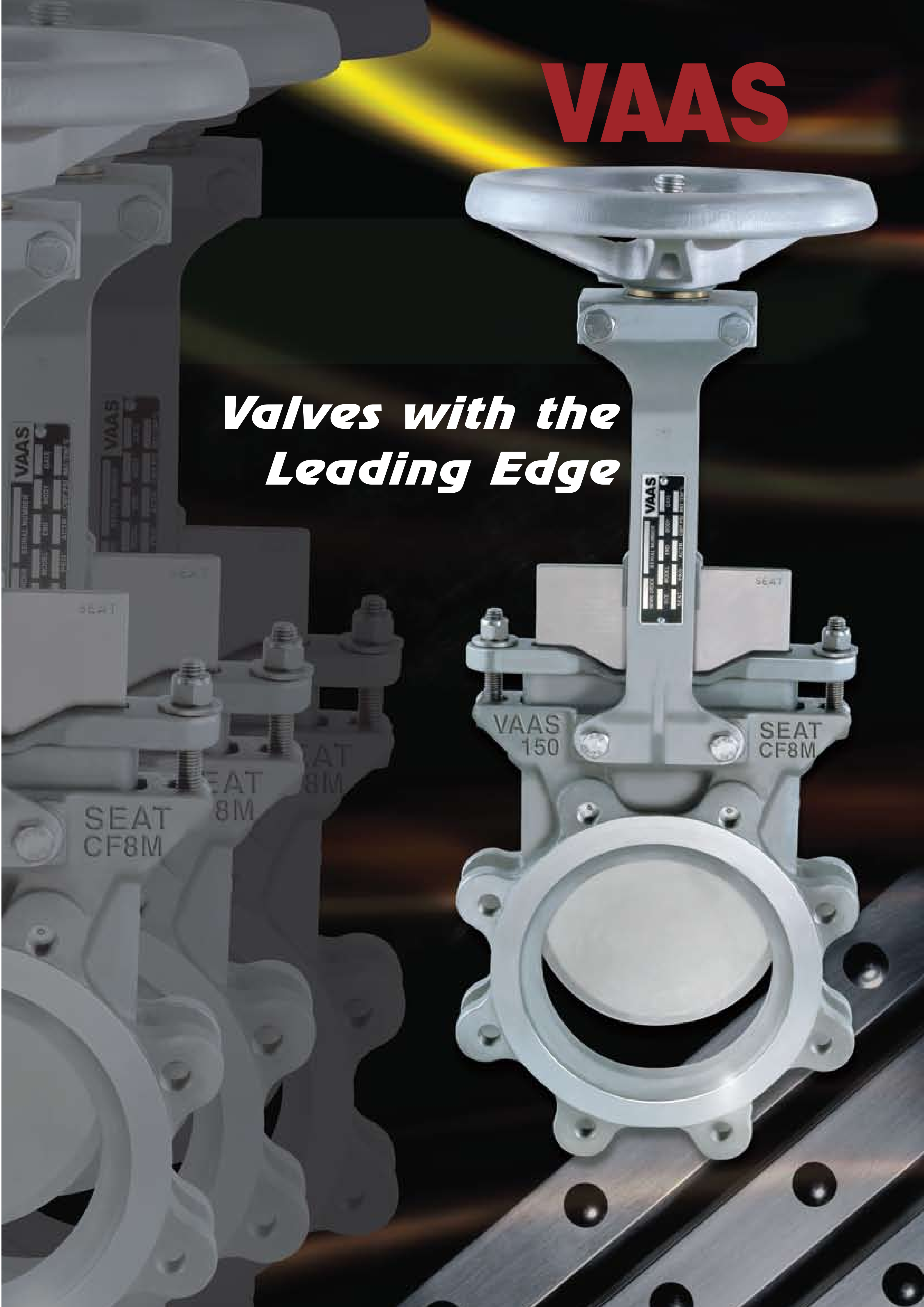
VAAS

Valves with the Leading Edge



VAAS - Europe

VAAS - Pacific

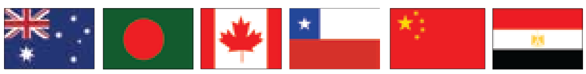
Our Mission at VAAS is to be a leader in Knife Gate Valve technology by offering solutions for customers' varied and difficult applications. We achieve this by working closely with customers. Long term associations and close interaction allows us to offer customers the right products at cost effective prices.

Mines in Australia, Paper mills in India, Steel factories in Africa, Municipal plants in the US – these are some of the industries worldwide that have discovered VAAS Knife Gate Valves.

Uniquely adapted for tough environments VAAS valves last longer and need fewer replacements resulting in less downtime.

VAAS is an ISO 9001 company established in 1984, in technical and financial collaboration with a leading US manufacturer.

VAAS valves have a market worldwide and are exported to countries spanning all continents from



VAAS - Headquarters, Chennai

Australia to South America.

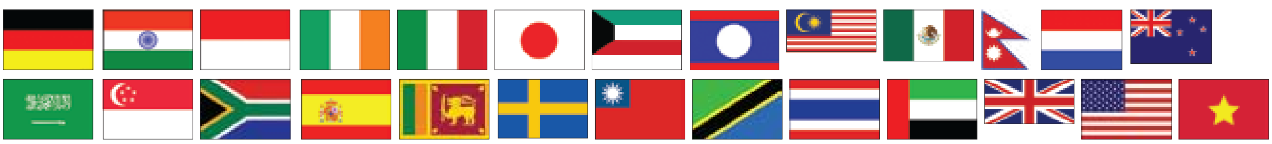
VAAS has an extensive list of satisfied users in a variety of industries which include Thermal Power, Pulp & Paper, Mining, Cement, Carbon Black, Chemical & Petrochemical and Water and Waste Water.

Top-of-the line Facilities

VAAS is a dedicated valve company-our name expands to 'Valves, Actuators, Automation & Solutions'. Our 3000 sq m facility in the port city of Chennai, India is equipped with modern machinery and a team of skilled engineers and technicians. Most of the manufacturing is done in-house including critical operations such as gate grinding, machining of body and seat assembly, and testing to ensure consistent quality. The entire operation is linked to a quality assurance system offering high traceability.

A top flight after sales team helps maintain valves during their operational life.

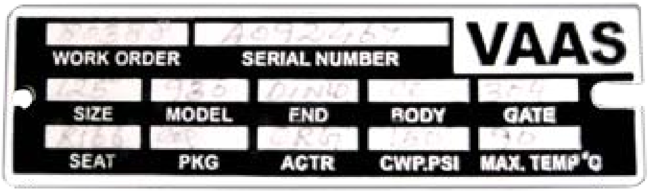
VAAS Group also includes a company manufacturing high quality Ball Valves.



Consistent Quality & Continuous Innovation
- The Cornerstones of VAAS Business Processes

We acknowledge that we have competitiors in business and respect them for their capabilities. Within the choices available to our customers for similar products, VAAS, an ISO 9001 company, strives to be the one manufacturer they can rely on for consistent quality. We back this up with continuous efforts to innovate products that are more suitable, more cost effective and more reliable.

Stringent quality control is the key to the high performance of our products. Every VAAS product that leaves our factory is tested by us as per our stringent norms (often stricter than applicable standards and industry norms).



