



ROAD TANKER  
EQUIPMENT  
CATALOGUE  
//



GENERAL  
PURPOSE  
ROAD TANKER





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**DISCHARGE VALVES //**

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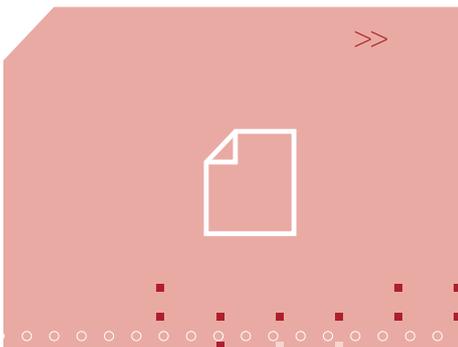
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# MANLID EQUIPMENT

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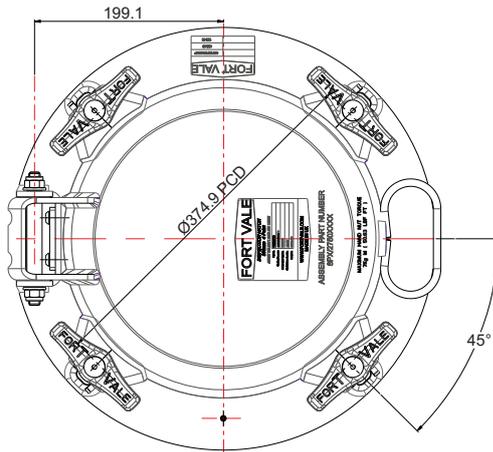
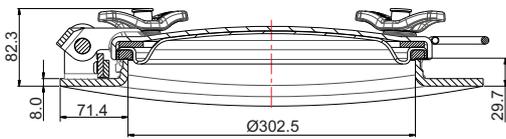


300mm Ultra Low Profile Inspection Hatch Assembly - 4 point fastening double skin cover. 8mm thick pressed neck/compensating ring profiled to suit tank radius range from 750 to 1220mm. Contact parts manufactured in 316 stainless steel. Stainless steel swingbolts with naval brass handnuts. Seal supplied separately.

**Options** - Stainless steel swingbolts with either stainless steel handnuts or low profile stainless steel/brass composite handnuts.

## Fitting Details

Example shown : 8PB/2750XXXP



## Specification

Weight	19.8 Kg *See Note
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)

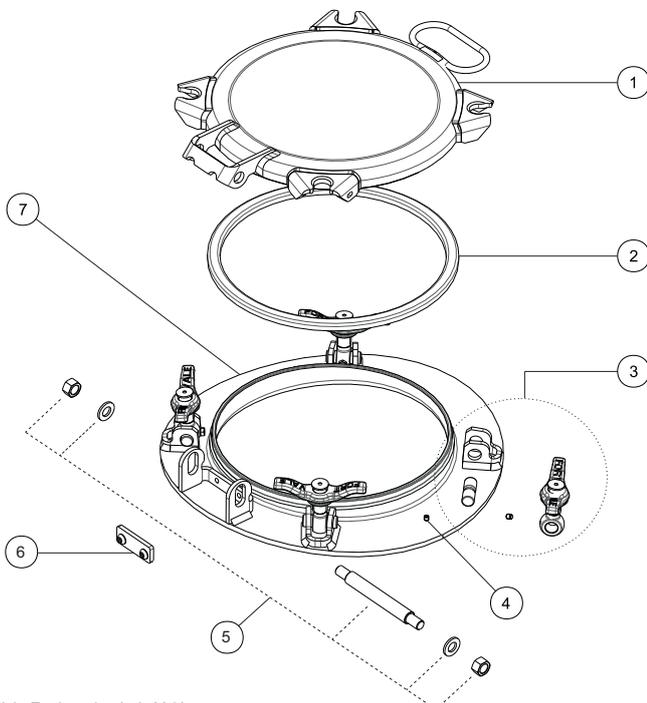
\*Note: Above data varies according to specification Manlid cover 703/0600P approved to BS EN14025

## Range

Part No.	Description
8PB/2750XXXP	Fitted with naval brass handnuts
8PB/2750XXXS	Fitted with stainless steel handnuts

XXX in part number above denotes the radius range:-  
**077** = 750 mm to 800 mm  
**082** = 800 mm to 850 mm  
**087** = 850 mm to 900 mm  
**092** = 900 mm to 950 mm  
**097** = 950 mm to 1005 mm  
**104** = 1005 mm to 1075 mm  
**111** = 1075 mm to 1145 mm  
**118** = 1145 mm to 1220 mm

## Parts drawing



Item	Description	Part No.
1	Cover	703/0600P
2	Seal	See DS/MAN028
3	Swingbolt assembly (4)	496/X260
4	Grubscrew	5111-009
5	Hinge pin assembly	600/1060
6	Hinge kit - 135° fixed	135B
7	Neck/compensating ring *See Note	63P/2750XXXP

\*Note: Part number varies according to specification

X in swingbolt part number denotes handnut material :  
**1** = naval brass  
**5** = stainless steel  
**E** = low profile stainless steel/brass composite

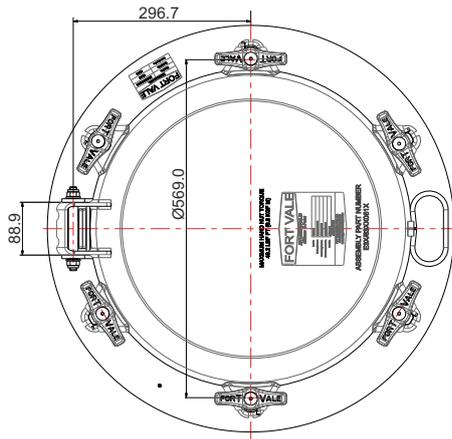
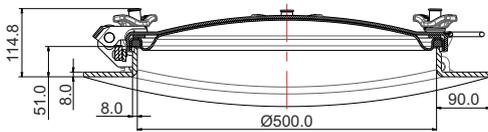


500mm Pendle Manlid Assembly - 6 point double skin manlid cover, hinged to open to 135°. Deep pressed neck/compensating ring, 51mm in height, profiled to suit a tank radius of between 850mm and 1220mm. To suit a MAWP of 3 Bar. Contact parts manufactured in 316 stainless steel with stainless steel swingbolt assemblies. Seal supplied separately.

**Options** - alternative necking heights. 120° opening. A variety of swingbolts and handnuts are available. Assembly may be fitted with a safebolt. Full range of 1 Bar, 3 Bar and 4 Bar assemblies. Other materials available.

## Fitting Details

Example shown : E3X/63XX051X



## Specification

Weight	42 Kg *See Note
Design Pressure (MAWP)	3 Bar (43.5 PSI)
Test Pressure	4.5 Bar (65.25 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

Approved to BS EN14025

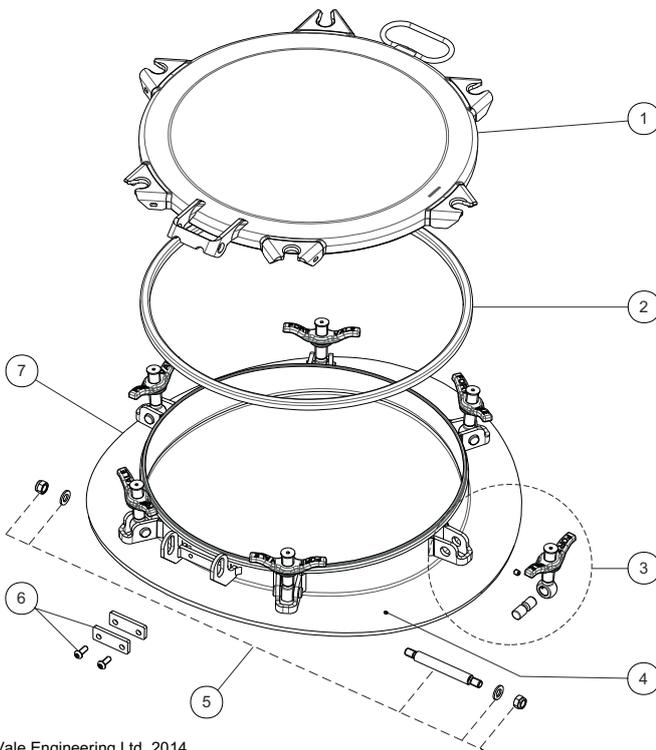
Note : Weight varies according to specification.

## Range

Part No.	Neckring Type
E3X/65XX025X	28mm ultra low profile pressed neckring
E3X/63XX051X	51mm deep pressed neckring
E3X/64XX110X	110mm extended pressed neckring

"XX" in above part number indicates the tank radius. Assemblies may be profiled to a tank radius of between 850mm and 1220mm. Please specify at time of order.

## Parts drawing



Item	Description	Part No.
1	Manlid	73E/0500
2	Manlid seal (sold separately)	5005-50XXX
3	Swingbolt assembly (6) *See Note A	496/XXXX
4	Grubscrew	5111-009
5	Hinge pin assembly	600/1060
6	135° Fixed Hinge kit *See Note B	135B
7	Neckring *See Note B	6EP/6351XXXP

**Note A** : The swingbolt assembly part number varies according to the swingbolt length and the handnut material. 2 x long bolt assemblies and 4 x short bolt assemblies will be required.

Standard handnuts :  
 1 = naval brass  
 5 = stainless steel  
 E = stainless steel with naval brass insert  
 Other materials are available - please contact Fort Vale.

**Note B** : Part number varies according to specification.

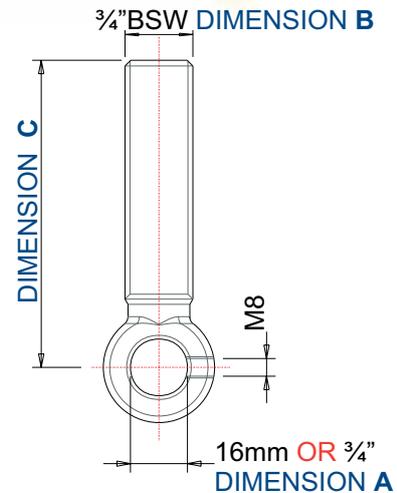
## Swingbolt Assemblies



Eyebolt with 16mm or  $\frac{3}{4}$ " eye (Dimension A) x  $\frac{3}{4}$ " BSW (Dimension B) x length from centre of eye to end of bolt (Dimension C). Manufactured in Stainless Steel. Fitted with M8 grubscrew. Supplied with swingbolt hinge pin and captivated handnut (see below for options)

### Standard handnuts :

- low profile stainless steel
- low profile naval brass with stainless steel thrust washer
- stainless steel "Anti-Galling" handnut (brass thread)



### 16mm eye Swingbolt Assemblies

## Part Number : 496/XXXX

Eyebolt Length (mm/") Dimension "C"	Swingbolt Assy. St.St. handnut	Swingbolt Assy. N. Brass handnut	Swingbolt Assy. Anti-Galling handnut
66mm (2.60")	496/5260	496/1260	496/C260
87mm (3.42")	496/5342	496/1342	496/C342
95mm (3.75")	496/5375	496/1375	496/C375

### $\frac{3}{4}$ " eye Swingbolt Assemblies

## Part Number : 495/XXXX

Eyebolt Length (mm/") Dimension "C"	Swingbolt Assy St. St. handnut	Swingbolt Assy N. Brass handnut
66mm (2.60")	495/1005	495/1081
87mm (3.42")	495/1015	495/1060
95mm (3.75")	495/1059	495/1055

### Hinge Pins

Description	Part Number
16mm Ø eyebolt pivot pin	10913SS
$\frac{3}{4}$ " Ø eyebolt pivot pin	10911SS
Manlid/neck hinge pin assembly	600/1060
16mm Ø locking manway hinge pin	600/1060/3







**3/4" BSW Safebolt Assembly** - an important safety feature suitable for use on all standard manlid assemblies.

Use of a safebolt assembly enables the controlled release of any residual tank pressure by breaking the seal between the lid and neck whilst retaining the manlid cover, thus eliminating any possibility of operator injury.

