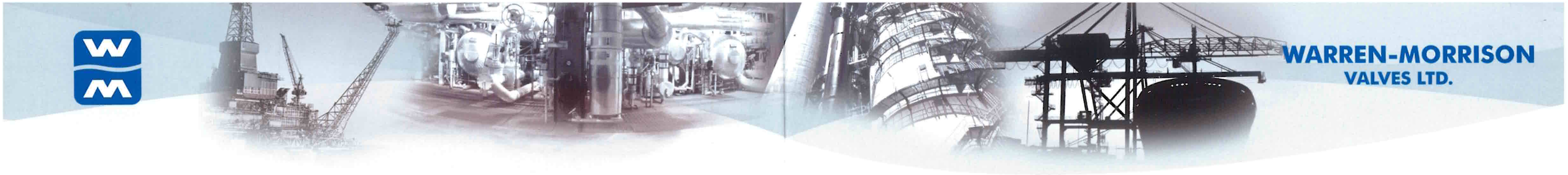


WARREN-MORRISON
VALVES LTD.

'S' Type Diaphragm Valves

Valves are available in manual and actuated styles and we are able to modify our castings to fit any suitable type of electric, pneumatic or hydraulic actuator.

Remember, Warren-Morrison manufactures tailor made valves and is able to offer flexible options to suit customers' exact specifications.

Diaphragms

The Warren-Morrison 'S' Type Diaphragm Valve is of an advanced design that provides a straight through flow with a diaphragm moulded in the open position.

This is achieved by employing a curved bonnet flange and a diaphragm so moulded that it moves from the open to closed position merely by partially straightening its curved surfaces and, therefore, no undue stress is applied.

Moulded into the rubber is a synthetic fibre reinforcement and diaphragm stud by which the diaphragm is attached to the compressor.

To ensure correct sealing it is essential that the bonnet assembly is in the closed position when a diaphragm is fitted to a valve body.

Warren-Morrison Diaphragm Valves are of an advanced design which provides straight through flow whilst restricting to a minimum of the flexing stress imposed on the diaphragm.

The internal contours of the body ensure smooth flow and are suitable for all types of protective lining. A wide selection of body materials coupled with a variety of highly developed rubbers and synthetics for the diaphragm enable the valve to handle the widest possible range of duties.

The diaphragm is moulded in the open position and has, therefore, no tendency to stick closed. The body design gives very low flow resistance and the valve can be rodded should build up occur in adjacent pipework.

A further refinement of the 'S' Type Valve is the design of common bonnet assemblies resulting in fewer spare diaphragms needed to cover the full range of valve sizes.

Standard production of the 'S' Type covers sizes DN15 to DN450 and the range includes options for handwheel, pneumatic, electric and hydraulic operation. Glass lined valves to BS 5156 are up to 1 mm longer than unlined but the glass lining does not affect the overall length of valves to DIN 3202F1.

Standard production covers sizes up to DN80 with screwed ends (BSP, API, NPT etc.), socket and butt weld. DN15 to DN450 with flanged ends (BST D/E, ASA 125/150 or metric). Face to face dimensions for flanged valves are to BS 5156 or DIN 3202F1.

All 'S' Type Diaphragm

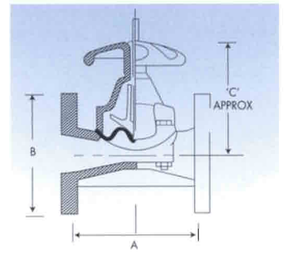
'S' Type Diaphragm Valve Typical Applications

- Water treatment - demineralisation, potable water treatment, acids, alkalis, effluent, treated sludges, effluent treatment
- Corrosive mineral acids - sulphuric, hydrochloric, nitric, hydrofluoric
- Chlor-alkali - chlorine, caustic soda, sodium hypochlorite, brine, pure water, gases
- Petroleum based organics - diesel, paraffin, organic acids
- Toxic hazardous chemicals and gases
- Power plant generation - hydrogen, acids and alkalis
- Pulp and paper production - bleach, pulp slurry, black and green liquors, chlorine gas
- Fire and safety - fire mains valves, wet riser landing valves on high rise buildings
- Pressure relief valves on sludge lines
- Compressed air lines - 100% shut off

Please contact Warren-Morrison Valves for more details

Standard Body Materials:

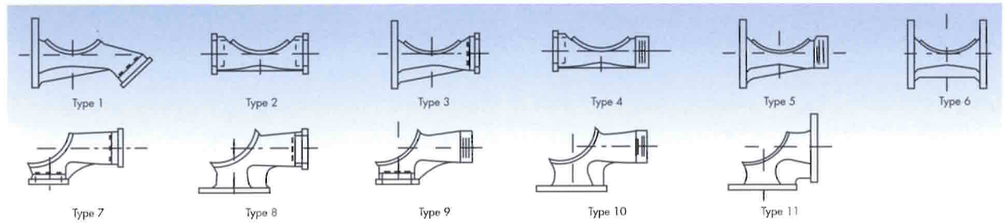
- Grey Iron BS1452
- S. G. Iron to BS2789
- Stainless Steel
- Carbon Steel
- Aluminium BS1490
- Bronzes to BS1400



