

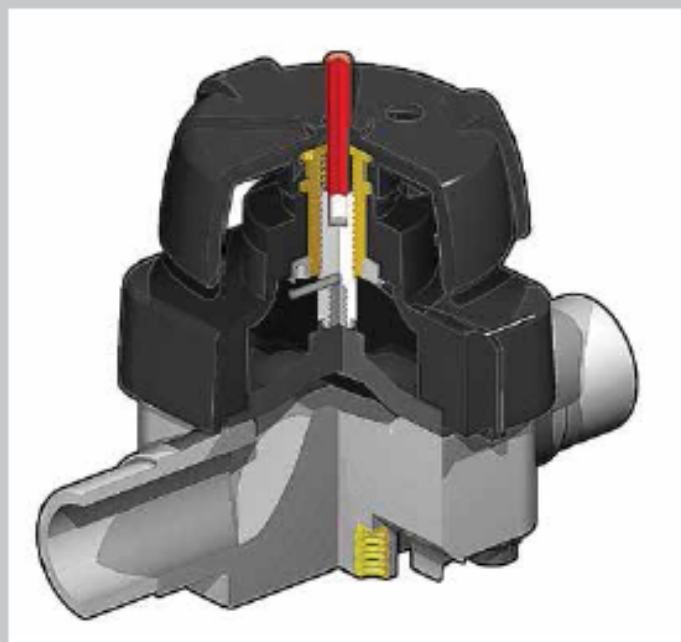


## UM/VM Diaphragm Valve

- The Diaphragm Valve is manually operated by a non-rising handwheel. The metal spindle and sleeve ensure reliability. The POM compression bearing reduces friction and wear
- Rising spindle extension to indicate the valve position
- Threaded inserts moulded in the bonnet, allowing the fixing bolts to be inserted from the bottom. This allows a cavity free bonnet, avoiding the accumulation of impurities and solids
- The valve can be used with liquids and gaseous fluids, and is suitable for dirty or abrasive media
- The 'CDSA' (Circular Diaphragm Sealing Area), in valves up to and including DN50, offers the following
  - Uniform pressure distribution of the compressor on to the diaphragm.
  - Reduction of up to 20% of the bolt tightening torque.
  - Reduced mechanical stress on the valve components.
  - Easier internal cleaning.
  - Lower chance of accumulation of deposits and fluid contamination, reducing the possibility of damage caused by crystallisation.
  - Reduced torque to the handwheel operation, by up to 40%. The handwheel operation allows a good regulation and reduces the possibility of water hammer.
- Pressure rating: Maximum working pressure: up to 10 bar at 20°C (water)
- High  $K_v$  value and reduced pressure losses
- Modular range: 5 Bonnet/Diaphragm sizes for 9 valve sizes
- Easy replacement of the sealing diaphragm
- Position indicator as standard
- For more information, please visit our website [www.durapipe.co.uk](http://www.durapipe.co.uk)

### Legend

<b>d</b>	Nominal outside diameter
<b>DN</b>	Nominal internal diameter in mm
<b>R</b>	Nominal size or the thread in inches
<b>PN</b>	Nominal pressure in bar (max. working Pressure at 20°C - water)
<b>g</b>	Weight in grams
<b>PmsVC-U</b>	Polyvinyl chloride unplasticised
<b>ABS</b>	Acrylonitrile Butadiene Styrene
<b>PP</b>	Polypropylene
<b>PVC-C</b>	Polyvinyl chloride chlorinated
<b>PP-GR</b>	Glass reinforced Polypropylene
<b>HIPVC</b>	High impact PVC
<b>PE</b>	Polyethylene
<b>PTFE</b>	Polytetrafluoroethylene
<b>EPDM</b>	Ethylene Propylene Diene Monomer (M-class) rubber
<b>FPM</b>	Fluorocarbon Rubber
<b>s</b>	Wall thickness (mm)
<b>SDR</b>	Standard dimension ratio = $d/s$





**Dimensions and Standards**

**Imperial**

The Imperial System is manufactured in accordance with the relevant British Standards: BS 5392 fittings.

