BALON®



Product Catalog

BALON®



Ball Valves - Floating
Series LM
Page B-7
This carbon steel threaded end ball valve is available in ¼" through 1". Stainless steel ball and stem are standard. Rugged valve for pressures up to 3,000 PSI WP.





Ball Valves - Floating
Series F Fractional
Pages B-8 & B-9
Available in ¼" through 1"- 3000 PSI. Also offered in LF2 forged steel for low-temp service to -50° F. NACE standard.





Ball Valves - Floating
Series LS
Page B-33
Available in ¼" through 1", this solid 316 stainless steel ball valve is the solution for corrosive applications. Pressures are up to 3000 PSI. It is widely used in odorant applications.





Ball Valves - Floating
Series S Threaded / Grooved
Pages B-10, B-23, B-25, B-26, B-27, B-29, & B-31
Available in 1" through 6" in a variety of threaded/grooved end combination 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-24, B-30, & B-32
Available in sizes from 1" through 4", with pressures up to 5000 PSI WP. Offered in carbon steel, "9D" nickel aluminum bronze and ductile iron. 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
Available in sizes up to 6" and offered in ANSI 125, 150, 300, 600, 900 and 1500 pressure classes. This valve is available in ductile iron and carbon steel. Also available in LF2 for low-temp service to -50° F.





Ball Valves - Floating
Series F Gear Operated
Pages B-13, B-15, B-17, & B-19
Balon includes gear operators as a standard feature in 6" full port and larger in ANSI 150 and 300 classes, 4" full port and larger ANSI 600 classes, and 3" full port and larger ANSI 900 class valves. Also available in low-temp service to -50° F.





Ball Valves - Trunnion
Series T Trunnion Mounted
Pages T-4 through T-11
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 2" through 6" in ANSI 150 and ANSI 300 classes. Locking devices and 2" square operating nut are standard.



Table of Contents

Balon: History	4-5
Why Balon is American Made	6
The Balon Mission	7
Leading the Pack Through Innovation	8
Safety Is No Accident: We Do It By Design	9
Balon Quality	10
Global Customer Support	11
Ball Valves - Floating	B-1
Trunnion Ball Valves	T-1
Gear Operator	G-1
Actuation Mounting Package	A-1
Test and Tap Valve	TT-1
Freeze Resistant Uni-Directional Ball Valve Option	F-1
Swing Check Valves	C-1
Needle Valves	N-1
Terms and Conditions	TC-1



Ball Valves - Test and Tap Valve Threaded
Page TT-1 & TT-2

Available in 1", 1 1/2" or 2" M x F NPT. Intergral 1/4" or 1/2" ball valve that allows a myriad of uses. 3000 PSI WP.

Ball Valves - Test and Tap Valve Flanged
Pages TT-3 & TT-4

Available in 2", 3", 4", 6", 8", 10", and 12" in 150, 300, and 600 ANSI Class. Sports an integral ball valve and designed so used where bleed rings are used.





Swing Check Valves
Series D Threaded/Grooved End
Page C-5

This top entry swing check valve is available in ductile iron, carbon steel and "9D" nickel aluminum bronze, in sizes 2" through 4", up to 2500 PSI WP. NACE and Stainless steel discs are standard.

Swing Check Valves
Series C Threaded / Grooved
Page C-12

NACE and 316 stainless steel disc are standard. Available in sizes 1" through 3", in carbon steel, ductile iron and "9D' nickel aluminum bronze.





Swing Check Valves
Thin and Long Pattern Wafer
Pages C-15 & C-16

With sizes ranging from 2" through 6", Balon's long and thin pattern wafer check valves are available in "hard to find" larger port sizes. NACE and a replaceable stainless steel disc are standard. Sturdy, rugged forged steel body construction. Also available with stainless steel seats.





Swing Check Valves
Series C Flanged End
Pages C-17 through C-19

This flanged end carbon steel valve is available in sizes 2" through 6" ANSI Class 150, 300, and 600 with a working pressure of 285, 740, and 1480 respectively. NACE and stainless steel are standard, and the seat and disc module are completely replaceable.





Needle Valves
Resilient Seated
Pages N-4 & N-6

This 6,000 PSI needle valve is built with precision metering in mind. It features a bonnet locking shroud and an innovative split seat design with integral lugs to prevent rotation. This valve is available in both carbon steel and stainless steel. 316 stainless steel stems are standard.

Needle Valves
Metal Seated
Pages N-5 & N-7

This 10,000 PSI needle valve uses an indirect globe style flow path to allow for delicate adjustment at high pressures.This valve is available in both carbon steel and stainless steel. 316 stainless steel stems are standard.



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 emigrant 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. When, owing 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.

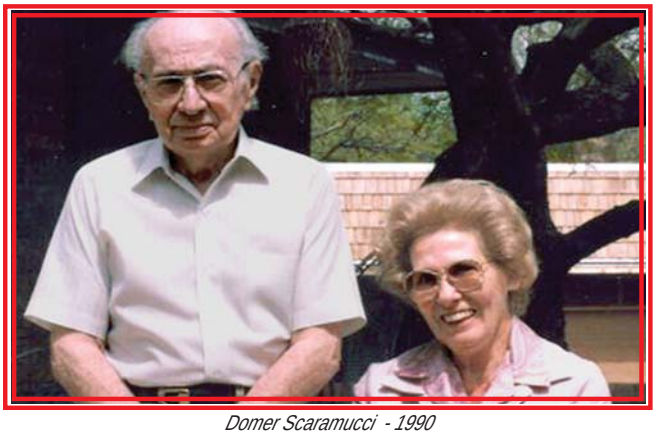
Mr. Scaramucci had a successful career designing and licensing products for other manufacturers. Many of his designs had become industry standards by the time Balon was established 1965. At the age of 54, at a time when most are thinking of retirement, he and Ilene embarked on what was a lifelong dream. 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, 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.



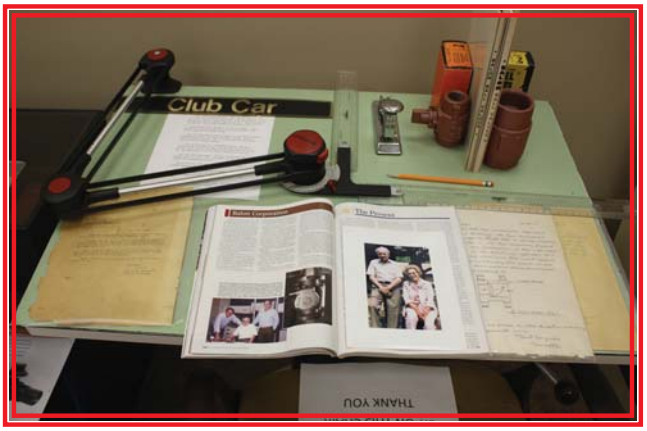
Domer Scaramucci - 1990

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 4000-square-foot metal building at the corner of South Hattie Avenue and SE 32nd 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, 1.4 million square feet.

We employ approximately 1,000 persons in manufacturing and operate approximately 1,500 machines. More than 60 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 materials 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.



1,500,000 sq ft manufacturing facility

Why Balon is American Made



Some may ask, “Why are Balon Valves made in America?”

We believe the proper question is, “Why would Balon want to manufacture valves anywhere else?”

The heart of America is where Balon humbly opened its doors, in 1965, on a 4000-square-foot shop that employed three persons.

America is where Balon grew, building safer, more rugged, maintenance-free valves that comprise domestic content only.

Prospective employees came to our door, in America, asking for an opportunity to join their futures to ours by becoming skilled craftsmen in our manufacturing plant.

Outstanding domestic foundries and forging houses respectfully asked to build relationships with us.

It was American valve users who first came to recognize that Balon Corporation provides an unmatched combination of product integrity and customer support.

Now, here in America, more than five decades after our founding, Balon’s manufacturing plant has grown to 1,500,000 square feet. We have brought together an excellent group of domestic raw materials suppliers who understand our insistence on quality and performance. We have approximately 1,000 dedicated employees who spare no effort to manufacture valves that meet our customers’ highest expectations. Why change a winning formula?

Balon’s diverse work force embodies skills, traditions, and a work ethic with origins around the globe. We honor and respect their cultures and the cultures of all countries. In fact, today, Balon sells and services valves in all regions of the world.

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.

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 already set the standard for valve technology with his patented valve designs for the oil and gas industry. Driven by a spirit for innovation with an emphasis on safety, he laid the ground work for the company that Balon has become today.

Balon's commitment to deliver the benefits of valve engineering and innovation to our customers is reflected through over two hundred patents that we have been issued throughout the United States and Canada. Our founder's influence on our design engineers continues today as we increase our patent portfolio at an average rate of five patents per year.

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 - all employees 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 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.

Global Customer Support



We understand that Balon products are expected to perform at the highest level in terms of safety and operation and to do so in a way that delivers maximum value to the end user. If our customers are to achieve the lowest cost of valve ownership, they must have the ability to communicate directly with factory representatives who are dedicated to complete customer satisfaction.

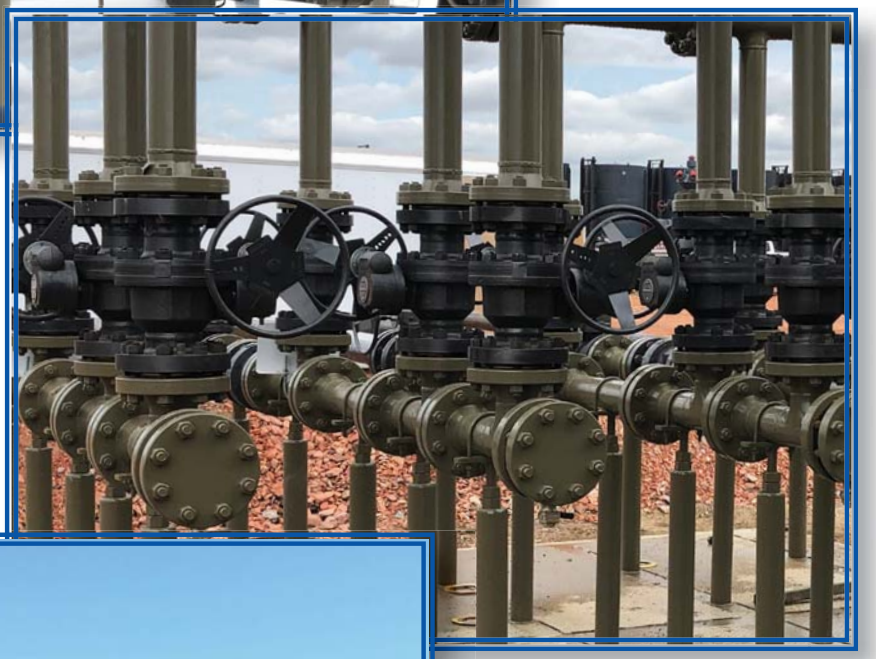
Balon employs full time, non-commissioned valve professionals who call on customers throughout the world, concentrating on the development of long-term relationships with valve distributors and valve owners.

Now and in the future, our distributors and product owners can rely on the prompt, personalized service that Balon has become known for.

For information regarding the nearest Balon representative or Balon distributor, please contact our factory in Oklahoma City by phone at (405) 677-3321, or by email at sales@balon.com.

Floating Ball Valves







BALON

BALON®

FLOATING BALL VALVES

BALON FLOATING BALL VALVES B-1

BALL VALVE IDENTIFICATION KEY B-2

INTRODUCTION
- The Balon Valve: Totally Advanced B-3
- Multi-Seal: The Heart of the Valve B-4
- An Advanced Concept in Stem Design B-5
- A More Complete Solution to Fire Safety B-6

CARBON STEEL VALVES
- **Female Threaded End Connection** B-7 - B-11
- **Flanged End Connection** B-12 - B-19
- **Weld x Flange Connection** B-20
- **Weld x Weld Connection** B-21
- **Threaded End Connection Socket Weld** B-22

DUCTILE IRON VALVES
- **Female x Female Threaded End Connection** B-23 - B-24
- **Male x Female Threaded End Connection** B-25
- **Male Threaded x Grooved End Connection** B-25
- **Female Threaded x Grooved End Connection** B-26
- **Grooved x Grooved End Connection** B-27
- **Flanged End Connection** B-28

"9D" NICKEL ALUMINUM BRONZE VALVES
- **Female x Female Threaded End Connection** B-29 - B-30
- **Grooved x Grooved End Connection** B-31 - B-32

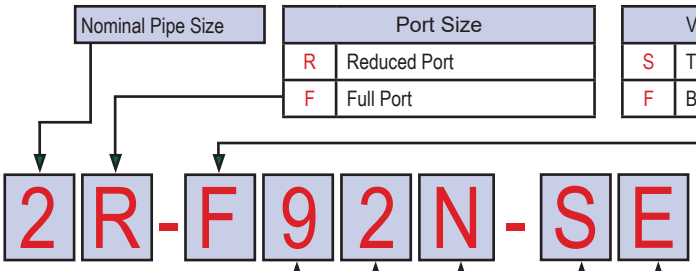
STAINLESS STEEL VALVES
- **Female Threaded End Connection** B-33

BALL VALVE ACCESSORIES B-34
- **Handles**
- **Chain Darts**
- **2" Square Operating Nuts**
- **Actuation Mounting Package Hardware** A-1

TECHNICAL INFORMATION B-35 - B-37

Floating Ball Valve Identification Key

Balon Threaded End / Grooved End Series F, S, UNI



Nominal Pipe Size

Port Size	
R	Reduced Port
F	Full Port

Valve Series	
S	Threaded Body
F	Bolted Body

Valve Working Pressure	
2	500 PSI WP
3	750 PSI WP
4	1000 PSI WP
6	1500 PSI WP
9	2000 PSI WP or 2500 PSI WP
0	2500 PSI WP or 3000 PSI WP
3M	3000 PSI WP
5M	5000 PSI WP

Valve Material	
2	Ductile Iron
3	Carbon Steel
4	Nickel Aluminum Bronze
5	Stainless Steel
3M	Carbon Steel
5M	Carbon or Alloy Steel

Trim (Ball & Stem Material)	
	Not Used if Carbon Steel Standard
N	NACE Stainless Steel Ball & Stem
NL	Low Temperature NACE Stainless Steel Ball & Stem

End Connection		
S	E	Female x Female Threaded
G	E	Grooved x Grooved
M	F	Male x Female Threaded
M	G	Male Threaded x Grooved
S	G	Female Threaded x Grooved

Note: For Threaded End Unidirectional valve substitute **UNI** *for* **SE.** *For Grooved End Unidirectional valve specify* **UNI** *after* **GE.**

Balon Flanged End, Weld End Series F, US



Nominal Pipe Size

Port Size	
R	Reduced Port
F	Full Port

Valve Series	
F	Bolted Body
US	Weld X Weld Weld X Flange

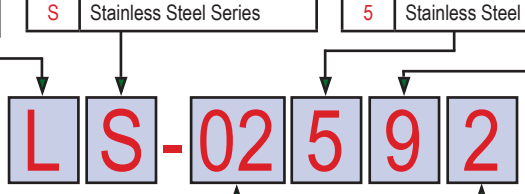
Valve Working Pressure	
1	ANSI 150 285 WP Carbon Steel RF 250 WP Ductile Iron FF 200 WP
3	ANSI 300 740 WP Carbon Steel RF 640 WP Ductile Iron
6	ANSI 600 1480 WP
9	ANSI 900 2220 WP
0	ANSI 1500 3705 WP

Valve Material	
2	Ductile Iron
3	Carbon Steel

Trim (Ball & Stem Material)	
	Not Used if Carbon Steel Standard
N	NACE Stainless Steel Ball & Stem
NL	Low Temperature NACE Stainless Steel Ball & Stem

End Connection		
R	F	Raised Face
R	J	Ring Type Joint
B	W	Butt Weld
W	F	Weld X Flange
F	F	Flat Face (Ductile Only)

Balon Threaded End Series L



L Series

Valve Series	
M	Carbon Steel Series
S	Stainless Steel Series

Valve Material	
3	Carbon Steel
5	Stainless Steel

Valve Working Pressure	
6	3000 PSI WP Carbon Steel 2000 PSI WP Stainless Steel
9	3000 PSI WP Stainless Steel

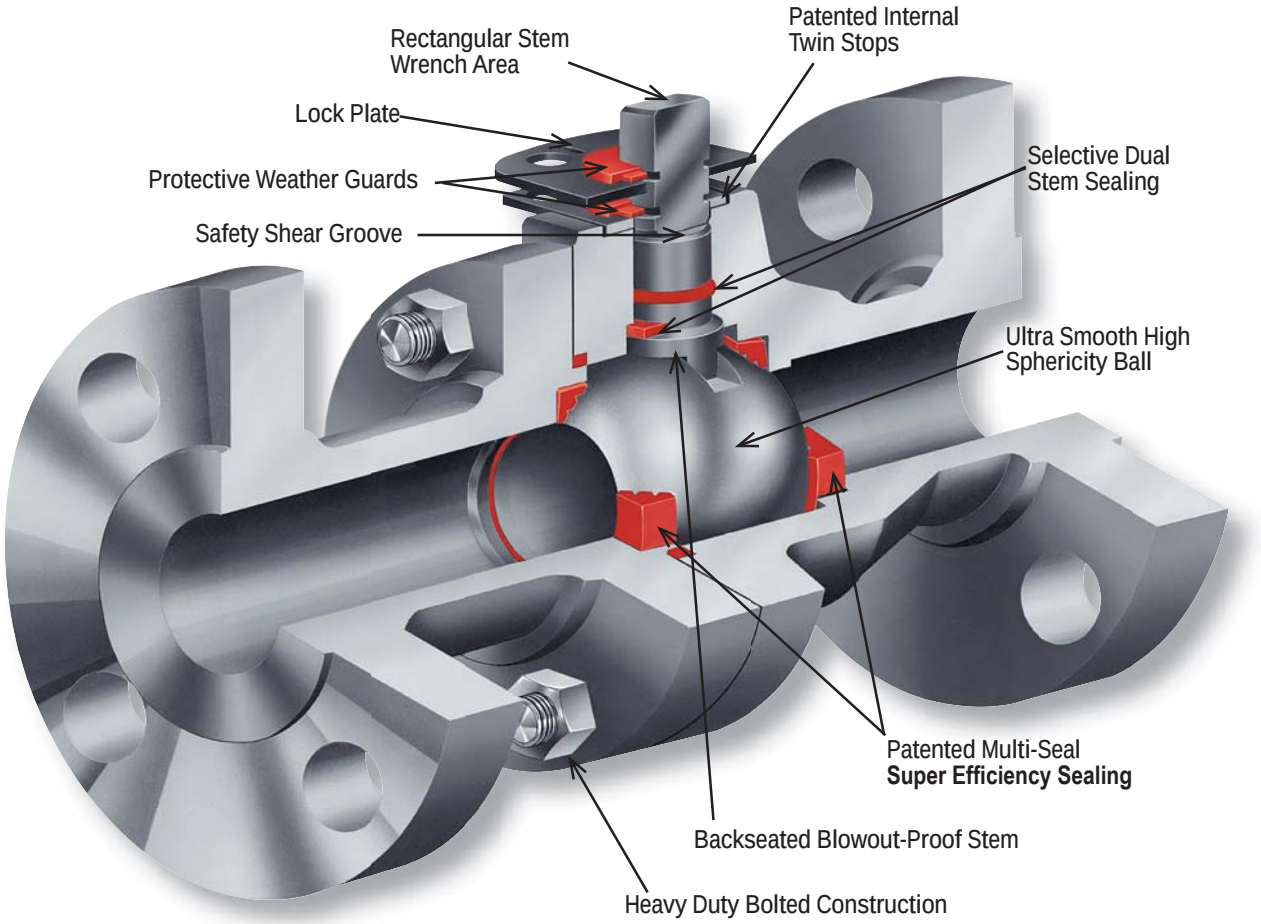
Nominal Pipe Size	
02	1/4 NPT
05	1/2 NPT
07	3/4 NPT
10	1 NPT

Port Size	
1	Reduced Port
2	Full Port

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 thousands 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.

Emissions Tested - API 641

Balon valves successfully completed low emissions testing. Call Oklahoma City plant for details.

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.

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.

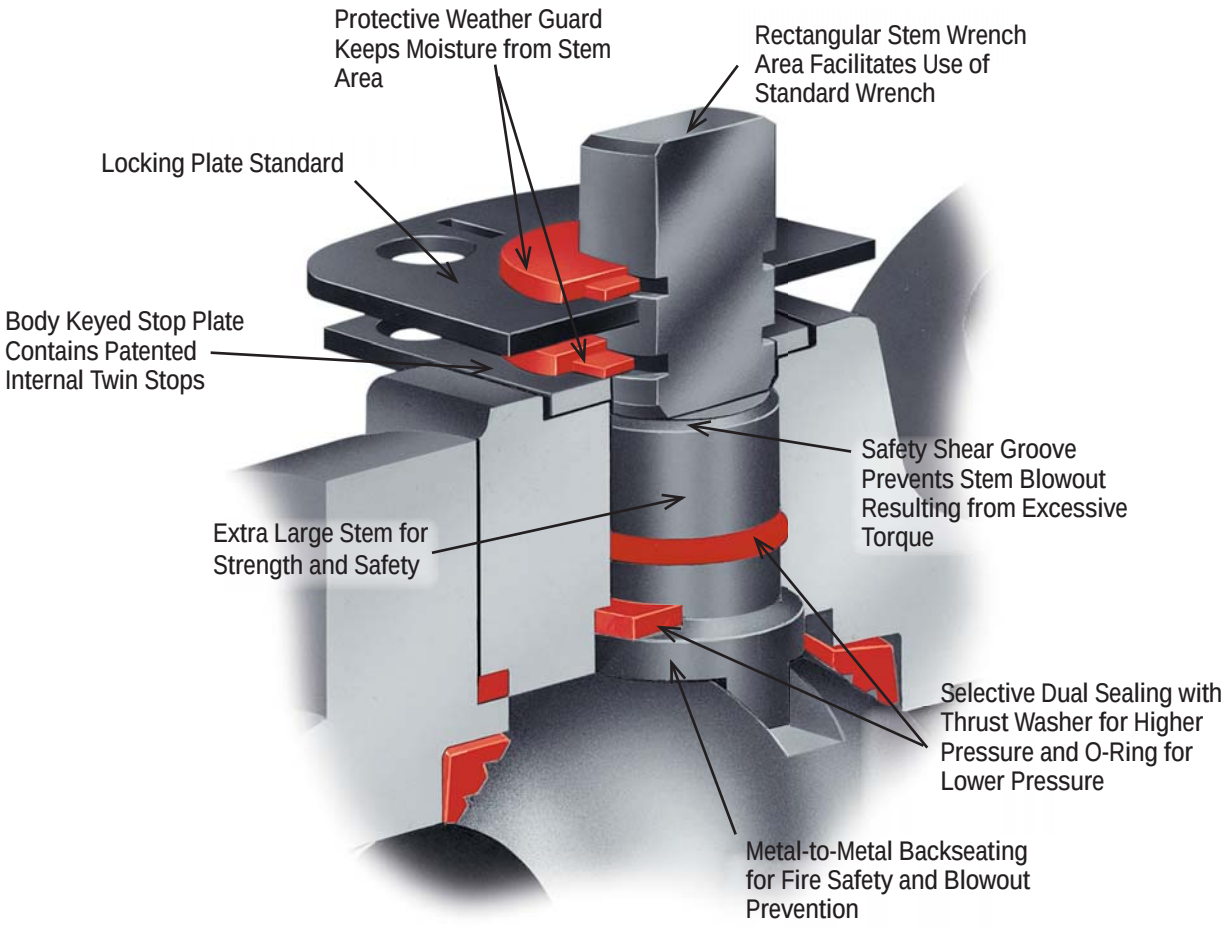


The Multi-Seal design permits selection of seal material best suited to abrasive, high and low pressure applications in toughest services. And the relief pockets formed by the tapered walls, with the series grooving, provide self-compensation for swell to permit easy turning, long-life operation. It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

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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 former designs, double O-rings were incorporated on the theory that should one O-ring fail to seal, then 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.

Emissions Tested - API 641

Balon valves successfully completed low emissions testing. Call Oklahoma City plant for details.

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.

Ball Valve Fire Safety

A More Complete Solution to Fire Safety

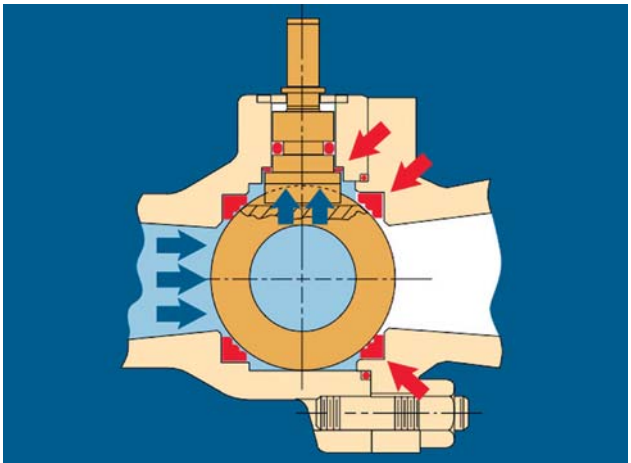


Figure A: Valve closed and seals intact.

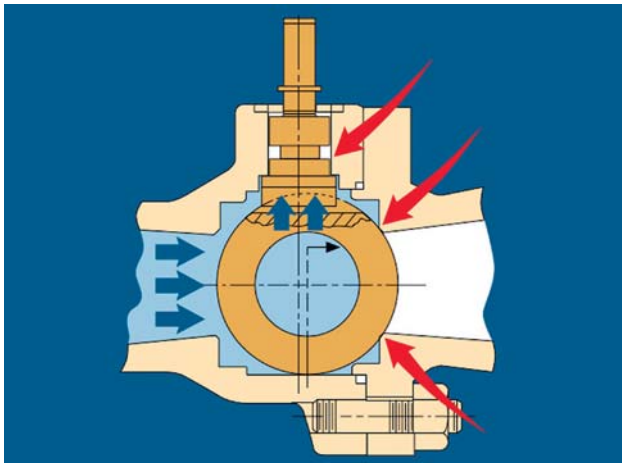


Figure B: Valve is closed, seals completely dissipated.

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:

- Backseated 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 so 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 oversize 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 backseated, 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 backseating - 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.

Threaded End Connection

Series LM Carbon Steel

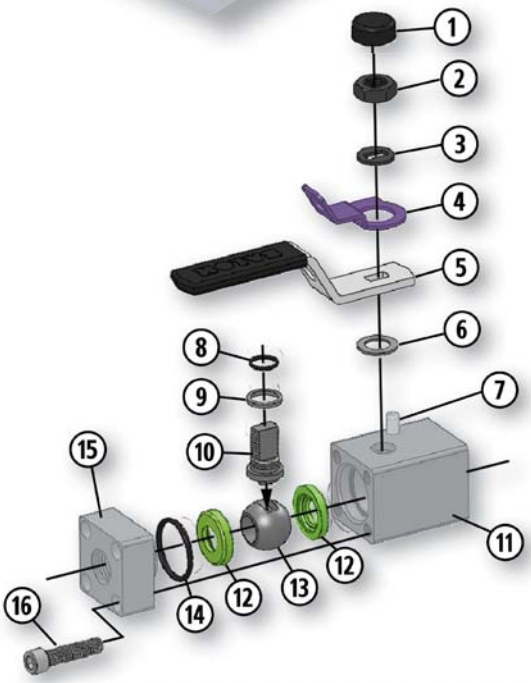


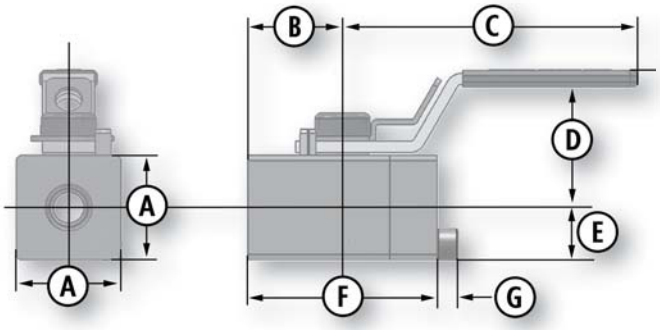
- **Lever Operated Ball Valve**
- **3000 PSI WP**
- **¼" Through 1"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Multi-Seal Seats
  - 316 Stainless Steel Ball and Stem Standard
  - Locking Device Standard
  - Maintenance Free
  - Fire Safe Design

Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polyethylene
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 (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.*

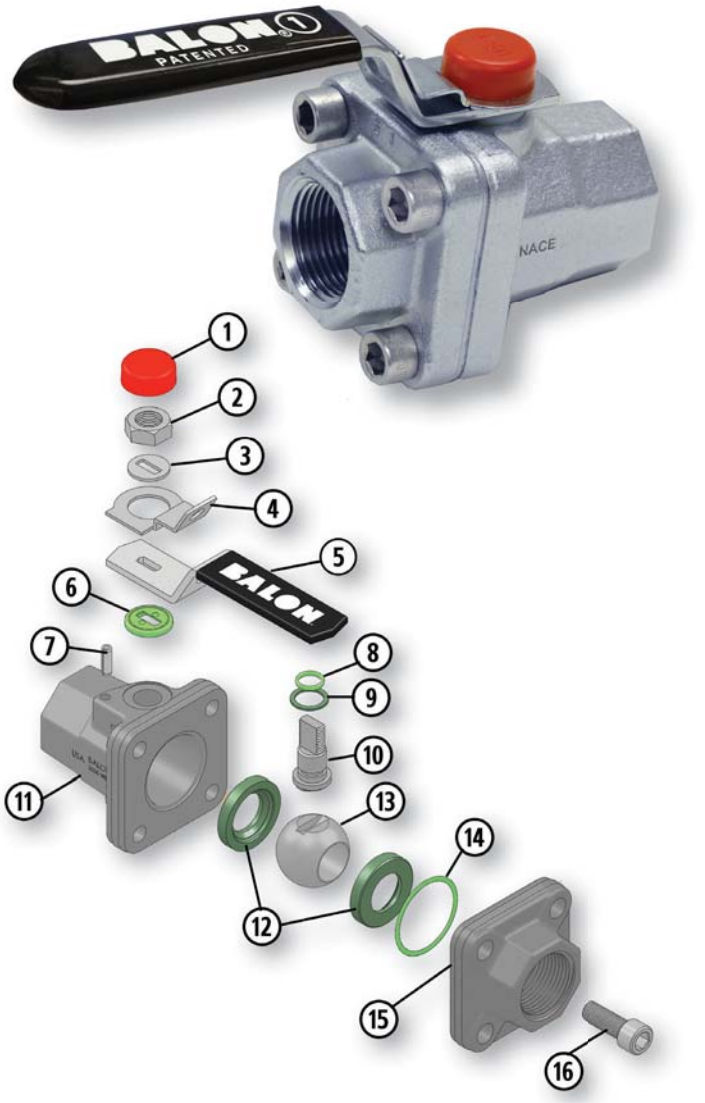


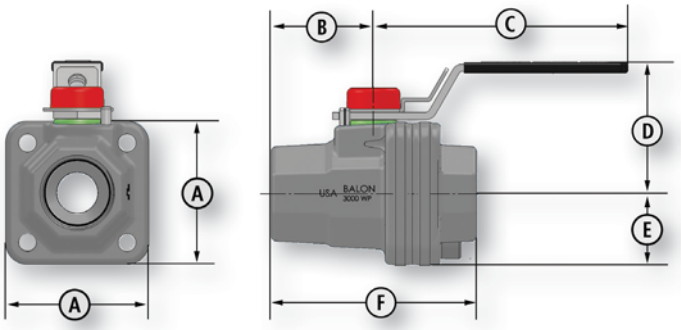


Dimensional Data

SIZE	CATALOG NUMBER STANDARD TRIM 316 SS BALL & STEM	PORT	A	B	C	D	E	F	G	LBS.	Cv
.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	2.0	1.81	4.87	2.25	1.0	3.62	.37	3.5	-
1x.75x1	LM-10361	.75	2.0	1.81	4.87	2.25	1.0	3.62	.37	3.5	30

