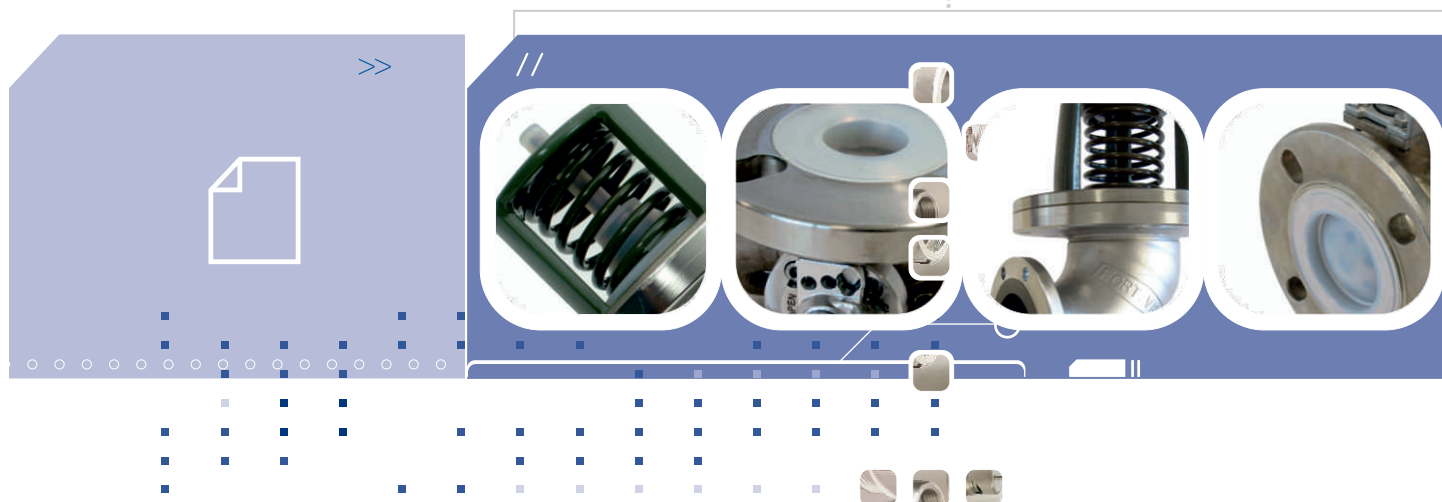




LINED EQUIPMENT //



PAGE

FOOTVALVES //

- » 3" PFA Lined Cleanflow Footvalve with 45° Outlet 1/2
- » 3" 45° Halar® Lined Footvalve 3/4
- » Halar® Lined 4" to 3" Hydraulic Highlift Footvalve 5

BALL VALVES //

- » 25mm PFA Lined Reduced Bore Flanged Airline Ball Valve 7
- » 50mm PFA Lined Full Bore Flanged Ball Valve 8
- » 80mm PFA Lined Full Bore Ball Valve 9/10

BUTTERFLY VALVES //

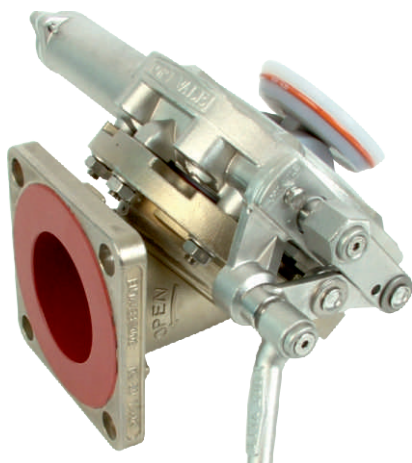
- » 3" PFA Lined Clamped Butterfly Valve 11/12

RELIEF VALVES AND VENTS //

- » 65mmMK3 Lined Flanged Pressure/Vacuum Super Maxi Relief Valve 13/14
- » 80NB PTFE Lined Flanged Vacuum Vent Valve 15



FORT VALE



Valve above is shown in the open position.

Specification

Weight	17.6 Kg *See Note
Design Pressure (MAWP)	4 Bar (58 PSI)
Test Pressure	6 Bar (87 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

Note: Weight varies according to valve specification.

Design approval by Lloyds Register of Shipping.
Approved to BS EN14433.

 Operating Instructions available - OPIN65

3" PFA Lined Cleanflow Footvalve with 45° Outlet - comprising 2-part body assembly: inlet cassette with poppet assembly and operating mechanism; 45° outlet assembly. Inlet flange drilled 8 x 14mm holes on a 178mm PCD, outlet flange drilled 4 x 17mm holes on a 160mm PCD. Supplied assembled. Handle supplied separate.

Inlet cassette manufactured in 316 stainless steel, all contact parts with moulded PFA lining. Fitted with Forty poppet O ring. 45° outlet assembly manufactured in 316 stainless steel, inlet/outlet flanges and inner body tube with sprayed and cured PFA lining.

Options - 30° and 90° PFA lined Cleanflow footvalves. Other lining materials are available on request for the outlet assembly only, eg. Halar®, Säkaphen®.

Range

Part No.	Description
845/P1200	3" 45° PFA lined Cleanflow footvalve
848/P1000	3" 30° PFA lined Cleanflow footvalve
844/P3000	3" 90° PFA lined Cleanflow footvalve

Associated Parts

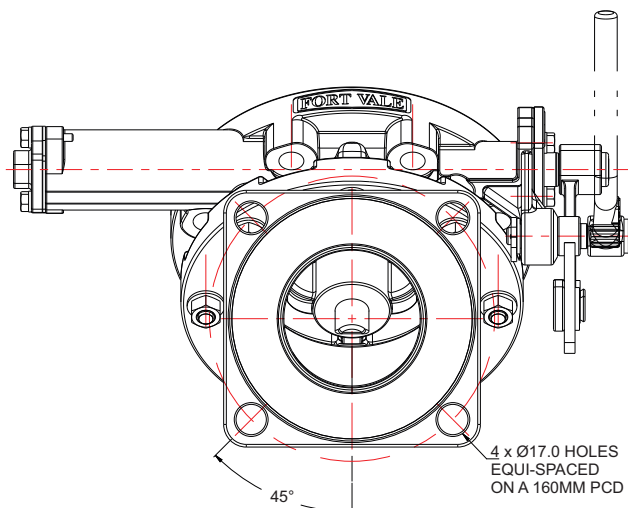
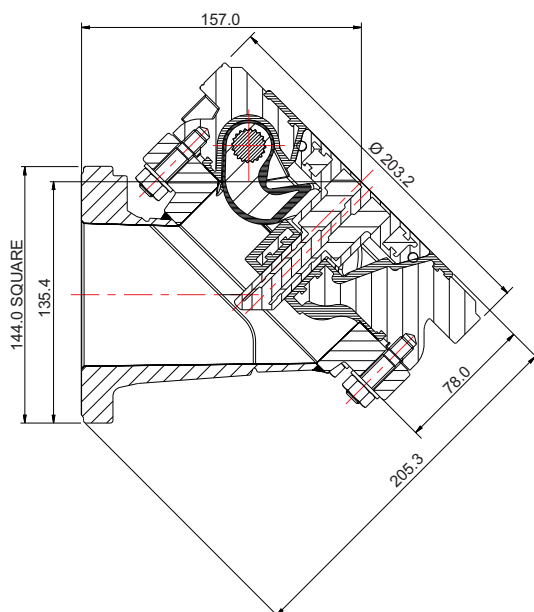
Associated Parts	Part No.
Tank weld-in flange	324/9000L
Inlet stud kit	845/P128
Bolting kit - 4 hole outlet	311/3500

GASKETS: No inlet gasket must be installed. No gasket must be installed between the inlet cassette and the outlet assembly.

If a Fort Vale PFA lined ball valve or PFA lined butterfly valve is installed to the outlet assembly, no intermediate gasket must be installed.

