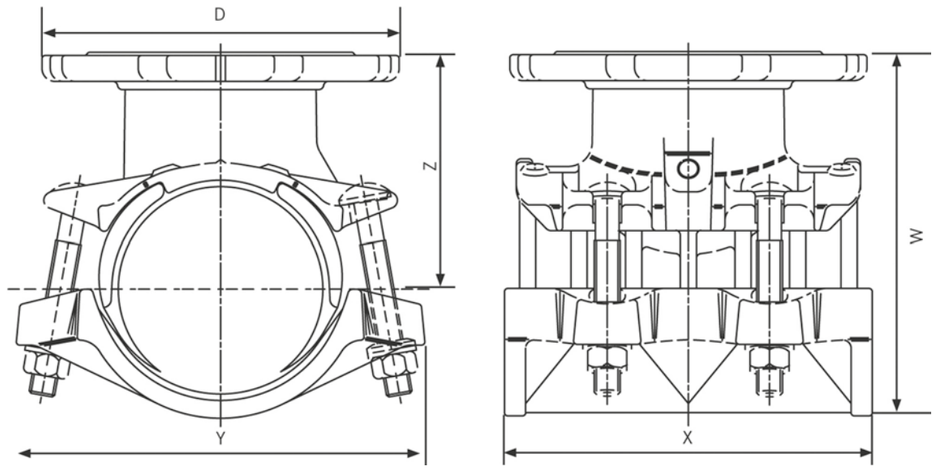
Mechanical Fittings and Repair Clamps – Viking Johnson

Universal EasiTee – Specifications



EasiTee

Pipe OD Size Range		Branch Drilling		Plain Mould No.	Branch Mould No.	Dimensions (mm)					Bolt Size No. -Size x Length	Weight (kg)
Min (mm)	Max (mm)	Nom	Spec			D	W	X	Y	Z		
85.4	103	80	PN 10,16	1792	1791	200	205	213	193	128	4-M16 x 110	9
111.8	129.4	80/100	PN 10,16	1741	1740	200	228	227	252	146	4-M16 x 130	10.5
165.2	184.4	80/100	PN 10,16	1743	1742	200	275	269	305	165	4-M16 x 130	18.7
162.2	184.4	150	PN 10,16	1743	1742	285	275	269	305	165	4-M16 x 130	20.9
215.9	239.7	80/100	PN 10,16	1745	1744	200	365	319	385	228	6-M20 x 140	25.4
215.9	239.7	150	PN 10,16	1745	1744	285	365	319	385	228	6-M20 x 140	28
215.9	239.7	200	PN 16	1745	1744	340	365	319	385	228	6-M20 x 140	29.5
269.2	293.5	80/100	PN 10,16	1747	1746	200	424	368	462	260	6-M20 x 140	49.1
269.2	293.5	150	PN 10,16	1747	1746	285	424	368	462	260	6-M20 x 140	51.2
269.2	293.5	200	PN 16	1747	1746	340	424	368	462	260	6-M20 x 140	52.3
269.2	293.5	250	PN 16	1747	1746	405	424	368	462	260	6-M20 x 140	56.6
323.1	349	80/100	PN 10,16	1749	1748	200	478	439	534	290	6-M20 x 160	58.7
323.1	349	150	PN 10,16	1749	1748	285	478	439	534	290	6-M20 x 160	61
323.1	349	200	PN 16	1749	1748	340	478	439	534	290	6-M20 x 160	62.5
323.1	349	250	PN 16	1749	1748	405	478	439	534	290	6-M20 x 160	66
323.1	349	300	PN 16	1749	1748	460	478	439	534	290	6-M20 x 160	66

Covers and Frames – See page 261

Valves

Keyline offer a wide range of valves to suit all applications complementing our pressure pipeline offer which services the following sectors:

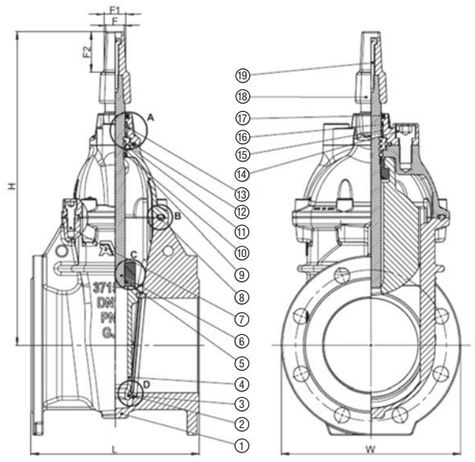
- Water
- Gas.
- Waste water

We offer project specific solutions or single unit small bore valves. We can also supply fully actuated valve and penstock packages for all applications along with complete design support.

Flood defence products can also be supplied to environment agency standards for projects of any size or specification.

From design stage to project completion, we work closely with customers to select the appropriate size and arrangement of valve assemblies, as well as the required ancillary products, including stainless steel parts for aggressive environments, specialist sensors, switches, extension spindles and ISO mountings.

Resilient Seated Gate Valves and Metal Faced Gate Valves

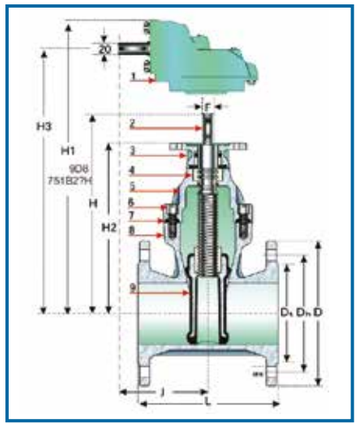


Eights													
L (mm)	H (mm)	Dt (mm)	D (mm)	Dh (mm)		Ds (mm)		Holes (number 16 bar)		F (mm)	H1	H2	H3
				PN10	PN 16	PN10	PN 16	PN10	PN 16				
178	279	98	165	125		18		4		23	356	233	311
203	294	133	200	160		18		8		23	371	248	326
229	324	153	220	180		18		8		23	401	278	356
267	429	209	285	240		22		8		23	506	383	461
292	531	264	340	295	295	22	22	8	12	23	608	485	563
330	614	320	405	350	355	22	26	12	12	23	691	568	646
356	690	367	460	400	410	22	26	12	12	23	767	644	722
381	867	432	533	460	470	22	26	16	16	30	924	801	879
406	867	482	580	515	525	26	30	16	16	30	924	801	879

Max. Valve DN (mm)	Ratio	Max Output	Output Bush Dia. (mm)
300	2:1	300Nm	23
400	4.5:1	600Nm	30

DN (mm)	PN Drilling	L (mm)	H (mm)	W (mm)	F (mm)	F1 (mm)	F2 (mm)	Theoretical Weight (kg)
50	16	178	304	165	28	35	63	11
80	16	203	349	200	28	35	63	21
100	16	229	381	220	28	35	63	27
150	16	267	498	285	28	35	63	43
200	16	292	597	340	28	35	63	76
250	16	330	672	405	28	35	63	105
300	16	356	753	460	28	35	63	159

Materials of Construction			
1	Body	11	Thrust Collar
2	Seat Ring	12	O-ring
3	Face Ring	13	Gland
4	Wedge	14	Socket Head Bolt
5	Wedge Nut	15	Bushing
6	Stem	16	O-ring
7	Socket Head Bolt	17	Wiper Ring
8	Bonnet Gasket	18	Stemcap
9	Bonnet	19	Bolt
10	O-ring		

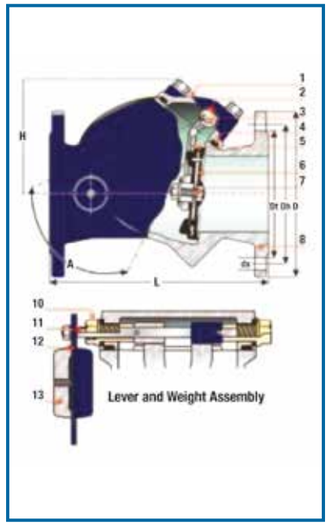


Furthermore no liability is accepted if use of any product in accordance with these data or suggestions infringes any patent.
Keyline Utilities reserve the right to change product specifications without further notification.

Valves

Swing Check Valve

Materials of Construction		
No.	**Description**	**Material**
1	Bonnet Assembly	Ductile Iron, BS EN 1563, EN-GJS-500-7 complete with bolts and washers DIN 931-A2
2	Bushing	DZR Brass to BS EN 12164
		CW 602 N. (CZ132)
3	Spindle	Stainless Steel to BS EN
		10088-1 No. 1.4021
4	Body/ Bonnet	Seal EPDM. ESW-70
5	Hinge	Up to DN200 – Stainless Steel AISI 316 (A4). DN250 – 300 – Ductile Iron, BS EN 1563 EN-GJS-500-7
6	Disc Assembly	DN50-200 – Steel to DIN 47100 Gr 40 – 2 fully encapsulated with EPDM. ESW – 70. DN250 – 300 – Ductile Iron to BS EN 1563 EN GJS 500-7 fully encapsulated with EPDM. ESW-70
7	Nut and Bolt	Stainless Steel A2
8	Body	Ductile Iron, BS EN 1563 EN-GJS-500-7
9	Body Seat	N/A
Optional Lever and Weight Assembly		
10	Bushing	DZR Brass to BS EN 12164, CW 602 N complete with 3 NBR O Rings
11	Extended Spindle	Stainless Steel to BS EN 10088-L No. 1.4021
12	Lever	Ductile Iron, BS EN 1563 EM-GJS-7
13	Weight	Grey Cast Iron, BS EN 1561 EN-GJL-250
	Coating	Electrostatically applied blue epoxy tested to WIS 4-52-01. Epoxy powder WRAS listed



Dimensions and Weight														
DN	**L (mm)**	**H (mm)**	**Dt (mm)**	**D (mm)**	**Dh (mm)**			**ds (mm)**			**Holes (no.)**		**A°**	**Weight (kilos)**
					PN10		**PN 16**	**PN10**		**PN16**	**PN10**		**PN16**	
50	203	110	102	165		125			19			4		60°	13
65	216	120	122	185		145			19			4		63°	17
80	241	140	138	200		160			19			8		66°	16
100	292	150	158	220		180			19			8		68°	21
125	330	180	188	254		210			19			8		68°	35
150	356	195	212	285		240			23			8		70°	38
200	495	230	268	340		295			23		8		12	73°	66
250	622	270	320	406	350		355	23		28		12		76°	132
300	698	300	370	482	400		410	23		28		12		80°	187

Sizes available up to 1000mm.

TRAVIS PERKINS | BENCHMARX | WICKES | TILE GIANT | BSS | PTS | CITY PLUMBING SUPPLIES
KEYLINE | RUDRIDGE | CCF | SBS | DHS | CITY HEATING SPARES | TOOLSTATION
SOLFEX | BIRCHWOOD PRICE TOOLS | F & P | CONNECTIONS | PRIMAFLOW

Travis Perkins operates some of the leading brands in the industry, 20 businesses from more than 1,800 sites across the UK. Including:

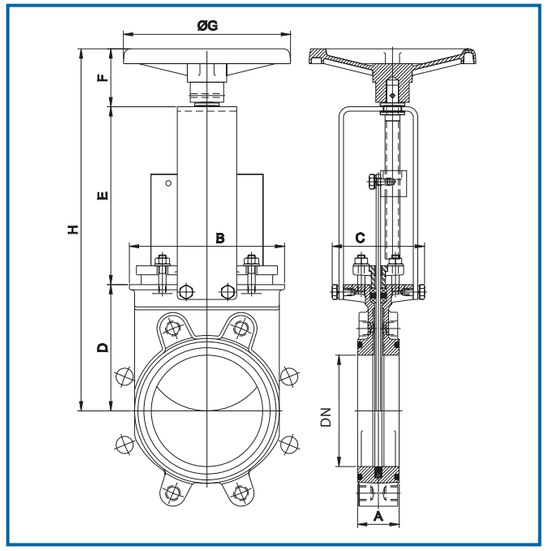
- **Benchmarx** – Benchmarx Kitchens and Joinery is a strictly trade only company supplying high quality kitchens, joinery and flooring and everything else to complete the job.
- **Birchwood Price Tools** – Birchwood Price Tools (BPT) is a leading wholesaler of power tools, hand tools and site equipment, carrying a distinguished line-up of global brands.
- **City Plumbing Supplies** – One of the UK's largest plumbers' merchants and bathroom retailers, with a dedicated national network of branches and bathroom showrooms.
- **CCF** – leading specialist distributors of ceilings, drywall, screeding, insulation, partitioning and fire protection to the construction industry.
- **City Heating Spares** – City Heating Spares is the new super-fast heating spares brand trading at selected City Plumbing Supplies branches.
- **Direct Heating Spares** – Direct Heating Spares Limited ('DHS') is a leading independent distributor of domestic heating spares in the UK with national coverage.
- **F & P Wholesale** – The independent merchants' choice for heating, plumbing and bathroom products.
- **BSS Industrial** – **Pipeline and Heating Solutions** – A specialist distributor of pipeline, heating and mechanical services equipment serving customers across all industrial sectors within the UK and Ireland.
- **Plumbing Trade Supplies** – PTS is a leading distributor of plumbing, heating, sanitaryware and renewable energy products to a wide range of customers, both public and private sector, from national house builders to the sole trading plumber.
- **Travis Perkins** – One of the UK's leading builders' merchants supplying more than 100,000 product lines to trade professionals and self-builders.
- **Tile Giant** – Tile Giant is the fastest growing ceramics merchant in the UK.
- **Toolstation** – Toolstation is a rapidly growing direct retailer of tools and hardware.
- **Wickes** – One of the UK's leading DIY and Home Improvement retailers, operating over 200 stores across the country.
- **Connections** – A leading distributor of plumbing fittings from leading brands and manufacturers.
- **Solfex** – One of the largest specialist distributors in the UK of high quality renewable energy systems.

Valves

Knife Gate Valve

Handwheel (non-rising stem)

- Consists of:
  - Handwheel
  - DN 50-300: Aluminium
  - DN > 350: GJS40 (GGG40)
  - Stem
  - Yoke bushing
  - Stem nut fixed to the gate
- Available from DN 50 to DN 1000
- Options:
  - Locking Device
  - Extension
  - Square Nut Drive.

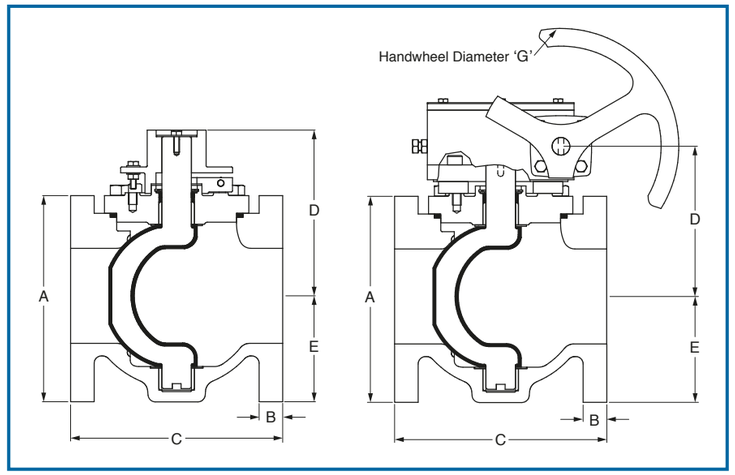


DN	A	B	C	D	E	F	ØG	H	Weight (kg)
50	43	113	124	105	132	78	225	315	8
65	46	128	124	115	149	78	225	342	9
80	46	143	124	124	165	78	225	367	10
100	52	162	124	140	190	78	225	408	12
125	56	181	124	150	214	78	225	442	15
150	56	209	124	170	240	78	225	488	17
200	60	263	142	205	305	92	310	602	30
250	68	315	142	250	360	92	310	702	42
300	78	370	142	290	410	92	310	792	60
350	78	420	197	325	487	110	410	922	90
400	102	478	197	360	537	110	410	1007	140
450	114	530	201	410	589	111	550	1110	185
500	127	584	201	450	649	111	550	1210	204
600	110	762	201	510	800	111	550	1434	230
700	110	890	398	601	979	147	800	1727	380
800	110	1012	320	695	1076	147	800	1918	550
900	110	1112	320	795	1115	147	800	2057	680
1000	110	1240	320	875	1220	147	800	2247	800

A: EN558-1 serie 20 up to DN500.
Size range 50-1200mm, larger sizes available – Price on enquiry.
Valves available with rising/non-rising stem, Handwheel operated, Chainwheel operated or actuated.

Eccentric Plug Valve

Flanged End – Series 601 – PN10 / 16

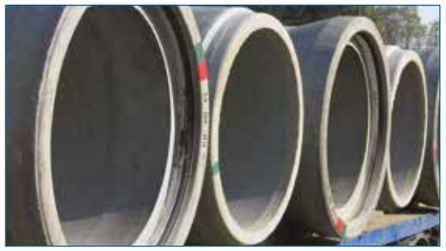


Dimensions (mm)	Flanged End – Series 601 – PN10 / 16 Nominal Valve Size – DN								
	50	65	80	100	125	150	200	250	300
A	152	178	191	229	254	279	343	406	483
B	20	20	22	24	26	26	30	32	32
C	178	191	203	229	254	267	292	330	356
D	127	157	157	184	221	213	271		
E	78	89	95	114	146	146	194	226	254
F	137	137	142	160	192	192	245	295	338
G		152	152	152	152	152	305	305	305
Weight (kg)	8.2	14	18	32	48	52	86	156*	200*

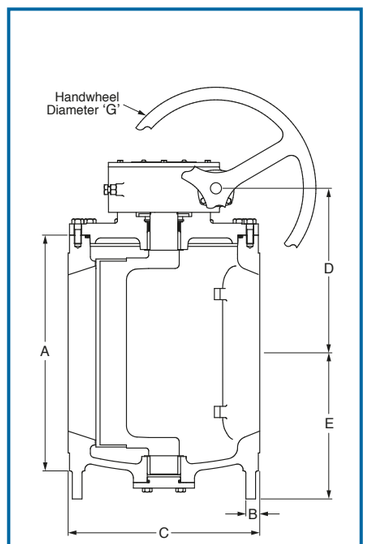
DDN250 and DN300 have gear operator as standard.
Weight includes gear operator.