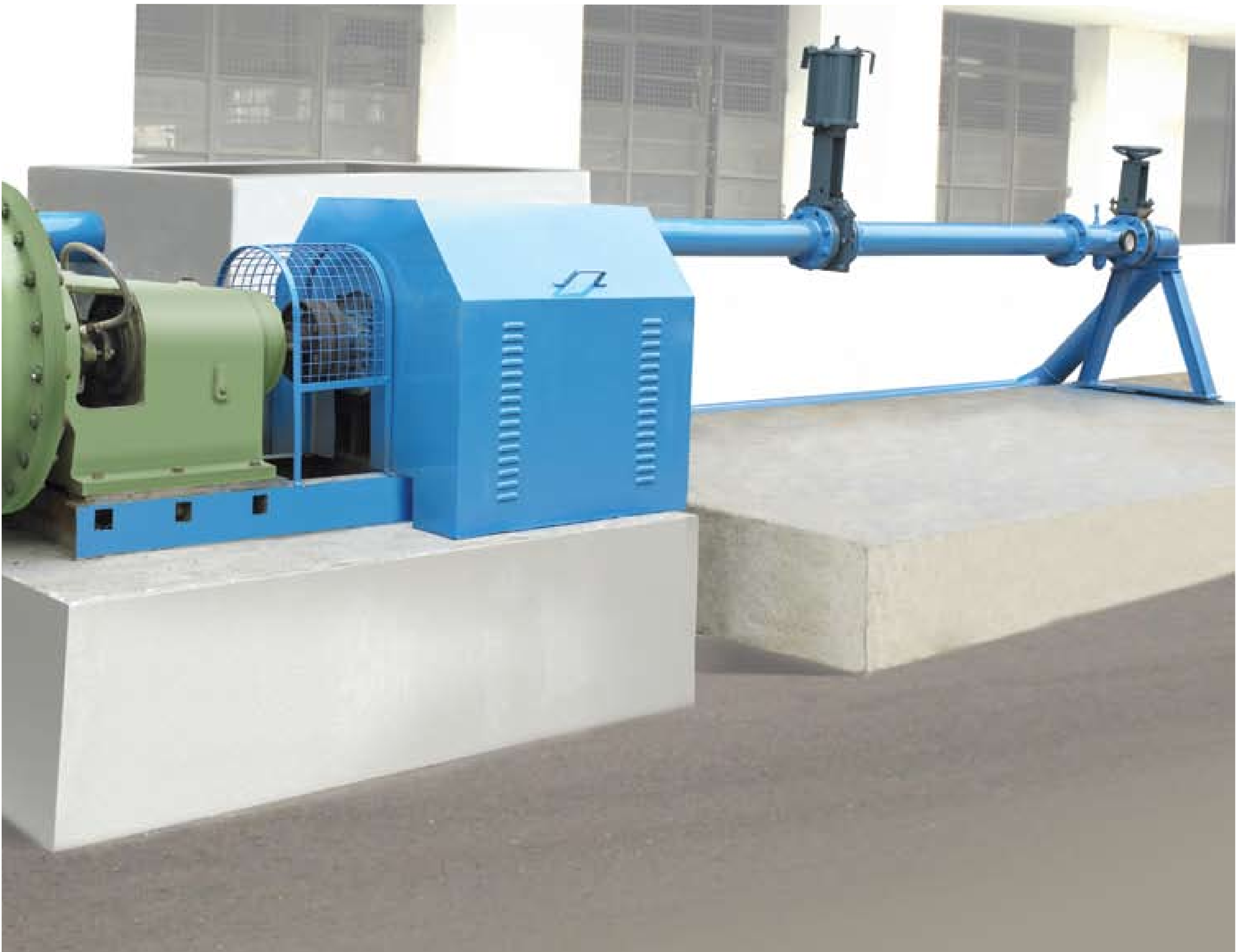
We maintain a complete record of the material that goes into production, its manufacturing sequence, etc. Every valve carries a stainless steel tag plate with the relevant product information and its functional capabilities. This tag also carries a unique serial number that can be used for full traceability and for ordering exact spares.

Specialised Manufacturing & Testing

We began producing Knife Gate Valves about a quarter of a century ago - just one type, limited to maximum 600mm (24 inch) size. Over the years, we actively listened to our customers and produced new designs, improved the ones we had and expanded our size range to 1500mm (60 inch).

Along the way, we also devised our own specialized systems for design and testing, more elaborate than those normally found with other valve manufacturers. A large percentage of our valves go into very difficult service environments such as highly abrasive erosive slurries.

VAAS has set up a unique in-house facility where valve prototypes can be life cycle tested in 'near-actual' conditions. This facility (see picture below) at our factory in Chennai, India is also available to customers/users, if they wish to test valves.



900 Series

Uni-directional Knife Gate Valves

FIG 930 VERSA

General purpose valve for use with sludge, mild slurries, pulp stock and dry powder hopper isolation meeting European face-to-face and rating norms

*CE Approved

FIG 931

General purpose valve for use with sludge, mild slurries, pulp stock and dry powders, meeting MSS SP-81 face-to-face norms

FIG 950

Wafer, semi-lug body design for severe service applications such as abrasive and erosive media

FIG 940

Lug body design for severe service applications such as abrasive and erosive media

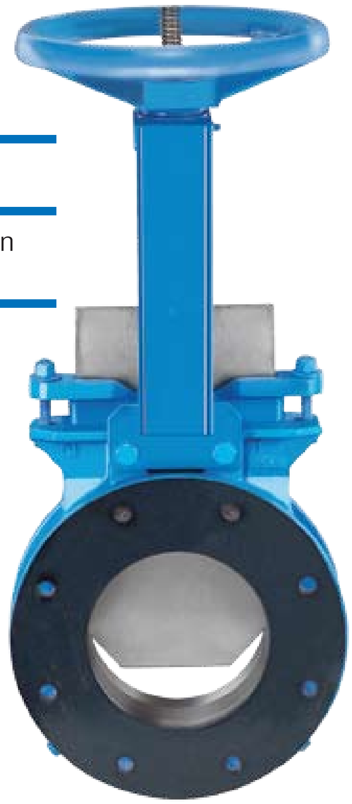


FIG 955

Flanged hopper isolation valve

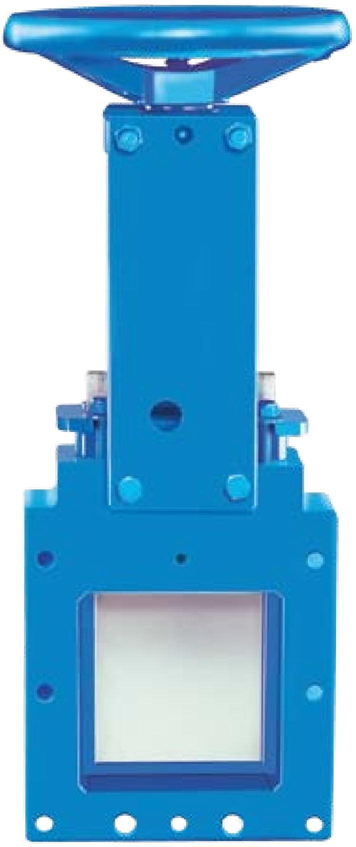


FIG 960

Square/rectangular flanged body design for dry powder hopper isolation and other material handling applications

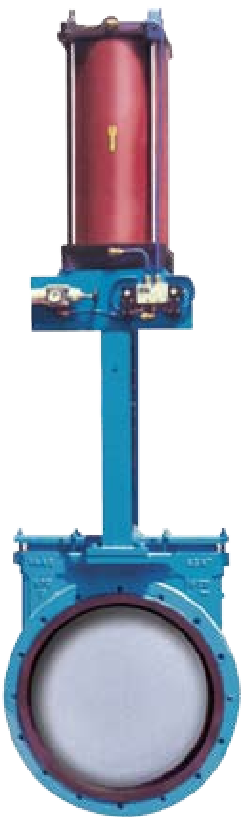


FIG 980

Wafer, semi lug body (lug body- FIG 985) uni-directional bonnetted design for buried services and for applications involving toxic or dangerous media requiring high packing tightness