Threaded End Connection





Series F Carbon Steel

- **NACE Standard**
- **Lever Operated Ball Valve**
- **3000 PSI WP**
- **¼" Through 1"**
- **Bolted Body Construction**

- Meets API 641 Emissions Standard
- Forged Body and Adapter
- Rugged Bolted Construction
- Low-Torque Operation
- Multi-Seal Seats
- Maintenance Free
- Fire Safe Design

Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polyethylene
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 A105, Normalized/A350 LF2 CL1
12	Seat	Nylon (TFE Optional)
13	Ball	316 Stainless Steel
14	Body Seal	Fluorocarbon
15	End Adapter	ASTM A105, Normalized/A350 LF2 CL1
16	Body Bolts	ASTM A193 B7M/ A320 L7M

** Handle and lock device are standard.*

Dimensional Data

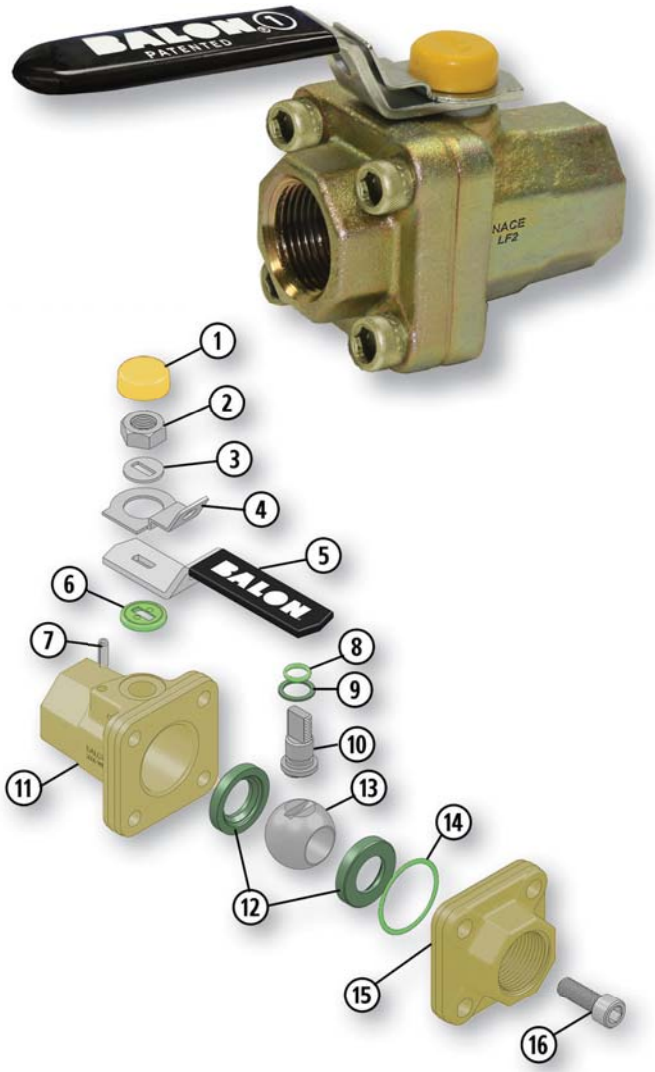
SIZE	CATALOG NUMBER NACE TRIM 316 SS BALL & STEM	PORT	WP	A	B	C	D	E	F	LBS.	Cv
.25 x .375 x .25	1/4F-F03N-SE	.37	3000	1.75	1.12	3.50	1.88	0.88	2.25	1.0	-
.50 x .375 x .50	1/2R-F03N-SE	.37	3000	1.75	1.19	3.50	1.88	0.88	2.38	1.0	6
.50 x .50 x .50	1/2F-F03N-SE	.50	3000	1.92	1.38	3.50	1.96	0.96	3.00	3.3	-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

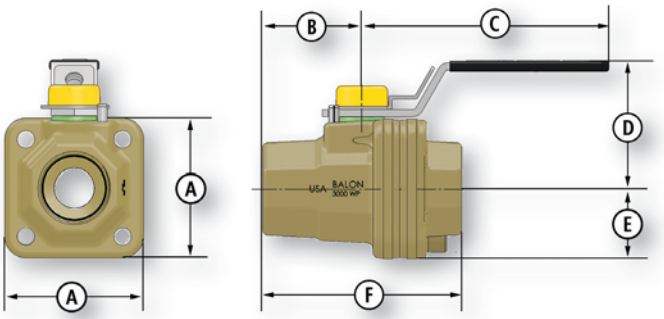
Threaded End Connection

Series F Carbon Steel

- **LF2 CL1 Forged Steel for Low-Temp Service to -50° F**
- **Lever Operated Ball Valve**
- **3000 PSI WP**
- **¼" Through 1"**
- **Bolted Body Construction**

- Meets API 641 Emissions Standard
- NACE Standard
- Forged Body and Adapter
- Rugged Bolted Construction
- Low-Torque Operation
- Multi-Seal Seats
- Maintenance Free
- Fire Safe Design





Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polyethylene
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 (TFE Optional)
13	Ball	316 Stainless Steel
14	Body Seal	Fluorocarbon
15	End Adapter	ASTM A350 LF2 CL1
16	Body Bolts	ASTM A320 L7M

** Handle and lock device are standard.*

Dimensional Data

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

Threaded End Connection



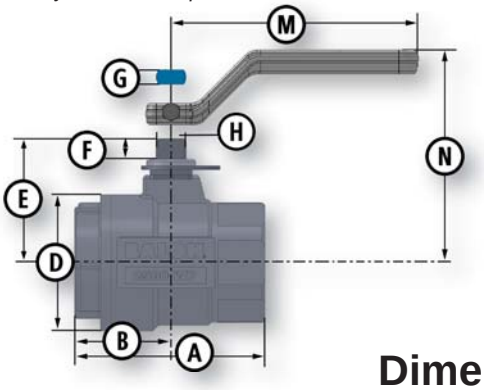
Series S Carbon Steel

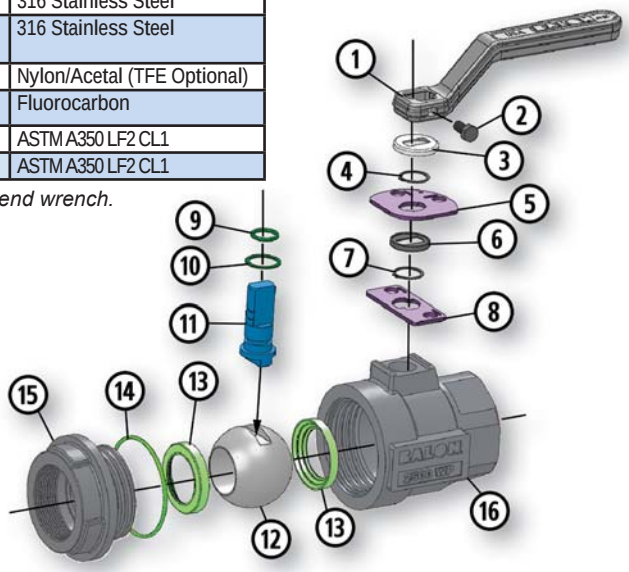
- **To 5000 PSI WP**
- **1" Through 2"**
- **Threaded Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Maintenance Free

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	Polyethylene	Polyethylene	Polyethylene
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	Polyethylene	Polyethylene	Polyethylene
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/Acetal (TFE Optional)	Nylon/Acetal (TFE Optional)	Nylon/Acetal (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

**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.*





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	20	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.*

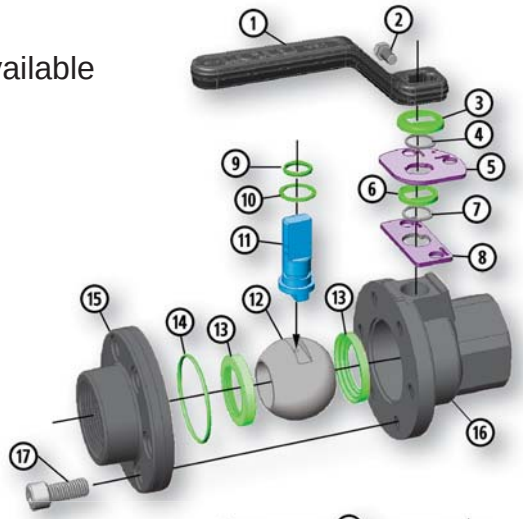
BALON

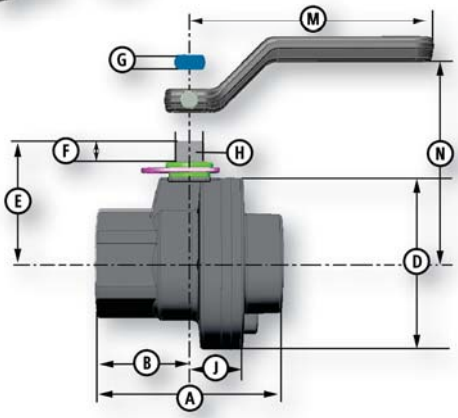
Threaded End Connection

Series F Carbon Steel



- **Lever Operated Ball Valve**
- **To 5000 PSI WP**
- **1" Through 4"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Multi-Seal Seats
  - Bolted Body Protects Against End Adapter Blowout
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Maintenance Free





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	Polyethylene	Polyethylene	Polyethylene
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	Polyethylene	Polyethylene	Polyethylene
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/Acetal (TFE Optional)	Nylon/Acetal (TFE Optional)	Nylon/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.*

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	.685	1.12	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	.685	1.12	4.37	2.00	4.0	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	.873	1.62	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	.873	1.62	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	.873	1.62	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	.873	1.75	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	.998	2.00	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	.998	2.00	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	.998	2.00	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	.998	2.06	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	2.47	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	5.75	1.06	.747	1.375	2.375	20.0	7.75	47.0	P-4127-DI	500

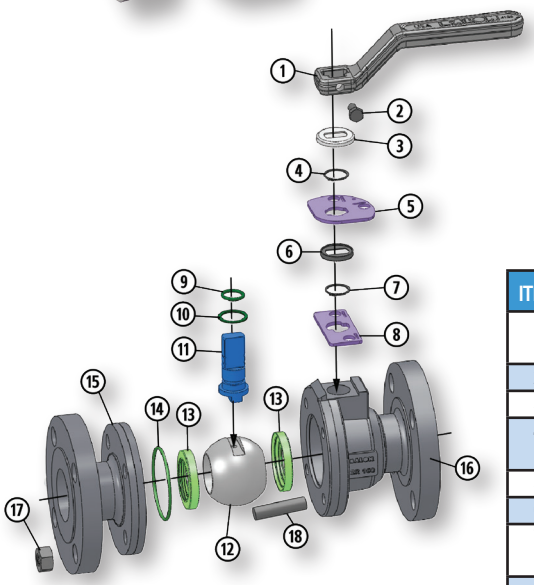
** Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.*

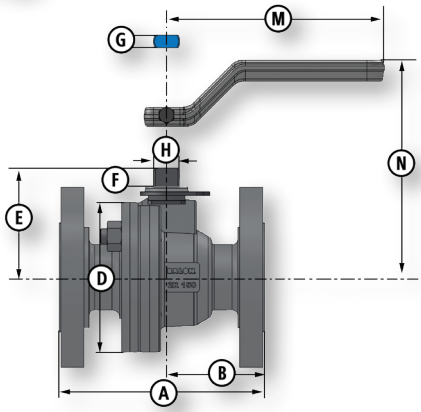
Flanged End Connection

Series F Carbon Steel



- **Lever Operated Ball Valve**
- **ANSI Class 150 (285 PSI WP)**
- **1" Through 6"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Maintenance Free





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	Polyethylene	Polyethylene	Polyethylene
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	Polyethylene	Polyethylene	Polyethylene
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 B-37 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	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	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	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	8.0	3.56	7.50	5.75	1.06	.747	1.373	20.0	7.75	54.0	P-4127-DI	-
4x3x4	4R-F13-RF	4R-F13N-RF	4R-F13NL-RF	3	9.0	4.06	7.87	5.75	1.06	.747	1.373	20.0	7.75	70.0	P-4127-DI	525
4x4x4	4F-F13-RF	4F-F13N-RF	4F-F13NL-RF	4	9.0	4.06	9.00	6.37	1.06	.747	1.373	20.0	8.37	80.0	P-4127-DI	-
6x4x6	6R-F13-RF	6R-F13N-RF	N/A	4	10.5	4.81	9.37	6.37	1.06	.747	1.373	20.0	8.37	102	P-4127-DI	800

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

BALON

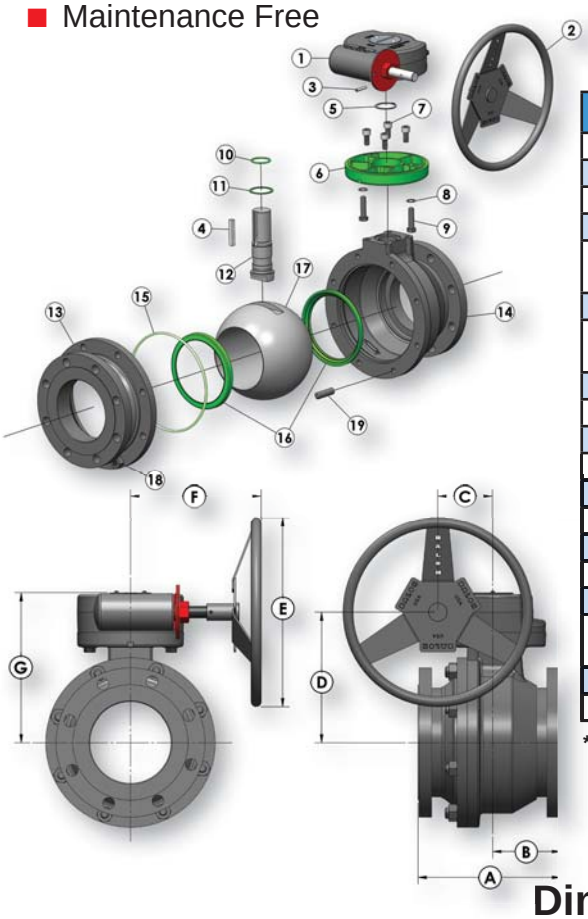
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Flanged End Connection

Series F Carbon Steel



- **Gear Operated Ball Valve**
- **ANSI Class 150 (285 PSI WP)**
- **6" Through 10"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Maintenance Free



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 (TFE Optional)	Nylon (TFE Optional)	Nylon (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**

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	12.0	20	11.5	13.75	520	-
10x8x10	10R-F13-RF	10R-F13N-RF	N/A	8	21.0	9.00	5.25	12.0	20	11.5	13.75	580	4200

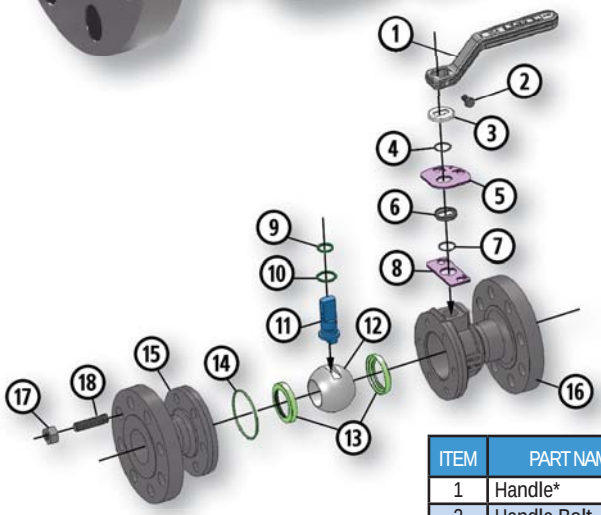
Flanged End Connection

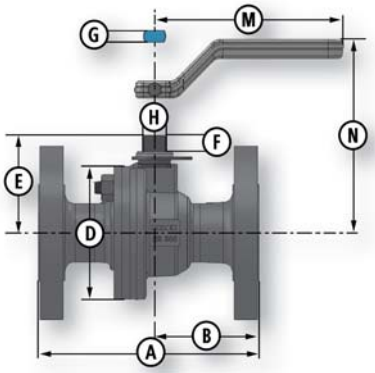


Series F Carbon Steel

- **Lever Operated Ball Valve**
- **ANSI Class 300 (740 PSI WP)**
- **2" Through 6"**
- **Bolted Body Construction**

- Meets API 641 Emissions Standard
- Available in Low-Temp Service to -50° F
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free





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	Polyethylene	Polyethylene	Polyethylene
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	Polyethylene	Polyethylene	Polyethylene
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 (TFE Optional**)	Nylon (TFE Optional**)	Nylon (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 B-37 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	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	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	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	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	12.00	5.50	9.37	6.37	1.06	.747	1.373	20.00	8.37	128	P-4127-DI	-
6x4x6	6R-F33-RF	6R-F33N-RF	N/A	4	15.87	7.44	10.0	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.*

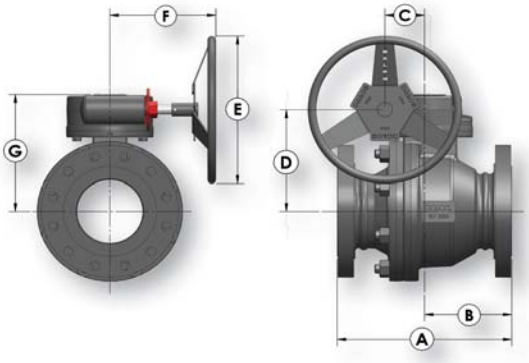
Flanged End Connection

Series F Carbon Steel



- **Gear Operated Ball Valve**
- **ANSI Class 300 (740 PSI WP)**
- **6" Through 8"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Maintenance Free





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 (TFE Optional*)	Nylon (TFE Optional*)	Nylon (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

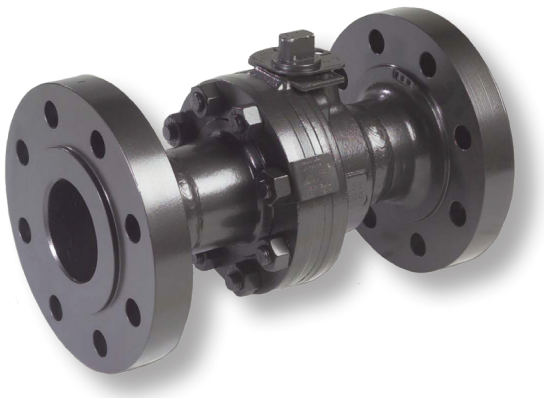
Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page B-37 for more information.

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

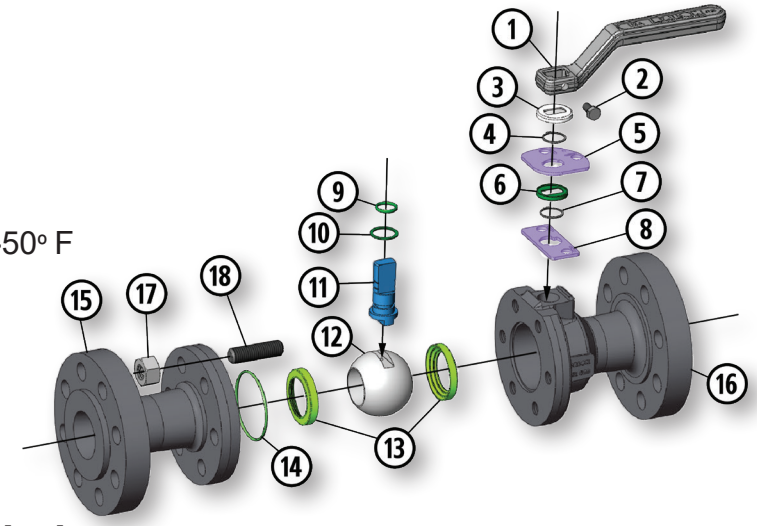
Flanged End Connection

Series F Carbon Steel



- Lever Operated Ball Valve
- ANSI Class 600 (1480 PSI WP)
- 1" Through 4"
- Bolted Body Construction

- Meets API 641 Emissions Standard
- Available in Low-Temp Service to -50° F
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free

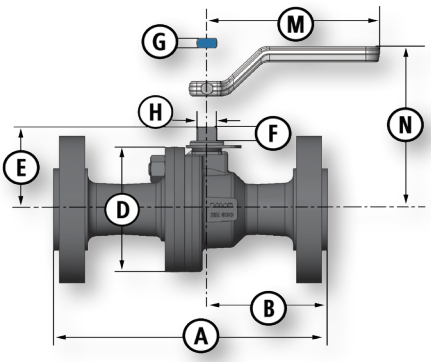


Material Description

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	Polyethylene	Polyethylene	Polyethylene
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	Polyethylene	Polyethylene	Polyethylene
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 B-37 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	1	8.50	-	3.68	-	3.37	2.37	.50	.340	.685	4.37	2	13.35	P-333-CS	-
2x1.5x2	2R-F63	2R-F63N	2R-F63NL	1.5	11.5	11.62	5.06	5.12	5.37	3.62	.75	.434	.873	7.25	5.25	37	P-4128-CS	125
2x2x2	2F-F63	2F-F63N	2F-F63NL	2	11.5	11.62	4.75	4.81	6.50	4.37	.87	.497	.998	10.25	6.20	48	P-4129-CS	-
3x2x3	3R-F63	3R-F63N	3R-F63NL	2	14	14.12	5.75	5.81	6.62	4.37	.87	.497	.998	10.25	6.75	69	P-4129-CS	200
3x3x3	3F-F63	3F-F63N	3F-F63NL	3	14	14.12	5.50	5.56	8	5.75	1.06	.747	1.373	20	7.75	90	P-4127-DI	-
4x3x4	4R-F63	4R-F63N	4R-F63NL	3	17	17.12	6.87	6.93	8.62	5.75	1.06	.747	1.373	20	7.75	154	P-4127-DI	525

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

** Also available with Balon Gear Operator.*

BALON

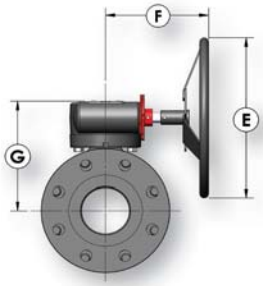
Flanged End Connection

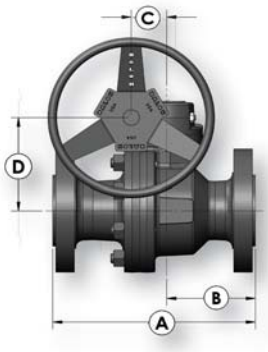
Series F Carbon Steel

- **Gear Operated Ball Valve**
- **ANSI Class 600 (1480 PSI WP)**
- **4" Through 8"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Available in Low-Temp Service to -50° F
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Stainless Steel Input Shaft Standard
    - ✔ Stainless Steel Directional Indicator
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Maintenance Free









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 (TFE Optional*)	Nylon (TFE Optional*)	Nylon (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 B-37 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		RF	RTJ	RF	RTJ							
4x4x4	4F-F63	4F-F63N	4F-F63NL-RF	4	17	17.12	7.37	7.43	3	8.19	14	9	9.69	238	-
6x4x6	6R-F63	6R-F63N	6R-F63NL-RF	4	22	22.12	9.88	9.25	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	26.12	10.62	10.68	4	9.75	20	11	11.19	570	2200

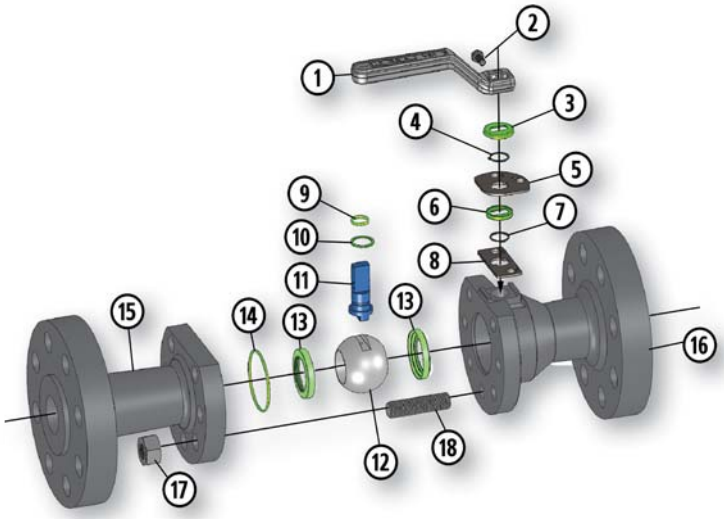
Flanged End Connection



Series F Carbon Steel

- Lever Operated Ball Valve
- ANSI Class 900 (2220 PSI WP)
- ANSI Class 1500 (3705 PSI WP)
- 2"
- Bolted Body Construction

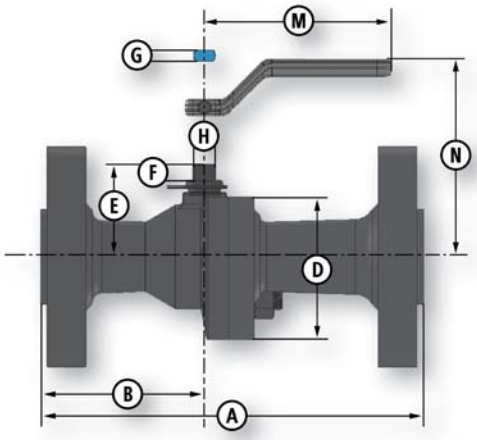
- Meets API 641 Emissions Standard
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free



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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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/Acetal	Nylon/Acetal
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter	ASTM A105, Normalized	ASTM A105, Normalized
16	Body	ASTM A105, Normalized	ASTM A105, 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	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.*

Flanged End Connection

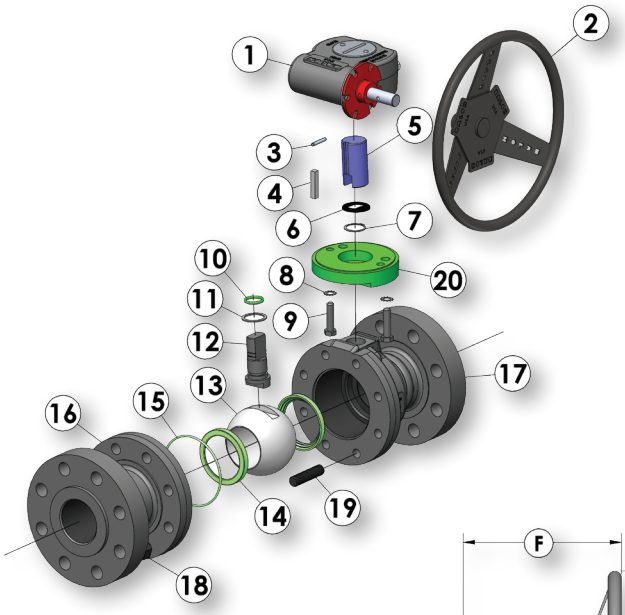
Series F Carbon Steel

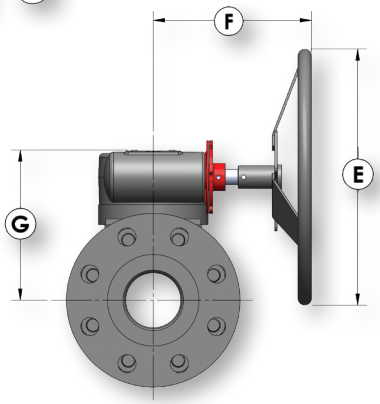
- **100% Made in USA**
- **ANSI Class 900 (2220 PSI WP)**
- **ANSI Class 1500 (3705 PSI WP)**
- **3"**
- **Bolted Body Construction**
  - Certified Low Emission per API 641
  - Certified Fire Safe per API 6FA
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard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

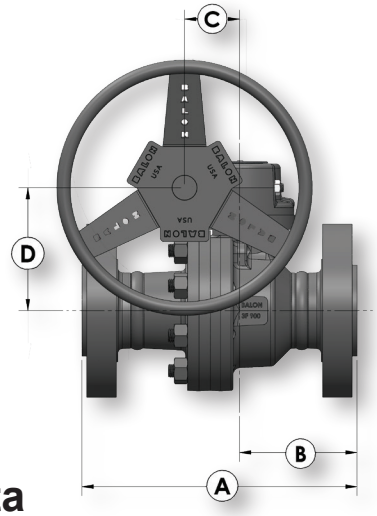


Material Description

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	Polyethylene	Polyethylene
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	ASTM A105, Normalized
17	Body	ASTM A105, Normalized	ASTM A105, Normalized
18	Nuts	ASTM A194 2H	ASTM A194 2HM
19	Body Bolts	ASTM A193 B7	ASTM A193 B7M







Dimensional Data

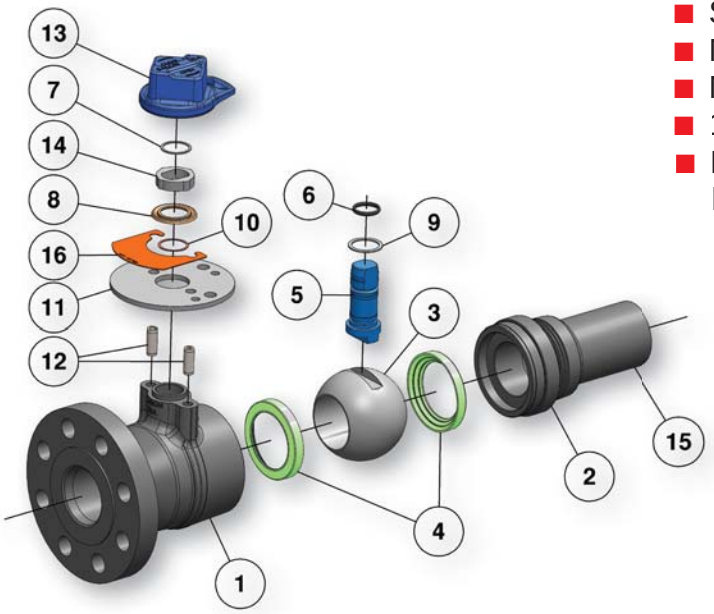
SIZE	CATALOG NUMBER		PORT	A		B		C	D	E	F	G	LBS.	Cv
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM 316 SS BALL & STEM		RF	RTJ	RF	RTJ							
3x3x3	3F-F93	3F-F93N	3	15	15.12	6.38	6.44	3	6.75	14	9	8.12	183	-
3x2.5x3	3R-F03	3R-F03N	2.5	18.5	18.63	7.90	7.96	3	10	14	9	11.5	219	280

Weld X Flange Connection

Series US Weld X Flange Carbon Steel



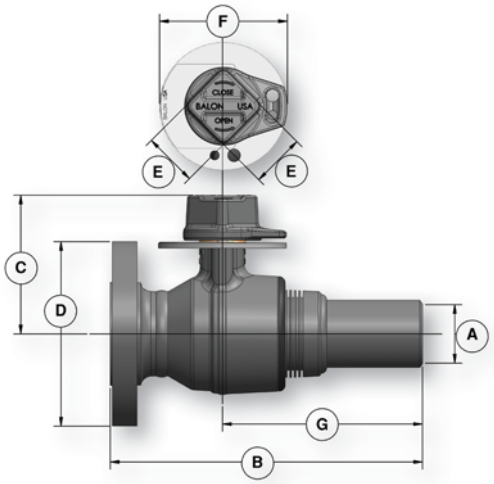
- **Weld X Flange Ball Valve**
- **ANSI Class 150 (285 PSI WP)**
- **ANSI Class 300 (740 PSI WP)**
- **2" Through 6"**
  - Meets API 641 Emissions Standard
  - Multi-Seal Seats
  - True Full Port for Hot Tap Service
  - Heat Dissipating Fins for Protection of Seats and Seals During Welding
  - Rugged Double Stops
  - Heavy Duty Forged Steel Construction
  - Stainless Steel Stem Standard
  - Maintenance Free
  - Meets/Exceeds-ASME B16.34
  - 100% Made in USA
  - Each Valve Marked With A Unique Identification Number



