



# VAAS AUTOMATION

## Head Office & Marketing Office in India

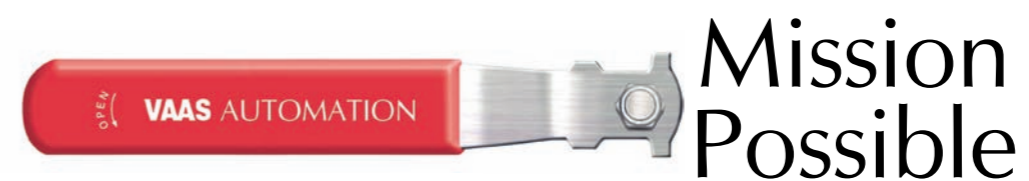
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(formerly Habonim VAAS Automation Pvt. Ltd.)  
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E-mail: sales@vaasautomation.com, www.vaasval.com

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VAAS Automation Ball Valves. At the heart of a successful mission

**Authorised Dealer;**  
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**Email : sales@pushkarnasales.com**  
**Web : www.pushkarnasales.com**

# VAAS AUTOMATION

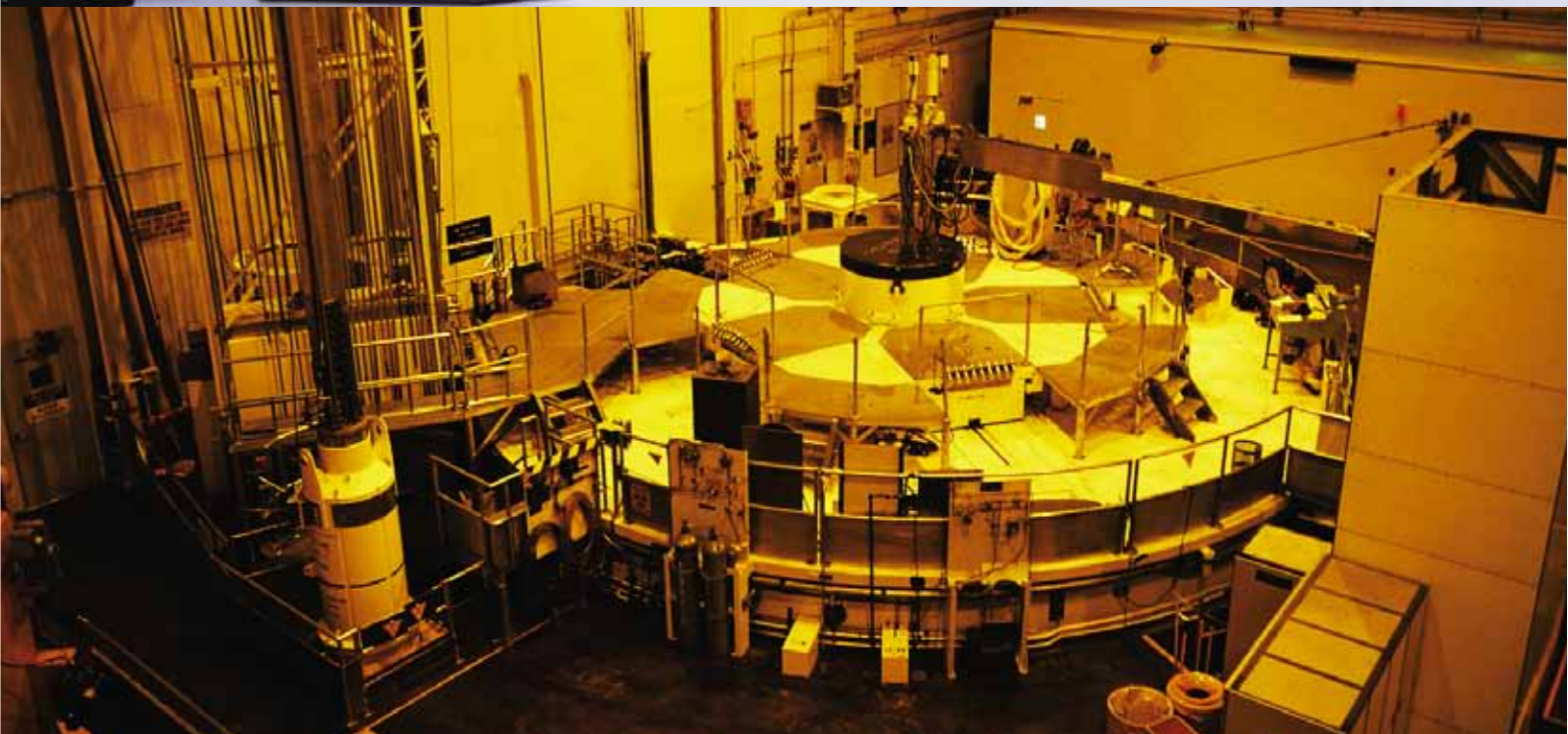


In sensitive, radioactive nuclear plants;

In processes critical for human life -  
pharma, food processing,  
water treatment;

In extreme environments;

There is one valve you can count on to  
keep the flow going ...



*VAAS Automation Ball Valves.*



## Tried and Trusted

VAAS Automation (formerly Habonim VAAS Automation Pvt. Ltd.) was established in 1995. VAAS valves have stood the test in a variety of installations across Asia Pacific. From critical industries like nuclear facilities and rocket testing labs to bio-tech, pharma and desal projects - wherever quality and reliability is valued, VAAS Ball Valves have been a preferred choice.