FIG 970

Coal mill isolation Knife Gate Valve complying to NFPA-85 (2001) design requirements featuring full flow bore and various hardfacing options for erosive boiler coal firing applications

* *CE/PED certification process for other designs in progress*

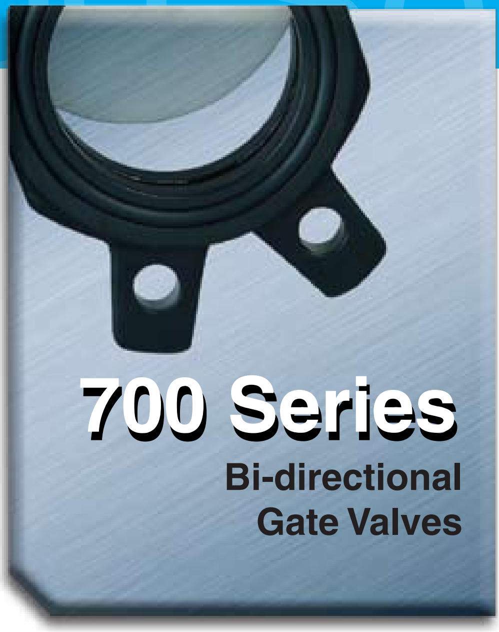


FIG 740

General purpose, lug body, full port, bi-directional gate valve for sludge, mild slurries, pulp stock and similar media, meeting MSS SP-81 face-to-face norms

FIG 752

Wafer, mid-flange, two-piece bolted body bi-directional slurry valve for severe services such as abrasive and erosive media with quick-change seats and reinforced U-seal seat

FIG 730

General purpose, wafer semi-lug body, full port, bi-directional gate valve for sludge, mild slurries, pulp stock and similar media meeting European face-to-face and rating norms

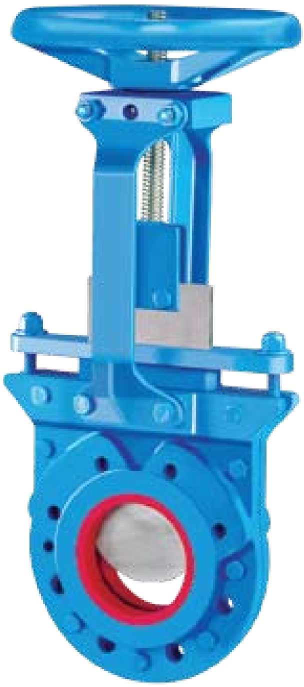


FIG 755

755 Wafer, mid-flange, two-piece bolted body bi-directional slurry valve for severe services such as abrasive and erosive media with quick-change steel reinforced U-seal seat and polyurethane bore liner

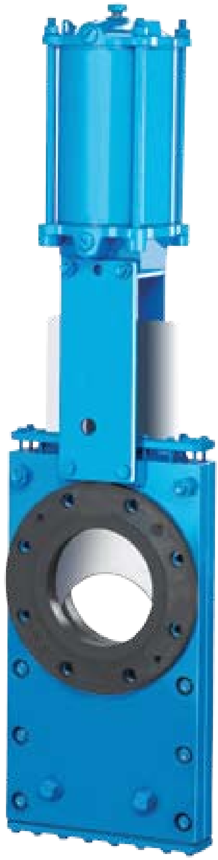


FIG 770

Through-going O-port bi-directional valve with steel reinforced elastomer seats for severe services such as cementing slurries and dry powder conveying systems

FIG 760 Slurry-Max

Two-piece bolted body, flanged, bi-directional valve for severe services such as abrasive and erosive media with spring-reinforced elastomer sleeves

FIG 780

Two-piece bolted body, through-going O-port bi-directional valve for severe services such as reject paper stock and similar media

CE/PED certification process for other designs in progress

ACTUATOR OPTIONS

MANUAL

Hand Wheel Rising Stem

Hand Wheel Non-Rising Stem

Gear Hand Wheel

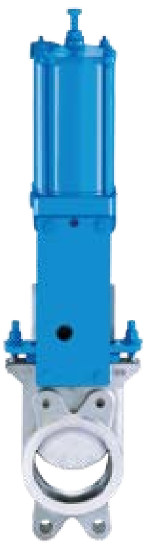
Chain Wheel

Lever

Extension Hand Wheel

PNEUMATIC

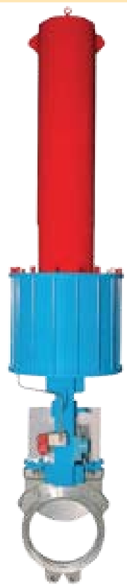
Double Acting



Double Acting with Fail Safe System

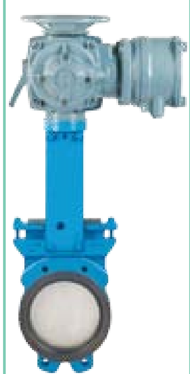
Double Acting Positioner

Spring Return

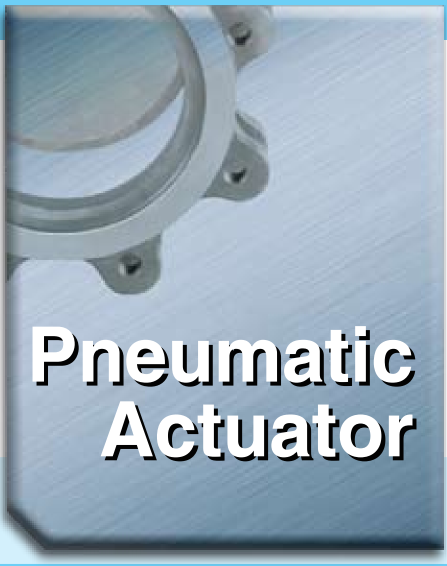


OTHER TYPES

Electric



Hydraulic



Model: CCGCx

Double-acting cylinder actuator for Series 900 valves.
Features: inter-changeability with most hand wheel operated valves in the series; FRP cylinder tube; Max pressure/temp – 8 bar (100 psi) / 100 deg C (212 deg F)

Model: RCGCx

Double-acting cylinder actuator for Series 700 valves.
Features: inter-changeability with most hand wheel operated valves in the series; FRP cylinder tube; Max pressure/temp – 8 bar (100 psi) / 100 deg C (212 deg F)

Model: CCMCx

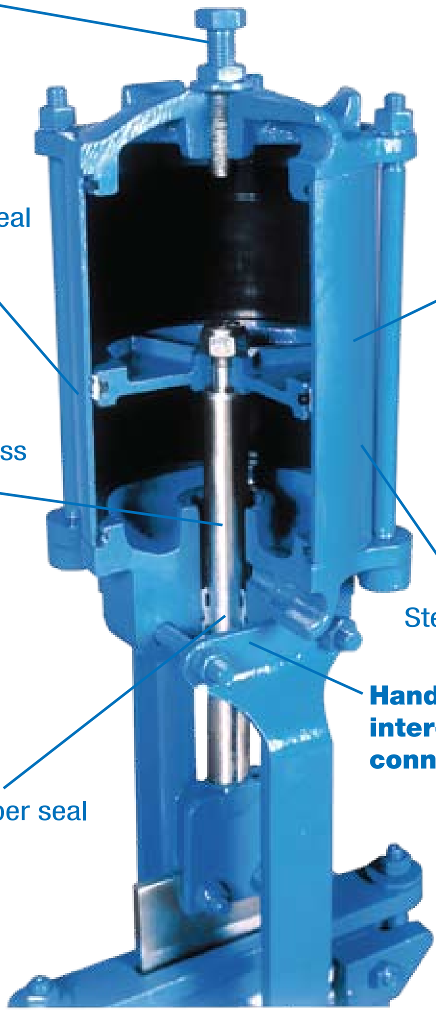
Double-acting cylinder actuator for Series 900 valves.
Features: inter-changeability with most hand wheel operated valves in the series; Steel cylinder tube; Max pressure/temp – 8 bar (100 psi) / 100 deg C (212 deg F); viton seals available as option for high ambient temperature locations