** Note: Valve is seal 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
5	Stem	316 Stainless Steel
6	Stem O-Ring	Buna-N
7	Snap Ring	Carbon Steel
8	Weather Seal	Nylon
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



Dimensional Data

SIZE	CATALOG	PORT/A	WP	B	C	D	E	F	G	LBS.	Cv
2x1.5x2	2R-US13-WF	1.5	285	10.5	4.5	6.0	2	4.5	6.9	18.5	148
2x1.5x2	2R-US33-WF	1.5	740	10.6	4.5	6.5	2	4.5	6.9	20.1	148
2x2x2	2F-US13-WF	2	285	10.9	4.9	6.0	2	4.5	7.0	22.5	-
2x2x2	2F-US33-WF	2	740	11.0	4.9	6.5	2	4.5	7.0	24.0	-
3x3x3	3F-US13-WF	3	285	11.7	5.9	7.5	2	4.5	7.0	47.0	-
3x3x3	3F-US33-WF	3	740	11.9	5.9	8.25	2	4.5	7.0	51.2	-
4x3x4	4R-US13-WF	3	285	12.2	5.9	9.0	2	4.5	7.4	54.2	662
4x3x4	4R-US33-WF	3	740	12.5	5.9	10.0	2	4.5	7.4	63.5	662
4x4x4	4F-US13-WF	4	285	12.8	6.6	9.0	2	4.5	7.6	71.5	-
4x4x4	4F-US33-WF	4	740	13.1	6.6	10.0	2	4.5	7.6	80.7	-
6x6x6	6F-US13-WF*	6	285	16.74	12.4	11.0	2	5.25	9.0	138	-
6x6x6	6F-US33-WF*	6	740	16.93	12.4	12.5	2	5.25	9.0	175	-

**Also available with Gear Operator.*

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Weld X Weld Connection

Series US Weld X Weld Carbon Steel

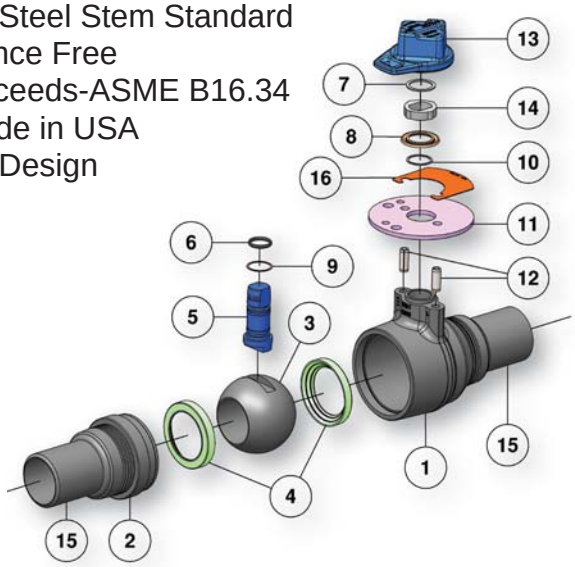
- **Weld End Ball Valve**
- **ANSI Class 150 (285 PSI WP)**
- **ANSI Class 300 (740 PSI WP)**
- **3/4" Through 8"**
  - Meets API 641 Emissions Standard
  - Multi-Seal Seats
  - True Full Port for Hot Tap Service
  - Heat Dissipating Fins for Protection of Seats and Seals During Welding
  - Each Valve Marked With A Unique Identification Number



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
5	Stem	316 Stainless Steel
6	Stem O-Ring	Buna-N
7	Snap Ring	Carbon Steel
8	Weather Seal	Nylon
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

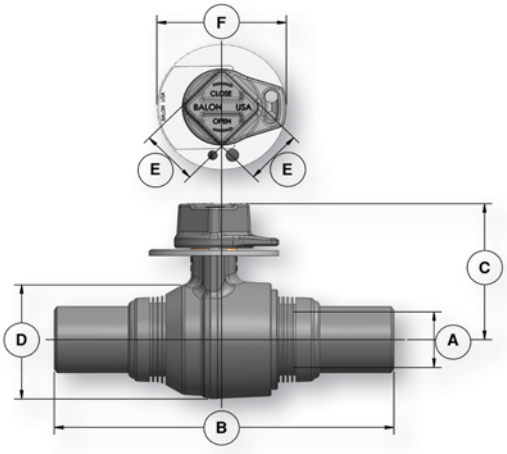
- Rugged Double Stops
- Heavy Duty Forged Steel Construction
- Stainless Steel Stem Standard
- Maintenance Free
- Meets/Exceeds-ASME B16.34
- 100% Made in USA
- Fire Safe Design



** Note: Valve is seal welded and is not field repairable.*

Dimensional Data

SIZE	CATALOG	PORT/A	WP	B	C	D	E	F	LBS.	Cv
.75x.75x.75	3/4F-US13-BW	.75	285	9.0.	3.1	1.82	.47	4.50	3.1	-
.75x.75x.75	3/4F-US33-BW	.75	740	9.0	3.1	1.82	.47	4.50	3.1	-
1x.75x1	1R-US13-BW	.75	285	9.0	3.1	1.82	.47	4.50	3.65	30
1x.75x1	1R-US33-BW	.75	740	9.0	3.1	1.82	.47	4.50	3.65	30
2x1.5x2	2R-US13-BW	1.5	285	11.8	4.5	3.48	2.0	4.50	14.0	148
2x1.5x2	2R-US33-BW	1.5	740	11.8	4.5	3.48	2.0	4.50	14.0	148
2x2x2	2F-US13-BW	2	285	11.8	4.9	4.28	2.0	4.50	18.0	-
2x2x2	2F-US33-BW	2	740	11.8	4.9	4.28	2.0	4.50	18.0	-
3x3x3	3F-US13-BW	3	285	11.8	5.9	6.05	2.0	4.50	38.0	-
3x3x3	3F-US33-BW	3	740	11.8	5.9	6.05	2.0	4.50	38.0	-
4x3x4	4R-US13-BW	3	285	12.8	5.9	6.05	2.0	4.50	41.0	662
4x3x4	4R-US33-BW	3	740	12.8	5.9	6.05	2.0	4.50	41.0	662
4x4x4	4F-US13-BW	4	285	12.8	6.6	7.50	2.0	4.50	58.0	-
4x4x4	4F-US33-BW	4	740	12.8	6.6	7.50	2.0	4.50	58.0	-
6x4x6	6R-US13-BW	4	285	15.5	6.6	7.50	2.0	4.50	63.0	800
6x4x6	6R-US33-BW	4	740	15.5	6.6	7.50	2.0	4.50	63.0	800
6x6x6	6F-US13-BW*	6	285	18.0	12.4	10.47	2.0	5.25	174.0	-
6x6x6	6F-US33-BW*	6	740	18.0	12.4	10.47	2.0	5.25	174.0	-
8x6x8	8R-US13-BW*	6	285	20.5	12.4	10.47	2.0	5.25	184.0	2200
8x6x8	8R-US33-BW*	6	740	20.5	12.4	10.47	2.0	5.25	184.0	2200



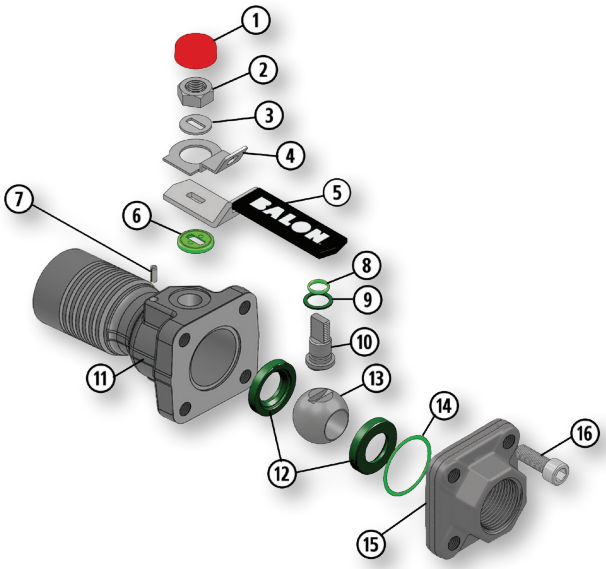
**Also available with Gear Operator.*

Threaded End Connection Socket Weld

Series F Carbon Steel

- Maintenance Free
- Bolted Body Construction
- 3000 PSI WP
- 1/2", 3/4" and 1"
- Forged Body and Adapter
- Meets API 641 Emissions Standard
- NACE Standard
- Low-Torque Operation
- Fire Safe Design
- Available in Low-Temperature Service to -50 °F
- Multi-Seal Seats
- Lever Operated Ball Valve

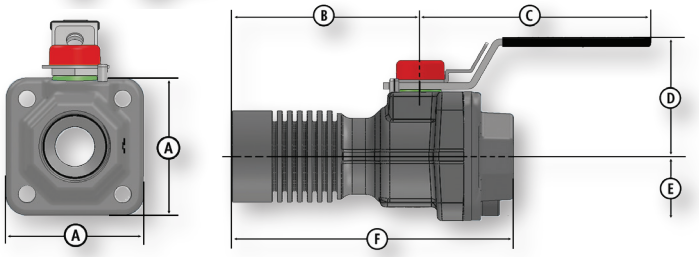




Material Description

ITEM	PART NAME	MATERIAL (NACE)	LOW TEMP (NACE)
1	Weather Guard	Polyethylene	Polyethylene
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	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 B-37 for more information.*



Dimensional Data

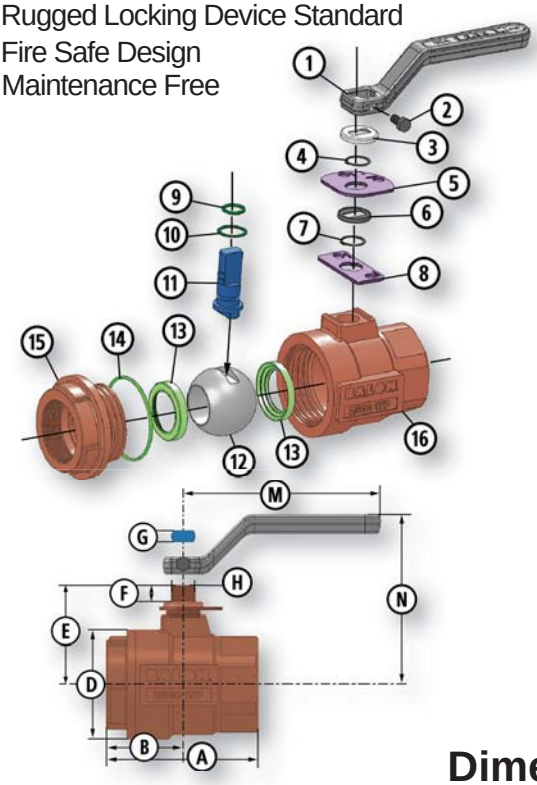
SIZE	CATALOG NUMBER		PORT	WP	A	B	C	D	E	F	LBS.	Cv
	NACE TRIM 316 SS BALL & STEM	LOW TEMP 316 SS BALL & STEM										
.50x.50x.50	1/2F-F03N-SWSE	-	.50	3000	1.92	3.38	3.50	1.96	.96	5.00	2.00	-
.75x.75x.75	3/4F-F03N-SWSE	3/4F-F03NL-SWSE	.75	3000	2.62	4.16	4.87	2.56	1.31	5.97	4.47	-
1x.75x1	1R-F03N-SWSE	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 Ductile Iron

- **Lever Operated Ball Valve**
- **To 2000 PSI WP**
- **1" Through 4"**
- **Threaded Body Construction**
  - Meets API 641 Emissions Standard
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
  - Multi-Seal Seats
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Fire Safe Design
  - Maintenance Free





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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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 (TFE Optional**)	Nylon (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

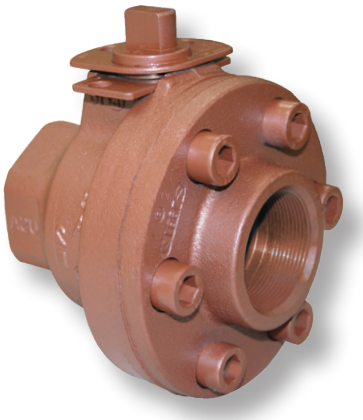
** Handle is optional. Balon valves can also be operated with a standard open-end wrench.*
*** Seat selection may result in de-rating of pressure. See Seat Pressure Ratings chart on page B-37 for more information.*

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														
1x1x1	1F-S42-SE	1F-S42N-SE	1	1000	3.87	1.93	2.25	2.37	.50	.340	.685	4.37	2.00	3.0	P-333-CS	-
1x1x1	1F-S62-SE	1F-S62N-SE	1	1500	3.87	1.93	2.25	2.37	.50	.340	.685	4.37	2.00	3.0	P-333-CS	-
1x1x1	1F-S92-SE	1F-S92N-SE	1	2000	4.00	2.00	2.50	2.37	.50	.340	.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	.62	.434	.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	.75	.434	.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	.75	.434	.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	.75	.434	.873	7.25	5.25	10.0	P-4128-CS	125
2x2x2	2F-S32-SE	2F-S32N-SE	2	750	5.75	2.87	4.25	4.37	.75	.497	.998	10.25	6.20	12.0	P-4129-CS	-
2x2x2	2F-S42-SE	2F-S42N-SE	2	1000	5.75	2.87	4.25	4.37	.75	.497	.998	10.25	6.20	13.0	P-4129-CS	-
2x2x2	2F-S62-SE	2F-S62N-SE	2	1500	6.00	3.00	4.75	4.37	.75	.497	.998	10.25	6.20	15.0	P-4129-CS	-
2x2x2	2F-S92-SE	2F-S92N-SE	2	2000	6.00	3.00	4.75	4.37	.75	.497	.998	10.25	6.20	16.0	P-4129-CS	-
3x2x3	3R-S32-SE	3R-S32N-SE	2	750	7.25	3.50	4.50	4.37	.75	.497	.998	10.25	6.20	17.8	P-4129-CS	180
3x3x3	3F-S32-SE	3F-S32N-SE	3	750	8.00	4.00	6.00	5.75	.87	.747	1.373	20.00	7.75	31.0	P-4127-DI	-
3x3x3	3F-S42-SE	3F-S42N-SE	3	1000	8.75	4.37	6.00	5.75	.87	.747	1.373	20.00	7.75	35.0	P-4127-DI	-
4x3x4	4R-S32-SE	4R-S32N-SE	3	750	8.75	4.37	6	5.75	.87	.747	1.373	20.00	7.75	36.0	P-4127-DI	525
4x4x4	4F-S22-SE	4F-S22N-SE	4	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.*

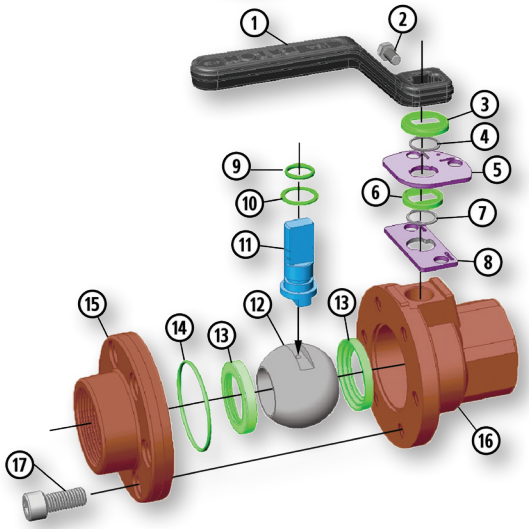
Threaded End Connection

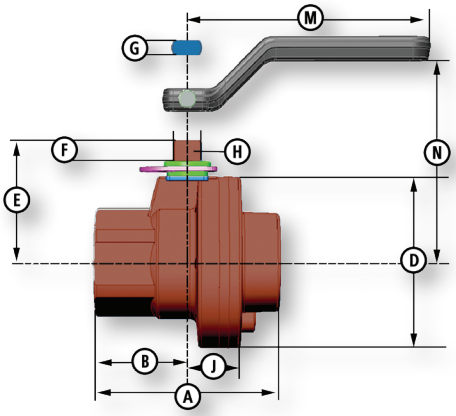


Series F Ductile Iron

- **Lever Operated Ball Valve**
- **To 2000 PSI WP**
- **1" Through 4"**
- **Bolted Body Construction**

- Meets API 641 Emissions Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Multi-Seal Seats
- Bolted Body Protects Against End Adapter Rotation
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free





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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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	AISI 1018 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 B-37 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	2000	3.87	1.93	3.37	2.37	0.50	.340	0.685	1.12	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	1.62	7.25	5.25	12.4	P-4128-CS	125
2x2x2	2F-F62-SE	2F-F62N-SE	2	1500	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.00	10.25	6.20	19.0	P-4129-CS	-
2x2x2	2F-F92-SE	2F-F92N-SE	2	2000	5.75	2.87	6.12	4.37	0.87	.497	0.998	2.00	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	2.25	16.00	6.75	27.0	P-4126-DI	-
3x2x3	3R-F62-SE	3R-F62N-SE	2	1500	7.25	3.62	6.75	4.37	0.87	.497	0.998	2.12	10.25	6.20	26.0	P-4129-CS	180
3x2x3	3R-F92-SE	3R-F92N-SE	2	2000	7.25	3.62	6.75	4.37	0.87	.497	0.998	2.12	10.25	6.20	26.0	P-4129-CS	180
3x3x3	3F-F42-SE	3F-F42N-SE	3	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	750	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
4x3x4	4R-F42-SE	4R-F42N-SE	3	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	750	9.37	4.68	9.25	6.37	1.06	.747	1.375	3.12	20.00	8.37	64.0	P-4127-DI	-

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

BALON®

Male x Female Threaded End Connection
Male Threaded x Grooved End Connection

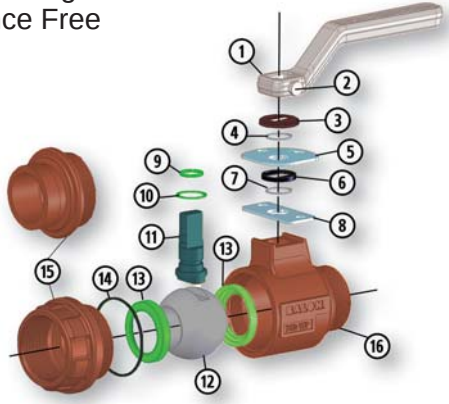
Series S Ductile Iron

- **Lever Operated Ball Valve**
- **750 PSI WP**
- **2" Through 4"**
- **Threaded Body Construction**





- Meets API 641 Emissions Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free

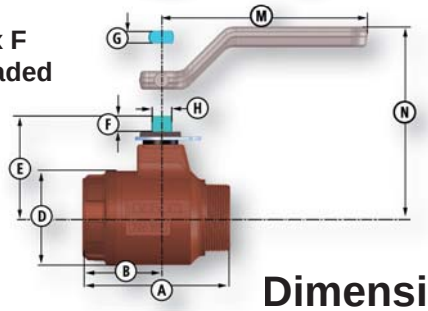


Material Description

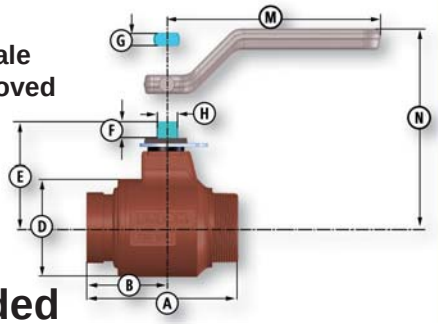
ITEM	PART NAME	MATERIAL (STANDARD)	MATERIAL (NACE)
1	Handle*	Carbon Steel/Ductile Iron	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt	Standard Hex Bolt
3	Weather Guard	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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 (TFE Optional**)	Nylon (TFE Optional**)
14	Body O-Ring	Buna-N	Fluorocarbon
15	End Adapter Threaded/Grooved	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 B-37 for more information.*

M x F Threaded



Male Grooved



Dimensional Data M x F Threaded

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-MF	2R-S32N-MF	1.5	750	5.00	2.68	3.37	3.62	.62	.434	0.873	7.25	5.25	8.0	P-4128-CS	140
3x2x3	3R-S32-MF	3R-S32N-MF	2	750	6.68	3.50	4.50	4.37	.75	.497	0.998	10.25	6.20	17.8	P-4129-CS	200
4x3x4	4R-S32-MF	4R-S32N-MF	3	750	8.38	4.50	6.00	5.75	.87	.747	1.373	20.00	7.75	36.0	P-4127-DI	550

Dimensional Data Male Grooved

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-MG	2R-S32N-MG	1.5	750	5.06	2.68	3.37	3.62	.62	.434	0.873	7.25	5.25	8.0	P-4128-CS	140
3x2x3	3R-S32-MG	3R-S32N-MG	2	750	6.68	3.50	4.50	4.37	.75	.497	0.998	10.25	6.20	17.8	P-4129-CS	200
4x3x4	4R-S32-MG	4R-S32N-MG	3	750	8.50	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.*

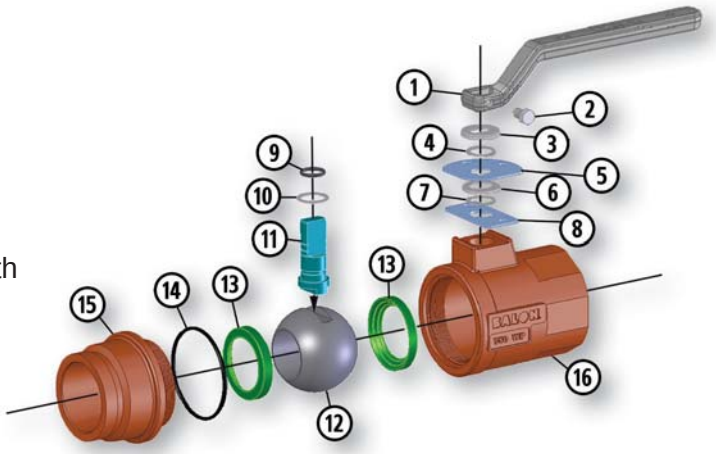
Female Threaded x Grooved End Connection

Series S Ductile Iron

- Lever Operated Ball Valve
- 750 PSI WP
- 2" Through 4"
- Threaded Body Construction



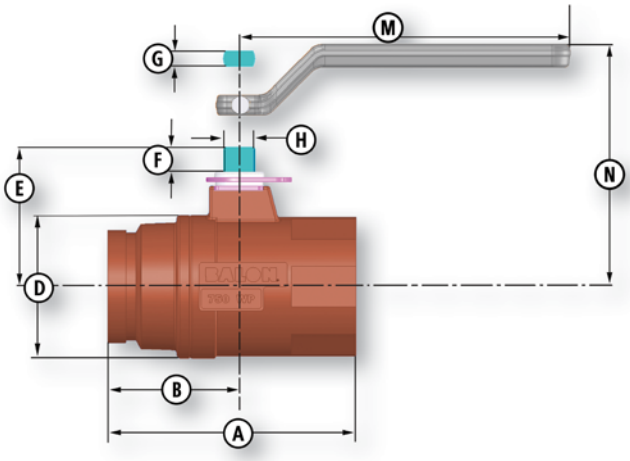
- Meets API 641 Emissions Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free



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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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 (TFE Optional)	Nylon (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.*



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	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	750	8.87	4.50	6.00	5.75	.87	.747	1.373	20.00	7.75	36.0	P-4127-DI	550

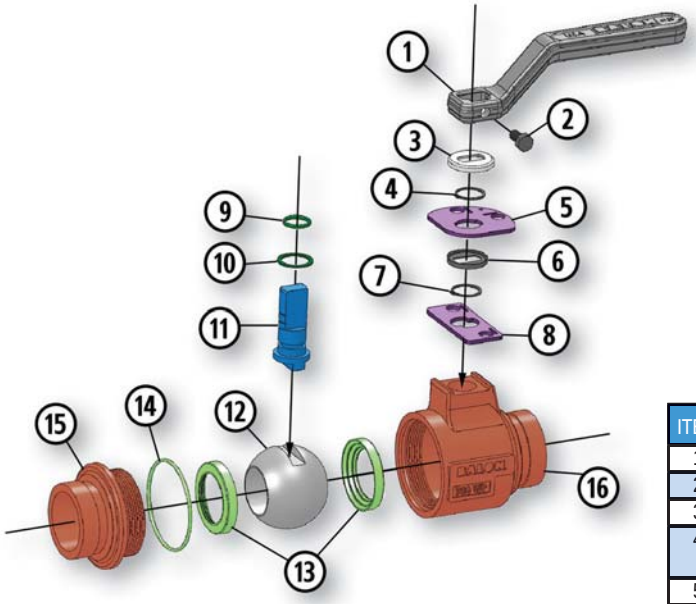
** Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.*

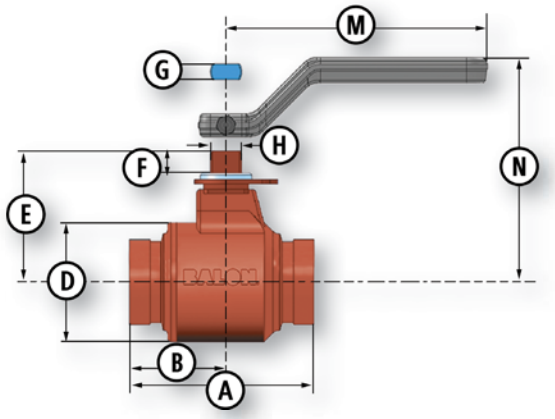
Grooved End Connection

Series S Ductile Iron

- Lever Operated Ball Valve
- To 1000 PSI WP
- 2" Through 6"
- Threaded Body Construction







- Meets API 641 Emissions Standard
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Multi-Seal Seats
- Fire Safe Design
- NACE Option With 316 Stainless Steel Ball and Stem Available
- Rugged Locking Device Standard
- Maintenance Free

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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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 (TFE Optional**)	Nylon (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 B-37 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	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	750	7.25	3.50	4.50	4.37	0.75	.497	0.998	10.25	6.20	17.0	P-4129-CS	200
3x2x3	3R-S42-GE	3R-S42N-GE	2	1000	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	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	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	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	500	10.10	5.05	7.00	6.38	0.87	.747	1.373	20.00	8.38	57.0	P-4127-DI	800

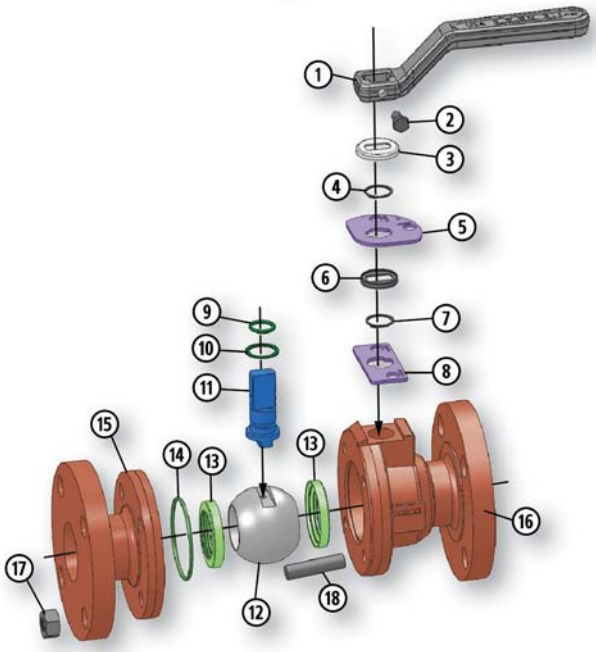
** Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.*

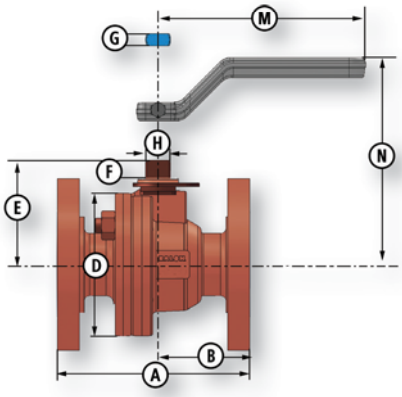
Flanged End Connection

Series F Ductile Iron



- **Lever Operated Ball Valve**
- **ANSI Class 150 (250 PSI WP) Raised or Flat Face**
- **2" Through 6"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Option With 316 Stainless Steel Ball and Stem Available
  - Rugged Locking Device Standard
  - Maintenance Free Sealing Improvement Over Lubricated Ball Valves and Cast Iron Plug Valves
  - Eliminates High Maintenance of Lubricated Valves





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	Polyethylene	Polyethylene
4	Lock Plate Retainer	Carbon Spring Steel	Carbon Spring Steel
5	Lock Plate	Carbon Steel	Carbon Steel
6	Dust Cover	Polyethylene	Polyethylene
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 (TFE Optional)	Nylon (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.*

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	.75	.434	.873	7.25	5.25	23	P-4128-CS	125
2x2x2	2F-F12	2F-F12N	2	250	7.00	2.75	6.00	4.37	.87	.497	.998	10.25	6.20	28	P-4129-CS	-
3x2x3	3R-F12	3R-F12N	2	250	8.00	3.00	6.00	4.37	.75	.497	.998	10.25	6.20	30	P-4129-CS	200
3x3x3	3F-F12	3F-F12N	3	250	8.00	3.56	7.50	5.75	1.06	.747	1.373	20	7.75	54	P-4127-DI	-
4x3x4	4R-F12	4R-F12N	3	250	9.00	4.06	7.87	5.75	.87	.747	1.373	20	7.75	65	P-4127-DI	525
4x4x4	4F-F12	4F-F12N	4	250	9.00	4.06	9.00	6.37	1.06	.747	1.373	20	8.37	80	P-4127-DI	-
6x4x6	6R-F12**	6R-F12N**	4	250	10.50	3.81		6.37	.87	.747	1.373	20	8.37	75	P-4127-DI	800

*** Uni-body design.*

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

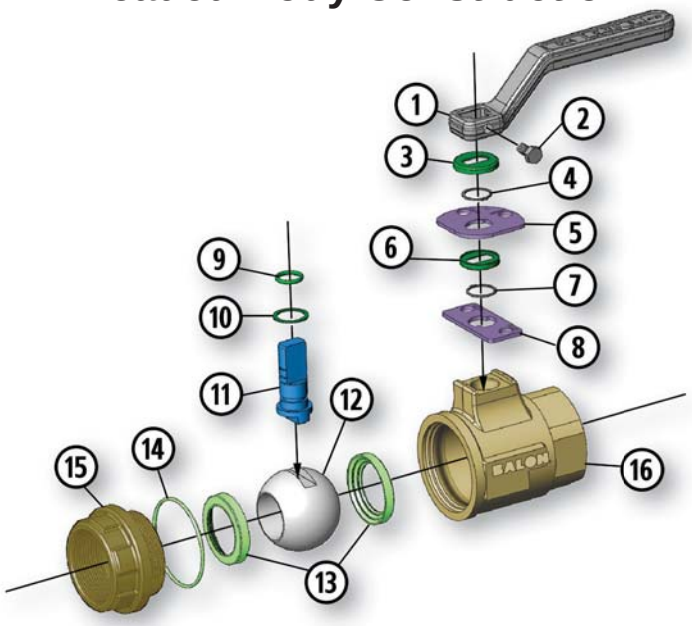
BALON

Threaded End Connection

Series S "9D"
Nickel Aluminum Bronze

- ASTM B148 GR 955 "9D"
- Lever Operated Ball Valve
- To 1000 PSI WP
- 2" Through 4"
- Threaded Body Construction