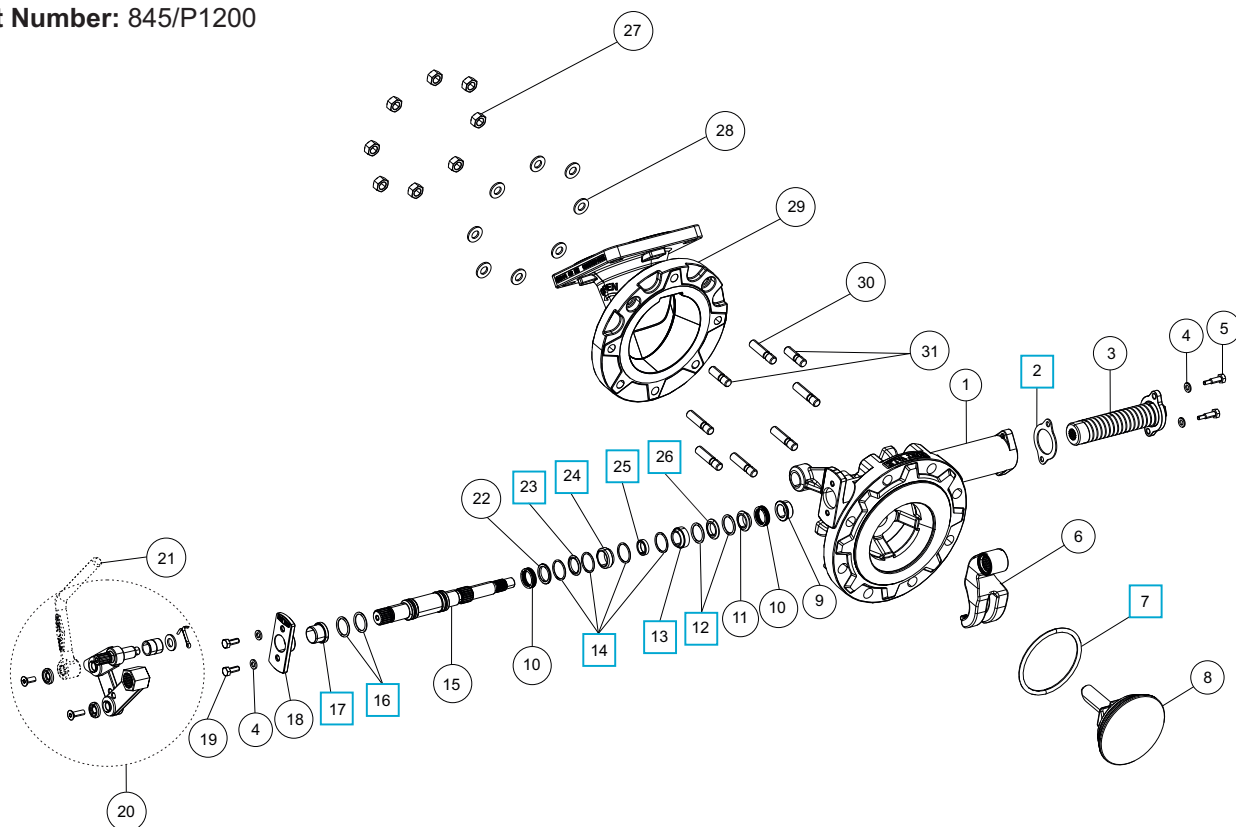
Fitting Details

Part Number: 845/P1200



Parts drawing

Part Number: 845/P1200



Item	Description	Qty	Part number
1	PFA lined body	1	845/P137LM
2	Spring housing gasket	1	5005-846 <input type="checkbox"/>
3	Torsion spring assembly	1	875/0050
4	M6 spring washer	4	5113-008
5	M6 x hex head set screw	2	845/0017
6	PFA lined lifting fork	1	845/P124L
7	Fortyt O ring	1	5005-104H <input type="checkbox"/>
8	PFA lined poppet	1	845/P125LM
9	Spindle bearing	1	845/P127/3
10	Spirawave spring	2	5104-027
11	Spring housing bush	1	845/P127/4
12	Perlast O ring	2	5005-384 <input type="checkbox"/>
13	Spindle bush	1	845/P127/2 <input type="checkbox"/>
14	Perfluoroelastomer O ring	4	ORB020K8 <input type="checkbox"/>
15	Main spindle	1	845/P126
16	Viton O ring	2	5005-336 <input type="checkbox"/>

17	Spindle stuffing seal	1	845/0061 <input type="checkbox"/>
18	Stuffing clamp flange	1	845/0016
19	M6 x 16mm hex head bolt	2	5111-022
20	Handle linkage assembly	1	324/8910
21	Handle (supplied separately)	1	324/8670
22	Wave spring seating washer	1	845/P127/5
23	Handle side O ring chevron	1	845/P127/6 <input type="checkbox"/>
24	Spindle bush	1	845/P127/1 <input type="checkbox"/>
25	Support ring	1	845/P127/8 <input type="checkbox"/>
26	Spring side O ring chevron	1	845/P127/7 <input type="checkbox"/>
27	M10 full nut	8	5112-002
28	M10 form a washer	8	5113-025
29	Lined 45° Cleanflow outlet assembly	1	845/P123/45L
30	M10 x 45mm stud	6	371/0002
31	M10 x 35mm stud	2	371/0001

SEAL KIT

Part number **845/P12SK** contains all parts marked ☐



Halar® Lined 3" 45° Footvalve - inlet flange drilled 8 x 14mm holes equi-spaced on a 178mm PCD; outlet flange drilled 4 x 17mm holes equi-spaced on a 160mm PCD. Valve manufactured in stainless steel and fitted with a Viton main seal. Bayonet cap and spring coated with Halar®, poppet lined with PFA and lifting plunger encased in PTFE bellows.

Options - Other main seal materials are available. Optional remote operating lever. Range of lined discharge valves and vent valves available for use with corrosive cargoes. Pneumatically actuated version.

Specification

Weight	10.5 Kg
Design Pressure (MAWP)	3 Bar (43.5 PSI)
Test Pressure	4 Bar (58.0 PSI)
Design Temperature	-20°C to +100°C (-4°F to +212°F)

Approved to BS EN14433.

Range

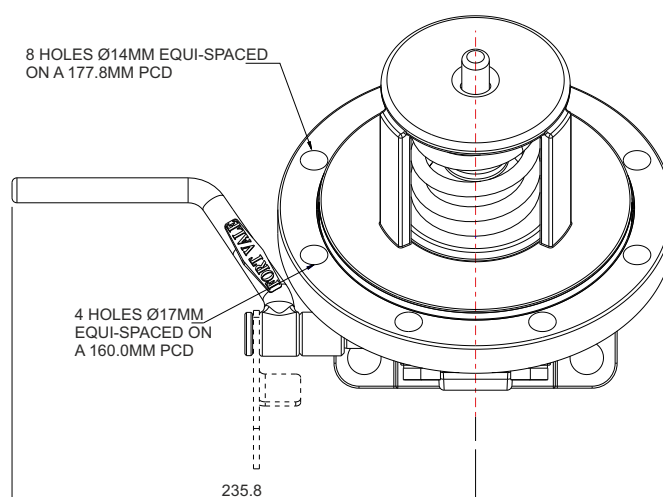
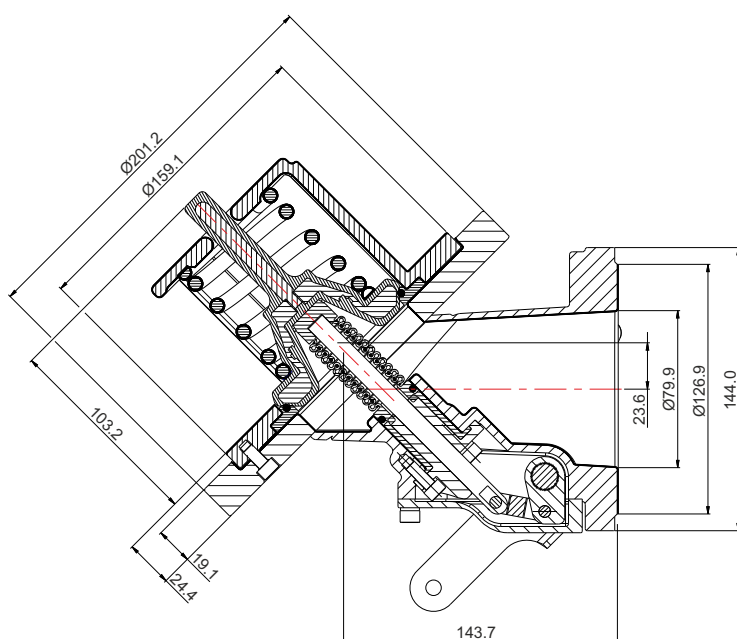
Part No.	Description
82L/1000V	Halar® lined 3" 45° Footvalve, Viton seal
82L/1000P	Halar® lined 3" 45° Footvalve, PTFE seal
82L/1000K	Halar® lined 3" 45° Footvalve, Kalrez seal
82L/1000XPN	Halar® lined 3" 45° Footvalve - pneumatically actuated.

Associated Parts

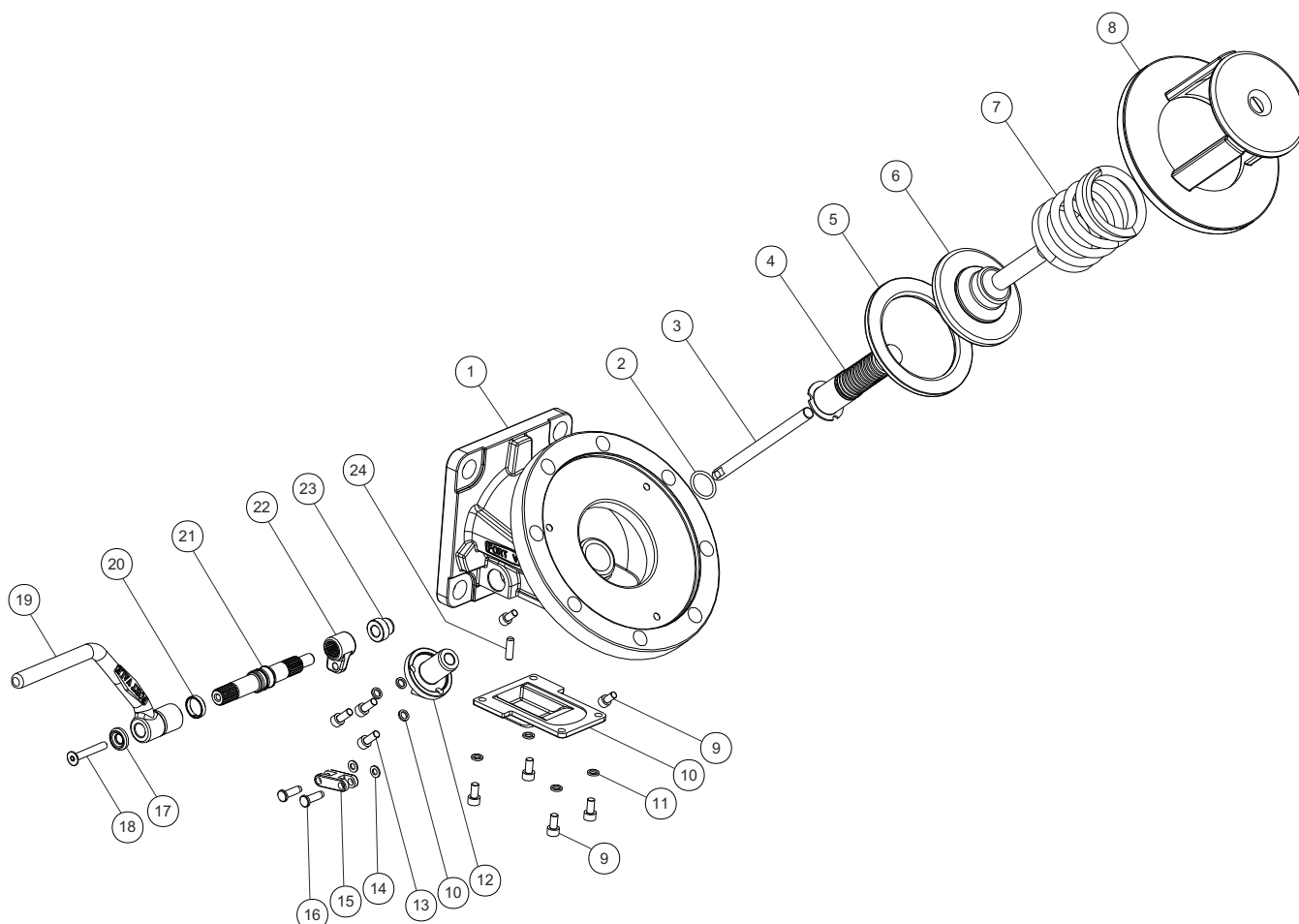
Associated Parts	Part No.
Remote operating lever	324/8927
Retaining collar for remote lever	324/8928
Tank pad suitable for lining	324/9000L
Stud kit	324/2055
Bolting kit – 6 hole outlet	360/0300
Bolting kit – 4 hole outlet	311/3000
Inlet gasket – 8 hole	5005-015
Outlet gasket – 6 hole	5005-169
Outlet gasket	5005-049

Fitting Details

Part Number : 82L/1000X



Parts drawing



SELF ADHESIVE DECAL - PART NO. 326/0300

Text in English, German and French

Item	Description	Part No.
1	Lined body assembly	826/1135
2	Viton O ring *See Note	5005-624
3	Lifting plunger	826/1133
4	Sealing bellows	826/1137
5	Viton poppet seal *See Note	826/1136
6	PFA lined poppet	826/1138P
7	Halar® coated spring	5104-875L
8	Halar® lined bayonet cap	826/1126FL
9	M6 cap screw (7)	5111-034
10	Dust cover	826/1139C
11	Spring washer (7)	5113-044
12	Plunger bearing	826/1127
13	M6 cap screw (3)	5111-108
14	Plain washer (2)	5113-015
15	Link arm	826/1132
16	Pivot pin (2)	826/1141
17	Retaining washer	20370
18	Countersunk bolt	5111-147
19	Handle	330/5018
20	Bearing ring	826/1143
21	Spindle	826/1128
22	Crank	826/1129
23	Bearing bush	826/1131
24	Extractable pin	826/1142

NOTE : Material and part number varies according to valve specification.



Halar Lined 4" to 3" Hydraulic Highlift Footvalve - inlet flange drilled 8 x 14mm holes equi-spaced on a 184mm PCD (4" TTMA). Outlet flange drilled 8 x 11mm holes equi-spaced on a 124mm PCD (3" TTMA). Hydraulic actuator with 1/8" NPT connections. Valve manufactured in 304/316 stainless steel fitted with a Viton main seal. All parts in contact with the cargo lined with Halar and lifting rod encased in PTFE bellows.

Options - other Halar lined products available : 3" 45° Footvalve; 3" Ball valve; 2" Ball valve.

Specification

Weight	15 Kg
Design Pressure (MAWP)	4 Bar (58.0 PSI)
Test Pressure	6 Bar (87.0 PSI)
Design Temperature	-20°C to +100°C (-4°F to +212°F)

Halar Lined Product Range

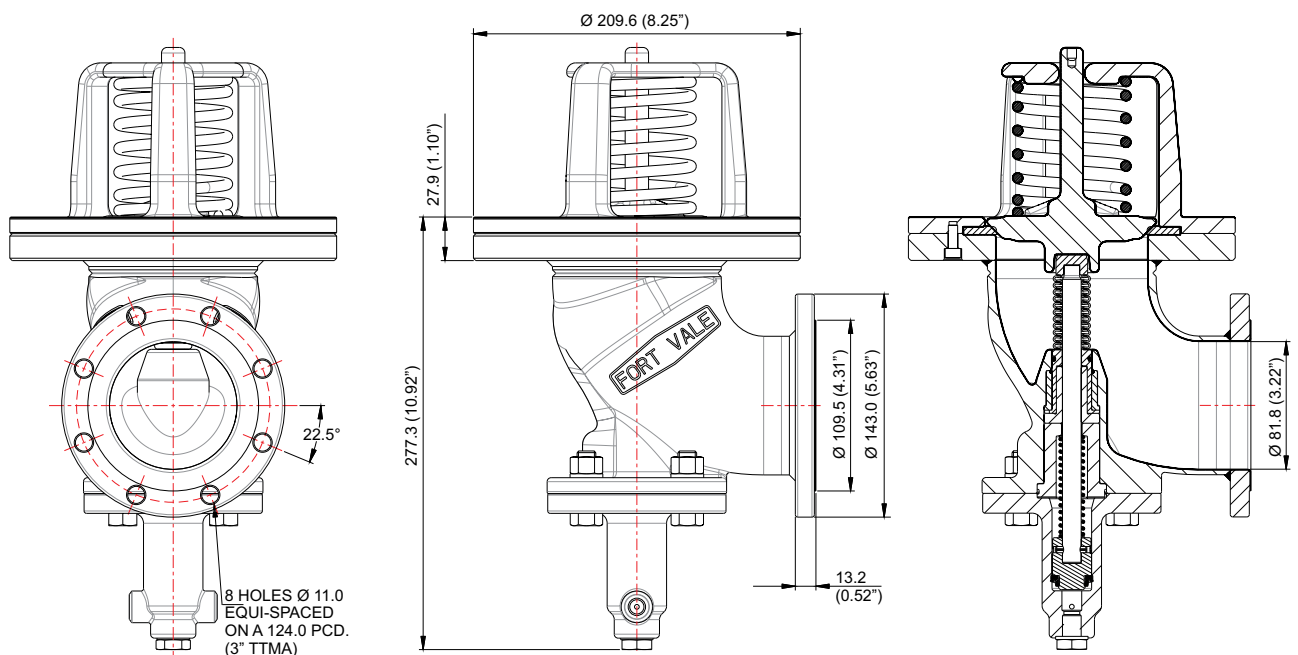
Part No.	Description
82L/1000	Halar lined 3" 45° Footvalve
370/L100	Halar lined 2" Ball valve
360/L050X	Halar lined 3" Ball valve

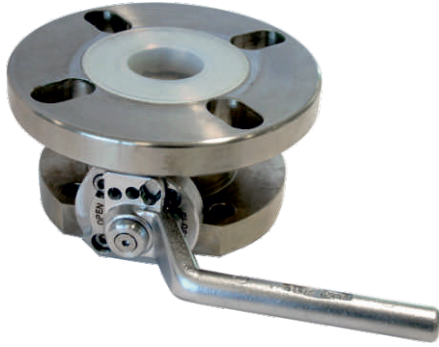
Associated Parts

Part Number	Description
299/0102	4" TTMA Tank pad
5005-441	Inlet gasket - CNAF/Teflon envelope
5005-445	Outlet gasket - CNAF/Teflon envelope

Fitting Details

Part Number : 299/L710GS



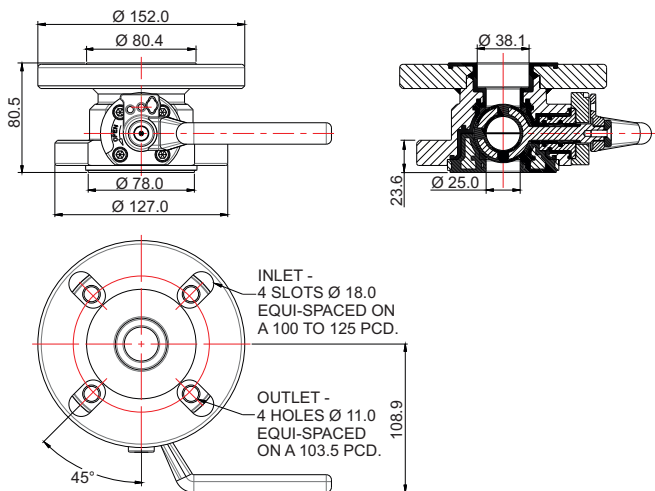


PFA Lined 25mm Reduced Bore Flanged Airline Ball Valve - inlet flange drilled 4 x 18mm slots on a 100mm to 125mm PCD; outlet flange (tank connection) drilled 4 x 11mm holes on a 103.5mm PCD. Valve manufactured in stainless steel with PTFE main seal. All parts in contact with the cargo lined with PFA.

Options - range of PFA lined ball valves (See RANGE)

Fitting Details

Part number : 530/P100



Specification

Weight	5.3 Kg
Design Pressure (MAWP)	6.9 Bar (100 PSI)
Test Pressure	10.3 Bar (150 PSI)
Design Temperature Range	-40°C to +200°C -40°F to +392°F

Valve complies with EN14432:2006 and RID norms.

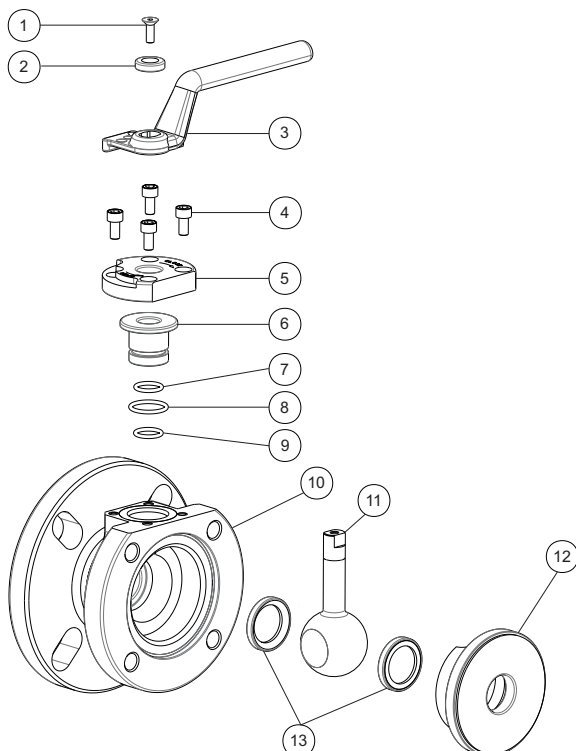
Range

Part No.	Description
530/P100	25mm PFA lined reduced bore ball valve
370/P100	50mm PFA lined full bore ball valve
360/P030X	80mm PFA lined full bore ball valve

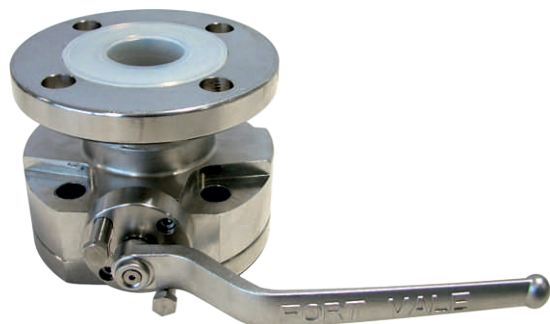
Associated Parts

Part No.	Associated Parts
350/0024	Tank weld-in pad
355/1250	Stud kit
530/8053CM	Blind flange
5005-348	Solid PTFE outlet gasket
311/3510	Bolting kit

Parts drawing



Item	Description	Part No.
1	M5 socket screw	5111-111
2	Retaining washer	20370/5
3	Handle	530/0020/1
4	M6 button screw (4)	5121-013
5	Stuffing clamp	530/1014
6	Seal carrier for lining	530/1013
7	Perfluoroelastomer O ring	5005-586
8	Perfluoroelastomer O ring	5005-384
9	Fortyt O ring	5005-601
10	PFA lined body	530/P110
11	PFA lined ball & stem	530/1010L
12	PFA lined clamp plate	530/1011P
13	PTFE front & rear seal (2)	530/0024

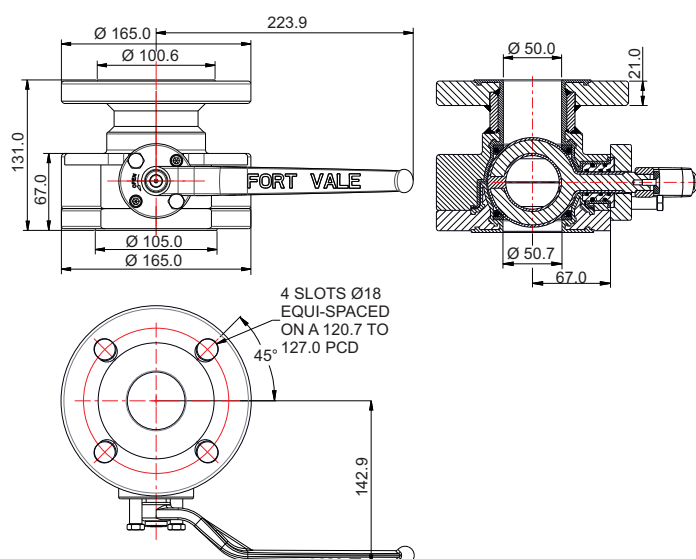


PFA Lined 50mm Full Bore Flanged Ball Valve - inlet flange drilled 4 x 18mm holes on a 126mm PCD; outlet flange drilled 4 x 18mm slots on a 120.7mm to 127mm PCD. Valve manufactured in stainless steel with PTFE main seal. All parts in contact with the cargo lined with PFA.

Options - range of PFA lined ball valves (See RANGE)

Fitting Details

Part number : 370/P100



Specification

Weight	12.15 Kg
Design Pressure (MAWP)	6.9 Bar (100 PSI)
Test Pressure	10.3 Bar (150 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

Valve complies with EN14432 and RID norms.

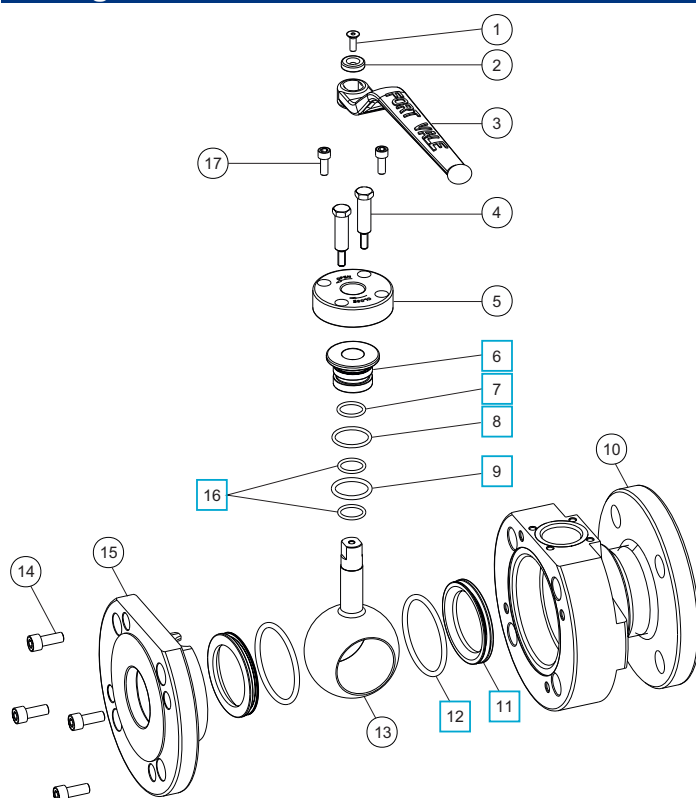
Range

Part No.	Description
530/P100	25mm PFA lined reduced bore ball valve
370/P100	50mm PFA lined full bore ball valve
360/P030X	80mm PFA lined full bore ball valve

Associated Parts

Part No.	Associated Parts
311/3790	Stud kit
311/3590	Bolting kit
370/4239PFA	PFA lined blind flange

Fitting Details



Item	Description	Part No.
1	M5 screw	5111-113
2	Retaining washer	20370/5
3	Handle	370/3306/1
4	Stop pin (2)	370/P107
5	Stuffing plate	370/P114
6	Seal carrier	370/P113 <input type="checkbox"/>
7	Viton O ring	ORB115VL <input type="checkbox"/>
8	Viton O ring	ORB121VL <input type="checkbox"/>
9	Perfluoroelastomer O ring	5005-214PER <input type="checkbox"/>
10	PFA lined body	370/P110
11	PTFE ball seal (2)	370/P115 <input type="checkbox"/>
12	Fortyt O ring (2)	ORM0580400F0 <input type="checkbox"/>
13	PFA lined obturator	370/P101
14	M8 cap screw (4)	5111-010
15	PFA lined clamp plate	370/P111
16	Perfluoroelastomer O ring (2)	5005-370P <input type="checkbox"/>
17	M6 cap screw (2)	5111-015

SEAL KIT

Part number 370/P100SK contains all parts marked ☐



PFA Lined 80mm Full Bore Ball Valve - inlet flange drilled 4 x 18mm holes on a 160mm PCD; outlet flange drilled 4 x 18mm slots equi-spaced on a 146 to 160mm PCD. (3" BSTD to DIN80) Left hand operated with TIR to handle. Valve manufactured in stainless steel with PTFE main seal. All parts in contact with the cargo lined with PFA.

Options - right hand operated version. Range of PFA lined ball valves (See RANGE)

Specification

Weight	12.9 Kg
Design Pressure (MAWP)	6.9 Bar (100 PSI)
Test Pressure	10.34 Bar (150 PSI)
Design Temperature Range	-40°C to 130°C -40°F to 266°F

Valve complies with EN14432:2006 and RID norms.

Range

Part No.	Description
530/P100	25mm PFA lined reduced bore ball valve
370/P100	50mm PFA lined full bore ball valve
360/P030X	80mm PFA lined full bore ball valve

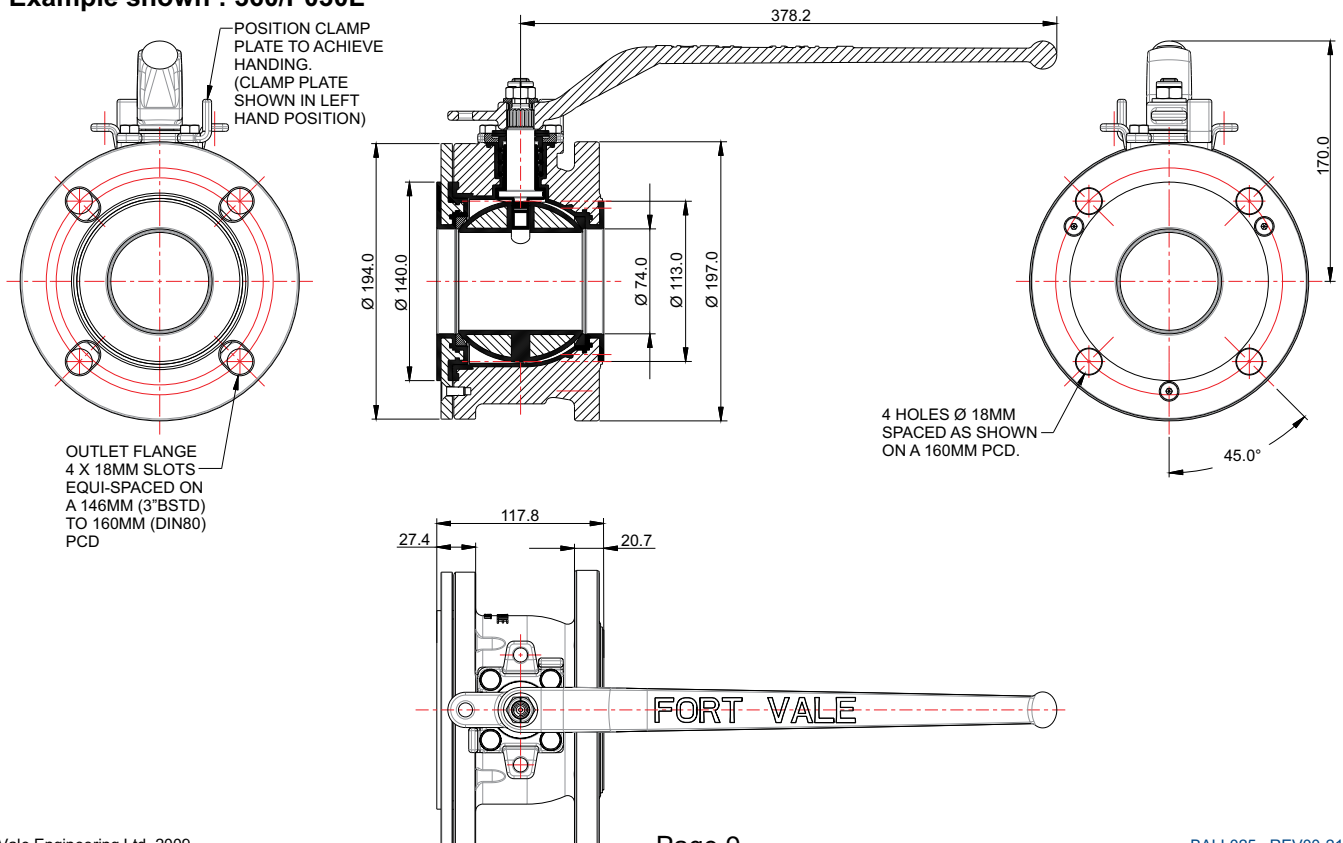
X in part number denotes whether left (**L**) or right (**R**) hand valve.

Associated Parts

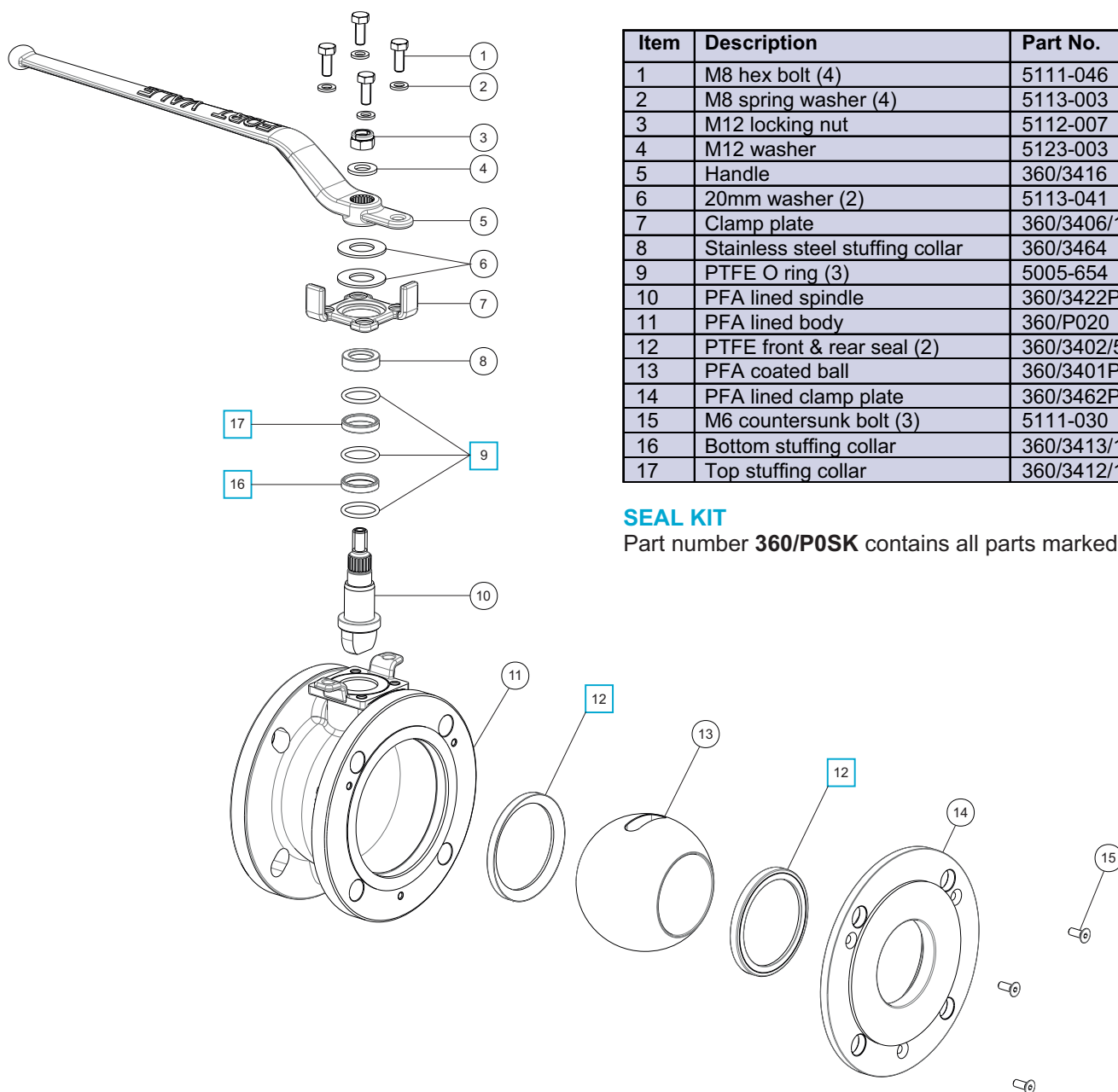
Part No.	Associated Parts
368/0500P	3" BSP PFA lined outlet flange
368/8047L	3" BSP Halar lined eccentric outlet flange
5005-417	Solid PTFE outlet gasket
360/8095P	PFA lined blind flange

Fitting Details

Example shown : 360/P030L



Parts drawing





PFA Lined 3" Clamped Butterfly Valve - left hand operated with TIR to handle and padlock facility. Valve manufactured in stainless steel with PFA body liner and fitted with a PFA lined closure plate and spindle assembly.

Options - PFA lined 2" clamped butterfly valve. Range of lined discharge valves and relief valves available - please contact our sales department for further details.

Specification

Weight	3.69 Kg
Design Pressure (MAWP)	4 Bar (58 PSI)
Test Pressure	6 Bar (87 PSI)
Design Temperature	-40°C to 200°C (-40°F to 392°F)

Approved to BS EN14432

Range

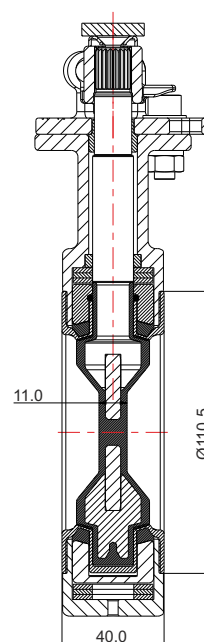
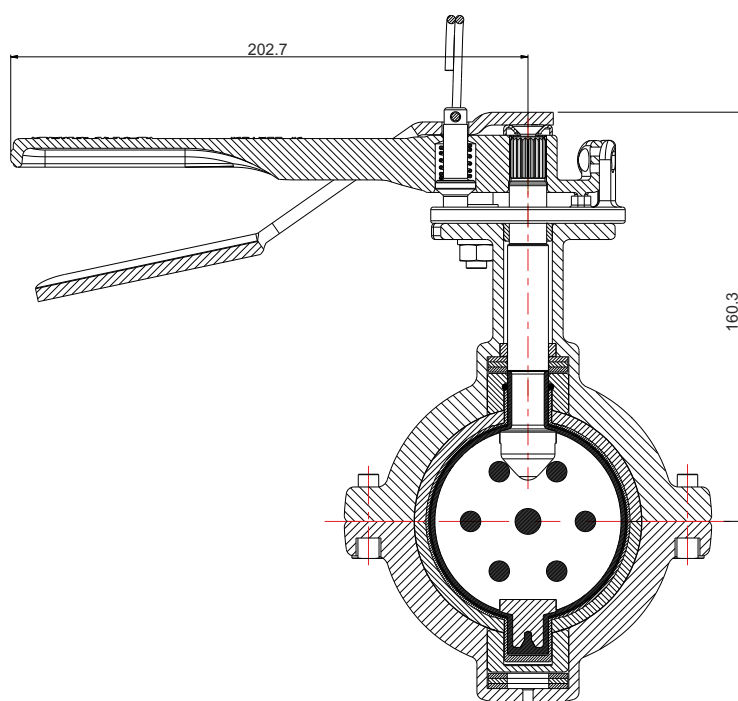
Part No.	Description
258/P700	PFA lined 2" clamped butterfly valve
358/P700	PFA lined 3" clamped butterfly valve

Associated Parts

Part Number	Description
368/8047L	Halar lined 3" BSP outlet flange
10303SS	3" BSP stainless steel cap with chain
10329P/1	PTFE disc seal to suit 3" cap

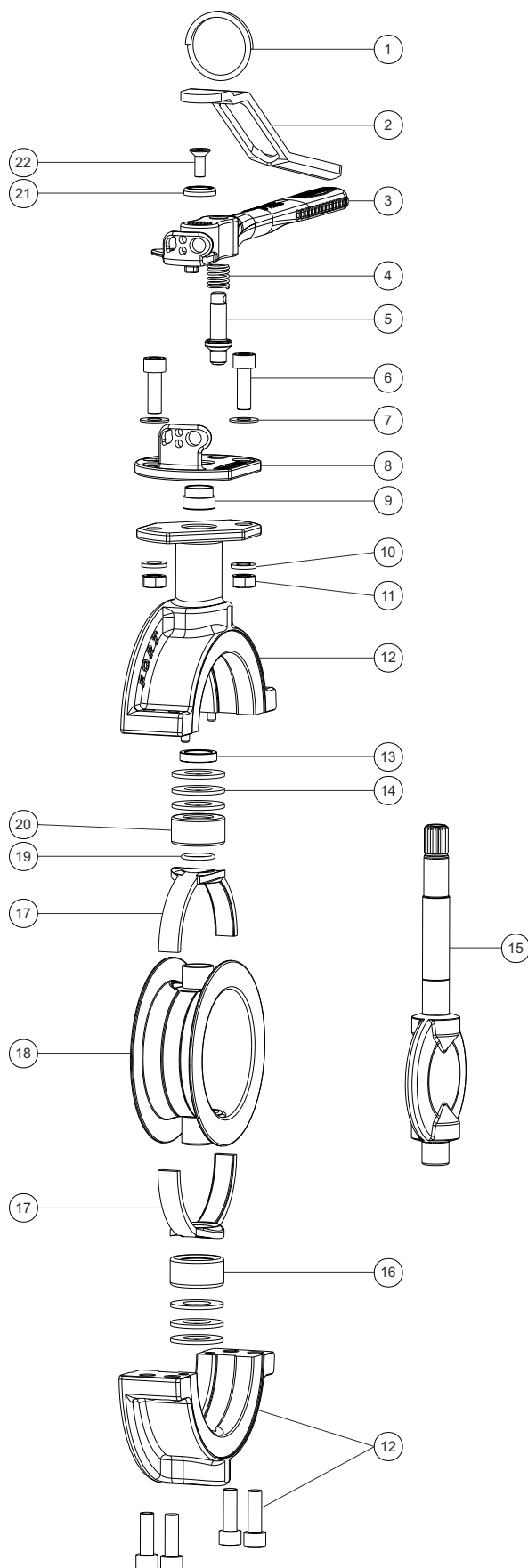
Fitting Details

Part number : 358/P700

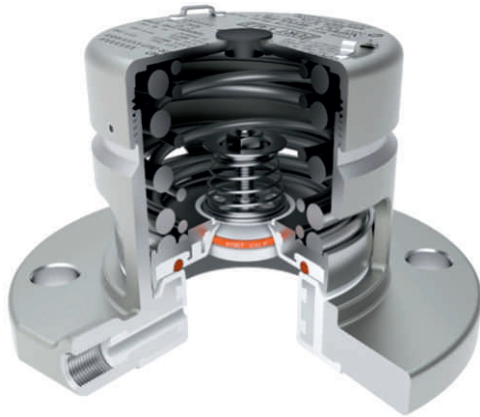


Parts Drawing

FORT VALE®



Item	Description	Part No.
1	Split ring	368/0011
2	Handle lever	368/9837
3	Handle	368/0050
4	Handle spring	368/0012
5	Handle location pin	368/0010
6	M8 cap screw (2)	5111-148
7	M8 plain washer (2)	5113-005
8	Stuffing clamp	368//0040
9	Stuffing clamp bush	368/0301
10	M8 spring washer (2)	5113-003
11	M8 full nut (2)	5112-001
12	Body assembly	358/P253
13	Top guide bush	358/P236
14	Belleville washer (6)	5113-052
15	PFA lined spindle/closure plate	358/P235
16	Bottom thrust bearing	358/P233/1
17	Backing rubber (2)	358/P257
18	PFA body seal	358/P250
19	Perfluoroelastomer o ring	5005-216PER
20	Stem seal housing	358/P233
21	Retaining washer	20370
22	M8 bolt	5111-030



Lined 65mm NB Flanged MK3 Super Maxi Relief Valve-flange drilling to suit customer requirements (See Range) Suitable for a pressure setting of between 3 PSI to 66 PSI (0.21 to 4.55 Bar) and a vacuum setting of between 0.5"Hg to 6.2"Hg (0.02 to 0.21 Bar). Manufactured with PFA lined body, pressure plate and vacuum poppet, Halar® coated pressure spring(s) and high nickel alloy vacuum spring. Fitted with Fortyt seal as standard. May be supplied with or without gauge tapping.

Options - pressure only version. 80mm NB range. Viton seals available.

Specification

Weight	5.8 Kg
Design Temperature Range	Fortyt : -55°C to 150°C Viton : -18°C to 150°C
Minimum Design Metal Temperature :	-29°C (-55°C on request)

Design approval by Lloyds Register of Shipping.

Test certificates supplied as standard. Please see separate data sheets for details on flow rates.

Tests may be witnessed and valves individually stamped by an independent inspectorate by arrangement.

Visual inspection and service (where necessary) is recommended on a 6 monthly basis.

Range

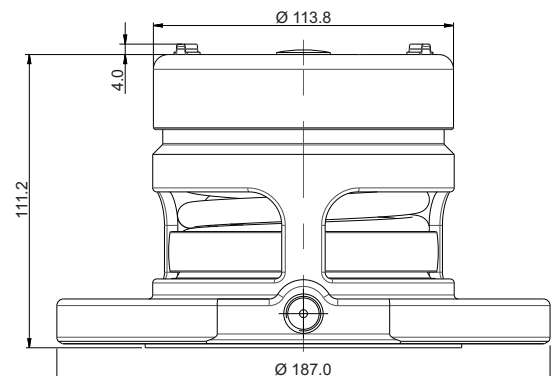
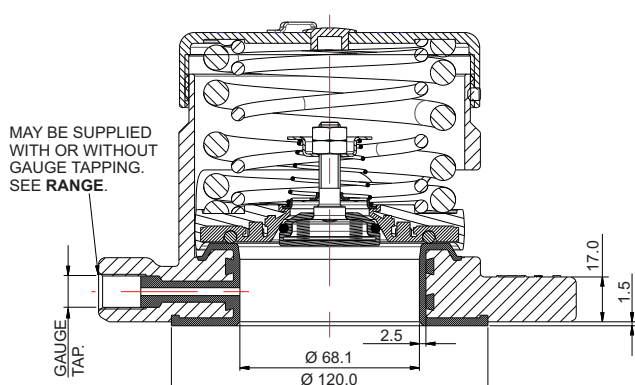
Part No.	Flange Drilling	Gauge tap
0U3/XXXXX6SLB	4 slots on Ø 145 - 152.4	NONE
0U3/XXXXX6SL	4 slots on Ø 145 - 152.4	1/4" BSP
0U3/XXXXX659	2.5" ASA 150	3/8" BSP
0U3/XXXXX65N	3" ASA 150	1/4" NPT
0U3/XXXXX658	3" ASA 150	NONE
0U3/XXXXX657	DIN 80 PN 10	1/4" BSP
0U3/XXXXX655	3" ASA 150	1/4" BSP
0U3/XXXXX654	2.5" ASA 150	1/4" BSP
0U3/XXXXX653	3" TABLE D	1/4" BSP
0U3/XXXXX651	DIN 80 PN 6	1/4" BSP
0U3/XXXXX650	DIN 65 PN 10	1/4" BSP

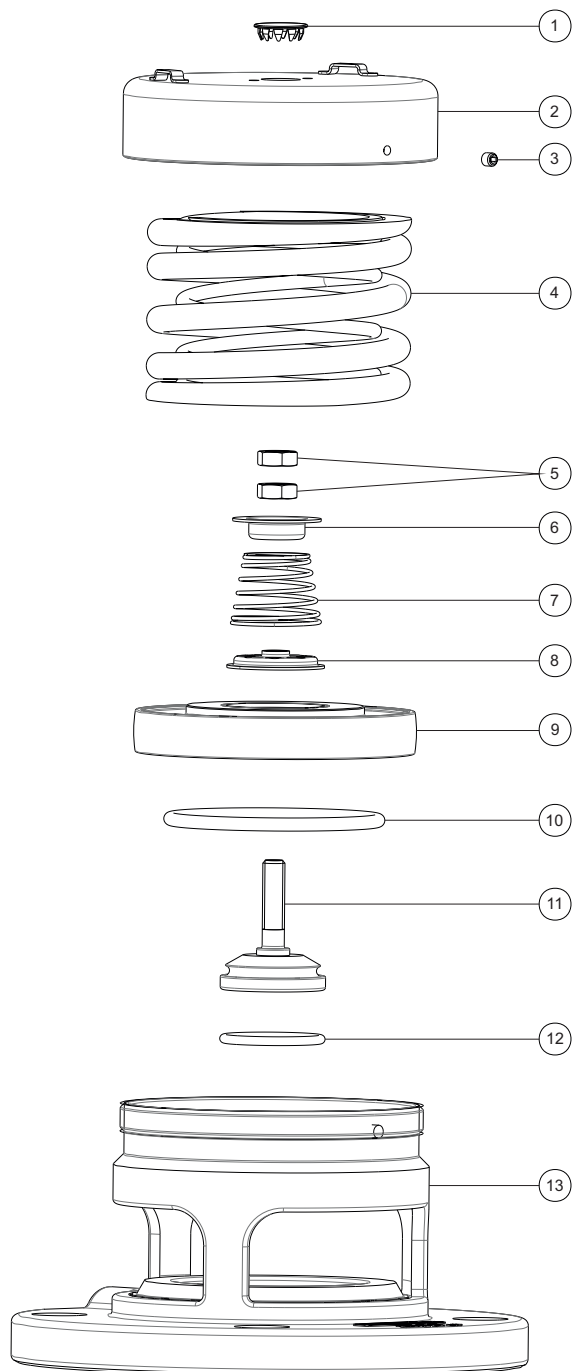
Associated Parts

Part No.	Description
921/07BBSP	0-100 PSI pressure gauge, bottom entry, brass internal parts
921/07RBSP	0-100 PSI pressure gauge, rear entry, brass internal parts
920/07BBSP	0-100 PSI pressure gauge, bottom entry, stainless steel internal parts
176/2900	Removable clamped gauze
862/XXXX	65mm bursting disc
311/3700	Stud kit (4 x M16)
176/3245L	Tank weld in flange suitable for lining

Fitting Details

Part number : 0U3/XXXXX65X



Parts Drawing


Item	Description	Part No.
1	Stainless steel plug	10978
2	Cap (See Note)	1860/0046XX
3	Locking grub screw	5121-001
4	Halar® coated pressure spring pair (See Table 1)	6104-XXXX
5	M8 half nut (2)	5112-004
6	Vacuum spring pad	1860/0005
7	High nickel alloy vacuum spring (See Table 2)	7104-XXXH
8	High nickel alloy spring pad	10986/3H
9	PFA lined pressure plate (See Note)	1860/PX56XX
10	Fortyt pressure O ring	5005-101
11	PFA lined vacuum poppet	10983V/P
12	Fortyt vacuum O ring	5005-108H
13	PFA lined body (See Note)	1860/06XXU

NOTE : Part numbers vary according to valve specification. Please contact Sales for further information.

TABLE 1

Pressure setting	Halar® coated pressure spring(s)
31.8 PSI (2.19 Bar)	6104-252L
44.0 PSI (3.03 Bar)	6104-0090L (Pair)
53.8 PSI (3.71 Bar)	6104-0422L (Pair)
63.8 PSI (4.40 Bar)	6104-0485C (Pair)

TABLE 2

Vacuum setting	High nickel alloy vacuum spring
0.5"Hg (0.02 Bar)	7104-001H
1"Hg (0.03 Bar)	7104-001H
1.5"Hg (0.05 Bar)	7104-002H
3"Hg (0.10 Bar)	7104-006H
6"Hg (0.21 Bar)	7104-012H

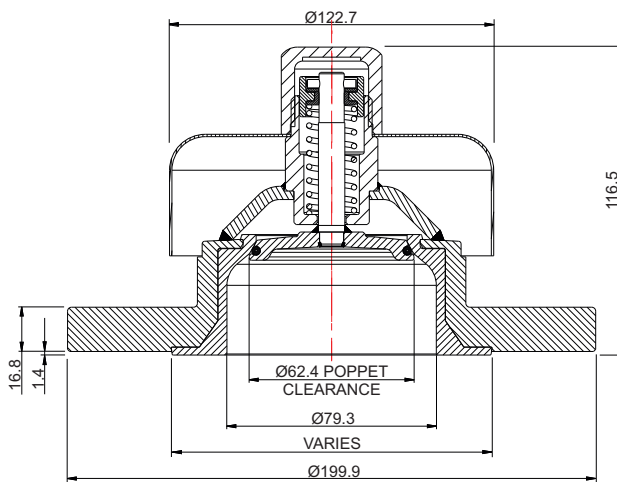


PTFE Lined 80mm NB Flanged Vacuum Vent Valve - flange drilling to suit customer requirements. (See Range) Suitable for a vacuum range of between 0.5"Hg to 6.2"Hg (0.02 Bar to 0.21 Bar) Manufactured in stainless steel fitted with Fortyt seal as standard. Wetted parts of body fitted with a PTFE liner. Poppet manufactured in high nickel alloy. Fitted with weatherproof cowl.

Options - Other seal materials are available. Various flange drilling options. Cowl with gauze. Non-lined 3" BSPF stainless steel version available.

Fitting Details

Example shown : 81BF/X00XXXP



Operating Instructions available - OPIN27

Specification

Weight	4.5 Kg
Design Pressure (MAWP)	4 Bar (58 PSIG)
Test Pressure	6 Bar (87 PSIG)
Design Temperature Range	-20°C to 150°C (-4°F to 302°F)

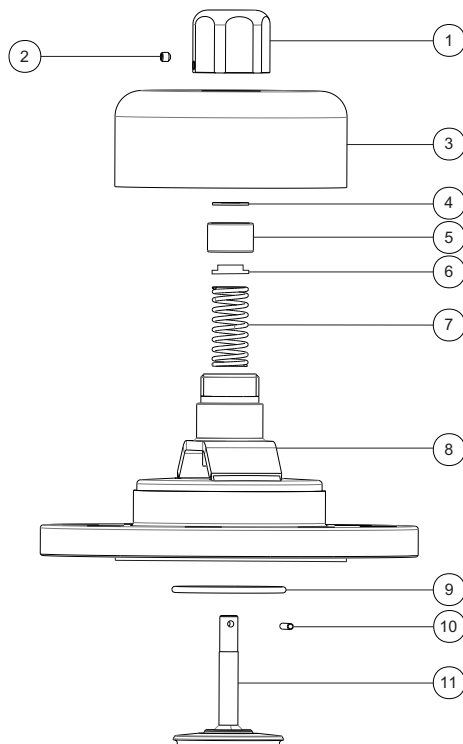
Range

Part No.	Flange Drilling
81BF/X00XX0P	DIN 65 PN10
81BF/X00XX1P	DIN 80 PN6
81BF/X00XX3P	3.0" B.S. TABLE D
81BF/X00XX4P	2.5" ASA 150
81BF/X00XX5P	3.0" ASA 150
81BF/X00XX7P	DIN 80 PN10

Associated Parts

Part No.	Associated Parts
1780/0560GZ	Weatherproof cowl to accept gauze ring
10206/2	Gauze ring to fit weatherproof cowl

Parts drawing



Item	Description	Part No.
1	Top Cap	1780/0580
2	Sockethead set screw	5121-001
3	Weatherproof cowl	1780/0560
4	Plain washer	5123-007
5	Spring locator	1780/0570
6	Continuity bush	1780/0571
7	Vacuum spring (See Note)	5104-XXX
8	Lined flanged body (See Note)	1780/080XX
9	Fortyt main seal	5005-679
	Viton main seal	5005-299
10	Retaining pin	5118-020
11	High nickel alloy poppet	1780/0555H

Note : Part number varies according to specification.



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