**When operating a manlid assembly fitted with a safebolt, it is important to secure the safebolt first when closing the manlid and release the safebolt last when opening the lid.**

Simple to operate and may easily be retro-fit.

**Fitting Details**

**SAFEBOLT WITH RETAINING COLLAR**

**PART NO : 496/XXXXXX**

(Part number dependent upon eyebolt length & handnut material)

**Part number 496/4XXX illustrated below**

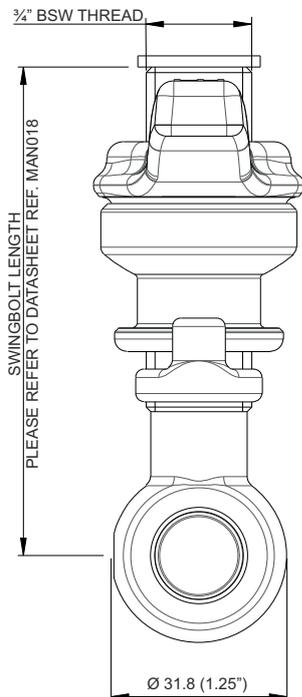
**i** See data sheet MAN024 for instructions on how to operate a safebolt. For full installation and operating instructions for manlid assemblies, see OPIN13.

**Specification**

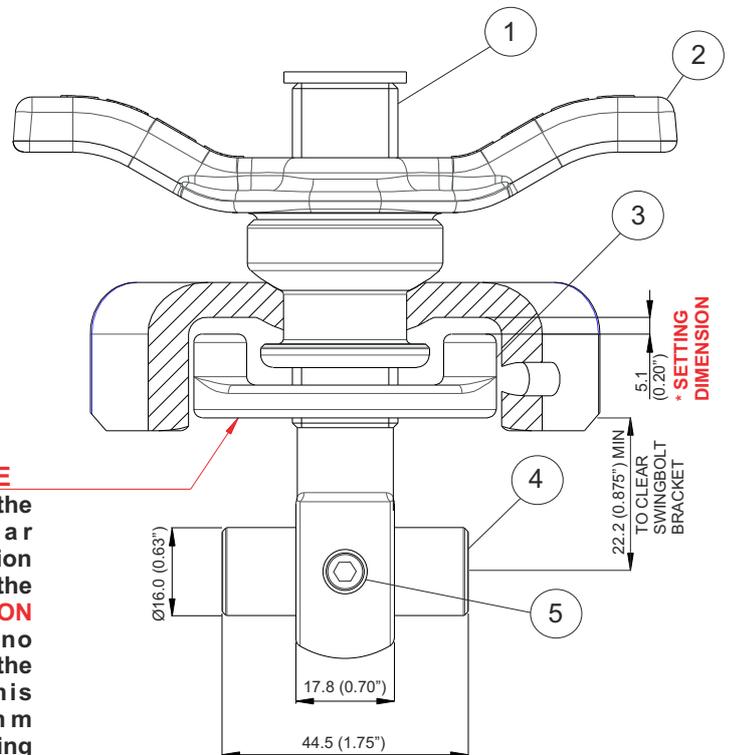
3/4" BSW eyebolt with 16mm eye, pivot pin, retaining collar and captivated safety handnut. Manufactured in stainless steel. (Fits to existing bracketry)

For the full range of swingbolt lengths, please refer to Swingbolt Assembly Components data sheet, MAN018.

**Options** - stainless steel low profile handnut (pictured), stainless steel low profile handnut with brass thread insert, extended stainless steel handnut with brass thread insert.



**IMPORTANT NOTE**  
Customer to weld the retaining collar 701/0050 in position on the assembly to the **\*SETTING DIMENSION** indicated, with no compression on the manlid seal. This allows for 5mm adjustment for sealing purposes.



Item	Description	Part No
1	3/4" eyebolt with 16mm eye *See Note	540/0XXX
2	Safebolt handnut *See Note	490/0XXX
3	Retaining collar	701/0050
4	Pivot pin	10913SS
5	M8 grub screw	5111-002

**Note** : Part number varies according to specification.

## Operating Details

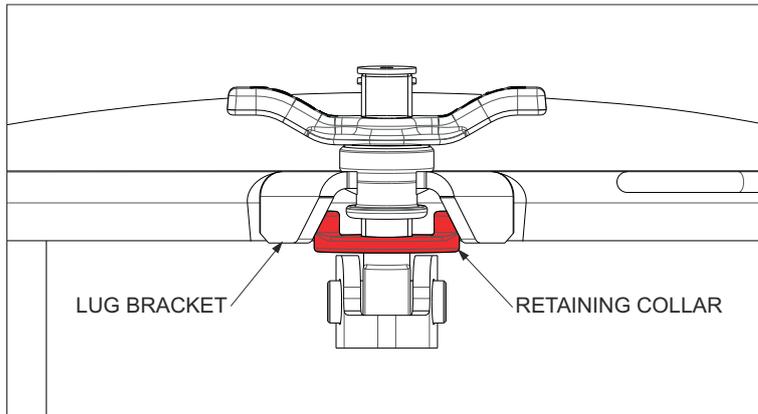


**IMPORTANT NOTE :** All pressure must be relieved from the tank prior to loosening the swingbolt assemblies. Failure to relieve residual tank pressure may cause the manway cover to blow open which may result in serious personal injury or death.

Proper use of a safebolt assembly enables the controlled release of any residual tank pressure. When operating a manlid assembly fitted with a safebolt, it is important to secure the safebolt first when closing the manlid and release the safebolt last when opening the manlid.

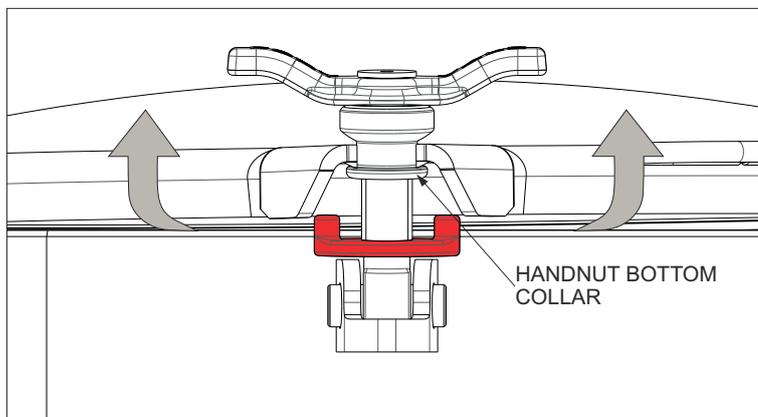
### SAFEbolt WITH RETAINING COLLAR, PART NO. 496/XXXXXX

#### CLOSED POSITION



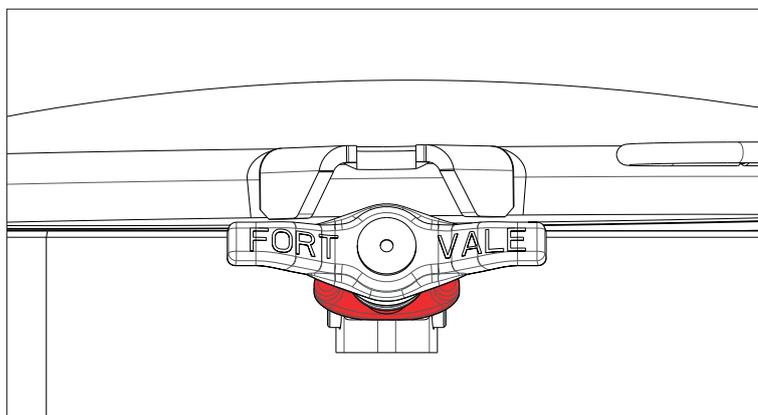
In this position, the safebolt retains the manlid closed, as does a standard swingbolt. In the event of the handnut working loose, the retaining collar (shown in red) will prevent the swingbolt from pivoting away from the lug bracket, thus preventing the manlid cover from opening suddenly due to a build-up of pressure inside the tank.

#### RETAINED POSITION



When intentionally unscrewed, the bottom collar on the handnut forces the lid to open slightly, even if the gasket is sticking to the neckring. This allows any residual pressure inside the tank to vent, making it safe for the operator to open the lid.

#### OPEN POSITION



Only when the safebolt has been fully unscrewed will the retaining collar be clear of the manlid lug bracket, allowing the bolt to pivot and the manlid to open fully.

**NOTE :** The above instructions are intended only as a guideline. For more detailed information, please refer to our Manway Operating Instructions, reference OPIN13. Please contact [sales@fortvale.com](mailto:sales@fortvale.com).



Fort Vale offer an extensive selection of manlid seals to suit all applications and a range of temperatures.

Standard seal section dimensions are approximately 16mm x 10mm. Alternative dimensions are available as well as special seals to suit specific manways.

Seals may be fitted into the manlid cover if requested at the time of order. It is the responsibility of the client to verify that the seal material is compatible with the cargo.

A comprehensive range of genuine Fort Vale spare seals is available from all Fort Vale group companies as well as from our worldwide network of authorised distributors and service centres.

### Rubber Compounds

Seals moulded from rubber compounds are suitable for many duties. Advantages include :

- Easily cleaned
- Good resilience qualities
- Excellent sealing capabilities
- Economical to replace regularly

Please be aware that many of these compounds are suitable only for specific types of cargo. The temperature range of each type of rubber must be observed. Please refer to the table overleaf for a general guide to product suitability. For more specific advice, please contact our Sales team.

### Composite Seals

Composite seals have been developed for general purpose tanks where the products carried can vary and therefore, where a multi-purpose seal is required.

**Braided - (NON-GAS TIGHT)** PTFE impregnated fibre tightly braided around a silicone core and jointed into a solid ring. Caution should be taken when fitting rigid seals. Fitting this seal is at the discretion of the tank builder. See note on reverse for duty.

**\*NB (see over page)** This material is lubricant free but does contain a small percentage of residual wetting agents essential to the PTFE dispersion with which this packing is impregnated. It should be noted that small amounts of these wetting agents may leach during application.

**“Super Tanktyt”** - a virgin PTFE sheath bonded to three sides of a nitrile rubber core offering excellent sealing capabilities and cleanliness together with suitability for a wide variety of cargoes. It remains gas tight at 4 Bar.

Advantages include:

- Easily cleaned
- Excellent resilience qualities
- Excellent sealing capabilities
- Does not become porous
- Suitable for a wide variety of cargoes and a broad temperature range

Overall, the Super Tanktyt is the ideal sealing solution for the chemical industry. Its rubber core gives flexibility to ensure a gastight seal and its PTFE envelope gives optimum protection in hazardous cargo applications. (Super Tanktyt is a Fort Vale trade name.)

### Seal Gas-Tightness - Important Note:

Following fabrication of the neckring to the tank shell, Fort Vale recommends a maximum tolerance of 4mm for roundness and 2mm for flatness. Fort Vale can accept no responsibility for weld distortion. Distortion in excess of these values may lead to problems in operation and/or sealing efficiency. Seal gas-tightness varies according to seal material and can depend upon the number of bolt fixings. For specific advice, please contact Fort Vale: +44 (0)1282 687120.