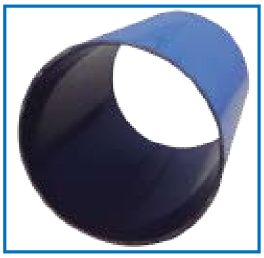
Model: RCMCx

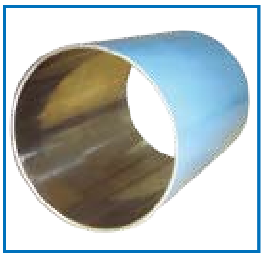
Double-acting cylinder actuator for Series 700 valves.
Features: inter-changeability with most hand wheel operated valves in the series; Steel cylinder tube; Max pressure/temp – 8 bar (100 psi) / 100 deg C (212 deg F); viton seals available as option for high ambient temperature locations

Model: CAACx

Double-acting cylinder actuator for FIG 930 & FIG 730 VERSA valves.
Features: inter-changeability with most hand wheel operated valves in the series; Aluminium cylinder tube; Max pressure/temp – 8 bar (100 psi) / 100 deg C (212 deg F)

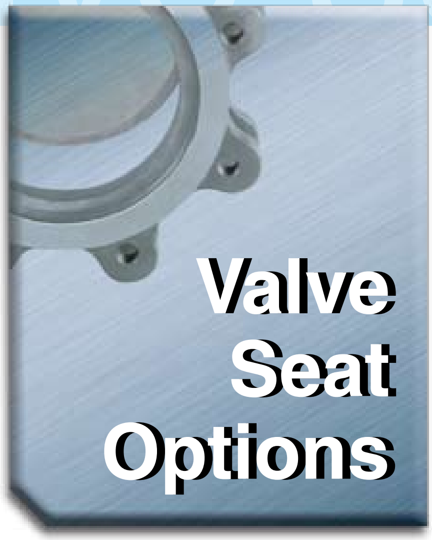


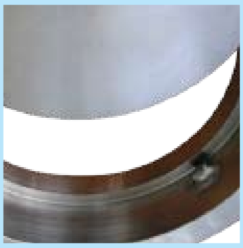

FRP Tube


Steel Tube


With Aluminium Tube


With FRP / Steel Tube





Integral, metal-to-metal

Available models: FIG 930, 931, 940, 950, 960, 980, 985

Replaceable metal seat with or without elastomer body seal

Available models: FIG 940, 950, 980, 985

Available elastomer materials: Nitrile, Choroprene, EPDM, Viton, PTFE

Replaceable elastomer seat

Available models: FIG 930, 931 940, 950, 960, 980, 985

Available elastomer materials: Nitrile, Choroprene, EPDM, Viton, PTFE

Replaceable elastomer seat with metal backup ring

Available models: FIG 940, 950

Available elastomer materials: Nitrile, Choroprene, EPDM, Viton, PTFE

Replaceable metal seat ring

Available model: FIG 780

PTFE seat ring

Available models: FIG 940, 950

PTFE seat ring with retainer ring

Available model: FIG 931

Replaceable metal reinforced elastomer seat

Available model: FIG 770

Available elastomer materials: Nitrile, Choroprene, EPDM, Viton

Replaceable flexible elastomer U-seal

Available models: FIG 730, 740

Available elastomer materials: Nitrile, Choroprene, Viton

Replaceable steel reinforced elastomer U-seal

Available models: FIG 752, 755

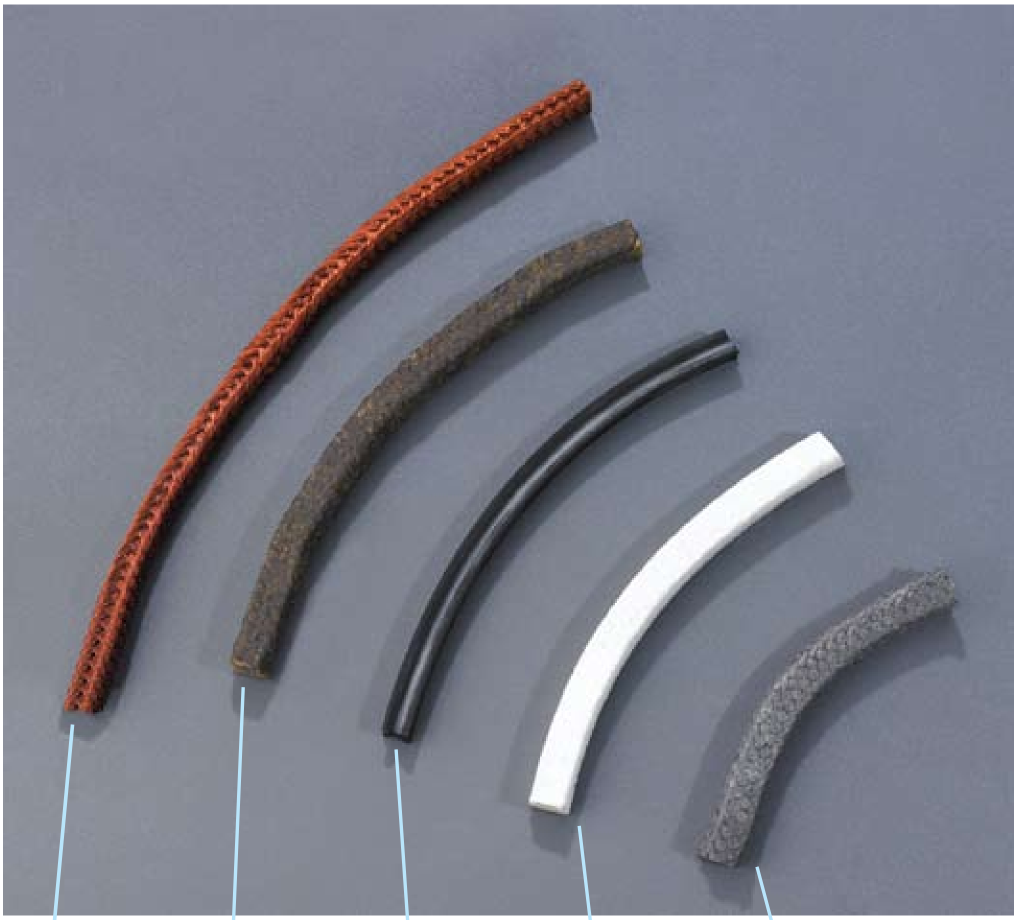
Available elastomer materials: Nitrile, Viton

Replaceable spring reinforced elastomer sleeve seat

Available model: FIG 760

Available elastomer materials: Natural Gum Rubber, Choroprene, EPDM, Viton

Maximum recommended temperatures (deg C / deg F) for the various elastomer seats/seals used in our valves:- Nitrile (80/176), Chloroprene (90/194), Natural Rubber (30/176), Polyurethane (80/176), EPDM (120/248), Viton (200/392), PTFE (232/450)



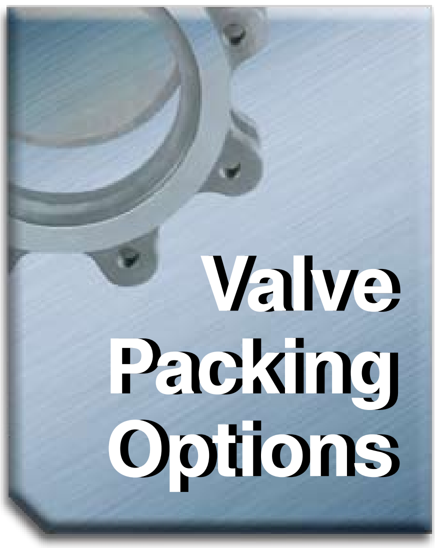
Copper braid wiper packing layer (500/932 deg C/F)