Dimensions (mm)	Flanged End – Series 601 – PN10 / 16 Nominal Valve Size – DN										
	350	400	450	500	600	700	800	900	1000	1200	1400
A	533	591	635	699	813	984	984	1168	1346	1511	1683
B	35	36	40	43	48	54	60	67	67	70	76
C	432	451	546	597	1067	1295	1295	1524	1829	2134	2438
D	383	402	432	519	581	701	701	838	956	956	956
E	330	356	381	406	549	629	629	737	737	914	914
G	457	457	457	457	610	601	610	762	762	762	762
Weight (kg)	411	467	615	853	1724	2359	2359	3153	4609	6056	6849

Dimensions on DN1500 and larger available upon request.
Weight includes gear operator.

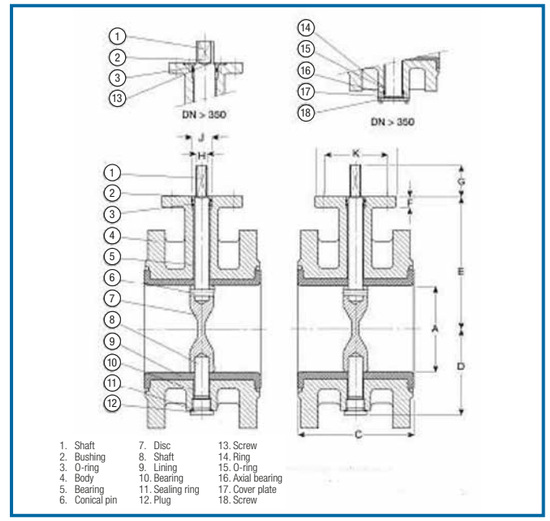


Drainage – See page 145



Double Flanged Butterfly Valve

Materials of Construction		
No.	Description	Material
	Body	Cast Iron, BS EN 1561, Ductile Iron, BS EN 1563
	External Coating	Polyurethane 100, Ral 5017
	Lining	EPDM vulcanized to the body
	Disc	DN ≤ 300: Stainless Steel AISI 431
		1.4057 (bs 431s29)
		DN ≤ 350: Ductile Iron, (BS EN 1563), coated with 300 Rilsan
	Shaft and Conical Pin	Stainless Steel, BS EN 10088
		Grade 1.4057. AISI 431
	Top Shaft Sealing	DN ≤ 350:2 EPDM O-rings placed in a bushing of bronze RG10
		DN ≤ 400: EPDM O-ring placed in bushing fixed with countersunk screws of galvanized steel 8.8
		DN ≤ 350: Plug of galvanized steel 8.8 sealing with one copper sealing ring
		DN ≤ 400: Axial bearing and ring of alu bronze, EPDM O-ring. Cover plate and screws of galvanized steel 8.8
	Top and Bottom Bearing	Steel Permaglide P10 coated with PTFE



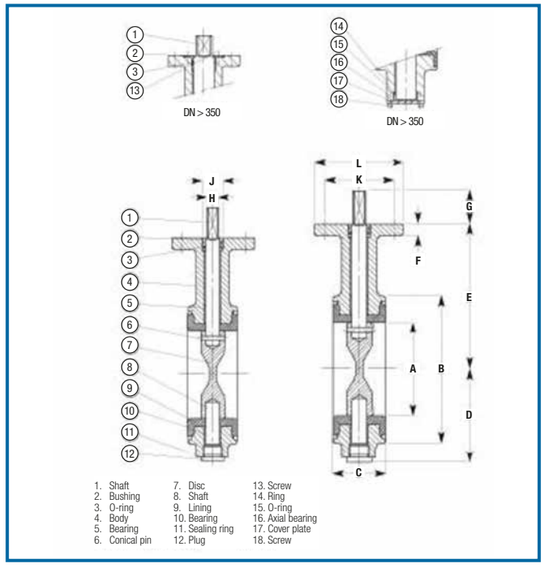
1. Shaft
2. Bushing
3. O-ring
4. Body
5. Bearing
6. Conical pin
7. Disc
8. Shaft
9. Lining
10. Bearing
11. Sealing ring
12. Plug
13. Screw
14. Ring
15. O-ring
16. Axial bearing
17. Cover plate
18. Screw

Dimensions and Weight														
DN	A (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	J (mm)	K (mm)	L (mm)	Top Flange DS (mm)	Holes	ISO 5211	Weight (kilos)
40	40	106	58	113	12	34	10	18	70	90	9	4	F07	8
50	50	108	63	118	12	34	10	18	70	90	9	4	F07	8.5
65	65	112	71	126	12	34	10	18	70	90	9	4	F07	9
80	80	114	78	133	12	34	10	18	70	90	9	4	F07	11
100	100	127	96	147	12	34	12	22	70	90	9	4	F07	13
125	125	140	109	160	12	34	12	22	70	90	9	4	F07	17
150	150	140	133	180	14	34	16	30	70	90	9	4	F07	23
200	200	152	158	204	14	34	16	30	70	90	9	4	F07	32
250	250	165	194	245	15	45	24	38	102	125	11	4	F10	50
300	300	178	219	270	15	45	24	38	102	125	11	4	F10	65
350	336	190	256	315	15	45	24	38	102	125	11	4	F10	95
400	386	216	308	363	25	50	30	90	140	175	17	4	F14	130
450	436	222	334	388	25	50	30	90	140	175	17	4	F14	150
500	486	229	360	413	25	50	30	90	140	175	17	4	F14	200
600	586	267	426	510	25	50	40	100	140	175	17	4	F14	300
700	686	292	480	560	25	60	46	110	165	210	21	4	F16	380
800	786	318	525	610	25	60	46	110	165	210	21	4	F16	500
900	886	330	635	690	30	90	60	130	254	300	17	8	F25	660
1000	986	410	685	740	30	90	60	130	254	300	17	8	F25	900
1200	1186	470	670	855	35	85	75	150	298	350	21	8	F30	1300
1400	1386	530	980	955	35	100	90	165	356	415	31	8	F35	1700
1600	1586	600	1096	1079	50	120	105	200	406	475	37	8	F40	2500

Sizes available up to 3000mm.

Wafer Butterfly Valve

Materials of Construction		
No.	**Description**	**Material**
	Body	Cast Iron, BS EN 1561
		Ductile Iron, BS EN 1563
	External Coating	Polyurethane 100 Ral 5017
	Lining	EPDM vulcanized to the body
	Disc	DN ≤ 300: Stainless Steel AISI 431
		1.4057 (BS 431S29)
		DN ≤ 350: Ductile Iron, (BS EN 1563), coated with 300 Rilsan
	Shaft and Conical Pin	Stainless Steel, BS EN 10088
		Grade 1.4057. AISI 431
	Top Shaft Sealing	DN ≤ 350: 2 EPDM O-rings placed in a bushing of bronze RG10
		DN ≤ 400: EPDM O-ring placed in bushing fixed with countersunk screws of galvanized steel 8.8
	Bottom Shaft	DN ≤ 350: Plug of galvanized steel 8.8 sealing with one copper sealing ring
		DN ≤ 400: Axial bearing and ring of alu bronze, EPDM O-ring. Cover plate and screws of galvanized steel 8.8
	Top and Bottom Bearing	Steel Permaglide P10 coated with PTFE
	Centring between pipe flanges:	
	DN 40 – 300	Bolts around the body
	DN 350 – 600	With centring holes
	DN 700 – 1000	Centring holes and tapped lugs

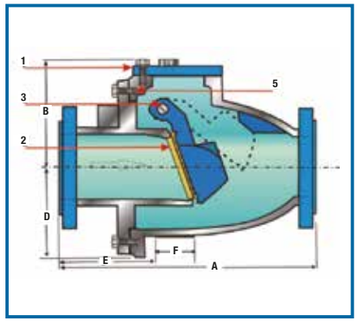


Dimensions and Weight															
DN	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**E (mm)**	**F (mm)**	**G (mm)**	**H (mm)**	**J (mm)**	**K (mm)**	**L (mm)**	**Top Flange DS (mm)**	**Holes**	**ISO 5211**	**Weight (kilos)**
40	40	86	33	58	113	12	34	10	18	70	90	9	4	F07	2.5
50	50	100	43	63	118	12	34	10	18	70	90	9	4	F07	2.6
80	80	130	46	78	133	12	34	10	18	70	90	9	4	F07	3.5
100	100	150	52	96	147	12	34	12	22	70	90	9	4	F07	4.5
125	125	182	56	109	160	12	34	12	22	70	90	9	4	F07	6.3
150	150	210	56	133	180	14	34	16	30	70	90	9	4	F07	8.8
200	200	262	60	158	204	14	34	16	30	70	90	9	4	F07	13.2
250	250	315	68	194	245	15	45	24	38	102	125	11	4	F10	22
300	300	371	78	219	270	15	45	24	38	102	125	11	4	F10	32
350	336	405	78	256	315	15	45	24	38	102	125	11	4	F10	40
400	386	470	102	308	262	25	50	30	90	140	175	17	4	F14	75
450	436	522	114	334	388	25	50	30	90	140	175	17	4	F14	90
500	486	576	127	360	413	25	50	30	90	140	175	17	4	F14	120
600	586	672	154	426	510	25	50	40	100	140	175	17	4	F14	180
700	686	776	165	480	560	25	60	46	110	165	210	21	4	F16	295
750	736	826	190	520	585	25	60	46	110	165	210	21	4	F16	325
800	766	880	190	525	610	25	60	46	110	165	210	21	4	F16	345
900	866	980	203	635	690	30	90	60	130	254	300	17	8	F25	475
1000	986	1085	216	685	740	30	90	60	130	254	300	17	8	F25	635

Sizes available up to 1200mm.

Recoil Check Valve

Materials of Construction		
No.	**Description**	**Material**
1	Body, Doors and Covers	Ductile Iron, BS EN 1563 GR500/7
2	Body and Door Seats	Gunmetal, BS EN 1982 CC491 .K
3	Spindles	Stainless Steel to EN 10088 1.4305
4	All Seals	EPDM
5	Fasteners	Zinc Plated Carbon Steel

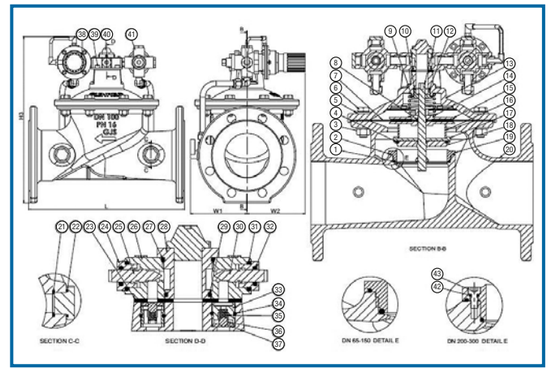


Dimensions, Weights and Flow									
DN (mm)	**A (mm)**	**B (mm)**	**C (mm)**	**D (mm)**	**E (mm)**	**F (mm)**	**Bypass Dia**	**Weight (kg)**	**Flow Capacities @ 3m/sec (itr/sec)**
100	495	210	311	159	202	100	19	81	24
150	610	260	412	210	245	130	19	154	53
200	762	343	533	273	296	150	19	290	94
250	965	387	620	315	354	230	25	447	147
300	1067	426	683	347	390	230	38	612	212
350	1220	464	819	457	470	305	50	1038	288
400	1220	464	819	457	470	305	50	1100	375
450	1295	546	978	571	508	406	80	1564	477
500	1473	635	1137	660	546	457	80	2240	589

C = Maximum width of body.

Pressure Reducing Valve

Materials of Construction		
No.	**Description**	**Material**
1	O-Ring	EPDM
2	O-Ring	EPDM
3	Hex Nut	Grade A4 – Delta Seal
4	Disc Seal	EPDM
5	Washer	SS ISO 3506; Grade A4
6	Hex Bolt	SS ISO 3506; Grade A4
7	Diaphragm	EPDM
8	O-Ring	EPDM
9	Flat Seal	EPDM
10	Flat Seal	EPDM
11	Stem	AISI 316
12	Stem Guide	AISI 316
13	Bonnet	Ductile Iron, EN-GJS-500-7 (GGG-50)
14	Spring	AISI 316
15	Diaphragm Support	AISI 316
16	Distance Pipe	AISI 316
17	Disc Retainer	AISI 316
18	Regulating Plug	AISI 316
19	Seat	AISI 316
20	Body	Ductile Iron, EN-GJS-500-7 (GGG-50)
21	Flat Seal	EPDM
22	O-Ring	NBR
23	Gasket	EPDM
24	Bushing	AISI 316
25	Needle for Closing	AISI 316
26	Body	AISI 316
27	O-Ring	EPDM



28	Insert	AISI 316
29	O-Ring	EPDM
30	Needle for Opening	AISI 316
31	O-Ring	EPDM
32	O-Ring	EPDM
33	Body	AISI 316
34	O-Ring	EPDM
35	Spring	AISI 316
36	Ball	AISI 316
37	Seat	AISI 316
38	Pilot Valve	AISI 316
39	Bolt	SS ISO 3506; Grade A4
40	Mechanical Air-Vent	AISI 316
41	Filter	AISI 316
42	O-Ring	EPDM
43	Machined Bolt	SS ISO 3506; Grade A4

Pressure Reducing Valve – Sizing Table Part 1

DN (mm)	Flange Drilling	Pilot Range Bar	L (mm)	W1 (mm)	W2 (mm)	H3 (mm)	Theoretical Weight (kg)
50	PN10/16	0.1 – 1	230	104	131	318	14.3
65	PN10/16	0.6 – 1	290	118	131	343	19.4
65	PN10/16	5 – 11	290	118	131	343	19.4
65	PN10/16	10 – 16	290	118	131	343	19.4
65	PN10/16	0.1 – 1	290	118	131	343	19.4
80	PN10/16	0.6 – 6	310	127	131	363	23.3
80	PN10/16	5 – 11	310	127	131	363	23.3
80	PN10/16	10 – 16	310	127	131	363	23.3
80	PN10/16	0.1 – 1	310	127	131	363	23.3
100	PN10/16	0.6 – 6	350	139	139	390	32.1
100	PN10/16	5 – 11	350	139	139	390	32.1
100	PN10/16	10 – 16	350	139	139	390	32.1
100	PN10/16	0.1 -1	350	139	139	390	32.1
150	PN10/16	0.6 – 6	480	202	202	494	72.6
150	PN10/16	5 – 11	480	202	202	494	72.6
150	PN10/16	10 – 16	480	202	202	494	72.6
150	PN10/16	0.1 – 1	480	202	202	494	72.6
200	PN10	0.6 – 6	600	252	252	606	125.1
200	PN10	5 – 11	600	252	252	606	125.1
200	PN10	10 – 16	600	252	252	606	125.1
200	PN16	0.1 – 1	600	252	252	606	125.1
200	PN16	0.6 – 6	600	252	252	606	125.1
200	PN16	5 – 10	600	252	252	606	125.1
200	PN16	0.1 – 1	600	252	252	606	125.1
250	PN10	0.6 – 6	730	275	275	688	179.9
250	PN10	5 – 11	730	275	275	688	179.9
250	PN10	10 – 16	730	275	275	688	179.9
250	PN16	0.1 – 1	730	275	275	688	179.9
250	PN16	0.6 – 6	730	275	275	688	179.9
250	PN16	5 – 10	730	275	275	688	179.9
250	PN16	0.1 – 1	730	275	275	688	179.9
300	PN10	0.6 – 6	850	300	300	758	233.3
300	PN10	5 -10	850	300	300	758	233.3
300	PN10	0.1 – 1	850	300	300	758	233.3
300	PN16	0.6 – 6	850	300	300	758	233.3
300	PN16	5 – 11	850	300	300	758	233.3
300	PN16	10 – 16	850	300	300	758	233.3
300	PN16	0.1 – 1	850	300	300	758	233.3

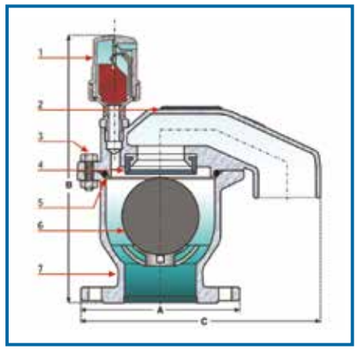
Pressure Reducing Valve – Sizing Table Part 2

DN (mm)	Flange Drilling	Pilot Range Bar	L (mm)	W1 (mm)	W2 (mm)	H3 (mm)	Theoretical Weight (kg)
65	PN10/16	0.6 – 6	290	104	131	335	17
65	PN10/16	5 – 11	290	104	131	335	17
65	PN10/16	10 – 16	290	104	131	335	17