'S' Type Diaphragm Valve

Standard Body Linings:

- Hard rubber
- Soft rubber
- EPDM
- Butyl
- Neoprene
- Hypalon
- Blue glass
- PVDF
- Polypropylene
- Halar (ECTFE)
- HPE
- RT 9000

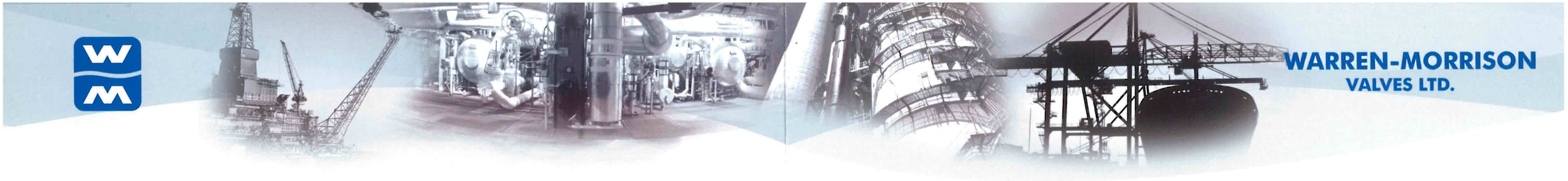


End connections available for 'S' and 'SFV' valves

Dimensions in millimetres (BASED ON BS 4504 PN 16)

Nominal Bore		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	450
Unlined to BS 5156	A	108	117	127	146	159	190	216	254	305	356	406	521	635	749	749	1100	1200
Rubber lind to BS 5156	A1	114	123	133	152	165	196	222	260	311	362	412	527	641	755	755	1112	1212
Unlined and rubber lined to DIN 3202 F1	A2	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	1200
Flange Diameter	B	65	105	115	140	150	165	185	200	229	254	285	343	406	483	534	580	641
Height from centre	C	62	62	89	89	152	152	172	172	229	286	286	406	406	600	600	660	654
Weight cast iron to BS 5156	kg	2	2.3	3.6	3.8	6	9	13.2	15	28.1	45.4	60	125	152	375	409	660	680
Weight cast iron to DIN 3202 F1	kg	2.7	3	4.5	5	9.5	11	17.7	19	31	51.3	65	143	174	424	*	*	*
Standard Pressure rating (Higher pressure ratings are available)	bar	16	16	16	16	16	16	10	10	10	10	10	10	10	10	10	10	10

Flanged ends drilled to BST D/E, ANSI 125/150 or metric or to your requirements * Details on application



WARREN-MORRISON
VALVES LTD.

True full bore Pinch Valves

MK 4 PINCH VALVE

The Warren-Morrison Pinch Valve is the number one choice for controlling the flow of corrosive or abrasive slurries, powders and granular material and is equally efficient when handling gases and viscous liquids.

For added safety Warren-Morrison Pinch Valves are normally supplied with totally enclosed bodies acting as a secondary containment system. Open bodied versions are also available for less critical applications.

The easily replaceable rubber sleeve is the only part in contact with the medium, thus eliminating gland leaks and the problems associated with jamming mechanisms.

Correct selection of sleeve elastomer will ensure maximised maintenance schedules and the ease of sleeve replacement minimises downtime.

All sizes are suitable for use in food and brewing industries and we offer a food quality EPDM rubber sleeve suitable for occasional steam sterilisation at 140°C.

The Mark 4 Pinch Valves have both pressure ratings and face to face dimensions to BS5156 which allows interchangeability with lined diaphragm valves.

All Pinch Valves are available in manual and actuated styles and we are able to modify our castings to fit any suitable type of electric, pneumatic or hydraulic actuator.

Depending on the size and application, Warren - Morrison Pinch Valves use either one or two moving pinch bars to effect closure.

The single pinch bar type closes against the lower valve body whereas the two pinch bar type closes on the centerline.

The sleeve prevents the body being exposed to the media, therefore in normal cases we would recommend the use of aluminium bodies as being light in weight and less costly. However, in certain applications the customer may requires an alternative material in which case we offer a range suitable for most situations.

Warren-Morrison Pinch Valves are designed to give long, trouble-free service; this will only be achieved if the most suitable material is used. Standard materials as listed below will cover most requirements.

Warren-Morrison will always be prepared to advise on the most suitable elastomer.