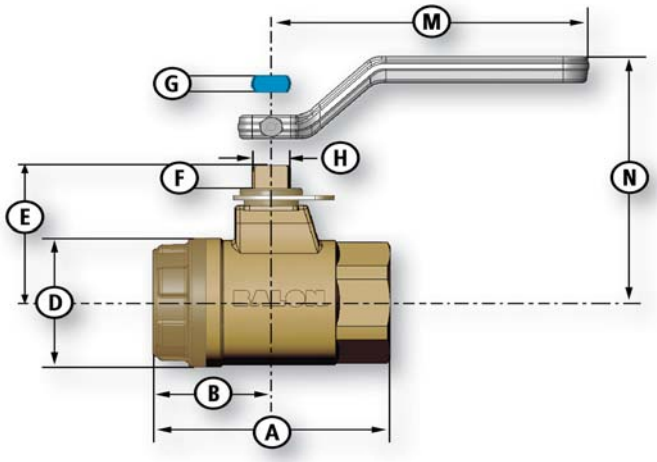


- Meets API 641 Emissions Standard
- Enhanced Protection Against CO_2 and Saltwater Corrosion
- NACE Standard
- Multi-Seal Seats
- Fire Safe Design
- Minimizes Risk of Galling Associated with Stainless Steel
- Exceptional Yield Strength
- Rugged Locking Device Standard
- Maintenance Free

Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polyethylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polyethylene
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 (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.*



Dimensional Data

SIZE	CATALOG	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	.75	.434	.873	7.25	5.25	7.5	P-4128-CS	125
2x2x2	2F-S44N-SE	2	1000	5.75	2.88	4.25	4.38	.75	.497	.998	10.25	6.20	12	P-4129-CS	-
3x2x3	3R-S44N-SE	2	1000	7.25	3.50	4.50	4.38	.75	.497	.998	10.25	6.20	17	P-4129-CS	180
3x3x3	3F-S44N-SE	3	1000	8.75	4.38	6	5.75	.88	.747	1.373	20	7.75	31	P-4127-DI	-
4x3x4	4R-S44N-SE	3	1000	8.75	4.38	6	5.75	.88	.747	1.373	20	7.75	36	P-4127-DI	525
4x4x4	4F-S34N-SE	4	750	9.38	4.69	7	6.38	1.06	.747	1.373	20	8.38	52	P-4127-DI	-

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

Threaded End Connection

Series F "9D"
Nickel Aluminum Bronze

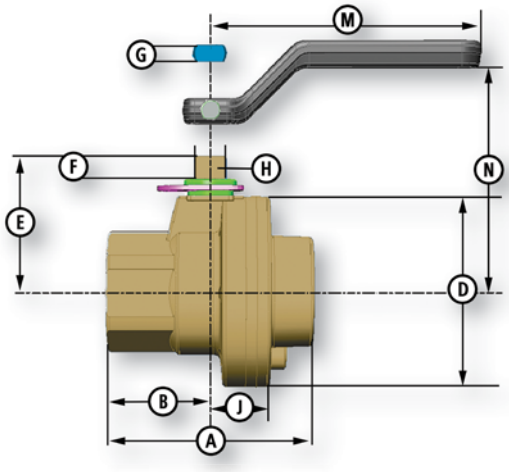


- ASTM B148 GR 955 "9D"
- Lever Operated Ball Valve
- To 3000 PSI WP
- 1" Through 2"
- Bolted Body Construction

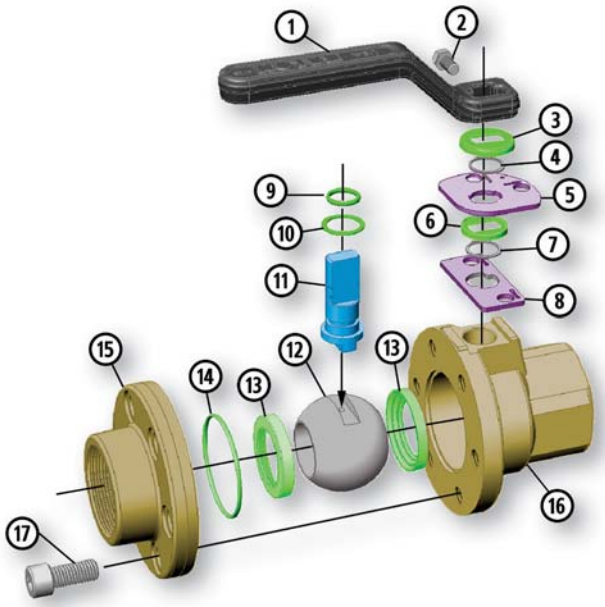
Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polyethylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polyethylene
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 (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.*



- Meets API 641 Emissions Standard
- Enhanced Protection Against CO_2 and Saltwater Corrosion
- NACE Standard
- Minimizes Risk of Galling Associated with Stainless Steel
- Exceptional Yield Strength
- Multi-Seal Seats
- Fire Safe Design
- Rugged Locking Device Standard
- Maintenance Free



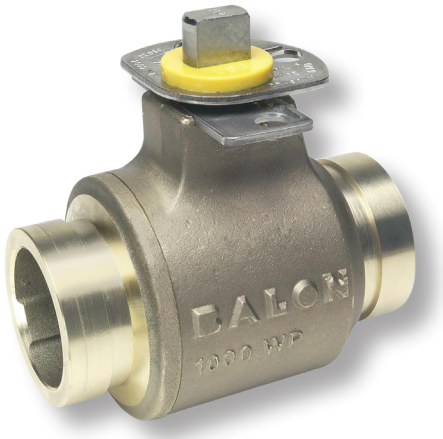
Dimensional Data

SIZE	CATALOG	PORT	WP	A	B	D	E	F	G	H	J	M	N	LBS.	HANDLE	Cv
1x1x1	1F-F04N-SE	1	3000	3.87	1.93	3.37	2.37	.50	.340	.685	1.12	4.37	2	4	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	2000	5.75	2.87	6.12	4.37	.87	.497	.998	2	10.25	6.20	19	P-4129-CS	-

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

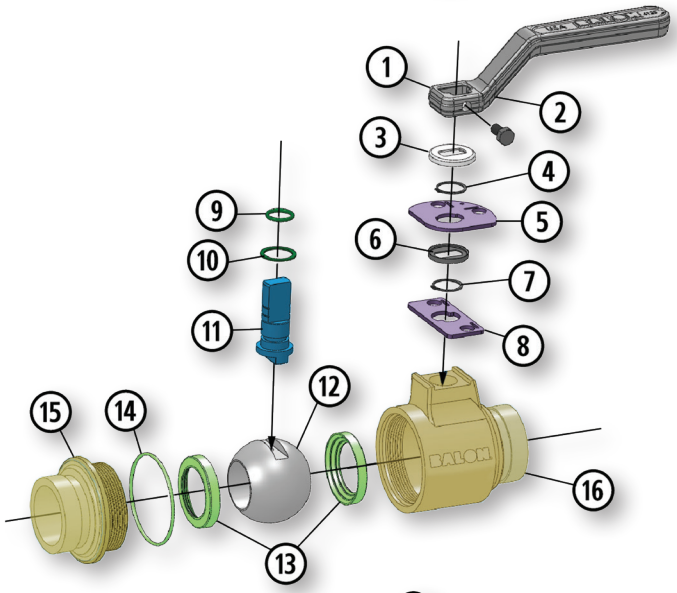
Grooved End Connection

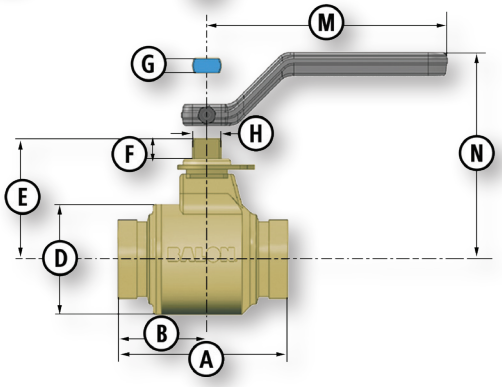
Series S "9D"
Nickel Aluminum Bronze



- **ASTM B148 GR 955 "9D"**
- **Lever Operated Ball Valve**
- **To 1000 PSI WP**
- **2" Through 6"**
- **Threaded Body Construction**

- Meets API 641 Emissions Standard
- Enhanced Protection Against CO_2 and Saltwater Corrosion
- Multi-Seal Seats
- Fire Safe Design
- NACE Standard
- Minimizes Risk of Galling Associated with Stainless Steel
- Exceptional Yield Strength
- Rugged Locking Device Standard
- Maintenance Free





Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel/Ductile Iron
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polyethylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polyethylene
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 B-37 for more information.*

Dimensional Data

SIZE	CATALOG NUMBER NACE TRIM 316 SS BALL & STEM	PORT	WP	A	B	D	E	F	G	H	M	N	LBS.	HANDLE	Cv
2x1.5x2	2R-S44N-GE	1.5	1000	5.12	2.68	3.37	3.62	.62	.434	.873	7.25	5.25	7.5	P-4128-CS	140
2x2x2	2F-S44N-GE	2	1000	6.00	3.12	4.25	4.37	.75	.497	.998	10.25	6.20	12	P-4129-CS	-
3x2x3	3R-S44N-GE	2	1000	7.25	3.50	4.50	4.37	.75	.497	.998	10.25	6.20	16	P-4129-CS	200
3x3x3	3F-S44N-GE	3	1000	7.25	3.75	6.00	5.75	.87	.747	1.373	20	7.75	30	P-4127-DI	-
4x3x4	4R-S44N-GE	3	1000	8.87	4.50	6.00	5.75	.87	.747	1.373	20	7.75	34	P-4127-DI	550
4x4x4	4F-S34N-GE	4	750	8.87	4.50	7.50	6.37	1.06	.747	1.373	20	8.37	48	P-4127-DI	-
6x4x6	6R-S34N-GE	4	750	10.10	5.05	7.00	6.38	.87	.747	1.373	20	8.38	57	P-4127-DI	800

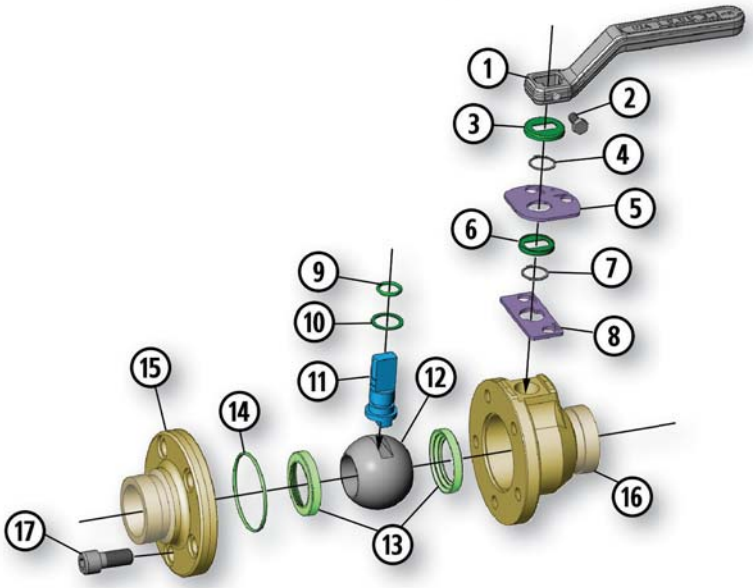
** Balon manufactured Actuation Mounting Hardware available. Please see page A-2 for details.*

Grooved End Connection

Series F "9D"
Nickel Aluminum Bronze



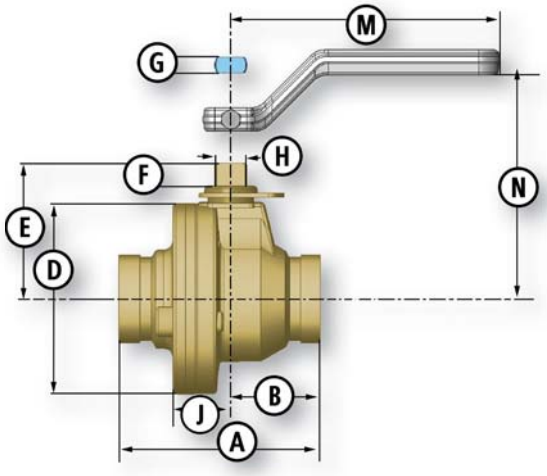
- **ASTM B148 GR 955 "9D"**
- **Lever Operated Ball Valve**
- **2000 PSI WP**
- **2"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Enhanced Protection Against CO_2 and Saltwater Corrosion
  - Multi-Seal Seats
  - Fire Safe Design
  - NACE Standard
  - Minimizes Risk of Galling Associated with Stainless Steel
  - Exceptional Yield Strength
  - Rugged Locking Device Standard
  - Maintenance Free



Material Description

ITEM	PART NAME	MATERIAL NACE (STANDARD)
1	Handle*	Carbon Steel
2	Handle Bolt	Standard Hex Bolt
3	Weather Guard	Polyethylene
4	Lock Plate Retainer	Stainless Steel
5	Lock Plate	Stainless Steel
6	Dust Cover	Polyethylene
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 (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.*



Dimensional Data

SIZE	CATALOG	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.*

Threaded End Connection

Series LS Threaded End Stainless Steel

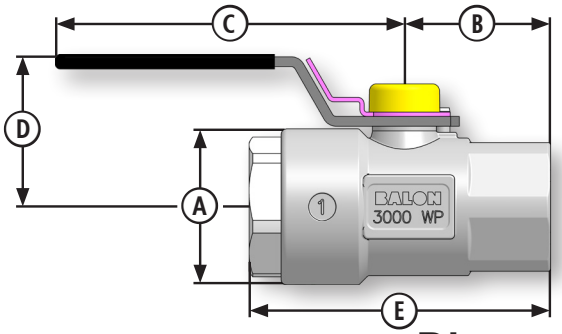


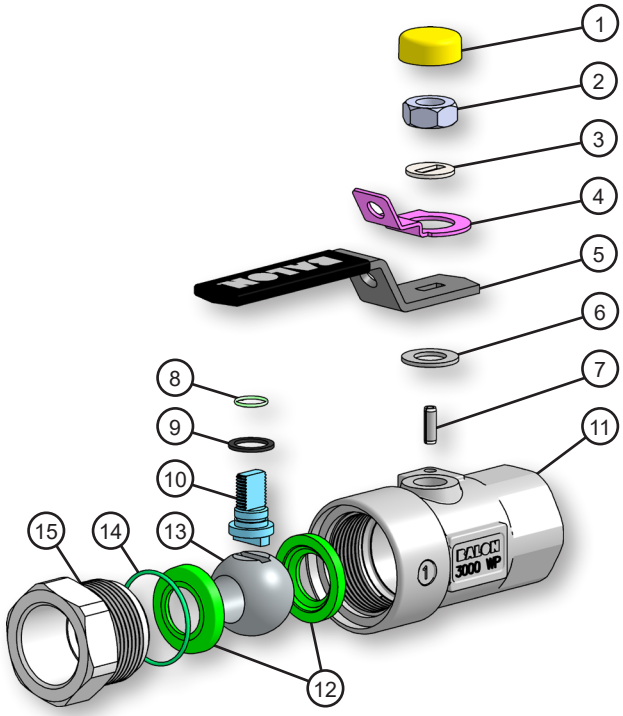
- **Lever Operated Ball Valve**
- **To 3000 PSI WP**
- **¼" Through 1"**
- **Threaded Body Construction**
  - Meets API 641 Emissions Standard
  - Multi-Seal Seats
  - NACE Standard
  - Exclusive Patented Design Inhibits Loosening of End Adapter
  - All Metal Components Made of Stainless Steel
  - Maintenance Free
  - Fire Safe Design

Material Description

ITEM	PART NAME	MATERIAL (STANDARD)
1	Weather Guard	Polyethylene
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 B-37 for more information.*

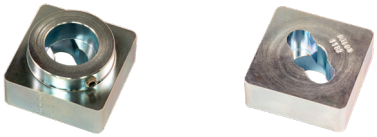
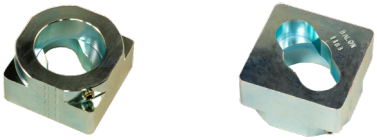




Dimensional Data

SIZE	CATALOG	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	2.50	-
.50x.50x.50	LS-05592	.50	3000	1.58	1.38	3.50	1.96	3.00	2.50	-
.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

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	2SQ-1.5 BORE-KIT	1.00	2"	
2" Full - 3" Reg Port	2SQ-2 BORE-KIT	1.00	2"	
3" Full - 4" Reg Port	2SQ-3 OR 4 BORE-KIT	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.

BALON

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			
Media *	Carbon Steel	Ductile Iron	316 SS	Buna-N	Viton	Nylon	TFE
Air	E	E	E	E	E	E	E
Alcohols	G	G	E	E	E	F	E
Amines (conc.)	E	E	E	U	U	E	E
Ammonia, Anhydrous	E	G	E	F	U	E	E
- Aqueous	E	E	E	F	U	G	E
- Solutions	G	G	E	F	U	G	E
Benzene or Benzol	G	G	E	U	E	E	E
Brines	F	F	G	E	E	E	E
Bunker Oils (Fuels)	G	G	E	E	E	E	E
Butane	E	E	E	E	E	E	E
Carbolic Acid (Phenol)	U	U	G	U	G	U	E
Carbon Dioxide, Dry	E	F	E	G	G	G	E
Carbonic Acid	U	U	G	G	E	E	E
Carbon Tetrachloride, Dry	F	F	E	U	E	E	E
-Wet	U	U	G	U	E	E	E
Carbonated Water	G	G	E	E	E	G	E
Crude Oil, Sweet	E	E	E	E	E	E	E
- Sour	G	G	E	F	G	G	E
Diethylamine (DEA)	E	E	E	U	U	E	E
Diesel Fuels	E	E	E	E	E	E	E
Dowtherm A and E	G	G	E	U	E	E	E
Drilling Mud	G	G	E	E	E	E	E
Ethane	E	E	E	E	E	E	E
Ethylene	E	E	E	U	E	E	E
Ethylene Glycol	G	G	G	E	E	G	E
Fuel Oil	G	G	E	E	E	E	E
Gas, Manufactured	G	G	G	E	E	E	E
- Natural	G	G	E	E	E	E	E
- Odorizers	G	G	E	U	E	G	E
- Sour	G	G	E	F	E	E	E
Gasoline, Leaded	E	G	E	G	E	E	E
- Unleaded	E	G	E	F	E	E	E
- Aviation	E	G	E	G	E	E	E
- Motor	E	G	E	F	E	E	E
Glycols	G	G	G	E	E	G	E
Heptane	E	E	E	E	E	E	E
Hexane	E	E	E	E	E	E	E
Hydraulic Oil - Petroleum Base	E	E	E	E	E	E	E
- Phosphate Base	E	E	E	U	E	E	E
Hydrocloric Acid -Air Free	U	U	U	F	E	U	E
Hydrofloric Acid	U	U	U	U	U	U	F
Hydrogen Gas	G	G	E	E	E	E	E
Hydrogen Sulfide, Dry(Conc.)	G	G	E	F	F	E	E
Wet(Conc.)	F	U	G	U	F	E	E
Illuminating Gas	E	E	E	E	E		E
Iso-Octane	E	G	E	E	E	E	E

	VALVE MATERIAL			SEAT AND SEAL MATERIAL			
Media *	Carbon Steel	Ductile Iron	316 SS	Buna-N	Viton	Nylon	TFE
Isopropyl Alcohol	G	G	G	G	E	G	E
- Ether	E	G	E	G	U	E	E
JP-4 Fuel	E	E	E	E	E	E	E
JP-5 Fuel	E	E	E	E	E	E	E
JP-6 Fuel	E	E	E	E	E	E	E
Kerosene	G	G	E	E	E	E	E
Liquified Pet. Gas (LPG)	G	G	G	E	E	E	E
Lubricating Oil	E	E	E	E	E	E	E
Mercaptan (Conc.)	G	G	E	F	E	G	E
Methane	E	E	E	E	E	E	E
Muratic Acid	U	U	U	G	E	U	E
Naphtha	G	G	E	G	E	E	E
Naphthalene	E	G	E	U	E	E	E
Natural Gas	E	E	E	E	E	E	E
Nitrogen	E	E	E	E	E	E	E
Oil, Animal	E	E	E	E	E		E
- Cottonseed	F	F	G	E	E	E	E
- Fish	G	G	E	E	E	E	E
- Fuel	G	G	E	E	E	E	E
- Lube	E	E	E	E	E	E	E
- Mineral	G	G	E	E	E	E	E
- Petroleum, Refined	E	G	E	E	E	E	E
Oil-Water Mixtures	E	E	E	E	E	E	E
Parafin	G	G	E	G	E	E	E
Pentane	G	G	E	U	E	E	E
Producer Gas	G	G	G	E	E	E	E
Propane	E	E	E	E	E	E	E
Propyl Alcohol	E	E	E	E	E	E	E
Propylene Glycol	E	E	E	E	E	F	E
Sea Water	U	U	E	E	E	E	E
Sodium Acetate	G	G	G	G	U	G	E
- Hydroxide, Cold, 20%	E	E	E	G	G	E	E
- Hydroxide, Hot, 20%	F	F	G	G	G	G	E
- Hydroxide, Cold, 50%	G	G	G	F	F	F	F
- Hydroxide, Hot, 50%	G	G	G	U	F	U	F
- Hydroxide, Cold, 70%	F	F	G	U	F		F
- Hydroxide, Hot, 70%	G	F	G	U	F		U
Steam (212˚ F)	E	E	E	U	U	U	E
Stoddard Solvent	G	G	G	E	E	G	E
Sulfur Dioxide (Dry)	G	G	E	U	U	F	E
Sulfuric Acid, 0-7%	F	F	G	F	E	G	E
- 20%	U	U	F	U	E	U	E
- 50%	U	U	U	U	E	U	E
- 100%	U	U	U	U	E	U	E
Toluene or Toluol	E	E	E	U	E	E	E
Water, Distilled, Aerated	U	U	E	E	G	E	E
- Fresh	F	F	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*

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

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.

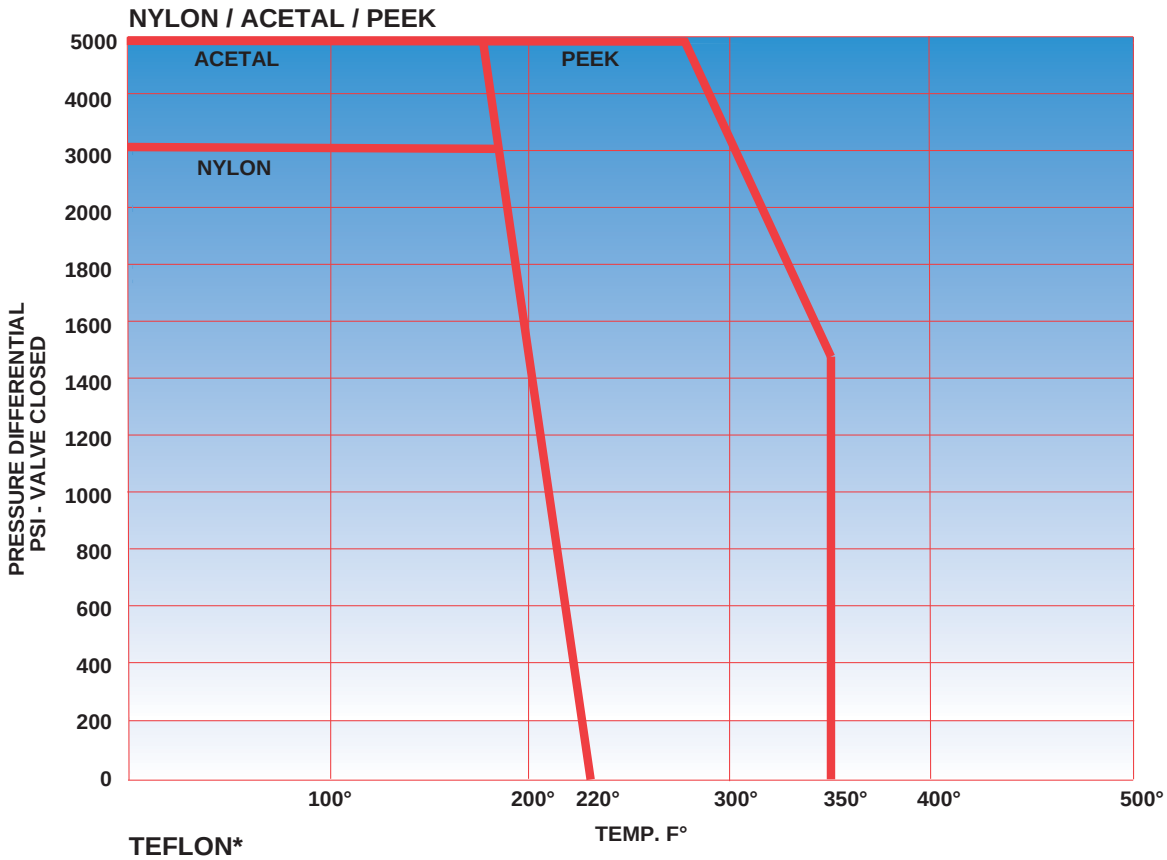
The user therefore, should specify a given standard if there is a need to assure total compliance with a given standard.

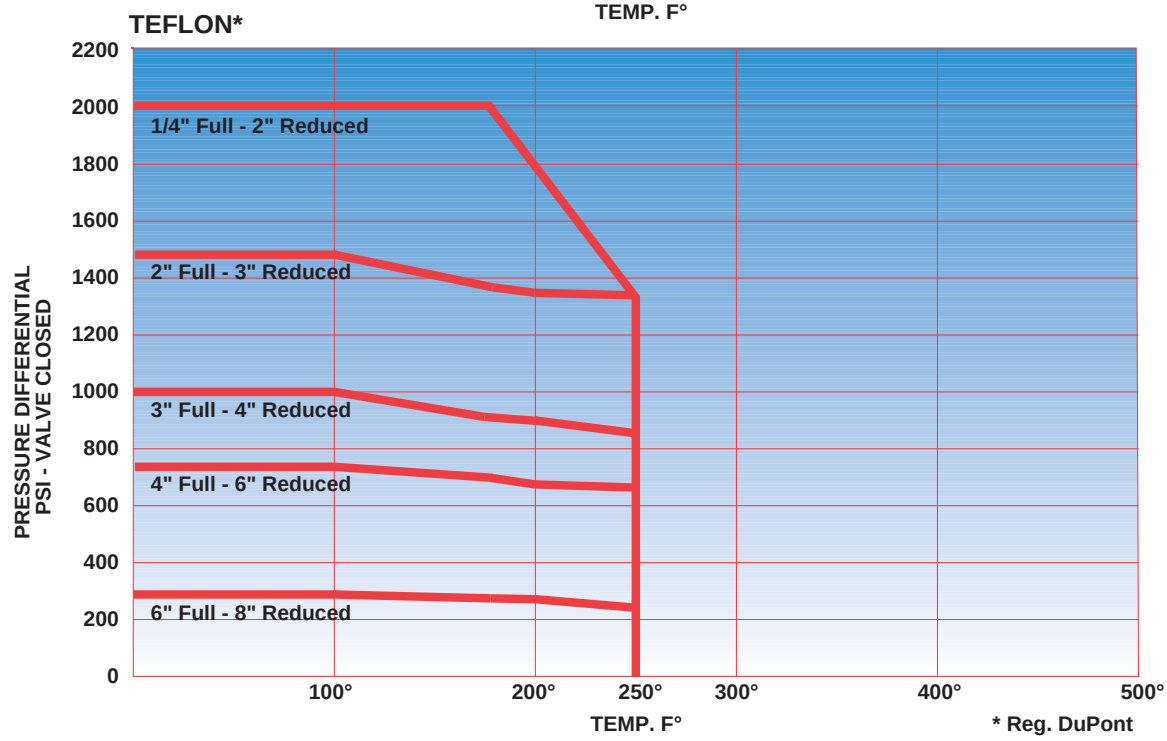
API. . . . . (American Petroleum Institute)
API-641 . . . . . Type Testing of Quarter Turn Valves For Fugitive Emissions
API-6FA . . . . . Fire Test For Resilient-Seated Valves
API 5B . . . . . Inspection Of Threads
API-6D . . . . . Specification for Pipeline and Piping Valves
API-Q1. . . . . Quality Programs
API-594 . . . . . Wafer Check Valves
ANSI . . . . . (American National Standard Institute)
ANSI-B. . . . . 16.5 - Pipe Flanges And Flanged Fittings
ANSI-B. . . . . 16.10 - Face-To-Face End-To-End Dimensions
ANSI-B. . . . . 16.42 Ductile Iron Pipe Flanges And Flanged Fittings
ANSI-B. . . . . 16.34 - Valves - Flanged End, Threaded And Butt Weld
ANSI-B. . . . . (B1.20.1) - Pipe Threads General Purpose (Inch)
MSS. . . . . (Manufacturers Standardization Society)
MSS-SP6. . . . . Standard Finishes For Contact Faces Of Pipe Flanges And Connection End Flanges Of Valves And Fittings
MSS-SP25. . . . . Standard Marking System For Valves, Fittings, Flanges And Fittings
MSS-SP72. . . . . Ball Valves With Flanged Or Butt Welding Ends For General Service
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)

CE marking to the PED available on most products

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

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.

Trunnion Ball Valves







BALON®

BALON®

TRUNNION BALL VALVES

TRUNNION BALL VALVES T-1

TRUNNION VALVE IDENTIFICATION KEY T-2

Trunnion Ball Valve Features T-3

SERIES T BALL VALVES

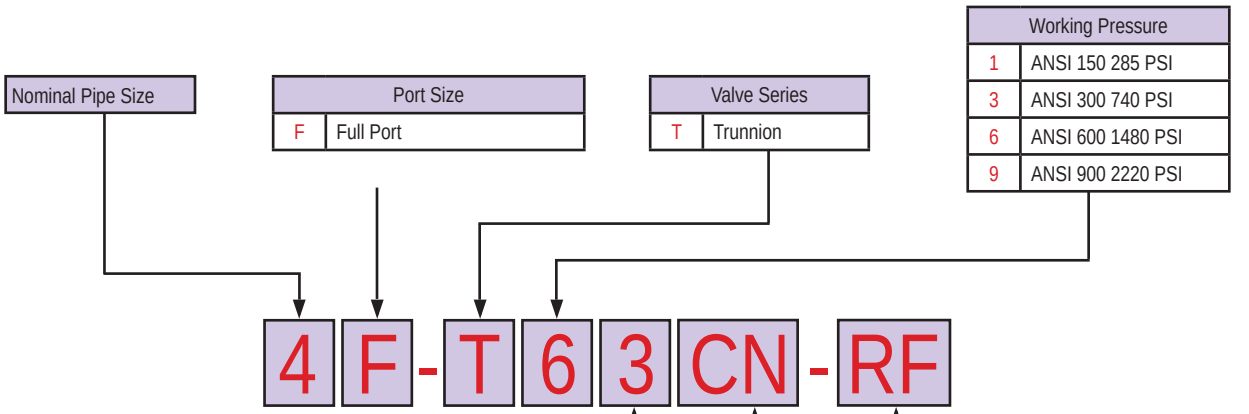
Carbon Steel, ANSI 150, 285 PSI WP (10″ Through 12") T-4, T-5
Carbon Steel, ANSI 300, 740 PSI WP (8″ Through 12") T-6, T-7
Carbon Steel, ANSI 600, 1480 PSI WP (4″ Through 12″) T-8, T-9
Carbon Steel, ANSI 900, 2220 PSI WP (4″) T-10,T-11

TECHNICAL INFORMATION

Standards and Specifications T-12

Trunnion Ball Valve Identification Key

Balon
Trunnion Ball Valves



Material	
3	Carbon Steel

Trim (Ball & Stem Material)	
	Not Used if Carbon Steel Standard
CN	NACE Carbon Steel Ball & Stem
CNL	Low Temperature NACE Carbon Steel Ball & Stem
SN	NACE Stainless Steel Ball & Stem
SNL	Low Temperature NACE Stainless Steel Ball & Stem

End Connection	
RF	Raised Face
RJ	Ring Type Joint

Note: For any valves not listed please consult factory.

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 point located 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 fire-safe as standard.