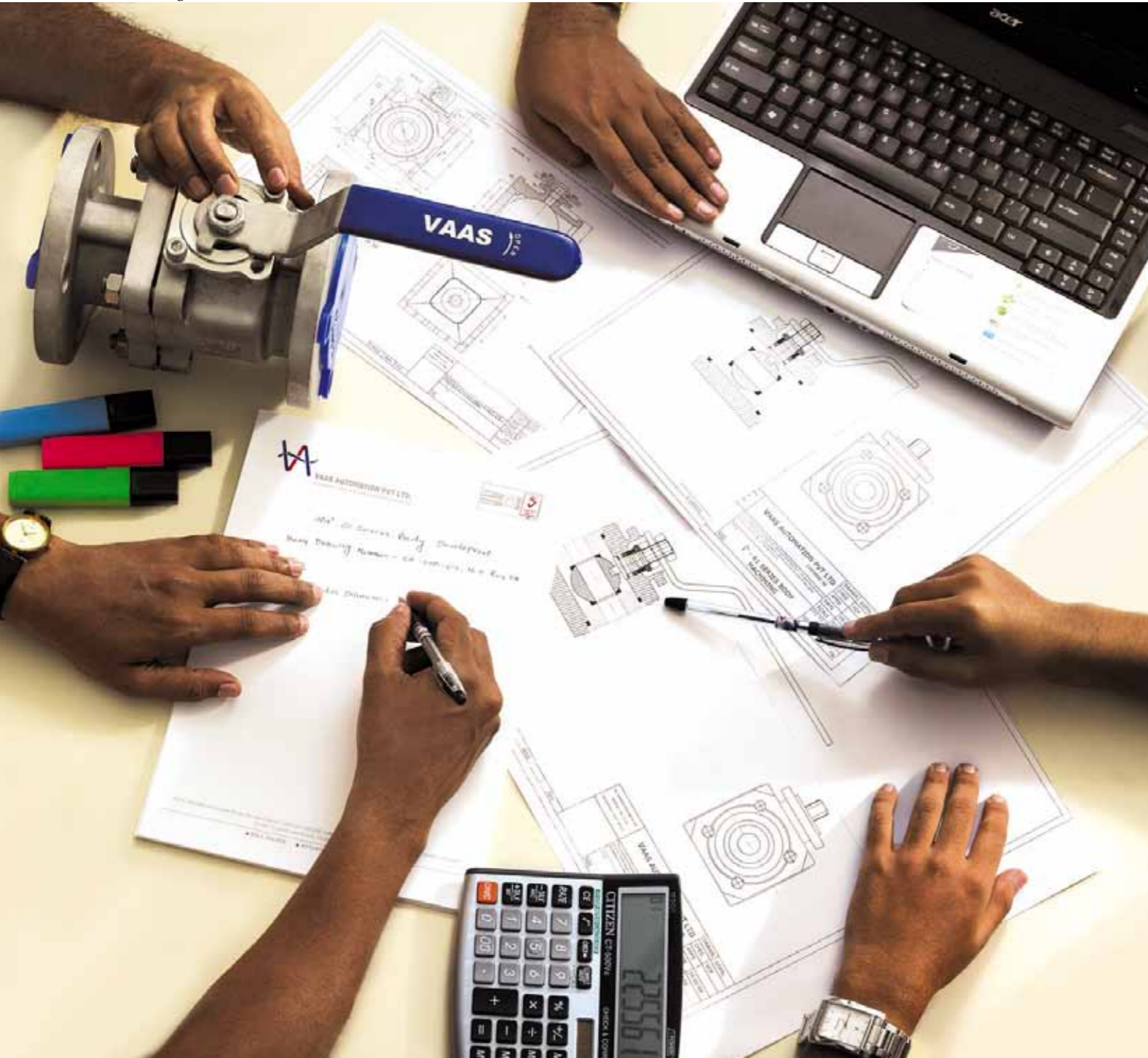
## Our Mission

To be leaders in quality ball valves and actuators and to provide innovative valve solutions around these products.

## The Preferred Valve in Asia-Pacific

Access to the best international technology and investment in a modern manufacturing unit in India has given VAAS the unique opportunity to make world class valves cost-effectively. In a relatively short span VAAS valves have found their way into projects and plants all over India, Thailand, Singapore, Malaysia, Philippines, Australia and New Zealand.

*From design to execution*



*Clean Room at VAAS Automation*

*Quality Testing*



## Facilities:

VAAS Ball Valves are manufactured in a state-of-the-art manufacturing unit in India, staffed with experienced engineers and technicians. We have exacting design, manufacturing and testing processes. This makes it possible for even a standard three-piece valve to be used up to 20 micron vacuum!

## Machining:

- CNC Turning centers for machining of our components
- CNC Vertical turning center for machining of larger Bodies and Ends.
- Drilling machines for drilling of Bodies and Ends

## Testing:

- Test stand for three piece and smaller size valves
- Non compression test stand for Flanged valves.
- High pressure test pump for high pressure valves.
- Fire-Safe testing facility for Fire-safe testing of valves.
- PMI testing equipment for Positive Material Identification.

## Quality:

An uncompromising stand where quality is concerned has led to the high standard of our products. A Quality Assurance program is in place covering all activities from purchase to dispatch with complete traceability for materials and processing. All VAAS Ball Valves are shipped with complete traceability and certification complying to 3.1b.

## VAAS Ball Valves can be offered, complying to:

Fire –Safe Certified to API 607 VIth Edition/ISO 10497-5:2004

CE/ATEX - 97/23/EC

TA-LUFT– Dual sealing in the gland as required by TA-LUFT

TFM seats as standard with SRS built in

## Product Range:

VAAS Ball Valves are available in 8-300 mm size in single, 2 piece and 3 piece designs in carbon steel, stainless steel and special alloys.

Options include special constructions for fire-safe to API 607, oxygen service, chlorine service, 3-way diverters, tank bottom valves, v-port control valves, cryogenic valves and valves for high vacuum services.

## Custom Designs:

VAAS Automation provides customised solutions by designing valves to suit your requirements using the latest CAD design and drafting tools.

## Valve Automation:

We do complete engineering, procurement and supply of any type of automated quarter-turn valves with actuators and accessories such as solenoids, proximity switches, positioners, etc. Multi-position actuation, controlled-speed actuation, breather blocks and other special requirements such as actuators with stainless steel dome cover for extremely corrosive environments are also available.

## Applications:

VAAS Automation is one of the few companies capable of supplying ball valves for ultra clean applications such as those in the food, pharma, bio, desal, nuclear and other industries.

## Service and Support:

Our highly experienced field service teams are known for their quick response and their commitment to save clients' downtime by getting plants back into action as soon as possible. Our core service team is supported directly by our own operations in Europe and North America and through our distributors worldwide.

## Customer Base:




Significant supplies to some of the biggest projects and leading names in Pharma, Bio-Tech, Pulp and Paper, Oil, Chemical, Nuclear and other high tech industries in India, South East Asia, Australia and New Zealand.

Now, VAAS Automation will continue to cater to these customers with an enhanced range of high quality ball valves.



# High Performance Series



	47 Series	41 Series	42/46 Series
			
<b>Design</b>	Standard Two Way	Standard Two Way	Standard Two Way
<b>Size range</b>	8mm - 150mm (1/4" to 6")	8mm - 65mm (1/4" to 2.1/2")	8mm - 50mm (1/4" to 2")
<b>Pressure Rating</b>	Cl.800 Rating upto 65 mm (2.1/2")	Cl.800 Rating	Cl.800 Rating
<b>End Connections</b>	Screwed Socket welded Butt Welded Flanged Tri-clamp etc.	Screwed Socket welded Butt Welded Flanged Tri-clamp etc.	Screwed Socket welded Butt Welded Flanged Tri-clamp etc.
<b>MOC-Body and Ends</b>	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.
<b>MOC - Seats</b>	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin
<b>Applications</b>	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.
<b>Applicable Standards</b>	EN 17292 EN 12266-1 API 607 ISO 10497	EN 17292 EN 12266-1	EN 17292 EN 12266-1

## Sleeve Colours:

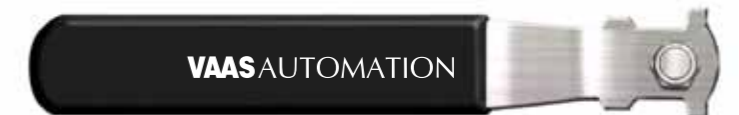
VAAS Automation valves are supplied with sleeves in standard colours of blue (High Performance) and green (Utility). Special service valves will be provided in the following sleeve colours:



Thermal service



Cryogenic service



Water Treatment service



Chlorine service

## Diverter Valves

Diverter options available are bottom entry and side entry.








# High Performance Series



## ANSI Series

## DIN-Series

	31 Series	32 Series	73 Series	74 Series	90 Series
					
<b>Design</b>	Regular Bore Standard Two Way	Regular Bore Standard Two Way	Full Bore Standard Two Way	Full Bore Standard Two Way	Full Bore Standard Two Way
<b>Size range</b>	15mm to 250mm	15mm to 250mm	15mm to 300mm	15mm to 300mm	15 mm to 150 mm
<b>Pressure Rating</b>	Cl.150 (ANSI/ASME)	Cl.300 (ANSI/ASME)	Cl.150 (ANSI/ASME)	Cl.300 (ANSI/ASME)	PN 16 (DIN Standard) PN 40 upto 50mm
<b>End Connections</b>	Flanged	Flanged	Flanged	Flanged	Flanged
<b>MOC-Body and Ends</b>	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.
<b>MOC - Seats</b>	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin	TFM
<b>Applications</b>	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.	Standard valve suitable for variety of standard and special applications.
<b>Applicable Standards</b>	EN 17292 ASME B 16.10 EN 12266-1 API 607 ISO 10497	EN 17292 ASME B 16.10 EN 12266-1 API 607 ISO 10497	EN 17292 ASME B 16.10 EN 12266 API 607 ISO 10497	EN 17292 ASME B 16.10 EN 12266 API 607 ISO 10497	EN 17292 EN 12266 API 607 ISO 10497


PED approval : PED 97/23/EC for all products

Please refer to the VAAS Order Code System at the end of this catalogue for ordering information