Warren-Morrison Pinch Valve sleeves are moulded either as true full bore or with a reduced bore for specific control applications.

Reduced bore sleeves are sized according to the customers' requirements.

For vacuum duty the sleeves are moulded with 'assist to open lugs' which locate in slotted pinch bars to ensure efficient operation.

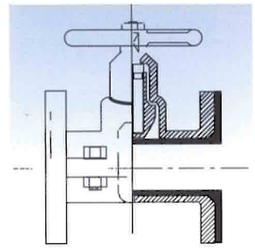
Dimensions & Materials

Pinch Valve - Typical Applications

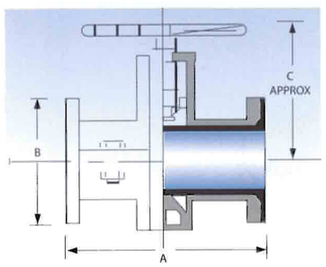
- Ceramics - slip and glaze, clays
- Waste treatment incinerators - line dosing control valves
- Mining - tailings and slurries, flotation, hydrocyclones
- Water treatment - granular activated carbon, micro-sand separation
- Nuclear fuels - cement grout control lines
- Cement manufacture - hopper vent valves
- Food process - isolation and control valves
- Paper and pulp - Recausticising, washing, screening, pulp lines, re-cycled paper handling
- Ink and paint manufacture - control of raw and finished products
- Iron and steel manufacture - control of additives, e g: Manganese
- Chemical industry - abrasive, viscous and noxious media
- Oil and gas exploration and production - drilling mud and screenings

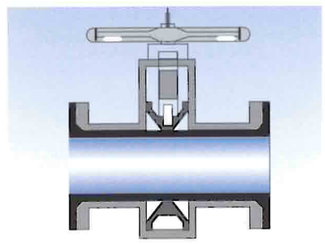
Body Materials:

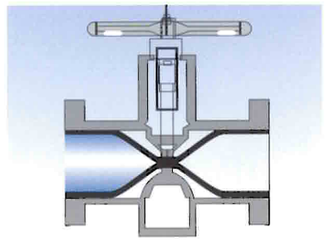
- Aluminium BS1490
- Grey Iron BS1452
- Bronzes to BS1400
- S. G. Iron to BS2789
- Stainless Steel
- Carbon Steel
- Engineering Plastics



Fully enclosed single pinch bar pinch valve



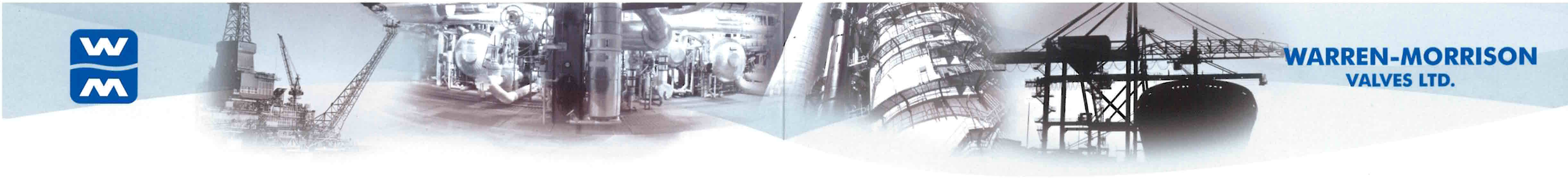




Fully enclosed double pinch bar pinch valve, half cross section, open valve, closed valve.

Dimensions in millimetres (BASED ON BS 4504 PN 16)

Nominal Bore		15	20	25	40	50	65	80	100	125	150	200	250	300	350
Length to BS 5156	A	114	123	133	165	196	222	260	311	362	412	527	881	749	1229
Flange Diameter	B	95	105	115	150	165	185	200	229	254	285	343	406	457	527
Height from centre - manual operation	C	102	108	127	152	184	222	222	267	324	381	470	572	622	686
Centre line to cylinder end - actuator operation	D	These dimensions are determined by the maximum working pressure and minimum air available to operate the cylinders													
Weight-Aluminium - manual operation	kg	1.4	2	2.7	4.6	7.3	9.6	11.8	20.3	32.5	44.2	95	185	358	*
Weight-Cast Iron - manual operation	kg	3.4	3.9	5.6	9.4	14.5	19.1	23.2	41	74	92	196	454	606	750
Pressure Rating standard	bar	16	16	16	16	16	10	10	10	10	10	6	6	6	6
Flanged ends drilled to BST D/E, ANSI 125/150 or metric or to your requirements * Details on application															



WARREN-MORRISON
VALVES LTD.

