



INDUSTRIAL VALVES

Technical Guide



ABOUT US

Established in 1974 as a single bearing shop in Durban, South Africa; BMG's aggressive growth strategy has included acquisitions, supplemented by a steady organic growth discipline. BMG attracts best-of-breed talent resulting in technical expertise that differentiates BMG in the industry. Staff are truly part of the BMG family and its success.

BMG boasts an accredited in-house technical and commercial training academy which fosters a culture of staff development and career advancement; it's all about sustainability.

The net result, is a company that reliably supplies and supports 70 000 customers in 15 countries with the widest range of industrial engineered products and expert services in Africa via 105 branches.

BMG is positioned to deliver bespoke 360 degree solutions to its customers, and subsequently return on investment to its investors and shareholders. BMG plays a pivotal role in supporting the productivity and production targets of all Industrial, Manufacturing, Mining and Agricultural sectors of the economies in the countries it serves. With an enviable reputation as Africa's largest distributor, manufacturer and service provider of the highest quality engineering consumables and components; including

- Bearings & Seals
- Power Transmission Components
- Drives, Motors and Controllers
- Hydraulics, Pneumatics and Filtration
- Heavy and Light Duty Materials Handling
- Valves and Lubrication
- Fasteners, Gaskets and Tools

BMG is a level 4 BEE contributor with ISO 9001 Quality Assurance certification. Health and safety of its employees and customers is a paramount focus and the company adheres to ISO 45001. BMG is also committed to environmental care and sustainability and strictly follows the ISO 14001 charter.

As a key contributor to the Invicta Holdings stable, BMG has played a major part in Invicta's unique achievement of being rated in South Africa's Top 100 Companies for 21 consecutive years.



TABLE OF CONTENTS

INDEX

Introduction	1-4
Butterfly Valves	5-7
Gate Valves	7-10
Diaphragm Valves	11
Ball Valves	12-13
Pinch & Angle Seat Globe Valves	14
Check Valves	15
Flange Drilling Guide	16-20
Valve Enquiry Form	21



INTRODUCTION

BMG is a competitive supplier of industrial valves. Due to the need for valves as components for lubrication systems, the variety of types and sizes have grown exponentially. We now meet the needs of a range of process industries.

The range of valves includes Diaphragm Valves (Straight Through and Weir type), Butterfly Valves, Gate Valves (Wedge, Resilient Seated and Knife), Check Valves (Ball and Swing), Pinch Valves, Angle Seated Valves and Ball Valves (Thermoplastic and Stainless Steel). This range will expand as customer demand requires it.

InterApp manual and actuated butterfly valves find applications in chemical, petrochemical and mining processing (acid extraction). With their ultra-high wear resistance, they are the ideal solution when safety and degradation resistance are crucial.

Industrial and slurry knife gate valves in the BMG range include valves with handwheels or actuators, assembled with either EPDM, Polyurethane, PTFE or NBR liners and are suitable for abrasive and corrosive applications.

Pinch valves have been added to our product offering, covering nominal bore sizes from DN50 up to DN500 in either short or long open frames, with safe working pressures up to 25 bar. These can be tailored to suit the application requirements, i.e. with a Stainless Steel frame.

Brand Representation



Wedge Gate Valves, Resilient Seated Gate Valves, Butterfly Valves and Ball Type Check Valves



Diaphragm Valves, Wedge Gate Valves and Pinch Valves



Butterfly Valves, Dampers and Ball Valves



Knife Gate Valves



Thermoplastic Valves

Valves regulate the amount of liquid, slurry or gas that moves from one chamber to another throughout an entire system of pipes. Valves use a sealing element that can open, close, or regulate, allowing small or large amounts of liquid, slurry or gas to pass through the opening.

Types of Valves

Various types of valves can be used in different applications. Valves are used in fluid transportation industries. There are many variations, and they each vary in different ways. The typical types are described below, which, form part of our valve range.

Butterfly Valves

A butterfly valve is a quarter-turn valve used to either isolate or regulate the flow of fluids. A disc in the body of the valve is positioned perpendicular or horizontally to the flow in the closed position, and rotated one-quarter of a turn to be parallel to the flow in the fully opened position. Intermediate rotations allow for regulation of the flow.

Advantages

Butterfly valves are similar to ball valves but have several advantages. They are lighter, more compact and when actuated pneumatically, open and close very quickly. The disc is lighter than a ball, and the valve requires less structural support than a ball valve of comparable diameter.

Ball valves are used for isolation and butterfly valves for isolation and control, even though both are quarter-turn valves. Butterfly valves have excellent flow characteristics, which makes them advantageous in industrial applications. They are reliable and require little maintenance, which can be done with ease if needed.

Operation

Butterfly valves operate manually, electrically or pneumatically actuated, with pneumatic valves operating most rapidly. Electrically actuated valves require a signal to the electric drive to open or close, while pneumatic valves can be either single- or double-acting. Single-acting valves ordinarily require a signal to open with the failsafe function, hinting that when airpower is lost, the valve jumps back to a fully closed or open position. Double-acting pneumatic valves are not spring loaded and require a signal both to open and to close.