Double Orifice Air Valve

Materials of Construction		
No.	**Description**	**Material**
1	Small Orifice	See Series 701/10 datasheet
2	Cover	Cast Iron. GG-25, BS EN 1561 – GJL-HB-195
3	Bolt Assembly	Steel Zinc Cobalt Plated
4	Nozzle (large)	EPDM on DZR Bronze to BS 2874, CZ 132
5	O Ring	EPDM
6	Ball	Polycarbonate
7	Body c/w Basket	Cast Iron, BS EN 1561 GJL-HB-195
8	Coating	Electrostatically applied Blue Epoxy to WIS-4-52-01 Class B

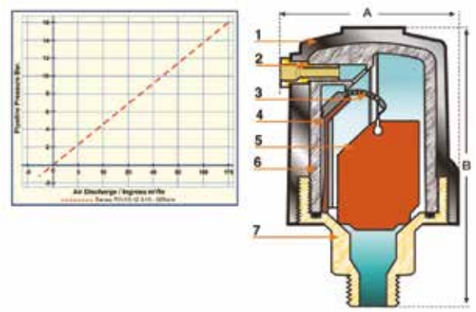
Dimensions, Weights and Flow				
Size	**A (mm)**	**B (mm)**	**C (mm)**	**Weight (kilos)**
2" (50mm)	165	330	167	9.4
2" + 80mm flange	200	346	173	12.4
3" (80mm)	200	358	286	18.4
4" (100mm)	220	382	336	27
6" (150mm)	285	550	553	76.6
8" (200mm)	340	554	553	117



Combination Air Relief Valve

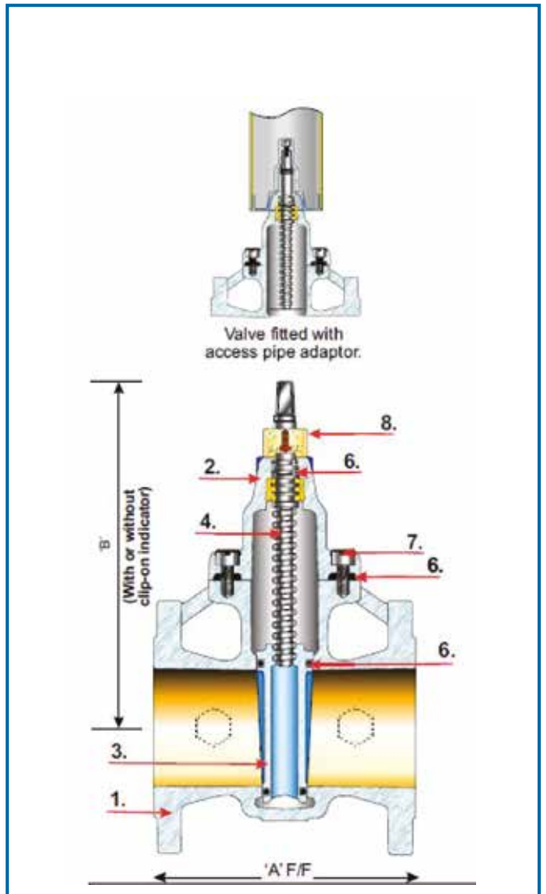
Materials of Construction		
No	**Description**	**Material**
1	Body	Grey Cast Iron, BS EN 1561 GJL-HB-195
2	Outlet	DZR Brass, BS 2784 CZ132
3	Rolling Seal	EPDM Rubber
4	Clamping Key	Reinforced Nylon
5	Float	Foamed Polypropylene
6	Liner	Reinforced Nylon
7	Base Assembly	DZR Brass, BS 2784 CZ132 complete with O-ring, BUNA-N. 1" BSPT male connection

Combination Air Relief Valve – Sizing Table			
Dimensions and Weights			
Size	**A (mm)**	**B (mm)**	**Weight (kilos)**
1" (25mm)	85	148	1.7



Gas Valves

Materials of Construction		
No.	**Description**	**Material**
1	Body	Cast Iron. EN 1561-GJL 250
2	Bonnet	Cast Iron. EN 1561-GJL 250
3	Wedge Gate	Cast Iron. EN 1561-GJL 250
4	Spindle	Standard: Carbon Steel. EN10087 11SMn30 (EN1A)
		Option: Stainless Steel. EN10088 X9CrNiS18-9 (303S31)
5	Pressure Relief Plug	Carbon Steel. EN10087 115Mn30 (ENIA)
6	Body/Bonnet, Gate and Spindle Seals	Standard: Nitrile Rubber. EN682. Type G. Option: Viton
7	Fastenings	Grade 8.8 Steel. FZB. BS EN ISO 4762

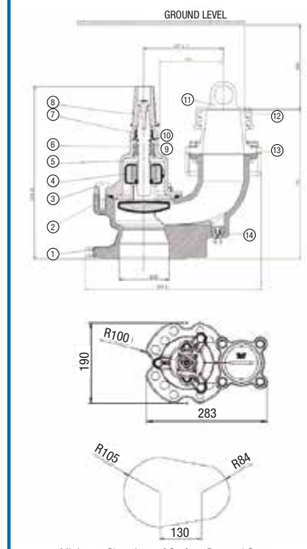


Dimensions and Weight (MkIII)								
Pressure								
Size	**A (mm)**	**B (mm)**	**Extra Height with False Cap**	**Extra Height with Handwheel**	**Relief Plug (when fitted)**	**Plugged Boss Size (where required)**	**Approx Turns to Close**	**Nett Weight (kg)**
50	178	231	19	20	Rp½	n/a	8½	12.5
80	203	288	19	20	Rp½	Rp½	13½	22
100	229	303	19	20	Rp½	Rp¾	15½	26
150	267	391	19	20	Rp¾	Rp¾	14½	52
200	292	478	19	20	Rp¾	Rp¾	19	82
250	330	617	67	11	Rp¾	Rp¾	25	150
300	356	696	67	11	Rp¾	Rp¾	27	200

Hydrants

Type 2 Underground Fire Hydrant

Materials of Construction		
No.	**Description**	**Material**
1	Body	Material
		Ductile Iron, BS EN 1563
		EN-GJS-500-7
2	Body/ Bonnet Seal	NBR WRAS Approved
3	All Fastenings	Hex Head screws, cap screws and washers
		Stainless Steel Grade A2. Option for Stainless Steel A4
		Option for Stainless Steel A4
4	Stopper Assembly (fixed only)	Ductile Iron, BS EN 1563
		EN-GJS-500-7
		Encapsulated in EPDM with DZR brass wedge nut to BSEN12164 CW602N
5	Bonnet	Ductile Iron, BS EN 1563 EN-GJS-500-7
6	Thrust Collars	DZR Brass, BS EN 12164, CW 602 N
7	Gland Flange Assembly	Ductile Iron, BS EN 1563 EN-GJS-500-7 with bush nylon 6.6 And 3 'O' rings NBR WRAS Approved
8	Stem Cap	Ductile Iron, BS EN 1563 EN-GJS-500-7
9	Stem	Stainless Steel, BS EN 10088 No. 14021. Option for Stainless Steel 1.4404 (316)
10	Gland Flange Seal	NBR WRAS Approved
11	Dust Cap	Polyethylene
12	Outlet	Stainless Steel to BS EN 10088 No. 1.4021
13	Body/Outlet Seal	NBR WRAS Approved
14	Auto-frost Valve	Nylon 6.6 body and plunger with NBR WRAS Approved 'O' rings and Stainless Steel spring to DIN 17224
	Coating	Internal and external blue. Epoxy applied to WIS-4-52-01 Class B

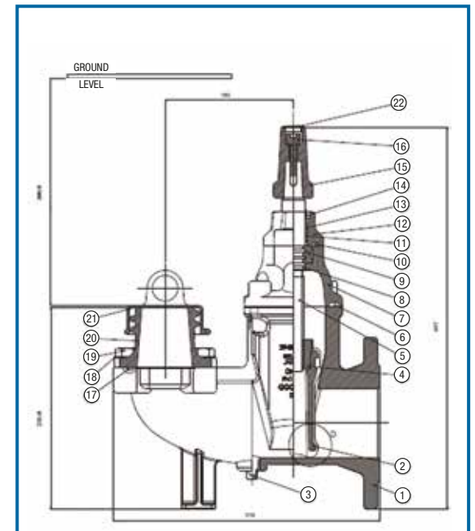


Minimum Clear Area of Surface Box and Cover

DN (mm)	L (mm)	H (mm)	L1 (mm)	Weight (kg)
80	283	278	127	12.5

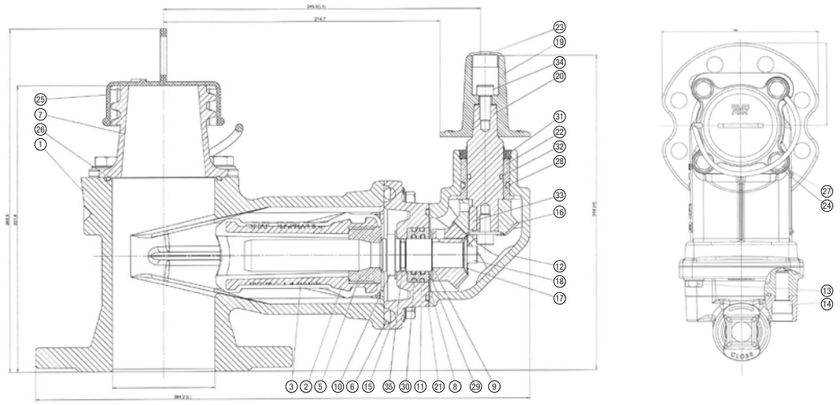
Type 1 Underground Fire Hydrant

Materials of Construction		
No.	**Description**	**Material**
1	Body	Ductile Iron, BS EN 1563 EN-GJS-500-7
2	Wedge	Ductile Iron, BS EN 1563 EN-GJS-500-7
		Encapsulated in EPDM
3	Drain Plug	Nylon 6.6
4	Wedge Nut (integral)	DZR Brass wedge nut to BSEN12164 CW602N
5	Stem	Stainless Steel, BS EN 10088 No. 1 4021. Option for Stainless Steel 1.4404 (316)
6	Body/Bonnet Seal	EPDM WRAS Approved
7	Bonnet	Ductile Iron, BS EN 1563 EN-GJS-500-7
8	O-Rings/Seals	NBR WRAS Approved
9	Thrust Collars	DZR Brass, BS EN 12164, CW 602 N
10,11	Gland Flange	Ductile Iron, BS EN 1563
12,13	Assembly	EN-GJS-500-7 with bush nylon 6.6 And 3 'O' rings NBR WRAS Approved
14		
15, 16	Stem Cap	Ductile Iron, BS EN 1563
22	Assembly	EN-GJS-500-7. Insert PE. Cap screw A2 Stainless
17	Outlet Seal	NBR WRAS Approved
18, 19	All Fastening	Hex Head screws, cap screws and washers Stainless Steel Grade A2. Option for Stainless Steel A
20	Outlet	Stainless Steel to BS EN 10088 No. 1.4021
21	Dust Cover	Polyethylene



DN (mm)	L (mm)	H2 (mm)	H3 (mm)	W5 (mm)	Weight (kg)
80	318	240	447	150	21

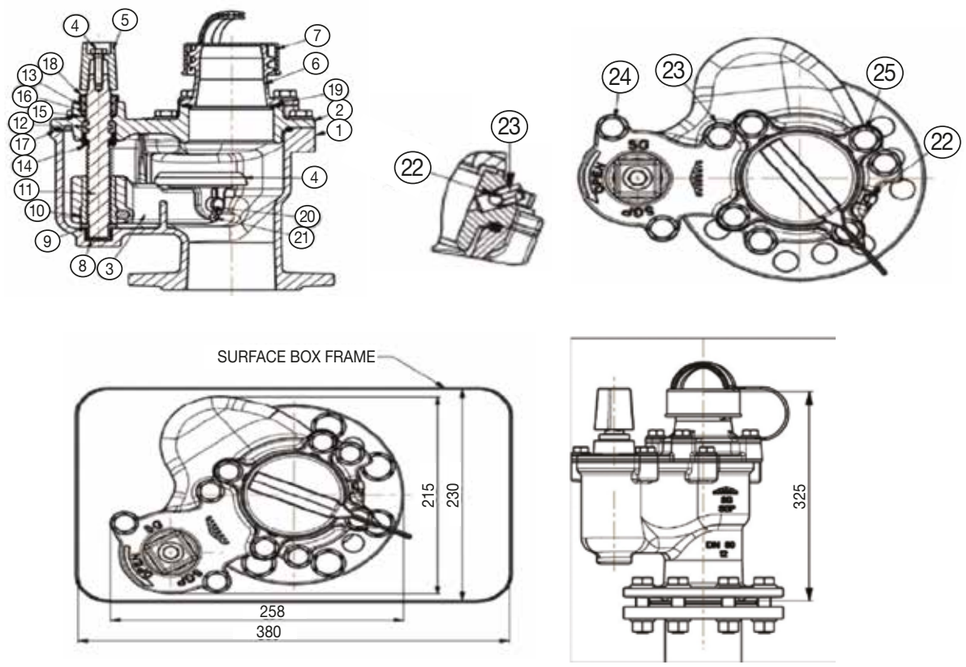
When ordering: x = 3 for gunmetal outlet and 4 for stainless steel outlet.



Type 2 Through Bore Underground Fire Hydrant

Materials of Construction		
No.	**Description**	**Material**
1	Body	Ductile Iron, BS EN 1563
		EN-GJS-500-7
3	Wedge	EPDM Coated Ductile Iron gate type wedge through bore 80mm
6	Bonnet Gasket	EPDM WRAS Approved
7	G.M Outlet	Stainless Steel to BS EN 10088 No. 1.4021
8	Lower Bushing	Dezn. Res. Brass EN 12165: CW602N
9	Stem	Stainless Steel, BS EN 10088 No. 1.4021 (420 S 37)
10	Stop Ring	Stainless Steel, BS EN 10088 No. 1.4021 (420 S 37)
11	O-ring	NBR WRAS Approved
12	Gear Box	Ductile Iron, BS EN 1563 EN-GJS-500-7
13	Bolt	Mild Steel FSV 8.8
13	Bolt	Stainless Steel Grade A2
14	Bolt	Mild Steel FZB 8.8
	Coating	Internally and externally
		Epoxy Coating WRAS
		Approved Blue Ral 5017
15	Bonnet	Ductile Iron, BS EN 1563 EN-GJS-500-7
16	Bevel Gear	Medium Carbon Steel
17	Washer	Mild Steel FSV 8.8
18	Bolt	Stainless Steel Grade A2
19	Stem Cap	Ductile Iron, BS EN 1563 EN-GJS-500-7. Stem cap in accordance with BS 750/ BE 5163-2
20	Stem	Stainless Steel to BS EN 10088 No.1.4021 (420 S 37)
21	O-ring	NBR WRAS Approved
22	Upper Bushing	Dezn. Res. Brass EN 12165: CW602N
23	Plastic Insert	Plastic
24	Washer	Stainless Steel Grade A2
25	Dust Cap	Polyethelene
26	O-ring	NBR WRAS Approved
27	Bolt	Stainless Steel Grade A2
28	O-ring	NBR, EN 681-1
29	Brass Washer	Dezn. Res. Brass EN 12165: CW602N
30	O-ring	NBR WRAS Approved
31	Wiper Ring	NBR, AS1646
32	O-ring	NBR WRAS Approved
33	Key	Stainless Steel, BS EN 10088 No.1 4021 (420 S 37)
34	Screw	Stainless Steel Grade A2
35	O-ring	NBR WRAS Approved

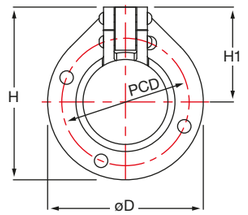
Through Bore-CE Fire Hydrant



Ref	Description	Material	Standard
1	Hydrant Body	Ductile Iron EN-GJS 500/7	BS EN 1563-3
2	Hydrant Bonnet	Ductile Iron EN-GJS 500/7	BS EN 1563-3
3	Obturator Arm	Stainless Steel Grade 1.4301 min 17%Cr	BS EN 1563
4	Obturator Gate	EPDM WRAS Approved	BS EN 1563
5	Operating Cap	Ductile Iron EN-GJS 500/7	BS EN 1563-3
6	Screwed Outlet	Stainless Steel Grade 1.4027 min 13%Cr	BS EN 12164
7	Outlet Cover	HDPE	
8	Bearing	Brass CW 614 N	BS 12164
9	Washer	Stainless Steel Grade 1.4021	BS EN 10088 – 3
10	Spindle Nut	Brass CW 614 N	BS 12164
11	Spindle	Stainless Steel Grade 1.4027 min 13%Cr	BS EN 12164
12	Limiter	Brass CW 614 N	BS 12164
13	Sealing Nut	Brass CW 614 N	BS 12164
14	Gasket	EPDM IHRD	BS EN 681-1
15	"O" – Ring ϕ26 x ϕ3	EPDM IHRD	BS EN 681-1
16	"O" – Ring ϕ23 x ϕ2.5	EPDM IHRD	BS EN 681-1
17	Bonnet Gasket	EPDM IHRD	BS EN 681-1
18	Gasket	EPDM IHRD	BS EN 681-1
19	Outlet Gasket	EPDM IHRD	BS EN 681-1
20	Obturator Pin	Stainless Steel Grade 1.4021	BS EN 10088 – 3
21	Split Pin ϕ5 x 28	Stainless Steel Grade A2	ISO 1234
22	Frost Valve Ball	EPDM IHRD	BS EN 681-1
23	Frost Valve Nut	Brass CW 614 N	BS 12164
24	Washer A12	Stainless Steel Grade A2	BS EN ISO 3506
25	Screw M12 x 30	Stainless Steel Grade A2 – 70	ISO 4017
26	Screw M12 x 25	Stainless Steel Grade A2 – 70	ISO 4017
27	Screw M8 x 35	Stainless Steel Grade A2 – 70	ISO 4017

Flap Valves

Cast Iron Flap Valve



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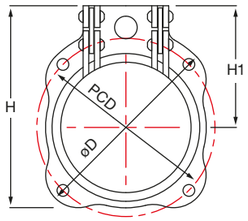


Double Link

Flap Valves – Technical Features

Dimensions								
DN	H (mm)	H1 (mm)	D (mm)	PCD (mm)	W (mm)	No. of Bolts	Hole Diameter	Approx Weight (kg)
80	225	125	200	160	68	4	19	4
100	244	134	220	180	72	4	19	6
150	312	170	285	240	81	4	23	11
200	370	210	340	295	77	4	23	16
225	395	229	370	325	74	4	23	20
250	410	233	400	355	75	4	28	23
300	470	280	460	410	83	4	28	25
350	550	321	540	470	94	4	28	33
375	550	321	540	495	94	4	25	33
400	621	331	580	525	95	4	31	44
450	695	375	640	585	100	4	31	53
500	758	400	715	650	103	4	34	62
600	867	447	840	770	110	4	37	78

Geotechnics – See page 291

Flap Valves

HDPE Flap Valve

DN125-DN3600 HDPE Flap Valves

Flap Valves Certificate: ISO 9001: 2008
Industrial Standards: DIN 19569-4

Advantages:

- Heavy duty construction
- Lightweight offering easier and more cost efficient installation
- Minimum maintenance
- Reduced hydraulic loss.