Elastomer (Nitrile, Viton) QUAD packing (80/176, 100/392 deg C/F)

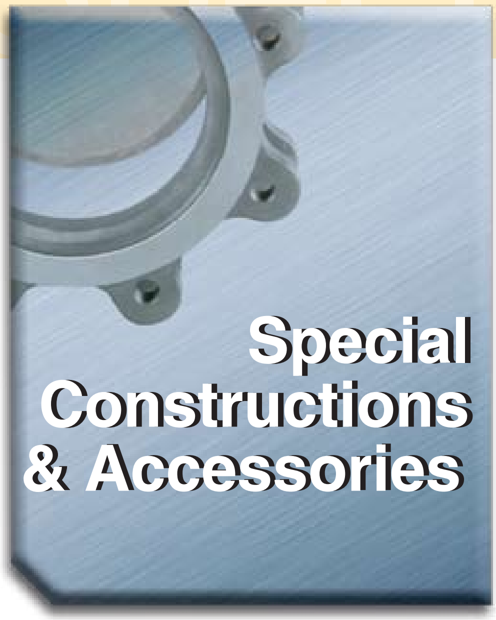
High temperature braided Graphite (1000/1832 deg C/F)

Yarn packing; for general, non-corrosive services (80/176 deg C/F)

STANDARD
PTFE Syntex braided (232/450 deg C/F)



Maximum recommended service temperature indicated within brackets.
Compatatibility with media to be checked; please consult VAAS for suggestions



Gate guard

Locking device

Stem extensions
& floorstands

Purge Port

Integral / Replaceable
V-orifice seat

Manual Override

For emergency operation of pneumatically operated valves

Stem guard

Roller support

Polyurethane
Bore-Liner

Models: FIG 752, 755

Deflection cone
Polyurethane (DC2)

Recommended for abrasive flow applications to direct the flow away from seat

Approx hardness: Shore 90A

Max temperature: 90 deg C.

Usage: With select 900 Series valves

Models: FIG 940, 950

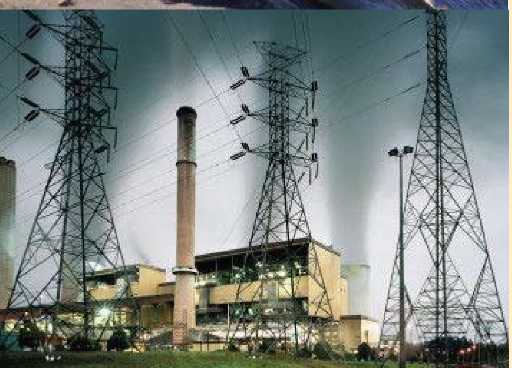
Deflection cone
Cast Ni-hard (DC1)

Recommended for abrasive flow applications to direct the flow away from seat

Approx hardness:500 BHN

Usage: With select 900 Series valves

Models: FIG 940, 950



Knife Gate Valve is a versatile design that offers superior performance and reliability over conventional valve designs in a variety of difficult applications. They are generally not used in clean media where conventional valves are sufficient.

Knife Gate Valves are used in gas, liquid and solid handling, mostly for flow isolation but for throttling/ control duties as well, in a limited way.

Most Knife Gate Valve applications involve relatively low pressures (typically 10 bar (150psi) or less). However, special designs are used upto 20 bar or even higher in some models. Knife Gate Valves, due to their simple construction, can handle temperature fluctuations that could seriously damage or hamper working of conventional valve designs.

It would be difficult to list the numerous applications that Knife Gate Valves are used for.

Following are some of the broad categories of media & applications that these valves generally handle:

Liquids

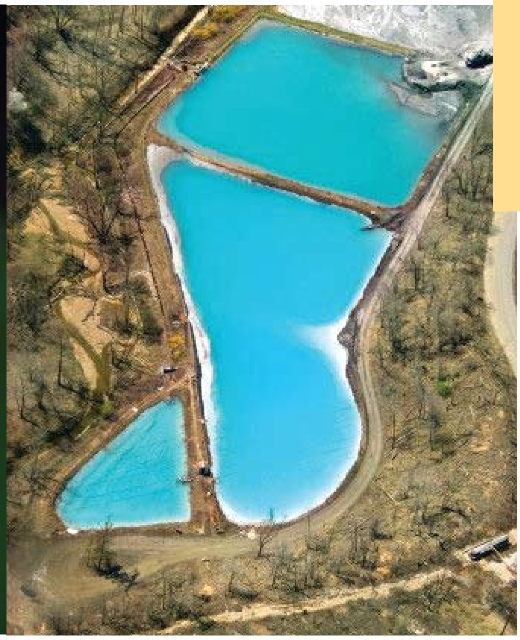
- **Water and waste water**
  Raw water intake; Sewage; Steel mill waste water
- **Abrasive slurries**
  Slurries in mineral processing of Coal, Iron ore, Copper, Nickel, Gold, Platinum etc; Ash slurries in coal fired power plants; Gypsum; Rock phosphate slurry
- **Chemical slurries**
  Slurries in phosphoric acid/fertilizer plants
- **High viscous media**
  Paper pulp, Molasses in sugar plants, Bitumen and other tarry media; Viscose rayon

Solids/Powders

- **Silo isolation handling variety of powders**
  ESP hoppers in coal fired power plants; Raw material and product storage in processing industries; Weighing systems; Foundries
- **Pneumatic conveying systems**
  Cement, Polyester pellets, Fly ash, Detergent powders
- **High temperature solids**
  Boiler bed ash, Carbon black powder