Gate Valves

Gate Valves are arranged in the following categories: Wedge Gate Valves, RSV's (resilient seated valves) and Knife Gate Valves. Wedge Gate Valves and RSV's are better suited to clean fluids such as water, oil and gas, where knife gate valves are suitable in media that contain particles such as sludges and slurries. A gate valve is distinguished by the flat face or vertical gate that slides on a track or seat, which can be lifted perpendicular to the flow path. Gate valves are used for on/off, non-throttling applications. They are intended to be fully open, offering little resistance to flow, or fully closed. Therefore, these are the primary valves used in bulk pumping applications. Large valves are power operated using pneumatic, hydraulic or electrical actuators. Available with rising and non-rising spindles, depending on the specific application.

Advantages

Gate valves have large flow capacity and offer a high sealing capability, making the shut-off of any flow possible and any leakage nearly impossible. Gate valves have low-pressure drop as there is virtually nothing obstructing the movement of the fluid while the valve is fully opened, creating limited resistance to the flow.

Operation

Gate valves are configured to be actuated manually, pneumatically or electrically, with pneumatic valves operating most rapidly. Electrically actuated valves require connection to the electric drive to open or close it. Pneumatic valves are often offered as double-acting, with a spring required to operate a single-acting actuator, which is dangerous when dismantling. There are various solutions to overcome a failsafe position, which include an accumulator system that stores enough air pressure to activate the desired failsafe position.

Diaphragm valves

These valves consist of a valve body with two or more ports, a diaphragm and a bonnet assembly, housing a manual or pneumatic actuator. These valves are composed of thermoplastic metal or metal with a thermoplastic lining.

These diaphragm valves were first developed for industrial application use. Later the design was adapted for the biopharmaceutical industry, by using compliant materials which withstand sanitizing and sterilizing applications.

There are two main categories of diaphragm valves: one type seals over a "weir" (saddle) and the other (sometimes called a "full bore or straightway" valve) seals over a seat. The weir type is the most common in-process application, whereas the full bore is used in slurry applications to reduce obstruction but used as a process valve as well. Diaphragm valves are either manually, pneumatically or electrically actuated. The applications are ordinarily as shut-off valves in in-process systems in the industrial, food and beverage, pharmaceutical and biotech industries.

Advantages

Full bore diaphragm valves have a high flow capacity and offer a high sealing capability, making the shut-off of any flow possible and any leakage nearly impossible. Full bore diaphragm valves have a low-pressure drop due to nothing obstructing the movement of the fluid when the valve is fully open, creating little resistance to the flow, making them fit for liquids with abrasive particles. Diaphragm valves offer excellent flow control characteristics, as well as sound isolation. They must be used in clean fluid applications as they will erode in abrasive applications.

Operation

These valves operate manually or pneumatically, with the pneumatic valves operating most rapidly. They are offered as double-acting, or single-acting. The weir and full bore configurations are available with a variety of body materials, linings and diaphragm materials to suit most applications.

Ball Valves

These are flow valves that are quarter-turn, straight-through and 3-way valves. They provide for shut-off purposes only and not suited for control purposes, as there is an open cavity behind the ball that can close up and cause the ball to seize.

Specialised "V-notched" ball valves are available, however, due to them being highly specialised, have defined applications.

Ball valves have a round closure element that contains a matching pair of rounded seats. These seats allow necessary sealing to take place. In simple terms, the main components of the ball valve are an outer shell, a ball with a hole in it, and a handle.

Advantages

Ball valves are durable and usually work to achieve perfect shut-off, even after years of misuse. They are therefore an excellent choice for shut-off applications (and are often preferred to globe valves and gate valves for this purpose).

Operation

The ball inside the shell plugs up the valve opening. A handle attached to the ball can turn the ball from outside the valve shell. The ball has a hole through the middle that allows liquid to pass. The hole is facing the flow direction when the handle is turned to the "open" position. Move the handle to turn it off, and the ball hole will face the sides of the valve wall.

Pinch Valves

These valves comprise a flexible tube, either exposed or enclosed in a body. The sleeve is pinched to close mechanically or by application of fluid pressure in the body.

Advantages

These are ideal for the flow control of liquids, powders, solids and abrasives.

Operation

The "working" element of a Pinch Valve is an elastomeric tube or sleeve which can be squeezed at its mid-section by a mechanical system until ultimately the tube walls are pinched or clamped together, producing full closure of the flow path. In its most simplistic form, it consists merely of an elastomeric tube, fitted with a pinch bar mechanism incorporating a closure stop to restrict over-pinching of the tube.

Globe Valves - Angle Seat Valves

An angled seat piston valve is a pneumatically-controlled valve with a piston actuator, providing linear actuation to lift a seal off its seat. The seat is set at an angle to provide maximum flow when unseated. They are particularly suited to applications where high temperatures and massive flow rates are required, such as steam or water. When used in reverse, some models will eliminate water hammering when operated.