Controlling Fugitive Emissions

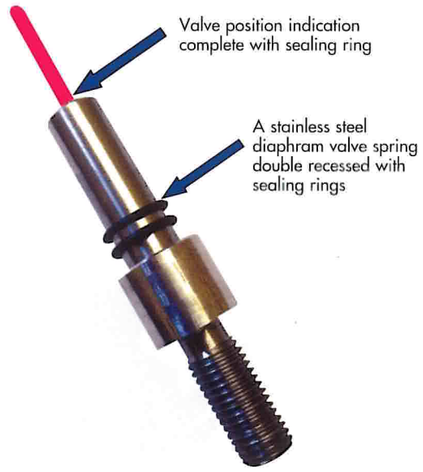
Warren-Morrison is a conscientious and proactive company, alert to the ever-growing concerns surrounding the importance of preserving our environment. We understand the effects, implications and the overall benefits of helping to prevent fugitive emissions, especially within the petrochemical industry.

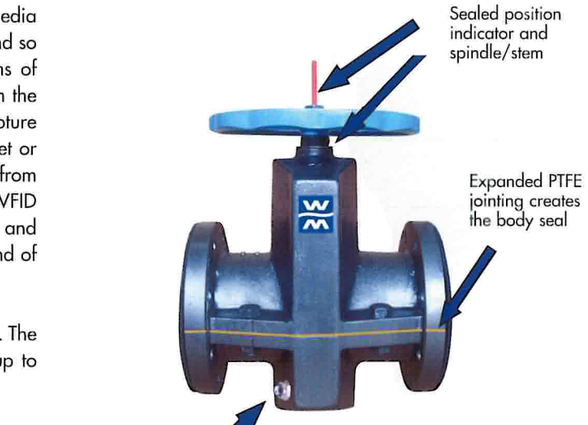
Knowing this, Warren-Morrison have responded by developing the most practical means of media containment within the valve assembly. We have achieved this by sufficiently and effectively sealing our spindle necks, position indicators in both the diaphragm valve and also the pinch valve body joint.

Further peace of mind has been introduced as an optional extra. Warren-Morrison is able to provide a "valve fail indication device" (VFID). This device offers visual indication to the user that the serviceable diaphragm or sleeve has failed within the valve, thus prompting responsive remedial action to be taken. This simple but effective device combined with sealed valve technology can be provided at the time of ordering.

The importance of controlling potentially hazardous media types is paramount; we know containment is essential and so is "post failure control". Post failure control is a means of dispelling the media in a safe and controlled fashion. In the unlikely event the diaphragm or sleeve should rupture prematurely, the media will begin to infiltrate the bonnet or body enclosure. The media requires to be safely drained from the valve. On the diaphragm valve and pinch valve, the VFID can be easily removed and the media drained safely and effectively minimizing the risk of exposure to humans and of course the environment.

The VFID is constructed from mild steel that is zinc coated. The working pressure is 16 bar with a work temperature up to 180 C.





A MK 4 pinch valve complete with VFID

Colour Codes

Diaphragm Materials

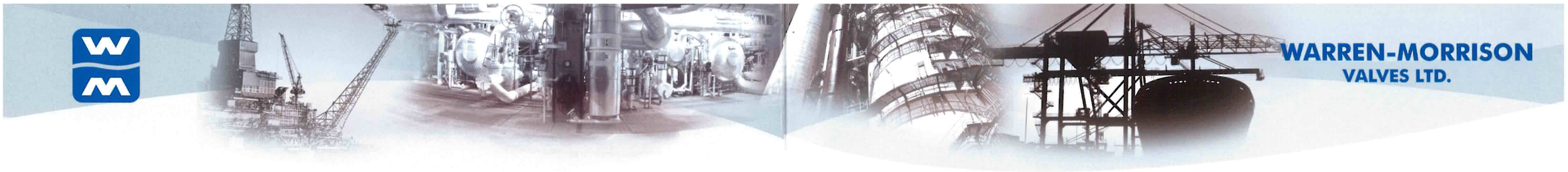
Elastomer	Colour Code	Colour Dot	Application	Temperature range
Natural Rubber	Blue		General Purpose abrasive elastomer also suitable for sea water application.	-60 to +75 deg C
Butyl	Red		Strong Acids & Alkali bases, durable.	-20 to +130 deg C
Neoprene	Yellow		General Purpose with better oil & acid resistance than Natural Rubber.	-40 to +95 deg C
Nitrile	White		Mineral & Vegetable Oils, Hydrocarbon solvents.	-20 to +100 deg C
Hydrogenated nitrate	White/Blue		Strong aggressive chemicals. Abrasive resistance.	-20 to +180 deg C
Natural Gum Rubber	Light green		Soft general abrasion resistant rubber, good compression set, environmentally desirable.	-60 to +75 deg C
HSN Gum	Pink		High abrasion - cut / tear resistant rubber.	-50 to +75 deg C
EPDM	Red/white		Food quality, WRC approved for potable water. Can handle short bursts of low pressure steam sterilization.	-50 to +130 deg C
Hypalon® (acid)	Orange		Severe service Acids & Alkalis at elevated temperatures.	-25 to +130 deg C
Hypalon® (fire)	Orange/Green		Reinforced with Kevlar, good flame retardency.	-25 to +130 deg C
PSN	Self coloured brilliant yellow		Exceptional abrasion resistance to aggressive slurries, mild chemical use.	-25 to +100 deg C
Viton	Green		Outstanding resistance to oils, fuels, lubricants, many aliphatic and aromatic hydrocarbons and most mineral acids.	-20 to +205 deg C
ViTile	Green/White		Similar to Viton, with good adhesion characteristics, very durable.	-20 to +205 deg C
PTFE	Self coloured white		Highest chemical resistance at elevated temperatures.	-200to +250 deg C