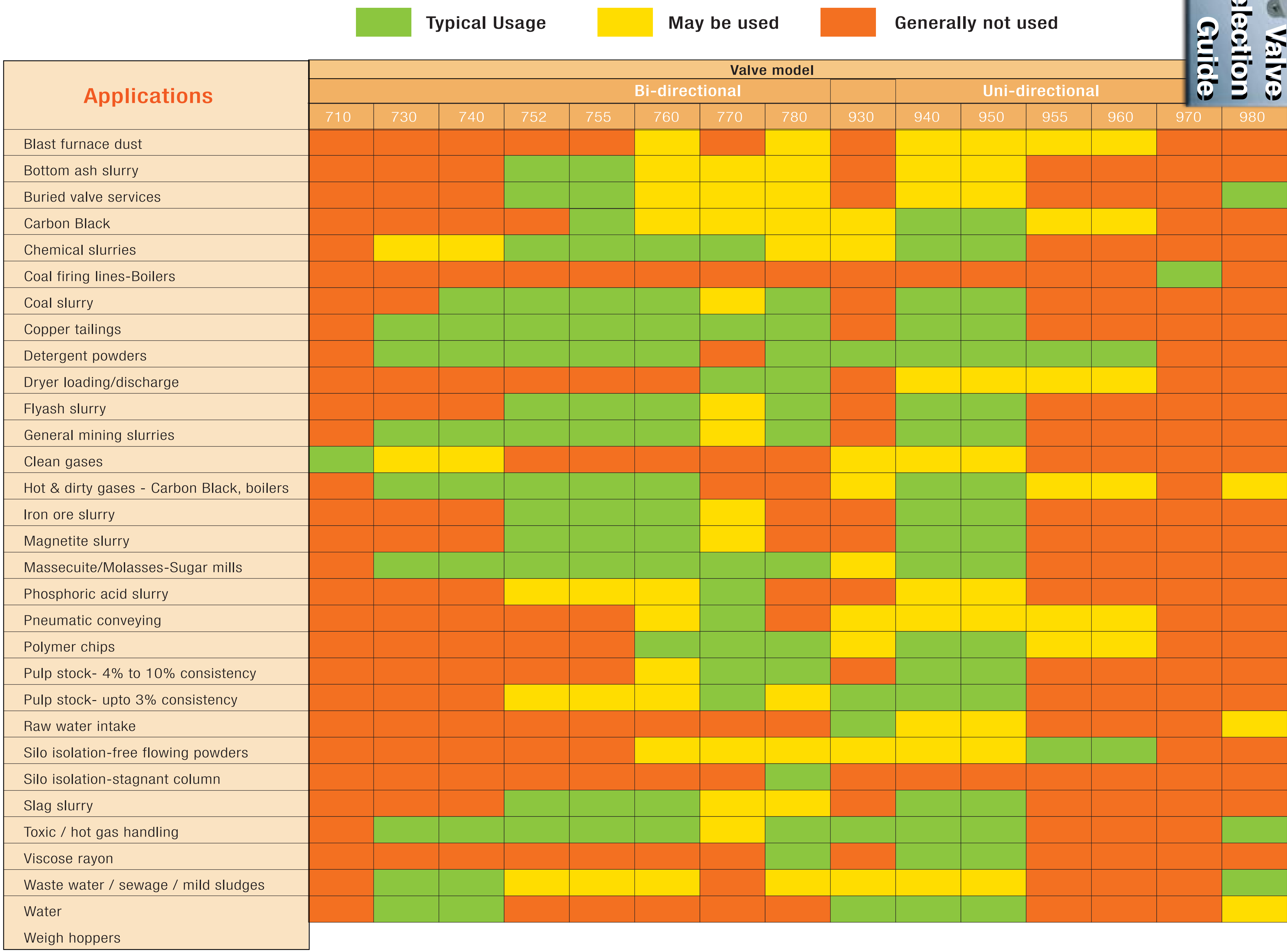
Gases

- **High temperature gases**
  Carbon black, Blast furnace gases
- **Media containing solid/powder material and gases**
  Pulverized coal firing lines in Power plants, Carbon black, Blast furnace gases, Engine exhaust applications



selection guide

Valve Selection Guide



		Size, mm	50	65	80	100	125	150	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
		Size, inch	2	2.5	3	4	5	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38	40	42	44	46	48	50	52	54	56	58	60
Model	Body	Seat	Pressure Rating, bar (For values in psi, please multiply by 14.5)																																
930	Cast Iron / Ductile Iron	Metal/Soft	10	10	10	10	10	10	10	10	6	6	6	5	4																				
931	Cast Iron / Ductile Iron	Metal/Soft	10		10	10	10	10	10	10	6	6	6	5	4		4																		
940	Cast Iron / Ductile Iron	Metal/Soft																																	
950	Cast Iron / Ductile Iron	Metal/Soft	10		10	10	10	10	10	10	10	5	5	5	5		5		5	5	5		3												
952	Cast Iron / Ductile Iron	Metal								7		7																		3					
955	Cast Iron / Ductile Iron	Metal				5		5	5	5	5																								
960	Cast Iron / Ductile Iron	Metal/Soft																																	
970	Cast Iron / Ductile Iron	Metal																																	
930	Steel / Stainless Steel	Metal/Soft	10			10			10																										
931	Steel / Stainless Steel	Metal/Soft	10		10	10	10	8	7	5	5	4	4	3	3		3				3														
940	Steel / Stainless Steel	Metal/Soft	10		10	10	10	10	10	10	10	10	10	10	10		10			10			10												
950	Steel / Stainless Steel	Metal/Soft	10		10	10	10	10	10	10	10	10	10	10	10	10	10	5	5	5	7	7	5	3	7		5		3		2	3			
952	Steel / Stainless Steel	Metal/Soft																							7	7			5						2
960	Steel / Stainless Steel	Metal/Soft																																	
970	Steel / Stainless Steel	Metal/Soft																																	
980	Steel / Stainless Steel	Metal/Soft			10			10	10		10		10		10					5															
981	Steel / Stainless Steel	Metal/Soft																																	2
985	Steel / Stainless Steel	Metal/Soft							10	10		10	10		10																				
730	Cast Iron / Ductile Iron	Soft																																	
752	Cast Iron / Ductile Iron	Soft	10		10	10	10	10	10	10	10	10	10	10	10		10																		
752	Cast Iron / Ductile Iron	Soft	16		16	16	16	16	16	16	16	16	16	16																					
752	Cast Iron / Ductile Iron	Soft								20	20	20																							
755	Cast Iron / Ductile Iron	Soft	10		10	10	10	10	10	10	10	10	10	10	10		10																		
755	Cast Iron / Ductile Iron	Soft	16		16	16	16	16	16	16				16																					
755	Cast Iron / Ductile Iron	Soft									20	20																							
760	Ductile Iron	Soft			7	7		7	7	7	7	7	7	7																					
770	Ductile Iron	Soft						10			10			10																					
780	Ductile Iron	Soft				10		10		10	10	10	10	10																					
710	Steel / Stainless Steel	Soft						7	7	7	7	7	7	7	7		7			7															
711	Steel / Stainless Steel	Soft						7	7	7	7	7	7	7	7	7																			
730	Steel / Stainless Steel	Soft																																	
740	Steel / Stainless Steel	Soft	10		10	10	10	10	10	10	10	10	10	10	10		10			5			5												
752	Steel / Stainless Steel	Soft	10		10	10	10	10	10	10	10	10	10																						
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755	Steel / Stainless Steel	Soft	10		10	10	10	10	10	10	10	10	10																						
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770	Steel / Stainless Steel	Soft						10			10			10																					
780	Steel / Stainless Steel	Soft				10		10		10	10	10	10	10																					
780	Steel / Stainless Steel	Soft				10		10	10	10	10		10		10		10			5															

Note: *Higher pressure designs available on request. Please consult VAAS.*

Model, Size, Pressure Rating & Availability

VAAS uses a 40-segment order code system to identify their products with clarity and detail. The order code is built up of segments in the sequence shown below. Example : 0300,FIG 950,WM,G1,S1-ST,S1-ST,C,S,CCGC3,MOH,PS,TS

Segment	Level Description	Segment	Level Description	Segment	Level Description	Segment	Description
1	Size	11	Seat Leakage	21	Position Indicator	31	Limit Switch / Prox Switch
2	Model	12	Pressure Rating	22	Solenoid Valve	32	Junction Box
3	Endstyle	13	Body Purges	23	Positioners	33	Companion Flanges
4	Drilling	14	Chest Purges	24	IP Convertor	34	Flange Fasteners
5	Body	15	Deflection Cone	25	Fail Safe System	35	Flange Gaskets
6	Body Option	16	Actuator	26	Manual Spool Valve	36	Special Construction1
7	Gate	17	Manual Override	27	Pneumatic Tubing	37	Special Construction2
8	Gate Option	18	Locking Device	28	Speed Control Valve	38	Special Construction3
9	Seat Option	19	Gate Guard / Bellows	29	Air Lock Relay	39	Painting
10	Packing Material	20	Stem Guard / Cushioning	30	Air Filter Regulator	40	Testing