Advantages

Angle seat valves are generally well-priced light-weight, compact, and offer excellent shut-off capabilities.

Operation

Pneumatic valves are operated by compressed air under pressure. The valve comes equipped with a pneumatic actuator supplied with a three-way solenoid valve. The weight of the pilot medium enters the actuator cylinder and works on the piston. This allows the seal to open and close within the stem. The return of the seal into its resting position is usually achieved by a return spring in the pneumatic actuator. In the double-acting configuration, there is a non-return spring, and the pilot medium is used for opening and closing the valve.

A position indicator becomes visible through the sight dome that is found on the top of the actuator when the valve is in the open position. The pressure depends on the weight of the pilot medium, the controlled medium and the direction of the flow. Construction parameters of the valve, like the diameter of the orifice, the actuator cylinder and the spring force also play a role.

Check Valves

Check valves, or non-return valves, allow material to flow in one direction and stops the matter from going in the opposite direction. They are installed in pipelines and do not require any activation from outside. The valve senses the material in the pipe is running in the opposite direction and "plugs" the pipe to prevent movement.

Advantages

Check valves are useful in various types of devices. They stop flooding in water-related devices like sump pumps and water heaters. They protect equipment, like control valves, strainers and flow meters harmed by the reverse flow of matter. Check valves prevent material from constantly flowing backwards when a device is off, which saves energy and protects the equipment.

Operation

There are various types of check valves. A ball check valve consists of a ball that sits over the valve's opening. When liquid flows past the ball, it pushes the ball away from the mouth of the valve and gives it room to flow through the pipe. When the liquid starts flowing the other way, the ball fits tightly over the valve's opening, plugging it.

Elastomer Liner Butterfly Valves

Technical Data	
Applications	Water Works, Sugar, Power Generation and General Industrial Applications
Type	Wafer, Flanged, Lugged
Size	DN 25 to DN 1200
Pressure	PN 10 to PN 16
Body Material	Cast Iron Epoxy Coated Cast Iron PU Coated Ductile Iron Epoxy Coated Ductile Iron PU Coated
Disc Material	Ductile Iron Rilsan Coated Ductile Iron Epoxy Coated 316 Stainless Steel Polished 316 Stainless Steel Halar Coated Alu-Bronze Hastelloy C
Liner Material	EPDM EPDM - High Temperature EPDM ACS FDA Nitrile Natural Rubber Viton
Temperature	-100°C to +150°C
Actuation	Manual, Pneumatic & Electric
Country of Origin	Switzerland



InterApp IA®

Polyurethane Liner Abrasion Resistant Butterfly Valves

Technical Data	
Applications	On/off & Control of Abrasive Slurries in Mining, Power Generation & Cement Handling
Type	Wafer Pattern, Lugged
Size	DN 80 to DN 400 Larger Sizes on Request
Pressure	PN 16
Body Material	Cast Iron Ductile Iron
Disc Material	Ultralene SS Abrasion Resistant Coating
Liner Material	Polyurethane
Temperature	-20°C to +80°C Higher Temperatures on Request
Actuation	Manual Pneumatic Electric
Country of Origin	Switzerland



InterApp IA®

Teflon Lined Butterfly Valves

Technical Data

Applications	Chemical, Petrochemical, Metallurgical Refining, Process Control, Corrosive Liquids, Acids & Food & Beverage
Type	Wafer, Flanged, Lugged, Split Body
Size	DN 50 to DN 900
Pressure	PN 10 to PN 16
Body Material	Ductile Iron Epoxy Coated
Disc Material	Stainless Steel Stainless Steel PFA Overmoulded
Liner Material	PTFE Silicone Backed PTFE Viton Backed ULTRAFロン
Temperature	-20°C to +200°C
Actuation	Manual Pneumatic Electric
Country of Origin	Switzerland



InterApp IA®

Thermoplastic Butterfly Valves

Technical Data

Applications	Corrosive Liquids, Seawater, Chemical & Waste Water
Type	Wafer
Size	DN 50 to DN 800
Pressure	PN 2 to PN 16
Body Material	PVC PP PVDF
Seal Material	EPDM Viton
Temperature	-10°C to +110°C
Actuation	Manual Pneumatic Electric
Country of Origin	Austria



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Double Flanged Butterfly Valves

Technical Data	
Applications	Water Works, Power Generation, Petrochemical & General Industrial Applications
Size	DN 50 to DN 1600 Larger Sizes on Request
Pressure	PN 10 to PN 16
Body Material	Cast Iron Ductile Iron
Disc Material	Cast Iron Ductile Iron WCB Stainless Steel
Liner Material	EPDM NPR Viton Silicone Neoprene
Temperature	-100°C to +250°C
Actuation	Manual Pneumatic Electric Hydraulic
Country of Origin	Denmark



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Resilient Seated Gate Valves