Hypalon® is a DuPont patent

Pinch Valve Sleeve Materials

Elastomer	Colour Code	Colour Dot	Application	Temperature range
Natural Rubber	Blue		General purpose.	-60 to +75 deg C
Butyl	Red		Acids & Alkalis.	-20 to +130 deg C
Neoprene	Yellow		General Purpose with better oil & acid resistance than Natural Rubber.	-40 to +95 deg C
EPDM	Red/White		Food quality, WRC approved for potable water, short burst of low pressure steam sterilisation.	-50 to +130 deg C
Nitrile	White		Mineral & Vegetable Oils, Hydrocarbon solvents.	-20 to +100 deg C
Hydrogenated nitrate	White/Blue		Strong aggressive chemicals. Abrasive resistance.	-20 to +180 deg C
Hypalon® (acid)	Orange		Severe service Acids & Alkalis.	-25 to +130 deg C
PSN	Self coluored brilliant yellow		Exceptional abrasion resistance and mild chemical use.	-25 to +100 deg C
ViTile	Green/White		Similar to Viton, with good adhesion characteristics, very durable.	-20 to +205 deg C
HSN Gum	Pink		High abrasion - cut / tear resistant rubber.	-50 to +75 deg C
Linatex	Self coloured Red		Exceptional abrasion resistance.	-30 to +70 deg C

Hypalon® is a DuPont patent



WARREN-MORRISON
VALVES LTD.

Conversion Tables

Conversions to SI Units

The following conversions have generally been based on BS350. The degree of rounding has been adjusted to an extent considered to be of value to a practical engineer. In the tabulation of conversion factors, the SI unit, or multiple thereof, recommended by the British Valve and Actuators Manufacturers Association for use in the valve industry, is shown in the left hand column.

Length

millimetre mm	metre m	inch in	foot ft	yard yd
1	0·001	0·0394	0·0033	0·0011
1000	1	39·3701	3·2808	1·0936
25·4	0·0254	1	0·0833	0·0278
304·8	0·3048	12	1	0·3333
914·4	0·9144	36	3	1

Volume

cubic metre mm³	cubic centimetre cm³	litre l	cubic inch in³	cubic foot ft³	UK gallon UK gal	US gallon US gal
1	1 000 000	999·972	61 023·7	35·314 7	219·969	264·172
0·000 001	1	0·000 999 7	0·0610	0·000 035 3	0·000 22	0·000 26
0·001	1 000 028	1	61·0255	0·035 3	0·22	0·264 2
0·000 016	15·3871	0·016 4	1	0·000 58	0·003 6	0·004 3
0·028 3	28 316·8	28·316 1	1 728	1	6·228 8	7·480 5
0·004 5	4 546·09	4·546	277·419	0·160 5	1	1·201
0·003 8	3 785·41	3·785 3	231	0·133 7	0·832 7	1

Velocity

metre per second m/s	foot per second ft/s	foot per minute ft/m	kilometre per hour km/h	mile per hour mile/h
1	3·2808	0·0547	3·6	2·2369
0·3048	1	0·0167	1·0973	0·6818
18·288	60	1	65·8368	40·9091
0·2778	0·9113	0·0152	1	0·6214
0·4470	1·4667	0·0245	1·6093	1

Mass

kilogram kg	pound lb	hundredweight cwt	tonne t	UK ton	US short ton sh ton
1	2·2046	0·0197	0·001	0·000 98	0·0011
0·4536	1	0·0089	0·000 454	0·000 446	0·0005
50·8023	112	1	0·050 8	0·05	0·056
1000	2204·62	19·6841	1	0·984 2	1·1023
1016·05	2240	20	1·016 1	1	1·12
907·185	2000	17·8571	0·907 2	0·892 9	1

Mass Rate of Flow

kilogram per second kg/s	kilogram per hour kg/h	pound per hour lb/h	ton per hour UK ton/hr	tonne per day t/d
1	3600	7936·64	3·543 14	86·40
0·000 278	1	2·2046	0·000 984	·024
0·000 126	0·4536	1	0·000 446	·0109
0·282 2	1016·05	2240	1	24·3852
0·011 6	41·6667	91·8592	0·041 01	1