Characteristics
Size 125 – 3600mm
Standard 6 mwc
Flange Sealed on One Side
Mounting Flat Structure, PVC,Concrete or Internal Rounded Pit

Specifications DN125-DN1000 Type Wall Mounted

Industrial Standards: DIN 19569-4

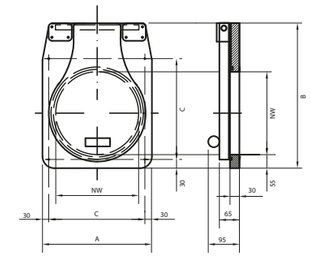
Pressure Characteristics: 6 mwc

Standard Construction Materials

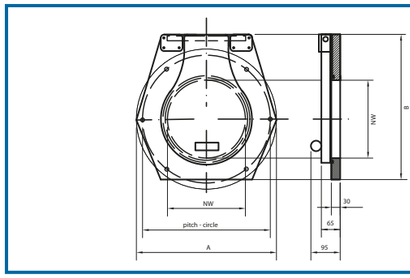
Frame: HDPE -300
Valve: HMPE – 500 Or HDPE – 300
Valve Hinge Pin: Stainless Steel Aisi 316
Sealing: EPDM

Options
Other Sizes up to 1000mm
Square, Rectangular or Oval

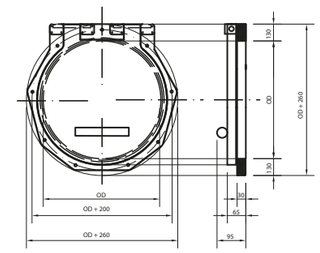
Specifications DN125-DN600 Type Wall Mounted



ØNW	A	B	C	Pressure	Weight (kg)
125	235	295	175	6 mwc	4
150	260	325	200	6 mwc	4
200	310	378	250	6 mwc	5
250	360	430	300	6 mwc	7
300	410	480	300	6 mwc	8



ØNW	A	B	C	Pressure	Weight (kg)
400	Ø 610	603	Ø 550	6 mwc	11
500	Ø 710	699	Ø 650	6 mwc	14
600	Ø 810	824	Ø 750	6 mwc	18



ØD	Width	Height	Pitch	Pressure	Weight (kg)
700	960	960	Ø 900	4 mwc	29
800	1060	1060	Ø 1000	3 mwc	34
900	1160	1160	Ø 1100	2.5 mwc	41
1000	1260	1260	Ø 1200	2 mwc	47

Surface Water Drainage – See page 166

Flap Valves

Duck Bill Flap Valves

Flanged Rubber Check Valves

Larger sizes available upon request.
Weights are approximate, based on service conditions.

Sizes • Drilling • Weights													
Nominal[1] Pipe Size (inch) / (mm)		Standard Dimensions for PROCO Style 710				Standard Drilling for PROCO Style 710						Weight[2] (lbs) / (kgs)	
		Length (inch) / (mm)		Duckbill Height (inch) / (mm)		Flange O.D. (inch) / (mm)		Bolt Circle (inch) / (mm)		No. of Holes	Size of Holes (inch) / (mm)		
1	(25)	4	(102)	2.125	(54)	4.25	(107.95)	3.13	(79.50)	4	0.625	(15.9)	1.5	(0.68)
1.5	(40)	5	(127)	2.625	(67)	5	(127)	3.88	(98.55)	4	0.625	(15.9)	1.75	(0.79)
2	(50)	6.5	(165)	3.875	(99)	6	(152.40)	4.75	(120.65)	4	0.75	(19.1)	3	(1.36)
2.5	(65)	7.5	(191)	4.625	(118)	7	(177.80)	5.5	(139.70)	4	0.75	(19.1)	4.2	(1.90)
3	(80)	8.5	(216)	5.5	(140)	7.5	(190.50)	6	(152. 40)	4	0.75	(19.1)	7	(3.18)
4	(100)	10	(254)	7.375	(188)	9	(228.60)	7.5	(190.50)	8	0.75	(19.1)	9	(4.08)
5	(125)	12	(305)	8.75	(223)	10	(254)	8.5	(215.90)	8	0.875	(22.2)	12	(5.44)
6	(150)	13	(330)	10.5	(267)	11	(279.40)	9.5	(241.30)	8	0.875	(22.2)	14	(6.35)
8	(200)	15	(381)	13.75	(350)	13.5	(342.90)	11.75	(298.45)	8	0.875	(22.2)	23	(10.43)
10	(250)	17	(423)	17	(432)	16	(406.40)	14.25	(361.95)	12	1	(25.4)	29	(13.15)
12	(300)	19	(483)	19.625	(499)	19	(482.60)	17	(431.80)	12	1	(25.4)	46	(20.87)
14	(350)	21	(533)	24.75	(629)	21	(533.40)	18.75	(476.25)	12	1.25	(31.8)	64	(29.03)
16	(400)	24	(610)	25.5	(674)	23.5	(596.90)	21.25	(539.75)	16	1.25	(31.8)	82	(38.20)
18	(450)	26	(661)	29.75	(756)	25	(635)	22.75	(577.85)	16	1.25	(31.8)	109	(49.44)
20	(500)	34	(867)	32.25	(819)	27.5	(698.50)	25	(635)	20	1.25	(31.8)	137	(62.14)
24	(600)	42	(1067)	43	(1093)	32	(812.80)	29.5	(749.30)	20	1.375	(34.9)	167	(75.75)
28	(700)	45	(1143)	46	(1169)	36.5	(927.10)	34	(863.60)	28	1.375	(34.9)	260	(117.94)
30	(750)	47	(1194)	49	(1245)	38.75	(984.25)	36	(914. 40)	28	1.375	(34.9)	317	(143.79)
32	(800)	53	(1346)	51	(1296)	41.75	(1060.45)	38.5	(977.90)	28	1.625	(41.3)	333	(151.05)
36	(900)	58	(1473)	55.25	(1404)	46	(1168.40)	42.75	(1085.85)	32	1.625	(41.3)	450	(204.12)
42	(1050)	62	(1575)	66.25	(1683)	53	(1346.20)	49.5	(1257.30)	36	1.625	(41.3)	818	(371.04)
48	(1200)	72	(1829)	78	(1893)	59.5	(1511.30)	56	(1422.40)	44	1.625	(41.3)	1005	(455.87)
54	(1350)	74	(1880)	78.25	(1988)	66.25	(1682.75)	62.75	(1593.85)	44	2	(50.8)	1310	(594.22)
60	(1500)	82	(2083)	85	(2159)	73	(1854.20)	69.25	(1758.95)	52	2	(50.8)	1445	(655.45)
72	(1800)	98	(2489)	105	(2667)	86.5	(2197.10)	82.5	(2095.50)	60	2	(50.8)	1586	(719.41)

Flap Valves

Duck Bill Flap Valves

Sleeved Rubber Check Valves

Larger sizes available upon request.
Weights are approximate, based on service conditions.

Sizes • Weights									
Nominal[1] Pipe Size (inch) / (mm)		Standard Dimensions for PROCO Style 730						Weight[2] (lbs) / (kgs)	
		Length (inch) / (mm)		Collar Width (inch) / (mm)		Duckbill Height (inch) / (mm)			
1	(25)	4	(102)	1	(25)	2.125	(54)	0.5	(0.23)
1.5	(40)	5	(127)	1	(25)	2.625	(67)	0.75	(0.34)
2	(50)	8	(203)	1.5	(38)	3.875	(98)	1.5	(0.68)
2.5	(65)	7.5	(191)	2	(51)	4.625	(117)	1.75	(0.79)
3	(80)	8.5	(216)	3	(76)	5.5	(140)	4	(1.81)
4	(100)	12.5	(318)	3	(76)	7.25	(184)	5	(2.27)
5	(125)	14	(356)	3	(76)	8.75	(222)	7	(3.18)
6	(150)	18	(457)	4	(102)	10.5	(267)	12	(5.44)
8	(200)	20	(508)	4	(102)	13.75	(349)	18	(8.16)
10	(250)	19	(483)	4	(102)	17	(432)	20	(9.07)
12	(300)	28	(711)	6	(152)	19.625	(498)	48	(21. 77)
14	(350)	30	(762)	6	(152)	23	(584)	60	(27.22)
16	(400)	32	(813)	6	(152)	26	(660)	75	(34.02)
18	(450)	33	(838)	6	(152)	29.6	(752)	115	(52.16)
20	(500)	36	(914)	8	(203)	32.25	(819)	139	(63.05)
24	(600)	47	(1194)	8	(203)	39	(991)	192	(87.09)
28	(700)	44	(1118)	8	(203)	46	(1168)	181	(82.10)
30	(750)	46	(1168)	10	(254)	49	(1245)	267	(121.11)
32	(800)	53	(1346)	10	(254)	51	(1295)	329	(149.23)
36	(900)	60	(1524)	10	(254)	58	(1473)	439	(199.13)
42	(1050)	61	(1549)	12	(305)	66.25	(1683)	743	(337.02)
48	(1200)	72	(1829)	12	(305)	74.5	(1892)	952	(431.83)
54	(1350)	74	(1880)	12	(305)	78.25	(1988)	1212	(549.76)
60	(1500)	81	(2057)	12	(305)	85	(2159)	1315	(596.48)
72	(1800)	98	(2489)	14	(358)	105	(2667)	1522	(690.38)

Flap Valves

Duck Bill Flap Valves

Higher back pressures can be obtained by using Internal Supports.
Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.
Larger sizes available upon request.
Weights are approximate.

Sizes • Drilling • Working Pressures • Weights

Nominal[1] Pipe Size (inch) / (mm)		Standard Dimensions for PROCO Style 720				Standard Drilling for PROCO Style 720							Maximum Working Pressure (PSIG)	Weight[2] (lbs) / (kgs)	
		Length (inch) / (mm)		Duckbill Height (inch) / (mm)		Flange O.D. (inch) / (mm)		Bolt Circle (inch) / (mm)		No. of Holes	Size of Holes (inch) / (mm)				
2	(50)	7.25	(184)	1.25	(32)	6	(152.40)	4.75	(120.65)	4	0.75	(19. 1)	125	3	(1.4)
3	(80)	9	(229)	2.25	(57)	7.5	(190.50)	6	(152.40)	4	0.75	(19. 1)	125	4	(1.8)
4	(100)	10	(254)	3.875	(98)	9	(228.60)	7.5	(190.50)	8	0.75	(19. 1)	100	8	(3.6)
5	(125)	13	(330)	4.875	(124)	10	(254)	8.5	(215.90)	8	0.875	(22.2)	75	10	(4.5)
6	(150)	14.5	(368)	5.875	(149)	11	(279.40)	9.5	(241.30)	8	0.875	(22.2)	75	12	(5.4)
8	(200)	15	(381)	6.75	(171)	13.5	(342.90)	11.75	(298.45)	8	0.875	(22.2)	75	13	(5.9)
10	(250)	21	(533)	9.875	(250)	16	(406.40)	14.25	(361.95)	12	1	(25.4)	50	29	(13.2)
12	(300)	26	(660)	11.875	(302)	19	(482.60)	17	(431.80)	12	1	(25.4)	50	37	(16.8)
14	(350)	27	(686)	12	(305)	21	(533.40)	18.75	(476.25)	12	1.25	(31.8)	50	41	(18.6)
16	(400)	32	(813)	14	(356)	23.5	(596.90)	21.25	(539.75)	16	1.25	(31.8)	50	50	(22.7)
18	(450)	29	(737)	17	(451)	25	(635)	22.75	(577.85)	16	1.25	(31.8)	25	158	(71.7)
20	(500)	34	(864)	19	(502)	27.5	(698.50)	25	(635)	20	1.25	(31.8)	25	234	(106.1)
24	(600)	44	(1118)	23	(603)	32	(812.80)	29.5	(749.30)	20	1.375	(34.9)	25	308	(139.7)
28	(700)	47	(1194)	27	(687)	36.5	(927.10)	34	(863.60)	28	1.375	(34.9)	25	362	(164.2)
30	(750)	49	(1245)	29	(737)	38.75	(984.25)	36	(914.40)	28	1.375	(34.9)	25	417	(189.1)
32	(800)	54	(1372)	31	(787)	41.75	(1060.45)	38.5	(977.90)	28	1.625	(41.3)	25	454	(206)
36	(900)	59	(1499)	35	(889)	46	(1168.40)	42.75	(1085.85)	32	1.625	(41.3)	25	499	(226.3)
42	(1050)	66	(1676)	41	(1041)	53	(1346.20)	49.5	(1257.30)	36	1.625	(41.3)	25	729	(330.7)
48	(1200)	74	(1880)	47	(1194)	59.5	(1511.30)	56	(1422.40)	44	1.625	(41.3)	25	754	(342)
54	(1350)	75	(1905)	53	(1346)	66.25	(1682.75)	62.75	(1593.85)	44	2	(50.8)	25	813	(368.8)
60	(1500)	83	(2108)	59	(1499)	73	(1854.20)	69.25	(1758.95)	52	2	(50.8)	25	964	(437.3)
72	(1800)	99	(2515)	71	(1803)	86.5	(2197.10)	82.5	(2095.50)	60	2	(50.8)	25	1125	(510.3)

Flap Valves

Duck Bill Flap Valves

Higher back pressures can be obtained by using Internal Supports.
Dimensions are approximate and may change due to pipe dimension changes, inlet, back pressures and flow rates.
Larger sizes available upon request.
Weights are approximate.