**Metric**

The Metric System is manufactured generally in accordance with the relevant International Standards: ISO 15493, KIWA 49 and 549, DIN 8062 and 8063.

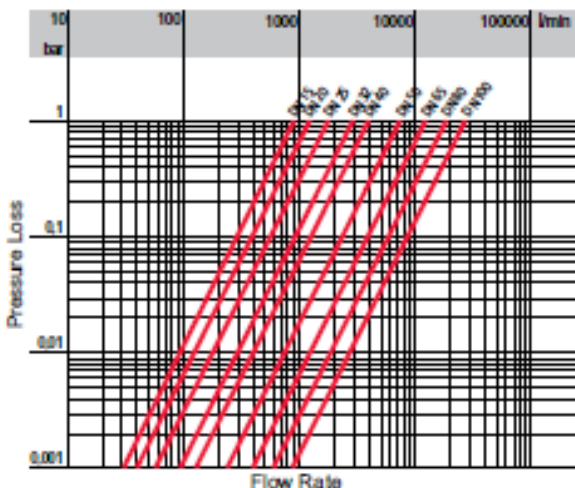
**BSP Thread**

Threaded fittings conform to the requirements of BS 21/DIN 2999/ISO7. Socket dimensions of metric fittings for solvent welding comply with ISO/DIS 727-1.

**Interchangeability**

Components in the imperial and metric ranges are not interchangeable.

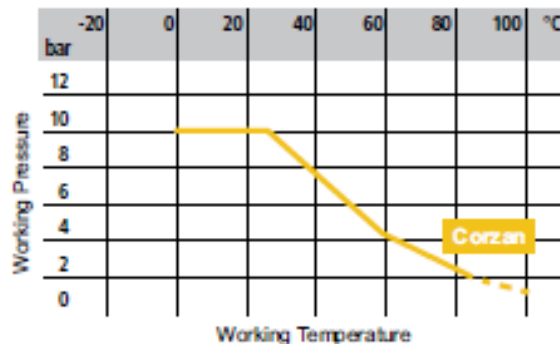
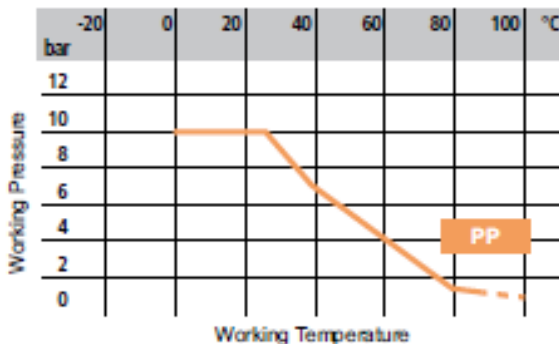
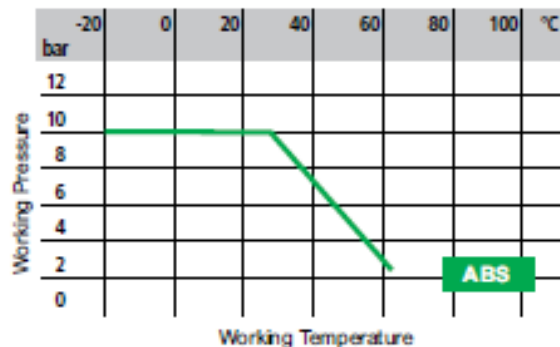
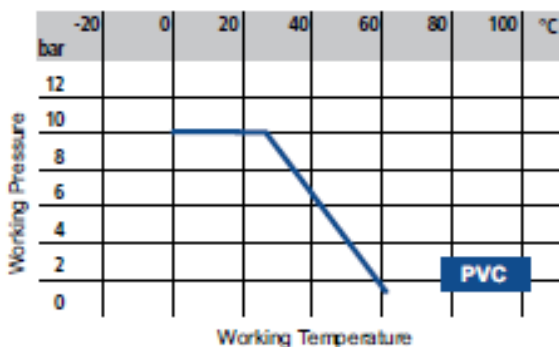
**Technical Data**



Pressure loss chart.