Volumetric Rate of Flow

litre per second l/s	litre per minute l/min	cubic metre per hour m³/h	cubic foot per hour ft³/h	cubic foot per minute ft³/m	UK gallon per minute UK gal/min	US gallon per minute US gal/min	US barrel per day/ US barrel/d
1	60	3·6001	127·136	2·1189	13·1986	15·8508	543·456
0·0167	1	0·0600	2·1189	0·3532	0·22	0·2642	9·0576
0·2778	16·6666	1	35·3147	0·5886	3·6662	4·4029	150·956
0·0079	0·4719	0·0283	1	0·1067	0·1038	0·1247	4·2746
0·4719	28·316	1·6990	60	1	6·2288	7·4805	256·475
0·0758	4.546	0·2728	9·6326	0·1605	1	1·201	41·1754
0·0631	3·7853	0·2271	8·0208	0·1337	0·8327	1	34·2857
0·0018	0·1104	0·0066	0·2339	0·0039	0·0243	0·0292	1

Pressure & Liquid Head

① bar	kilogram force per square centimetre ② kgf/cm²	pound force per square inch ② lbf/in²	④ atm	⑤ ft H. O	in H. O	m H. O	centimetre of mercury cm Hg	inch of mercury in Hg	millimetre of mercury ⑥ mm Hg
1	1·0197	14·5038	0·9869	33·4553	401·463	10·1972	75·0062	29·530	750·062
0·9807	1	14·2233	0·9878	32·8084	393·701	10	73·556	28·959	735·559
0·0689	0·0703	1	0·0809	2·3067	27·68	0·7031	5·1715	2·036	51·716
1·0133	1·0332	14·6959	1	33·889	406·782	10·3323	76·0	29·9213	760
0·0299	0·0305	0·4335	0·0295	1	12	0·3048	2·242	0·8827	22·4198
0·0025	0·0025	0·0361	0·0025	0·0833	1	0·0254	0·1868	0·0734	1·8683
0·0981	0·1000	1·422	0·0968	3·2808	39·3701	1	7·3556	2·896	73·356
0·0133	0·0136	0·1934	0·0132	0·4461	5·3524	0·136	1	0·3937	10
0·0339	0·0345	0·4911	0·0334	1·133	13·5951	0·3453	2·54	1	25·4
0·0013	0·0014	0·0193	0·0013	0·446	0·5352	0·0136	0·1	0·0394	1

① 1 bar = 10^5 N/m²
② Often denoted non-technically as psi
③ At density 1g/cm³
④ Technical (metric) atmosphere (at)
⑤ International standard atmosphere
⑥ Also known as torr

Pressure Conversions and Equivalents

Head and pressure equivalents are based on pure air-free water at standard atmosphere at 20°C having a density of 0·99823 g/cm³.

Metres head to feet head, bar and lbf/in²

Head metres	Head feet	Pressure bar	Pressure lbf/in²
0·10	0·328	0·010	0·142
0·20	0·656	0·020	0·284
0·30	0·984	0·029	0·426
0·40	1·312	0·039	0·568
0·50	1·640	0·049	0·710
0·60	1·969	0·059	0·852
0·70	2·297	0·069	0·994
0·80	2·625	0·078	1·136
0·90	2·953	0·088	1·278
1	3·281	0·098	1·420
2	6·562	0·196	2·840
3	9·843	0·294	4·259
4	13·123	0·392	5·679
5	16·404	0·489	7·099
6	19·685	0·587	8·519
7	22·956	0·685	9·939
8	26·247	0·783	11·358
9	29·528	0·881	12·778
10	32·808	0·979	14·198
11	36·089	1·077	15·618
12	39·370	1·175	17·038
13	42·651	1·273	18·457
14	45·932	1·371	19·877
15	49·213	1·468	21·297
16	52·493	1·566	22·717
17	55·774	1·664	24·137
18	59·055	1·762	25·557
19	62·336	1·860	26·976
20	65·617	1·958	28·396
30	98·425	2·937	42·594
40	131·234	3·916	56·792
50	164·042	4·895	70·990
60	196·850	5·874	85·188
70	229·659	6·853	99·386
80	262·467	7·831	113·584
90	295·276	8·810	127·783
100	326·084	9·789	141·981
110	360·892	10·768	156·179
120	393·701	11·747	170·377
130	426·509	12·726	184·575
140	459·318	13·705	198·773
150	492·126	14·684	212·971
160	524·934	15·663	227·169
170	557·743	16·642	241·367
180	590·551	17·621	255·565
190	623·360	18·600	269·763
200	656·168	19·579	283·961
210	688·976	20·558	298·159
220	721·785	21·536	312·357
230	754·593	22·515	326·555
240	787·402	23·494	340·753
250	820·210	24·473	354·951