Description	Order code
1. Valve Size	
2 inch (50 mm) to 60 inch (1500 mm) (All except model FIG 960)	0200 to 6000
Length (Stroking dimension,inch- first two digits) & Width (inch, second two digits) (For FIG 960 valves only)	eg.,0306= 3in (80mm) x 6 in (150mm), nominal
2. Model	
FIG 930 VERSA semi-lug uni-directional knife gate valve, EN-558 face-to-face	FIG 930
FIG 930A semi-lug uni-directional knife gate valve - MSS SP81 face-to-face	FIG 931
FIG 940 full lug uni-directional knife gate valve	FIG 940
FIG 950 semi-lug uni-directional knife gate valve	FIG 950
FIG 952 Flanged uni-directional knife gate valve	FIG 952
FIG 955 Hopper Isolation uni-directional knife gate valve	FIG 955
FIG 960 Square / Rectangular uni-directional knife gate valve	FIG 960
FIG 710 Slim Bi-directional valve (Drilling: ANSI 150,300,600lb)	FIG 710
FIG 711 Slim Bi-directional valve (Drilling: ANSI 150,300,600 & 900lb)	FIG 711
FIG 730 Bi-directional gate valve, semi-lug, single-piece body	FIG 730
FIG 730 Bi-directional gate valve, full lug, single-piece body	FIG 740
FIG 752 Bi-directional slurry valve	FIG 752
FIG 752 Bi-directional slurry valve with polyurethane bore liner	FIG 755
FIG 760 Slurry-Max Bi-directional slurry valve	FIG 760
FIG 770 Ported gate valve	FIG 770
FIG 780 O-port valve	FIG 780
FIG 780 O-port valve with dual gates	FIG 780D
FIG 780 O-port valve with steel reinforced elatomer seats	FIG 780S

Description	Order code
FIG 970 Coal mill isolation valve	FIG 970
FIG 980 Bonnetted two-lug knife gate valve	FIG 980
FIG 985 Bonnetted full lug knife gate valve	FIG 985
3. Endstyle	
Wafer with threaded holes in lugs & chest area (Not applicable for FIG752/FIG755/FIG930 valves)	W
Wafer with through holes in lugs & threaded holes in chest area (Not applicable for FIG780 valves)	WT
Wafer with metric threaded holes in lugs & chest area (Not applicable for FIG752/FIG755/FIG930 valves)	WM
Wafer with through holes in lugs & metric threaded holes in chest area (Not applicable for FIG780 valves)	WTM
Wafer Square valve	W3
Wafer Rectangular valve	W4
UNC DRILLED HOLES AND TAPPED.	W5
4. Drilling	
Drilled to suit ANSI 150 (ANSI B16.5 class 150 (for size up to 600mm/24")/MSS-SP-44 (above 600mm/24") flanges.	F
Drilled to suit DIN PN 10 flanges	G1
Drilled to suit DIN PN 16 flanges	G2
Drilled to suit BS 10 Table D flanges	HD
Drilled to suit BS 10 Table E flanges	HE
Drilled to suit JIS 5 K flanges	JS0
Drilled to suit JIS 10 K flanges	JS1
Drilled to suit 280MM PCD,8 HOLES,M12 TAPPED flanges	F1
Drilled to suit 410MM PCD,12 HOLES,M16 TAPPED flanges	F2
Drilled to suit BS 4504 PN10 flanges	F3
Drilled to suit IS6392 TABLE 17 flanges	F9
Drilled to suit AS 2129 TABLE D flanges	F10
Drilled to suit AS 2129 TABLE E flanges	F11
Drilled to suit BS 4504 PN16 STANDARD flanges	F12

Description	Order code
Drilled to suit sketch furnished / approved by customer	F15
Undrilled	F17
Drilled to suit ANSI 150 & 300 drilling on chest area	F21
Drilled to suit IS:8329 TABLE 3 flanges	F28
Drilled to suit ANSI 150,300& 600 drilling on chest area	F29
Drilled to suit AS 2129 TABLE "F" flanges	F31
Drilled to suit BS-4504 PN-6 flanges	F33
Drilled to suit ANSI 150,300,600 & 900 drilling on chest area	F34
Drilled to suit ANSI 300 lb flanges	F35
Drilled to suit ANSI 600 lb flanges	F36
Drilled to suit IS:1538 TABLE 6 flanges	F37
Drilled to suit IS 6392 TABLE 10 flanges	F38
Drilled to suit SABS 1123 flanges	F39
Drilled to suit IS6392 TABLE 11 flanges	F40
5. Body Material	
Cast iron	CI
Alloy Cast iron with hardness of 250 BHN (Min)	AC
Cast iron - IS 210 Gr FG 300	AC1
Aluminium	A
Ductile iron	DI
Ni Resist Cast Iron	D2
Carbon Steel (Cast (WCB) / Fabricated)	CS
Cast 304 stainless steel; ASTM A351 CF8	S1
ast 316 stainless steel; ASTM A351 CF8M	S2
Cast 316 stainless steel; ASTM A351 CF3M	S2L
Cast 317L stainless steel; ASTM A351 CG3M	S3L
Cast 310 stainless steel; ASTM A351 CK20	S4
Hastelloy-C22 or equivalent	S5
Alloy 20	S6
CD4MCu, Duplex stainless steel	S8
6. Body Options	
Nitrided	NI

Seat face stellited	ST
V-orfice; welded-on	V
Seat bore stellited	STB
Seat face & bore stellited	STF
V-orifice ; welded-on with bore face stellited	V-ST
Welded-on 304 Stainless steel seat (applicable for CS body)	S1

7. Gate Material

Stainless steel, 304	S1
Stainless steel, 316	S2
Stainless steel, 316L	S2L
Stainless steel, 317	S3
Stainless steel, 317L	S3L
Stainless steel, 310	S4
Hastelloy C (B4)	S5
Alloy 20 (B10)	S6
Stainless steel, 410	S7
Stainless steel, 904L	S8
Carbon Steel	CS
Ni-Resist Cast Iron	D2

8. Gate Options

Nitrided	NI
Edge Stellited	ST
Hard Chrome Plated	HC9

9. Seat Options

Replaceable; Chloroprene	RS16
Replaceable; NBR	RS26
Replaceable; EPDM	RS66
Replaceable; Nitrile	RS69
Replaceable; OFF WHITE VITON	RS58
Replaceable; Viton	RS48
Replaceable, PTFE with 316 st. steel back-up ring (for sizes above 200mm)	RS75
Replaceable, PTFE; solid PTFE ring (for sizes upto 150mm)	RS76
Nitrile with steel reinforcement Series 752 / 755 valves only	RS80
Viton with steel reinforcement Series 752 / 755 valves only	RS85
Replaceable Stainless steel 304 with stellited face	RS-S1-ST
Replaceable Stainless steel 316 with stellited face	RS-S2-ST
Replaceable Stainless steel 304 with stellited face with EPDM O-ring	RS-S1T-E
Replaceable Stainless steel 316 with stellited face with	
EPDM O-RING	RS-S2-ST-E
Stainless steel 304 replaceable seat with EPDM O-ring	RS-S1-E
Stainless steel 316 replaceable seat with EPDM O-ring	RS-S2-E
Stainless steel 304 replaceable seat with VITON O-ring	RS-S1-V
Stainless steel 316 replaceable seat with VITON O-ring	RS-S2-V
Replaceable, Stainless steel 304 V-orifice	RS-S1-VP
Replaceable, Stainless steel 316 V-orifice	RS-S2-VP
Replaceable Alloy Cast Iron Seat	RS-AC
Replaceable Cast Iron (IS 210 Gr.FG 300) Seat	RS-AC1
Nitrile with steel wire reinforcement	RO80
Chloroprene with steel wire reinforcement	RO16
EPDM with steel wire reinforcement	RO66
Chloroprene rubber sleeve	RS-SL-RS16
Natural rubber sleeve	RS-SL-RS53
EPDM rubber sleeve	RS-SL-RS66