DN	10	15	20	25	32	40	50	65	80	100
$k_{v100}$	93	93	136	175	300	416	766	1300	2000	2700

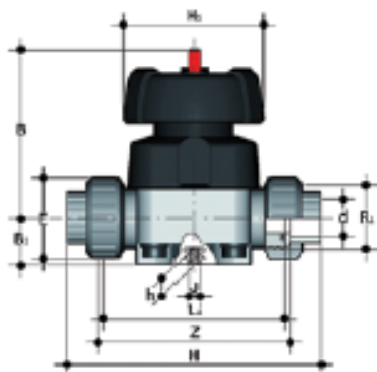
Flow coefficient  $k_{v100}$   
 $k_{v100}$  is the number of litres per minute of water at a temperature of 20°C that will flow through a valve with a one bar pressure differential at a specified rate. The  $k_{v100}$  values shown in the table are calculated with the valve fully open.



Pressure/temperature rating for water and harmless fluids to which the material is RESISTANT. In other cases a reduction of the PN is required. (25 years with safety factor).



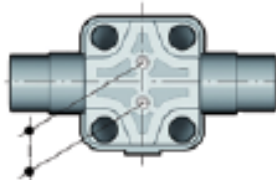
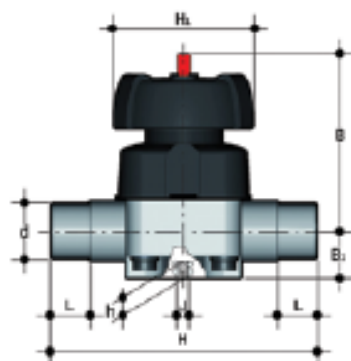
BS Series Female Ends



VMULV **PVC-U**  
VMULA **ABS**

Diaphragm valve with BS series female ends for solvent welding

														PVC-U			ABS				
d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	L <sub>x</sub>	J	Z	E	R <sub>1</sub>	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
1/4	15	10	95	26	147	12	90	25	108	M6	115	41	1	830	H0 UME 102	H0 UMF 102	H0 UMG 102	690	H0 UMA 102	H0 UMB 102	H0 UMC 102
3/4	20	10	95	26	154	12	90	25	108	M6	116	50	114	860	H0 UME 103	H0 UMF 103	H0 UMG 103	690	H0 UMA 103	H0 UMB 103	H0 UMC 103
1	25	10	95	26	168	12	90	25	116	M6	124	58	115	895	H0 UME 104	H0 UMF 104	H0 UMG 104	720	H0 UMA 104	H0 UMB 104	H0 UMC 104
1 1/4	32	10	126	40	192	16	115	44.5	134	M8	140	72	2	1650	H0 UME 105	H0 UMF 105	H0 UMG 105	1520	H0 UMA 105	H0 UMB 105	H0 UMC 105
1 1/2	40	10	126	40	222	16	115	44.5	154	M8	160	79	2 1/4	1730	H0 UME 106	H0 UMF 106	H0 UMG 106	1545	H0 UMA 106	H0 UMB 106	H0 UMC 106
2	50	10	148	40	266	16	140	44.5	184	M8	190	98	2 3/4	2800	H0 UME 107	H0 UMF 107	H0 UMG 107	2275	H0 UMA 107	H0 UMB 107	H0 UMC 107