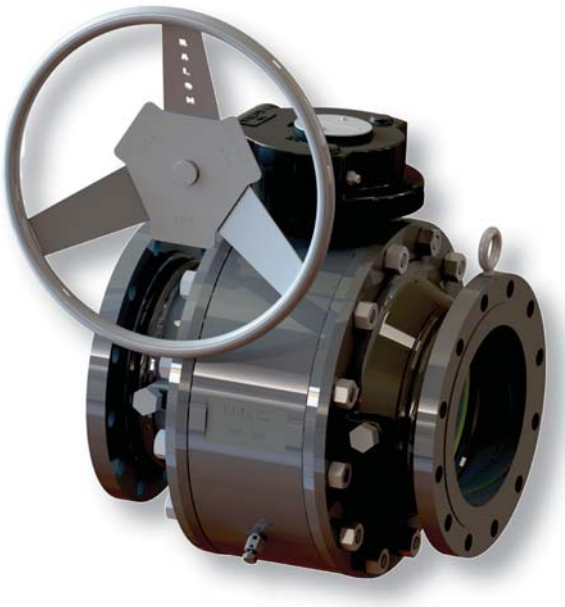
EMISSIONS TESTED - API 641

Balon valves successfully completed low emissions testing. Call Oklahoma City plant for details.

100% AMERICAN-MADE

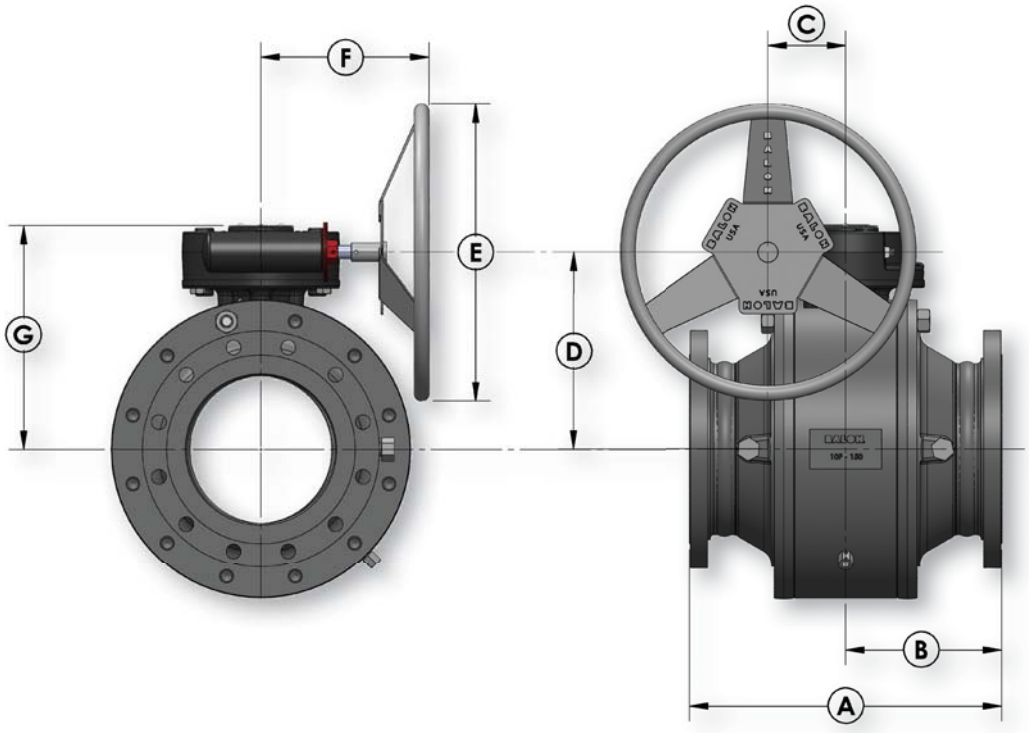
Like all Balon valves, the Series T comprises 100% domestic raw materials. All machining work is performed in our Oklahoma City plant by Balon employees.

Series T Trunnion Valves ANSI Class 150



Series T Carbon Steel

- **Gear Operated Trunnion Ball Valve**
- **ANSI Class 150 (285 PSI WP)**
- **10" through 12"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Stainless Steel Input Shaft Standard
    - ✔ Stainless Steel Directional Indicator
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - Temperature rating of -20° to 250° 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	10.5	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

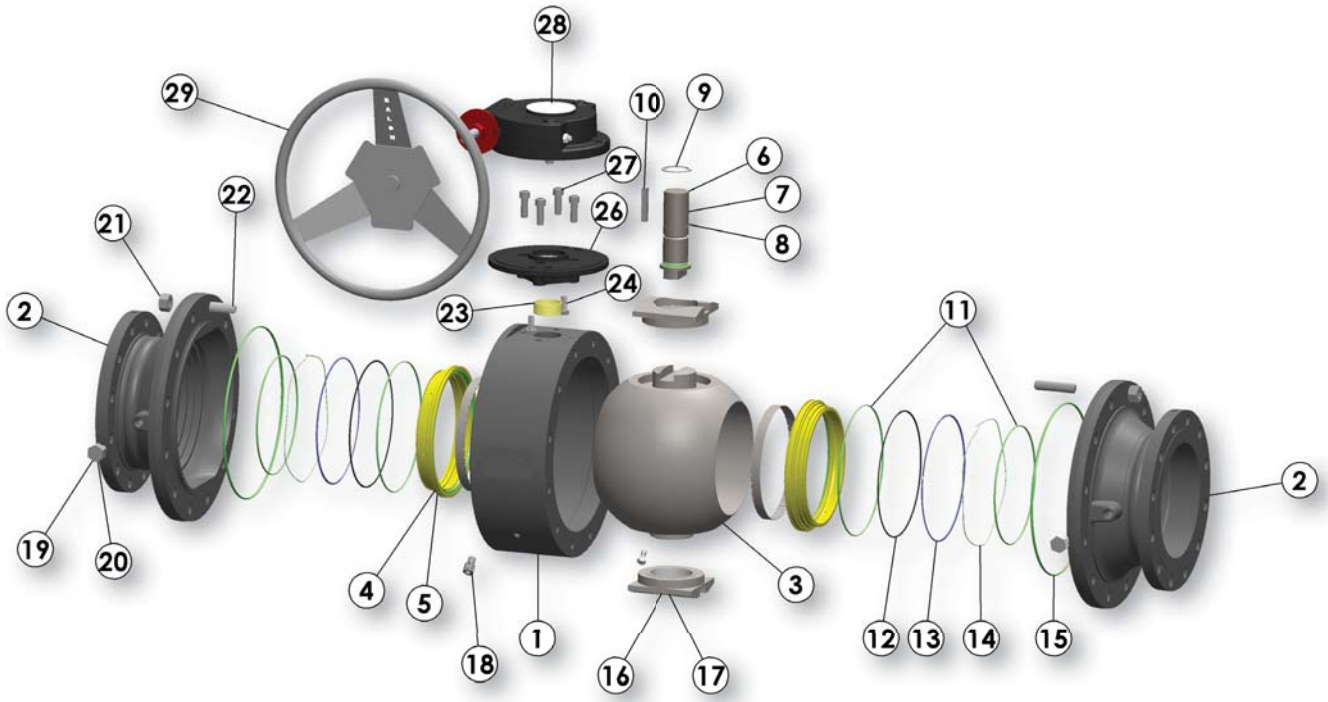
*** NACE Valves are also available in low temp at -50 to 250 F. Call factory for details.**

BALON®

12.2019.Rev.1

Series T Trunnion Valves ANSI Class 150

Series T Carbon Steel



Material Description

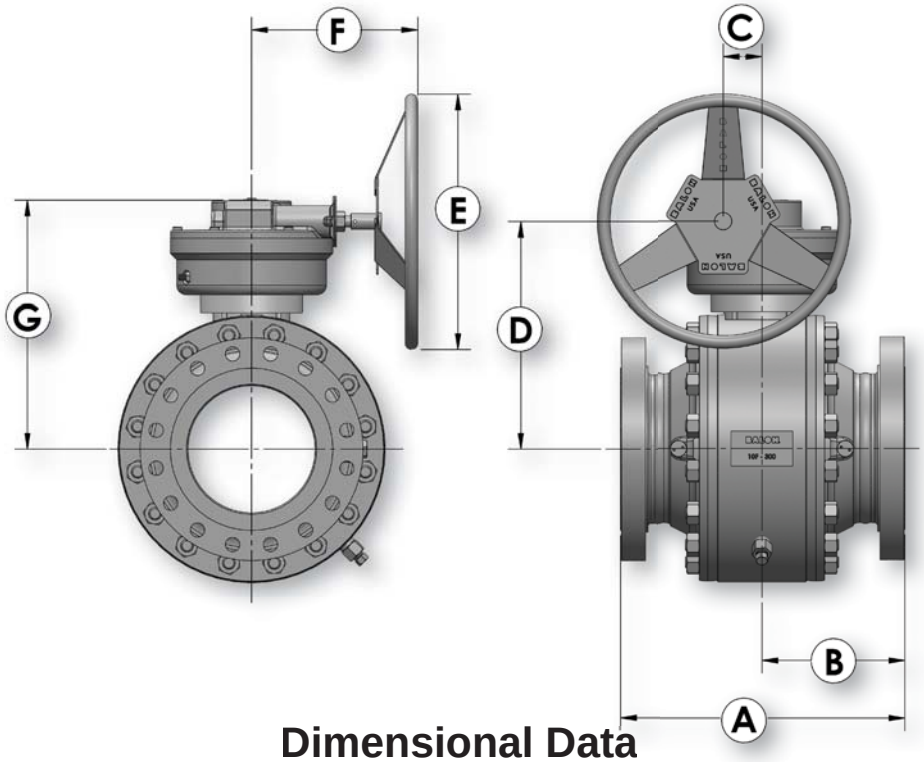
ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105	ASTM A105	ASTM A105
2	Adapter	ASTM A105	ASTM A105	ASTM A105
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon/Acetal	Nylon/Acetal	Nylon/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

- **Gear Operated Trunnion Ball Valve**
- **ANSI Class 300 (740 PSI WP)**
- **8" Through 12"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Stainless Steel Input Shaft Standard
    - ✔ Stainless Steel Directional Indicator
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - Temperature rating of -20° to 250° F



Dimensional Data

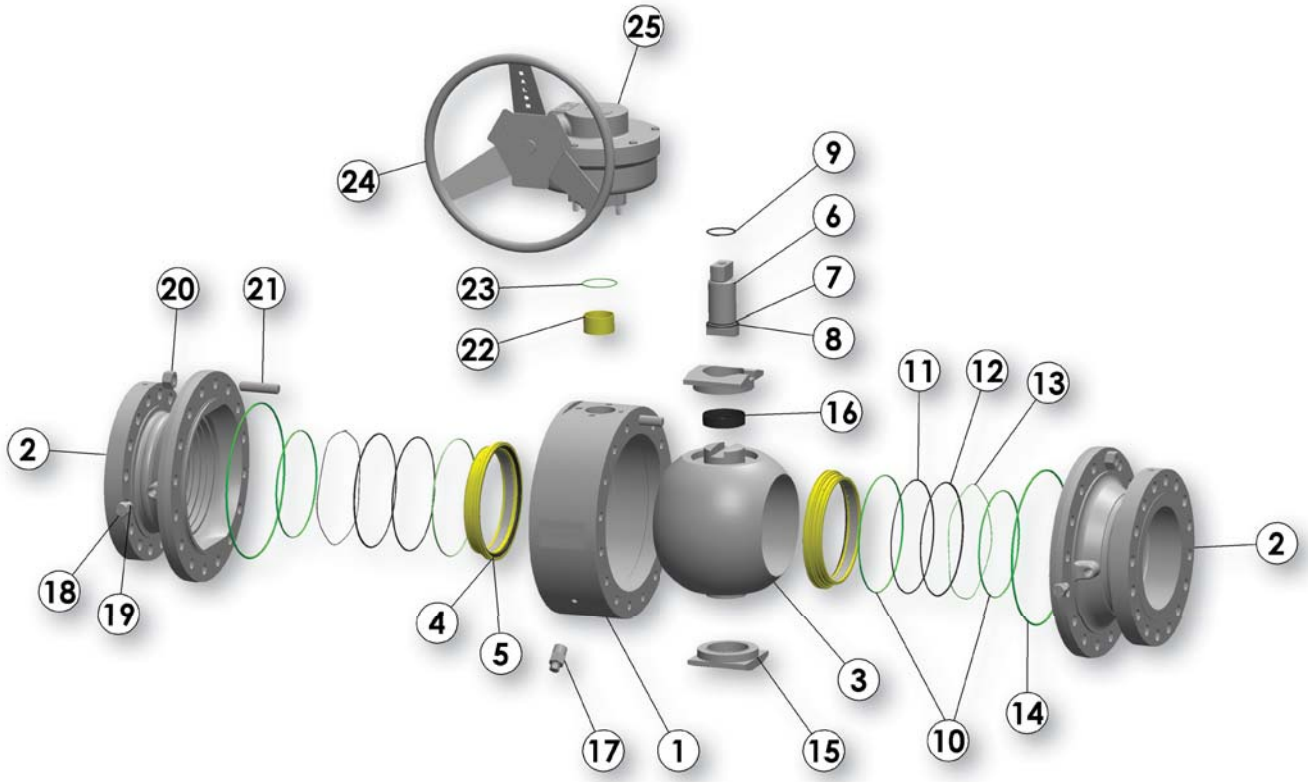
SIZE	CATALOG NUMBER			PORT	A	B	C	D	E	F	G	LBS.
	STANDARD TRIM CARBON STEEL BALL & STEM	NACE TRIM CARBON STEEL BALL & STEM*	NACE TRIM 316 SS BALL & STEM*									
8x8x8	8F-T33-RF	8F-T33CN-RF*	8F-T33SN-RF*	8	19.75	9.37	5.25	11.75	20	11.56	13.67	684
10x10x10	10F-T33-RF	10F-T33CN-RF*	10F-T33SN-RF*	10	22.38	11.2	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.**

BALON

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/Acetal	Nylon/Acetal	Nylon/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

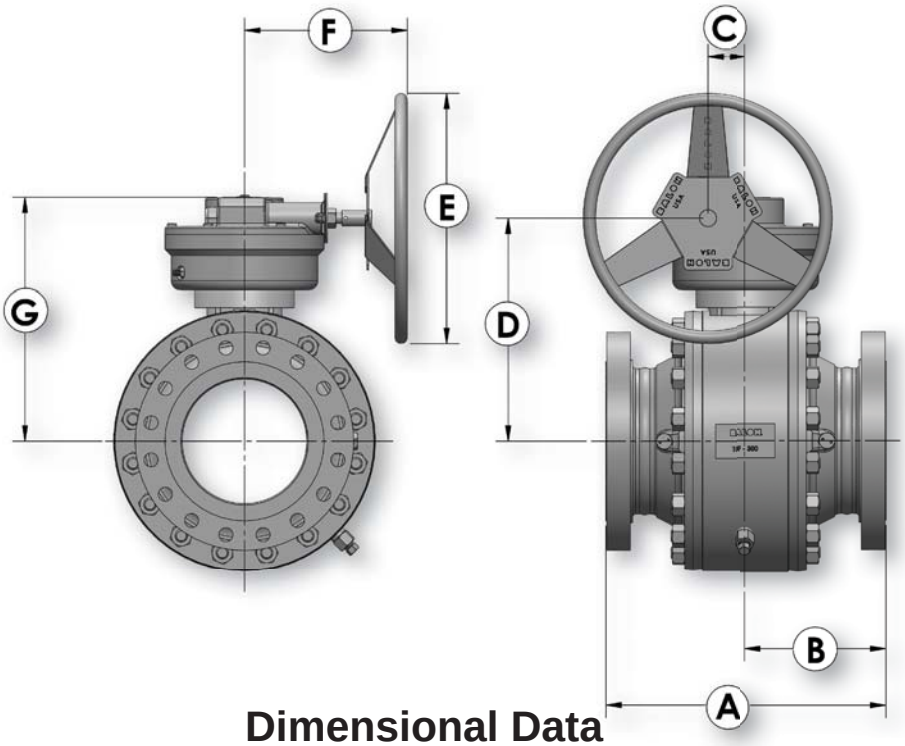
*** 8" body is ASTM A216 WCB**

Series T Trunnion Valves ANSI Class 600



Series T Carbon Steel

- **Gear Operated Trunnion Ball Valve**
- **ANSI Class 600 (1480 PSI WP)**
- **4" Through 12"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Stainless Steel Input Shaft Standard
    - ✔ Stainless Steel Directional Indicator
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - Temperature rating of -20° to 250° 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	RTJ	RF	RTJ						
4x4x4	4F-T63	4F-T63CN*	4F-T63SN*	4	17	17.12	9	8.56	3.04	8.06	14	8.75	9.68	309
6x6x6	6F-T63	6F-T63CN*	6F-T63SN*	6	22	22.12	11	11.06	4.06	9.69	20	11.19	11.31	560
8x8x8	8F-T63	8F-T63CN*	8F-T63SN*	8	26	26.12	13	13.06	5.25	11.75	20	11.56	13.68	998
10x10x10	10F-T63	10F-T63CN*	10F-T63SN*	10	31	31.12	15.5	15.56	3.04	17.82	26	14.00	19.57	1550
12x12x12	12F-T63	12F-T63CN*	12F-T63SN*	12	33	33.12	16.5	16.56	3.04	18.53	26	14.00	20.28	2320

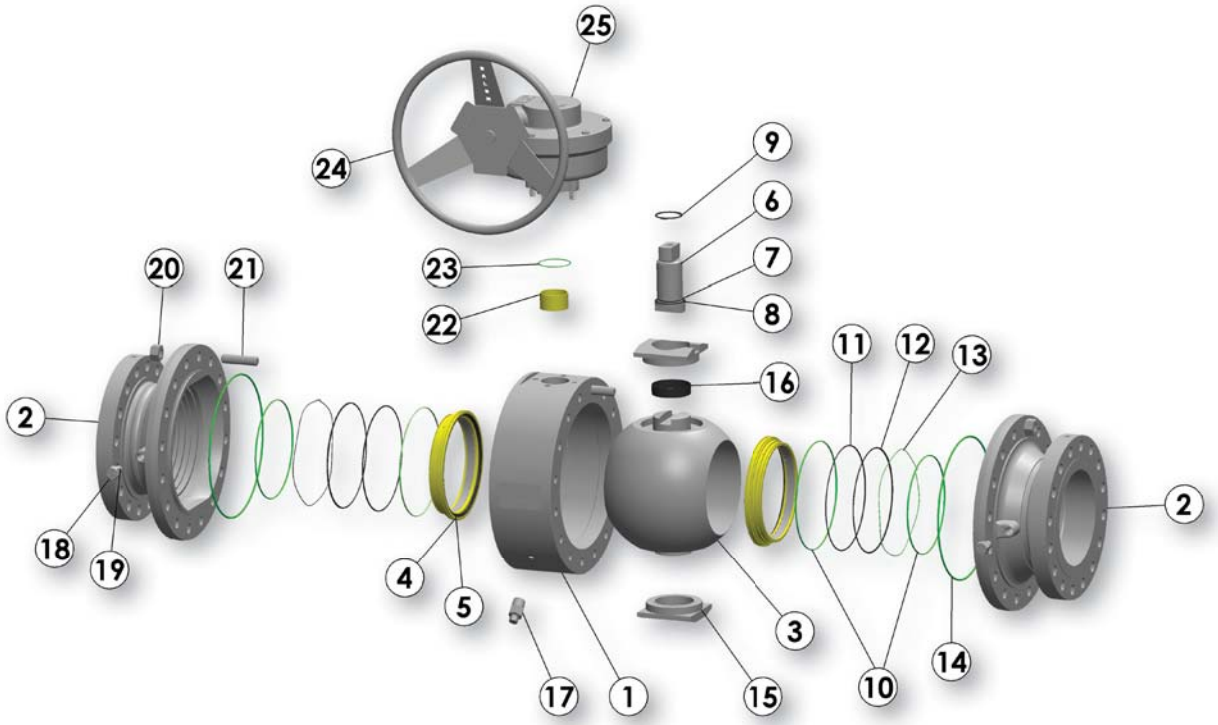
*** NACE Valves are also available in low temp at -50 to 250 F. Call factory for details.**

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12.2019.Rev.1

Series T Trunnion Valves ANSI Class 600

Series T Carbon Steel



Material Description

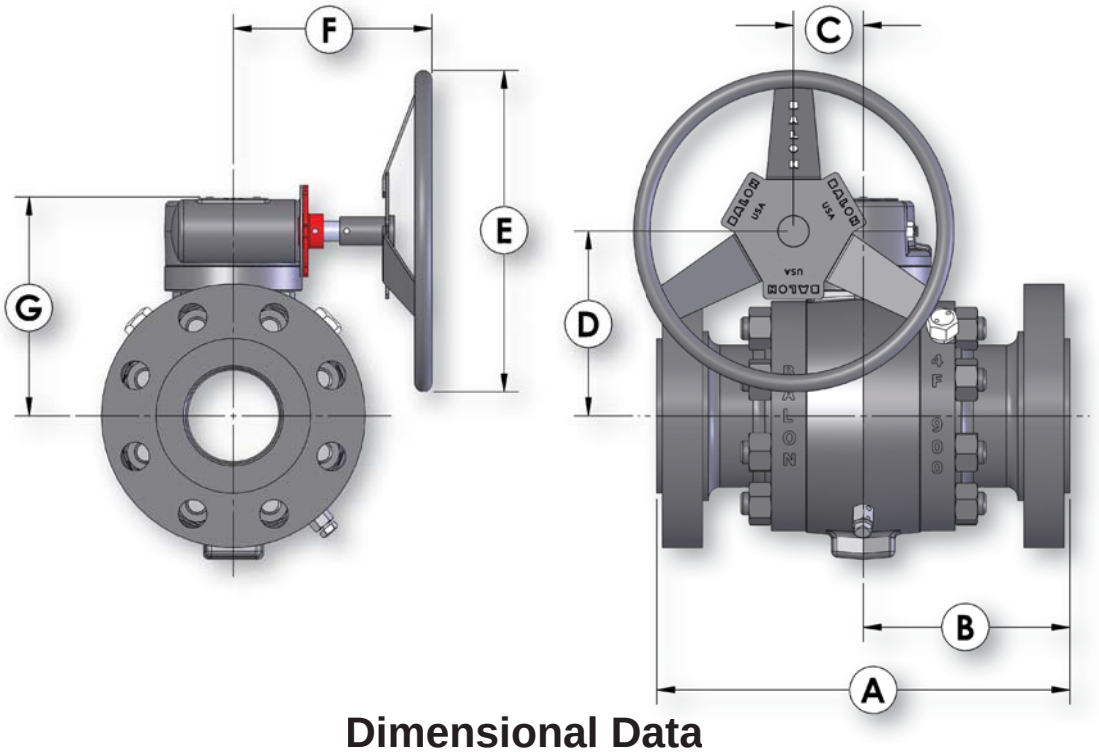
ITEM	PART NAME	STANDARD TRIM	CARBON STEEL NACE	STAINLESS STEEL NACE
1	Body	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
2	Adapter	ASTM A105, Normalized	ASTM A105, Normalized	ASTM A105, Normalized
3	Ball	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
4	Seat Carrier	Carbon Steel Nickel Chrome Plated	Carbon Steel Nickel Chrome Plated	316 Stainless Steel
5	Seat Insert	Nylon/Acetal	Nylon/Acetal	Nylon/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

- **Gear Operated Trunnion Ball Valve**
- **ANSI Class 900 (2220 PSI WP)**
- **4"**
- **Bolted Body Construction**
  - Meets API 641 Emissions Standard
  - Exclusive Balon Gearbox
    - ✔ Suitable for Buried Service
    - ✔ Stainless Steel Input Shaft Standard
    - ✔ Stainless Steel Directional Indicator
    - ✔ Integral Locking Device Standard
    - ✔ Manufactured in our Oklahoma City Plant
  - Multi-Seal Seats
  - Fire Safe Design
  - Temperature rating of -20° to 250° F



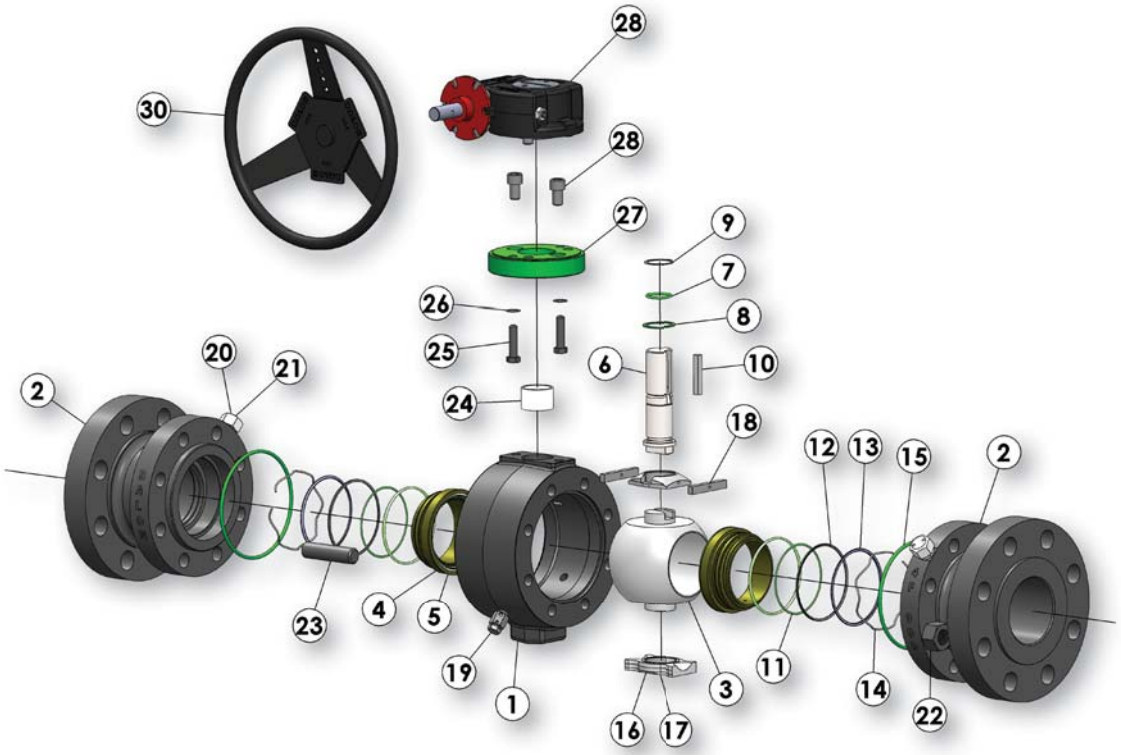
Dimensional Data

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	RTJ	RF	RTJ						
4x4x4	4F-T93	4F-T93CN*	4F-T93SN*	4	18	18.12	9	9.06	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/Acetal	Nylon/Acetal	Nylon/Acetal
6	Stem	Carbon Steel	Carbon Steel	17-4 Plate 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

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)
API-641 . . . . . Type Testing of Quarter Turn Valves For Fugitive Emissions
API-6FA . . . . . Fire Test For Resilient-Seated Valves
API 5B . . . . . Inspection Of Threads
API-6D. . . . . Specification for Pipeline and Piping Valves
API-Q1. . . . . Quality Programs
API-594 . . . . . Wafer Check Valves
ANSI . . . . . (American National Standard Institute)
ANSI-B. . . . . 16.5 - Pipe Flanges And Flanged Fittings
ANSI-B. . . . . 16.10 - Face-To-Face End-To-End Dimensions
ANSI-B. . . . . 16.42 Ductile Iron Pipe Flanges And Flanged Fittings
ANSI-B. . . . . 16.34 - Valves - Flanged End, ... Threaded And Butt Weld
ANSI-B. . . . . (B1.20.1) - Pipe Threads General Purpose (Inch)
MSS. . . . . (Manufacturers Standardization Society)
MSS-SP6. . . . . Standard Finishes For Contact Faces Of Pipe Flanges And Connection End Flanges Of Valves And Fittings
MSS-SP25. . . . . Standard Marking System For Valves, Fittings, Flanges And Fittings
MSS-SP72. . . . . Ball Valves With Flanged Or Butt Welding Ends For General Service
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)

CE marking to the PED available on most products

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

BALON®

GEAR OPERATOR

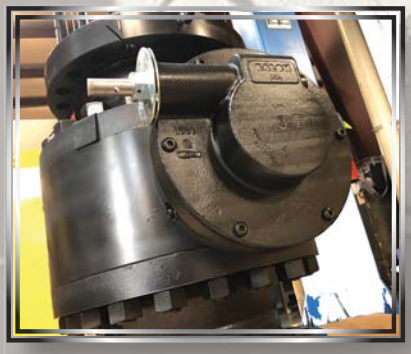
While developing and extending Balon's product line, it became essential to design and manufacture, in house, Balon's line of gear operators. Rather than relying on commodity made gear operators manufactured by others, Balon's gear operators are specifically designed for operator safety and dependable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

Please consult the chart below for sizes and pressure classes on which Balon gear operators are standard.

Balon Gear Operator Models and Their Corresponding Valves *		
B44 **	**B64**	**B88**
4F-F63	6F-F13	8F-F13
4F-T63	6F-F33	8F-T33
6R-F63	6F-F63	8F-T63
4F-T93	6F-T63	10R-F13
	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.*

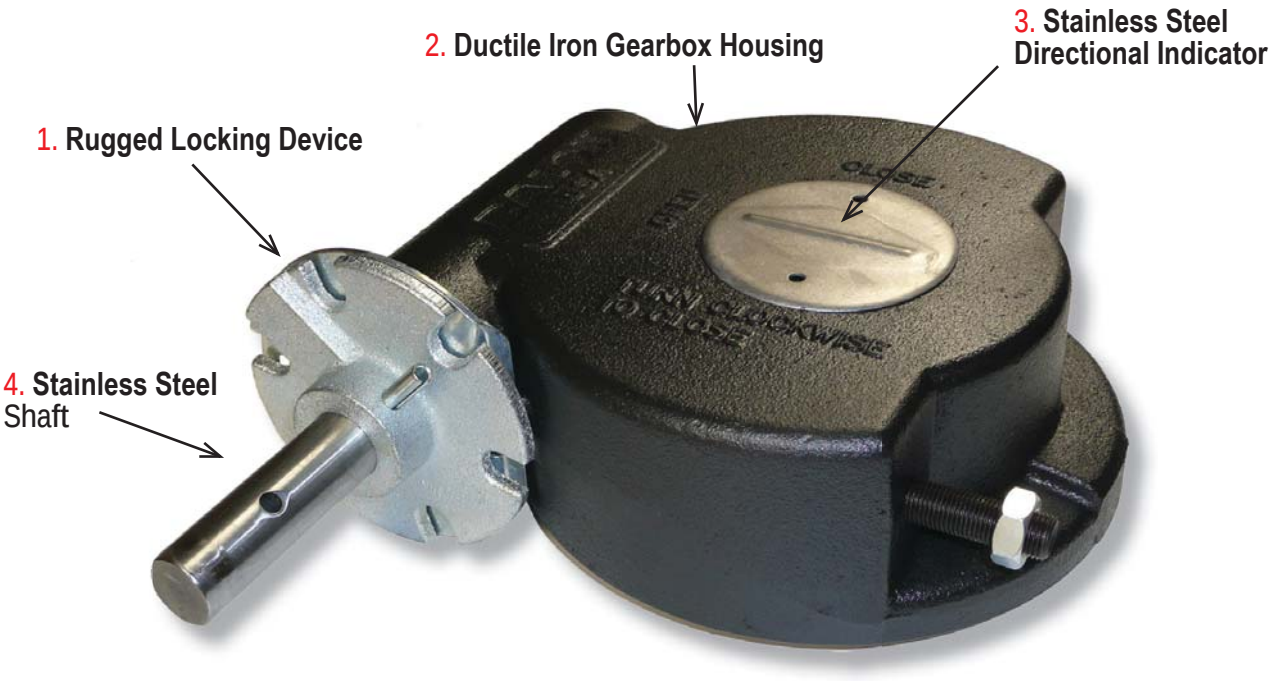


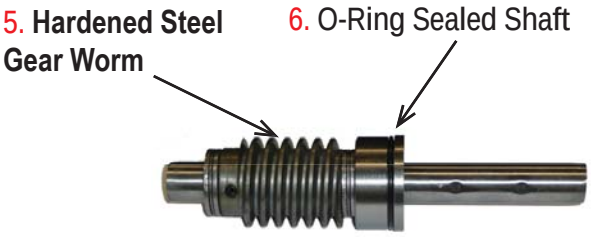




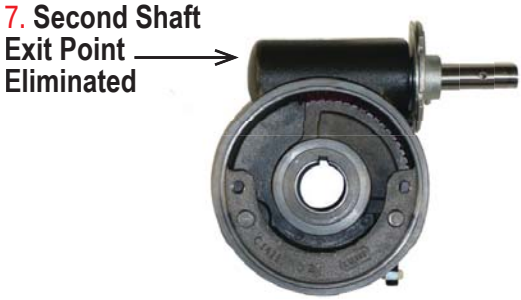
Gear Operator Features: B44, B64, B88 G-2
Gear Operator Features: B100, B132, B264 G-3

Gear Operator Feature
B44, B64, B88





Shaft with Gear Worm and Seals



Gearbox Underside

1. Rugged Locking Device Standard

A rugged locking device is standard with every Balon gearbox.

