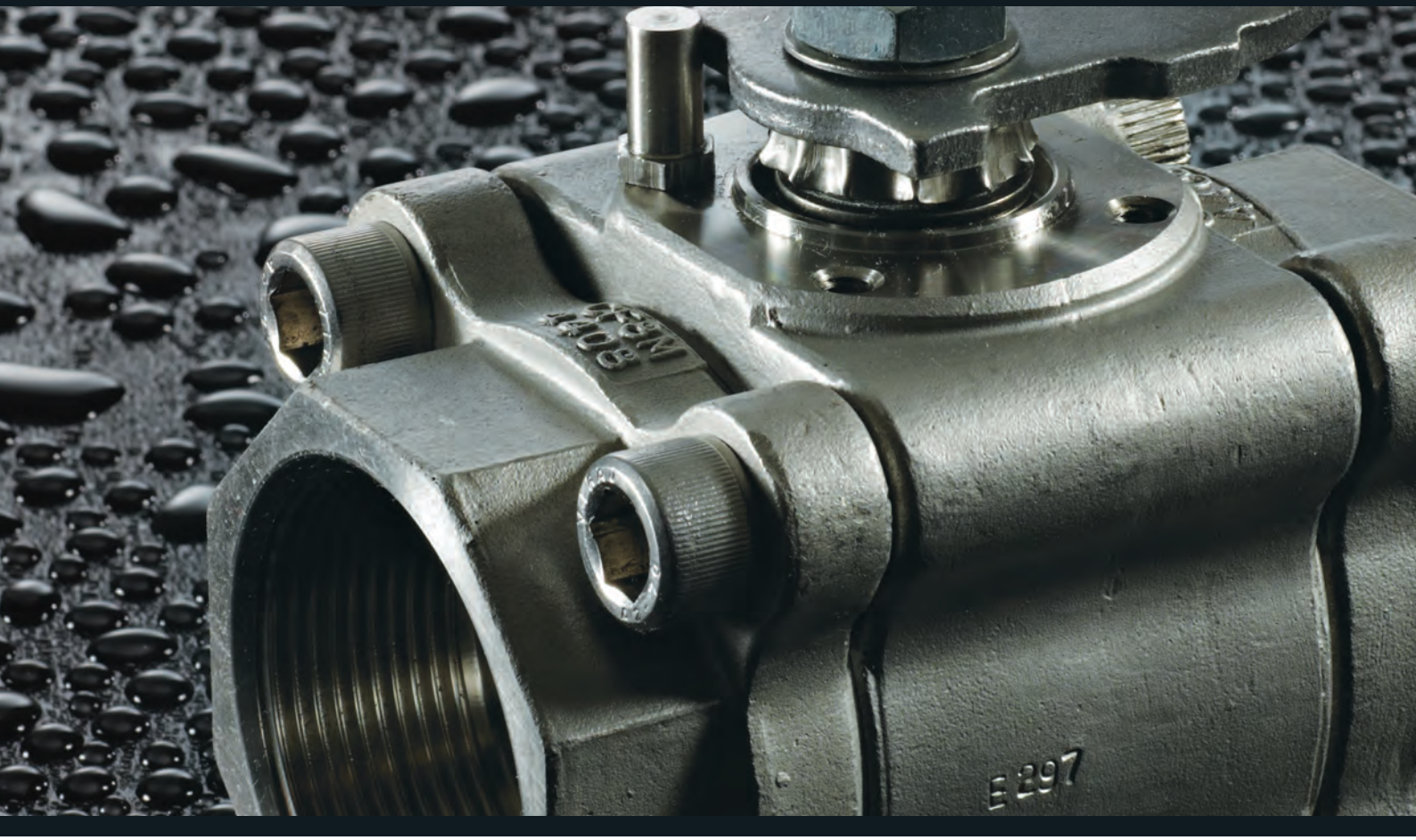
Valves with a leading edge

VAAS

47 SERIES



47 SERIES
HIGH PERFORMANCE THREE-PIECE BALL VALVES
FOR INDUSTRIAL AND PROCESS APPLICATIONS


DESIGNED BY MASTER& ALLEN

VAAS INTERNATIONAL

A WORLD OF EXPERIENCE

VAAS International is one of the World's premier suppliers of valves and related products within the chemical, pharmaceutical, water, food and power generation industries.

Our extensive product range encompasses the latest technology in valve, actuation and control.

IN THE BEGINNING

VAAS International was established in 1984, by an esteemed valve technocrat with a vision of becoming one of the World's leading 'complete supply' valve manufacturers.

The vision was quickly realised via the immediate installation of a purpose-built high-technology manufacturing facility, with VAAS supplying engineered valve solutions to market leaders in critical industries, such as rocket testing, nuclear power generation and pharmaceutical research & development.

TODAY

As an ISO 9001 accredited company, furnished with high-technology design and manufacturing facilities, VAAS have succeeded in supplying cost-effective and innovative engineered solutions throughout the World.

With local offices in Europe, USA, Australasia and the Far East, VAAS have installed a support base that can efficiently accommodate all of your requirements in a friendly and informative manner.

VAAS HEAD OFFICE

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VAAS EUROPE

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WEB: www.vaaseurope.eu

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VAAS PACIFIC

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TEL: +61 3 9544 6981
WEB: www.vaaspacific.com