VMMV **PVC-U**  
VMMA **ABS**

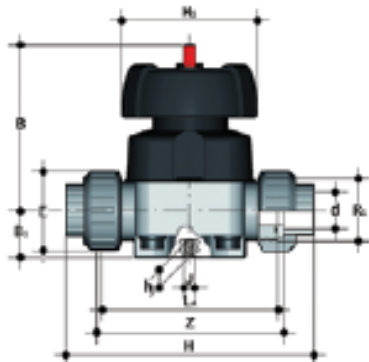
Diaphragm valve with BS series female ends for solvent welding

														PVC-U			ABS		
d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	J	L	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code	
2 1/2	65	10	225	55	284	23	200	100	M12	44	7000	H0 VME 412	H0 VMF 412	H0 VMG 412	6225	H0 VMA 412	H0 VMB 412	H0 VMC 412	
3	80	10	225	55	300	23	200	100	M12	51	7000	H0 VME 209	H0 VMF 209	H0 VMG 209	6440	H0 VMA 209	H0 VMB 209	H0 VMC 209	
4	100	10	295	69	300	23	200	120	M12	61	10500	H0 VME 210	H0 VMF 210	H0 VMG 210	9015	H0 VMA 210	H0 VMB 210	H0 VMC 210	



Metric Series Female Ends

- VMUIV **PVC-U**
- VMUIA **ABS**
- VMUIM **PP**
- VMUIC **Corzan**



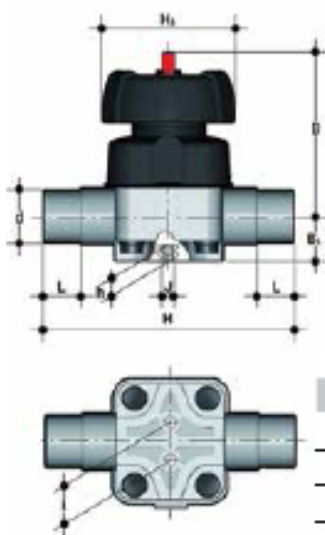
Diaphragm valve with Metric series female ends

d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	L <sub>x</sub>	J	Z	E	R <sub>1</sub>
20	15	10	95	26	147	12	90	25	108	M6	115	41	1
25	20	10	95	26	154	12	90	25	108	M6	116	50	114
32	25	10	95	26	168	12	90	25	116	M6	124	58	116
40	32	10	126	40	192	16	115	44.5	134	M8	140	72	2
50	40	10	126	40	222	16	115	44.5	154	M8	160	79	214
63	50	10	148	40	266	16	140	44.5	184	M8	190	98	214

PVC-U					ABS			
d	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
20	830	H0 UME 306	H0 UMF 306	H0 UMG 306	690	H0 UMA 306	H0 UMB 306	H0 UMC 306
25	860	H0 UME 307	H0 UMF 307	H0 UMG 307	690	H0 UMA 307	H0 UMB 307	H0 UMC 307
32	895	H0 UME 308	H0 UMF 308	H0 UMG 308	720	H0 UMA 308	H0 UMB 308	H0 UMC 308
40	1650	H0 UME 309	H0 UMF 309	H0 UMG 309	1520	H0 UMA 309	H0 UMB 309	H0 UMC 309
50	1730	H0 UME 310	H0 UMF 310	H0 UMG 310	1545	H0 UMA 310	H0 UMB 310	H0 UMC 310
63	2800	H0 UME 311	H0 UMF 311	H0 UMG 311	2275	H0 UMA 311	H0 UMB 311	H0 UMC 311

PP					Corzan			
d	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
20	710	H0 UMN 306	H0 UMP 306	H0 UMQ 306	860	H0 UMJ 306	H0 UMK 306	H0 UML 306
25	750	H0 UMN 307	H0 UMP 307	H0 UMQ 307	895	H0 UMJ 307	H0 UMK 307	H0 UML 307
32	780	H0 UMN 308	H0 UMP 308	H0 UMQ 308	930	H0 UMJ 308	H0 UMK 308	H0 UML 308
40	1420	H0 UMN 309	H0 UMP 309	H0 UMQ 309	1720	H0 UMJ 309	H0 UMK 309	H0 UML 309
50	1730	H0 UMN 310	H0 UMP 310	H0 UMQ 310	1800	H0 UMJ 310	H0 UMK 310	H0 UML 310
63	2800	H0 UMN 311	H0 UMP 311	H0 UMQ 311	2915	H0 UMJ 311	H0 UMK 311	H0 UML 311