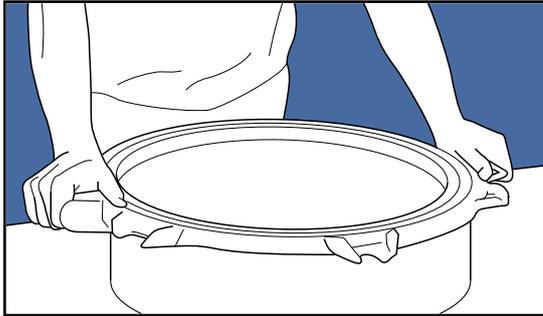
The table below is a guide to the standard range of Fort Vale manlid seals. We also offer a wide variety of different sizes and materials - please contact our sales department if the seal you require is not listed below. **The seal section is noted below the part number - all dimensions quoted are millimetres.**

Fort Vale rubber manlid seals have a unique colour-coding system to identify the seal material. The appropriate colour is marked on the outer edge of the seal as indicated in the table below.

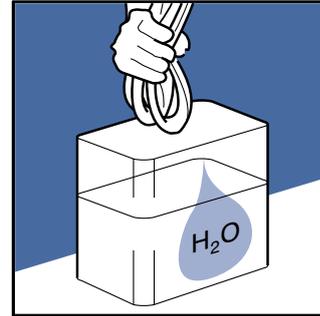
	Duty (example only)	Pendle Manlid Seal					Euro Lid Seal			Colour Code
		170mm (7")	300mm (12")	460mm (18")	500mm (20")	600mm (24")	300mm (12")	460mm (18")	500mm (20")	
<b>Butyl</b>	Non-corrosive cargo -40°C to 120°C (-40°F to 248°F)	5005-17B 16 x 10	5005-30B 16 x 10	11536B 14.5 x 11.8	5005-50B 15.24 x 11.8	5005-60B 16 x 10	5005-33B 16 x 16	5005-47B 16 x 16	5005-53B 16 x 16	Blue
<b>EPDM</b>	Some corrosive cargoes. Not suitable for petroleum based liquids. -50°C to 150°C (-58°F to 302°F)	5005-17EPD 16 x 10	5005-30EPD 16 x 10	11536EPD 14.5 x 11.8	5005-50EPD 15.24 x 11.8	5005-60EPD 16 x 10	5005-33EPD 16 x 16	5005-47EPD 16 x 16	5005-53EPD 16 x 16	Red/Blue
<b>Graphite Impregnated Fibre (non-Asbestos)</b>	Non-corrosive high temperature products e.g. tar, bitumen etc. -50°C to 250°C (-58°C to 482°F)	5005-17GA 14.2 x 14.2	5005-30GA 14.2 x 14.2	11536GA 14.2 x 14.2	5005-50GA 14.2 x 14.2	5005-60GA 14.2 x 14.2	5005-33GA 16 x 16	5005-47GA 16 x 16	5005-53GA 16 x 16	
<b>CSM</b>	Moderately corrosive cargoes. Not suitable for petroleum based liquids. -40°C to 85°C (-40°F to 185°F)	5005-17CSM 16 x 10	5005-30CSM 16 x 10	11536CSM 14.5 x 11.8	5005-50CSM 15.24 x 11.8	5005-60CSM 16 x 10	5005-33CSM 16 x 16	5005-47CSM 16 x 16	5005-53CSM 16 x 16	White
<b>Natural White Rubber</b>	Food products -50°C to 80°C (-58°F to 176°F)	5005-17SWR 16 x 10	5005-30SWR 16 x 10	11536SWR 14.5 x 11.8	5005-50SWR 15.24 x 11.8	5005-60SWR 16 x 10	5005-33SWR 16 x 16	5005-47SWR 16 x 16	5005-53SWR 16 x 16	
<b>Neoprene</b>	Non-corrosive cargo -30°C to 100°C (-22°F to 212°F)	5005-17NR 16 x 10	5005-30NR 16 x 10	11536NR 14.5 x 11.8	5005-50NR 15.24 x 11.8	5005-60NR 16 x 10	5005-33NR 16 x 16	5005-47NR 16 x 16	5005-53NR 16 x 16	Green
<b>Nitrile (Black)</b>	Aliphatic hydrocarbons -25°C to 100°C (-13°F to 212°F)	5005-17N 16 x 10	5005-30N 16 x 10	11536N 14.5 x 11.8	5005-50N 15.24 x 11.8	5005-60N 16 x 10	5005-33N 16 x 16	5005-47N 16 x 16	5005-53N 16 x 16	Red
<b>PTFE Impregnated Braided Fibre (silicone core)</b>	Most corrosive cargoes – commonly used on general purpose tanks. -30°C to 120°C (-22°F to 248°F) <i>See note on reverse</i>	5005-17P/A 16 x 10	5005-30P/A 14 x 14	11536P/A 14 x 14	5005-50P/A 14 x 14		5005-33P/A 16 x 16	5005-47P/A 16 x 16	5005-53P/A 16 x 16	
<b>Orange Silicone</b>	High temperature non-corrosive cargoes. -50°C to 200°C (-58°F to 392°F)	5005-17S 16 x 10	5005-30S 16 x 10	11536S 14.5 x 11.8	5005-50S 15.24 x 11.8	5005-60S 16 x 10	5005-33S 16 x 16	5005-47S 16 x 16	5005-53S 16 x 16	
<b>White Silicone</b>	Food products. FDA approved. -50°C to 200°C (-58°F to 392°F)	5005-17WS 16 x 10	5005-30WS 16 x 10	11536WS 14.5 x 11.8	5005-50WS 15.24 x 11.8	5005-60WS 16 x 10	5005-33WS 16 x 16	5005-47WS 16 x 16	5005-53WS 16 x 16	Red
<b>Super Tanktyt Nitrile Core</b>	Corrosive cargoes – resistance similar to that of PTFE. -25°C to 140°C (-13°F to 284°F)		5005-890 15 x 10	5005-870 14.5 x 10	5005-860 14.5 x 12	5005-850 16 x 10			5005-871 16 x 16	
<b>Super Tanktyt EPDM Core</b>	Corrosive cargoes – resistance similar to that of PTFE. -50°C to 150°C (-58°F to 302°F)	5005-830EP 15.5 x 10	5005-890EP 15 x 10	5005-870EP 14.5 x 10	5005-860EP 14.5 x 12	5005-850EP 15 x 10				
<b>Viton A</b>	Moderately corrosive cargoes. -15°C to 200°C (5°F to 392°F)	5005-17VR 16 x 10	5005-30VR 16 x 10	11536VR 14.5 x 11.8	5005-50VR 15.24 x 11.8	5005-60VR 16 x 10	5005-33VR 16 x 16	5005-47VR 16 x 16	5005-53VR 16 x 16	Yellow

**Super Tanktyt** is a Fort Vale trade name.

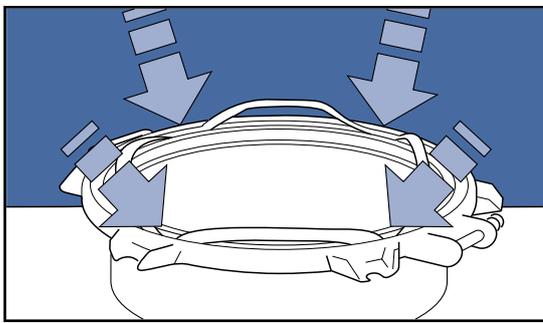
# Fitting a Rubber Seal



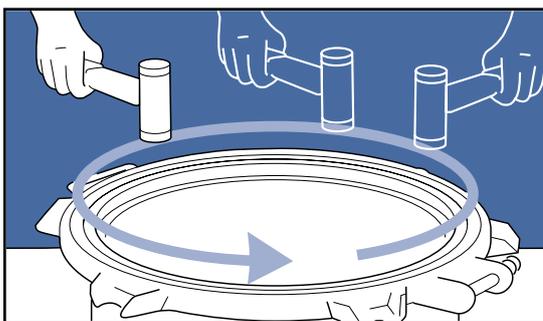
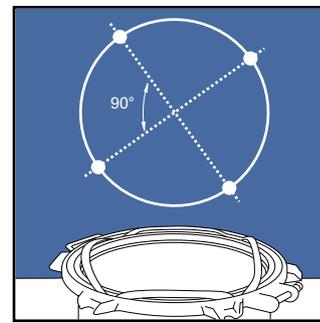
Turn the manlid upside down on its neckring



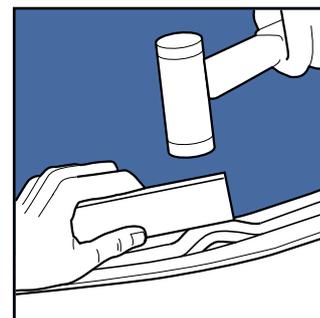
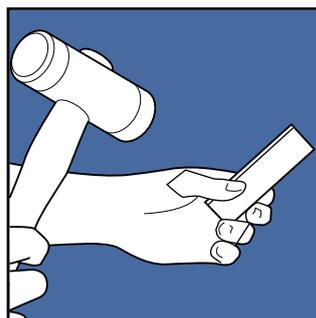
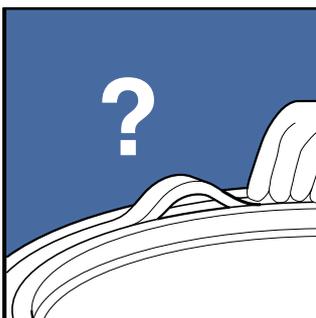
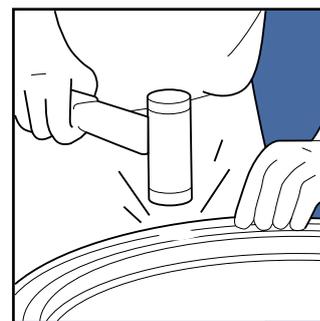
Take the rubber seal and immerse it in cold water



Push the seal into the manlid groove at four points, 90° to each other

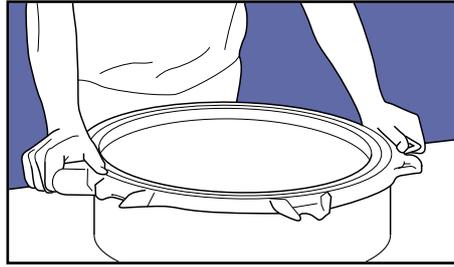


Knock the seal firmly into place with a plastic or wooden mallet, all round the manlid

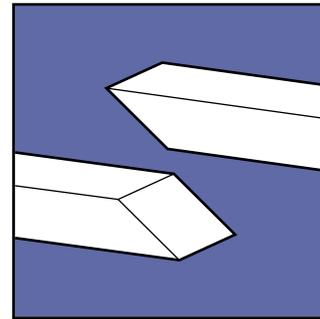
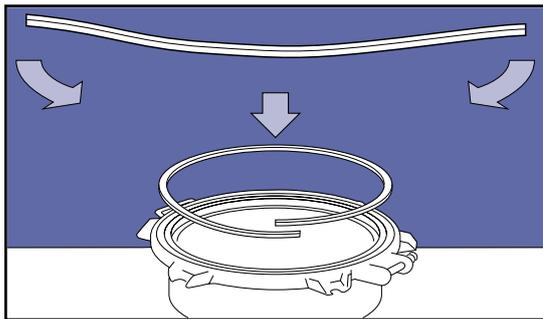


If a kink occurs, use a small piece of clean plastic or spare rubber seal material and the mallet to work the seal back into the groove.