Technical Data	
Applications	Water Treatment & Mining Sludge Handling
Type	SANS 664, SANS 665, Victaulic Ends
Size	DN 50 to DN 200
Pressure	PN 16
Body Material	Ductile Iron Epoxy Coated
Gate Material	Ductile Iron Fully Encapsulated with EDK 70 Rubber
Temperature	-20°C to +100°C
Actuation	Manual
Country of Origin	Denmark



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Resilient Seated Gate Valves

Technical Data

Applications	Water Treatment, Mining & Sludge Handling
Type	Flanged, Socketed & Plain Ended
Size	DN 50 to DN 600
Pressure	PN 6, PN 10, PN 16, PN 25
Body Material	Ductile Iron, Epoxy Coated, SABS 664, SABS 665
Gate Material	Ductile Iron Fully Encapsulated with EDK 70 Rubber
Temperature	-20°C to +100°C Higher Temperatures on Request
Actuation	Manual Pneumatic
Country of Origin	Denmark



Metal Seated Wedge Gate Valves

Technical Data

Applications	Water Treatment, Mining & Power Generation
Type	Flanged
Size	DN 50 to DN 900
Pressure	PN 10, PN 16
Body Material	Ductile Iron, Epoxy Coated SABS 664, SABS 665
Gate Material	Ductile Iron, Epoxy Coated
Temperature	-20°C to +100°C Higher Temperatures on Request
Actuation	Manual Pneumatic Hydraulic
Country of Origin	Denmark



Urethane Lined Knife Gate Valves

Technical Data	
Applications	Abrasive & Corrosive Mining Applications
Type	Flanged, Lugged
Size	DN 50 to DN 600
Pressure	PN 10 CWP
Body Material	WCB
Gate Material	Duplex SS
Seat / Seal Material	Hard Chrome EPDM Viton Neoprene
Liner Material	Urethane (FV 8000)
Temperature	-10°C to +80°C Higher Temperatures on Request
Actuation	Manual Pneumatic Electric
Country of Origin	USA



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Ported Slide Knife Gate Valves

Technical Data	
Applications	Heavy Mining & Slurries
Type	Flanged, Lugged
Size	DN 50 to DN 400 Larger Sizes on Request
Pressure	PN 10 to PN 16
Body Material	Ductile Iron WCB Stainless Steel Gate Material Stainless Steel
Seat Material	EPDM Viton Buna-n
Supporting Rings/Liner	UHMWPE Carbon PTFE
Temperature	-10°C to +95°C
Actuation	Manual Pneumatic Electric Hydraulic
Country of Origin	USA



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Knife Gate Valves

Technical Data	
Applications	Mining & Minerals, Pulp & Paper & Waste Water
Type	Wafer
Size	DN 32 to DN 600
Pressure	PN 10 CWP
Body Material	Ductile Iron
Gate Material	Stainless Steel
Seat Material	EPDM
Liner Material	Replaceable Polyurethane Liners
Temperature	-10°C to +80°C
Actuation	Manual Pneumatic
Country of Origin	Spain



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Wedge Gate Valves For Fly Ash

Technical Data	
Applications	Power Generation - Fly Ash Handling & Tailings
Type	Flanged
Size	DN 300 to DN 400
Pressure	PN 16
Body Material	Ductile Iron
Temperature	-20°C to +150°C Higher Temperatures on Request
Actuation	Manual Pneumatic
Country of Origin	South Africa



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DIAPHRAGM VALVES

Thermoplastic Diaphragm Valves

Technical Data	
Applications	Water Treatment, Corrosive Media & General Industrial Applications
Type	Flanged, Solvent Sockets, Union Ends
Size	DN 15 to DN 100
Pressure	PN 6 to PN 10
Body Material	PVC PP ABS PVDF
Diaphragm Material	EPDM PTFE NBR Viton
Temperature	-10°C to +110°C
Actuation	Manual Pneumatic Electric
Country of Origin	Austria



Diaphragm Valves

Technical Data	
Applications	Slurry Water Treatment & General Industrial Applications
Type	Flanged
Size	DN 15 to DN 350
Pressure	PN 3 to PN 10
Body Material	Ductile Iron Cast Steel
Liner Material	Soft Rubber Unlined Butyl Viton Halar or Glass
Diaphragm Material	EPDM PTFE NBR Viton
Temperature	-10°C to +100°C
Actuation	Manual Pneumatic
Country of Origin	South Africa



Thermoplastic 2-way Ball Valves

Technical Data	
Applications Treatment	Chemical Applications & Water
Type	Flanged
Size	DN 15 to DN 150
Pressure	PN 3 to PN 10
Body Material	Ductile Iron PFA Lined Ductile Iron PP Lined
Liner Material	PP PFA
Diaphragm Material	EPDM PTFE NBR Viton
Temperature	-20°C to +150°C
Actuation	Manual Pneumatic Electric
Country of Origin	Germany