- VMIV **PVC-U**
- VMIA **ABS**
- VMDV **PP**
- VMIC **Corzan**

Diaphragm valve with Metric series male ends

d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	J	L
75	65	10	225	55	284	23	200	100	M12	44
90	80	10	225	55	300	23	200	100	M12	51
110	100	10	295	69	300	23	200	120	M12	61

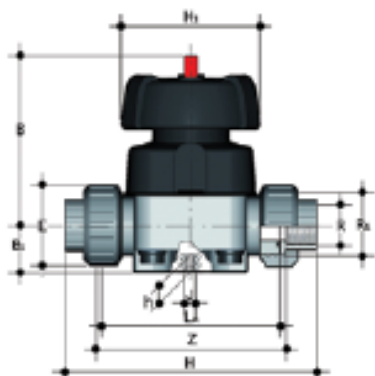
PVC-U					ABS			
d	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
75	7000	H0 VME 412	H0 VMF 412	H0 VMG 412	6225	H0 VMA 412	H0 VMB 412	H0 VMC 412
90	7000	H0 VME 209	H0 VMF 209	H0 VMG 209	6440	H0 VMA 209	H0 VMB 209	H0 VMC 209
110	10500	H0 VME 210	H0 VMF 210	H0 VMG 210	9015	H0 VMA 210	H0 VMB 210	H0 VMC 210

PP					Corzan			
d	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
75	6000	H0 VMN 412	H0 VMP 412	H0 VMG 412	7260	H0 VMJ 412	H0 VMK 412	H0 VML 412
90	6000	H0 VMN 209	H0 VMP 209	H0 VMG 209	7260	H0 VMJ 209	H0 VMK 209	H0 VML 209
110	9000	H0 VMN 210	H0 VMP 210	H0 VMG 210	10860	H0 VMJ 210	H0 VMK 210	H0 VML 210



**BSP Threaded Socket Ends**

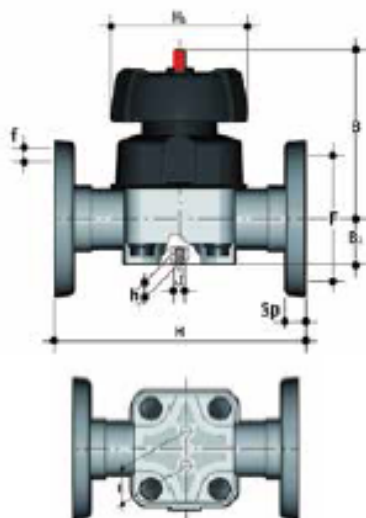


**VMUFV PVC-U**

Diaphragm valve with BSP parallel female threaded ends.

														PVC-U			
d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	L <sub>1</sub>	J	Z	E	R <sub>1</sub>	gms	EPDM Code	FPM Code	PTFE Code
1/2	15	10	95	26	148	12	90	25	108	M6	118	41	1	830	H0 UME B02	H0 UMF B02	H0 UMG B02
3/4	20	10	95	26	151	12	90	25	108	M6	118	50	1 1/4	860	H0 UME B03	H0 UMF B03	H0 UMG B03
1	25	10	95	26	165	12	90	25	116	M6	127	58	1 1/2	895	H0 UME B04	H0 UMF B04	H0 UMG B04
1 1/4	32	10	126	40	188	16	115	44.5	134	M8	145	72	2	1650	H0 UME B05	H0 UMF B05	H0 UMG B05
1 1/2	40	10	126	40	208	16	115	44.5	154	M8	165	79	2 1/4	1730	H0 UME B06	H0 UMF B06	H0 UMG B06
2	50	10	148	40	246	16	140	44.5	184	M8	195	98	2 3/4	2800	H0 UME B07	H0 UMF B07	H0 UMG B07