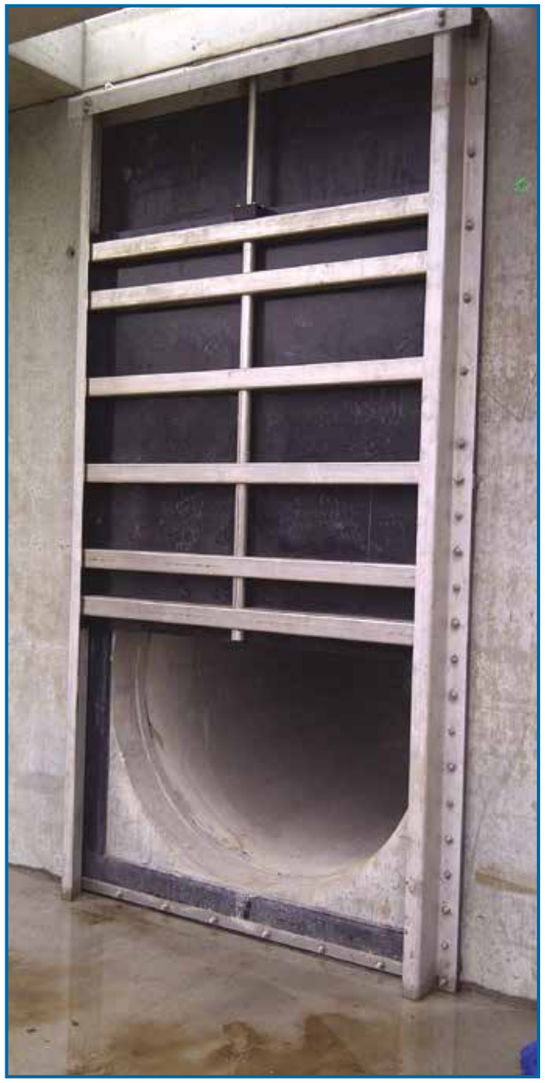
Sizes • Working Pressures • Weights

Nominal[1] Pipe Size (inch) / (mm)		Standard Dimensions for PROCO Style 740						Maximum Working Pressure (PSIG)	Weight[2] (lbs) / (kgs)	
		Valve I.D. (inch) / (mm)		Length (inch) / (mm)		Duckbill Height (inch) / (mm)				
2	(50)	1.25	(32)	6.75	(171)	1.875	(48)	125	4	(1.8)
3	(80)	2.25	(57)	9	(229)	2.875	(73)	125	6	(2.72)
4	(100)	3	(80)	12.5	(317)	3.875	(98)	100	8	(3.63)
5	(125)	4	(100)	16	(406)	4.875	(124)	75	12	(5.4)
6	(150)	5	(125)	13.5	(343)	5.875	(149)	75	14	(6.35)
8	(200)	6.625	(168)	19	(483)	7.875	(200)	75	18	(8.2)
10	(250)	8.625	(219)	21	(533)	9.875	(251)	50	28	(12.7)
12	(300)	10	(250)	27	(686)	11.875	(302)	50	43	(19.5)
14	(350)	11.5	(292)	28	(711)	13	(349)	50	55	(24.9)
16	(400)	13.5	(343)	31	(787)	15	(401)	50	92	(41.8)
18	(450)	15.25	(387)	33	(838)	17	(451)	25	152	(68.9)
20	(500)	17	(432)	35	(889)	19	(502)	25	236	(107)
24	(600)	20.5	(521)	37	(940)	23	(603)	25	300	(136.1)
28	(700)	24.5	(622)	46	(1168)	27	(686)	25	364	(165.1)
30	(750)	26.5	(673)	51	(1295)	29	(737)	25	423	(191.9)
32	(800)	28.5	(724)	58	(1473)	31	(787)	25	466	(211.4)
36	(900)	32.5	(826)	63	(1600)	35	(889)	25	501	(227.2)
42	(1050)	38.25	(972)	65	(1651)	41	(1041)	25	728	(330.2)
48	(1200)	44.25	(1073)	74	(1880)	47	(1194)	25	762	(345.6)
54	(1350)	50.25	(1276)	77	(1956)	53	(1346)	25	820	(371.9)
60	(1500)	56	(1422)	85	(2159)	59	(1499)	25	969	(439.5)
72	(1800)	68	(1727)	102	(2591)	71	(1803)	25	1089	(494)

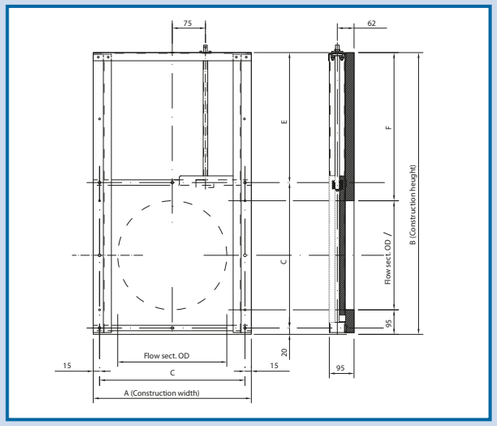
Penstocks

Stainless Steel and HDPE Penstocks

Materials
All Penstocks are made from high quality HDPE materials, stainless steel or a combination of both materials. The materials are corrosion resistant with a longevity and low maintenance cost. The stainless steel 304 or 316 thrust bearing achieves a reduction of the operating moment by a factor of 4. The back plate is made completely from 30mm thick HDPE sheet. This results in a robust construction that ensures free running of the spindle during and after installation. Stainless steel spindle tube instead of a free-standing plastic spindle protection tube contributes to the rigidity of the construction.



ØD	A	B	C	E	F	Weight (kg)
150	340	600	300	280	355	16
200	390	700	350	330	405	22
250	440	800	400	380	455	26
300	490	900	450	430	505	31



Standard Series DN 150 – DN 300

Industrial Standard
BS7775

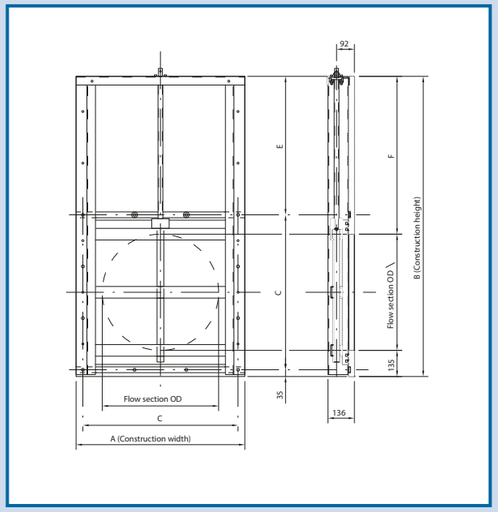
Loading Characteristics
6m on- and off-seating
4-sides closing, double acting

Standard Construction Materials
Frame: Stainless Steel AISI 304
Slide gate: HMPE -500
Backing plate: HDPE-300 (30mm)
Reinforcements: Stainless Steel AISI 304
Non-rising spindle: Stainless Steel AISI 304 TR25 x 7.5
Spindle bearing: PTFE
Door Nut: POM (self-lubricating)
Bolts and nuts: Stainless Steel A4
Sealing: EPDM

Optional Construction Materials
Frame: Stainless Steel AISI 316
Slide gate: Stainless Steel AISI 316
Reinforcements: Stainless Steel AISI 316
Door Nut: Bronze
Sealing: NBR

Optional Features
Non-standard sizes
Electric, hydraulic or pneumatic operations
Rising spindle
Wedge construction

Penstocks



Standard Series DN 400 – DN 900

Industrial Standard
BS7775

Loading Characteristics
6m on- and off-seating
4-sides closing, double acting

Standard Construction Materials
Frame: Stainless Steel AISI 304
Slide gate: HMPE -500
Backing plate: HDPE-300 (30mm)
Reinforcements: Stainless Steel AISI 304
Non-rising spindle: Stainless Steel AISI 304 TR25 x 7.5
Spindle bearing: Stainless Steel thrust bearing
Door Nut: POM (self-lubricating)
Bolts and nuts: RVS A4
Sealing: EPDM

Optional Construction Materials
Frame: Stainless Steel AISI 316
Slide gate: Stainless Steel AISI 304/316
Reinforcements: Stainless Steel AISI 316
Door Nut: Bronze
Sealing: NBR

Optional Features
Non-standard sizes
Electric, hydraulic or pneumatic operation
Rising spindle
Wedge construction

ØD	A	B	C	E	F	Weight (kg)
400	670	1150	600	515	615	55
500	770	1350	700	615	715	75
600	870	1550	800	715	815	90
700	970	1750	900	815	915	110
800	1070	1950	1000	915	1015	130
900	1170	2150	1100	1015	1115	155

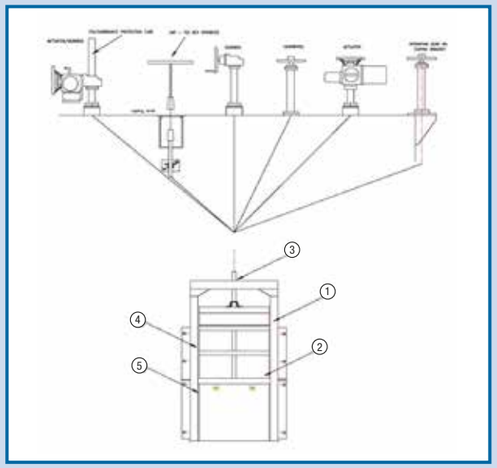
Weir Penstocks

Specifications Weir Penstocks

Weir Penstocks are utilised in water and sewage plants for accurate regulation or measurement of flow.

Operation of the Weir Penstock is opposite to that of a conventional penstock. The Weir Penstock door opens downwards. The illustration below shows a typical arrangement for a Weir Penstock being operated with a rising stem. Non rising stem versions are also available.

Stainless Steel Weir Penstocks



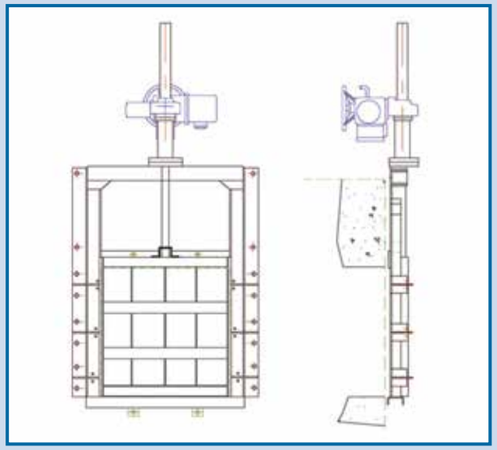
Component	Material
Frame	Stainless Steel Grades SS304, SS316, Mild Steel, Super Duplex
Door	Stainless Steel Grades SS304, SS316, Mild Steel, Super Duplex
Stem	Stainless Steel Grades SS304, SS316, Mild Steel
Wedge	PE, Stainless Steel Grades SS304, SS316
Seal	EPDM, Combined PE+Neoprene, Nitrile Seal

Penstocks

Actuated Stainless Steel Wall Penstocks

Wall Penstocks – Design Feature

Types: Full Frame with direct-on operating gear
Open Frame with remote operating gear
Size range: From 100mm to 4000mm square or rectangular
Pressure: Up to 10 metres head of water, On and Off Seating.
Materials: Stainless Steel Grades SS304, SS316, Super Duplex, Mild Steel with Protective Coatings



Stoplogs

Aluminium Stoplogs

Application:
Isolation or diversion for maintenance

Types:
Rebated Channel Mounted Stoplogs. Side Wall Mounted Stoplogs. End Wall Mounted Stoplogs

Size Range:
From 200mm to 4000mm square or rectangular

Pressure:
Max 4 metres

Materials:
Frame: Stainless Steel Grades SS316, SS304 or Mild Steel with protective coatings
Stoplogs: Aluminium to EN 753-3

Stainless Steel Stoplogs

Application:
Isolation or diversion for maintenance

Types:
Rebated Channel Mounted Stoplogs. Side Wall Mounted Stoplogs. End Wall Mounted Stoplogs

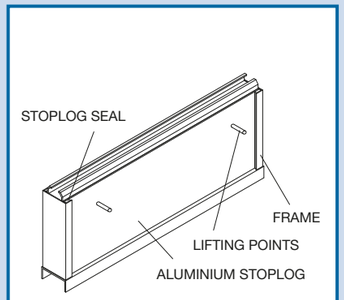
Size range:
From 200mm to 4000mm square or rectangular

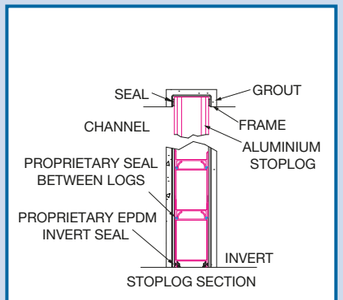
Pressure:
Max 4 metres

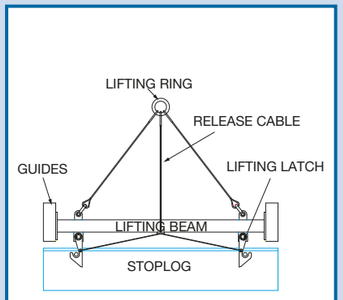
Materials:
Frame: Stainless Steel Grades SS316, SS304 or Mild Steel with protective coatings
Stoplogs: Stainless Steel Grades SS316, SS304 or Mild Steel with protective coatings

Lifting Equipment

Types:
Lightweight Manual Lifting Poles. Automatic Lifting Beam. Lifting Davit







We can also supply EA approved fish passes, tilting weirs and floodgates.

Process Pipework – PVC-U

Unplasticised Polyvinyl Chloride (PVC-U)

Plasticizer-free polyvinyl chloride offers the best value for money for many applications. PVC-U is also a universal material. Additionally a silicon-free product range is offered, supplemented by silicon-free mountings and screw joints for applications with silicon sensitive media (i.e. water-based paints).

Applications:
- Water Treatment
- Shipbuilding
- Chemical Process Industry
- Microelectronics.

Advantages:
- Universal use
- Excellent chemical and corrosion resistance
- Proven physiological safety.

Key Product Information:
- Standards: ISO, BS, ASTM, JIS.

Imperial

Pipe Fittings for Solvent Cement Jointing

Pipe – Standard Length 6 Metre
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½*
3
4
5*
6
8

* 5 Metre Length.

Bends 90º Short Radius
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
5
6
8*

* 21 01 11 – Short Pattern.

Bends – 45° Long Radius
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
6

Elbows 45º – Plain
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

Bends – 90° Long Radius
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
6

Elbows 90º – Plain
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6

Reducing Tees 90º – Plain
Size (inch)
¾ – ½
1 – ½
1 – ¾
1¼ – ¾
1¼ – 1
1½ – ½
1½ – ¾
1½ – 1
2 – ¾
2 – 1
2 – 1½
4 – 3
5 – 2½

Pipe Fittings for Solvent Cement Jointing – Continued

Equal Tees 45º – Plain
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
5

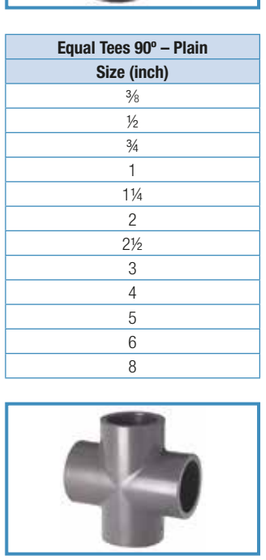
Sockets – Plain
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

End Caps – Plain
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5

Equal Tees 90º – Plain
Size (inch)
⅜
½
¾
1
1¼
2
2½
3
4
5
6
8

Barrel Nipple – Plain
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5

Reducing Bush – Plain
Size (inch)
½ – ⅜
¾ – ⅜
¾ – ½
1 – ⅜
1 – ½
1 – ¾
1¼ – ⅜
1¼ – ½
1¼ – ¾
1¼ – 1
1½ – ½
1½ – ¾
1½ – 1
1½ – 1¼
2 – ¾
2 – 1
2 – 1¼
2 – 1½
2½ – 2
3 – 1
3 – 1½
3 – 2
3 – 2½
4 – 3
5 – 3*
5 – 4
6 – 4*
6 – 5
8 – 6



Cross – Plain
Size (inch)
¾
1
1¼
1½
2
2½

* 21 91 13 – Long Pattern.

Adaptor Fittings

Elbow 90° – Plain/Female BSP Thread
Size (inch)
½
¾
1

Tees 90° Equal – Plain/Female BSP Thread
Size (inch)
⅜
½
¾
1

Adaptor Bush Equal – Plain Spigot/Female BSP Thread
Size (inch)
½
¾
1
1¼
1½
2

Process Pipework – PVC-U

Adaptor Fittings – Continued

Reducing Bush – Plain/Female BSP Thread
Size (inch)
⅜ – ½

Adaptor Socket Nipple – Plain Socket/Spigot / Male BSP Thread
Size (inch)
⅜
½
¾
1

Adaptor Socket – BS Inch – Metric Sockets
Size (inch/mm)
⅜ x 16
½ x 20
¾ x 25
1 x 32
1¼ x 40
1½ x 50
2 x 63
3 x 90
4 x 110

Hose Connector – Plain Spigot/ Taper Hose Connector
Size (inch)
¼

Adaptor Bush Equal – Plain Socket/ Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½

Reducing Bushes (Short) – Plain Spigot/Female BSP Thread
Size (inch)
½ x ⅜
¾ x ½
1 x ¾
1 x ½

Adaptor Socket – Plain Socket/ Female BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2

Hose Connector – Plain Spigot/ Parallel Hose Connector
Size (inch)
⅛
¼

Adaptor Bush Reducing – Plain Socket/Male BSP Thread
Size (inch)
½ – ¾
¾ – 1
1 – 1¼
1¼ – 1½
1½ – 2

Adaptor Nipple – Plain Spigot/Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2
3
4

Tap Connector – Plain Socket/ Female BSP Thread
Size (inch)
⅜ – ½
½ – ¾

Process Pipework – PVC-U

Flange Adaptors

Flange Adaptors – Serrated
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
5
8
10
12

Flange Adaptors – Flat
Size (inch)
2
2½
3
4
5
6
8

Flange Adaptors – O-Ring Groove
Size (inch)
2
2½
5
8

Penstocks – See page 106

Process Pipework – PVC-U

Flanges and Gaskets

Full Face Flanges
Size (inch)
Drilled BS10 Table D&E
½
¾
1
1¼
1½
2
3
4 E
4 D
6

Drilled to BS 4504 NP10/16
½*
¾*
1*
1¼
1½
2
3
4*
6

* 21 73 11

Drilled to ANSI B16.5 Class 150
½
¾
1
1¼*
1½*
2
3
4
6

* 21 73 11

Undrilled
½
¾
1
1¼
1½
2
3
4
6

Blanking Flanges
Size (inch)
Drilled BS10 Table D&E
½
¾
1
1¼
1½
2
3
4 E
4 D
6

BS4504 NP10/16
½
¾
1
1¼
1½
2
3
4
6

ANSI BS16.5 Class 150
½
¾
1
1¼
1½
2
3
4
6

Undrilled
½
¾
1
1¼
1½
2
3
4
6

O-Rings and Gaskets	
Size (inch)	Metric Equivalent (mm)
EPDM For unions	
⅜	16
½	20
¾	25
1	32
1¼	40
1½	50
2	63
2½	75
3	90
4	110
FPM For unions	
⅜	16
½	20
¾	25
1	32
1¼	40
1½	50
2	63
2½	75
3	90
4	110
EPDM For flange adaptors	
⅜	16
½	20
¾	25
1	32
1¼	40
1½	50
2	63
½	75
3	90
4	110
5	140
6	160
8	225
10	280
12	315
FPM For flange adaptors	
⅜	16
½	20
¾	25
1	32