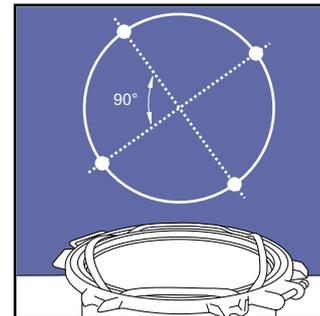
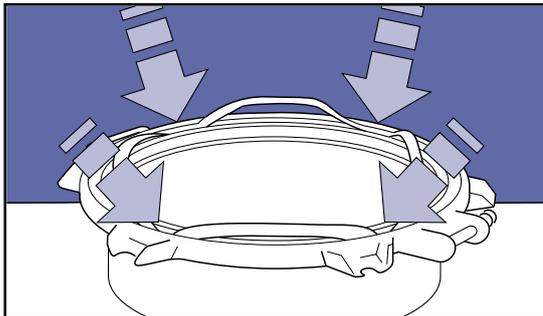
# Fitting a Braided Seal



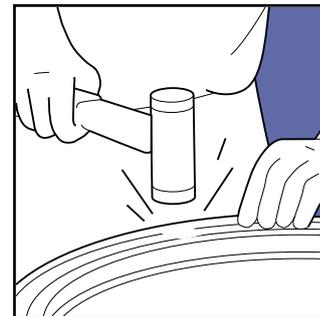
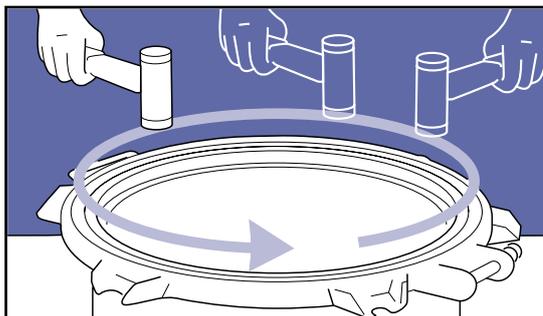
Turn the manlid upside down on its neckring



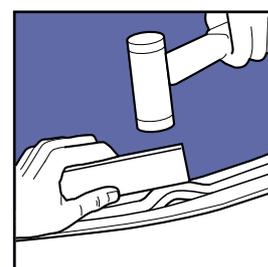
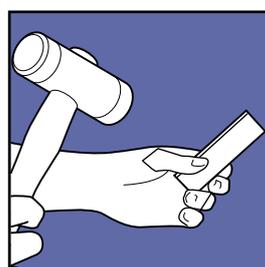
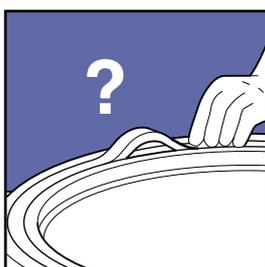
Take the braided seal and place it over the manlid groove to measure the length required. Cut the seal with a mitre joint. PTFE tape may be applied to reinforce the mitre joint. (Adhesive not recommended)



Push the seal into the manlid groove at four points, 90° to each other



Knock the seal firmly into place with a plastic or wooden mallet, all around the manlid

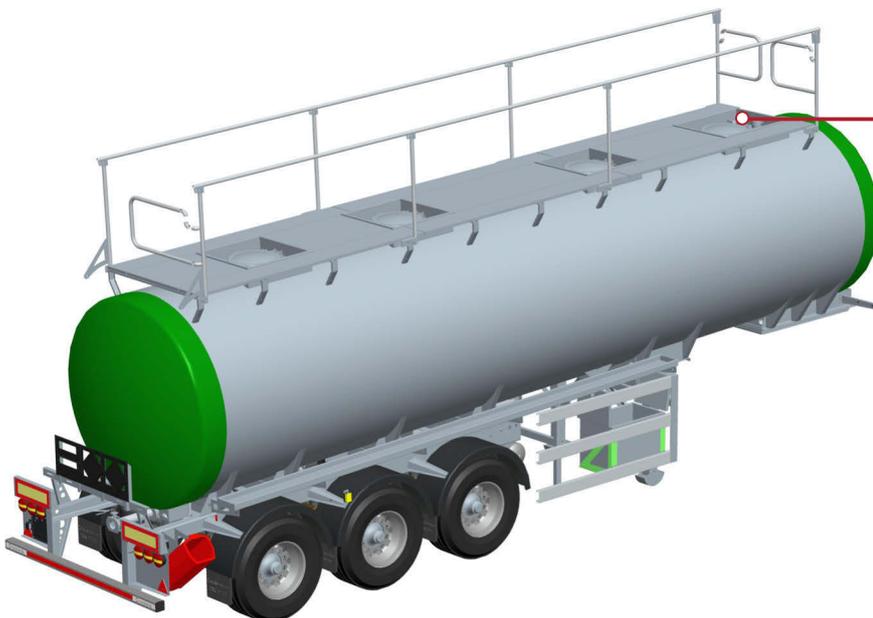
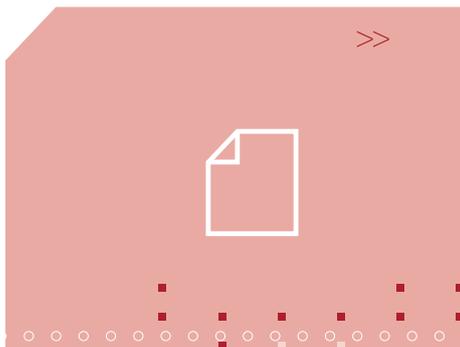


If a kink occurs, use a small piece of clean plastic or spare seal material and the mallet to work the seal back into the groove



# AIRLINE VALVES

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## Female Socket Ball Valves - Stainless Steel

### One Piece Ball Valve

Description	Part No.
1/4" BSP one piece ball valve	410/104025
3/8" BSP one piece ball valve	410/104037
1/2" BSP one piece ball valve	410/104050
3/4" BSP one piece ball valve	410/104075
1" BSP one piece ball valve	410/104100
1 1/4" BSP one piece ball valve	410/104125
1 1/2" BSP one piece ball valve	410/104150
2" BSP one piece ball valve	410/104200

### Two Piece Ball Valve

Description	Part No.
1/4" BSP two piece ball valve	410/204025
3/8" BSP two piece ball valve	410/204037
1/2" BSP two piece ball valve	410/204050
3/4" BSP two piece ball valve	410/204075
1" BSP two piece ball valve	410/204100
1 1/4" BSP two piece ball valve	410/204125
1 1/2" BSP two piece ball valve	410/204150
2" BSP two piece ball valve	410/204200
2 1/2" BSP two piece ball valve	410/204250
3" BSP two piece ball valve	410/204300

### Three Piece Ball Valve

Description	Part No. BSP	Part No. WELD PREP
1/4" BSP three piece ball valve	410/304025B	410/304025W
3/8" BSP three piece ball valve	410/304037B	410/304037W
1/2" BSP three piece ball valve	410/304050B	410/304050W
3/4" BSP three piece ball valve	410/304075B	410/304075W
1" BSP three piece ball valve	410/304100B	410/304100W
1 1/4" BSP three piece ball valve	410/304125B	410/304125W
1 1/2" BSP three piece ball valve	410/304150B	410/304150W
2" BSP three piece ball valve	410/304200B	410/304200W
2 1/2" BSP three piece ball valve	410/304250B	410/304250W
3" BSP three piece ball valve	410/304300B	410/304300W
4" BSP three piece ball valve	410/304400B	410/304400W



**CAUTION: Do not overtighten these ball valves.**





2" Pneumatically Operated Air Inlet Ball Valve - inlet flange drilled 4 x 18mm holes on a 125mm PCD; outlet flange 4 x 18mm open slots on a 120.7mm minimum PCD to suit 2" ASA 150/DIN50 PN40. Valve manufactured in 316 stainless steel with PTFE seals. Fitted with Kinetrol pneumatic actuator with spring return and 1/4" BSP air inlet.

**Options** - Full range of manually operated air inlet valves available.

**Specification**

Weight	5.88 Kg
Design Pressure (MAWP)	7.5 Bar (108.8 PSI)
Test Pressure	15 Bar (217.5 PSI)
Design Temperature: Valve	-40°C to 205°C (-40°F to 400°F)
Kinetrol Actuator	-20°C to 80°C (-4°F to 176°F)

Ball valve approved to BS EN 14432.

**Range**

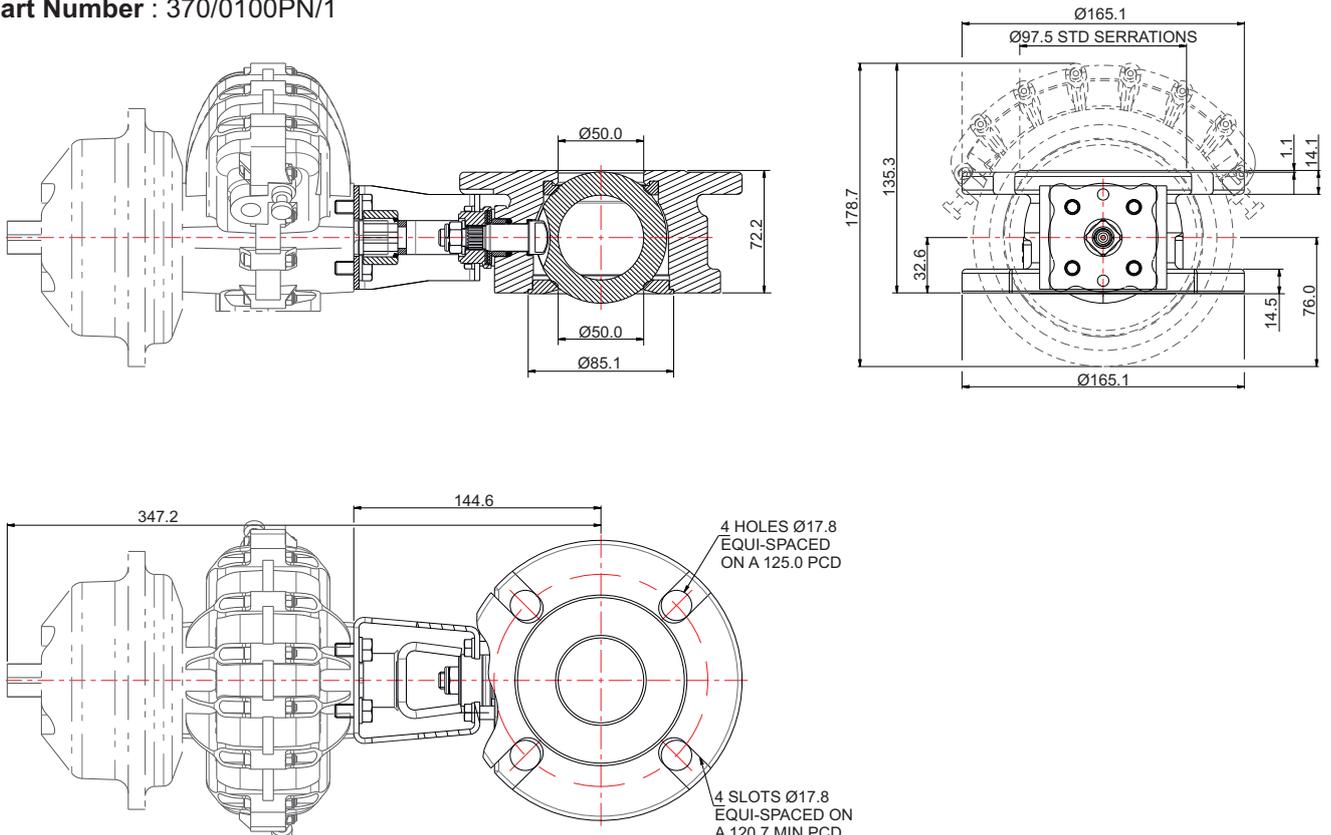
Part No.	Description
370/0100PN/1	2" pneumatic Blacko ball valve
370/0100	2" manually operated Blacko ball valve