47 SERIES

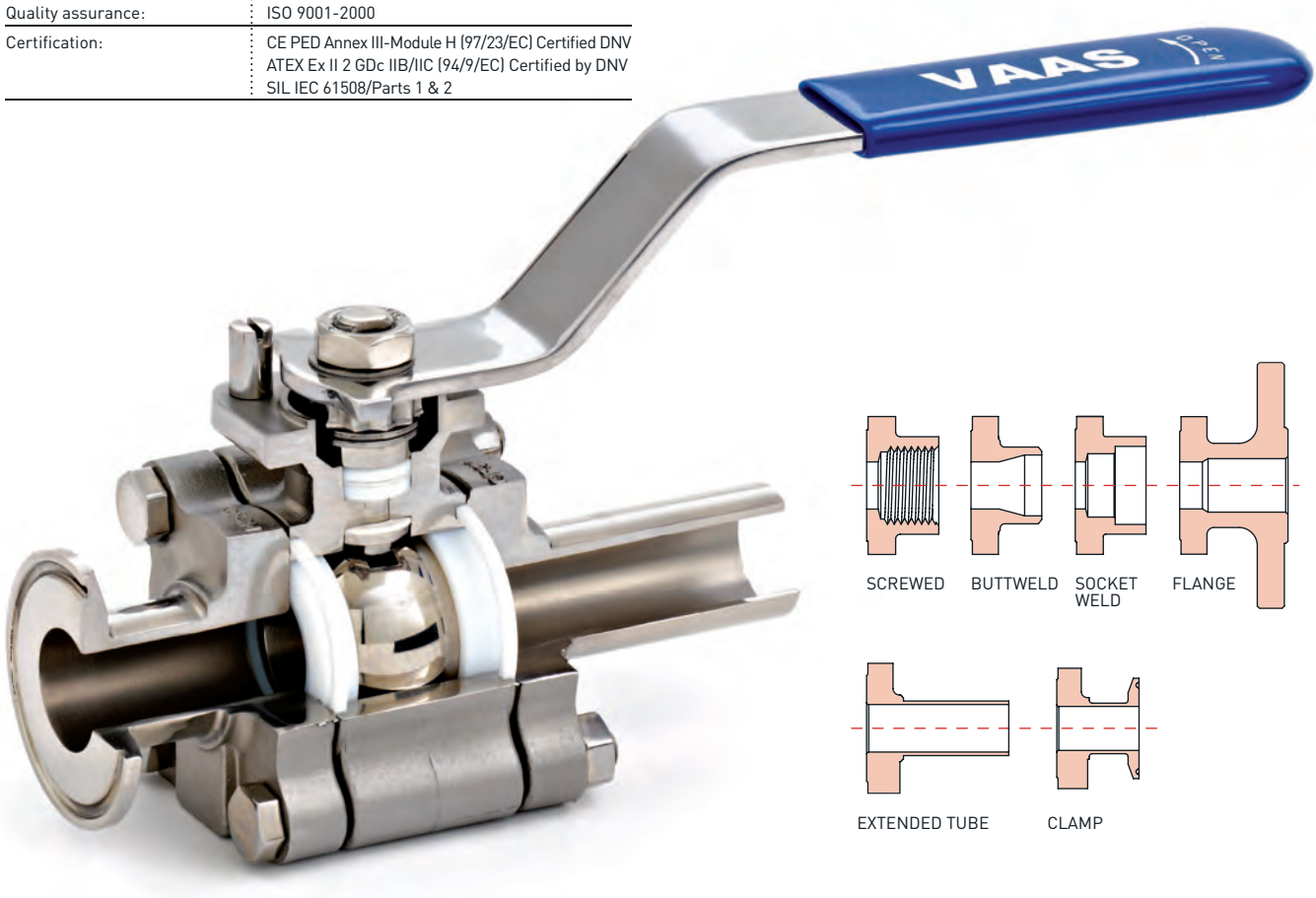
OVERVIEW

The 47 Series by VAAS is for the user who requires high flow capacity and tight shutoff under demanding process conditions, who demands high reliability and flexibility, and who must adhere to the tough standards and requirements that must be met within their Industry.

STANDARDS OF COMPLIANCE	
Design:	ANSI B16.34, EN ISO 17292-2004 BS 5351, BS 5159
ANSI Class	600# rating up to 2" (50mm) 300# rating above 2½" (65mm)
Threaded end connections:	NPT ANSI B1.20.1 BSPT ISO R/7, BS 21 BSPP ISO R/7, BS 2779 DIN 2999, DIN 3852
Socket weld end connections:	BS 1600.API 5L ANSI B16.11, DIN 3239/Part 2
Buttweld end connections: (Schedules 5, 10, 40, 80)	API 5L. BS 1600 ANSI B16.11, DIN 3239/Part 1 ASTM A269/270 and DIN 11850
Pressure testing: 100% of production:	BS EN 12266-1&2 Rate A DIN 3230/Part 3, API598, ISO 5208
Fire testing:	API 607 5th Edition. API 6FA BS 6755/Pt 2
NACE (must be specified)	MR-01-75
Quality assurance:	ISO 9001-2000
Certification:	CE PED Annex III-Module H (97/23/EC) Certified DNV ATEX Ex II 2 GDc IIB/IIC (94/9/EC) Certified by DNV SIL IEC 61508/Parts 1 & 2

The 47 Series has a rigid body construction and is designed in compliance with ANSI B16.34 and BS 5351, with the 3-piece construction facilitating simple and cost-effective in-line maintenance and servicing of wear parts.

The top mounting flange conforms to ISO 5211, incorporating a raised location ring to ensure accurate fitment of actuators, limit switches, or VAAS ancillaries such as spring-return handles, fugitive emission bonnets and extended handles. Pressure-containing components are stamped with heat numbers, which enable full material and process test traceability from foundry to assembly.



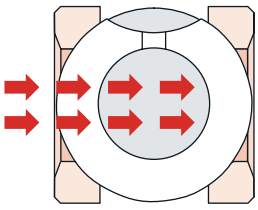
47 SERIES

FEATURES

The 47 Series is an extremely versatile valve that boasts a variety of safety and design features that enable it to be used in a wide range of applications.

FLOATING BALL

The VAAS 'floating ball' provides superior ball-seat shutoff, whilst offering reduced seat wear and decreased torque figures. Under pressure, the closed ball is pushed into the downstream seat, thereby creating a bubble-tight shutoff. Meanwhile, the upstream seat utilises line pressure to float towards the ball and away from the body, thereby equalising cavity pressure with upstream pressure via equalising slots at the perimeter of the seat. Operating torque is reduced by the ball sealing against one seat at a time, and also due to the lack of stem side-loading. Seat wear is reduced thanks to the seat only being fully loaded upon complete closure of the valve.



FLOATING BALL
DOWNSTREAM SEAL

ADDITIONAL DESIGNS

For increased flow control, VAAS offer a range of profiled ball orifices that can be sized specifically to the users given parameters. The range of V-orifice balls offer linear or exponential flow control rates, whilst the L-port configurations offer side-entry or bottom-entry directional control. Other options include P250 pressure relief holes and surface-treatments such as Hard-Chrome plating and Nickel Nitriding.

SPECIALIST APPLICATIONS

The 47 Series is supplied with the High Performance trim as standard. When specialist applications are required, alternative materials of construction are available with colour-coded handle sleeves for simple valve specification and service duty identification. If you require an alternative colour to those indicated below, VAAS are able to source and supply accordingly.

HIGH PERFORMANCE SERVICE	VAAS
THERMAL SERVICE	VAAS
CRYOGENIC SERVICE	VAAS
WATER TREATMENT SERVICE	VAAS
CHLORINE SERVICE	VAAS
UTILITY SERVICE	VAAS
SPECIALIST (COLOUR TO CLIENT SPEC)	VAAS

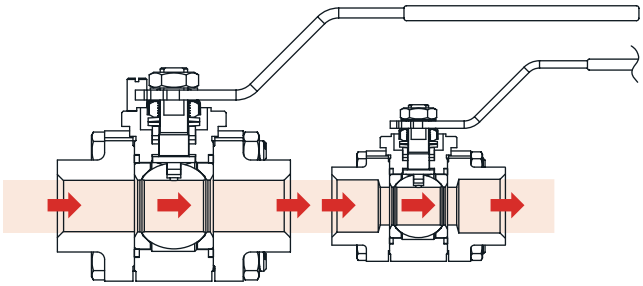
47 SERIES
FEATURES

REDUCED BORE & FULL BORE

The VAAS 47 Series is available in both reduced and full bore configurations.

Reduced bore valves utilise a reduced ball I/D to create a downstream pressure drop, thereby increasing flow velocity through the valve assembly. This facilitates the use of a smaller body vs Full-Bore configurations, which in-turn offers the user reduced costs vs full bore design.

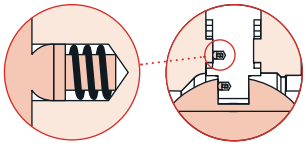
Full bore valves have a ball I/D equal to the line I/D, which offers maximum flow against minimal pressure drop.



FULL BORE REDUCED BORE

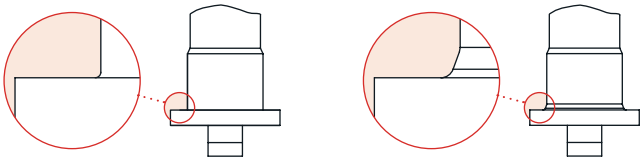
ANTI-STATIC DEVICE

Continual electrical contact between all metallic components, as per BS 5351, is present within all VAAS 47 Series valves. This is achieved by means of an energised insert within the stem assembly, which is in constant contact with the valve body stem cavity. For valves above 2" bore, a similar arrangement is adopted between the valve stem and floating ball.