Feet head to metres head, bar and lbf/in²

Head feet	Head metres	Pressure bar	Pressure lbf/in²
1	0·305	0·030	0·433
2	0·610	0·060	0·866
3	0·914	0·090	1·298
4	1·219	0·119	1·731
5	1·524	0·149	2·164
6	1·829	0·179	2·597
7	2·134	0·209	3·029
8	2·438	0·239	3·462
9	2·743	0·269	3·895
10	3·048	0·298	4·328
20	6·095	0·597	8·655
30	9·144	0·895	12·983
40	12·192	1·194	17·310
50	15·240	1·492	21·638
60	18·288	1·790	25·965
70	21·336	2·089	30·293
80	24·384	2·387	34·621
90	27·432	2·685	38·948
100	30·480	2·884	43·276
150	45·720	4·476	64·914
200	60·960	5·968	86·551
250	76·200	7·459	108·189
300	91·440	8·951	129·827
350	106·680	10·443	151·465
400	121·920	11·935	173·103
450	137·160	13·427	194·741
500	152·400	14·919	216·376
550	167·640	16·411	238·016
600	182·880	17·903	259·654
650	198·120	19·395	281·292
700	213·360	20·886	302·930
750	228·600	22·378	324·568
800	243·840	23·870	346·205

Bar to lbf/in², metres head and feet head

Pressure bar	Pressure lbf/in²	Head metres	Head feet
0·01	0·145	0·102	0·335
0·02	0·290	0·204	0·670
0·03	0·435	0·306	1·005
0·04	0·580	0·409	1·341
0·05	0·725	0·511	1·676
0·06	0·870	0·613	2·011
0·07	1·015	0·715	2·346
0·08	1·160	0·817	2·681
0·09	1·305	0·919	3·016
0·10	1·450	1·022	3·351

Pressure Drop and Flow Characteristics of General Purpose Valves

When a valve is inserted into a pipeline, pressure drop, additional to that already present due to pipe friction, is caused by the inevitable changes in shape and direction of flow, eddy currents and obstructions in the seating vicinity and end fittings.

The general formular given in this section constitute a guide in establishing the value of this pressure drop for a given size and type of valve: alternatively they establish size and/or type of valve required for a given acceptable value of pressure drop.

Users are advised, whenever possible, to consult Warren-Morrison.

It is important to note that the information given relates to the TURBULENT flow region, i.e. where Reynolds Numbers exceed approximately 2000 and which covers the majority of cases.

However, in the few cases where high viscosities or low flow rates drop the Reynolds Number well below 2000, some correction will be necessary.

Liquid Flow

$$\Delta P = \frac{K\,Q^2\,S}{1000\,A^2}$$

ΔP = Pressure Drop, lbf/in²
K = Head loss Coefficient*
Q = Flow, gal/min
S = Specific Gravity
A = Nominal Valve Area, in²

$$Q = Cv\sqrt{\frac{\Delta P}{S}}$$

ΔP = Pressure Drop, lbf/in²
Cv = Flow Coefficient*, gal/min or US gal/min
Q = Flow, gal/min or US gal/min
S = Specific Gravity

$$Q = Kv\sqrt{\frac{\Delta P}{S}}$$

ΔP = Pressure Drop, kgf/cm²
Kv = Flow Coefficient*, l/min
Q = Flow, l/min
S = Specific Gravity

Specific Gravity of Liquids

Water	1·0
Sea Water	1·025
Kerosene	0·80
Sulphuric Acid 100%	1·83
Hydrochloric Acid 45%	1·48
Sodium Hydroxide 25%	1·27
Carbon Tetrachloride	1·60
Petrol (Gasoline)	0·65 - 0·80
Benzene	0·88
Turpentine	1·1 - 1·2