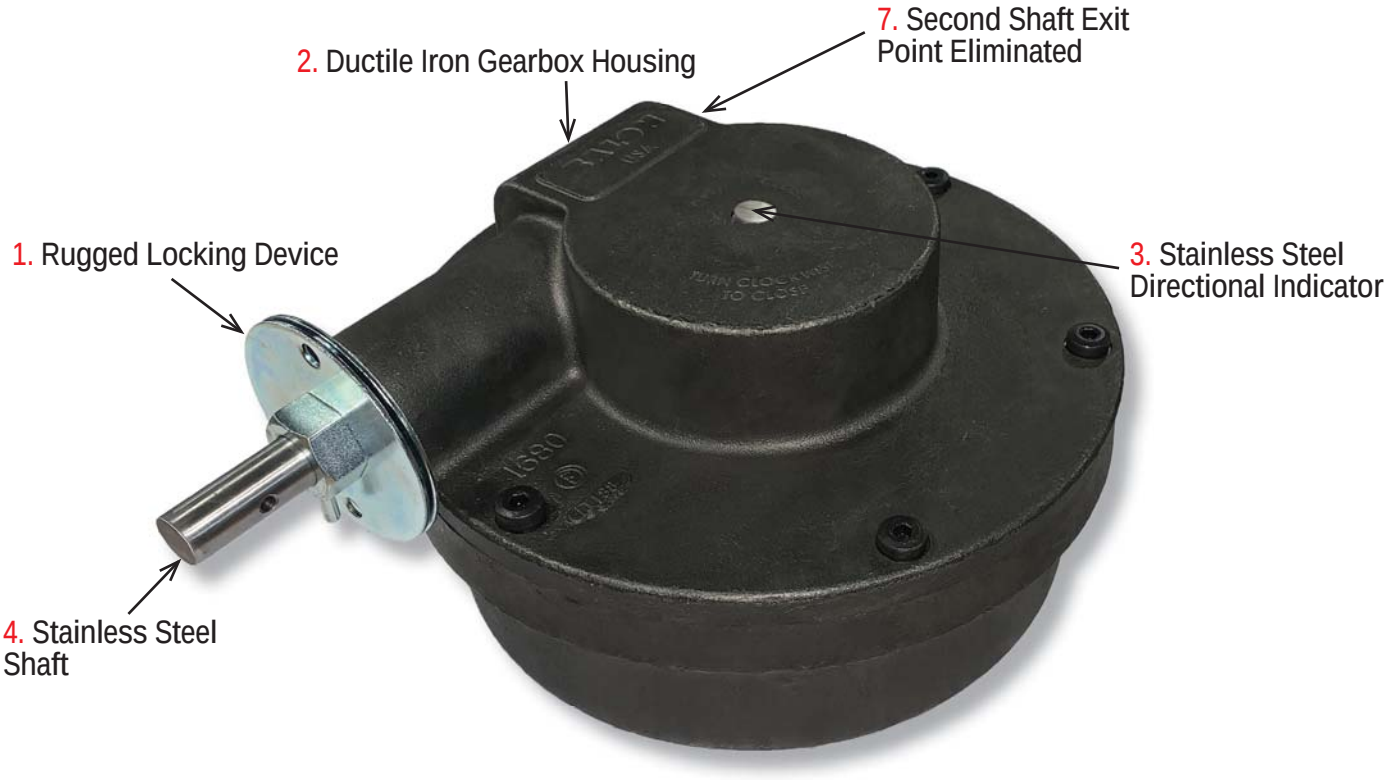
2. Ductile Iron Gearbox Housing

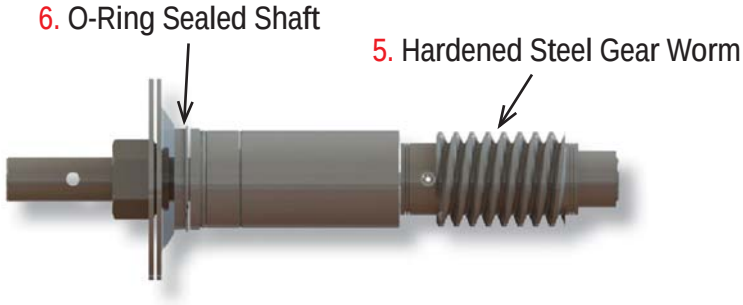
For all gearbox housings, Balon uses high-strength ductile iron, a more malleable material with a yield strength comparable to carbon steel.

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

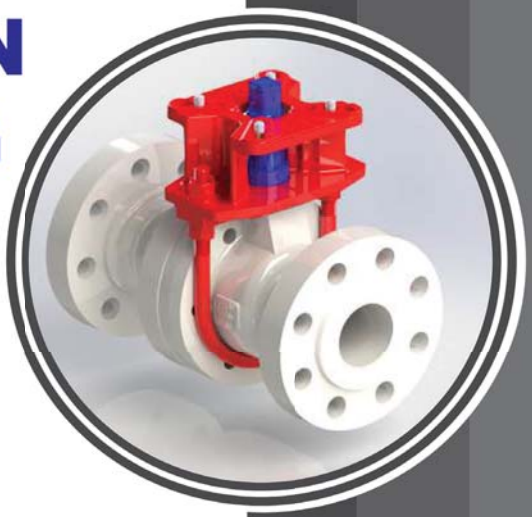
Gear worms are often susceptible to galling and wear. Balon takes the additional step of hardening our steel gear worms, making them highly resistant to galling and premature failure.

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

BALON®

ACTUATION MOUNTING PACKAGE



- EASY TO INSTALL
- WEATHER PROTECTED
- PERFECT ALIGNMENT ASSURED
- INCLUDES BOLTING FOR MOST COMMON COMBINATIONS
- DESIGNED FOR INSTALLATION ON BALON VALVES
  (Balon Valve sold separately)

PROUDLY MADE IN THE U.S.A.

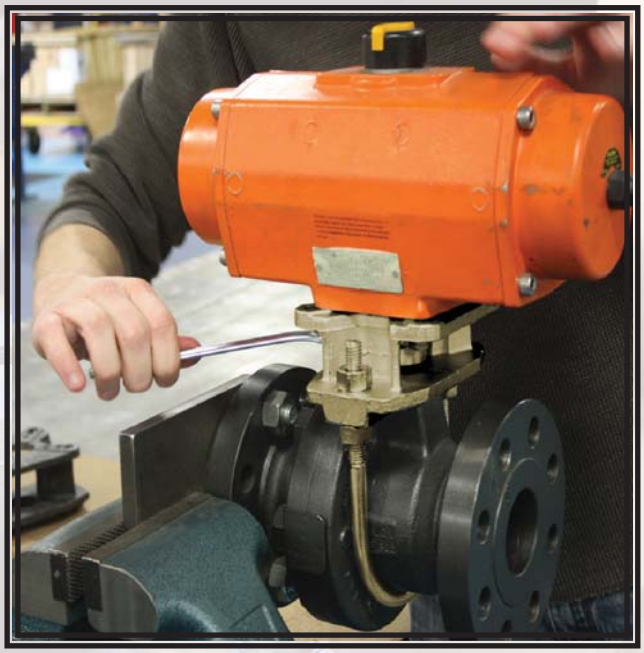
Actuation Mounting Package

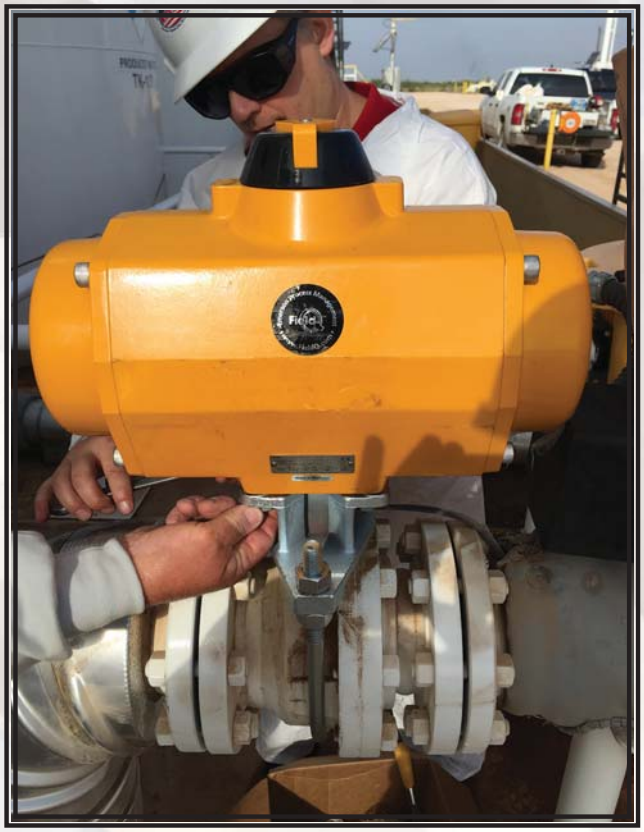
Actuation torque values for Balon ball valves may be found on Balon Corporation's website at www.balon.com.

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.

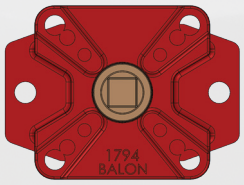


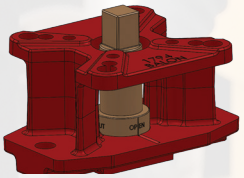


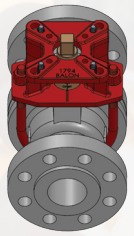


BALON ACTUATION MOUNTING PACKAGE

For Lever Operated Balon Floating Ball Valves







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 3/4	M6 X 22mm	14-1F-ISO
			5/16-18 X 7/8	M8 X 22mm	
		17mm	1/4-20 X 3/4	M6 X 22mm	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

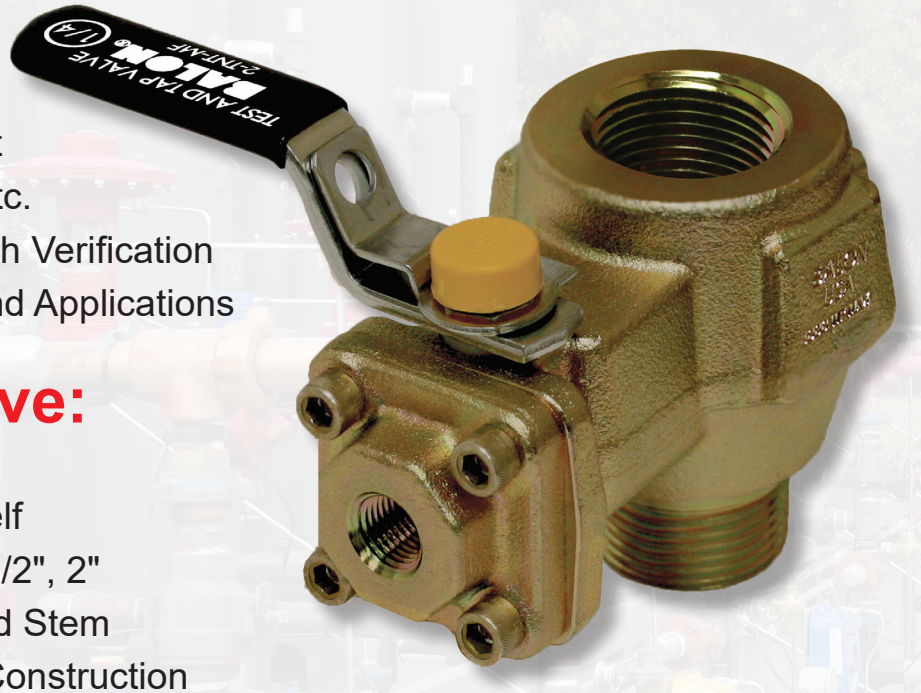
Balon can accommodate most actuators with ISO or Non-ISO mounting dimensions. Please contact the factory for additional information.

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

Nominal Pipe Size	-	Valve Series	-	End Connection
1	-	TNT	-	MF

Valve Series

TNT	Test and Tap®

End Connection

MF	Male x Female Threaded

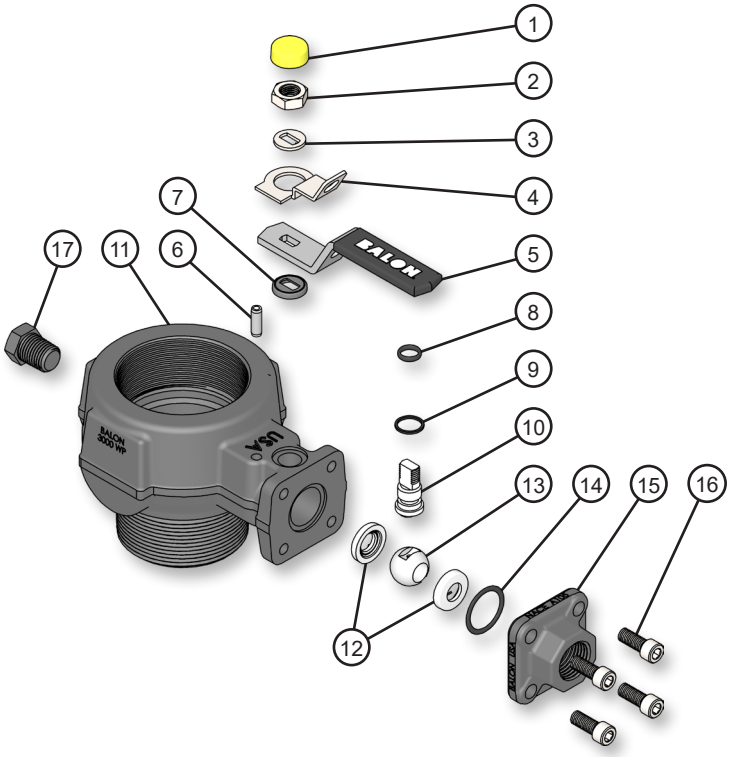
Note: For any valves not listed please consult factory.

TEST AND TAP® VALVE - Threaded Series

Material Description

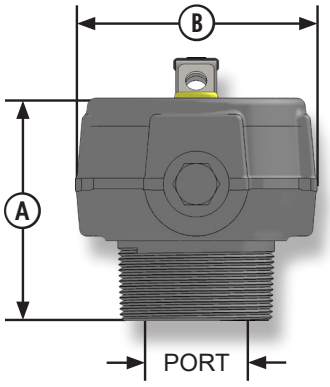
ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polyethylene
2	Stem Nut	Carbon Steel
3	Spacer	Carbon Steel
4	Lock Plate	Carbon Steel
5	Handle*	Carbon Steel
6	Stem Washer	Acetal
7	Stop Pin	Carbon Steel
8	Stem O-Ring	Fluorocarbon
9	Stem Seal	TFE
10	Stem	316 Stainless Steel
11	Body	ASTM A350 LF2 CL1
12	Seat	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

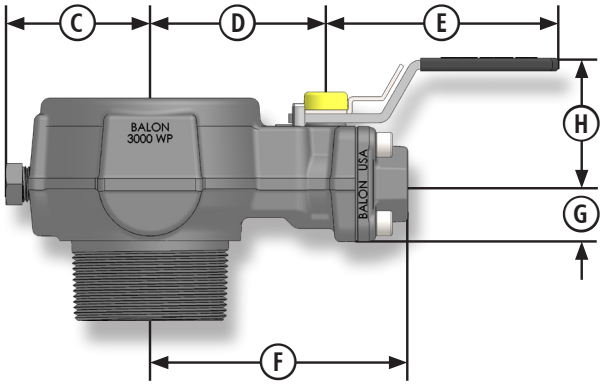
** Handle and lock device are standard.*

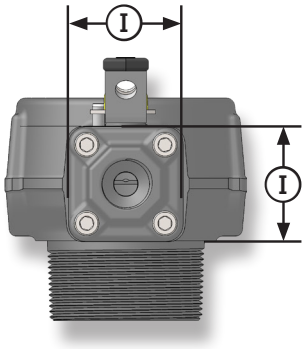


Dimensional Data

SIZE	CATALOG NUMBER	PORT	WP	A	B	C	D	E	F	G	H	I	LBS
0.75	**3/4-TNT-MF**	0.75	3,000	3.00	2.50	1.54	2.21	3.50	3.50	0.87	1.88	1.75	3.50
1	**1-TNT-MF**	0.91	3,000	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	3,000	3.60	3.26	1.97	2.60	3.50	3.90	0.87	1.88	1.75	4.75
2	**2-TNT-MF**	1.88	3,000	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:

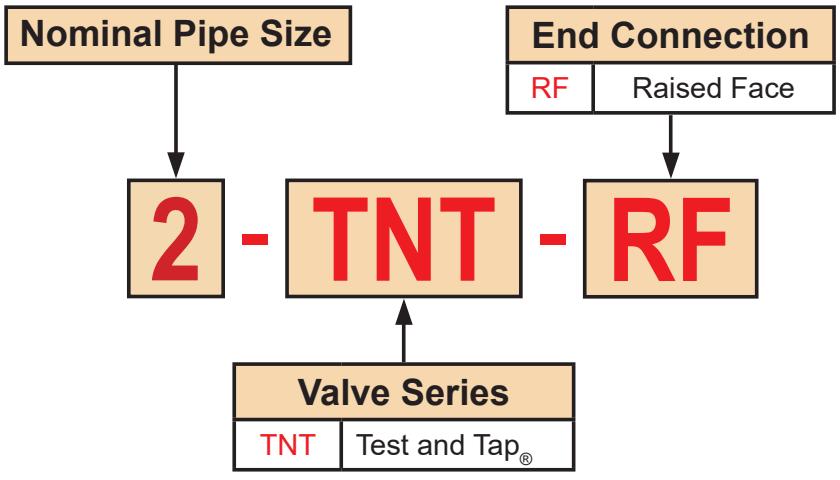
- ✓ Pressure Relief on Blind End Applications
- ✓ ESD/Safety Pressure Switch Verification
- ✓ Drains, Taps, Farm Taps, etc.
- ✓ Instrumentation Attachment
- ✓ Relief Valve Testing
- ✓ Chemical Injection
- ✓ Sampling



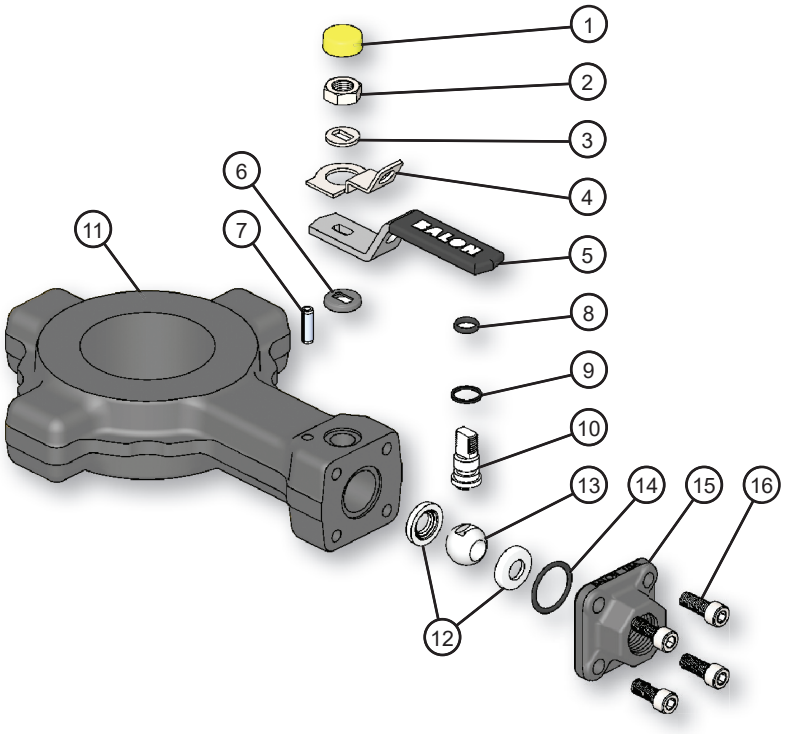
BALON® TNT Valve:

- 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



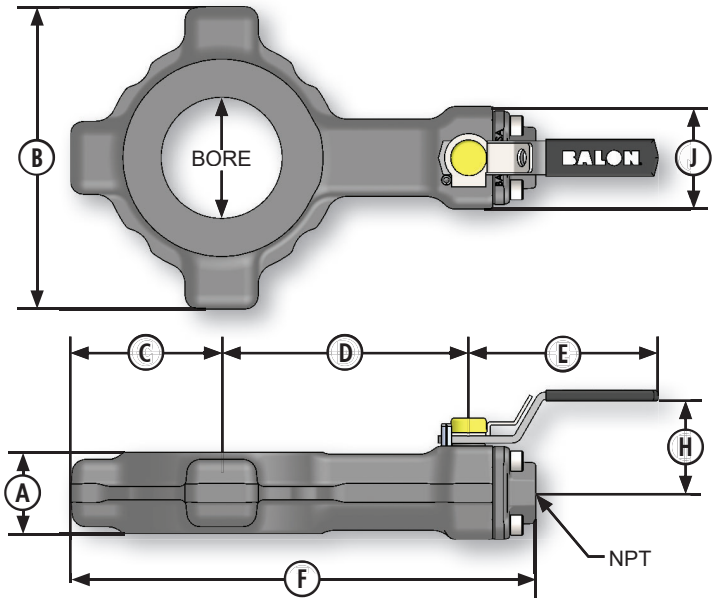
Material Description

ITEM	PART NAME	MATERIAL (NACE)
1	Weather Guard	Polyethylene
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	VALVE WP	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”	3000	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”	3000	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”	3000	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”	3000	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”	3000	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”	3000	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”	3000	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 possibilty 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.

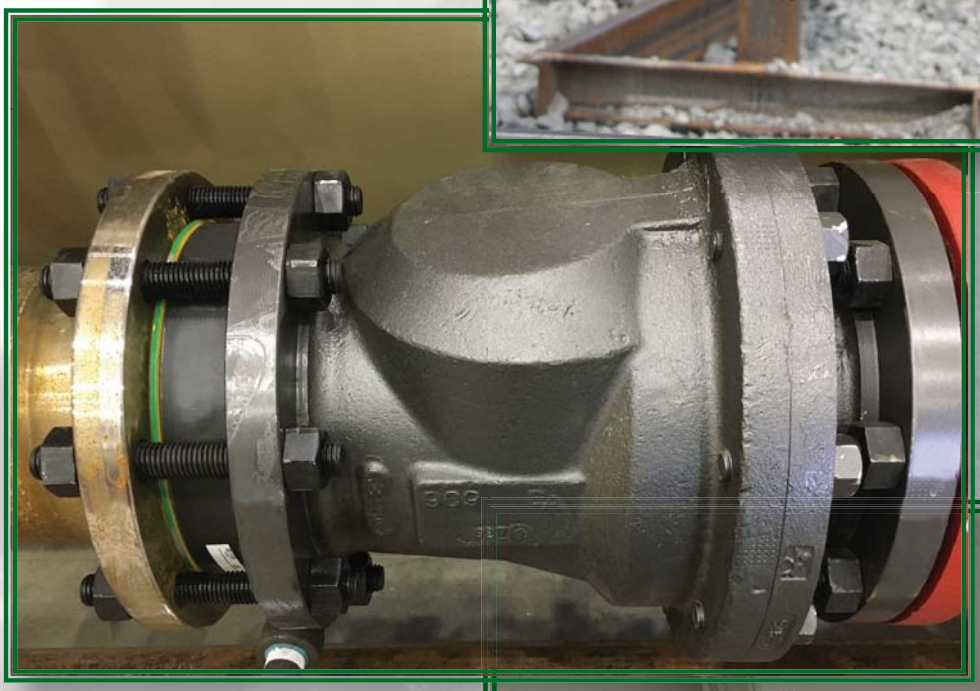


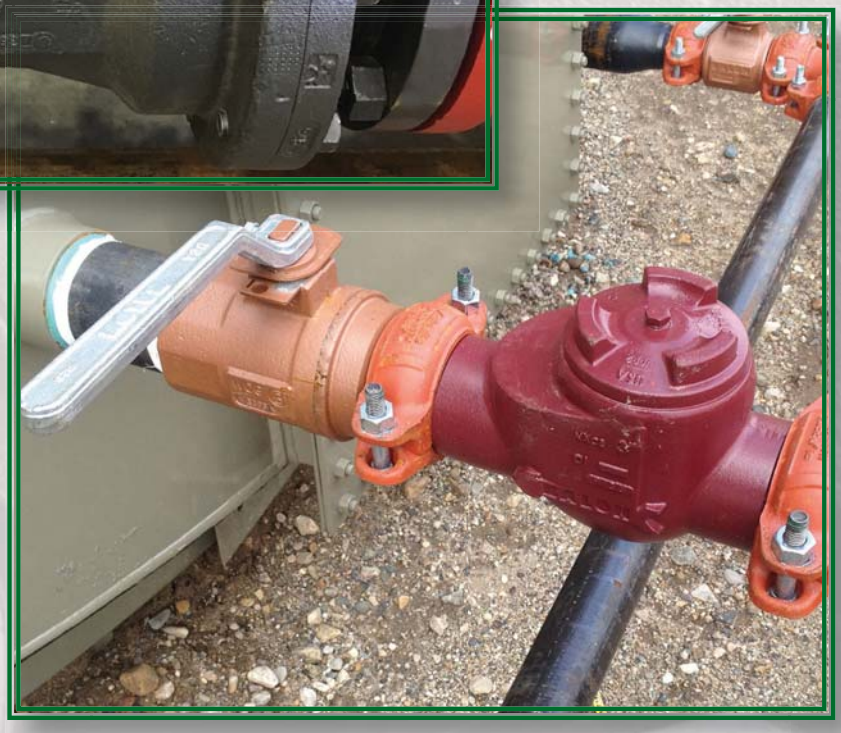
Relief Hole, Upstream When Valve Is Closed



SWING CHECK VALVES







BALON®

SWING CHECK VALVES

BALON SWING CHECK VALVES C-1

CHECK VALVE IDENTIFICATION KEY C-2

Balon Check Valve Features C-3

SERIES D CHECK VALVES

CARBON STEEL VALVES

Female x Female Threaded End Connection

Carbon Steel, To 2500 PSI WP, Threaded End (1″ Through 2″) C-4

DUCTILE IRON VALVES

Female x Female Threaded End Connection

Ductile Iron, To 2000 PSI WP, Threaded End (1″ Through 4″) C-5

Grooved x Grooved End Connection

Ductile Iron, 750 PSI WP, Grooved End (2″ Through 4″) C-6

NICKEL ALUMINUM BRONZE VALVES

Female x Female Threaded End Connection

Aluminum Bronze, To 2000 PSI WP, Threaded End (1″ Through 4″) C-7

Grooved x Grooved End Connection

Aluminum Bronze, To 1000 PSI WP, Grooved End (2″ Through 4″) C-8

SERIES C CHECK VALVES

NICKEL ALUMINUM BRONZE VALVES

Female x Female Threaded End Connection

Aluminum Bronze, 3000 PSI WP, Threaded End (2″) C-9

Aluminum Bronze, 750 PSI WP, Threaded End (2″ Through 3″) C-10

DUCTILE IRON VALVES

Female x Female Threaded End Connection

Ductile Iron, To 750 PSI WP, Threaded End (2″ Through 3″) C-11

Ductile Iron, To 1000 PSI WP, Threaded End (2″) C-11

Ductile Iron, 2000 PSI WP, Threaded End (2″ Through 3″) C-12

CARBON STEEL VALVES

Female x Female Threaded End Connection

Carbon Steel, To 3000 PSI WP, Threaded End (1″) C-13

Grooved x Grooved End Connection

Carbon Steel, To 1000 PSI WP, Grooved End (2″ Through 3″) C-13

Female x Female Threaded End Connection

Carbon Steel, 3000 PSI WP, Threaded End (2″) C-14

Wafer Check

Wafer ANSI 150, 300, 600; To 1480 PSI WP Thin Pattern (2″ Through 6″) C-15

Wafer ANSI 150, 300, 600; To 1480 PSI WP Long Pattern (2″ Through 6″) C-16

Flanged End Connection

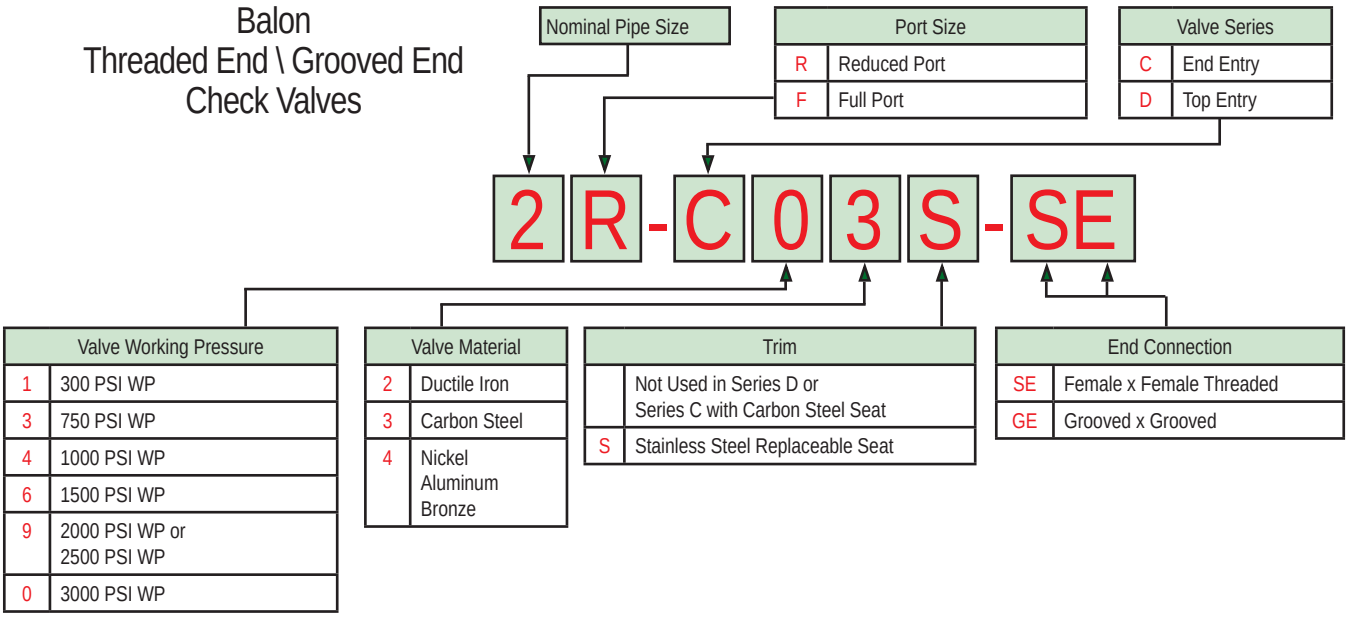
Carbon Steel, Flanged End, ANSI 150, 285 PSI WP (2″ Through 6″) C-17