**Flanged Ends to BS EN1092-1 PN10/16**



**VMOV PVC-U**

**VMOM PP**

**VMOC Corzan**

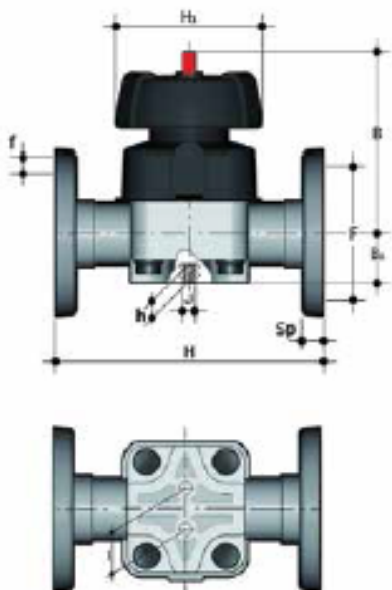
Diaphragm valve with Flanged ends, to BS EN1092-1 PN10/16.

d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	J	F	f	S <sub>p</sub>
1/2	15	10	95	26	130	12	90	25	M6	65	14	11
3/4	20	10	95	26	150	12	90	25	M6	75	14	13.5
1	25	10	95	26	160	12	90	25	M6	85	14	14
1 1/4	32	10	126	40	180	18	115	44.5	M8	100	18	14
1 1/2	40	10	126	40	200	18	115	44.5	M8	110	18	16
2	50	10	148	40	230	18	140	44.5	M8	125	18	16
2	65	10	225	55	290	23	200	100	M12	145	18	21
3	80	10	225	55	310	23	200	100	M12	160	18	21.5
4	100	10	225	69	350	23	250	120	M12	180	18	21.5

d	PVC-U				PP				Corzan			
	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
1/2	840	H0 VME F02	H0 VMF F02	H0 VMG F02	740	H0 VMN F02	H0 VMP F02	H0 VMQ F02	910	H0 VMJ F02	H0 VMK F02	H0 VML F02
3/4	900	H0 VME F03	H0 VMF F03	H0 VMG F03	800	H0 VMN F03	H0 VMP F03	H0 VMQ F03	970	H0 VMJ F03	H0 VMK F03	H0 VML F03
1	990	H0 VME F04	H0 VMF F04	H0 VMG F04	890	H0 VMN F04	H0 VMP F04	H0 VMQ F04	1060	H0 VMJ F04	H0 VMK F04	H0 VML F04
1 1/4	1960	H0 VME F05	H0 VMF F05	H0 VMG F05	1660	H0 VMN F05	H0 VMP F05	H0 VMQ F05	2120	H0 VMJ F05	H0 VMK F05	H0 VML F05
1 1/2	2075	H0 VME F06	H0 VMF F06	H0 VMG F06	1775	H0 VMN F06	H0 VMP F06	H0 VMQ F06	2225	H0 VMJ F06	H0 VMK F06	H0 VML F06
2	3170	H0 VME F07	H0 VMF F07	H0 VMG F07	2670	H0 VMN F07	H0 VMP F07	H0 VMQ F07	3320	H0 VMJ F07	H0 VMK F07	H0 VML F07
2	8100	H0 VME F08	H0 VMF F08	H0 VMG F08	7100	H0 VMN F08	H0 VMP F08	H0 VMQ F08	8500	H0 VMJ F08	H0 VMK F08	H0 VML F08
3	8500	H0 VME F09	H0 VMF F09	H0 VMG F09	7500	H0 VMN F09	H0 VMP F09	H0 VMQ F09	9150	H0 VMJ F09	H0 VMK F09	H0 VML F09
4	12400	H0 VME F10	H0 VMF F10	H0 VMG F10	11350	H0 VMN F10	H0 VMP F10	H0 VMQ F10	13200	H0 VMJ F10	H0 VMK F10	H0 VML F10