Process Pipework – PVC-U

Flanges and Gaskets – Continued

O-Rings and Gaskets	
Size (inch)	**Metric Equivalent (mm)**
1¼	40
1½	50
2	63
2½	75
3	90
4	110
5	140
6	160
8	225
10	280
12	315

Flange Gasket – EPDM	
Size (inch)	**Metric Equivalent (mm)**
⅜	16
½	20
¾	25
1	32
1¼	40
1½	50
2	63
2½	75
3	90
4	110
6	140
7	160
9	225
10	280
12	315

Flat Gaskets – EPDM
Size (inch)
For Tap Connector
½ – 16
¾ – 20
1 – 25

Flat Gaskets for Full Face Flanges
Size (inch)
EPDM – BS 10 Tables D&E
½
¾
1
1¼
1½
2
3
4 E
4 D
6

EPDM – ISO/BS 4504 NP10/16
½
¾
1
1¼
1½
2
3
4
6

EPDM – BS 1560:1958, (ANSI BS16.5 Class 150)
½
¾
1
1¼
1½
2
3
4
6

FPM – BS 10 Tables D&E
½
¾
1
1¼
1½
2
3
4 E
4 D
6

Flat Gaskets for Full Face Flanges (cont)
Size (inch)
FPM – ISO/BS 4504 NP10/16
½
¾
1
1¼
1½
2
3
4
6

FPM – BS 1560:1958, (ANSI B16.5 Class 150)
½
¾
1
1¼
1½
2
3
4
6

Process Pipework – PVC-U

Adaptor Unions

Adaptor Unions
Size (inch)
Plain socket/BSP female thread
⅜
½
¾
1
1¼
1½
2

Adaptor Unions (cont)
Size (inch)
Plain socket/Brass male BSP thread
½
¾
1
1¼
1½
2
3

Plain socket metric/Plain socket BS inch
⅜ x 16
½ x 20
¾ x 25
1 x 32
1¼ x 40
1½ x 50
2 x 63

Plain socket/Malleable Iron female BSP thread
½
¾
1
1¼
1½
2
3

Plain socket/Brass female BSP thread
½
¾
1
1¼
1½
2
3

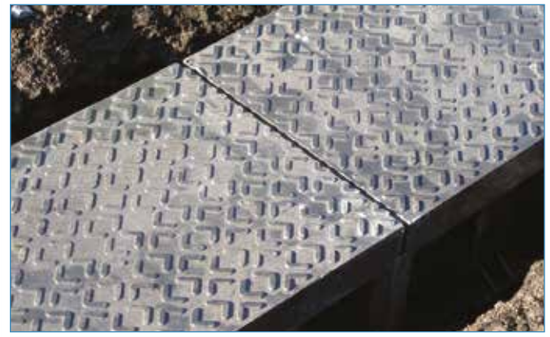
Tank Adaptors
Size (inch)
Plain socket/parallel thread
½
¾

Plain socket
⅜
½
¾
1
1¼
1½
2

Branch Saddles

Branch Saddles
Size (inch)
Saddle Single Branch
3 x 1¼
3 x 1½
3 x 2
4 x 1¼
4 x 1½
4 x 2
6 x 1¼
6 x 1½
6 x 2

Branch Saddles (cont)
Size (inch)
Saddle Double Branch
3 x 1¼
3 x 1½
3 x 2
4 x 1¼
4 x 1½
4 x 2
6 x 1¼
6 x 1½
6 x 2



Troughing – See page 241

Threaded Fittings

90° Elbow – Female BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4

Reducing Bush – Male BSP Thread/ Reduced Female BSP Thread
Size (inch)
½ x ⅜
¾ x ½
1 x ½
1 x ¾
1¼ x 1
1½ x 1¼
2 x 1½

Plugs – Parallel Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2

Hose Connector – Male BSP Thread
Size (inch)
¼
⅜
½
¾
1
1¼

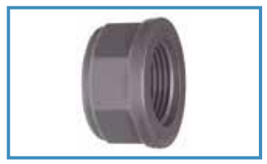
Tees 90° Equal – Female BSP Threaded
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4

Hexagon Nipples – Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2

Plugs – Tapered Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2

Threaded Union – Female BSP Threaded
Size (inch)
¼
⅜
½
¾
1
1¼
1½
2

Socket – Female BSP Threaded
Size (inch)
¼
⅜
½
¾
1
1¼
1½
2

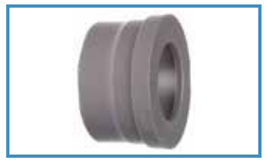


End Caps – Female BSP Thread
Size (inch)
¼
⅜
½
¾
1
1¼
1½
2

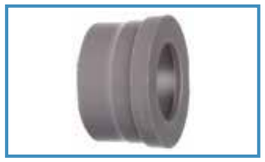
Barrel Nipples – Male BSP Thread
Size (inch)
⅜
½
¾
1
1¼
1½
2
3
4

Process Pipework – PVC-U

Union Ends, Bushes and Nuts

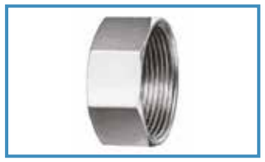


Union End – BS Inch
Size (inch)
⅜
½
¾
1
1¼
1½
2



Union Bush – Female Parallel Thread
Size (inch)
¼
⅜
½
¾
1
1¼
1½
2

Union End – Female Parallel Thread
Size (inch)
¼
⅜
½
¾
1
1¼
1½
2



Backnut – Female Parallel Thread
Size (inch)
½
¾
1
1¼
1½
2

Union Bush – BS Inch Solvent Cement Socket
Size (inch)
⅜
½
¾
1
1¼
1½
2

Valves

Ball Valve Type 546	
Size (inch)	Seal Material
⅜	EPDM
½	EPDM
¾	EPDM
1	EPDM
1¼	EPDM
1½	EPDM
2	EPDM
3	EPDM
4	EPDM

⅜	FPM
½	FPM
¾	FPM
1	FPM
1¼	FPM
1½	FPM
2	FPM
3	FPM
4	FPM

PVC-U with solvent cement sockets BS inch. Without mounting inserts.

Ball Valve Type 353
Size (inch)
½
¾
1
1¼
1½
2

Ball Valve Type 350
Size (inch)
½
¾
1
1¼
1½
2

PVC-U with solvent cement sockets BS inch.

Ball Valve Type 355
Size (inch)
½
¾
1
1¼
1½
2

Valves – Continued

Ball Check Valves Type 360
Size (inch)
⅜
½
¾
1
1¼
1½
2

PVC-U with solvent cement sockets BS inch EPDM.

Diaphragm Valves Type 314
Size (inch)
½
¾
1
1¼
1½
2

PVC-U with solvent cement sockets BS inch EPDM.

Variable Area Flowmeter		
Size (inch)	Type	Scale range (l/h)
1	SK10	50-500
1	SK11	100-1000
1½	SK20	300-3000
1½	SK21	600-6000
2	SK30	1000-10000
2	SK31	1500-15000

Float in PVDF with PVC-U union ends BS inch EPDM seals Trogamid T-tube.

Metric

Pipe – Grey Standard Length 5m
Size (mm)
6
8
10
12
16
20
25
32
40
50
63
75
90
110
125
140
160
180
200
225
250
280
315

Pipe – Transparent Standard Length 5m
Size (mm)
12
16
20
25
32
40
50
63
75
90
110
125
140
160
200
250

Fittings for Solvent Cement Jointing

Bend 90º
Size (mm)
20
25
32
40
50
63
75
90
110
140
160

Bend 90º Short Pattern
Size (mm)
225
280
315
400

Elbow 90º
Size (mm)
6
8
10
12
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250

Process Pipework – PVC-U

Fittings for Solvent Cement Jointing – Continued

Pro-Fit Elbow 90º
Size (mm)
20
25
32
40
50
63

Solvent cement socket, solvent cement spigot in combination with reducing socket.

Pro-Fit Elbow 45º
Size (mm)
20
25
32
40
50
63

Solvent cement socket, solvent cement spigot in combination with reducing socket.

Pro-Fit Tee 90º Equal
Size (mm)
20
25
32
40
50
63

Solvent cement socket, solvent cement spigot in combination with reducing socket.

Tee 90º Reducing
Size (mm)
25 x 20 x 25
32 x 20 x 32
32 x 25 x 32
40 x 20 x 40
40 x 25 x 40
40 x 32 x 40
50 x 20 x 50
50 x 32 x 50
50 x 40 x 50
63 x 25 x 63
63 x 32 x 63
63 x 40 x 63
63 x 50 x 63
72 x 32 x 75
75 x 40 x 75
75 x 50 x 75
75 x 63 x 75
90 x 32 x 90
90 x 50 x 90
90 x 63 x 90
90 x 75 x 90
110 x 32 x 110
110 x 50 x 110
110 x 90 x 110
125 x 50 x 125
125 x 90 x 125
140 x 50 x 140
140 x 75 x 140
140 x 110 x 140
160 x 110 x 160
200 x 110 x 200
200 x 160 x 200
225 x 110 x 225
225 x 160 x 225
250 x 160 x 250
250 x 200 x 250
280 x 160 x 280
280 x 225 x 280
315 x 160 x 315
315 x 225 x 315
400 x 225 x 400
400 x 315 x 400

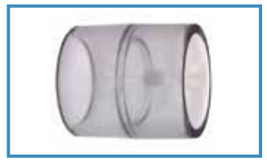
Elbow 45º
Size (mm)
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250
280
315
400

Tee 90º Equal
Size (mm)
6
8
10
12
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250
280
315
400

Tee 45º
Size (mm)
10
12
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250

Fittings for Solvent Cement Jointing – Continued

Cross
Size (mm)
10
12
16
20
25
32
40
50
63
75
90
110



Socket Equal – Transparent
Size (mm)
16
20
25
32
40
50
63

Reducing Socket with Solvent Cement Sockets
Size (mm)
25 x 20
32 x 20
40 x 20
50 x 40

Pro-Fit Reducing Bush
Size (mm)
8/12 – 10
12/16 – 8/12
12/16 – 10/16
16/20 – 10/16
16/20 – 12/16
20/25 – 12/16
20/25 – 16/20
25/32 – 12/16
25/32 – 16/20
25/32 – 20/25
32/40 – 16/20
32/40 – 20/25
32/40 – 25/32
40/50 – 20/25
40/50 – 25/32
40/50 – 32/40
50/63 – 25/32
50/63 – 32/40
50/63 – 40/50
63/75 – 32/40
63/75 – 40/50
63/75 – 50/63
75/90 – 40/50
75/90 – 50/63
75/90 – 63/75

Solvent cement spigot in combination with reducing socket.

Socket Equal
Size (mm)
6
8
10
12
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250
280
315
355
400

Barrel Nipple with Solvent Cement Spigots on Both Sides
Size (mm)
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225

Reducing Bush – With Spigot and Solvent Cement Socket
Size (mm)
8 x 10
10 x 6
10 x 8
20 x 16
25 x 20
32 x 25
40 x 32
50 x 40
63 x 50
75 x 50
75 x 63
90 x 75
140 x 110

Process Pipework – PVC-U

Fittings for Solvent Cement Jointing – Continued

Reducing Bush Short – With Spigot and Solvent Cement Socket
Size (mm)
12 x 18
16 x 12
20 x 16
25 x 20
32 x 20
32 x 25
40 x 20
40 x 25
40 x 32
50 x 20
50 x 25
50 x 32
40 x 40
63 x 32
63 x 40
63 x 50
75 x 50
75 x 63
90 x 50
90 x 63
90 x 75
110 x 50
110 x 63
110 x 90
125 x 90
125 x 110
140 x 90
140 x 110
140 x 125
160 x 90
160 x 110
160 x 140
200 x 110
200 x 125
200 x 140
200 x 160
225 x 110
225 x 125
225 x 140
225 x 160
225 x 200
250 x 125
250 x 140
250 x 160
250 x 200
250 x 225
280 x 140
280 x 160
280 x 200
280 x 225

Reducing Bush Short – With Spigot and Solvent Cement Socket (cont)
Size (mm)
280 x 250
315 x 160
315 x 200
315 x 225
315 x 250
315 x 280
355 x 315
400 x 250
400 x 280
400 x 315
400 x 355

Cap
Size (mm)
12
16
20
25
32
40
50
63
75
90
110
140
160

Adaptor Fittings

Elbow 90º
Size (mm/inch)
12 x ¼
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½*
90 x 3*
110 x 4*

With solvent cement socket and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

*without reinforcement, connection to plastic threads only.

Adaptor Socket
Size (mm/inch)
12 x ¼
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

With solvent cement socket and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

Tee 90º
Size (mm/inch)
12 x ¼
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½*
90 x 3*
110 x 4*

With solvent cement socket, branch with parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

*without reinforcement, connection to plastic threads only.

Adaptor Socket
Size (mm/inch)
75 x 2½
90 x 3
110 x 4

With solvent cement socket and parallel female thread Rp.

Connection to plastic threads only.

Process Pipework – PVC-U

Adaptor Fittings – Continued

Adaptor Socket
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3
110 x 4

With solvent cement socket and NPT (ASTM) taper female thread.

Connection to plastic threads only.

Adaptor Socket-Nipple
Size (mm/inch)
12 x 16 x ⅜
16 x 20 x ½
20 x 25 x ¾
25 x 32 x 1
32 x 40 x 1¼
40 x 50 x 1½
50 x 63 x 2

With solvent cement spigot/socket reducing and taper male thread R.

Connection to plastic threads only.

Adaptor Socket
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
90 x 3
110 x 4

With metric and BS (ASTM) inch solvent cement sockets.

Manometer Adaptor Socket
Size (mm/inch)
12 x ¼
16 x ½

With solvent cement socket and female thread G.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

Reducing Bush
Size (mm/inch)
12 x ¼
20 x ⅜
25 x ½
32 x ¾
40 x 1
50 x 1¼
63 x 1½

With solvent cement spigot and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

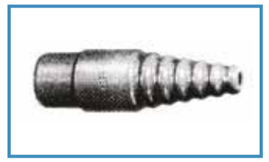
Adaptor Bush Equal
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3
110 x 4

With solvent cement socket and taper male thread R.

Connection to plastic threads only.

Adaptor Socket, Brass/PVC-U
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Brass with taper male thread R and PVC-U solvent cement socket insert.



Hose Connector
Size (mm)
10
12
16
20

With solvent cement spigot and tapered hose connection.

Adaptor Bush Equal
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

With solvent cement spigot and parallel female thread Rp.

Connection to plastic threads only.

Adaptor Nipple
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1

With solvent cement socket and taper male thread R.

Connection to plastic threads only.

Adaptor Socket, Brass/PVC-U
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Brass with parallel female thread Rp and PVC-U solvent cement socket insert.

Hose Connector
Size (mm)
10
12
16
20
25
32
40
50
63

With solvent cement spigot and parallel hose connection.

Process Pipework – PVC-U

Flange Adaptors and Flanges

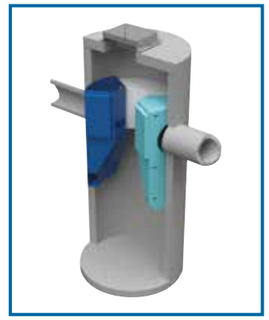
Flange Adaptor – Jointing Face Serrated
Size (mm)
63
75
90
110
125
140
160*
200*
225*
250
280*
315*
355
400

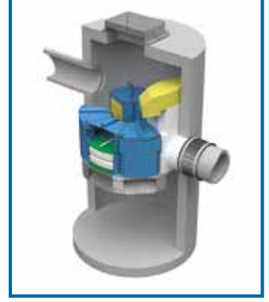
* Combined flange adaptor (jointing face serrated and flat).

Flange Adaptor – Jointing Face with O-Ring Groove
Size (mm)
16
20
25
32
40
50
63
75
90
110
125
140
160
200
225
250
280
315

Fixed Flange – Jointing Face Serrated
Size (mm)
20
25
32
40
50
63
75*
90*
110*
140*
160*

* Combined flange drill dimensions PN10 and ANSI 150.





Flange Adaptor – Jointing Face Flat
Size (mm)
16
20
25
32
40
50
63
75
90
110
125
140
250

Fixed Flange – Jointing Face Flat
Size (mm)
20
25
32
40
50
63
75*
90*
110*
140*
160*

* Combined flange drill dimensions PN10 and ANSI 150.

Blanking Flange – Jointing Face Serrated
Size (mm)
20*
25*
32*
40*
50*
63*
75*
90*
110*
140*
160*
225
250
280
315
355
400

Hydro-Brakes – See page 163

Process Pipework – PVC-U

Unions for Solvent Cement Jointing

Socket Union
Size (mm)
EPDM O-ring
10
12
16
20
25
32
40
50
63
75
90
110

FPM O-ring
10
12
16
20
25
32
40
50
63
75
90
110

Pro-Fit Union – EPDM O-Ring
Size (mm)
EPDM O-ring
16
20
25
32
40
50
63

FPM O-ring
16
20
25
32
40
50
63

Union with Union Ends Blank
Size (mm)
EPDM O-ring
10
12
16
20
25
32
40
50
63
75
90
110

FPM O-ring
10
12
16
20
25
32
40
50
63
75
90
110

Adaptor Union
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½

Plain socket metric/Plain socket BS inch.

Adaptor Union
Size (mm/inch)
EPDM
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

FPM
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

PVC-U socket metric/stainless steel parallel female thread RP.

Chambers – See page 249

Process Pipework – PVC-U

Unions for Solvent Cement Jointing – Continued

Adaptor Union
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

FPM
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Plain PVC-U socket metric/stainless steel taper male thread R.

Adaptor Union
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3

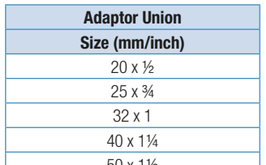
Plain PVCu socket/Malleable iron male thread R.

Adaptor Union
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3

Plain PVCu socket/Brass male thread R.

Adaptor Union
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3

Plain PVCu socket/Malleable iron fem thread Rp.



Adaptor Union
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
75 x 2½
90 x 3

Plain PVCu socket/Brass female thread Rp.

Tap Connector
Size (mm/inch)
16 – ½
20 – ¾
25 – 1

Tank Adaptors

Adaptor Union
Size (mm)
16
20
25
32
40
50
63

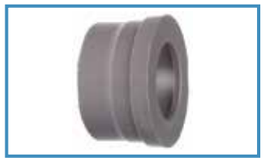
Tank Adaptor
Size (mm)
16/12
20/16
25/20
32/25
40/32
50/40
63/50

PVCu union end with PRO-FIT spigot.

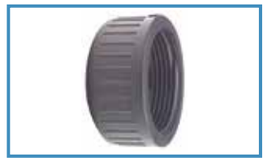
Ducting – See page 222

Process Pipework – PVC-U

Union Ends, Bushes and Nuts



Union End – Solvent Cement Socket
Size (mm)
10
12
16
20
25
32
40
50
63
75
90
110



Union Nut
Size (mm)
10
12
16
20
25
32
40
50
63
75
90
110

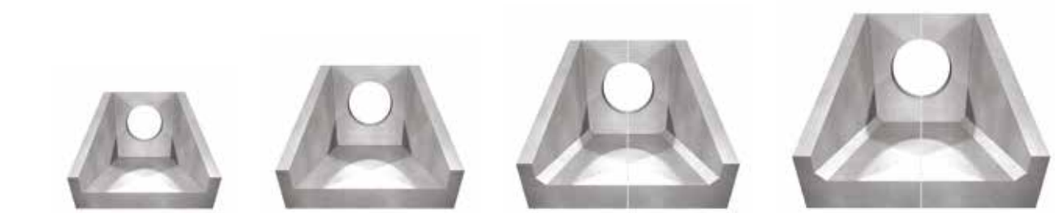
Union Bush – Solvent Cement Socket
Size (mm)
10
12
16
20
25
32
40
50
63
75
90
110

Branch Saddles

Branch Saddle
Size (mm)
63-40
63-50
90-40
90-50
90-63
110-40
110-50
160-40
160-50
160-63
225-50
225-63

Repair Saddle
Size (mm)
63
90
110
160
225

Branch Saddle – NBR Gasket
Size (mm)
63-40
63-50
90-40
90-50
90-63
110-40
110-50
110-63
160-40
160-50
160-63
225-50
225-63



Headwalls – See page 160

Process Pipework – PVC-U

Valves

Ball Valve Type 546	
Size (mm)	Seal Material
16	EPDM
20	EPDM
25	EPDM
32	EPDM
40	EPDM
50	EPDM
63	EPDM
75	EPDM
90	EPDM
110	EPDM

16	FPM
20	FPM
25	FPM
32	FPM
40	FPM
50	FPM
63	FPM
75	FPM
90	FPM
110	FPM

PVC-U with solvent cement sockets metric.

Without mounting inserts.

Ball Valve Type 353
Size (mm)
20
25
32
40
50
63

PVC-U with solvent cement sockets metric.

Ball Valve Type 355
Size (mm)
20
25
32
40
50
63

PVC-U with solvent cement sockets metric.

Permanent Way

Embankments

Stations and Platforms

Car Parks

Other Products

See our Rail Guide for more information

Process Pipework – ABS

Pipework – ABS

AcryInitrile-Butadiene-Styrene has high impact resistance – even at very low temperatures. The low heat conductivity supports its use in cold and climate-controlled areas. In addition to the range of standard fittings, other components such as silicon-free mountings and screw joints are also offered.

ABS pipes and fittings from GF Piping Systems are also offered for cooling equipment as a pre-insulated system under the COOL-FIT brand.

- Water Treatment
- Cooling
- Food and Beverage processing
- Shipbuilding
- Building Technology.

Advantages:

- High impact strength even at low temperatures
- Single installation via solvent cement joints
- Low heat conductivity
- Halogen free.

Standards: ISO, BS

Ball Check Valves Type 360
Size (mm)
16
20
25
32
40
50
63

PVC-U with solvent cement sockets metric EPDM.

Diaphragm Valves Type 314
Size (mm)
20
25
32
40
50
63

PVC-U with solvent cement sockets metric EPDM.

Variable Area Flowmeter		
Size (mm)	Type	Scale range (l/h)
32	SK10	50-500
32	SK11	100-1000
50	SK20	300-3000
50	SK21	600-6000
63	SK30	1000-10000
63	SK31	1500-15000

Float in PVDF with PVC-U union ends metric.

EPDM seals Trogamid T-tube.

Butterfly Valve Type 567	
Size (mm)	Liner Material
63	EPDM
75	EPDM
90	EPDM
110	EPDM
140	EPDM
160	EPDM
225	EPDM
63	FPM
75	FPM
90	FPM
110	FPM
140	FPM
160	FPM
225	FPM

PVC-U lever handle with ratchet settings.

Variable Area Flowmeter		
Size (mm)	Type	Scale range (l/h)
32	SK100	50-500
32	SK110	100-1000
50	SK200	300-3000
50	SK210	600-6000
63	SK300	1000-10000
63	SK310	1500-15000

Float in PVDF with magnet, with PVC-U union ends metric.

EPDM seals Trogamid T-tube.

Process Pipework – ABS

Imperial

Pipe – Standard Length 6 Metre
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½*
3
4
5*
6
8

* 5 Metre Length.

Fittings for Solvent Cement Jointing

Bend 90º
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4

Long Radius Bend 45º
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4

Elbow 45º
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

Bend 90º Short Pattern
Size (inch)
8

Elbow 90º
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6

Tee 90º
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

Long Radius Bend 90º
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4

Tee 45º
Size (inch)
½
¾
1
1¼
1½
2
2½
5

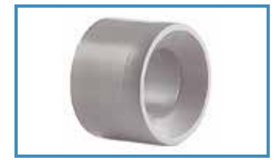
Process Pipework – ABS

Fittings for Solvent Cement Jointing – Continued

Tee 90º – Reducing
Size (inch)
¾ x ½
1 x ½
1 x ¾
1¼ x ¾
1¼ x 1
1½ x ½
1½ x ¾
1½ x 1
2 x ¾
2 x 1
2 x 1½
4 x 3

Socket
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

Cap
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4
5



Reducing Bush – Short Pattern
Size (inch)
½ x ⅜
¾ x ½
1 x ½
1 x ¾
1¼ x ½
1¼ x ¾
1¼ x 1
1½ x ½
1½ x ¾
1½ x 1
1½ x 1¼
2 x ¾
2 x 1
2 x 1¼
2 x 1½
2½ x 2
3 x 1
3 x 1½
3 x 2
3 x 2½
4 x 3
5 x 4
8 x 6

Barrel Nipple – with Solvent Cement Spigots on Both Ends
Size (inch)
⅜
½
¾
1
1¼
1½
2
3
4

Reducing Bush – Long Pattern
Size (inch)
6 x 4

Adaptor Fittings

Adaptor Fittings – Elbow 90º
Size (inch)
½ x ½
¾ x ¾
1 x 1

With solvent cement socket and parallel female thread Rp.

Adaptor Fittings – Socket
Size (inch)
⅜ x ⅜
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

With solvent cement socket and parallel female thread Rp.

Adaptor Bush Equal
Size (inch)
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

With solvent cement spigot and parallel female thread Rp.

Adaptor Bush Equal
Size (inch)
⅜ x ⅜
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

With solvent cement socket and taper male thread R.

Process Pipework – ABS

Adaptor Fittings – Continued

Adaptor Socket Nipple
Size (inch)
¼ x ⅜ x ⅜
⅜ x ½ x ½
½ x ¾ x ¾
¾ x 1 x 1

With solvent cement spigot/socket reducing and taper male thread R.

Adaptor Socket Inch-Metric
Size (inch/mm)
⅜ x 16
½ x 20
¾ x 25
1 x 32
1¼ x 40
1½ x 50
2 x 63
3 x 90
4 x 110

With BS inch and metric solvent cement sockets.

Reducing Bush – Short
Size (inch)
½ x ⅜
¾ x ½
1 x ¾
1 x ½

With solvent cement spigot and parallel female thread Rp.

Adaptor Nipple
Size (inch)
⅜ x ⅜
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2
3 x 3
4 x 4

With solvent cement spigot and taper male thread R.

Threaded Fittings

Hexagon Nipple
Size (inch)
½
¾
1

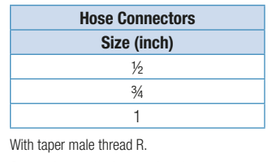
With taper male thread R.

Connection to plastic threads only.

Barrel Nipple
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½
3
4

With taper male thread R.

Connection to plastic threads only.



Hose Connectors
Size (inch)
½
¾
1

With taper male thread R.

Connection to plastic threads only.

Plug
Size (inch)
½
¾
1

With taper male thread R.

Connection to plastic threads only.

Threaded Socket
Size (inch)
½
¾
1

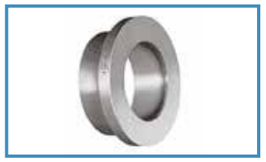
With female parallel thread Rp.

Connection to plastic threads only.

Tunnelling – See page 215

Process Pipework – ABS

Flange Adaptors



Flange Adaptor – Jointing Face Flat
Size (inch)
4
6
8

Flange Adaptor – Jointing Face Serrated
Size (inch)
½
¾
1
1¼
1½
2
2½
3
4
5
6
8

Flange Adaptor – With O-Ring Groove
Size (inch)
4
8

Full Face Flanges

Full Face Flange – Jointing Face Serrated
Size (inch)
½
¾
1
1¼
1½
2
3
4 table E
4 table D
6

Solvent cement socket.

Drilled to BS10 Table D&E.

Full Face Flange – Jointing Face Serrated
Size (inch)
½
¾
1
1¼
1½
2
3
4
6

Solvent cement socket.

Drilled to BS 4504 Table NP10/16.

Full Face Flange – Jointing Face Serrated
Size (inch)
½
¾
1
1¼
1½
2
3
4
6

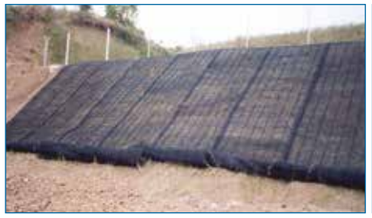
Solvent cement socket.

Drilled to ANSI B16.5 Class 150.

Full Face Flange – Jointing Face Serrated
Size (inch)
½
¾
1
1¼
1½
2
3
4
6

Solvent cement socket.

Undrilled.



See our Geotechnics Guide for more information

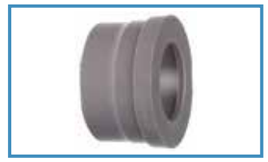
Process Pipework – ABS

Unions for Solvent Cement Jointing

Union
Size (inch)
⅜
½
¾
1
1¼
1½
2
2½

Union end: solvent cement socket.

Union bush: solvent cement socket.

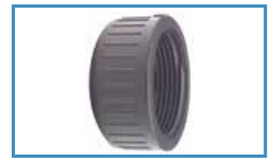


Union End
Size (inch)
⅜
½
¾
1
1¼
1½
2

Solvent cement socket.

Union Bush
Size (inch)
⅜
½
¾
1
1¼
1½
2

Solvent cement socket.



Backnut
Size (inch)
½
¾
1
1¼
1½
2

Parallel female thread Rp.

Adaptor Unions

Adaptor Union, ABS/Malleable Iron
Size (inch)
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

Union bush: solvent cement socket ABS.

Union end: malleable iron galvanised, parallel female thread RP.

Union nut: ABS.

Adaptor Union, ABS/Brass
Size (inch)
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

Union bush: solvent cement socket ABS.

Union end: brass, parallel female thread Rp.

Union nut: ABS.

Adaptor Union, ABS/PVC-U
Size (inch)
⅜ x ⅜
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

Union end: PVC-U parallel female thread Rp.

Union bush: ABS solvent cement socket.

Connection to plastic threads only.

Do not use thread sealing pastes that are harmful to ABS.

Adaptor Union, ABS/PVC-U
Size (inch)
⅜ x 16
½ x 20
¾ x 25
1 x 32
1¼ x 40
1½ x 50
2 x 63

Union end: PVC-U solvent cement socket – metric.

Union bush: ABS solvent cement socket – BS inch.

Union nut: ABS.

Adaptor Union, ABS/Malleable Iron
Size (inch)
½ x ½
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

Union bush: solvent cement socket ABS.

Union end: malleable iron galvanised, parallel male thread RP.

Union nut: ABS.

Adaptor Union, ABS/Brass
Size (inch)
¾ x ¾
1 x 1
1¼ x 1¼
1½ x 1½
2 x 2

Union bush: solvent cement socket ABS.

Union end: brass, taper male thread R.

Union nut: ABS.

Adaptor Union, ABS/PVC-U
Size (inch)
⅜
½
¾
1
1¼
1½
2

Union end: PVC-U solvent cement socket.

Union bush: ABS solvent cement socket.

Union nut: ABS.

Tank Adaptor – End Connection: Union With Solvent Cement Socket
Size (inch)
⅜
½
¾
1
1¼
1½
2

Process Pipework – ABS

Valves

Ball Valve Type 546
Size (inch)
⅜
½
¾
1
1¼
1½
2
3
4

ABS with solent cement sockets BS inch.

Without mounting inserts.

Ball Check Valves Type 360
Size (inch)
⅜
½
¾
1
1¼
1½
2

ABS with solvent cement sockets BS inch EPDM.

Variable Area Flowmeter		
Size (inch)	Type	Scale range (l/h)
1	SK10	50-500
1	SK11	100-1000
1½	SK20	300-3000
1½	SK21	600-6000
2	SK30	1000-10000
2	SK31	1500-15000

Float in PVDF with ABS union ends BS inch.

EPDM seals Trogamid T-tube.

Diaphragm Valves Type 315
Size (inch)
½
¾
1
1¼
1½
2

ABS with solvent cement sockets BS inch EPDM.

Metric

Pipe – Standard Length 6 Metre
Size (mm)
16
20
25
32
40
50
63
75
90
110
140
160
200
225
250
280
315

Process Pipework – ABS

Fittings for Solvent Cement Jointing

Bend 90º – Short Pattern
Size (mm)
225
280
315

Bend 90º
Size (mm)
20
25
32
40
50
63
75
90
110
140
160

Elbow 90º
Size (mm)
16
20
25
32
40
50
63
75
90
110
140
160
200
250

Elbow 45º
Size (mm)
20
25
32
40
50
63
75
90
110
140
160
200
225
250
280
315

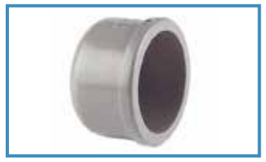
Tee 90º
Size (mm)
16
20
25
32
40
50
63
75
90
110
140
160
200
225
250
280
315

Tee 90º – Reducing
Size (mm)
25 x 20 x 25
32 x 25 x 32
40 x 25 x 40
40 x 32 x 40
50 x 25 x 50
50 x 32 x 50
63 x 25 x 63
63 x 32 x 63
63 x 50 x 63
75 x 40 x 75
90 x 32 x 90
90 x 63 x 90
110 x 32 x 110
110 x 50 x 110
140 x 50 x 140
140 x 75 x 140
160 x 90 x 160
200 x 110 x 200
225 x 110 x 225
225 x 160 x 225

Tee 45º
Size (mm)
20
25
32
40
50
63
75
90
110
140

Cross
Size (mm)
32
63

Socket
Size (mm)
16
20
25
32
40
50
63
75
90
110
140
160
200
225
250
280
315



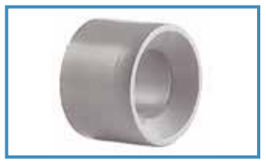
Cap
Size (mm)
16
20
25
32
40
50
63
75
90
110
140
160

Process Pipework – ABS

Fittings for Solvent Cement Jointing – Continued

Reducing Bush Long
Size (mm)
32 x 20
40 x 25
50 x 25
63 x 32
75 x 40
90 x 63

Barrel Nipple – With Solvent Cement Spigots on Both Ends
Size (mm)
16
20
25
32
40
50
63
75
110



Reducing Bush
Size (mm)
20 x 16
25 x 20
32 x 20
32 x 25
40 x 20
40 x 25
40 x 32
50 x 20
50 x 25
50 x 32
50 x 40
63 x 32
63 x 40
63 x 50
75 x 50
75 x 63
90 x 50
90 x 63
90 x 75
110 x 63
110 x 90
140 x 110
160 x 110
160 x 140
200 x 160
225 x 200
225 x 160
250 x 225
280 x 250
315 x 280

Adaptor Fittings

Adaptor Fittings – Elbow 90º
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

With solvent cement socket and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

Adaptor Socket – Nipple
Size (mm)
16 x 20 x ½
20 x 25 x ¾
25 x 32 x 1
32 x 40 x 1¼
40 x 50 x 1½
50 x 63 x 2

With solvent cement spigot/socket and taper male thread R.

Connection to plastic threads only.

Adaptor Fittings – Socket
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

With solvent cement socket and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

Adaptor
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

With solvent cement spigot and parallel female thread Rp.

Connection to plastic threads only.

Adaptor Fittings – Reducing Bush
Size (mm/inch)
20 x ⅜
25 x ½
32 x ¾
40 x 1
50 x 1¼
63 x 1½

With solvent cement spigot and parallel female thread Rp.

Reinforcing ring stainless A2.

Connection to plastic or metal threads.

Adaptor Socket
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2
90 x 3
110 x 4

With metric and BS inch solvent cement sockets.

Process Pipework – ABS

Adaptor Fittings – Continued

Adaptor Nipple
Size (mm/inch)
16 x ⅜

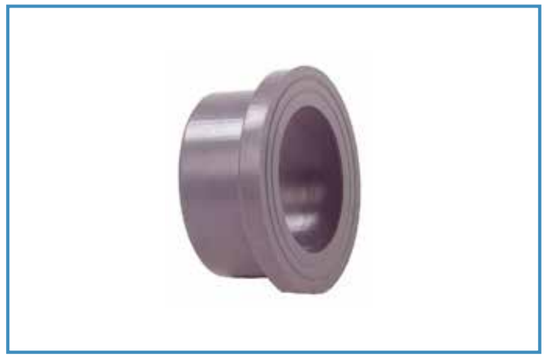
With solvent cement spigot and taper male thread R.

Connection to plastic threads only.

Do not use thread sealing pastes that are harmful to ABS.

Hose Connector
Size (mm)
16
20
25
32

Flange Adaptors



Flange Adaptor – Jointing Face Serrated
Size (mm)
20
25
32
40
50
63
75
90

Flange Adaptor – Jointing Face Serrated (cont)
Size (mm)
110
140
160
200
225
250
280
315

Unions

Unions
Size (mm)
16
20
25
32
40
50
63
75
90
110

Union end: Solvent cement socket.

Union bush: Solvent cement socket.

Adaptor Union, Stainless Steel/ABS
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Union end: Stainless Steel 316L taper male thread R.

Union bush: Solvent cement socket ABS.

Union nut: ABS.

Adaptor Union, Stainless Steel/ABS
Size (mm/inch)
16 x ⅜
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Union end: Stainless Steel 316L, parallel female thread Rp.

Union bush: Solvent cement socket ABS.

Union nut: ABS.

Adaptor Union, Malleable Iron/ABS
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Union bush: Solvent cement socket ABS.

Union end: Malleable iron galvanised, parallel female thread Rp.

Union nut: ABS.

Kiosks and Cages – See page 286

Process Pipework – ABS

Unions – Continued

Adaptor Union, Malleable Iron/ABS
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Adaptor Union, Brass/ABS
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Union bush: Solvent cement socket ABS.
Union end: Brass, taper male thread R.
Union nut: ABS.

Adaptor Union, Brass/ABS
Size (mm/inch)
20 x ½
25 x ¾
32 x 1
40 x 1¼
50 x 1½
63 x 2

Union bush: Solvent cement socket ABS.
Union end: Brass, parallel female threads Rp.
Union nut: ABS.

Adaptor Union, Copper for Soldering, ABS
Size (mm)
16 x 18
20 x 22
25 x 28
32 x 35
40 x 42
50 x 54

Union end: copper.
Union bush: solvent cement socket ABS.
Union nut: Brass.

Branch Saddles
Size (mm)
90 x 50
110 x 50
160 x 63
225 x 63

For ABS pipes.
Top saddle for solvent cementing.
Bottom saddle and clamps, PVC-U.
Outlet with solvent cement socket.

Valves

Ball Valve Type 546	
Size (mm)	Material
16	EPDM
20	EPDM
25	EPDM
32	EPDM
40	EPDM
50	EPDM
63	EPDM
75	EPDM
90	EPDM
110	EPDM

ABS with solvent cement sockets metric.
Without mounting inserts.

Diaphragm Valves Type 315
Size (inch)
½
¾
1
1¼
1½
2

ABS with solvent cement spigots metric EPDM.

Ball Check Valves Type 360
Size (mm)
16
20
25
32
40
50
63

ABS with solvent cement sockets metric EPDM.

Butterfly Valve Type 567	
Size (mm)	Liner Material
90	EPDM
110	EPDM
160	EPDM
225	EPDM

ABS lever handle with ratchet settings.

Process Pipework – ABS

Valves – Continued

Variable Area Flowmeter		
Size (mm)	Type	Scale range (l/h)
32	SK10	50-500
32	SK11	100-1000
50	SK20	300-3000
50	SK21	600-6000
63	SK30	1000-10000
63	SK31	1500-15000

Float in PVDF with ABS union ends metric.
EPDM seals Trogamid T-tube.

Variable Area Flowmeter		
Size (mm)	Type	Scale range (l/h)
32	SK100	50-500
32	SK110	100-1000
50	SK200	300-3000
50	SK210	600-6000
63	SK300	1000-10000
63	SK310	1500-15000

Float in PVDF with magnet, with ABS union ends metric.
EPDM seals Trogamid T-tube.

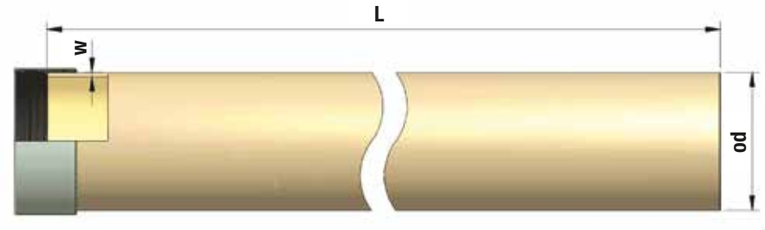
GRP Pressure Pipes

GRP is widely used within the UK Utilities industry, its lightweight construction and simple jointing methods rapidly increase construction speeds when compared to alternative materials. Its high resistance to UV light, chemical resistance and high loading capacity ensure a long service life.

Applications

- Hydro power
- Trenchless installations
- Potable water mains
- Waste water and sewage
- Power station water cooling lines.

GRP Pressure DN150-DN2000, PN 6, PN10



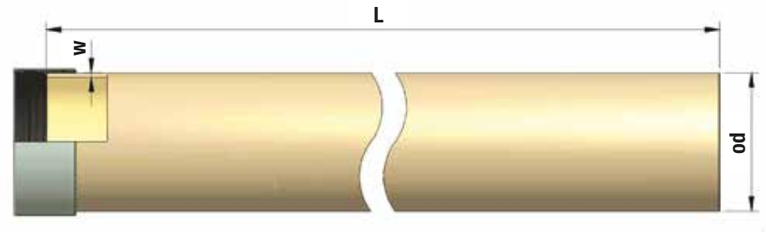
Standard pipe length = 6m. ½m or 3m are available upon request.

			PN 6						PN 10					
			SN 5000		SN 10000		SN 20000		SN 5000		SN 10000		SN 20000	
DN	Diameter Series	od (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)
150	B2	168			5	6	6	7			5	6	6	7
200	B2	220			9	8	11	9			9	7	10	9
250	B2	272			14	9	17	11			13	9	15	10
300	B2 B4	324			20	10	25	13			17	10	22	12
350	B2	376	21	10	27	12	32	14	18	9	23	12	29	14
400	B3	401	23	10	29	12	35	15	20	10	26	12	32	15
400	B2	427	26	10	33	13	40	15	23	10	29	13	36	15
450	B2	478	30	11	38	13	46	16	25	10	33	13	41	16
500	B3	501	32	11	41	14	50	16	28	11	36	13	45	16
500	B2	530	38	12	46	14	55	17	31	11	40	14	50	17
550		550	40	12	49	15	60	18	35	12	43	15	54	18
600	B1	616	50	14	61	16	74	19	42	13	53	16	67	20
650		650	55	14	68	17	82	20	46	14	59	17	74	20
700	B1	718	66	15	81	18	101	23	56	15	71	18	91	23
750		752	72	16	89	19	110	24	61	15	77	19	99	24
800	B1	820	85	17	105	21	130	25	71	16	91	20	117	25
860		860	93	18	114	21	142	26	78	17	99	21	128	27
900	B1	924	106	19	134	23	163	28	89	18	116	23	147	28
960		960	114	19	144	24	175	29	95	19	125	24	158	29
1000	B1	1026	129	21	163	25	199	31	108	20	142	25	179	31
1100		1099	151	23	187	27	228	33	124	21	162	27	205	33
1200	B1	1229	187	25	231	30	282	36	156	24	200	29	254	37
1280		1280	201	26	249	31	305	38	169	24	217	31	274	38
1350		1350	222	27	275	32	336	39	186	25	239	32	304	40
1400	B1	1434	249	28	309	34	379	41	209	27	269	34	342	42
1500		1499	271	29	336	35	413	43	221	28	286	35	365	43
1535		1535	286	30	355	36	436	44	234	28	304	36	389	45
1600	B1	1638	323	32	402	39	495	47	266	30	344	38	441	47
1720		1720	355	33	442	40	543	49	292	31	378	39	485	49
1800	B1	1842	404	35	504	43	621	52	333	33	430	42	554	53
1940		1940	445	37	555	45	685	55	367	35	474	44	611	55
2000	B1	2047	494	39	617	47	763	58	403	36	528	46	680	58

Additional sizes are available up to and including DN 3600.
Wall thickness and masses are for guidance only and are subject to plus/minus tolerances.

GRP Pressure Pipes

GRP Pressure DN150-DN1600, PN 16, PN20



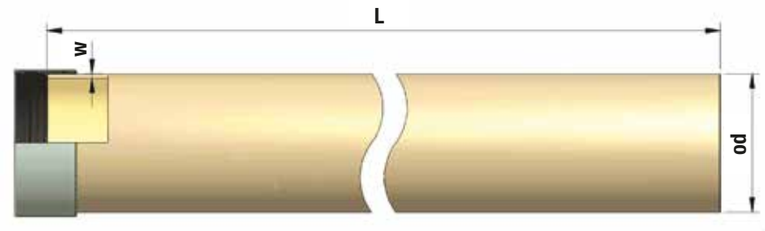
Standard pipe length = 6m. ½m or 3m are available upon request.

			PN 16				PN 20			
			SN 10000		SN 20000		SN 10000		SN 20000	
DN	Diameter Series	od (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)
150	B2	168	4	6	6	7	4	6	6	7
200	B2	220	8	7	10	9	8	7	10	9
250	B2	272	11	9	15	10	11	8	14	10
300	B2 B4	324	16	10	21	12	15	10	20	12
350	B2	376	21	11	27	14	20	11	26	13
400	B3	401	25	12	31	14	23	12	30	14
400	B2	427	28	12	34	15	26	12	33	15
450	B2	478	31	13	39	15	29	12	38	15
500	B3	501	34	13	42	16	32	13	41	16
500	B2	530	37	14	47	17	35	13	47	17
550		550	40	14	51	17	38	14	51	18
600	B1	616	50	16	62	19	46	15	62	19
650		650	56	16	69	20	51	16	68	20
700	B1	718	65	17	85	22	61	17	81	21
750		752	71	18	93	23	66	18	90	23
800	B1	820	84	19	109	25	77	19	106	24
860		860	92	20	120	26	84	20	116	25
900	B1	924	108	22	137	27	96	21	132	27
960		960	116	23	147	28	103	21	142	28
1000	B1	1026	132	24	167	30	119	23	162	30
1100		1099	151	26	192	32	135	25	185	32
1200	B1	1229	186	29	237	35	166	27	230	35
1280		1280	202	30	256	37	179	28	248	36
1350		1350	222	31	283	38	227	32	275	38
1400	B1	1434	251	33	319	41	256	34	309	40
1500		1499	278	35	337	42	239	32	329	42
1535		1535	293	36	357	43	251	33	347	43
1600	B1	1638	332	38	404	45	283	35	393	45

Additional sizes are available up to and including DN 3600.
Wall thickness and masses are for guidance only and are subject to plus/minus tolerances.

GRP Pressure Pipes

GRP Pressure DN150-DN1000, PN 25, PN32



Standard pipe length = 6m. ½m or 3m are available upon request.

			PN 25				PN 32			
			SN 10000		SN 20000		SN 10000		SN 20000	
DN	Diameter Series	od (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)	m (kg/m)	w (mm)
150	B2	168	4	6	5	7	5	7	5	7
200	B2	220	8	7	9	9	9	8	9	9
250	B2	272	11	8	14	10	13	10	13	10
300	B2 B4	324	15	10	20	12	17	11	19	12
350	B2	376	20	11	26	13	23	12	24	13
400	B3	401	23	12	29	14	26	13	27	14
400	B2	427	26	12	33	15	28	13	30	14
450	B2	478	29	12	38	15	35	15	35	15
500	B3	501	32	13	41	16	37	15	38	15
500	B2	530	35	13	47	17	41	16	42	16
550		550	38	14	51	18	45	16	45	16
600	B1	616	46	15	61	19	54	18	55	18
650		650	51	16	68	20	60	18	60	19
700	B1	718	60	17	84	22	71	20	72	20
750		752	66	18	91	23	77	21	79	21
800	B1	820	77	19	104	24	93	23	94	23
860		860	84	19	113	25	101	24	103	24
900	B1	924	95	21	129	27	115	25	117	25
960		960	102	21	139	28	123	26	126	26
1000	B1	1026	118	23	157	29	139	27	142	28

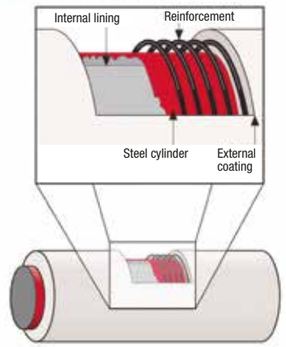
Additional sizes are available up to and including DN 3600.
Wall thickness and masses are for guidance only and are subject to plus/minus tolerances.

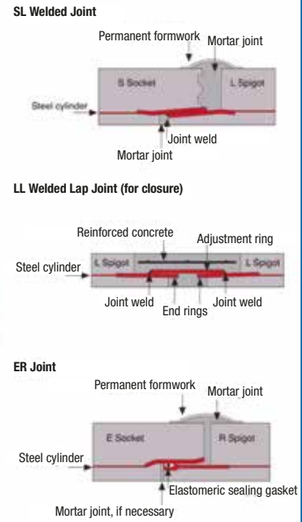
Precast Pressure Pipe

A proven efficiency for over 100 years which has been used for the following applications:

- Sea outfalls
- Power station cooling water pipework
- Sewage pumping mains
- Sewage treatment works
- Industrial plant pipework.

Standard Joint Types





Precast Pressure Pipes

Internal Diameter (mm)	External Diameter (mm)	Effective Length (m)	Approximate Weight (kg)
250	420	6.07	230
300	420	6.07	170
400	520	6.15/6.50	220
500	630	6.15/6.50	290
600	730	6.15/6.50	350
700	840	6.15/6.50	430
800	950	6.15/6.50	530
900	1060	6.15/6.50	630
1000	1164	6.15/6.50	710
1100	1276	6.5	840
1200	1390	6.15	990
1250	1470	6.15	1200
1400	1640	5.03/6.15	1460
1500	1740	5.03/6.15	1560
1600	1880	5.03	1950
1700	1980	5.03	2050
1800	2100	5.03	2340
2000	2320	4.5	2770
2100	2440	4.5	3090
2200	2560	4.7	3430
2350	2730	4	3870
2400	2800	5.03	4170
2500	2910	4	4440
2600	3030	2.91	4850
2800	3250	3.5	5450
3000	3480	2.91	6230
3200	3720	2.91	7210
3500	4080	2.41	8800
4000	4640	2.05	11070

Benefits

Design Service

The requirements for each pressure pipe application are unique. A major advantage of the Bonna pressure pipe system is the inclusion of a free, in-house project design service which provides:

- Design calculations
- Layout drawings
- Installation manuals
- Maintenance manuals
- Optional site supervision.

Durability

- Will withstand full vacuum conditions
- High resistance to impact loading
- Abrasion resistant internal lining
- Low hydraulic coefficient of friction
- High resistance to floatation
- Resistant to external climatic conditions
- Designed to withstand water hammer.

Cost Effectiveness

- Optimal design for each project
- Most ‘as dug’ material can be used as backfill
- Thrust blocks are not required for welded joints
- Cathodic protection is not required
- Pipeline curvature achievable through joint deflection.

Versatility

- Unrivalled diameter range from DN 250 – 4000
- Installation by open cut or jacking
- Underwater installation by float and lower, bottom tow or jacking
- Joints can be welded, flanged, gasketed or custom made
- A wide range of factory produced fittings are available, to virtually any configuration.

Other Products

Civils

Drainage

Geogrids

Street Furniture

Landscaping

Block Paving

Surface Water Drainage

Aggregates

Cement

Bricks

Lintels

Dry Lining

Insulation

Roofing

Rendering

Tool Hire

Retaining Walls

Blocks

Flags, Kerbs and Edgings

Modular Crates