Carbon Steel, Flanged End, ANSI 300, 740 PSI WP (2″ Through 6″) C-18

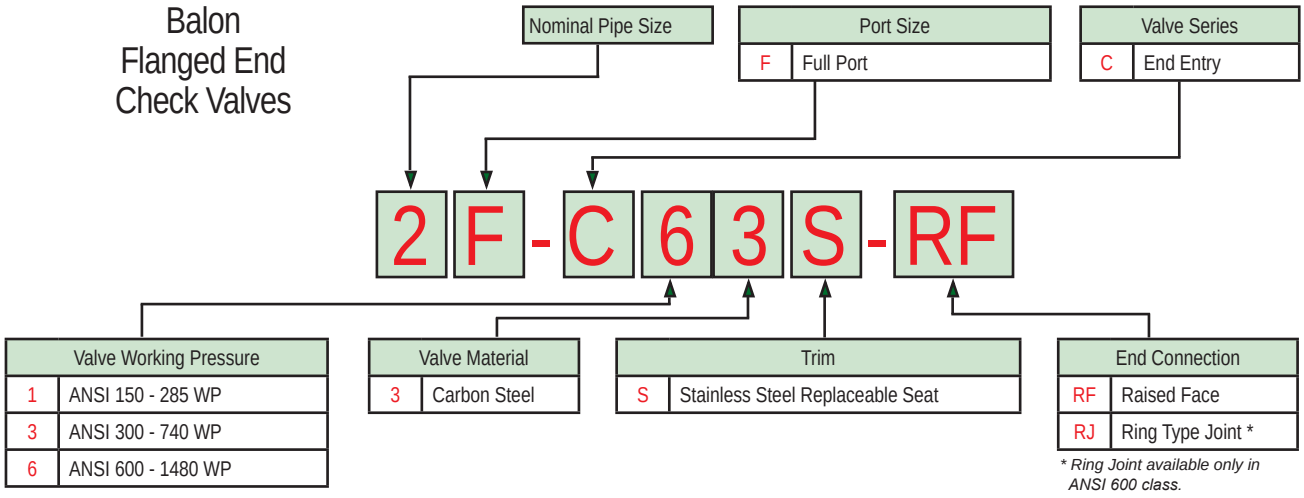
Carbon Steel, Flanged End, ANSI 600, 1480 PSI WP (2″ Through 6″) C-19

Check Valve Identification Key

Balon Threaded End \ Grooved End Check Valves

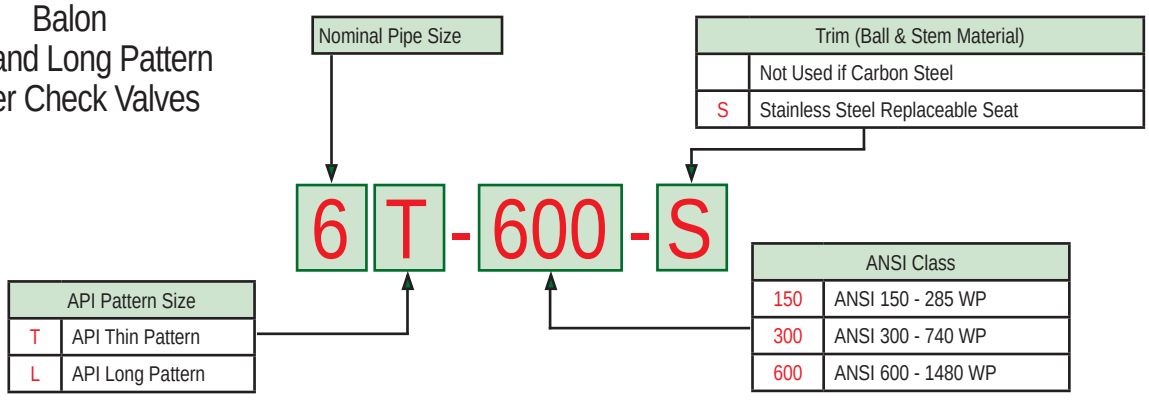


Balon Flanged End Check Valves



** Ring Joint available only in ANSI 600 class.*

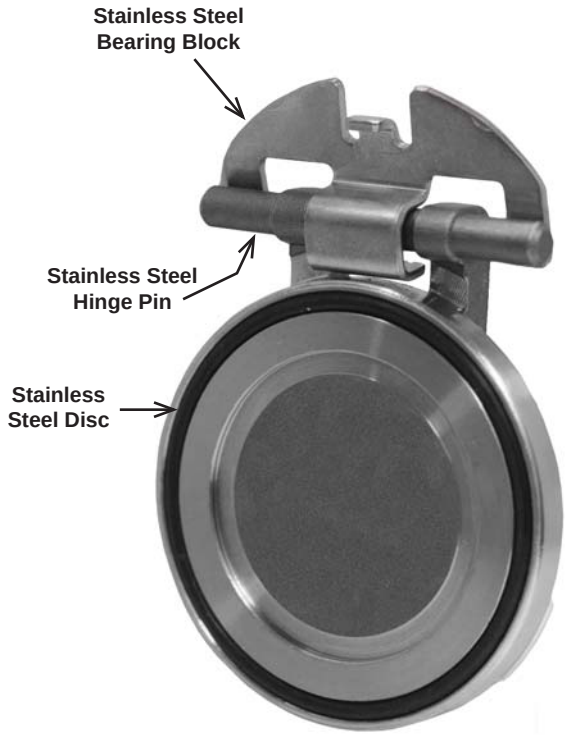
Balon Thin and Long Pattern Wafer Check Valves



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.

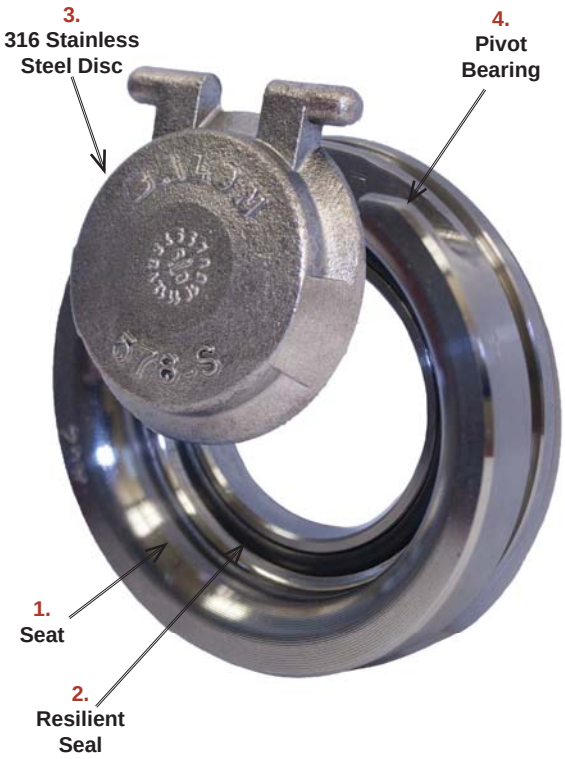
All series D are full port to allow for uninterrupted flow through the valve. As is the case with all of Balon's other check valves, all series D meet NACE and include 316 stainless steel discs as standard components.

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



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

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.

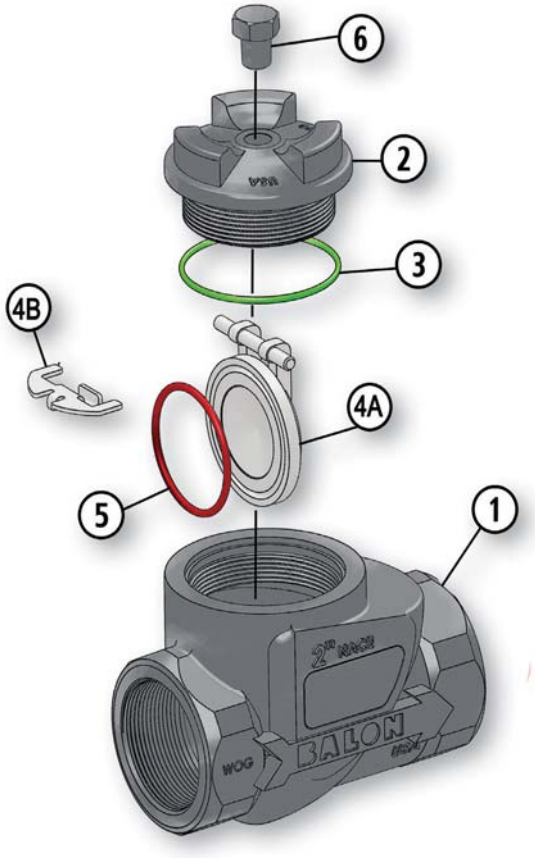
Threaded End Connection



Series D Carbon Steel

- Top Entry Swing Check Valve
- To 2500 PSI WP
- 1" Through 2"
- Threaded Body Construction

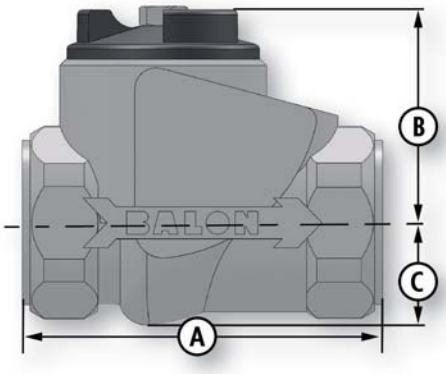
- Patented Hinge-Works for Extended Life
- Stainless Steel Disc Standard
- Improved by Design for Easier Bonnet Removal
- NACE Standard



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	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	3.75	1.81	12
2	2F-D93-SE	2	2500	6	3.75	1.81	12

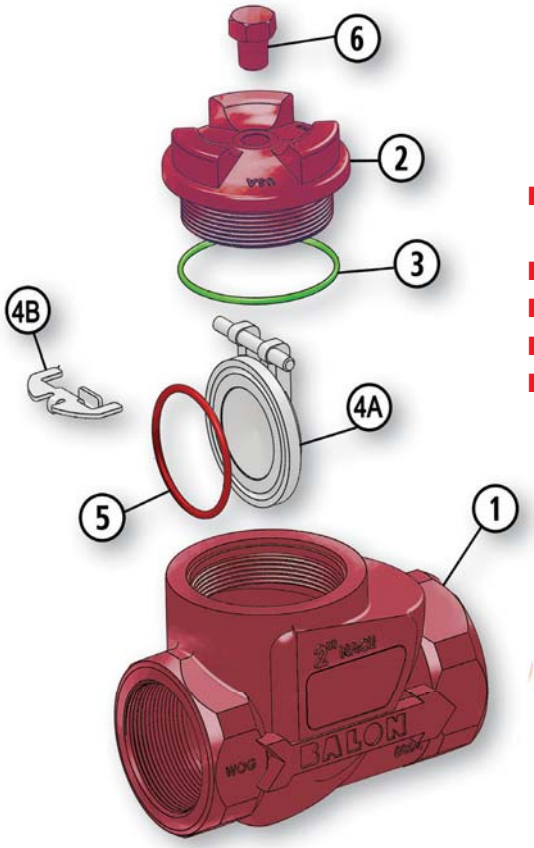
BALON

Threaded End Connection

Series D Ductile Iron

- Top Entry Swing Check Valve
- To 2000 PSI WP
- 1" Through 4"
- Threaded Body Construction





- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Patented Hinge-Works for Extended Life
- Stainless Steel Disc Standard
- Improved by Design for Easier Bonnet Removal
- NACE Standard

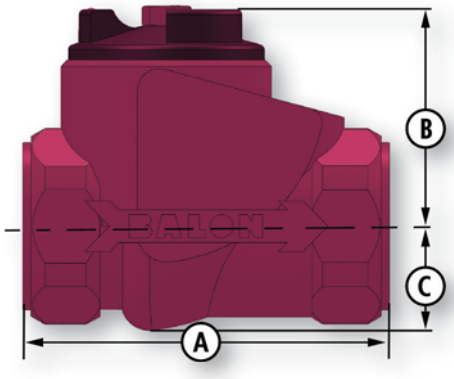
Material Description

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	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	3.75	1.81	10
2	2F-D32-SE	2	750	6	3.75	1.81	10
2	2F-D42-SE	2	1000	6	3.75	1.81	10
2	2F-D62-SE	2	1500	6	3.75	1.87	11
2	2F-D92-SE	2	2000	6	3.75	1.87	11
3	3F-D32-SE	3	750	8	4.45	2.43	21
4	4F-D32-SE	4	750	10	5.54	3.00	36

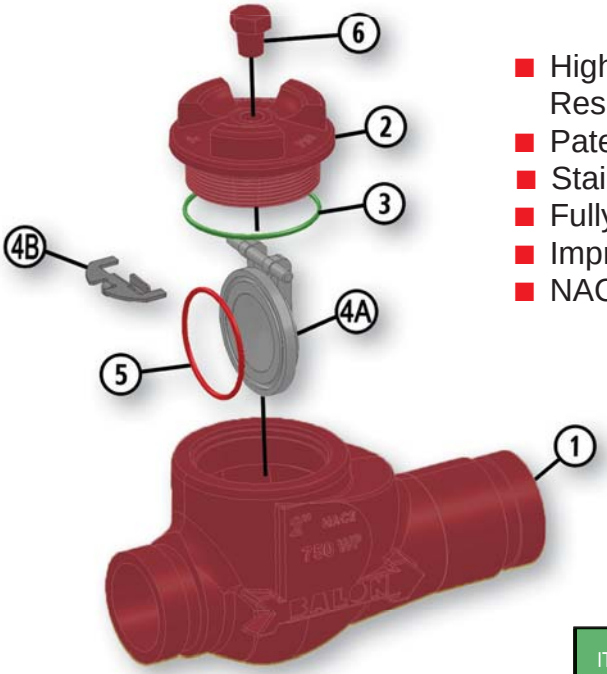


Grooved End Connection

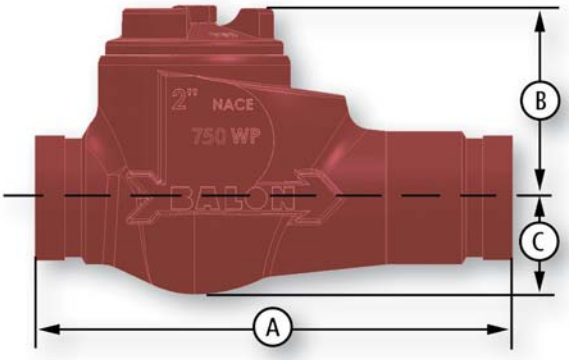
Series D Ductile Iron

- **Top Entry Swing Check Valve**
- **750 PSI WP**
- **2" to 4"**
- **Threaded Body Construction**





- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Patented Hinge-Works for Extended Life
- Stainless Steel Disc Standard
- Fully Machined Grooves
- Improved by Design for Easier Bonnet Removal
- NACE Standard



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	Stainless Steel
5	Disc Seal	Fluorocarbon
6	Pipe Plug	Carbon Steel

Dimensional Data

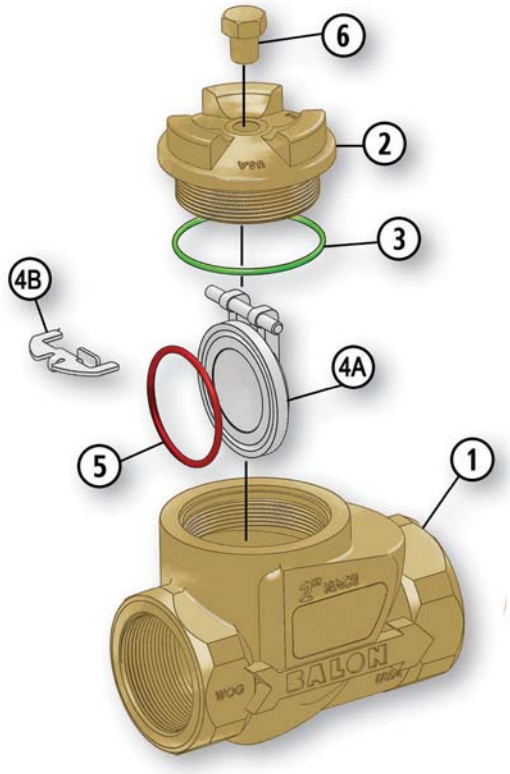
SIZE	CATALOG	PORT	WP	A	B	C	LBS.
2	2F-D32-GE	2	750	9	3.58	1.82	10
3	3F-D32-GE	3	750	10.75	4.50	2.45	20
4	4F-D32-GE	4	750	12	5.54	2.95	36

Threaded End Connection

Series D "9D"
Nickel Aluminum Bronze

- ASTM B148 GR 955 "9D"
- Top Entry Swing Check Valve
- To 2000 PSI WP
- 1" to 4"
- Threaded Body Construction





- Enhanced Protection Against CO_2 and Saltwater Corrosion
- Replaceable Disc
- NACE Standard
- 316 Stainless Steel Disc Standard
- Exceptional Yield Strength
- Improved by Design for Easier Bonnet Removal
- Minimizes Risk of Galling Associated with Stainless Steel

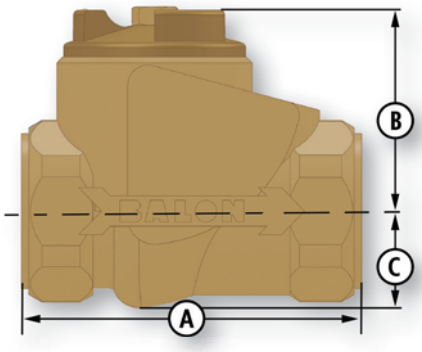
Material Description

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	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	3.75	1.87	9.8
2	2F-D94-SE	2	2000	6	3.75	1.87	11
3	3F-D44-SE	3	1000	8	4.45	2.43	21
4	4F-D44-SE	4	1000	10	5.54	3.00	36



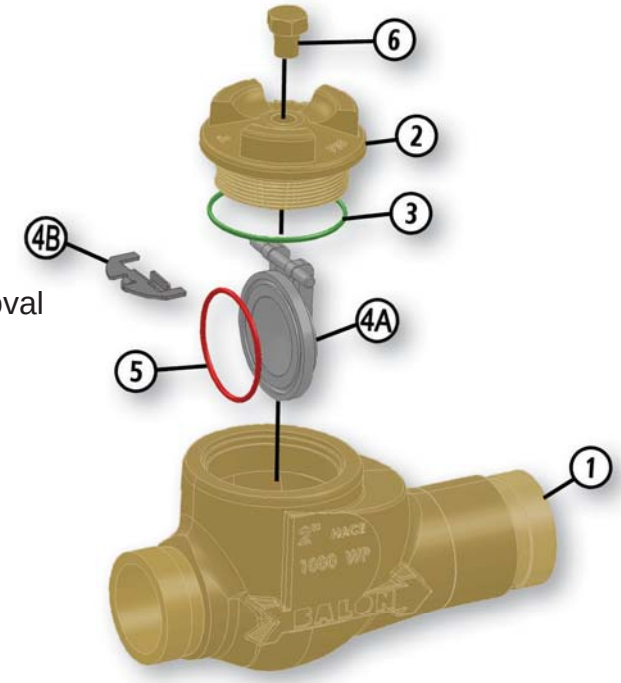
Grooved End Connection



Series D "9D"
Nickel Aluminum Bronze

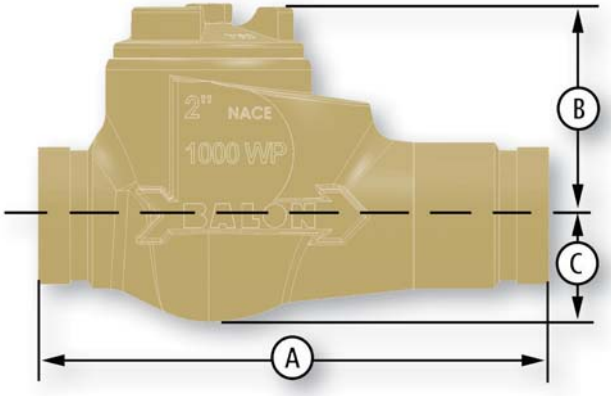
- ASTM B148 GR 955 "9D"
- Top Entry Swing Check Valve
- 1000 PSI WP
- 2" to 6"
- Threaded Body Construction

- Enhanced Protection Against CO_2 and Saltwater Corrosion
- Replaceable Disc
- NACE Standard
- 316 Stainless Steel Disc Standard
- Exceptional Yield Strength
- Improved by Design for Easier Bonnet Removal



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	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	3.58	1.82	9.75
3	3F-D44-GE	3	1000	10.75	4.50	2.45	21
4	4F-D44-GE	4	1000	12	5.54	2.95	36
6	6R-D44-GE	4	1000	12	5.54	2.95	38.6

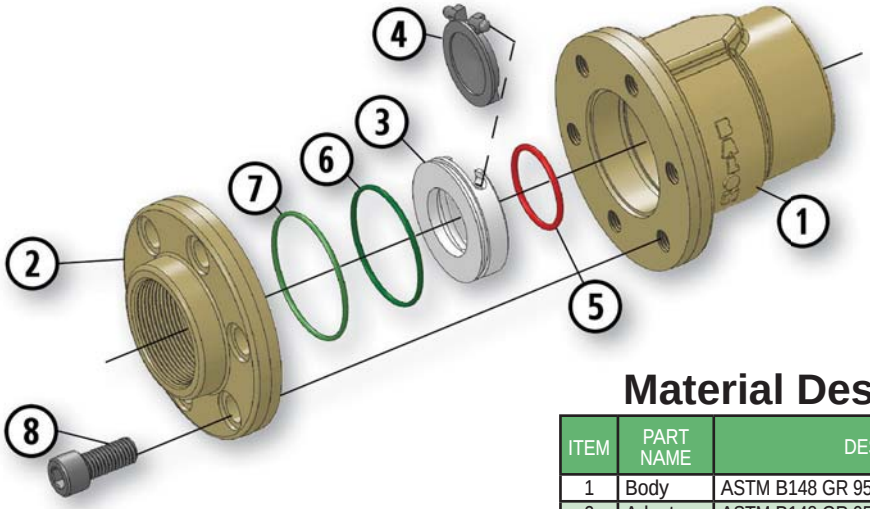
BALON

Threaded End Connection

Series C "9D"
Nickel Aluminum Bronze

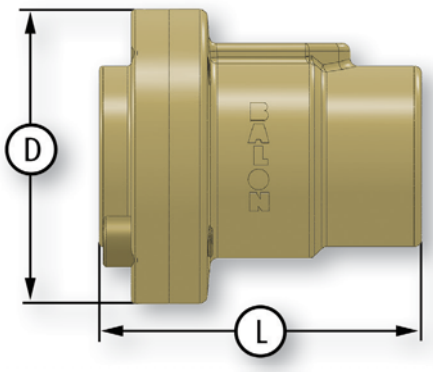


- **ASTM B148 GR 955 "9D"**
- **Swing Check Valve**
- **3000 PSI WP**
- **2"**
- **Bolted Body Construction**
  - Enhanced Protection Against CO_2 and Saltwater Corrosion
  - Replaceable Seat Disc Cartridge
  - Seal Located in Seat, Thus Protected From Flow
  - NACE Standard
  - 316 Stainless Steel Disc 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

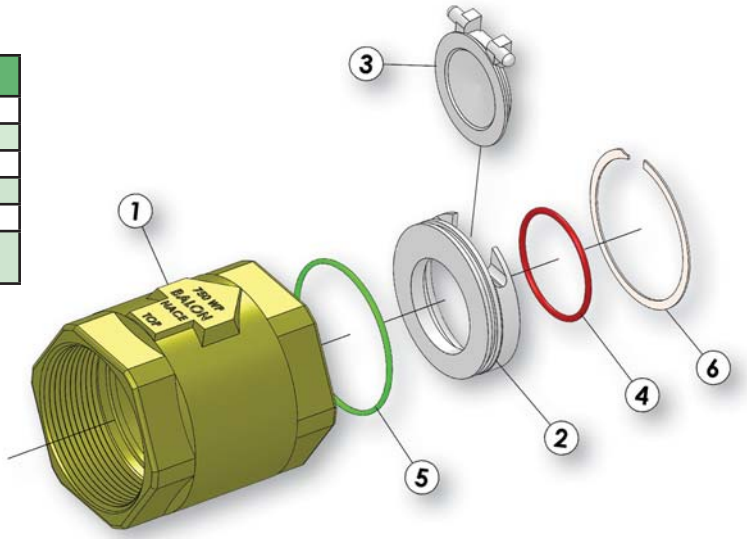
- **ASTM B148 GR 955 "9D"**
- **Swing Check Valve**
- **750 PSI WP**
- **2" Through 3"**
- **One Piece Body**

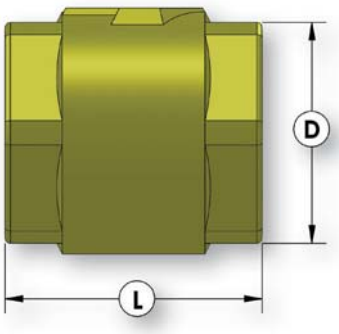


- Enhanced Protection Against CO_2 and Saltwater Corrosion
- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- 316 Stainless Steel Disc Standard
- Exceptional Yield Strength
- Minimizes Risk of Galling Associated with Stainless Steel

Material Description

ITEM	PART NAME	DESCRIPTION
1	Body	ASTM B148 GR 955
2	Seat	Replaceable Carbon 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	3.62	3.3
3	3R-C34S-SE	2	4.25	4.50	7.3

BALON®

Threaded End Connection

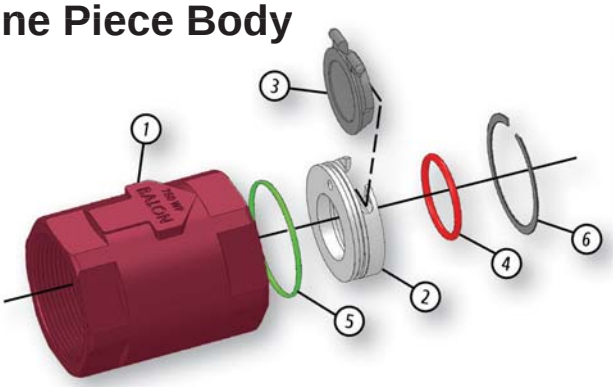


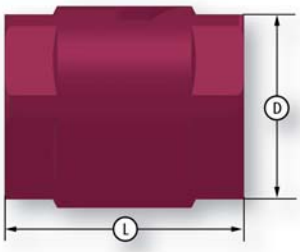
Series C Ductile Iron

- Swing Check Valve
- 750 PSI WP
- 2" Through 3"
- One Piece Body

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





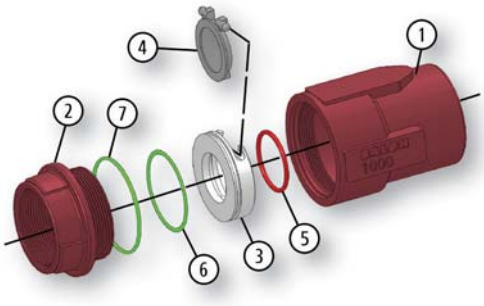
Dimensional Data

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

- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Replaceable Seat Disc Cartridge
- Stainless Steel Disc Standard
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard



Swing Check Valve
1000 PSI WP
2"
Threaded Body Construction

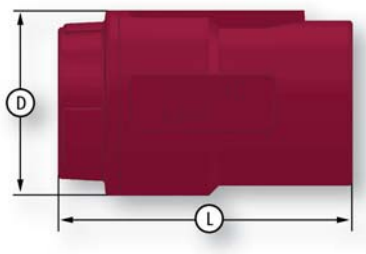


Material Description

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 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



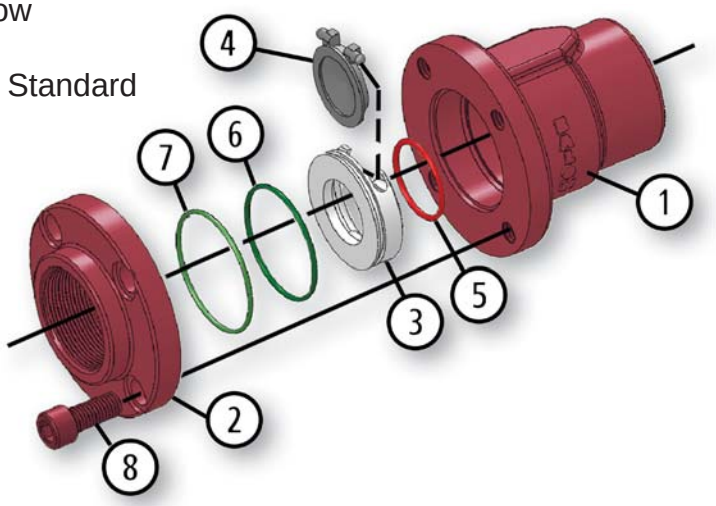
Threaded End Connection

Series C Ductile Iron



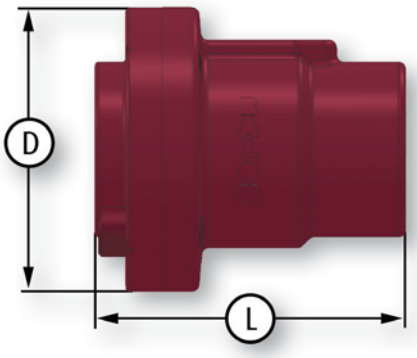
- **Swing Check Valve**
- **2000 PSI WP**
- **2" Through 3"**
- **Bolted Body Construction**

- Bolted Body Protects Against End Adapter Blowout
- High Grade Annealed Ductile Iron for Better Corrosion Resistance and Greater Yield Strength
- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- 316 Stainless Steel Disc 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
3	3R-C92-SE	3R-C92S-SE	2	6.75	7.25	24.3

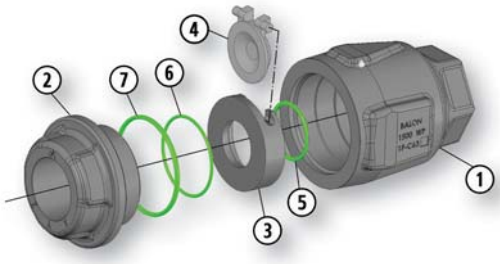
BALON

Threaded \ Grooved End

Series C Carbon Steel



- Swing Check Valve
- To 3000 PSI WP
- 1"
- Threaded Body Construction

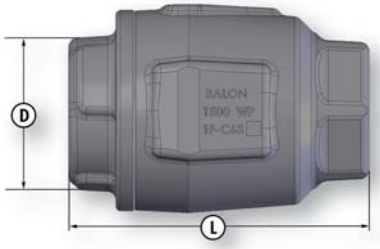


Material Description

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

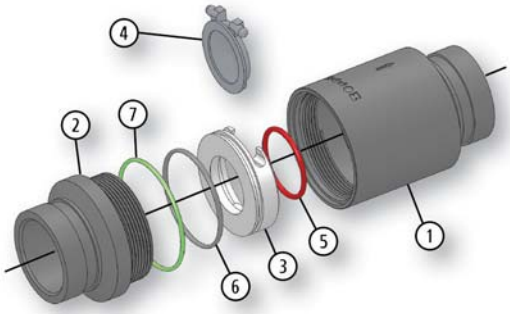
SIZE	CATALOG NUMBER		PORT	WP	D	L	LBS.
	CARBON STEEL SEAT	STAINLESS STEEL SEAT					
1	1F-C63-SE	1F-C63S-SE	1	1500	2.75	4.25	4.2
1	1F-C03-SE	1F-C03S-SE	1	3000	2.75	4.25	4.2

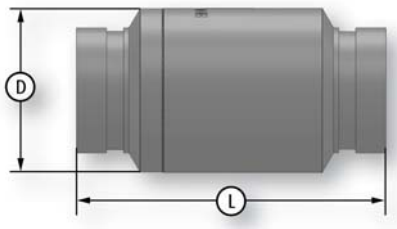


- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- 316 Stainless Steel Disc Standard

- Swing Check Valve
- 1000 PSI WP
- 2" Through 3"
- Threaded Body Construction







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	4	6.50	9.8

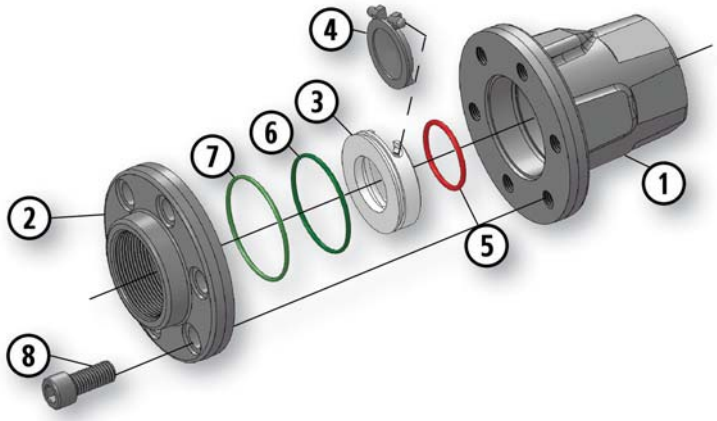
Threaded End Connection

Series C Carbon Steel



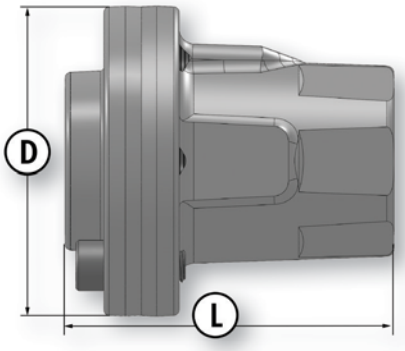
- **Swing Check Valve**
- **3000 PSI WP**
- **2"**
- **Bolted Body Construction**

- Bolted Body Protects Against End Adapter Blowout
- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- 316 Stainless Steel Disc 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

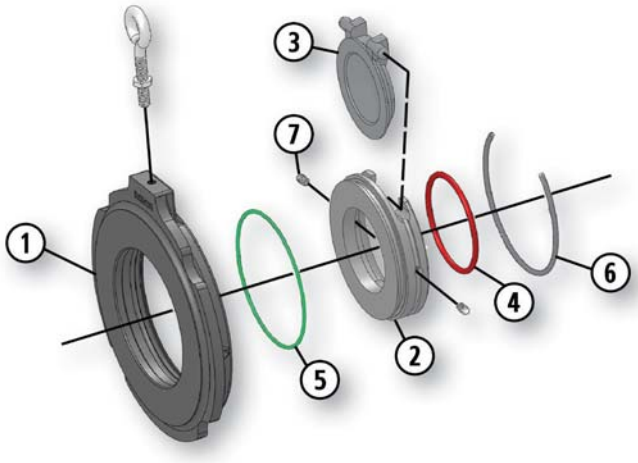


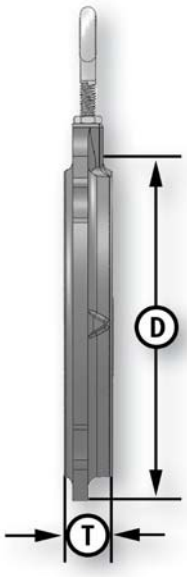
Wafer Check Valves
Carbon Steel

- **Thin Pattern Swing Check Valve**
- **ANSI 150 (285 PSI WP)**
- **ANSI 300 (740 PSI WP)**
- **ANSI 600 (1480 PSI WP)**
- **2" Through 6"**
- **Forged Steel Body Construction**
  - Replaceable Seat Disc Cartridge
  - Seal Located in Seat, Thus Protected From Flow
  - NACE Standard
  - 316 Stainless Steel Disc Standard
  - Generally 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	.75	4.25	2.5
2	2T-300	2T-300S	1.25	4.37	.75	4.50	2.5
2	2T-600	2T-600S	1.25	4.37	.75	5.25	2.5
3	3T-150	3T-150S	2	5.37	.75	4.50	4.4
3	3T-300	3T-300S	2	5.87	.75	5.25	4.4
3	3T-600	3T-600S	2	5.87	.75	6	4.4
4	4T-150	4T-150S	2.81	6.87	.75	4.50	7
4	4T-300	4T-300S	2.81	7.12	.75	5.50	6.95
4	4T-600	4T-600S	2.62	7.62	.87	7	8.5
6	6T-150	6T-150S	4.50	8.75	.87	5	13.5
6	6T-300	6T-300S	4.50	9.87	.87	5.75	13.6
6	6T-600	6T-600S	4	10.50	1.12	8	19

Wafer Check Valves

Wafer Check Valves
Carbon Steel

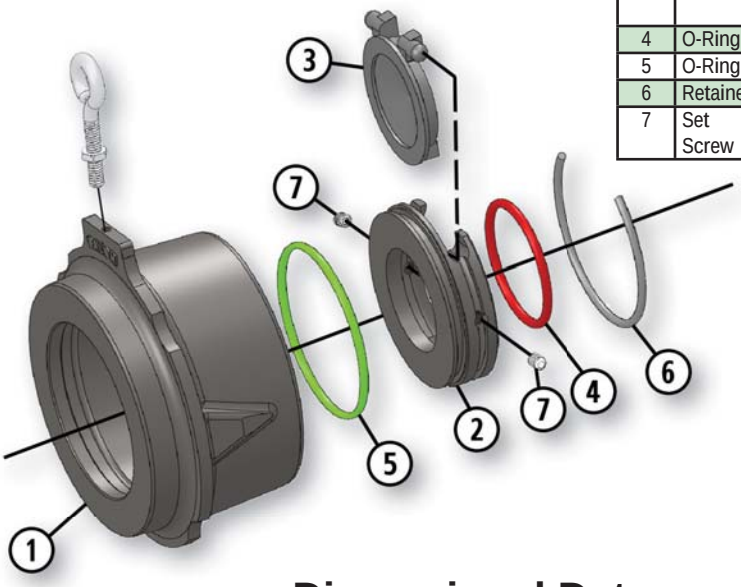


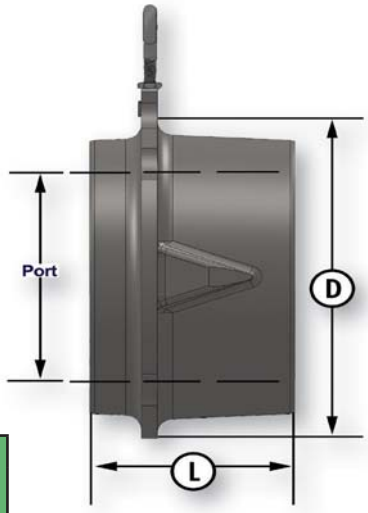
- **Long Pattern Swing Check Valve**
- **ANSI 150 (285 PSI WP)**
- **ANSI 300 (740 PSI WP)**
- **ANSI 600 (1480 PSI WP)**
- **2" Through 6"**
- **Forged Steel Body Construction**

- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- 316 Stainless Steel Disc Standard
- Generally 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	1.5	4.37	2.37	6.25	4.9
2	2L-600	2L-600S	1.5	4.37	2.37	6.75	4.9
3	3L-150	3L-150S	2	5.37	2.87	6.50	11.8
3	3L-300	3L-300S	2	5.87	2.87	7.25	11.8
3	3L-600	3L-600S	2	5.87	2.87	8	11.8
4	4L-150	4L-150S	3	6.87	2.87	6.50	15
4	4L-300	4L-300S	3	7.12	2.87	7.75	15
4	4L-600	4L-600S	3	7.87	3.12	9.25	16
6	6L-150	6L-150S	4.75	8.75	3.87	8	34
6	6L-300	6L-300S	4.75	9.87	3.87	9	34.8
6	6L-600	6L-600S	4.75	10.50	5.37	12.50	48

BALON

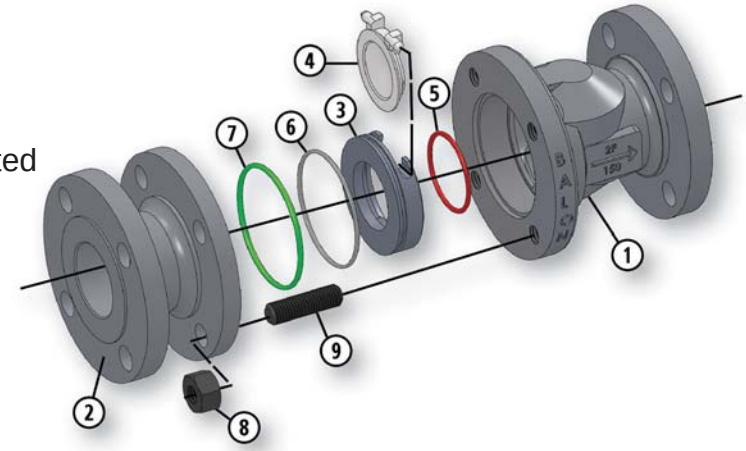
Flanged End Connection

Series C
Carbon Steel



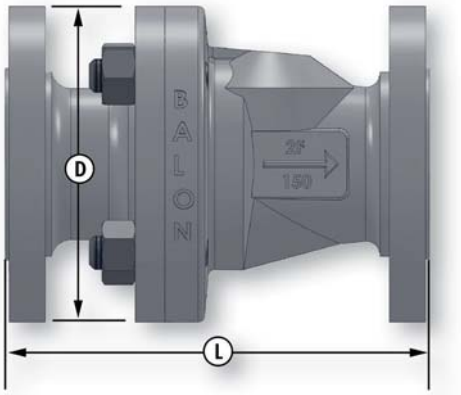
- Swing Check Valve
- ANSI Class 150 (285 PSI WP)
- 2" Through 6"
- Bolted Body Construction

- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- Stainless Steel Disc and Seat 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	8	27
3	3F-C13S-RF	3	7.50	9.5	48
4	4F-C13S-RF	4	9	11.5	74
6	6F-C13S-RF	6	12.75	14	162

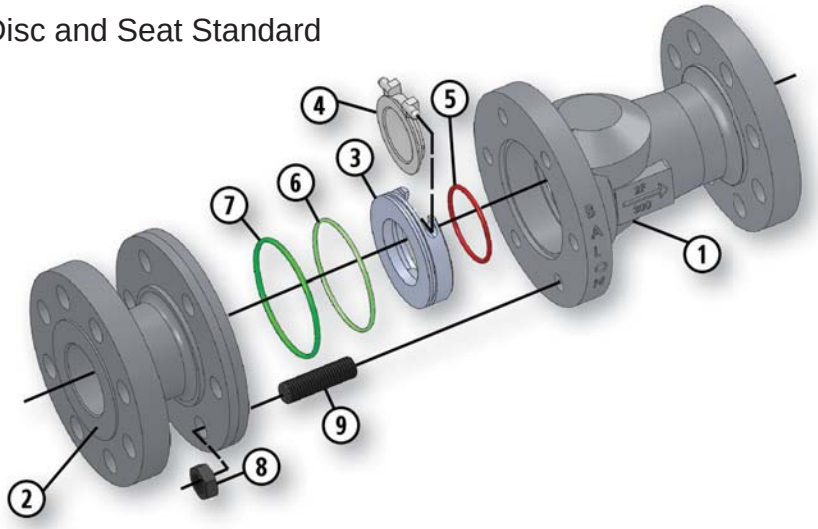
Flanged End Connection

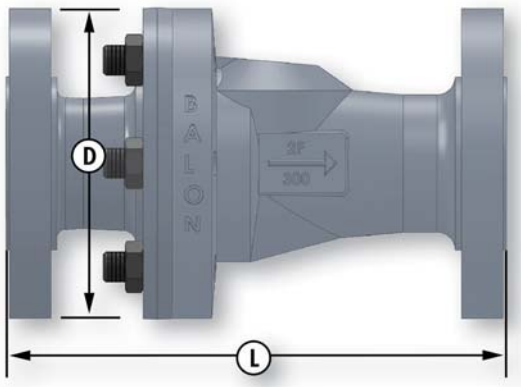
Series C
Carbon Steel



- **Swing Check Valve**
- **ANSI Class 300 (740 PSI WP)**
- **2" Through 6"**
- **Bolted Body Construction**

- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- Stainless Steel Disc and Seat 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	12.5	74
4	4F-C33S-RF	4	9.37	14	111
6	6F-C33S-RF	6	13.25	17.5	268

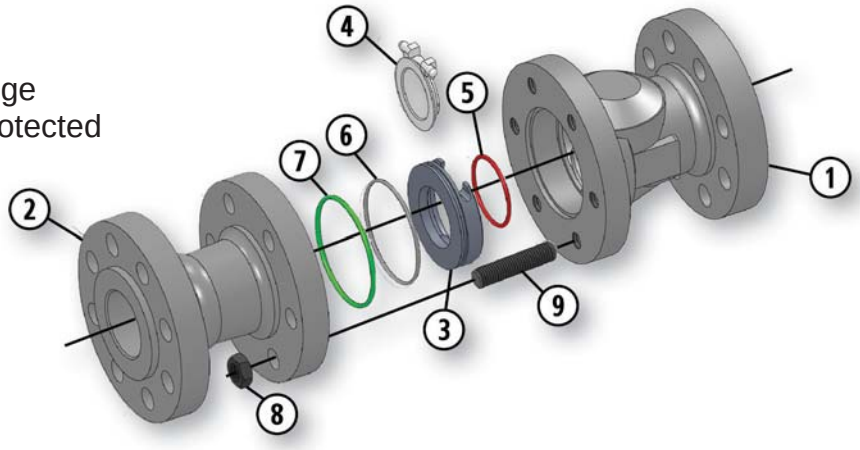
Flanged End Connection

Series C
Carbon Steel



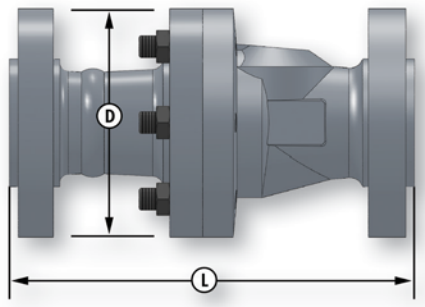
- Swing Check Valve
- ANSI Class 600 (1480 PSI WP)
- 2" Through 6"
- Bolted Body Construction

- Replaceable Seat Disc Cartridge
- Seal Located in Seat, Thus Protected From Flow
- NACE Standard
- Stainless Steel Disc and Seat 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.
	RAISED FACE	RING JOINT			RF	RJ	
2	2F-C63S-RF	2F-C63S-RJ	2	6.50	11.5	11.62	42
3	3F-C63S-RF	3F-C63S-RJ	3	8	14	14.12	80
4	4F-C63S-RF	4F-C63S-RJ	4	10.75	17	17.12	188
6	6F-C63S-RF	6F-C63S-RJ	6	13.75	22	22.12	384

Needle Valves







BALON

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

Male x Female (¼″ and ½″) N-4

Female x Female (¼″ and ½″) N-4

Male x 90° Angle Female (½″ x ¼″) N-4

10,000 PSI WP Metal Seated

Male x Female (¼″ and ½″) N-5

Female x Female (½″) N-5

316 STAINLESS STEEL SEATED NEEDLE VALVES

6,000 PSI WP Resilient Seated

Male x Female (¼″ and ½″) N-6

Female x Female (½″) N-6

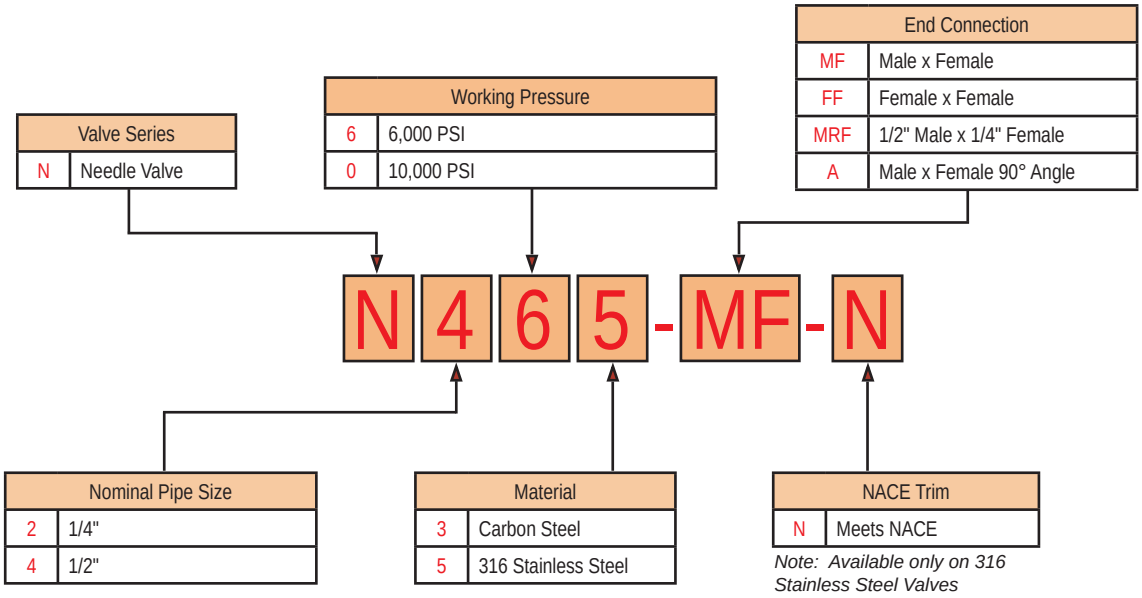
10,000 PSI WP Metal Seated

Male x Female (¼″ and ½″) N-7

Female x Female (½″) N-7

Needle Valve Identification Key

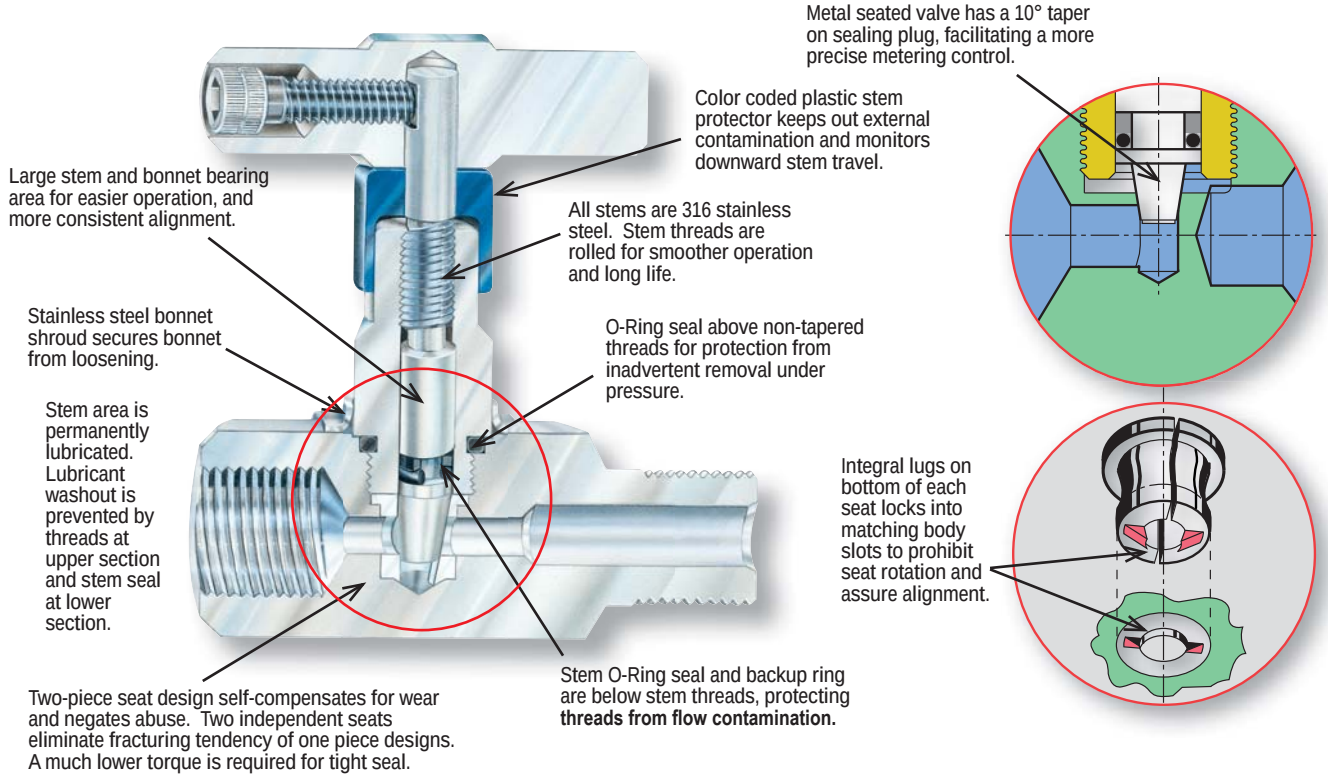
Balon
Carbon Steel \ Stainless Steel
Needle Valves



Note: For any valves not listed please consult factory.

Needle Valve Features

Balon: The Benchmark for Needle Valves



INTEGRATED STEM AND BONNET DESIGN

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

All stems are 316 stainless steel for almost universal corrosion resistance and therefore much longer life.

Stem threads are located above the stem sealing area so that 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 and gives a “superb quality feel” of operation, and it enhances overall seal ability.

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.

Thick cross sectional area limits and cushions downward handle movement, thus helping to prevent overtightening of 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 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”.

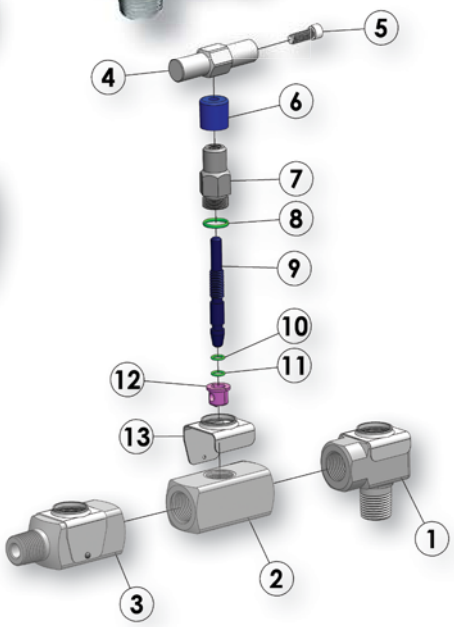
Threaded Needle Valves

6000 PSI / Resilient Seated









- 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 °)	A216 WCB (Investment Casting)
2	Body (FxF)	1215 CRS
3	Body (MxF)	AISI 1018
4	Handle	12L14 CRS
5	Handle Bolt	SHCS Zinc Plated
6	Bonnet Cover	Polypropylene
7	Bonnet	12L14 CRS
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)

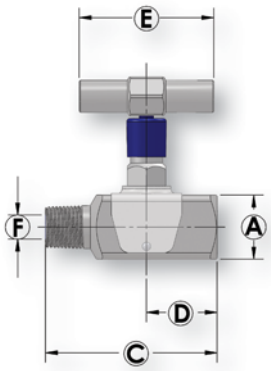


Diagram B (F x F)

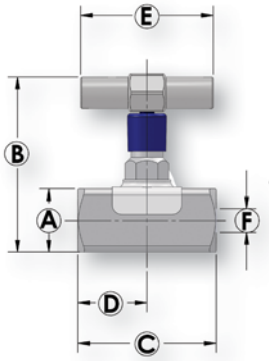
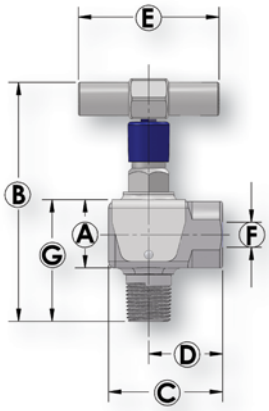


Diagram C (M x F) Angle



Dimensional Data

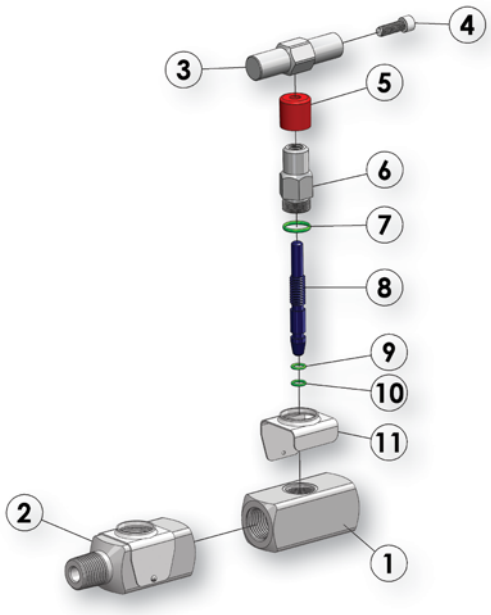
SIZE	CATALOG NUMBER CARBON STEEL	SEAT	DIAGRAM	A	B	C	D	E	F	G	LBS.
.25	N263-MF	Resilient	A	1.25	3.87	3.25	1.37	2.62	.219	N/A	1.5
.25	N263-FF	Resilient	B	1.25	3.87	2.75	1.37	2.62	.219	N/A	1.5
.50	N463-MF	Resilient	A	1.25	3.87	3.37	1.37	2.62	.219	N/A	1.5
.50x.25	N463-MRF	Resilient	A	1.25	3.87	3.37	1.37	2.62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

Threaded Needle Valves

10000 PSI / Metal Seated

- 316 Stainless Steel Stem Standard
- Bonnet Locking Shroud
- Precise Metering
- Maximum Temp 200°





Material Description

ITEM	PART NAME	CARBON STEEL VALVE
1	Body (FxF)	1215 CRS
2	Body (MxF)	AISI 1018
3	Handle	12L14 CRS
4	Handle Bolt	SHCS Zinc Plated
5	Bonnet Cover	Polypropylene
6	Bonnet	12L14 CRS
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)

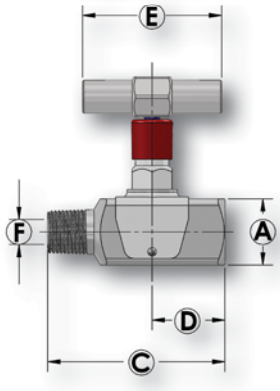
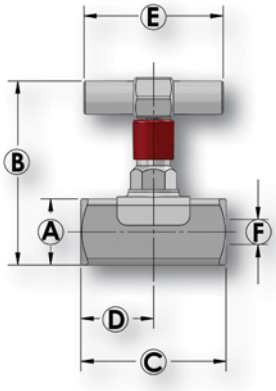


Diagram B (F x F)



Dimensional Data

SIZE	CATALOG NUMBER CARBON STEEL	SEAT	DIAGRAM	A	B	C	D	E	F	LBS.
.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

- 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

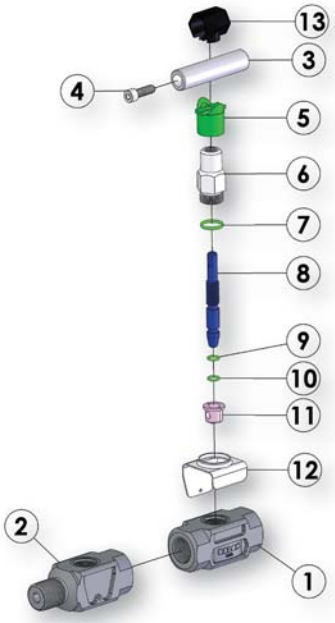


Diagram A (M x F)

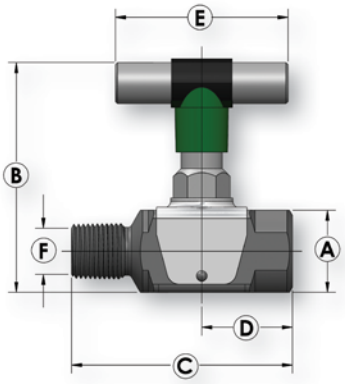
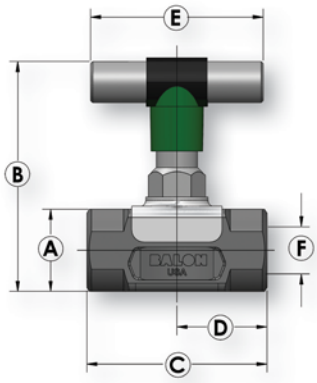


Diagram B (F x F)



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

BALON

Threaded Needle Valves

10000 PSI / Metal Seated

- Bonnet Locking Shroud
- Precise Metering
- 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	Bonnet Locking Shroud	304 Stainless Steel
12	Handle Cover	Polypropylene

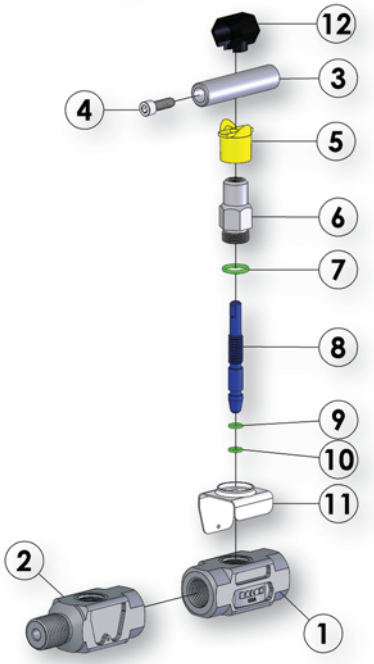


Diagram A (M x F)

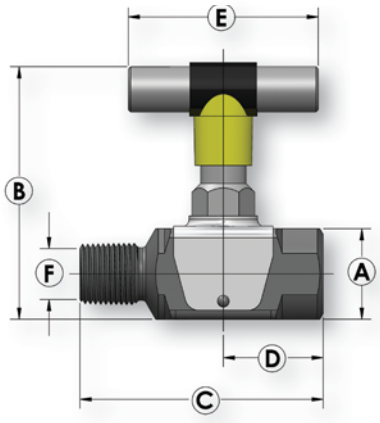
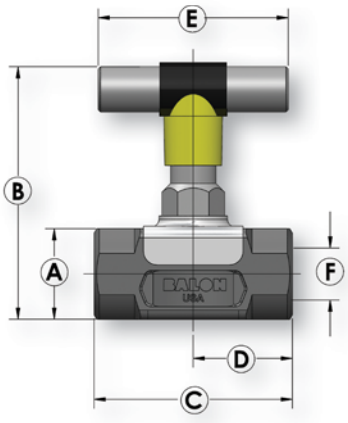


Diagram B (F x F)



Dimensional Data

SIZE	CATALOG NUMBER		SEAT	DIAGRAM	A	B	C	D	E	F	LBS.
	STAINLESS STEEL	NACE									
.25	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

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 on 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 F.O.B. at Balon's plant in Oklahoma City 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.

Transfer of Title, Risk of Loss, Freight Charges, Allowances, and Claims: All shipments are F.O.B. at Balon's plant in Oklahoma City, Oklahoma. 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 on orders with a minimum product weight of 1,000 pounds or more for shipment to one destination within the continental United States or Canada (excluding Alaska and Hawaii). Freight allowances are via least expensive way determined by Balon in its sole discretion. If Buyer designates a more costly transportation route or carrier, Balon shall have the right to assess a charge upon Buyer for the difference between the cost of Buyer's designated transportation route or carrier and the least expensive transportation method available to Balon. Unless requested in writing by the Buyer and acknowledged in writing by Balon, Balon does not insure shipments against damage or loss in transit. If agreed by Balon in writing, Balon will place insurance at Buyer's expense as nearly as possible in accordance with Buyer's written instructions and in such case Balon acts only as agent between the insurance company and the Buyer and assumes no liability whatsoever. Any claims for shipping loss, breakage, or damage (obvious or concealed) are Buyer's responsibility and must be made to the carrier or insurer, as applicable. All claims regarding shortages must be made to Balon in writing within thirty (30) days from receipt of shipment and must be accompanied by the packing list(s) covering the 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: Firm 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.

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 no 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. Returned product may only be exchanged for merchandize credit valid for future purchases and is not eligible for refund or cash reimbursement. All returns are final. Unused products of current manufacturing design may be returned only upon written consent of 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. A deduction will be made for 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.

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.

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.

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. 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

BALON

THANK YOU FOR SPECIFYING BALON VALVES.

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





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