**Associated Parts**

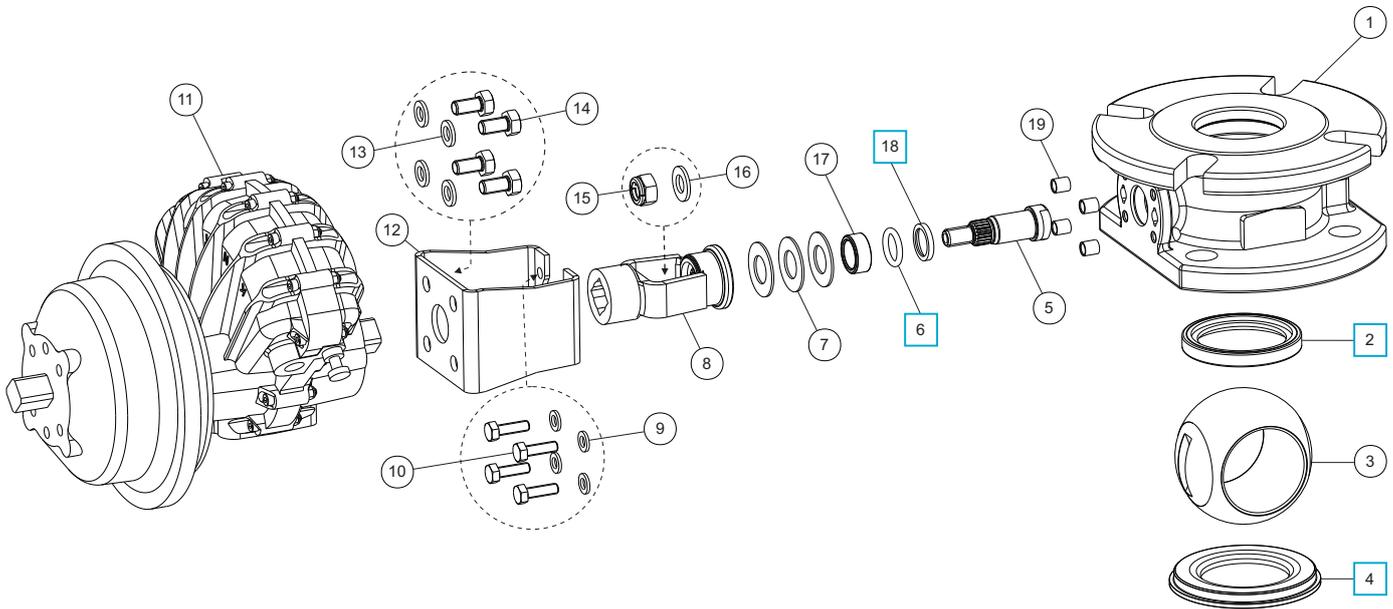
Associated Parts	Part No.
Mating flange	294/0082
Tank weld-in pad	355/3100
Stud kit	311/3700
Outlet gasket	5005-361
Blind flange	370/4239CM
Bolting kit	311/3000

**Fitting Details**

Part Number : 370/0100PN/1



## Parts drawing



Item	Description	Part No.
1	Body	370/0110
2	PTFE front seal	370/0102 <input type="checkbox"/>
3	Ø50mm ball	370/3301
4	PTFE rear seal	370/0105 <input type="checkbox"/>
5	Spindle	370/0120
6	PTFE O ring	5005-688 <input type="checkbox"/>
7	Belleville washer (3)	5113-038
8	Spline adaptor assembly	370/0209
9	M6 spring washer (4)	5113-008
10	M6 hex bolt (4)	5111-076
11	Kinetrol pneumatic actuator	5127-078
12	Mounting bracket	370/0208
13	M8 spring washer (4)	5113-003
14	M8 hex bolt (4)	5111-822
15	M10 self lock nut	5112-008
16	M10 plain washer	5113-009
17	Stuffing collar	370/0103
18	Bottom bearing bush	370/0104 <input type="checkbox"/>
19	Spacer boss (4)	370/0163

## SEAL KIT

Part number **370/01SK** contains all parts marked



# SAFETY RELIEF VALVES

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1" BSP Minnow IBC Relief Valve - 1" BSP male connection. Suitable for a pressure range of between 1 - 45 PSI (0.07 - 3.10 Bar). Contact parts manufactured in 316 stainless steel fitted with Viton seals as standard. Complete with PTFE tank seal.

**Options** - combined pressure/vacuum version. Alternative seal materials available. Manual vent button option. Ventlock option. 1" BSP female connection available. 1"NPT version.

**Specification**

Weight	0.18 Kg
Seal Temperature Range :	
Viton	-20°C to +200°C
Perfluoroelastomer	-15°C to +240°C
EPDM	-20°C to +150°C
Silicone	-20°C to +200°C

**i** Operating Instructions available - OPIN05

Test certificates supplied as standard.

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

**Range**

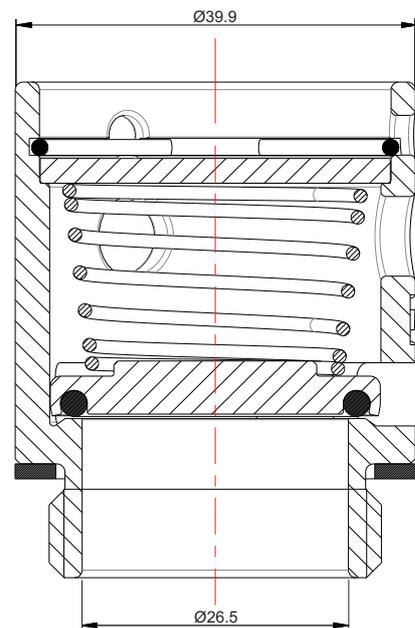
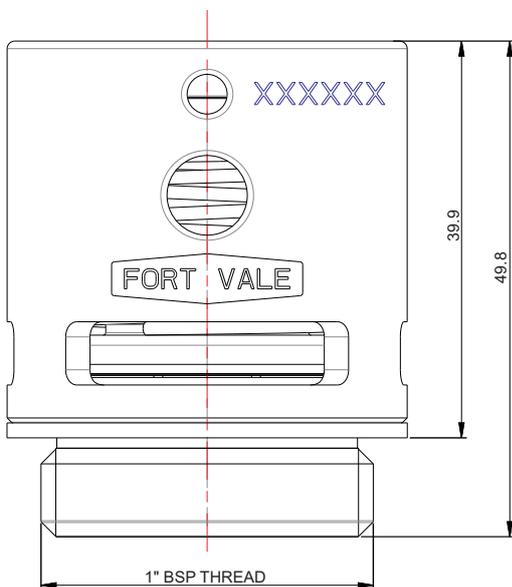
Part No.	Description
65/XXX00	1" BSPM standard valve
65/XXX00NPT	1" NPT standard valve
65B/XXX00	1" BSPM valve with manual vent button
65BT/XXX00	1" BSPM valve with manual vent button & TIR facility
68/XXX00	1" BSPM valve with manual vent button & ventlock facility
66/XXX00	1" BSPF standard valve
69/XXX00	1" BSPF valve with manual vent button & ventlock facility

**Associated Parts**

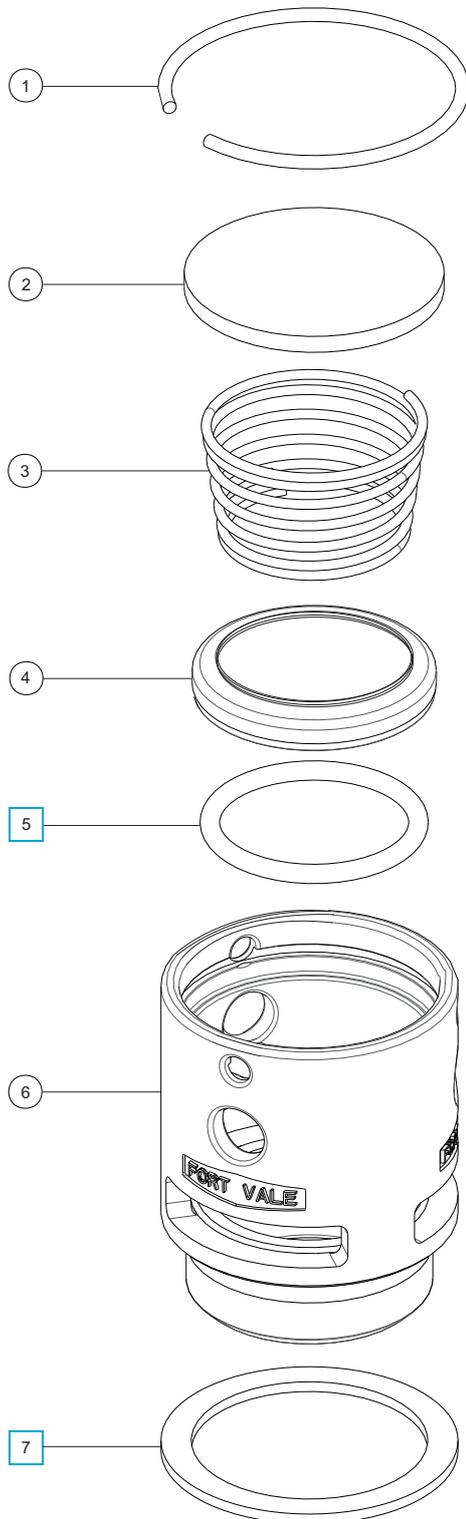
Part No.	Description
600/1025	1" tank weld-in socket
600/1026	1" tank weld-in nipple
179/0300	1" clamped type gauze ring

**Fitting Details**

Example shown 65/XXX00



## Parts drawing



Item	Description	Part No.
1	Retaining clip (below 10 PSI/0.69 Bar)	5120-015
	Retaining clip (above 10 PSI/0.69 Bar)	5120-021
2	Top cap	179/0010
3	Pressure spring <b>See Table 1</b>	5104-XXX
4	Pressure plate <b>See NOTE</b>	179/0050XX
5	Pressure o ring <b>See Table 2 &amp; NOTE</b>	5005-XXX <input type="checkbox"/>
6	Body	179/0100
7	PTFE gasket	5005-553 <input type="checkbox"/>

### SEAL KIT

Part number **65/XPSK** contains all parts marked   
(Part number varies according to seal material).

**NOTE** - Special tooling is necessary to peen a pressure O ring into a pressure plate. If you need a spare pressure O ring or pressure plate, we recommend that you order a pressure plate with a factory-fit O ring (**See Table 2**).

**TABLE 1**

Common Pressure Settings	Pressure Spring Part No.
3 PSI (0.21 Bar)	5104-653
6 PSI (0.41 Bar)	5104-656
9 PSI (0.62 Bar)	5104-659
30 PSI (2 Bar)	5104-695

Pressure springs are available from 1 PSI (0.07 Bar) to 45 PSI (3.10 Bar)

**TABLE 2 - See NOTE**

Seal Material	Pressure o ring	Pressure plate with o ring
Viton	5005-552	179/0050VS
EPDM	5005-651	179/0050ES
Perfluoroelastomer	5005-585	179/0050PERS
Silicone	5005-615	179/0050SS



Part Number Illustrated: 47/XXX00A

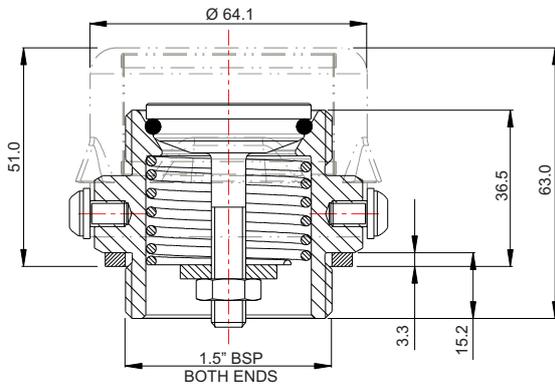
## Specification

Weight 0.6 Kg

**i** Operating Instructions available - OPIN08

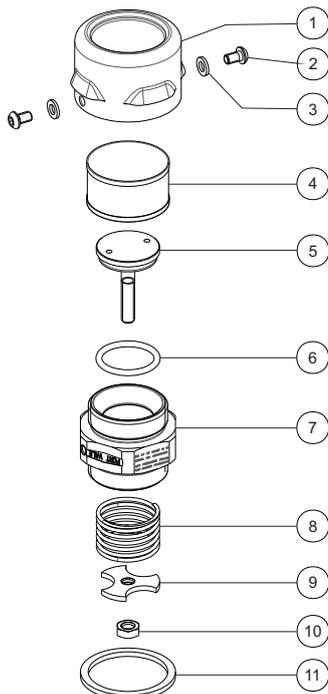
## Fitting Details

Example shown 47/XXX00AX



## Parts Drawing

Part Number Illustrated : 47/XXX00AGZ



Test certificate supplied as standard. Visual inspection and service (where necessary) is recommended on a regular basis.

1½” BSP Uniact Relief Valve - 1½” BSP male connection. Suitable for a pressure range of between 1 - 72 PSI (0.07 - 4.97 bar). Single acting valve - pressure only. Contact parts manufactured in 316 stainless steel fitted with Fortyt seal (FEP encapsulated silicone O ring) as standard. Complete with CNAF tank seal.

Options - optional cowl/gauze. Vacuum only version. Alternative connections: ¼”BSP, 2”BSP, 50mm DIN11851, flanged. Alloy C276 valve. Viton, EPDM, Perfluoroelastomer and High Temperature Fortyt O rings available. PTFE tank seal.

## Range

Part No.	Description
47/XXX00A	1½” BSP standard valve
47/XXX00AC	1½” BSP with cowl
47/XXX00AGZ	1½” BSP with cowl & gauze
47M/XXX00A	50mm DIN11851 connection
47H/XXX00AX	1½” BSP Alloy C276 valve
47V/XXX00A	1½” BSP PTFE tank seal

## Associated Parts

Part No.	Associated Parts
600/1010	1½” tank weld-in socket
176/2660	50mm DIN 11851 weld-in socket
176/2670	50mm DIN 11851 fitting nut
10217/1	Pressed stainless steel cap
10217/1GZ	Pressed stainless steel cap with gauze

Item	Description	Part No.
1	Cap	10217/1
2	M6 button screw (2)	5111-611
3	M6 spring washer (2)	5113-008
4	Gauze ring	10204
5	Poppet	10983V
6	O ring (see Table 2)	5005-XXX
7	Body	10213
8	Spring (see Table 1)	5104-XXX
9	Spring pad	10215
10	M8 half nut	5112-004
11	CNAF gasket tank seal	5005-011

Pressure Setting	Pressure Spring
30 PSI	5104-630

O ring Material	Temp. Range	Pressure Seal
Viton	-20°C to +200°C	5005-107
Fortyt	-55°C to +200°C	5005-108H
Perfluoroelastomer	-15°C to +260°C	5005-764
EPDM	-20°C to +150°C	5005-255
High Temp. Fortyt	-55°C to +260°C	5005-108HPFA



**C SPANNER - 400/3000**  
For relief valve fitting and removal. Size range ¼” to 3”



Part Number Illustrated: 47/X00XXAGZ

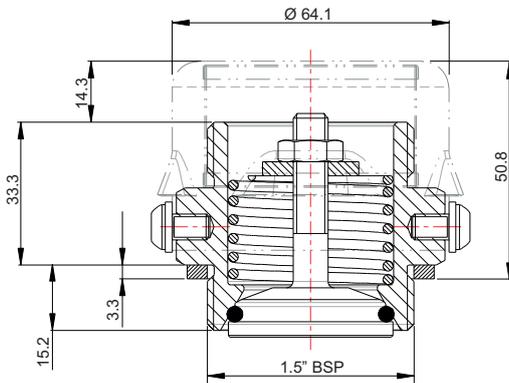
## Specification

Weight 0.8 Kg

**i** Operating Instructions available - OPIN08

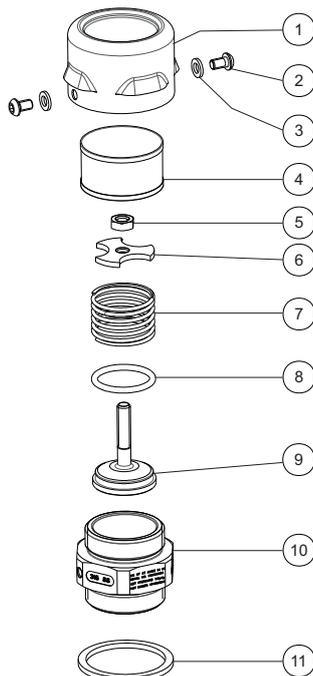
## Fitting Details

Example shown 47/X00XXAX



## Parts Drawing

Part Number Illustrated : 47/X00XXAGZ



Test certificate supplied as standard. Visual inspection and service (where necessary) is recommended on a regular basis.

1½" BSP Uniact Relief Valve - 1½" BSP male connection. Suitable for a vacuum range of between 0.5" - 26" Hg (-0.02 to -0.9 Bar). Single acting valve - vacuum only. Contact parts manufactured in 316 stainless steel fitted with Fortyt seal (FEP encapsulated silicone O ring) as standard. Complete with CNAF tank seal.

Options - optional cowl/gauze. Pressure only version. Alternative connections: ¼" BSP, 2" BSP, 50mm DIN11851, flanged. Alloy C276 valve. Viton, EPDM, Perfluoroelastomer and High Temperature Fortyt O rings available. PTFE tank seal.

## Range

Part No.	Description
47/X00XXA	1½" BSP standard valve
47/X00XXAC	1½" BSP with cowl
47/X00XXAGZ	1½" BSP with cowl & gauze
47/X00XXVBA	1½" BSP with manual vent button
47M/X00XXA	50mm DIN11851 connection
47H/X00XXAX	1½" BSP Alloy C276 valve
47V/X00XXAX	1½" BSP PTFE tank seal

## Associated Parts

Part No.	Associated Parts
600/1010	1½" tank weld-in socket
176/2660	50mm DIN 11851 weld-in socket
176/2670	50mm DIN 11851 fitting nut
10217/1	Pressed stainless steel cap
10217/1GZ	Pressed stainless steel cap with gauze

Item	Description	Part No.
1	Cap	10217/1
2	M6 button screw (2)	5111-611
3	M6 spring washer (2)	5113-008
4	Gauze ring	10204
5	M8 half nut	5112-004
6	Spring pad	10215
7	Spring (see Table 1)	5104-XXX
8	O ring (see Table 2)	5005-XXX
9	Poppet	10983V
10	Body	10213VO
11	CNAF gasket	5005-011

Vacuum Setting	Vacuum Spring
1" Hg	5104-601

O ring Material	Temp. Range	Vacuum Seal
Viton	-20°C to +200°C	5005-107
Fortyt	-55°C to +200°C	5005-108H
Perfluoroelastomer	-15°C to +260°C	5005-764
EPDM	-20°C to +150°C	5005-255
High Temp. Fortyt	-55°C to +260°C	5005-108HPFA



**C SPANNER - 400/3000**  
For relief valve fitting and removal. Size range ¼" to 3"



2½" BSP Twinact Relief Valve - 2½" BSP male connection. Suitable for a pressure range of between 1 to 63 PSI (0.07 to 4.34 Bar) and a vacuum range of between 0.5" to 28"Hg (0.02 to 0.94 Bar). Contact parts manufactured in 316 stainless steel fitted with Fortyt (FEP encapsulated silicone O ring) seals as standard. Complete with manual vent button and rubber/PTFE tank seal.

**Options** - pressure only version. 80mm DIN11581 connection for hygienic applications. Nickel plated version. Viton seal available. Other seal materials available.

## Specification

Weight 1.48 Kg  
 Fortyt Seal Temperature Range -55°C to +200°C  
 Viton Seal Temperature Range -20°C to +200°C

**i** Operating Instructions available - OPIN02

In-house test certificates confirming valve settings and serial numbers are supplied as standard.

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

## Range

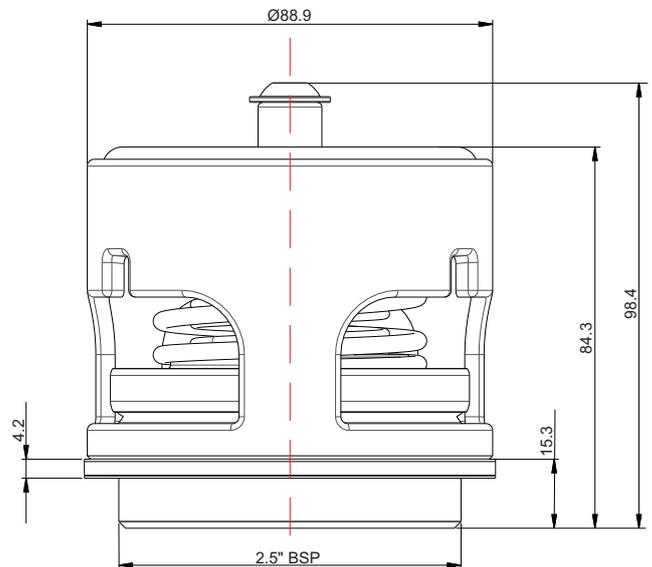
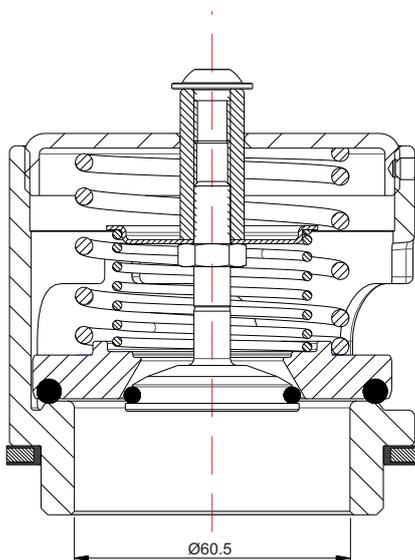
Part No.	Description
20/XXX00	Standard pressure only valve
20/XXXXX	Standard pressure/vacuum valve
2N/XXXXX	2½" Nickel plated valve, pressure/vacuum
2M/XXXXX	2½" Twinact 80mm DIN11851 connection

## Associated Parts

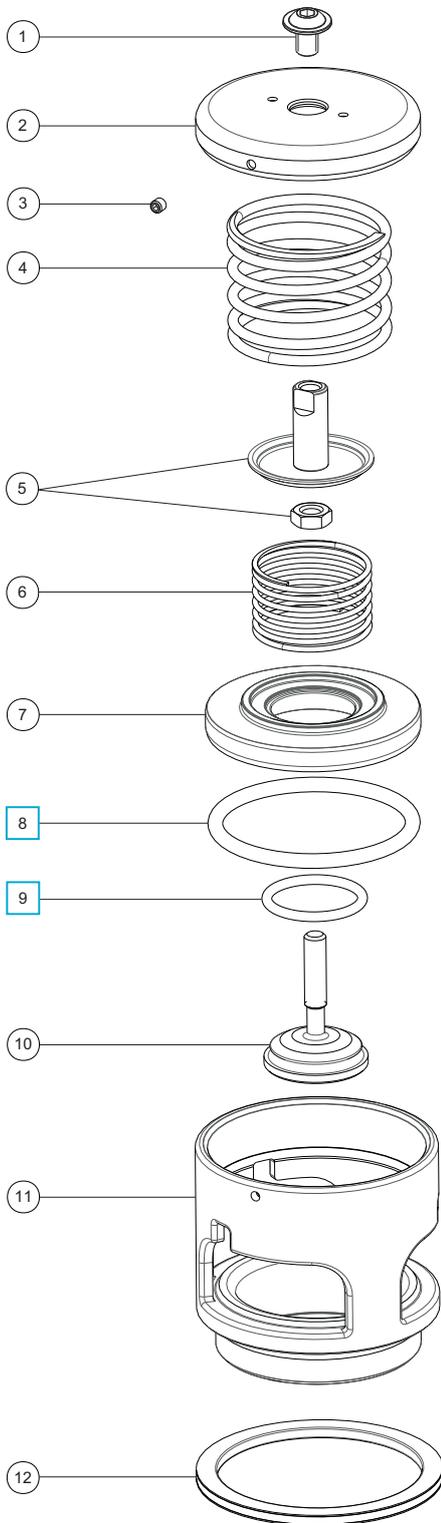
Part No.	Description
600/1000	2½" tank weld-in socket
176/3150	2½" tank weld-in flange
130/5000	2½" clamped gauze ring
5005-027	PTFE tank seal
5005-026	CNAF tank seal

## Fitting Details

Example shown : 20/XXXXX



Parts drawing



Item	Description	Part No.
1	Flanged button screw	5111-9812
2	Top cap	10967/1
3	Grub screw	5121-001
4	Pressure spring <b>See Table 1</b>	5104-XXX
5	Spring pad assembly	130/0010
6	Vacuum spring <b>See Table 2</b>	5104-XXX
7	Pressure plate <b>See NOTE</b>	175/00XXX
8	Pressure o ring <b>see Table 3 &amp; NOTE</b>	5005-XXX <input type="checkbox"/>
9	Vacuum o ring <b>see Table 3</b>	5005-XXX <input type="checkbox"/>
10	Vacuum poppet	10983V
11	Body	10951
12	Rubber/PTFE envelope gasket	5005-046

**SEAL KIT** - contains all parts marked   
 Part no. **20/1PVSK** contains Fortyt O rings  
 Part no. **20/0PVSK** contains Viton O rings

**NOTE** - Special tooling is necessary to peen a pressure O ring into a pressure plate. If you need a spare pressure O ring or pressure plate, we recommend that you order a pressure plate with a factory-fit O ring (See Table 4).

**TABLE 1**

Common Pressure Settings	Pressure Springs
28 to 30 PSI (1.93 Bar to 2.07 Bar)	5104-529

Pressure springs are available from 1 PSI (0.07 Bar) to 63 PSI (4.34 Bar)

**TABLE 2**

Common Vacuum Settings	Vacuum Springs
0.5" Hg (0.02 Bar)	5104-560
1" Hg (0.03 Bar)	5104-561
3" Hg (0.10 Bar)	5104-563

Vacuum springs are available from 0.5"Hg (0.02 Bar) to 28"Hg (0.94 Bar)

**TABLE 3 - See NOTE**

Seal Material	Pressure o ring	Vacuum o ring
Fortyt	5005-101	5005-108H
Viton	5005-102	5005-107

**TABLE 4**

Seal Material	Pressure plate	Pressure plate with o ring
Fortyt	175/0061	175/0061F
Viton	175/0031	175/0031V



**C SPANNER - PART NUMBER 400/3000**  
 For relief valve fitting and removal.  
 Size range 1 1/4" to 3".



2 1/2" BSP Super Maxi Emergency Relief Valve - 2 1/2" BSP male connection with 65mm nominal bore. Suitable for a pressure range of between 2 - 75 PSI (0.14 - 5.17 Bar) and a vacuum range of between 0 - 26"Hg (0 - 0.88 Bar). Contact parts manufactured in 316 stainless steel. Fitted with Fortyt seals as standard. Complete with rubber/PTFE tank seal.

**Options** - pressure only version. Flanged connections available. Range of high pressure extended body valves. Manual vent button option. A range of alternative seal materials is available.

## Specification

Weight 4.08 Kg \*Varies  
 Temperature Range Dependant upon seal material

Design Approval by Lloyds Register of Shipping.

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

Test certificates are supplied as standard.

Valve flow rates are available by request.

**\* Fitting ancillary items in the flow stream will alter the valve flow rate.**

## Range

Part No.	Common Valve Configurations
010/13212	31.8 PSI (2.19 Bar) & 6.2"Hg (-0.21 Bar)
010/14812	48.0 PSI (3.31 Bar) & 6.2"Hg (-0.21 Bar)
010/15412	53.8 PSI (3.71 Bar) & 6.2"Hg (-0.21 Bar)
010/16312	63.8 PSI (4.40 Bar) & 6.2"Hg (-0.21 Bar)

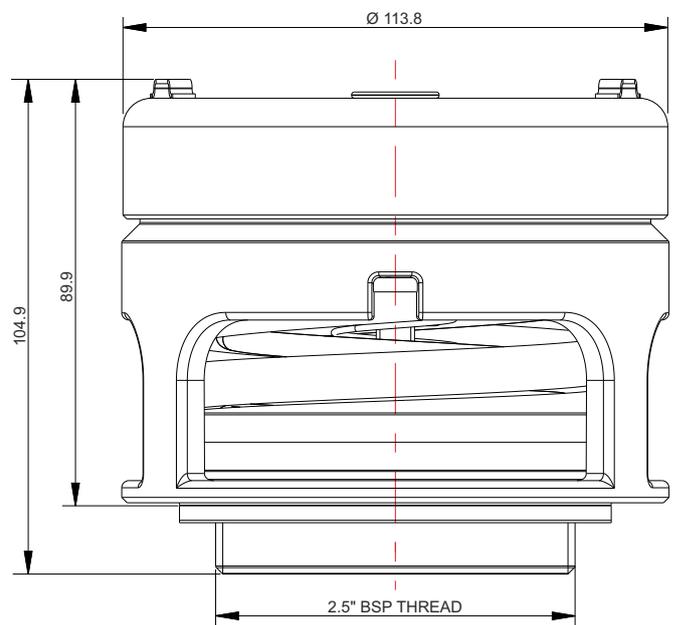
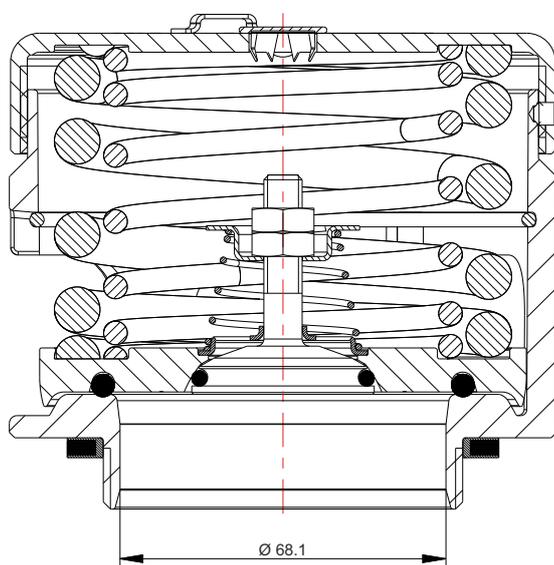
**NB** Above part number varies according to valve pressure and vacuum settings. These are standard settings.

## Associated Parts

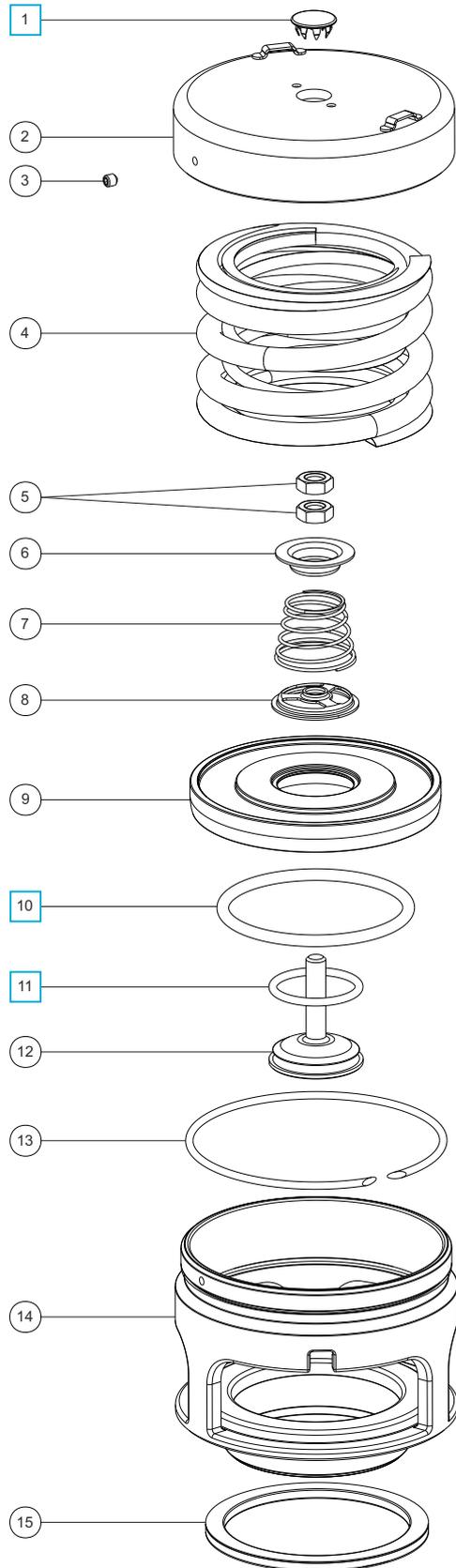
Part No.	Associated Parts
600/1000	2 1/2" BSP weld-in socket
176/3150	Tank weld-in pad
5005-398	CNAF/PTFE gasket to suit weld-in pad/adaptor flange
921/07BBSP	0-100 PSI pressure gauge, bottom entry, brass internal parts
921/07RBSP	0-100 PSI pressure gauge, rear entry, brass internal parts
920/07BBSP	0-100 PSI pressure gauge, bottom entry, stainless steel internal parts
176/2900 *	Removable flameproof gauze
176/6000 *	Gauzed cowl

## Fitting Details

Example shown : 010/1XXXX



Parts drawing



Item	Description	Part No.
1	Stainless steel plug	10978 <input type="checkbox"/>
2	Cap *See Note	1760/0005XX
3	Setting locking grub screw	5121-001
4	Pressure springs *See Table 1	6104-XXXX
5	M8 half nut (2)	5112-004
6	Vacuum spring pad	1860/0005
7	Vacuum spring *See Table 2	7104-XXX
8	Spring pad	10986/3
9	Pressure plate *See Note	1860/005XXX
10	Fortyt pressure O ring	5005-101 <input type="checkbox"/>
11	Fortyt vacuum O ring	5005-108H <input type="checkbox"/>
12	Vacuum poppet	10983V/3
13	Retaining ring clip	5120-067
14	Body	1860/0100
15	Rubber/PTFE envelope seal	5005-046

NOTE : Part number varies according to specification.

SEAL KIT

Part number 000/1PVSK contains all parts marked

TABLE 1

Common Pressure Settings	Pressure Spring Part No.
31.8 PSI (2.19 Bar)	6104-0252
48.0 PSI (3.31 Bar)	6104-0112 & 6104-0252
53.8 PSI (3.71 Bar)	6104-0422 (Pair)
63.8 PSI (4.40 Bar)	6104-0485 (Pair)

Pressure springs are available from 2 PSI (0.14 Bar) up to 75 PSI (5.17 Bar)

TABLE 2

Common Vacuum Setting	Vacuum Spring Part No.
6.2"Hg (0.21 Bar)	7104-012

Vacuum springs are available from 0.5"Hg (0.02 Bar) to 26"Hg (0.88 Bar)

Visual inspection and service (where necessary) is recommended regularly. A detailed step-by-step repair manual is available for our Super Maxi Relief Valves. Please contact our Sales team for further information.



# FIRST CLOSURE DISCHARGE VALVES

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**3" 90° Cleanflow 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 with flats milled top and bottom. Footvalve body with 'Superseat' (alloy 625) seating area. All other contact parts manufactured in 316 stainless steel with Fortyt O ring to main poppet as standard.