STEM ASSEMBLIES

All VAAS ball valves are fitted with blowout-proof stem assemblies. All stems are live-loaded through Bellville spring washers, thereby compensating for temperature & pressure fluctuations as well as thrust washer wear. The stem retaining nut is encapsulated within a castellated washer, in order to eliminate unwanted nut movement through rotational operation of the valve assembly.



STANDARD STEM FIRESAFE STEM

Standard (½"-2 ½")

Body-stem seal achieved through a single thrust washer, with stem-centering achieved through stem packing rings, followed by a stainless steel centering gland. All components held in place by stem nut fitted with anti-loose washer, with rigid operating handle retained by additional stem nut.

Standard (3"-6")

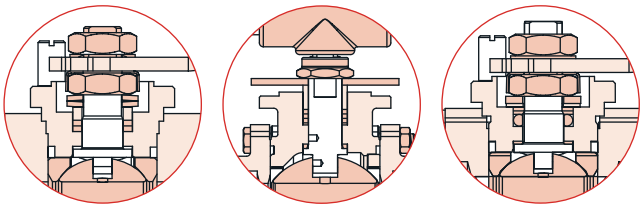
As above, except operating handle replaced by top-loaded stem boss, through which a pipe wrench is inserted.

O-Ring Assembly

O-ring seals are fitted instead of standard stem glands, when valves are handling searching gas, high-vacuum processes, or 'special' media such as ammonia. The O-ring design is based on a radial-seal principal, and is secured in position by a bearing with stainless steel location washer.

High-Cycle

High-Cycle applications which involve unusually high operation rates require higher stem assembly specifications. VAAS are able to offer all ball valves with surface-treated special-alloy stems and high-wear stem thrust seals. The assembly may also be complemented with the O-ring gland arrangement mentioned above.



STANDARD **O-RING ASSEMBLY** **HIGH-CYCLE**

47 SERIES

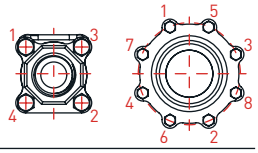
TECHNICAL INFORMATION

ASSEMBLY, MARKING AND PACKAGING

All valves are 100% leak tested prior to despatch. Each valve is tagged with a unique serial number, enabling material certification to be provided on request. VAAS valves are delivered in the open position with capped ends.

Actuated valves are supplied in their fail-safe position. Please refer to the body bolt torque figures below for safe installation & operation. It is recommended to flush the pipe line before operating the valve, to prevent seat damage.

VALVE SIZE	BOLT SIZE	TIGHTENING TORQUE	
½" – ¾"	**M6**	10 Nm	88.6 In.Lb
1" – 1 ¼"	**M8**	22 Nm	195 In.Lb
1 ½" – 3"	**M10**	45 Nm	400 In.Lb
4"	**M12**	75 Nm	655 In.Lb
6"	**M16**	161 Nm	1425 In.Lb



VALVE SIZE		CV VALUES		LIMITING STEM INPUT TORQUE			
RB	**FB**	Flow coefficients		**316 S/S** Stem materials		**17-4PH** Stem material	
½"		8 Cv	6.9 Kv	13.2 Nm	117 In.Lb	91 Nm	800 In.Lb
¾"	½"	12 Cv	10.4 Kv	13.2 Nm	117 In.Lb	91 Nm	800 In.Lb
1"	¾"	32 Cv	28.1 Kv	24.4 Nm	216 In.Lb	165 Nm	1460 In.Lb
1 ¼"	1"	57 Cv	49.3 Kv	24.4 Nm	216 In.Lb	165 Nm	1460 In.Lb
1 ½"	1 ¼"	80 Cv	69.2 Kv	48.6 Nm	430 In.Lb	268 Nm	2370 In.Lb
2"	1 ½"	104 Cv	90 Kv	48.6 Nm	430 In.Lb	268 Nm	2370 In.Lb
2 ½"	2"	240 Cv	208 Kv	NONE	NONE	268 Nm	2370 In.Lb
3"	2 ½"	320 Cv	277 Kv	385 Nm	3400 In.Lb	1,920 Nm	17000 In.Lb
4"	3"	580 Cv	501 Kv	385 Nm	3400 In.Lb	1920 Nm	17000 In.Lb
-	4"	2400 Cv	2070 Kv	NONE	NONE	1920 Nm	17000 In.Lb

Cv – Flow in US GPM. Pressure in psi. **Kv**– Flow in m^3/hr. Pressure in bar.

Valve flow rates are determined in full open position with water temperature of 15 C° (60 F°) .

VALVE ACTUATOR SIZING

Torque figures for all VAAS valve configurations are available on request.

Figures are taken from laboratory tests, performed at room temperature using H20 as the test media.

Please contact VAAS for more details.

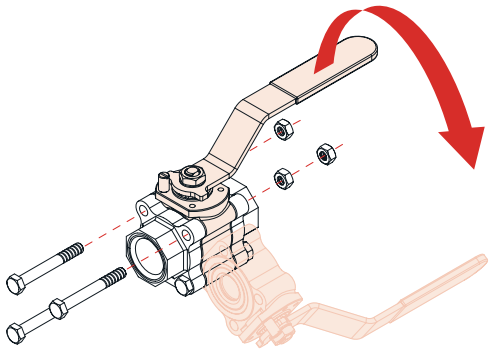
ISO 9001 CERTIFIED

As an ISO 9001 certified company, VAAS operate with strict internal manufacturing specifications and philosophies.

From the procurement of raw materials to the final inspection of assembled valves, VAAS control all internal & external routings in order to ensure complete integrity of all parts, manufacturing processes, test operations and stock holdings.

IN-LINE MAINTENANCE

VAAS 47 Series valves are in-line repairable, offering reductions in both maintenance time and labour cost during servicing operations. The swing-out design also facilitates efficient replacement of valve trims and straight-forward upgrades in product specification.



47 SERIES

SEAT VARIATIONS

TYPES AND MATERIALS

Maintaining bubble-tight shut off throughout the valve's operating range, whilst offering reductions in both seat wear and torque figures, is achieved by offering a seat design with external pressure equalising slots in the perimeter.

The flexible seat works in conjunction with the floating ball principal to ensure that whilst downstream sealing friction is increased with line pressure, upstream friction is considerably reduced.

Pressure equalising slots allow the ball cavity pressure to be equalised with the upstream line pressure, further reducing the loads exerted upon the upstream seat.

Where reduced dead volume is required, VAAS offer a cavity-filler design that encapsulates the floating ball.

Abrasive and/or corrosive media often restricts the use of soft-seat ball valves. VAAS have engineered a revolutionary metal seat design, which is provided with a specially matched floating ball to offer both long service life and high shut-off.

T **PTFE** WHITE

When a process demands a seat with high durability, low coefficient of friction, excellent thermal resistance and fantastic chemical inertness, PTFE is the material of choice. Highly recommended for water, foodstuff or corrosive chemical duty.

A **TFM™** (MODIFIED PTFE) WHITE + BROWN STRIPE

TFM™, as a chemically modified PTFE, retains all of the favourable features of PTFE, whilst offering reduced creep under high-load / low-cycle applications.

J **R** **GLASS FILLED PTFE** J: WHITE + BLUE STRIPE / R: WHITE + RED STRIPE

Glass-Filled PTFE retains the chemical inertness of PTFE, with extensions to both working pressure and temperature ranges. High compression resistance under high loads makes Glass-filled PTFE a good option for low cycle applications, as well as Steam duty.

Available with 15% and 25% Glass Fibre content.

P **CARBON FILLED PTFE** (NRG) CHARCOAL + WHITE STRIPE

Carbon-Filled PTFE seats are suitable for elevated temperatures, have a low coefficient of friction and can be used for many corrosive applications. The availability of two different profiles enable NRG to be used in both High-Temperature and Cryogenic applications.

H **GLASS & METAL OXIDE FILLED PTFE** BLUE

Glass & Metal Oxide-filled PTFE offers extended Pressure & Temperature ranges over Glass-Filled PTFE. Not recommended for use on Foodstuff duty.

U **UHMWPE** (ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE) WHITE + GREEN STRIPE

UHMWPE offers high radio-active resistance, and is commonly used in the tobacco Industry and H_2S0_4 applications. UHMWPE also possesses good abrasion resistance.

K **CARBON FILLED PEEK®** BLACK + YELLOW STRIPE

PEEK® (Polyetheretherketone) is a semi-crystalline thermoplastic with high tensile strength, excellent shear strength, and high creep resistance. Other benefits are outstanding fatigue and chemical resistance with no susceptibility to hydrolysis (Steam/Hot water).

L **VIRGIN PEEK®** BEIGE

Virgin PEEK® has similar physical characteristics as filled PEEK®, without the inclusion of fillers. It offers higher radiation resistance than filled PEEK®, and can be applied to food, tobacco and pharmaceutical applications.

S **VESPEL®** BROWN

Vespel® is a polymide with high temperature capabilities under load, and is often used in heat transfer, hot gas and oil applications.

Not to be used with media containing H_2O.

C **PCTFE** (KEL-F®) TRANSPARENT WHITE

PCTFE (commonly referred to as Kel-F®: Chlorotrifloro Ethylene) is used extensively in cryogenic applications where valves are exposed to temperatures between -196˚C and 121˚C. Gas production, transportation and storage applications often favour PCTFE over other materials.

Y **DELRIN®** (ACETAL RESIN) CREAMY WHITE + BLACK STRIPE

Delrin® is preferred for high pressure applications that demand excellent resistance to wear and deformation. Often used in the petroleum industry, its maximum temperature is limited to 80˚C under full load.

Delrin® must not be used if there is OXYGEN present.

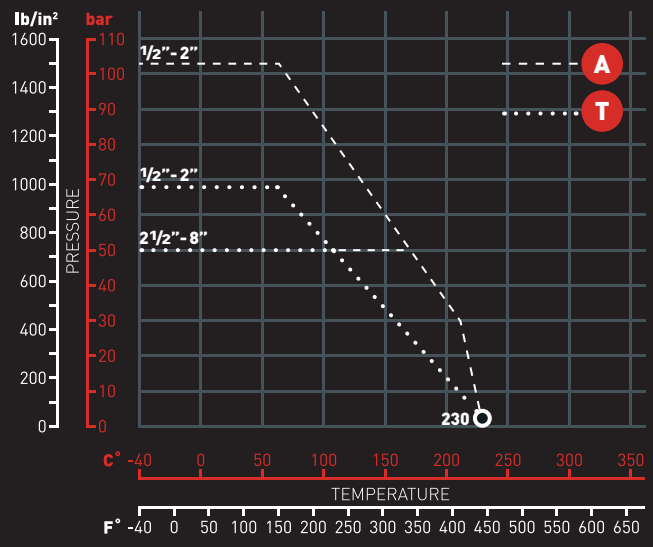
47 SERIES

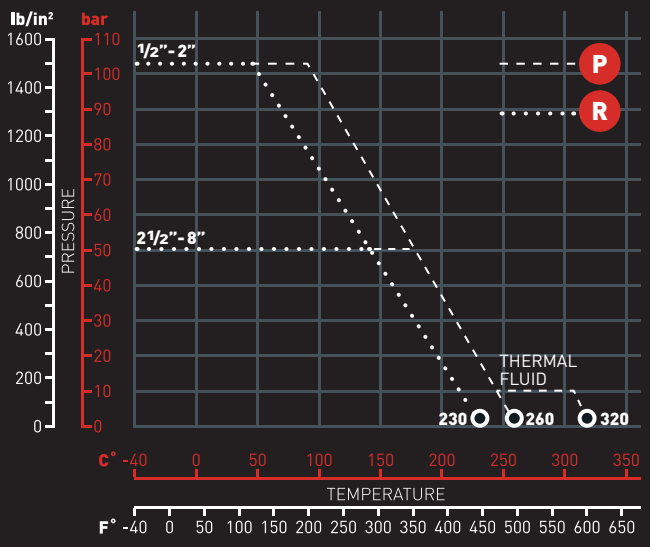
SEAT PRESSURE & TEMPERATURE RATINGS

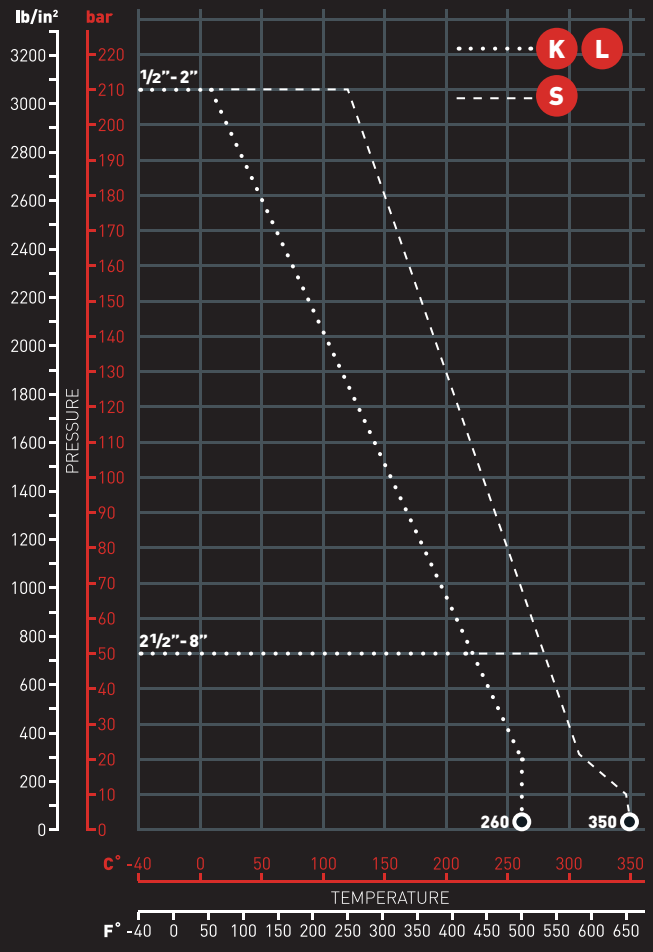
MATERIAL RATINGS

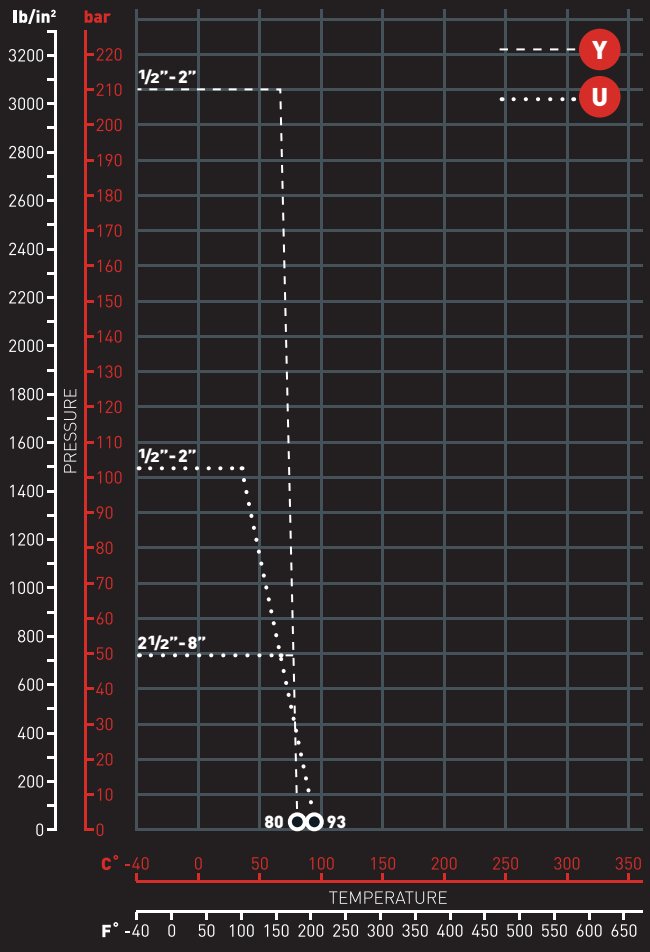
The graphs below correspond with the highlighted seat material ratings. The valve body pressure ratings are higher than the seat ratings in all conditions and are therefore excluded.*

The data refers to differential pressure, with valves in the closed position.









*Additional information on other materials is available on request.

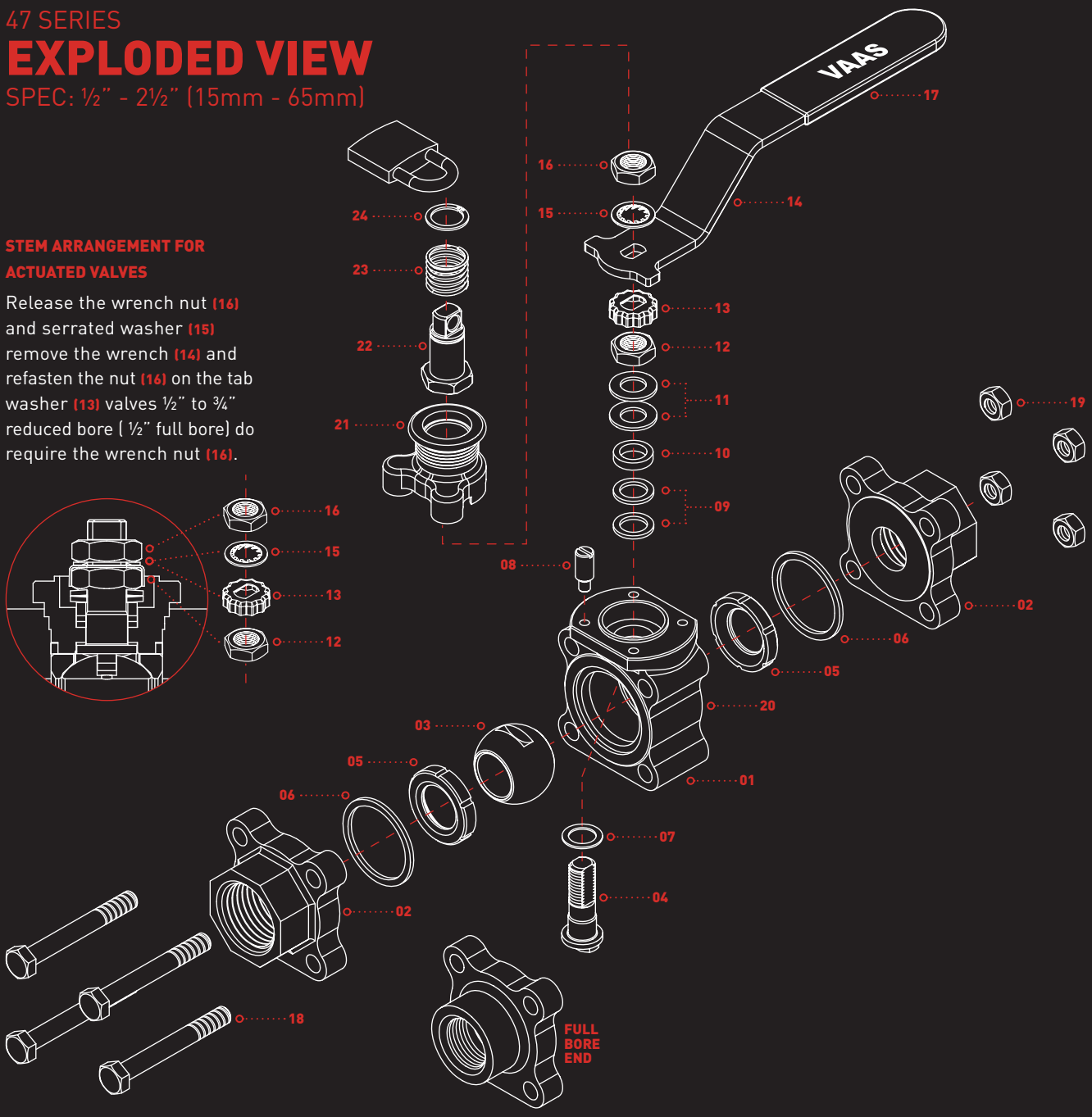
47 SERIES

EXPLODED VIEW

SPEC: ½" - 2½" (15mm - 65mm)

STEM ARRANGEMENT FOR ACTUATED VALVES

Release the wrench nut **(16)** and serrated washer **(15)** remove the wrench **(14)** and refasten the nut **(16)** on the tab washer **(13)** valves ½" to ¾" reduced bore (½" full bore) do require the wrench nut **(16)**.



ITEM	DESCRIPTION	MATERIAL SPEC	QTY
01	BODY	STAINLESS ST. ASTM A351 CF8M, CARBON ST. AI05, WCB, HASTELOY-C, ALLOY-20, MONEL	1
02	END CONNECTOR	Stainless ST. ASTM A351 CF8M OR CF3M, CARBON ST. AI05, WCB, HASTELOY-C, ALLOY-20, MONEL	1
03	BALL	STAINLESS ST. ASTM A276 316, HASTELOY-C, ALLOY-20, MONEL	1
04	STEM	STAINLESS ST. ASTM A276 316, STAINLESS ST 17-4PH	1
05*	SEAT	PTFE, RPTFE, NRG, PEEK, TFM, UHMWPE, VESPEL	2
06*	BODY SEAL	PTFE, RPTFE, TFM, UHMWPE, GRAPHITE, METAL O-RING	2
07*	STEM THRUST SEAL	PTFE, RPTFE, PEEK, NYLATRON, UHMWPE, VESPEL	1
08*	STOP PIN	STAINLESS ST. AISI 304	1
09*	STEM PACKING	PTFE, RPTFE, TFM, UHMWPE, OR GRAPHITE	2-3 1
10	GLAND	STAINLESS ST. AISI 304	1-2**
11	DISC SPRING	STAINLESS ST. 17-7PH	1
12	GLAND NUT	STAINLESS ST. AISI 316	1

ITEM	DESCRIPTION	MATERIAL SPEC	QTY
13	TAB WASHER	STAINLESS ST. AISI 316	1
14	WRENCH	STAINLESS ST. AISI 430, CARBON ST. ZINC PLATED	1
15	SERRATED WASHER	STAINLESS ST. AISI 316	1
16	WRENCH NUT	STAINLESS ST. AISI 316	1
17	SLEEVE	VINYL PLASTISOL	1
18	BODY BOLT	STAINLESS ST. AISI 304, CARBON ST. ZINC PLATED	4
19	BODY NUT	STAINLESS ST. AISI 316, CARBON ST. ZINC PLATED	4
20	TAG (not shown)	STAINLESS ST. AISI 316	1
21	LOCK HOUSING	STAINLESS ST. AISI 304	1
22	LOCK STEM	STAINLESS ST. AISI 316	1
23	LOCK SPRING	STAINLESS ST. AISI 303	1
24	LOCK CIRCLIP	STAINLESS ST. AISI 304	1

*Standard items for repair kits.

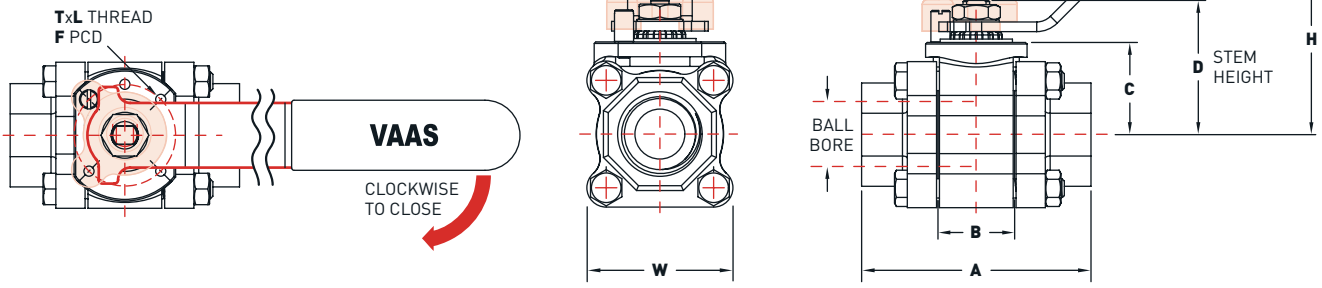
** 2 Followers are used on ½" to ¾".

47 SERIES

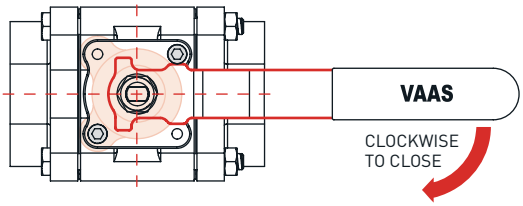
DIMENSIONS

SPEC: ½" - 2½" (15mm - 65mm)

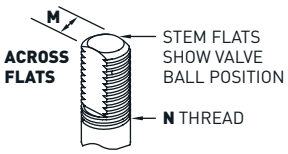
½" - 2½" (½" - 1½" FB) WITH ISO TOP



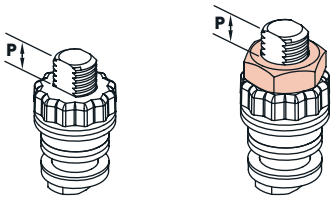
2½" (2" FB) TOP (ISO 5211 F07)



STEM DIMENSIONS



PREPARATION FOR ACTUATION



½" / ¾" / 2½"
without nut **(16)**

1" to 2"
with nut **(16)**

RB	FB	UNIT	BORE	A	B	C	D	H	S	W	M	N	P	TxL	F (ISO)	WEIGHT
½"	¼" 3/8"	MM INCH	11.1 0.44	66 2.598	20.6 0.811	29 1.142	38.7 1.524	61.5 2.421	150 5.906	47.0 1.850	5.5 0.217	3/8" UNF	7.2 0.283	M5X10	F03 38.0	0.6 KG 1.33 LB
¾"	½"	MM INCH	14.3 0.56	71 2.795	24.5 0.965	32.4 1.236	41.4 1.618	63.9 2.516	150 5.906	53.7 2.114	5.5 0.217	3/8" UNF	7.2 0.283	M5X10	F03 38.0	0.8 KG 1.77 LB
1"	¾"	MM INCH	20.6 0.81	95 3.740	31.7 1.248	38.2 1.504	55.6 2.189	79.4 3.126	187 7.362	63.7 2.507	7.54 0.297	7/16" UNF	7.2 0.283	M5X10	F04 40.0	1.6 KG 3.54 LB
1 ¼"	1"	MM INCH	25.4 1.00	108 4.252	40.9 1.610	42.7 1.679	60.2 2.370	84.1 3.311	187 7.362	71.7 2.822	7.54 0.297	7/16" UNF	7.2 0.283	M5X10	F04 40.0	2.5 KG 5.53 LB
1 ½"	1 ¼"	MM INCH	31.8 1.25	115.5 4.547	48.4 1.906	43.6 1.717	73 2.874	97 3.819	237 9.331	86.7 3.413	8.71 0.343	9/16" UNF	8.0 0.315	M6X12	F05 50.0	3.6 KG 7.96 LB
2"	1 ½"	MM INCH	38.1 1.50	128 5.039	56.3 2.217	48.3 1.902	77.8 3.063	101.8 4.008	237 9.331	96.9 3.815	8.71 0.343	9/16" UNF	8.5 0.334	M6X12	F05 50.0	4.5 KG 9.95 LB
2 ½"	2"	MM INCH	50.8 2.50	158* 6.220	72.6 2.858	70 2.756	88.1 3.469	115.1 4.531	237 9.331	108 4.252	8.71 0.343	9/16" UNF	13.5 0.531	M8X12	F07 70.0	9.5 KG 21.0 LB

* **2"** valve full bore "A" dimension is 5.956 in (151.3 mm).

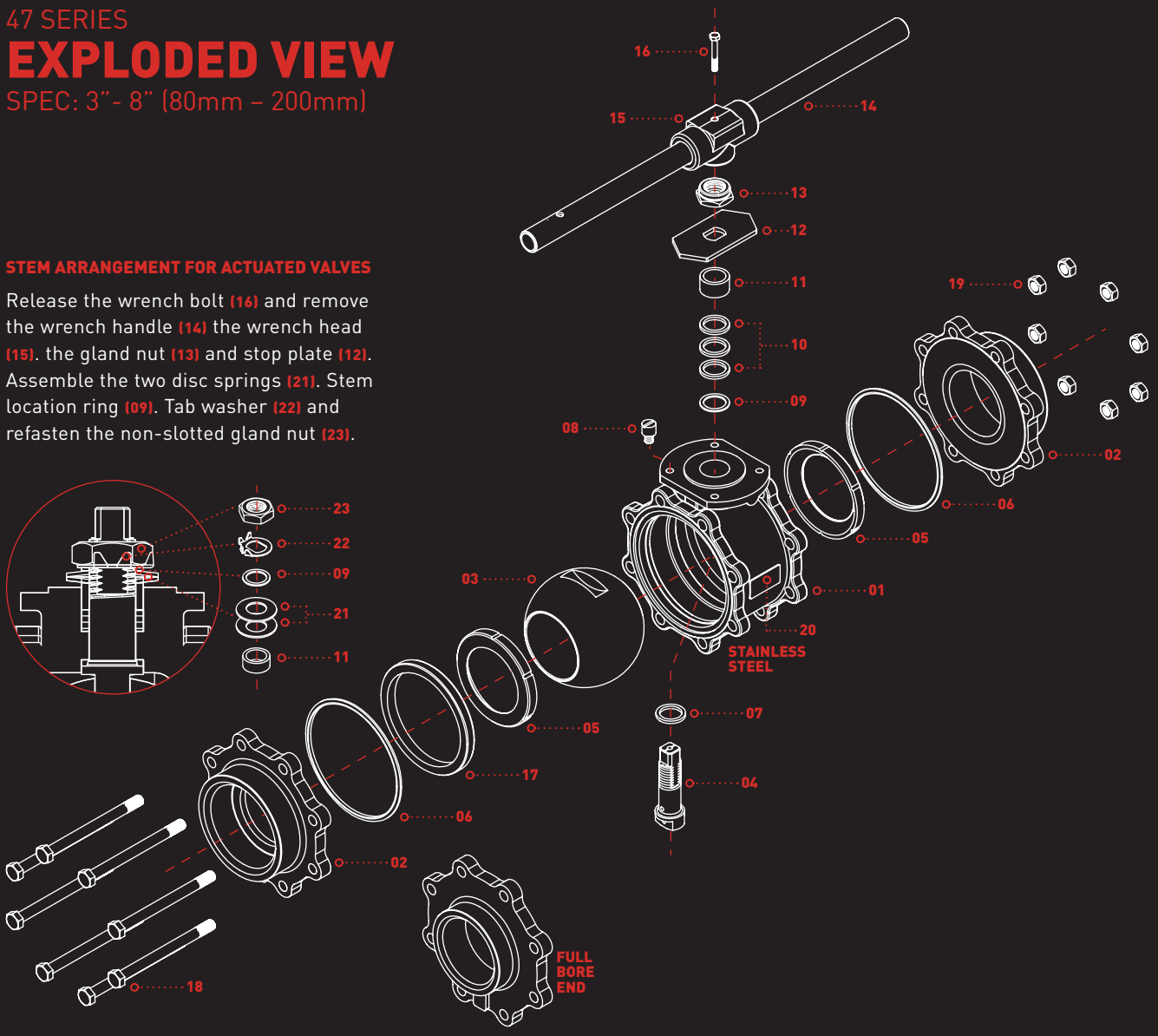
47 SERIES

EXPLODED VIEW

SPEC: 3”- 8” (80mm – 200mm)

STEM ARRANGEMENT FOR ACTUATED VALVES

Release the wrench bolt **(16)** and remove the wrench handle **(14)** the wrench head **(15)**. the gland nut **(13)** and stop plate **(12)**. Assemble the two disc springs **(21)**. Stem location ring **(09)**. Tab washer **(22)** and refasten the non-slotted gland nut **(23)**.



ITEM	DESCRIPTION	MATERIAL SPEC	QTY
01	BODY	STAINLESS ST. ASTM A351 CF8M CARBON ST. WCB HASTELOY-C, ALLOY-20, MONEL	1
02	END	STAINLESS ST. ASTM A351 CF3M CARBON ST. WCB	2
03	BALL	STAINLESS ST. ASTM A276 316 HASTELOY-C, ALLOY-20, MONEL	1
04	STEM	STAINLESS ST. ASTM A276 316 STAINLESS ST 17-4PH HASTELOY-C, ALLOY-20, MONEL	1
05*	SEAT	PTFE, RPTFE, NRG, PEEK, TFM,UHMWPE, VESPEL	2
06*	BODY SEAL	PTFE, RPTFE, TFM, UHMWPE, GRAPHITE, METAL O-RING	2
07*	STEM THRUST SEAL	PTFE, RPTFE, PEEK, NYLATRON, UHMWPE, VESPEL	1
08	STOP PIN	STAINLESS ST. AISI 304	1
09	STEM LOCATION RING	STAINLESS ST. AISI 316	1
10*	STEM PACKING	PTFE, RPTFE, TFM, UHMWPE, OR GRAPHITE	3 1

ITEM	DESCRIPTION	MATERIAL SPEC	QTY
11	GLAND	STAINLESS ST. AISI 304	1
12	STOP PLATE	STAINLESS ST. 430	1
13	GLAND NUT (slotted)	STAINLESS ST. AISI 316 CARBON ST. ZINC PLATED	1
14	WRENCH HANDLE	STAINLESS ST. AISI 430 STAINLESS ST. AISI 316	1
15	WRENCH HEAD	MALEABLE IRON	1
16	WRENCH BOLT	CARBON ST. ZINC PLATED	1
17	SEAT RETAINING RING	STAINLESS ST. ASTM A351 CF8M CARBON ST. WCB	1
18	BODY BOLT	STAINLESS ST. AISI 304 CARBON ST. ZINC PLATED	8-16
19	BODY NUT	STAINLESS ST. AISI 304 CARBON ST. ZINC PLATED	8
20	TAG	STAINLESS ST. AISI 316	1
21	DISC SPRING	STAINLESS ST. 17-7PH	2
22	TAB WASHER	STAINLESS ST. AISI 316	1
23	GLAND NUT (non-slotted)	STAINLESS ST. AISI 316 CARBON ST. ZINC PLATED	1

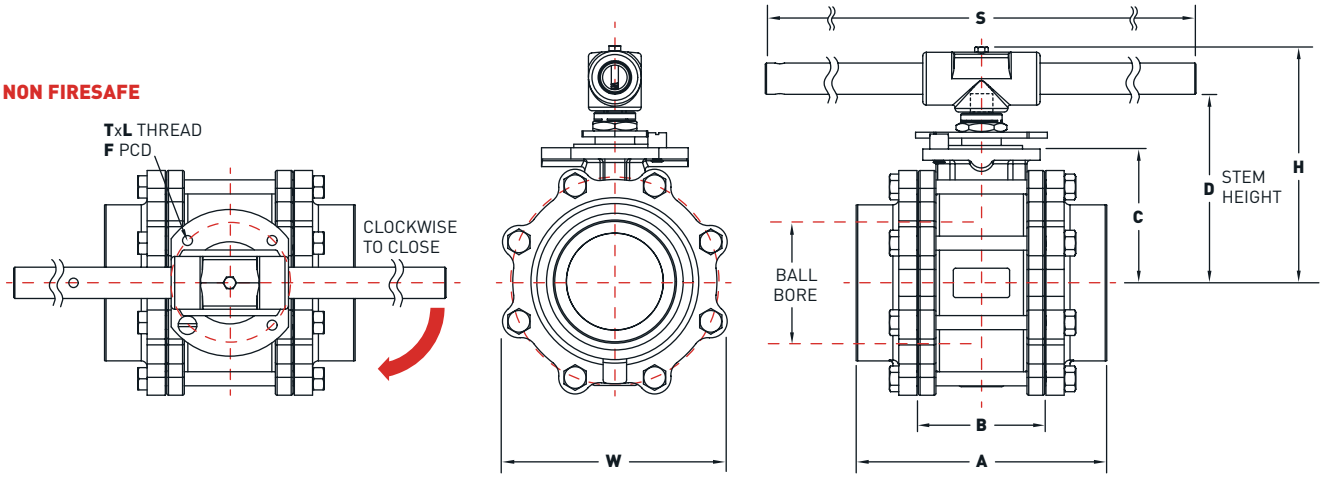
*Standard items for repair kits.

47 SERIES

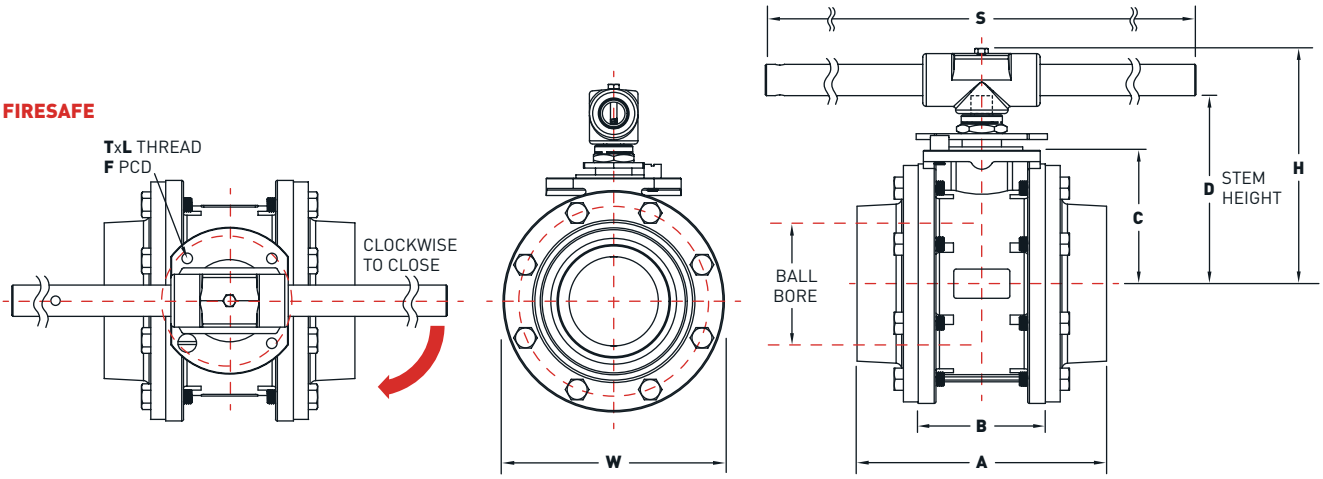
DIMENSIONS

SPEC: 3”- 8” (80mm – 200mm)

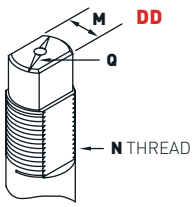
NON FIRESAFE



FIRESAFE



STEM DIMENSIONS



RB	FB	BORE	A (FB)	A (FB)	B	C	D	H	S	W	M	M-DD	N	P	Q	F (ISO)	TxL	WEIGHT
3”	2 ½”	63.5 2.50	169 6.653	169 6.653	83.3 3.280	98.3 3.870	144.9 5.705	185 7.287	400 15.75	140 5.500	18.9 0.744	15.9 0.626	1” UNS	16.5 0.649	22.7 0.894	F10	M10X20	13.7 KG 30.28 LB
4”	3”	82.6 3.25	214 8.425	195 7.677	108.8 4.283	114.1 4.492	160.7 6.327	200 7.894	600 23.62	177 6.969	18.9 0.744	15.9 0.626	1” UNS	16.5 0.649	22.7 0.894	F10	M10X20	23.7 KG 52.4 LB
-	4”	100 3.94	- -	239 9.409	123 4.843	124 4.882	170.5 6.713	211 8.299	600 23.62	200 7.874	18.9 0.744	15.9 0.626	1” UNS	16.5 0.649	22.7 0.894	F10	M10X20	30.0 KG 66.3 LB

6“ valve dimensions can be supplied on request.

47 SERIES

HOW TO ORDER

When placing an order for VAAS valves, please provide as many details as possible on the application such as: Media, temperature, pressure, pipe line size and type of connection.

In accordance with our policy to strive for continuous improvement of the product, we reserve the right to alter the dimensions, technical data and information included in this catalogue when required.

Please use the table below to order your VAAS valves.

EXAMPLE A: 10 AFB47-4466TG/BW-P043

Size 1" (10) | Antistatic (A) | Firesafe (F) | Full bore (B) | 3-piece ISO (47) | C. St Body / Ends (4) | S. St 316 Trim (6) | PTFE seats (T) | Graphite body seals (G) | Buttweld ends (BW) | Stem seal for vacuum and gas service (P043)

EXAMPLE B: 20 R47-6666KV/PN40-VB60

Size 2" (20) | Bottom tank (R) | 3-piece ISO (47) | S. St 316 body (6) | End / Trim (6) | PEEK seats (K) | Viton body seals (V) | DIN flanged end (PN40) | Control ball (VB)

Ball valve identification code

SIZE CODE	SERVICE	SERIES			BODY | END	BALL | STEM	SEAT | SEAL		END CONNECTION					SPECIAL APPLICATION				
0	5	A	F	B	4	7	- 6	6	6	6	T	T	/ B	S	P	T	- A	0	8	6	6

SIZE

02	¼" / 8 mm
03	⅜" / 10 mm
05	½" / 15 mm
07	¾" / 20 mm
10	1" / 25 mm
12	1 ¼" / 32 mm
15	1 ½" / 40 mm
20	2" / 50 mm
25	2 ½" / 65 mm
30	3" / 80 mm
40	4" / 100 mm
60	6" / 150 mm

SERVICE

A	Antistatic
B	Full bore
C	Cryogenic
D	Diverter bottom entry
F	Firesafe
H	High pressure
I	High purity
K	Dry chlorine
L	Twin ferrule compression
N	Control
O	Oxygen
Q	Cavity filler
R	Bottom tank
S	Diverter side entry
V	Vacuum
W	Steam thermal fluid

BODY | END | BALL | STEM

1	Bronze
4	Carbon steel
5	Brass
6	S. St. 316 (L)
7	Monel
8	S. St. 304
9	C. Steel LCB
A	Alloy-20
C	Hasteloy-C
D	Duplex
I	Inconel
M	17-4PH
T	Titanium

SEAT

C	PCTFE
F	PFA
H	VX1
J	25% glass filled PTFE
K	Carbon filled PEEK®
L	Virgin PEEK®
M	Metal
P	NRG
R	15% glass filled PTFE
S	VESPEL®
T	PTFE
U	UHMWPE
Y	Delrin®

SEAL

B	Buna "N" shore 90
E	EPDM
G	Expanded graphite
I	Impregnated graphite
J	25% glass filled PTFE
K	Kalrez®
M	PTFE coated S. St O-Ring
N	Neoprene
R	15% glass filled PTFE
T	PTFE
U	UHMWPE
V	Viton®

END CONNECTION

BSPT	BS 21	**ETO**	Extended OD tube
DIN	DIN 2999 (BSPP)	**SWO**	Socket weld OD tube
DIN	3582	**TC**	Tri-clamp
NPT	B1.20.1	**KLM**	Copper tube
BW	Buttweld Sch 5,10, 40, 80	**ETB**	Extended copper tube
XBW	Extended buttweld	**LL**	Comp (Inch)
SW	Socket weld	**LM**	Comp (Metric)
XSW	Extended socket weld	**PN40**	Flanged DIN PN40/F1
BWO	OD tube		

SPECIAL APPLICATION

T	T port ball (61P series)	**J2N05**	Jacketed valve, No. outlets, type, size
L	L port ball (61P series)	**FE**	Fugitive emission
X	X port ball (62P series)	**VB**	Control ball
90°	Diverter ball valve 90° turn	**DBB**	Double block & bleed
180°	Diverter ball valve 180° turn	**NACE**	Nace service
A0866	Stem seal ammonia service	**LD**	Swivel locking device
P043	Stem seal for vacuum and gas service	**K**	LLP locking device
F043	Stem seal neoprene	**EP**	Electro polish
P250	Ball with pressure relief hole		

Other end connections are available on request.

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VAAS