**SPECIAL**

# Special Valves

	61 Series	27 Series	48 Series
			
<b>Design</b>	Three / Four Way	Two Way	Standard Two Way
<b>Size range</b>	20mm to 100mm (3/4" to 4")	8mm to 150mm (1/4" to 6")	15mm to 100mm 1/2" - 4"
<b>Pressure Rating</b>	Cl.150 Rating (ANSI/ASME)	Cl.2500 Rating (ANSI/ASME)	Cl.150 Rating
<b>End Connections</b>	Screwed Socket Welded Butt Welded Flanged Tri-clamp etc.	Screwed Socket Welded Butt Welded Flanged	BWO ETO Tri clamp etc.
<b>MOC-Body and Ends</b>	Carbon Steel Stainless Steel	Carbon Steel (Bar Machined) Stainless Steel (Bar Machined)	Stainless Steel Monel Hastelloy Alloy 20 etc.
<b>MOC - Seats</b>	PTFE TFM	Deirin PEEK	PTFE TFM PEEK
<b>Applications</b>	Valves suitable for delivering and mixing applications.	High pressure Valves	High purity
<b>Applicable Standards</b>	ASME B16.34 EN 12266	ASME B16.34 ASME B16.10 EN 12266 API 607 ISO 10497	ASME B16.34 EN 12266

# Automation



VAAS Automation offers a complete range of ball valves with a choice of pneumatic or electric actuators. Accessories such as air filter regulators, solenoid valves, limit switches, positioners, etc. also can be included to complete the automation package, assembled and tested in-house by us. We have strategic arrangements with the leading manufacturers of these accessories to offer optimum solutions.

# Chlorine Service Valves

## Design

The ball has a relief hole on its upstream side to ensure that excess pressure in the ball and body cavity of the closed valve will relieve spontaneously towards the direction of high pressure. A directional arrow on the valve shows the direction of the flow. The valve has a blowout proof stem. The stem seals can be externally adjusted. These valves are available in fire-safe construction.

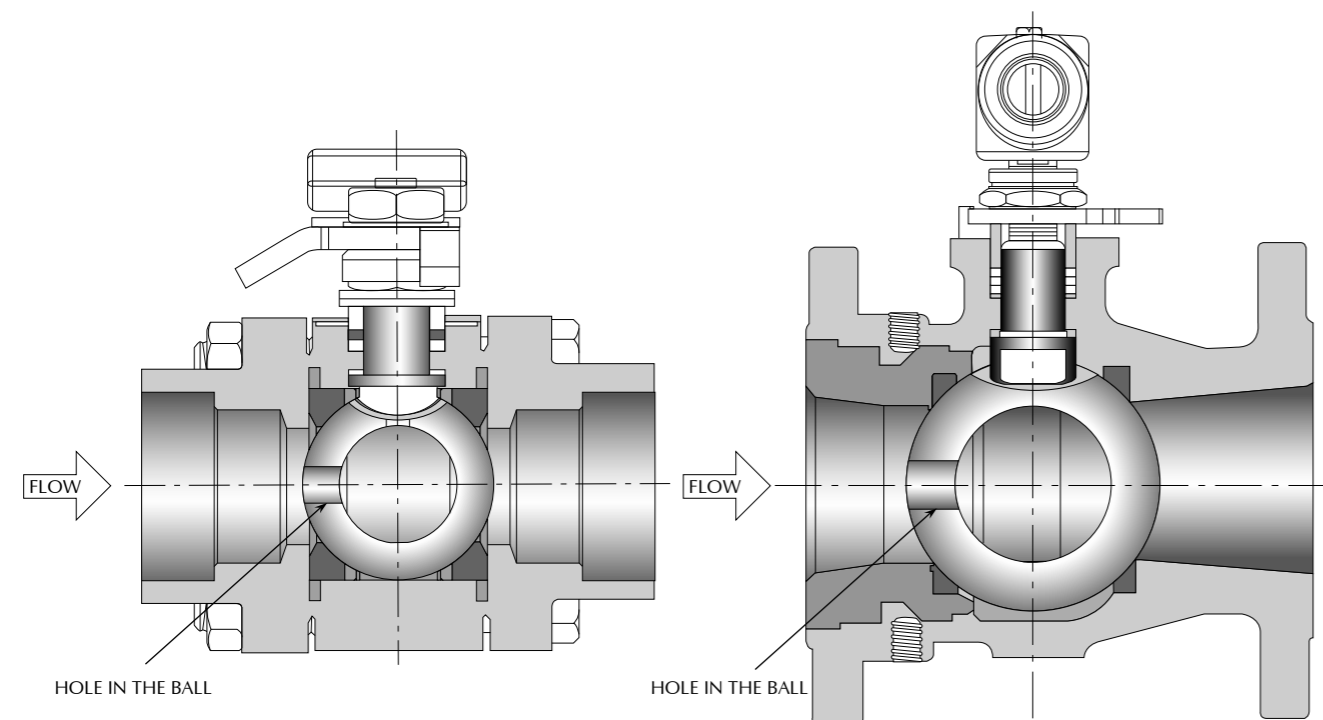
VAAS Automation carries a wide selection of valves suitable to fulfill most applications:-

Flanged valves from 15NB(1/2") to 300 NB(12") class 150 and class 300 and three piece valves from 8 NB (1/4") to 150 NB (6").

Valves are specially degreased, cleaned, assembled and packed in a clean room in accordance with "Ball valves for Chlorine Service" specifications. Special chlorine service lubricants are used for valve seats and stem seals. Valves with desiccants (silica gels) are bagged and sealed in polyethylene bags, tagged with a sticker "For Chlorine Service". Valves for chlorine service are identified by a letter " K " before the series number. Valve sizes 1/4" to 2" are fitted with a yellow sleeve on the wrench.

## Accessories

Chlorine Service Valves can be fitted with optional "Fugitive Emission Kits" with secondary stem packing to eliminate stem leakage and two monitoring ports, for detection and accumulation of possible leaks. Locking devices and stem extensions to accommodate insulation are available.



Valve shown in closed position

# Oxygen Service Valves

VAAS Automation's "O" Series Oxygen Service ball valves can be used with both liquid and gaseous oxygen. All valves designated for Oxygen Service are carefully prepared and cleaned to the high degree required for the safe operation of Oxygen Service equipment and to maintain product purity.

## Materials of Construction

Gaseous oxygen is non corrosive and may be contained in systems constructed of any common metal. Stainless steel, bronze and brass are the preferred material for all metal components coming in contact with oxygen. Ordinary carbon steels and most alloy steels lose their ductility in high temperatures and are therefore considered unsatisfactory for liquid oxygen service. Also, carbon steels cannot be adequately cleaned for oxygen service.

## Oxygen Hazards

Never permit oil, grease or other combustible substances to come in contact with Oxygen Service Valves or valve parts. Combining with these substances can result in violent explosions.

## Design

VAAS carries a wide selection of valves for Oxygen Service suitable to fulfill most applications. Valves are available with screwed, socket weld, ANSI Class 150 and ANSI Class 300, DIN PN16 and DIN PN40 flanged ends.

Flanged valves range from 15 NB (1/2"). to 300 NB (12") and three piece valves from 8 NB (1/4"). to 150 NB (6").

Body materials include 316 stainless steel, Monel, Bronze and Brass. Standard ball and stem material is 316 stainless steel or brass.

PTFE or glass filled PTFE are inert in oxygen and are the standard seat and seal material for Oxygen Service.

Acetal Resin (Delrin) seats and Nylatron stem thrust seals **MUST NOT BE USED IN OXYGEN SERVICE**

VAAS Oxygen Service Valves may be used on both liquid and gaseous oxygen. For temperatures below -60°C, our Cryogenic Valves are recommended.

## Preparation

All valve components used for oxygen service, in gaseous or liquid state, are deburred to a high standard and specifically cleaned to remove any traces of oil, grease or hydrocarbon materials before assembly. Assembly of Oxygen Service Valves is carried out in a "Clean Area". using lint free, gloved hands to assure absence of grease or dust. Only lubricants compatible with oxygen are used. Valve seating and external leakage pressure tests are conducted in the "Clean Area", using grease free nitrogen. Only specially clean tools are used for valve assembly.

## Packing

The successfully tested valves are restored to the "open" position. A "Silica-gel pack" is placed in each valve end and capped. The capped valve is labeled "Prepared for Oxygen Service", and sealed in a polyethylene bag. A second label is attached to the sealed bag, clearly stating - "Caution, Silica-gel Pack in each valve end - remove before operating or putting into service." Valves for oxygen service are identified by a letter "O" before the series number.



# Cryogenic Service Valves

Our Cryogenic Ball Valves, available in 3-piece design or flanged design to ANSI class 150# and class 300#, offer tight shut off, high flow capacity, long service life and exceptional performance under extremely cold working temperatures.

## Cryogenic Valves

Cryogenic Ball Valves are available in 3-piece or flanged design, like C47/C31/C73 series. Other valve options include diverter valves, V-Port control etc.,

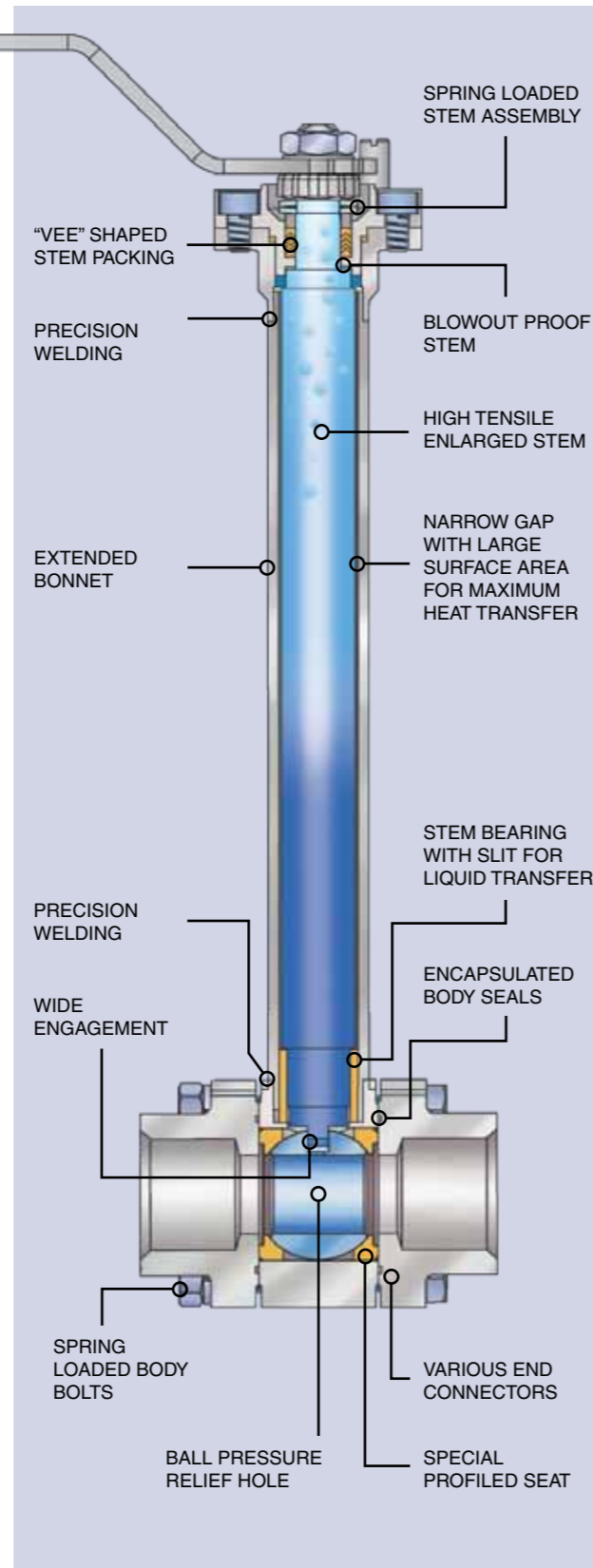
## Valve Features

Cryogenic Ball Valves are designed specifically for cryogenic applications. All the cryogenic valves have an extended bonnet with an ISO 5211 mounting pad. The extension prevents cryogenic liquids from boiling and converting to gas. The balls have a pressure relief hole on the upstream side to prevent overpressure of the body cavity from thermal expansion. The valve is uni-directional with an arrow showing flow direction.



### Other features included are:

- Straight through-flow providing minimum pressure loss and maximum flow
- Tight shutoff according to Cryogenic standards
- Quick opening for automation
- Rugged construction with precision welding of bonnet extension
- Blowout proof one-piece stem with enlarged diameter and wide stem-to-ball engagement
- Seats with specially designed profiles to allow flexible movement under very low temperatures
- Encapsulated body seals
- Spring loaded stem assembly
- "V" shaped PTFE stem packing with 5 seals to reduce stem leakage



# Vacuum Service Valves

Made to the same high standards of quality that mark a VAAS Automation Ball Valve, our vacuum service valves are versatile and reliable.

Our standard valves with no special preparation can effectively be used in vacuum service down to 20 microns. When higher vacuum service is required, valves specially prepared can be used down to  $10^{-6}$  mm or mercury.

## Higher Vacuum Service:

Valves for Higher Vacuum Service will require all the valve components – "CLEAN", "DRY ASSEMBLED", "TESTED", "BAGGED AND SEALED IN POLYETHYLENE BAGS" with "SILICA GELS", clearly marked for Vacuum Service.

# Cavity Filler Valves

Cavity Filler Valves are the solution when there is no room for any sediment inside the valve. The seats almost completely fill the cavity inside the valve and ensure that there is minimal sediment present between the ball and the body.



# Seat Variants and Applications



- A** - Modified PTFE
- T** - PTFE
- R** - 15 % Glass filled PTFE
- J** - 25% Glass filled PTFE
- P** - Carbon filled PTFE
- N** - 33% Carbon filled PTFE
- Y** - Delrin (Acetal Resin)
- K** - PEEK (Virgin)
- L** - Carbon filled PEEK
- U** - Ultra High Molecular Weight Polyethylene

## Special Seat Designs:

### DIVERTER SEAT

One piece seat and seal for diverter and double block and bleed valves.

### CAVITY FILLER

One piece seat and seal enveloping the valve ball and stem, eliminating dead space in the valve cavity.

## Seat Variants and Applications

### A TFM Modified PTFE

TFM is a chemically modified PTFE that offers enhanced properties while retaining all the proven advantages of conventional PTFE, FDA grade.  
Colour: White

### T PTFE

Inert to most chemicals, low coefficient of friction, recommended for water, foodstuff and corrosive chemicals.  
Colour: White

### R 15% glass filled PTFE

Withstands higher pressures than virgin PTFE. Good resistance to wear and deformation under load.  
Colour: Off-White

### J 25% glass filled PTFE

Similar to 15% glass filled PTFE seats but better resistance to wear and deformation under load.  
Colour: Gray-White

### N 33% Carbon filled PTFE

Specially for steam and vegetable oils, low coefficient of friction.  
Colour: Black

### P Carbon filled PTFE

Specially for steam and thermal oil, low coefficient of friction, inert to most media.  
Colour: Pale Black

### U Ultra High Molecular Weight Polyethylene (UHMWPE)

Good for nuclear, Tobacco, H<sub>2</sub>SO<sub>4</sub> and Chemical resistance application, low coefficient of friction. Temperature limit of 80° C  
Colour: Pale White

### C PCTFE

Cryogenic applications such as oxygen, hydrogen, nitrogen and more suitable for temperature up to -260°C  
Colour: See-through White

### Y Acetal Resin(Delrin)

Suitable for high pressures, good resistance to

wear and deformation under load, temperature limit 80° C. Must not be used in presence of oxygen.  
Colour: Creamy White

### K Carbon filled PEEK

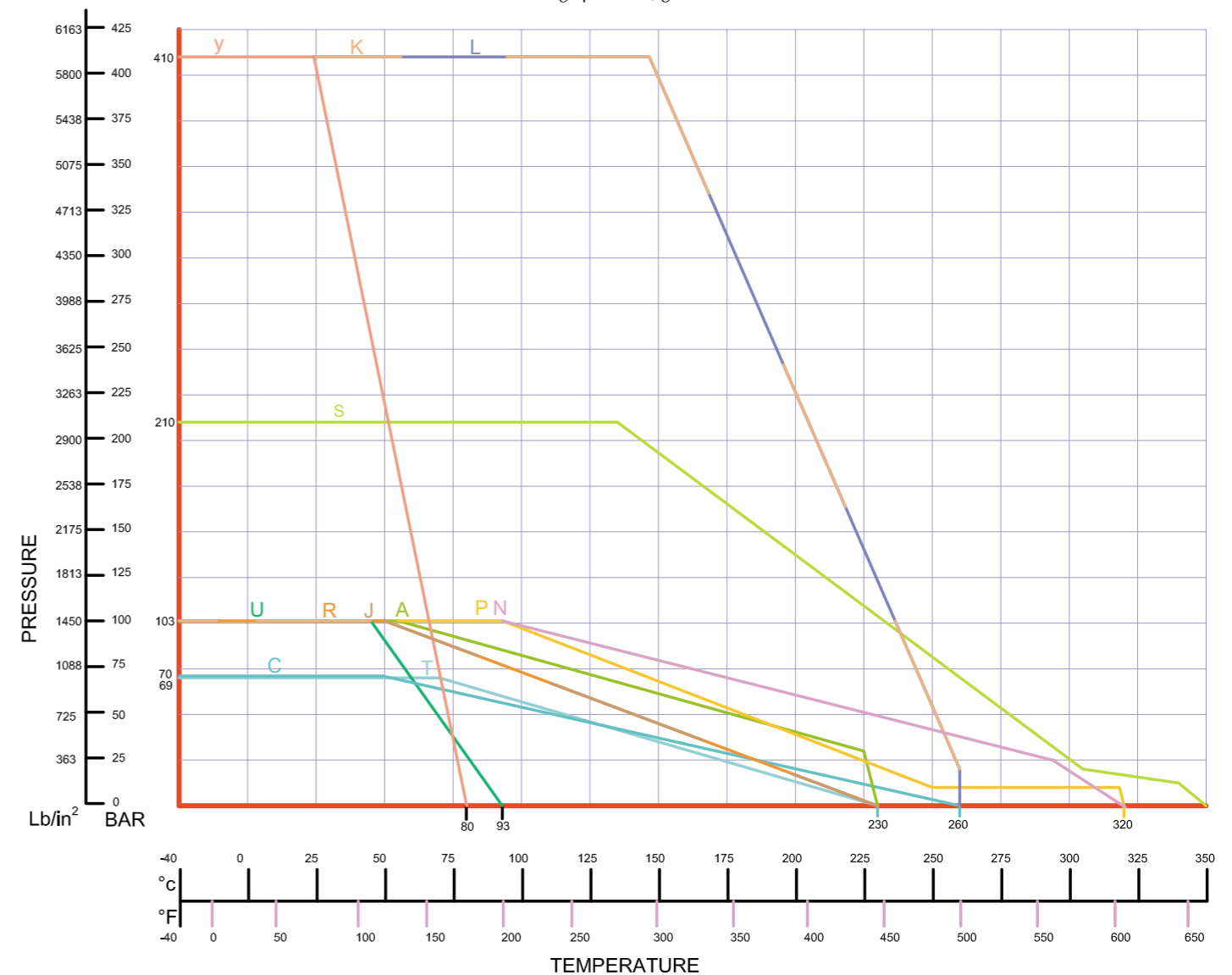
Suitable for elevated temperatures, good resistance under high pressure loads, low coefficient of friction, suitable for many corrosive applications.  
Colour: Charcoal Black

### L Virgin PEEK





Similar to filled PEEK but higher coefficient of friction, suitable for nuclear, Tobacco, FDA and clean applications.  
Colour: Beige

### S VESPEL

Vespel is a polyimide material that has high temperature capabilities under load and is mainly used for heat transfer applications, hot gasses and oils. Vespel must not be used with STEAM or media containing WATER VAPOR.  
Colour: Brown



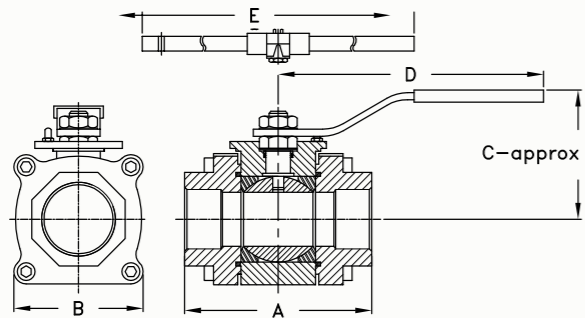
# Utility Valve Service

	40 Series	45 Series	35 Series	75 Series
				
<b>Design</b>	Standard Two Way Full and Regular Bore	Standard Two Way Full and Regular Bore	Standard Two Way Regular Bore	Standard Two Way Full Bore
<b>Size range</b>	8mm to 65mm (1/4" to 2.1/2")	15mm to 150mm ((1/2" to 6")	15mm to 150mm (1/2" to 6")	15mm to 150mm (1/2" to 6")
<b>Pressure Rating</b>	Cl.800 Rating	1000 WOG	Cl.150 (ANSI/ASME)	Cl.150 (ANSI/ASME)
<b>End Connections</b>	Screwed Socket welded Butt Welded Flanged Tri-clamp etc.	Screwed Socket welded Butt Welded Flanged Tri-clamp etc.	Flanged	Flanged
<b>MOC-Body and Ends</b>	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel Duplex Stainless Steel Monel Hastelloy Alloy 20 etc.	Carbon Steel Stainless Steel	Carbon Steel Stainless Steel
<b>MOC - Seats</b>	PTFE TFM Glass filled PTEE Carbon filled PTEE PEEK Delrin	PTFE TFM Glass filled PTEE Carbon filled PTEE	PTFE TFM	PTFE TFM
<b>Applications</b>	Utility Valves	Utility Valves	Utility Valves	Utility Valves
<b>Applicable Standards</b>	ASME B16.34 ASME B16.10 EN 12266-1	ASME B16.34 EN 12266-1	ASME B16.34 ASME B16.10 EN 12266-1	ASME B16.34 ASME B16.10 EN 12266-1

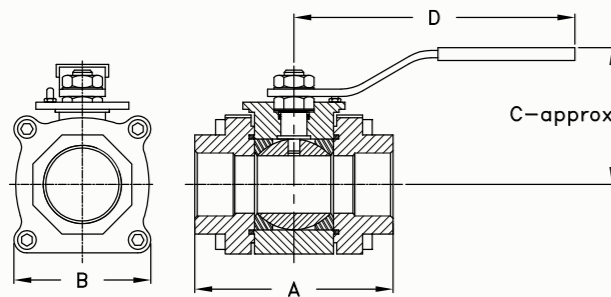
PED approval : PED 97/23/EC for all products

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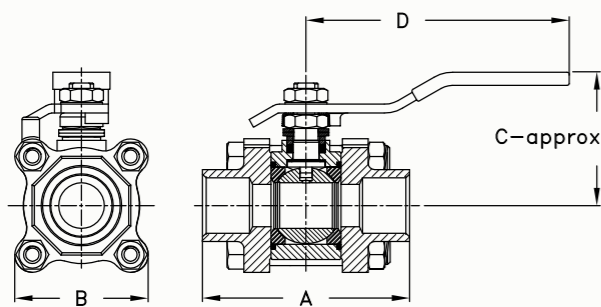
## High Performance Valves - 3 piece valves