10. Packing Options

Oil impregnated yarn; max. temperature-120 deg C	B
PTFE impregnated syntex fiber; max temperature - 232 deg C	C
Copper wiper	W
PTFE impregnated syntex fiber; max temperature - 232 deg C with copper wiper layer	CW
PTFE impregnated syntex fiber; max temperature - 232 deg C with copper wiper layer & nitrile quad layer	CWQ
PTFE impregnated syntex fiber; max temperature - 232 deg C with nitrile quad layer	CWQ1
PTFE impregnated syntex fiber; max temperature - 232 deg C with copper wiper layer & nitrile quad layer	CQ
PTFE impregnated syntex fiber; max temperature - 232 deg C with copper wiper layer & nitrile quad layer	CQ1
Pure PTFE; Max.temp. 232 Deg C; Max. pressure 150 psi	T
Inmarco style 126S pcking; Max.temp. 1000 Deg C	M15
Inmarco style 126S pcking; Max.temp. 1000 Deg C with copper wiper layer	M15W
PTFE synth. Fiber with one Nitrile quad seal with Polyurethane scrapper IG752/FIG755 Moldels only	CQS

11. Seat Leakage

As per MSS SP-81 for metal seated valves	M
As per ANSI Class I	V
Leakage @ 100 cc/min when tested with 40 psi water at normal flow direction (applicable for std valves with lapping)	E
Max leakage of 4cc/min/inch size of valve- for valves with PTFE seats only	X
As per MSS SP-81 for soft seated valves	Z
No seat test done (for all square,rectangular & valves with M5 Packing)	N
Leakage @ 300cc/min or 2.25 LPM whichever is high, when tested with 40 psi water at normal flow direction (applicable for Fig 930 metal seated valves)	G

12. Pressure Rating

900 Series with standard rating	No code
Rating - CWP- 2 bar	CWP-2
Rating - CWP- 3 bar	CWP-3
Rating - CWP- 5 bar	CWP-5
Rating - CWP- 7 bar	CWP-7
Rating - CWP- 10 bar	CWP-10
Rating - CWP- 16 bar	CWP-16
Rating - CWP- 20 bar	CWP-20

13. Body Purges

Purge connections on valve body; NPT(M) connections with plug; 2 nos (5&7 O' Clock position); Size - 1/4"	P11
Purge connections on valve body; NPT(M) connections with plug; 3 nos (3,6 & 9 O' Clock position); Size - 1/4"	P21
Purge connections on valve body; NPT(M) connections with plug; 2 nos (5&7 O' Clock position); Size - 3/8"	P12
Purge connections on valve body; NPT(M) connections with plug; 3 nos (3,6 & 9 O' Clock position); Size - 3/8"	P22
Purge connections on valve body; NPT(M) connections with plug; 2 nos (5&7 O' Clock position); Size - 1/4"	P13
Purge connections on valve body; NPT(M) connections with plug; 3 nos (3,6 & 9 O' Clock position); Size - 1/2"	P23
Purge connections on valve body; NPT(M) connections with plug; 2 nos (5&7 O' Clock position); Size - 1/2"	P15
Purge connections on valve body; NPT(M) connections with plug; 3 nos (3,6 & 9 O' Clock position); Size - 1"	P25
Purge connections on valve body; NPT(M) connections with plug; 2 nos (5&7 O' Clock position); Size - 1"	P35

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VAAS/GenCat/10000/09-2009

Your local contact / distributor

Notes

Description	Order code
14. Chest Purges	
Purge connections on valve body; NPT(M) connections with plug; 2 nos on either side of chest; Size - 1/4"	C21
Purge connections on valve body; NPT(M) connections with plug; 2 nos on either side of chest; Size - 3/8"	C22
Purge connections on valve body; NPT(M) connections with plug; 2 nos on either side of chest; Size - 1/2"	C23
Purge connections on valve body; NPT(M) connections with plug; 2 nos on either side of chest; Size - 1"	C25
Purge connections on valve body; NPT(M) connections with plug; 2 nos on face of chest; Size - 1"	CF25
15. Deflection Cone	
Deflection cone, cast n-hard	DC1
Deflection cone, polyurethane	DC2
Deflection cone, cast n-hard with Aramid gasket	DC11
Deflection cone, 304 stainless steel	DCS1
Deflection cone, 316 stainless steel	DCS2
16. Actuator	
Direct mounted hand wheel, non-rising; rising stem	CHG
Direct mounted hand wheel, non-rising; non-rising stem	CRG
Lever	CLG
Chain wheel	CWG
Open bevel gear hand wheel; rising stem	CGG
Open bevel gear hand wheel; rising stem	CGG2
Pneumatic double-acting cylinder actuator, Aluminium cylinder tube, PTFE+nitrile+polyurethane seals; x inch diameter cylinder - for Series 900 valves	CAACx
Pneumatic double-acting cylinder actuator, FRP cylinder tube, PTFE+nitrile+polyurethane seals, x inch diameter cylinder - for Series 900 valves	CCGCx
Pneumatic double-acting cylinder actuator, Steel cylinder tube, PTFE+nitrile+polyurethane seals, x inch diameter cylinder - for Series 900 valves	CCMCx
Pneumatic double-acting cylinder actuator, Steel cylinder tube, PTFE+viton seals; x inch diameter cylinder - for Series 900 valves	CCMCxV

Description	Order code
Pneumatic double-acting cylinder actuator, FRP cylinder tube, PTFE+nitrile+polyurethane seals; x inch diameter cylinder - for Series 700 valves tube	RCGCx
Pneumatic double-acting cylinder actuator, Steel cylinder tube, PTFE+nitrile+polyurethane seals, x inch diameter cylinder - for Series 700 valves tube	RCMCx
Pneumatic double-acting cylinder actuator, Steel cylinder tube, PTFE+viton seals, x inch diameter cylinder- for Series 700 valves	RCMCxV
Enclosed bevel gear hand wheel, Model Gx, ISO - F10 mounting	CEGx-F10
Enclosed bevel gear hand wheel, Model Gx, ISO - F14 mounting	CEGx-F14
Electric actuator, On/off duty, Model Rotork India K30F10A-WD1000 K30F10A	WD1000
17. Manual Override	
Manual override; direct mounted rising stem hand wheel	MOH
Manual override; bevel gear rising stem hand wheel	MOG
Manual override; enclosed bevel gear rising stem hand wheel; model G01	MO-EG01-F10
Manual override; enclosed bevel gear rising stem hand wheel; model G02	MO-EG02-F14
Manual override; direct mounted rising stem chain wheel	CWG
18. Locking Device	
Locking device; chain type	LK1
Locking device; special yoke with pin	LK2
Locking device; lock for handwheel locking	LK3
19. Gate Guard/bellows	
Gate guard	GG1
Gate guard with holes	GG2
Gate cover; steel	GC
Bellows for piston rod protection; canvas bellows	CBEL
Bellows for piston rod protection; leather bellows	LBEL
20. Stem Guard / Cushioning	
21. Position Indicator	

Description	Order code
22. Solenoid Valve	
23. Positioners	
24. Ip Convertor	
25. Fail Safe System	
Capacity tank fail safe system-FAIL CLOSED	FSC
Capacity tank fail safe system-FAIL OPEN	FSO
26. Manual Spool Valve	
27. Pneumatic Tubing	
28. Speed Control Valve	
29. Air Lock Relay	
30. Air Filter Regulator	
31. Limit Switch / Prox Switch	
32. Junction Box	
33. Companion Flanges	
34. Flange Fasteners	
35. Flange Gaskets	
36. Special Construction1	
37. Special Construction2	
38. Special Construction3	
39. Painting	
VAAS standard paint - Phirozi blue epoxy on non-stainless steel exteriors (RAL 5012)	PS
As per customers order/ drg /approved specification details	PC
Heat resistant aluminium paint, coating thickness	P1
RILSAN coated body- inside and outside	PE4
40. Testing	
VAAS standard pre-dispatch inspection	TS
VAAS standard pre-dispatch inspection with customer witness	TC