Thermoplastic 3-way Ball Valves

Technical Data	
Applications	Non-metallic, Chemical, Corrosive & Water Treatment
Type	Flanged, Solvent Sockets, Threaded T-port, L-port
Size	DN 6 to DN 100
Pressure	PN 10 to PN 16
Body Material	PVC PP PVDF
Ball Material	PVC PP PVDF
Seal Material	EPDM Viton
Seat Material	PTFE
Temperature	0°C to +110°C
Actuation	Manual Pneumatic Electric
Country of Origin	Austria



BALL VALVES

Female Threaded Ball Valves

Technical Data	
Applications	General Industrial Applications
Type	Female Threaded & Socket Weld Ends 1 Piece, 2 Piece, 3 Piece Cast / Forged
Size	3 piece, DN 10 to DN 100 2 piece, DN 10 to DN 80 1 piece, DN 10 to DN 50
Pressure	Class 150 to Class 300
Body Material	WCB Stainless Steel
Ball Material	Stainless Steel
Seat Material	Glass Reinforced PTFE
Temperature	-20°C to +250°C
Actuation	Manual Pneumatic Electric
Country of Origin	Switzerland



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Soft Seat Floating Ball Valves

Technical Data	
Applications	Pipeline & General Industrial Applications
Type	Flanged, Cast / Forged, Full and Reduced Bore
Size	DN 15 to DN 150
Pressure	Class 150 to Class 1500
Body Material	WCB Stainless Steel
Ball Material	Stainless Steel
Seat Material	Glass Reinforced PTFE
Temperature	-195°C to +540°C
Actuation	Manual Pneumatic Electric
Country of Origin	Switzerland



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Pinch Valves

Technical Data	
Applications	Control & Isolation of Abrasive Slurries
Type	Short & Long Frame, Flanged
Size	DN 50 to DN 500
Pressure	PN 6, PN 10, PN 16 and PN 25
Body Material	Mild Steel Stainless Steel on Request
Sleeve	Soft Rubber
Temperature	-20°C to +80°C, High Temperatures on Request
Actuation	Manual Pneumatic Hydraulic
Country of Origin	South Africa



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Angle Seat Globe Valves

Technical Data	
Applications	Water, Steam & Air
Type	Female Threaded, Flanged
Size	DN 15 to DN 65
Pressure	PN 10, PN 16 and PN 25
Body Material	316 Stainless Steel
Plug / seat	EPDM PTFE Viton
Temperature	-10°C to +200°C
Actuation	Pneumatic
Country of Origin	Germany



SED

Ball Check Valves

Technical Data	
Applications	Abrasive Slurries, Sewage & Waste Water
Type	Flanged
Size	DN 50 to DN 350
Pressure	PN 10 to PN 16
Body Material	Cast Iron Ductile Iron WCB Stainless Steel
Ball Material	Cast Iron Rubber Lined
Temperature	UHMWPE -10°C to +80°C
Country of Origin	Denmark



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Single Door Swing Check Valves With Flow Booster

Technical Data	
Applications	Water, Mining, Power Generation & Pump Protection
Type	Wafer
Size	DN 50 to DN 400
Pressure	PN 10 to PN 20
Body / Disc Material	WCB Stainless Steel PVC PP PVDF
Temperature	-10°C to +110°C
Country of Origin	Austria



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FLANGE DRILLING GUIDE

Nominal Size 15 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	95	65	4xM12	14
	16	95	65	4xM12	14
	25	95	65	4xM12	14
	40	95	65	4xM12	14
	64	105	75	4xM12	14
SABS 1123	1000	95	65	4xM12	14
	1600	95	65	4xM12	14
	2500	95	65	4xM12	14
	4000	95	65	4xM12	14
ASME B16.5	15	88.9	60.3	4x $\frac{1}{2}$	16
	30	95.3	66.7	4x $\frac{1}{2}$	16
	60	95.3	66.7	4x $\frac{1}{2}$	16
	90	120.7	82.6	4x $\frac{3}{4}$	22
BS 10	D/E	95	67	4xM12	14
	F	95.25	66.7	4xM12	14
	H	114.3	82.6	4xM16	18
	J	114.3	82.6	4xM16	18
	K	114.3	82.6	4xM16	18
	R	114.3	82.6	4xM16	18

Nominal Size 20 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	95	65	4xM12	14
	10	105	75	4xM12	14
	16	105	75	4xM12	14
	25	105	75	4xM12	14
	40	105	75	4xM12	14
	64	130	90	4xM16	18
SABS 1123	1000	105	75	4xM12	14
	1600	105	75	4xM12	14
	2500	105	75	4xM12	14
	4000	105	75	4xM12	14
ASME B16.5	150	98.4	69.9	4x $\frac{1}{2}$	16
	300	117.5	82.6	4x $\frac{5}{8}$	19
	600	117.5	82.6	4x $\frac{5}{8}$	19
	900	130.2	88.9	4x $\frac{3}{4}$	22
BS 10	D/E	102	73	4xM12	14
	F	101.6	73	4xM12	14
	H	114.3	82.6	4xM16	18
	J	114.3	82.6	4xM16	18
	K	114.3	82.6	4xM16	18
	R	114.3	82.6	4xM16	18

Nominal Size 25 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	115	85	4xM12	14
	25/40	115	85	4xM12	14
	64/100	140	100	4xM16	18
	160	140	100	4xM16	18
SABS 1123	1000	115	85	4xM12	14
	1600	115	85	4xM12	14
	2500	115	85	4xM12	14
	4000	115	85	4xM12	14
ASME B16.5	150	108	79.5	4x $\frac{1}{2}$	16
	300/600	124	89	4x $\frac{5}{8}$	19
	900/1500	149	101.5	4x $\frac{3}{4}$	25
BS 10	D/E	114	82.5	4xM12	14
	F/H/J	121	87.5	4xM16	18
	R	127	95	4xM16	18
	S	140	101.5	4xM20	22
	T	146	108	4xM20	22

Nominal Size 40 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	150	110	4xM16	18
	25/40	150	110	4xM16	18
	64/100	170	125	4xM20	22
	160	170	125	4xM20	22
SABS 1123	1000	150	110	4xM16	18
	1600	150	110	4xM16	18
	2500	150	110	4xM16	18
	4000	150	110	4xM16	18
ASME B16.5	150	127	98.5	4x $\frac{1}{2}$	16
	300/600	156	114.5	4x $\frac{3}{4}$	22
	900/1500	178	124	4x1	29
BS 10	D/E	133	98.5	4xM12	14
	F/H/J	140	105	4xM16	18
	R	152	114.5	4xM20	22
	S	159	120	4xM20	22
	T	171	124	8xM20	22

FLANGE DRILLING GUIDE

Nominal Size 50 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	165	125	4xM16	18
	25/40	165	125	4xM16	18
	64	180	135	4xM20	22
	100/160	195	145	4xM24	26
SABS 1123	1000	165	125	4xM16	18
	1600	165	125	4xM16	18
	2500	165	125	4xM16	18
	4000	165	125	4xM16	18
ASME B16.5	150	152	120.5	4x $\frac{5}{8}$	19
	300/600	165	127	8x $\frac{5}{8}$	19
	900/1500	216	165	8x $\frac{7}{8}$	25
BS 10	D/E	152	114.5	4xM16	18
	F/H	165	127	4xM16	18
	J	165	127	4xM20	22
	R	165	127	8xM16	18
	S	171	133.5	8xM20	22
	S	184	146	8xM20	22

Nominal Size 65 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	185	145	4xM16	18
	25/40	185	145	8xM16	18
	64	205	160	8xM20	22
	100/160	220	170	8xM24	26
SABS 1123	1000	185	145	4xM16	18
	1600	185	145	4xM16	18
	2500	185	145	8xM16	18
	4000	185	145	8xM16	18
ASME B16.5	150	178	139.5	4x $\frac{5}{8}$	19
	300/600	190	149	8x $\frac{3}{4}$	22
	900/1500	244	190.5	8x1	29
BS 10	D/E	165	127	4xM16	18
	F/H	184	146	8xM16	18
	J/R/S	184	146	8xM20	22
	T	203	165	8xM22	25

Nominal Size 80 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	200	160	8xM16	18
	25/40	200	160	8xM16	18
	64	215	170	8xM20	22
	100/160	230	180	8xM24	26
SABS 1123	1000	200	160	8xM16	18
	1600	200	160	8xM16	18
	2500	200	160	8xM16	18
	4000	200	160	8xM16	18
ASME B16.5	150	190	152.5	4x $\frac{5}{8}$	19
	300/600	210	168.5	8x $\frac{3}{4}$	22
	900	241	190.5	8x $\frac{7}{8}$	25
	1500	267	203	8x1 $\frac{1}{8}$	32

BS 10	D/E	184	146	4xM16	18
	F/H	203	165.1	8xM16	18
	J/R	203	165.1	8xM20	22
	S	203	165.1	8xM22	25
	T	235	190.5	8xM26	29

Nominal Size 100 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	220	180	8xM16	18
	25/40	235	190	8xM20	22
	64	250	200	8xM24	26
	100/160	265	210	8xM27	30
SABS 1123	1000	220	180	8xM16	18
	1600	220	180	8xM16	18
	2500	235	190	8xM20	22
	4000	235	190	8xM20	22
ASME B16.5	150	229	190.5	8x $\frac{5}{8}$	19
	300	254	200	8x $\frac{3}{4}$	22
	600	273	216	8x $\frac{7}{8}$	25
	900	292	235	8x1 $\frac{1}{8}$	32
	1500	311	241.5	8x1 $\frac{1}{4}$	35
BS 10	D	216	177.8	4xM16	18
	E	216	177.8	8xM16	18
	F/H	229	190.5	8xM16	18
	J	229	190.5	8xM20	22
	R	241	196.8	8xM22	25
	S	248	203.2	8xM26	29
	T	286	234.9	8xM30	32

FLANGE DRILLING GUIDE

Nominal Size 300 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	445	400	12xM20	22
	16	460	410	12xM24	26
	25	485	430	16xM27	30
	40	515	450	16xM30	33
	64	530	460	16xM33	36
	100/160	585	500	16xM39	42
SABS 1123	1000	445	400	12xM20	22
	1600	460	410	12xM24	26
	2500	485	430	16xM24	26
	4000	515	450	16xM30	33
ASME B16.5	150	483	432	12x $\frac{1}{8}$	25
	300	521	451	16x1 $\frac{1}{8}$	32
	600	559	489	20x1 $\frac{1}{4}$	35
	900	610	533.5	20x1 $\frac{3}{8}$	38
	1500	673	571.5	16x2	54
BS 10	D	457	406.4	12xM20	22
	E	457	406.4	12xM22	25
	F/H	489	438.1	16xM22	25
	J	489	438.1	16xM26	29
	R	508	457.2	16xM30	32
	S	578	508	16xM38	41
	T	654	571.5	16xM45	48

Nominal Size 350 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	505	460	16xM20	22
	16	520	470	16xM24	26
	25	555	490	16xM30	33
	40	580	510	16xM33	36
	64	600	525	16xM36	39
	100	655	560	16xM45	48
SABS 1123	1000	505	460	16xM20	22
	1600	520	470	16xM24	26
	2500	555	490	16xM30	33
	4000	580	510	16xM30	33
ASME B16.5	150	533	476	12x1	29
	300	584	514.5	20x1 $\frac{1}{8}$	32
	600	603	527	20x1 $\frac{3}{8}$	38
	900	641	559	20x1 $\frac{1}{2}$	41
	1500	749	635	16x2 $\frac{1}{4}$	60
BS 10	D/E	527	469.9	12xM22	25
	F/H	552	495.3	16xM26	29
	J	552	495.3	16xM30	32
	R	584	527	16xM32	35
	S	648	577.8	20xM38	41

Nominal Size 400 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	565	515	16xM24	26
	16	580	525	16xM27	30
	25	620	550	16xM33	36
	40	660	585	16xM36	39
	64	670	585	16xM39	42
	100	715	620	16xM45	48
SABS 1123	1000	565	515	16xM24	26
	1600	580	525	16xM24	26
	2500	620	550	16xM30	33
	4000	660	585	16xM36	39
ASME B16.5	150	597	540	16x1	29
	300	648	571.5	20x1 $\frac{1}{4}$	35
	600	686	603	20x1 $\frac{1}{2}$	41
	900	705	616	20x1 $\frac{3}{8}$	44
	1500	826	705	16x2 $\frac{1}{2}$	67
BS 10	D/E	578	520.7	12xM22	25
	F/H	610	552.4	20xM26	29
	J	610	552.4	20xM30	32
	R	641	584.2	20xM32	35
	S	743	660.4	20xM45	48

Nominal Size 450 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	615	565	20xM24	26
	16	640	585	20xM27	30
	25	670	600	20xM33	36
	40	685	610	20xM36	39
SABS 1123	1000	615	565	20xM24	26
	1600	640	585	20xM24	26
	2500	670	600	20xM30	33
	4000	685	610	20xM36	39
ASME B16.5	150	635	578	16x1 $\frac{1}{8}$	32
	300	711	628.5	24x1 $\frac{1}{4}$	
	600	743	654	20x1 $\frac{5}{8}$	
	900	787	686	20x1 $\frac{3}{8}$	
	1500	914	774.5	16x2 $\frac{3}{4}$	
BS 10	D	641	584.2	12xM22	25
	E	641	584.2	16xM22	25
	F/H	673	609.6	20xM30	32
	J	673	609.6	20xM32	35
	R	737	673.1	20xM36	38

FLANGE DRILLING GUIDE

Nominal Size 125 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	250	210	8xM16	18
	25/40	270	220	8xM24	26
	64	295	240	8xM27	30
	100/160	315	250	8xM30	33
SABS 1123	1000	250	210	8xM16	18
	1600	250	210	8xM16	18
	2500	270	220	8xM24	26
	4000	270	220	8xM24	26
ASME B16.5	150	254	216	8x $\frac{3}{4}$	22
	300	279	235	8x $\frac{3}{4}$	22
	600	330	267	8x1	29
	900	349	279.5	8x1 $\frac{1}{4}$	35
	1500	375	292	8x1 $\frac{1}{2}$	41
BS 10	D/E	254	209.5	8xM16	18
	F/H	279	234.9	8xM20	22
	J	279	234.9	8xM22	25
	R	279	234.9	12xM22	25
	S	286	234.9	12xM22	25
	T	324	273	12xM30	32

Nominal Size 150 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10/16	285	240	8xM20	22
	25/40	300	250	8xM24	26
	64	345	280	8xM30	33
	100/160	355	290	12xM30	33
SABS 1123	1000	285	240	8xM20	22
	1600	285	240	8xM20	22
	2500	300	250	8xM24	26
	4000	300	250	8xM24	26
ASME B16.5	150	279	241.5	8x $\frac{3}{4}$	22
	300	318	270	12x $\frac{3}{4}$	22
	600	356	292	12x1	29
	900	381	317.5	12x1 $\frac{1}{8}$	32
	1500	394	317.5	12x1 $\frac{3}{8}$	38
BS 10	D	279	234.9	8xM16	18
	E	279	234.9	8xM20	22
	F/H	305	260.3	12xM20	22
	J/R	305	260.3	12xM22	25
	S	324	273	12xM26	29
	T	375	317.5	12xM32	35

Nominal Size 200 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	340	295	8xM20	22
	16	340	295	12xM20	22
	25	360	310	12xM24	26
	40	375	320	12xM27	30
	64	415	345	12xM33	36
	100/160	430	360	12xM33	36
SABS 1123	1000	340	295	8xM20	22
	1600	340	295	12xM20	22
	2500	360	310	12xM24	26
	4000	375	320	12xM24	26
ASME B16.5	150	343	298.5	8x $\frac{3}{4}$	22
	300	381	330	12x $\frac{7}{8}$	25
	600	419	349	12x1 $\frac{3}{8}$	32
	900	470	393.5	12x1 $\frac{3}{8}$	38
	1500	483	393.5	12x1 $\frac{5}{8}$	44
BS 10	D	337	292.1	8xM16	18
	E	337	292.1	8xM20	22
	F/H	368	323.8	12xM20	22
	J	368	323.8	12xM22	25
	R	368	323.8	12xM26	29
	S	413	355.6	12xM32	35
T	476	406.4	12xM38	41	

Nominal Size 250 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	395	350	12xM20	22
	16	405	355	12xM24	26
	25	425	370	12xM27	30
	40	450	385	12xM30	33
	64	470	400	12xM33	36
	100	505	430	12xM36	39
	160	515	430	12xM39	42
SABS 1123	1000	395	350	12xM20	22
	1600	405	355	12xM24	26
	2500	425	370	12xM24	26
	4000	450	385	12xM30	33
ASME B16.5	150	406	362	12x $\frac{7}{8}$	25
	300	445	387.5	16x1	29
	600	508	432	16x1 $\frac{1}{4}$	35
	900	546	470	16x1 $\frac{3}{8}$	38
	1500	584	482.5	12x1 $\frac{7}{8}$	51
BS 10	D	406	355.6	8xM20	22
	E	406	355.6	12xM20	22
	F/H	432	381	12xM22	25
	J	432	381	12xM26	29
	R	432	387.3	16xM26	29
	S	483	425.4	16xM32	35
T	559	488.9	16xM38	41	

Nominal Size 500 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	670	620	20xM24	26
	16	715	650	20xM30	33
	25	730	660	20xM33	36
	40	755	670	20xM39	42
	64	800	705	20xM45	48
	100	870	760	20xM52	56
SABS 1123	1000	670	620	20xM24	26
	1600	715	650	20xM30	33
	2500	730	660	20xM30	33
	4000	755	670	20xM36	39
ASME B16.5	150	699	635	20x1 $\frac{1}{8}$	32
	300	775	686	24x1 $\frac{1}{4}$	35
	600	813	724	24x1 $\frac{5}{8}$	44
	900	857	749.5	20x2	54
	1500	984	832	16x3	79
BS 10	D/E	705	641.3	16xM22	25
	F/H	737	673.1	24xM30	32
	J	737	673.1	24xM32	35
	R	806	730.2	20xM38	41

Nominal Size 600 mm					
	Table / Class	Flange ø mm	Pitch Circle ø mm	No. & ø of bolts	Hole ø mm
BS 4504	10	780	725	20xM27	30
	16	840	770	20xM33	36
	25	845	770	20xM36	39
	40	890	795	20xM45	48
	64	930	820	20xM52	56
	100	990	875	20xM56	62
SABS 1123	1000	780	725	20xM24	26
	1600	840	770	20xM30	33
	2500	845	770	20xM36	39
ASME B16.5	150	813	749.5	20x1 $\frac{1}{4}$	35
	300	915	813	24x1 $\frac{1}{2}$	41
	600	940	838	24x1 $\frac{7}{8}$	51
	900	1041	901.5	20x2 $\frac{1}{2}$	67
	1500	1168	990.5	16x3 $\frac{1}{2}$	92
BS 10	D	826	755.6	16xM26	29
	E	826	755.6	16xM30	32
	F/H	851	781	24xM32	35
	J	851	781	24xM36	38

VALVE ENQUIRY FORM

Customer Details

Date: _____

Company: _____

Section: _____ Telephone: _____

Contact: _____ Position: _____

Email: _____

Valve Data

Quantity: _____ Size: _____

Valve Type: _____ Body Material: _____

Disc/Ball/Diaphragm: _____ Seals/Seat: _____

End Connect/Drilling: _____ Accessories: _____

Existing Brand: _____

Process Data

Temperature: _____ Pressure: _____

Media: _____ Solids: _____

% SG: _____ Piping Material: _____

Application: _____

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