47 SERIES						
VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
8 MM (1/4")	66	47	61	150	-	0.6 (1.33)
10 MM (3/8")	66	47	61	150	-	0.6 (1.33)
15 MM (1/2")	71	53	61	150	-	0.6 (1.33)
20MM (3/4")	71	53	63	150	-	0.8 (1.77)
25MM (1")	95	63	79	187	-	1.6 (3.54)
32MM (1-1/4")	108	71	84	187	-	2.5 (5.53)
40MM (1-1/2")	115	86	97	237	-	3.6 (7.96)
50MM (2")	128	96	101	287	-	4.5 (9.95)
65MM (2-1/2")	158	108	115	287	-	9.5 (21.0)
80MM (3")	169	140	185	-	400	13.7 (30.28)
100MM (4")	214	177	200	-	600	23.7 (52.4)
150MM (6")	239	200	211	-	600	30.0 (66.3)



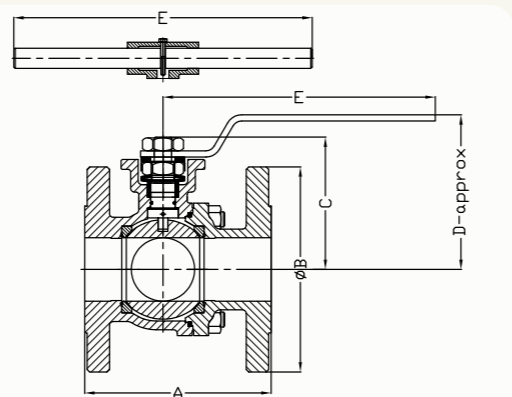
41 SERIES					
VALVE SIZE MM (INCHES)	A	B	C	D	WEIGHT Kg. (lb)
8 MM (1/4")	66	47	61	150	0.6 (1.33)
10MM (3/8")	66	47	61	150	0.6 (1.33)
15MM (1/2")	71	53	61	150	0.6 (1.33)
20MM (3/4")	71	53	63	150	0.8 (1.77)
25MM (1")	95	63	79	187	1.3 (2.87)
32MM (1-1/4")	108	71	84	187	2.1 (4.64)
40MM (1-1/2")	115	86	97	237	3.0 (6.63)
50MM (2")	128	96	101	287	4.1 (9.06)
65MM (2-1/2")	158	108	115	287	8.9 (19.67)



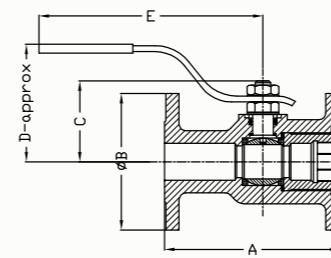
42/46 SERIES					
VALVE SIZE MM (INCHES)	A	B	C	D	WEIGHT Kg. (lb)
8MM (1/4")	66	47	61	150	0.6 (1.33)
10MM (3/8")	66	47	61	150	0.6 (1.33)
15MM (1/2")	71	53	61	150	0.6 (1.33)
20MM (3/4")	71	53	63	150	0.8 (1.77)
25MM (1")	95	63	79	187	1.6 (3.54)
32MM (1-1/4")	108	71	84	187	2.5 (5.53)
40MM (1-1/2")	115	86	97	237	3.6 (7.96)
50MM (2")	128	96	101	287	4.5 (9.95)
65MM (2-1/2")	158	108	115	287	9.5 (21.0)

## DIN Series Valves

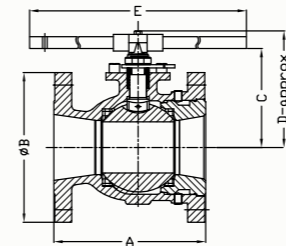
90 SERIES						
DN	A	B	C	D	E	WEIGHT Kg. (lb)
15	115	95	47	73	150	2.5(5.53)
20	120	105	65	91	150	3.2(7.07)
25	125	115	74	96	170	4.2(9.28)
32	130	140	87	109	170	5.5(12.16)
40	140	150	96	114	219	7.10(15.69)
50	150	165	107	125	219	9.5(21.00)
65	170	185	125	170	400	14.5(32.04)
80	180	200	136	180	400	18(39.78)
100	190	235	163	210	610	29(64.09)
125	325	270	220	284	900	60(132.60)
150	350	300	236	300	900	72(159.12)
200	400	375	281	347	900	140(309.40)



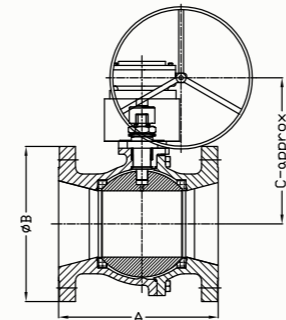
## High Performance Valves - Flanged



31/32 SERIES									
VALVE SIZE MM (INCHES)	A		B		C	D	E	WEIGHT Kg. (lb)	
	150	300	150	300				150	300
15 MM (1/2")	108	140	89	95	38	92	151	1.7 (3.8)	2.4 (5.3)
20 MM (3/4")	117	152	98	117	40.3	94	151	2.3 (5.1)	3.3 (7.3)
25 MM (1")	127	165	108	124	55.6	103.5	170	3.3 (7.3)	4.6 (10.2)
40 MM (1-1/2")	165	190	127	156	73.1	119.2	221	5.5 (12.2)	8.7 (19.3)
50 MM (2")	178	216	152	165	77.8	123.9	221	8.1 (18.0)	10.8 (24.0)



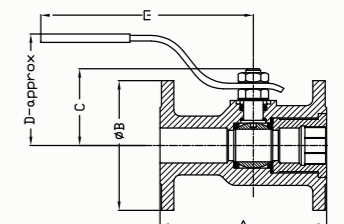
31/32 SERIES									
VALVE SIZE MM (INCHES)	A		B		C	D	E	WEIGHT Kg. (lb)	
	150	300	150	300				150	300
80 MM (3")	203	284	191	210	145	185	400	18.0(40.0)	22.7(50.4)
100 MM (4")	229	295	229	254	161	201	610	28.2(62.8)	36.3(80.6)
150 MM (6")	267	305	279	318	226	285.9	916	41.0(91.0)	69.0(153)
200 MM (8")	292	419	343	381	254	313.6	916	82.0(182)	105 (233)



31/32 SERIES							
VALVE SIZE MM (INCHES)	A		B		C	WEIGHT Kg. (lb)	
	150	300	150	300		150	300
200 MM (8")	292	419	343	381	550	105 (233)	230 (511)
250 MM (10")	533	xx	406	445	650	210 (466)	350 (777)

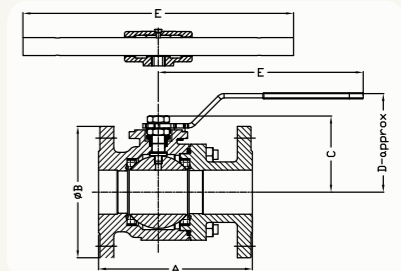
### 73/74 SERIES

VALVE SIZE MM (INCHES)	A		B		C	D	E	WEIGHT Kg. (lb)	
	150	300	150	300				150	300
15 MM (1/2")	108	140	89	95	40.5	94	151	1.8 (4.0)	2.3 (5.1)
20 MM (3/4")	117	152	98	117	55.6	103.5	170	2.2 (4.8)	3.3 (7.3)
25 MM (1")	127	165	108	124	60.3	108	170	3.2 (7.0)	4.6 (10.1)



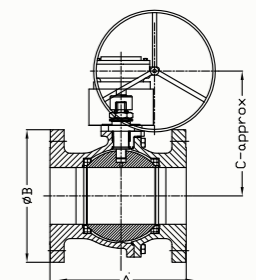
### 73/74 SERIES

VALVE SIZE MM (INCHES)	A		B		C	D	E	WEIGHT Kg. (lb)	
	150	300	150	300				150	300
40 MM (1-1/2")	165	190	127	156	77.8	124	221	6.6 (14.5)	9.8 (21.5)
50 MM (2")	178	216	152	165	88	134.2	221	13.0 (28.6)	15.0 (33.0)
80 MM (3")	203	283	191	210	154.6	194.8	400	26.0 (57.0)	29.0 (64.0)
100 MM (4")	229	305	229	254	170.6	211	610	34.0 (75.0)	39.0 (86.0)
150 MM (6")	394	403	279	318	248.5	308	916	71.0 (156)	78.0 (172)



### 73/74 SERIES

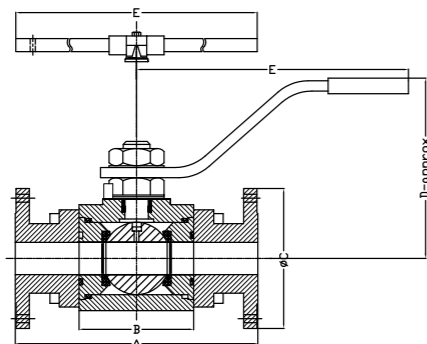
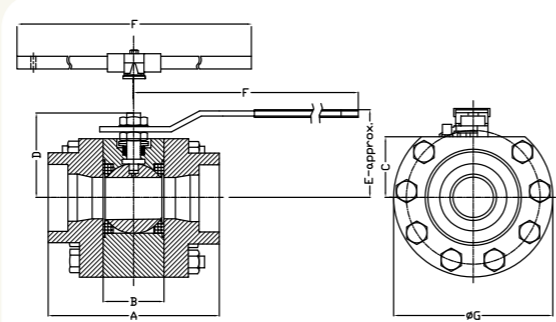
VALVE SIZE MM (INCHES)	A		B		C	WEIGHT Kg. (lb)	
	150	300	150	300		150	300
200 MM (8")	292	419	343	381	550	210 (467)	260 (577)
250 MM (10")	568	xx	406	445	650	350 (777)	425 (944)
300 MM (12")	267	xx	483	521	750	380 (844)	440 (977)



## Special Valves

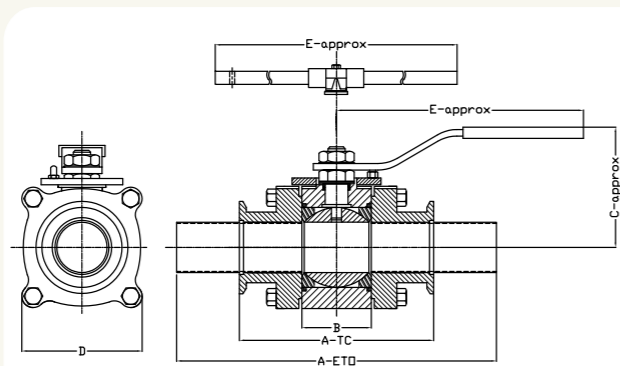
### 27 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	F	ØG	WEIGHT Kg. (lb)
15MM(1/2")	70.6	20.6	27	38.1	46	179	70	1.9 (5.1)
20MM(3/4")	88.6	24.6	30	40.5	48	179	80	2.4 (7.3)
25MM(1")	93.7	31.8	38.2	50.5	61	192	98	4.5 (12.2)
32MM(1-1/4")	108	41.3	42.8	61.0	65	192	105	5.4 (12.2)
40MM(1-1/2")	128	48.4	50	74.0	80	287	130	9.5 (18.0)
50MM(2")	156	56.4	55	77.8	84	287	145	13.1 (18.0)
80MM(3")	224	83.3	70	145	185	400	215	38.8 (18.0)
100MM(4")	268	108.8	90	161	201	610	250	63.7 (18.0)



### 61 SERIES

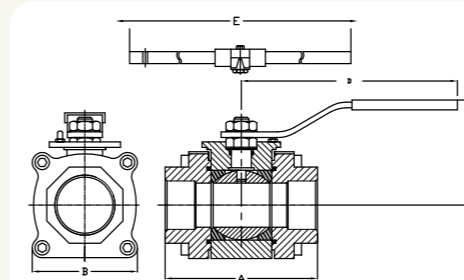
VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
20 MM (3/4")	154	62	98	80	187	2.75 (5.1)
25 MM (1")	167	71.8	108	85.5	187	4.0 (7.3)
32 MM (1-1/4")	174.5	76	108	90	187	5.8 (12.2)
40 MM (1-1/2")	208	91	127	103	236	7.5 (12.2)
50 MM (2")	228.7	107.2	152	139.4	255	13.5 (18.0)
65 MM (2-1/2")	242.9	125	178	150.9	255	21.0 (18.0)
80MM (3")	283.9	154	191	189	610	36.0 (18.0)
100MM (4")	324.8	206	229	203	610	60 (18.0)



### 48 SERIES

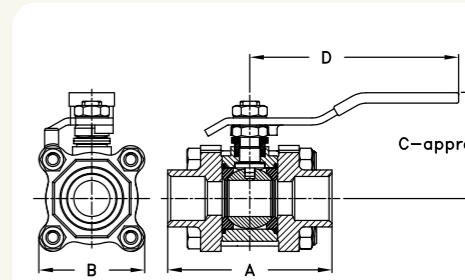
VALVE SIZE MM (INCHES)	A-ETO	A-TC	B	C	D	E	WEIGHT Kg. (lb)
15MM(1/2")	137	89	20.6	61.6	31.8	150	0.9 (2.0)
20MM(3/4")	147	102	24.6	67.9	38.1	150	1.0 (2.1)
25MM(1")	168	118	35.5	84.8	44.5	187	1.7 (3.8)
40 MM(1-1/2")	186	141	50.0	107.1	57.2	238	3.5 (7.7)
50MM(2")	223	184	72.7	143.1	84.0	258	9.4 (20.8)
65MM(2-1/2")	250.4	189.1	80.3	185.1	139.7	401	13.7 (30.3)
80MM(3")	302	193	96.4	192.5	160.0	401	17.7 (39.1)
100MM(4")	317.5	236.2	123	210.8	200.0	620	31.3 (69.2)

## Utility Valves



### 45 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
15 MM (1/2")	71	53	61	150	-	0.6 (1.33)
20 MM (3/4")	71	53	63	150	-	0.8 (1.77)
25 MM (1")	95	63	79	187	-	1.5 (3.31)
32 MM (1-1/4")	108	71	84	187	-	2.3 (5.08)
40 MM (1-1/2")	115	86	97	237	-	3.5 (7.73)
50 MM (2")	128	96	101	287	-	4.2 (9.28)
65 MM (2-1/2")	158	108	115	287	-	9.0 (19.89)
80 MM (3")	169	140	185	400	-	12.8 (28.29)
100 MM (4")	214	177	200	600	-	22.0 (48.62)
150 MM (6")	239	200	211	600	-	27.0 (59.67)

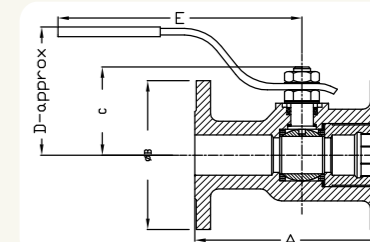


### 40/46 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	WEIGHT Kg. (lb)
8MM(1/4")	66	47	61	150	0.6 (1.33)
10MM(3/8")	66	47	61	150	0.6 (1.33)
15MM(1/2")	71	53	61	150	0.6 (1.33)
20MM(3/4")	71	53	63	150	0.6 (1.33)
25MM(1")	95	63	79	187	1.2 (2.65)
32MM(1-1/4")	108	71	84	187	2.1 (4.64)
40MM(1-1/2")	115	86	97	237	3.2 (7.07)
50MM(2")	128	96	101	287	4.0 (8.84)
65MM(2-1/2")	158	108	115	287	9.0 (19.89)

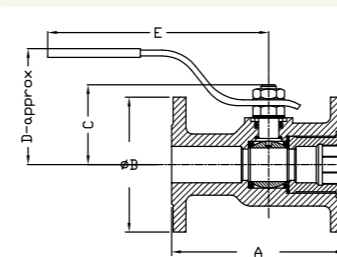
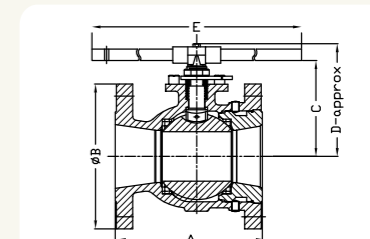
### 35 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
15 MM (1/2")	108	89	38	92	151	1.7 (3.8)
20 MM (3/4")	117	98	40.3	94	151	2.3 (5.1)
25 MM (1")	127	108	55.6	103.5	170	3.3 (7.3)
40 MM (1-1/2")	165	127	73.1	119.2	221	5.5 (12.2)
50 MM (2")	178	152	77.8	123.9	221	7.8 (17.2)



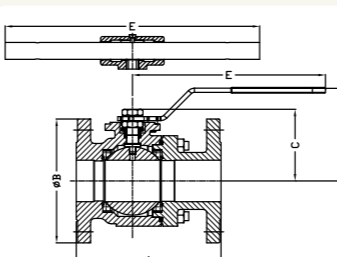
### 35 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
80 MM (3")	203	191	145	185	400	15.5 (34.2)
100 MM (4")	229	229	161	201	610	25.0 (55.3)
150 MM (6")	267	279	226	285.9	916	37.0 (81.8)



### 75 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
15 MM (1/2")	108	89	40.5	94	151	1.8 (4.0)
20 MM (3/4")	117	98	55.6	103.5	170	2.2 (4.8)
25 MM (1")	127	108	60.3	108	170	3.0 (6.6)



### 75 SERIES

VALVE SIZE MM (INCHES)	A	B	C	D	E	WEIGHT Kg. (lb)
40 MM (1-1/2")	165	127	77.8	124	221	6.0 (13.3)
50 MM (2")	178	152	88	134.2	221	9.0 (19.9)
80 MM (3")	203	191	154.6	194.8	400	21.0 (46.4)
100 MM (4")	229	229	170.6	211	610	31.0 (68.5)
150 MM (6")	394	279	248.5	308	916	71.0 (156)

# VAAS AUTOMATION ORDER CODE SYSTEM

SIZE			SERVICE		SERIES		BODY & END		BALL & STEM		SEAT		SEAL		END CONNECTION		SPECIAL FEATURES	
Code	MM	INCH	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description	Code	Description
02	08	1/4"	A	Antistatic	27	High pressure	1	Carbon steel A105	1	CA15 / SS410	A	TFM	A	TFM	BSPT	BS 21	A0866	Ammonia service stem seal
03	10	3/8"	B	Full bore	31	Ansi 150 Single piece	2	Carbon steel WC6	2	Carbon steel WC6	C	PCTFE	B	Buna N Shore 90	BSP	BSPP(DIN 2999)	P043	Vacuum & searching gas stem seal
05	15	1/2"	C	Cryogenic	32	Ansi 300 Single piece	3	Duplex 4A / S32205	3	Duplex 2205/S31803	F	PFA	G	Graphite	DIN3852	DIN 3852	P250	Ball with pressure relief hole
07	20	3/4"	D	Diverter Bot.entry	35	1000 WOG Single piece	4	Carbon steel WCB	4	Carbon steel WCB	H	VX1		Impregnated	NPT	ASME B1.20.1	J2&J3	Jacketed valve with 2 / 3 ports
10	25	1"	F	Fire-safe	40	Cl.800 Utility	5	S Duplex steel 5A/S2507	5	S Duplex 2507/ S32750	J	25% Glass filled PTFE	I	Graphite	BW	Buttweld Sch.xxx	FE	Fugitive emission
12	32	1.1/4"	H	High pressure	42	Cl.800 Forged body	6	CF8M / SS 316	6	CF8M / SS 316	K	PEEK	N	Neoprene	XBW	Extended buttweld	VB xx	Control valve Ball (angle)
15	40	1.1/2"	I	High Purity	45	1000 WOG Three piece	7	Monel	7	Monel	L	PEEK - Virgin		15% Glass filled	SW	Socket weld	DBB	Double Block and Bleed
20	50	2"	K	Chlorine	46	Cl.800 Non-ISO	8	CF8 / SS 304	8	CF8 / SS 304	M	Metal	R	PTFE	XSW	Extended socket weld	NACE	Nace MR01-75
25	65	2.1/2"	L	Let lock	47	Cl.800 ISO pad	9	Carbon steel LCB	9	Carbon steel LCB	N	33% Carbon filled PTFE	T	PTFE	TC	Tri-clamp	K	Locking device
30	80	3"	M	Ammonia	48	High Purity	A	Alloy 20 / CN7M	A	Alloy 20 / CN7M	P	NRG - Polyfil	U	UHMWPE	ETO	Extended OD Tube	LDP	Locking plate
40	100	4"	N	Control	61	Multi port 3 way	C	Hastelloy C276	C	Hastelloy C276	R	15% Glass filled PTFE	V	Viton	ETD	Extended DIN Tube	EP	Electro polish
50	125	5"	O	Oxygen	62	Multi port 4 way	D	CF3 / SS 304L	D	CF3 / SS 304L	S	Vespel			ETI	Extended ISO Tube	DHN	Nitride coating
60	150	6"	Q	Cavity filler	73	Ansi 150 Two piece	E	CF3M / SS 316L	E	CF3M / SS 316L	T	PTFE			TCI	Sanitary clamp ISO	HC	High cycle
80	200	8"	R	Flush bottom tank	74	Ansi 300 Two piece	F	CF8C / SS321	F	CF8C / ss 321	U	UHMWPE			TCD	Sanitary clamp DIN	DS	Dual safe
A0	250	10"	S	Diverter side entry	75	1000 WOG Two piece	G	CG8M / SS317	G	CG8M / SS 317	Y	Delrin - Acetal resin			BWD	Buttweld DIN	SRS	Self relieving seat
A2	300	12"	U	Nuclear	90	DIN PN 16 Two piece	J	CG3M / SS317L	J	CG3M / SS317L	W	PVDF			BWI	Buttweld ISO	HYD	Hydrogen service
A4	350	14"	V	Vacuum	91	DIN PN40 Two piece	L	Carbon steel LF2	I	Inconel					BWO	Buttweld OD Tube	SRH	Spring return handle
A6	400	16"	W	Steam,Thermal Fluid			K	CK20 / SS 310	L	AL6XN					PN16	Flanged DIN PN 16	90°	Diverter valve 90° turn
							M	17-4 PH	K	CK20 / SS 310					PN 40	Flanged DIN PN 40	180°	Diverter valve 180° turn
							S	SMO 254	M	17-4 PH					150RF	Flanged ANSI Cl.150		
							T	Titanium Gr. 2	S	SMO 254					300RF	Flanged ANSI Cl.300		
							W	Hastelloy C 22	T	Titanium Gr. 2					600RF	Flanged ANSI Cl.600		
							X		W	Hastelloy C 22					900RTJ	Flanged ANSI Cl.900 Ring Type Joint		
									X						1500RTJ	Flanged ANSI Cl.1500 Ring Type Joint		
															2500RTJ	Flanged ANSI Cl.2500 Ring Type Joint		

**Example: 20-AB474466TG/SW**

Size 50NB (2")-(20), Anti-static (A), Full Bore (B), Three piece 47 Series (47), Carbon Steel Body & Ends (44), SS 316 Ball & Stem (66), PTFE Seat (T), Graphite Seal (G), Socket Weld Ends (SW).

*For specific requirements and availability of options, please consult VAAS Marketing.*