Flanged Ends to ANSI 150



- VMOAV PVC-U
- VMOAM PP
- VMOAC Corzan

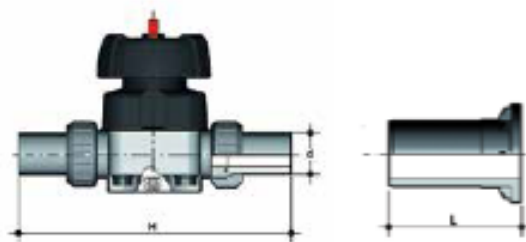
Diaphragm valve with Flanged ends, to ANSI 150.

d	DN	PN	B	B <sub>1</sub>	H	h	H <sub>1</sub>	I	J	F	f	S <sub>p</sub>
1/2	15	10	95	26	130	12	90	25	M6	60.5	16	11
3/4	20	10	95	26	150	12	90	25	M6	70	16	13.5
1	25	10	95	26	160	12	90	25	M6	79.5	16	14
1 1/4	32	10	126	40	180	18	115	44.5	M8	89	16	14
1 1/2	40	10	126	40	200	18	115	44.5	M8	98.5	16	16
2	50	10	148	40	230	18	140	44.5	M8	121	19	16
2	65	10	225	55	290	23	200	100	M12	140	19	21
3	80	10	225	55	310	23	200	100	M12	152.5	19	21.5
4	100	10	225	69	350	23	250	120	M12	190.5	19	21.5

d	PVC-U				PP				Corzan			
	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code	gms	EPDM Code	FPM Code	PTFE Code
1/2	840	H0 VME X02	H0 VMF X02	H0 VMG X02	740	H0 VMN X02	H0 VMP X02	H0 VMQ X02	910	H0 VMJ X02	H0 VMK X02	H0 VML X02
3/4	900	H0 VME X03	H0 VMF X03	H0 VMG X03	800	H0 VMN X03	H0 VMP X03	H0 VMQ X03	970	H0 VMJ X03	H0 VMK X03	H0 VML X03
1	990	H0 VME X04	H0 VMF X04	H0 VMG X04	890	H0 VMN X04	H0 VMP X04	H0 VMQ X04	1060	H0 VMJ X04	H0 VMK X04	H0 VML X04
1 1/4	1960	H0 VME X05	H0 VMF X05	H0 VMG X05	1660	H0 VMN X05	H0 VMP X05	H0 VMQ X05	2120	H0 VMJ X05	H0 VMK X05	H0 VML X05
1 1/2	2075	H0 VME X06	H0 VMF X06	H0 VMG X06	1775	H0 VMN X06	H0 VMP X06	H0 VMQ X06	2225	H0 VMJ X06	H0 VMK X06	H0 VML X06
2	3170	H0 VME X07	H0 VMF X07	H0 VMG X07	2670	H0 VMN X07	H0 VMP X07	H0 VMQ X07	3320	H0 VMJ X07	H0 VMK X07	H0 VML X07
2	8100	H0 VME X08	H0 VMF X08	H0 VMG X08	7100	H0 VMN X08	H0 VMP X08	H0 VMQ X08	8500	H0 VMJ X08	H0 VMK X08	H0 VML X08
3	8500	H0 VME X09	H0 VMF X09	H0 VMG X09	7500	H0 VMN X09	H0 VMP X09	H0 VMQ X09	9150	H0 VMJ X09	H0 VMK X09	H0 VML X09
4	12400	H0 VME X10	H0 VMF X10	H0 VMG X10	13500	H0 VMN X10	H0 VMP X10	H0 VMQ X10	13200	H0 VME X10	H0 VMK X10	H0 VML X10



## Accessories



End Connector in PE100, long spigot, for electrofusion or butt welding (SDR11)

d	DN	L	H	Product Code
20	15	95	298	HZ PVE M06
25	20	95	298	HZ PVE M07
32	25	95	314	HZ PVE M08
40	32	95	330	HZ PVE M09
50	40	95	350	HZ PVE M10
63	50	95	380	HZ PVE M11

End connectors also available in PP, please speak to the Durapipe Valve Department for details.