Product Codes

SPECIALS

-	None
AB	Media containment Design

END/FLANGE SUITABILITY

SC01	Screwed - FNPT
SC02	Screwed - MNPT
SC03	Screwed - BSPT
SC04	Screwed - BSPP
SW01	Socket Weld
BW01	Butt Weld
A125	ANSI Class 125 # FF
A150	ANSI Class 150 # FF
A300	ANSI Class 300 # FF
E006	EN 1092-1 PN 06
E010	EN 1092-1 PN 10
E016	EN 1092-1 PN 16
A1S1	ANSI 125#FF x Screwed - FNPT
A1S2	ANSI 125#FF x Screwed - MNPT
A1S3	ANSI 125#FF x Screwed - BSPT
A1S4	ANSI 125#FF x Screwed - BSPP
A2S1	ANSI 150#FF x Screwed - FNPT
A2S2	ANSI 150#FF x Screwed - MNPT
A2S3	ANSI 150#FF x Screwed - BSPT
A2S4	ANSI 150#FF x Screwed - BSPP
E1S1	EN 1092-1 PN 06 #FF x Screwed - FNPT
E1S2	EN 1092-1 PN 06 #FF x Screwed - MNPT
E1S3	EN 1092-1 PN 06 #FF x Screwed - BSPT
E1S4	EN 1092-1 PN 06 #FF x Screwed - BSPP
E2S1	EN 1092-1 PN 06 #FF x Screwed - FNPT
E2S2	EN 1092-1 PN 06 #FF x Screwed - MNPT
E2S3	EN 1092-1 PN 06 #FF x Screwed - BSPT
E2S4	EN 1092-1 PN 06 #FF x Screwed - BSPP
E3S1	EN 1092-1 PN 06 #FF x Screwed - FNPT
E3S2	EN 1092-1 PN 06 #FF x Screwed - MNPT
E3S3	EN 1092-1 PN 06 #FF x Screwed - BSPT
E3S4	EN 1092-1 PN 06 #FF x Screwed - BSPP

ACTUATOR

NA	NOT APPLICABLE
HW	HAND WHEEL
SC	STEM CAP

BODY TYPE

SB	Straight Body
AB	Angle Body
BN	Bib Nosed Body

FLANGE SUITABILITY

A150	ANSI Class 150#
E006	EN 1092-1 PN 06
E010	EN 1092-1 PN 10
E016	EN 1092-1 PN 16

DIAPRAGM/SLEEVE

T01	NATURAL RUBBER 36004
T02	BUTYL 36/52
T03	NEOPRENE 36006
T04	NITRILE 36003
T05	GUM 30944B
T06	EPDM 2008(WRAS)
T07	HYPALON (ACID GRADE)
T08	HYPALON (FIRE GRADE)
T09	HSN RED
T11	VITILE
T12	PTFE
T13	PSN YELLOW
T14	HPE

SEAT

M	METAL
E	EPDM
B	BUNA

BODY LINING

00	NO LINING
01	SOFT RUBBER
02	HARD RUBBER
03	EPDM
04	BUTYL
05	NEOPRENE
06	HYPALON
07	BLUE GLASS
08	PVDF
09	POLYPROPYLENE
10	HALAR(ECTFE)
11	POLYETHYLENE
12	RT9000
13	CORACOAT
14	ETFE
15	HPE

STEM

1	SS 410
2	SS 431
3	SS 316

BODY

C	CAST IRON
D	DUCTILE IRON
W	CARBON STEEL
S	STAINLESS STEEL
A	ALUMINIUM
B	BRONZE

SIZE

015	1/2" (15mm)
020	3/4" (20mm)
025	1" (25mm)
032	1-1/4" (32mm)
040	1-1/2" (40mm)
050	2" (50mm)
065	2-1/2" (65mm)
080	3" (80mm)
100	4" (100mm)
125	5" (125mm)
150	6" (60mm)
200	8" (200mm)
250	10" (250mm)
300	12" (300mm)
350	14" (350mm)
400	16" (400mm)
450	18" (450mm)

BODY

C	CAST IRON (BS 1452 Gr. 220)
D	DUCTILE IRON (BS 2789 Gr. 500/7)

SIZE

050	2" (50mm)
065	2-1/2" (65mm)
080	3" (80mm)
100	4" (100mm)
125	5" (125mm)
150	6" (60mm)
200	8" (200mm)
250	10" (250mm)
300	12" (300mm)
350	14" (350mm)
400	16" (400mm)
450	18" (450mm)
500	20" (450mm)
600	24" (450mm)

PRESSURE RATING

06	6 BARG
10	10 BARG
16	16 BARG

FACE TO FACE STD

B	BS 5156
D	DIN 3202 F1

VALVE MODEL

SDV	S TYPE DIAPHRAGM VALVE
SFV	S TYPE FIRE VALVE
MK4	PINCH VALVE

PRESSURE RATING

10	10 BARG
16	16 BARG

VALVE MODEL

GNR	FLANGED RESILIENT SEATED GATE VALVE (BS 5163/ISO 5752)
CVS	FLANGED SWING TYPE CHECK VALVE
CVD	WAFER DUAL PLATE CHECK VALVE (ISO 5752)

SDV-B-10-050-W-01-T01-SB-A150-C

EXAMPLE FOR 'SDV' TYPE DIAPHRAGM VALVES

SFV-B-16-080-A-03-T08-AB-A1S1

EXAMPLE FOR 'SFV' TYPE FIR HYDRANT VALVES

GNR-10-050-D-D-1-M-A150-HW

EXAMPLE FOR GATE VALVES:

CVD-16-080-C-0-3-E016-NA

EXAMPLE FOR CHECK VALVES: