

World Class Performance  
in Abrasive, Scaling and  
Corrosive Slurries, Sludge,  
Liquids, and Bulk Solids



**STRAIGHT-THROUGH TYPE KB  
DIAPHRAGM VALVES**



Saunders full bore diaphragm valves have been developed to satisfy market demand for a valve to handle sludges, slurries and give flow performance with minimum turbulence, while giving 100% leaktight closure. A wide choice of materials, methods of operation and body end connections meet the needs of most industrial applications. Extended life, reliability, safety and ease of use, combined with essential simple design, result in low maintenance for minimum running costs. Saunders straight-through bore diaphragm valves (DN15-DN350) positively benefit your bank balance with a unique range of features



**Handwheel-**  
Comfortable handwheel for fast easy operation, saves time and effort

**Other Methods of Operation -**  
Pneumatic and electric actuators- versatility to match individual needs throughout the plant, without over investment. Ask for information on our Biman BFC actuators

**Indication - (Optional)**  
Valve position indicator confirms valve position at a distance to save walking (or climbing) time

**Stem -**  
Designed to reduce friction for low operating torque

**Sealing -**  
Operating mechanism (stem and compressor) sealed from service and atmosphere, avoids the need for exotic metals

**Diaphragm -**  
Tough, resilient diaphragms, with choice of grade to match the service, give 100% leaktight performance and protect working parts from line fluids. No leaks mean no money wasted. Diaphragm grades include natural and synthetic rubber mixes, nitrile, polychloroprene, hypalon, viton and ethylene propylene. Saunders 50 years of elastomer technology ensures that correct selection means long life for minimum running costs

**Body End Connections -**  
Screwed and flanged end connections suit UK, European and USA specifications to avoid planning problems.

**Linings -**  
Body linings prevent corrosion - without high capital outlay

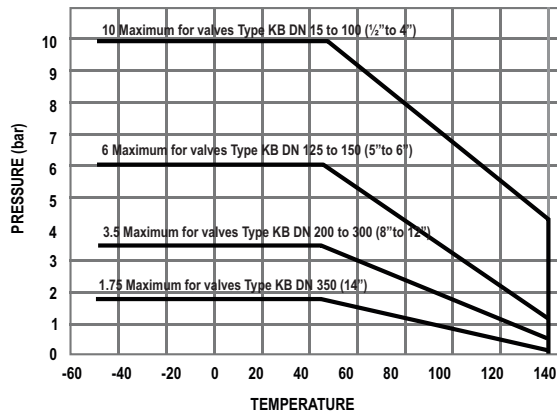
### A valve package that creates profitability

GUIDE TO BODY (LININGS) APPLICATIONS		RANGE AVAILABILITY	
BODY / LINING	TYPICAL APPLICATIONS	SIZE	TEMP °C
Cast Iron Ductile Iron (SG)	Strength, low cost non corrosives	DN15 - DN350	-20° to 175 °
Rubbers - Soft (SRL/AAL) - Hard (Ebonite) (HRL) - Butyl (BL) - Neoprene (NL)	Economic handling of corrosive & abrasive media Abrasive duties Acid, chlorinated water, moist chlorine Mineral acids, & slurries Abrasive duties where hydrocarbons are present	DN15 - DN350	-10° to 85 ° -10° to 85 ° -10° to 110 ° -10° to 105 °
Borosilicate Glass	Excellent for strong acids, halogens	DN25 - DN200	-10° to 175 °
Halar™	Excellent resistance to mineral and oxidising acids inorganic bases, salts.	DN25 - DN350	-10° to 150 °
Rilsan™	Potable water applications	DN25 - DN350	-20° to 80 °
Fusion Bonded Epoxy FBE	Potable water applications	DN25 - DN350	-20° to 80 °

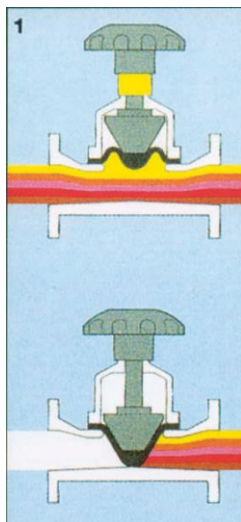
Halar™ is the registered trademark of AUSIMONT UK Ltd