## Connection to the System

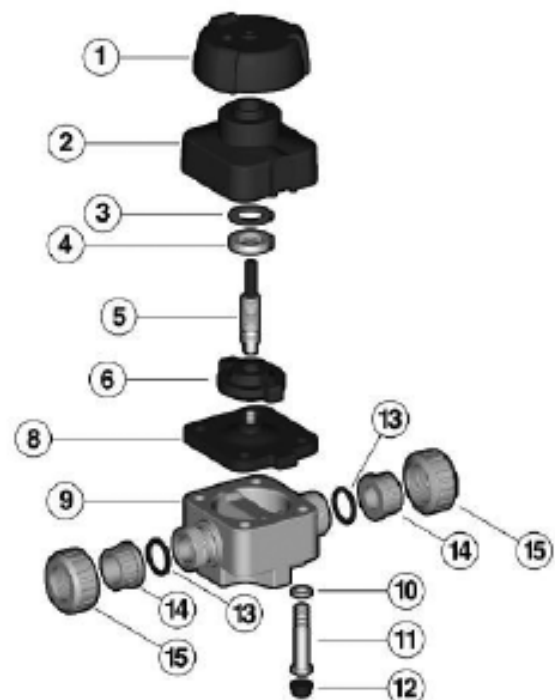
Before proceeding with the installation, please read and familiarise yourself with these instructions.

### Union Ended Version

1. Check that the pipes either side of the valve are axially aligned, in order to avoid mechanical stress on the threaded union joints.
2. Unscrew the union nuts (15) from the valve body and slide them onto the pipe.
3. Solvent weld, Socket Fuse or screw the valve end connectors (14) onto the pipe ends. For correct jointing see the Durapipe material technical catalogues.
4. Position the valve between the two end connectors and screw the union nuts clockwise by hand until a resistance is felt; do not use keys or other tools which may damage the nut surface.

### Spigot Ended Version

1. Check that the pipes either side of the valve are axially aligned, in order to avoid mechanical stress on the threaded union joints.
2. Solvent weld or Socket Fuse the valve body (9) into the fitting socket. For correct jointing see the Durapipe material technical catalogues. Take care when solvent welding to ensure that no solvent runs into the valve body.



## Disassembly

1. Isolate the valve from the flow and drain down upstream of the valve.
2. Unscrew the four bolts (11) and separate the headworks (1 to 6) from the body (9).
3. Unscrew the diaphragm (8) from the compressor (6).
4. Clean or replace the diaphragm, if necessary.

## Assembly

1. Screw the diaphragm (8) into the compressor (6), to hand tight, then rotate anti-clockwise to line up the diaphragm holes with the bonnet drillings.
2. Place the bonnet/diaphragm assembly onto the valve body. Bolt together with the four bolts, tightening in a diagonally opposite sequence. Fit the plastic protective caps (12).

Position	Components	Material
1	Handwheel	PP/Glass reinforced
2	Bonnet	PP/Glass reinforced
3	Compression Bearing	POM
4	Security Ring	Brass
5	Indicator / Stem	Stainless steel
6	Compressor	PP/Glass reinforced
7	Diaphragm	EPDM/FPM/PTFE
8*	Valve Body	Valve Material
9	Washer	Zinc plated steel
10	Bolt	Zinc plated steel
12	Protective Cap	PE
13	Socket Seal O-ring	EPDM/FPM
14*	Union End	Valve Material
15*	Union Nut	Valve Material

\*Spare Parts