Rilsan™ is the registered trademark of ATO CHEMICAL PRODUCTS UK

### VALVE BODY TEMPERATURE / PRESSURE RELATIONSHIP



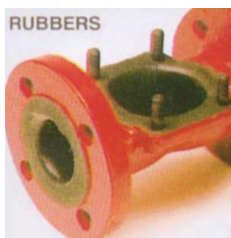
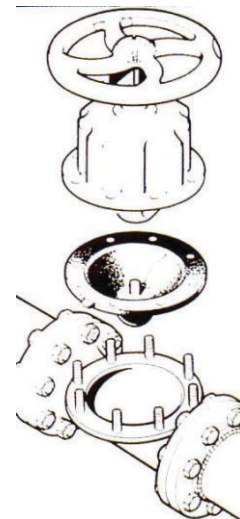
Graph applies to whole valve performance (manual bonnets). For actuated valves refer to appropriate performance graphs. Temperature bands for diaphragms are shown as a guide only. Many aspects of service conditions will determine the highest working temperature. For example 325 diaphragms have given excellent performance, under certain conditions up to 150C



**1. Valve Flow -**  
Smooth bore, straight-through body, gives non-turbulent flow to minimise wear from abrasion and allows rodding through when sludges "set" in the pipeline - saving dismantling

**2. Valve usable in any position -**  
For greater planning flexibility and ease of access

**4. Maintenance -**  
Three part design (bonnet (1), diaphragm (2), body (3)) means the diaphragm is replaced with the body in the pipeline, no gasket costs or pipeline disturbance problems are involved.



**RUBBERS:**  
(Hard, soft, butyl, neoprene). Corrosives and abrasives handled with low initial outlay. Popularity of rubber linings results in exceptional availability



**HALAR Coating:**  
Resists many industrial chemicals and additionally protects the exposed parts of valve bodies - to cut-out painting

**Body Linings and Coatings:**  
(Base materials cast Grey and SG iron).

**Borosilicate Glass Coatings:**  
Purity, smooth flow (especially on viscous fluids) with great strength and resistance to chemical attack.

**Body Materials: -**  
Cast iron, SG iron for strength and low cost on non-corrosive duties. Acid resisting bronze and gunmetal - long life in hostile, corrosive applications. Stainless steel, purity for services where profits depend on product protection

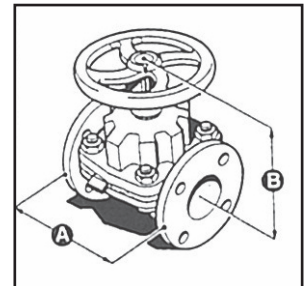
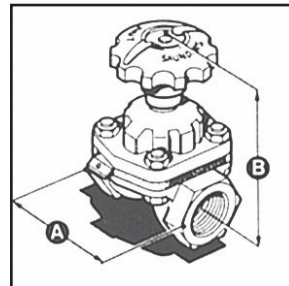
## Saunders diaphragm valves - a unique design, sealed from the service and proofed against corrosion and erosion in hostile environments

Guide to Diaphragm Applications:		Range availability	
GRADE TYPICAL APPLICATIONS		Size	Temp. °C
<b>A</b>	Abrasives in slurry or dry powder form	DN15 TO DN350	-40° to 90°
<b>B</b>	Acid and alkalis. Up to 85% sulphuric acid at ambient temperatures. Hydrochloric hydrofluoric phosphoric acids, caustic alkalis and many esters. Sea water, very low vapour and gas permeability. Inert gases and many industrial gases	DN15 TO DN350	-30° to 90°
<b>Q</b>	Abrasives, water purification brewing, inorganic salts, mineral acids.	DN15 TO DN350	-40° to 90°
<b>226</b>	Paraffinic and aromatic hydrocarbons, acids, particularly concentrated sulphuric and chlorine applications. Not recommended for ammonia and its derivatives or for polar solvents, e.g. acetone.	DN15 TO DN250	-5° to 140°
<b>237</b>	Good acid and ozone resistance certain chlorine services	DN15 TO DN350	-0° to 90°
<b>300</b>	For hot water services applications involving steam sterilisations, therefore, ideally suited for brewing and pharmaceutical applications. For services involving continuous high temperature / pressure combinations consult our technical department	DN15 TO DN350	-20° to 120°
<b>325</b>	Salts in water, drinking water	DN15 TO DN350	-40° to 100°





## Saunders type KB straight-through bore diaphragm valves basic details

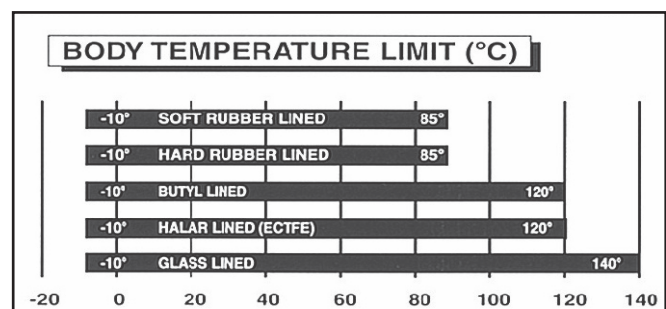
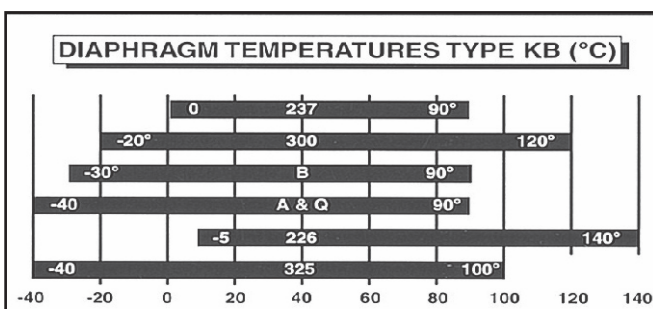


VALVE Size (DN)	SCREWED ENDS			FLANGED PIPE CONNECTIONS					
	A (mm)	B (max)	NOMINAL MASS kg	A (mm) BS5156			B (max)	NOMINAL MASS	
				Unlined	Coated	Lined		Unlined kg	Lined kg
15	64	120	—	108	110	—	106	2	—
25	111	164	2,2	127	129	133	160	4,4	4,2
32	124	164	2,8	146	148	152	160	4,4	5,7
40	143	164	3,7	159	161	165	182	5,5	6,9
50	168	189	5,9	190	192	196	230	10	11
65	206	228	10	216	218	222	296	17	18
80	257	302	16	254	256	260	303	23	21
100	—	—	—	305	307	311	324	26	28
125*	—	—	—	356	358	362	346	47	50
150	—	—	—	406	408	412	470	65	65
200	—	—	—	521	523	527	640	110	108
250	—	—	—	635	637	641	745	196	185
300	—	—	—	749	751	755	785	296	298
350	—	—	—	984	986	990	785	450	460

\* Non preferred size

Valve feature bonnet assembly designed for ease of operation and low cost.  
At present stage of manufacture a non-rising handwheel unit is standard.  
Dimensions shown are for planning purposes and should not be used for manufacturing.

**Standards Applicable:**  
BS 5156 Diaphragm valves  
BS 4504 Flange dimensions  
ISO R7 thread connections



### The Americas Operations

RF Valves Inc.  
1342-A Charwood Road  
Hanover, MD 21076, USA  
Tel: +1-410-850-4404 Fax: +1-410-850-4464  
email: contact@rfvalve.com  
www.rfvalve.com

### African Operations

Dynamic Fluid Control (Pty) Ltd  
32 Lincoln Road,  
Industrial Sites, Benoni South, South Africa  
Tel: +27-11-748-0200 Fax: +27-11-421-2749  
email: dfc@dfc.co.za  
www.dfc.co.za

### Australian Operations - NSW

5 Vangeli St, Arndell Park, NSW, 2148  
P.O. Box 156, Seven Hills, NSW, 1730  
Tel: +61-2-8814-9699  
Fax: +61-2-8814-9666  
Email: sales@ventomat.com.au  
Website: www.ventomat.com.au

### European Operations

RF Valves, Oy.  
Tullitie 9,  
53500 Lappeenranta, Finland  
Tel: +358-20-758-1790 Fax: +358-20-785-1799  
email: rfvalves@rftek.fi  
www.rfvalve.com

### Brazil Operations

Aveng Industria e Comercio de Valvulas do Brasil Ltda  
Address: Rua Álvaro da Silveira, 40 - Santa Margarida  
Belo Horizonte - Minas Gerais, Brasil  
Tel : +55-31-3658-3656  
Email address: rfq@rfvalve.com  
www.rfvalve.com