**Options** - Available with alloy C276 seating area or with a replaceable seat. Different outlet flange drillings and main seal materials are available. A steam-heated version with conical poppet is available for solidifying cargoes. We can offer valves with extended bodies and with pneumatic or hydraulic actuators. A full range of 30°, 45° and 180° Cleanflow footvalves is available.

## Specification

Weight	15 Kg *See Note
Design Pressure (MAWP)	4 Bar (58 PSI)
Test Pressure	6 Bar (87 PSI)
Design Temperature	-30°C to 200°C (-22°F to 392°F)

**Note:** Weight and dimensions vary according to valve specification.

To make sure that the tank stays sealed if an accident occurs, the valve body has a shear groove that is designed to fail so that the internal part of the valve stays closed and attached to the tank.

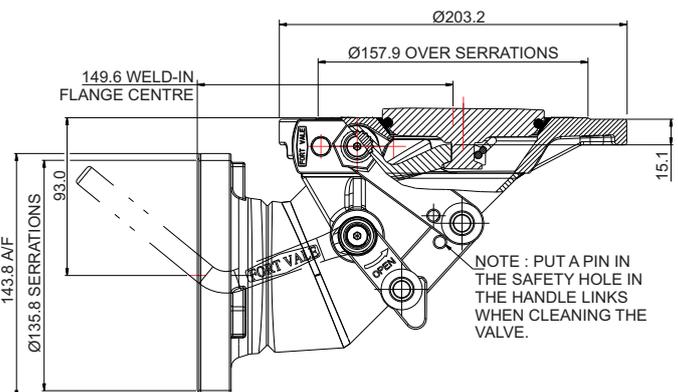
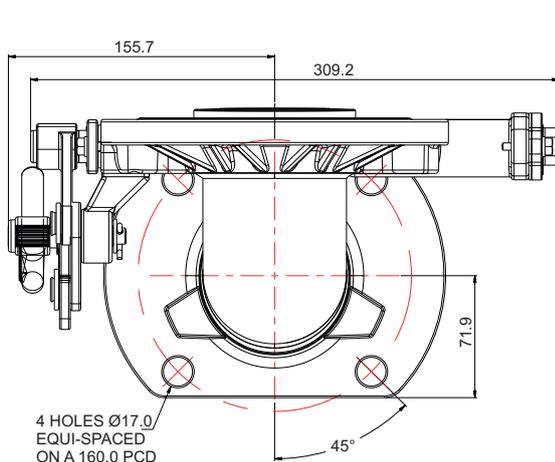
Comparison tests between the Cleanflow and the Highlift footvalves conclude that there is a 38% increase in flow and a 27% reduction in discharge time.

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

**i** Operating Instructions available - OPIN28 & OPIN47

## Fitting Details

Part Number : 844/3000A



## Range

Part No.	Specification
844/3000A	Std. body, manually operated
844/7400A	Extended body, manually operated
844/3080ASS	Std. body, pneumatically operated
844/7700ASS	Extended body, pneumatically operated, slotted outlet

## Associated Parts

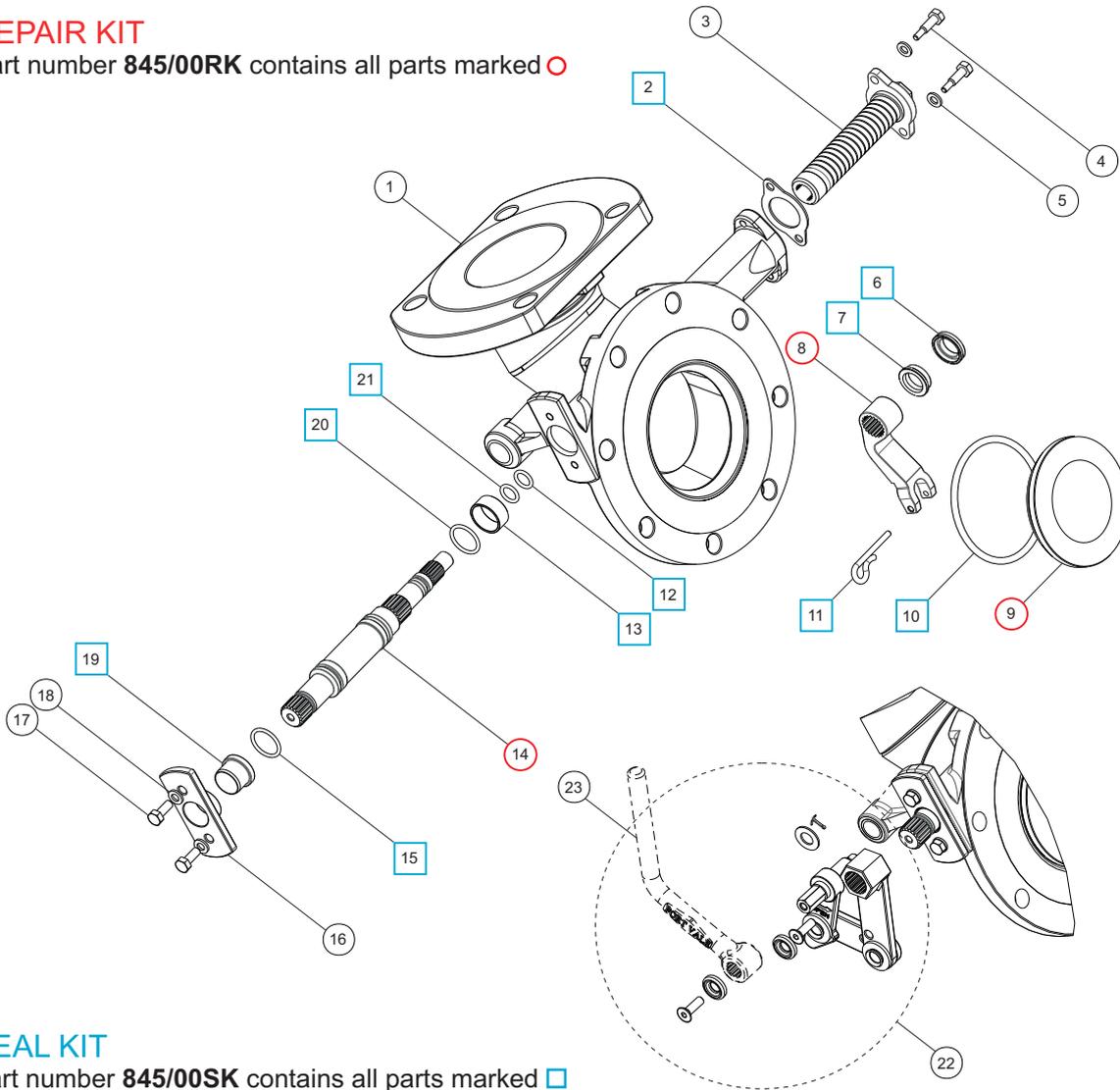
Associated Parts	Part No.
Tank pad	324/9000
Stud kit	845/2040
Bolting kit – 4 hole outlet	311/3000
Inlet gasket – 8 hole	5005-015
Outlet gasket	5005-049

**Parts drawing**



**REPAIR KIT**

Part number **845/00RK** contains all parts marked ○



**SEAL KIT**

Part number **845/00SK** contains all parts marked □

Item	Description	Part No.
1	Body	844/2075B
2	Spring boss gasket	5005-845 <span style="color: red;">○</span> <span style="color: blue;">□</span>
3	Spring assembly	845/0050
4	Clamp screw (2)	845/0017
5	Spring washer (2)	5113-008
6	Bush seal	845/0064 <span style="color: red;">○</span> <span style="color: blue;">□</span>
7	Seal energizer	845/0063 <span style="color: red;">○</span> <span style="color: blue;">□</span>
8	Lifting fork	845/0010 <span style="color: red;">○</span>
9	Poppet	845/0040 <span style="color: red;">○</span>
10	Fortyt O ring	5005-104 <span style="color: red;">○</span> <span style="color: blue;">□</span>
11	Retaining pin	845/0015 <span style="color: red;">○</span> <span style="color: blue;">□</span>
12	Perfluoroelastomer O ring	10133PHT <span style="color: red;">○</span> <span style="color: blue;">□</span>

Item	Description	Part No.
13	Spindle bearing	845/0062 <span style="color: red;">○</span> <span style="color: blue;">□</span>
14	Spindle	845/0200 <span style="color: red;">○</span>
15	Viton O ring	5005-336 <span style="color: red;">○</span> <span style="color: blue;">□</span>
16	Stuffing clamp	845/0016
17	Clamp bolt (2)	5111-022
18	Spring washer (2)	5113-008
19	Stuffing seal	845/0061 <span style="color: red;">○</span> <span style="color: blue;">□</span>
20	Perlast O ring	5005-384 <span style="color: red;">○</span> <span style="color: blue;">□</span>
21	PTFE O ring	5005-008 <span style="color: red;">○</span> <span style="color: blue;">□</span>
22	Handle linkage assembly	324/8910
23	Handle	T.B.A. *See Note

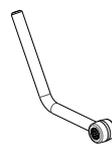


**SELF ADHESIVE DECAL**  
 Part No. 845/0320  
 Text in English, German & French

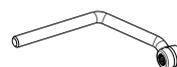
Please see separate data sheet for details on remote closure kits

A detailed step-by-step repair manual is now available for our Cleanflow range of footvalves. Please contact our Sales team for further information.

**Note:** Please specify the style of handle required at the time of order.



**STANDARD CLEANFLOW HANDLE**  
 Part No. 324/8670



**STANDARD HIGHLIFT HANDLE**  
 Part No. 330/5010



4" 90° Pneumatic Cleanflow Footvalve - inlet flange drilled 8 x 18mm holes equi-spaced on a 210mm PCD (DIN125 PN16); outlet flange drilled 8 x 18mm holes equi-spaced on a 180mm PCD (DIN100 PN16). Footvalve body with 'Superseat' (alloy 625) seating area. All other contact parts manufactured in 316 stainless steel with Fortyt O ring to main poppet as standard.

**Options** - Available with alloy C276 seating area or with a replaceable seat. Different outlet flange drillings and main seals are available. A steam-heated version with conical poppet is available for solidifying cargoes. Manually operated version. A full range of 30°, 45° and 180° Cleanflow footvalves is available.

**Specification**

Weight	32.1 Kg *See Note
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)

**Note:** Weight and dimensions vary according to valve specification.

To make sure that the tank stays sealed if an accident occurs, the valve body has a shear groove that is designed to break so that the internal part of the valve stays closed and attached to the tank.

Approved to BS EN14433.

**Range**

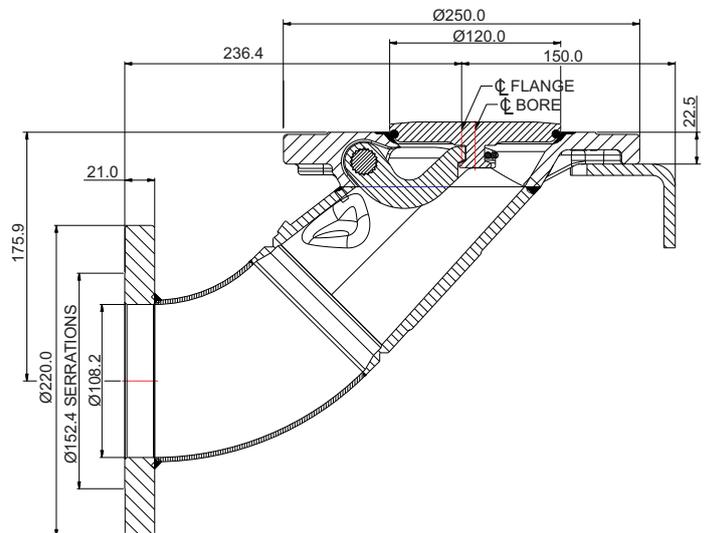
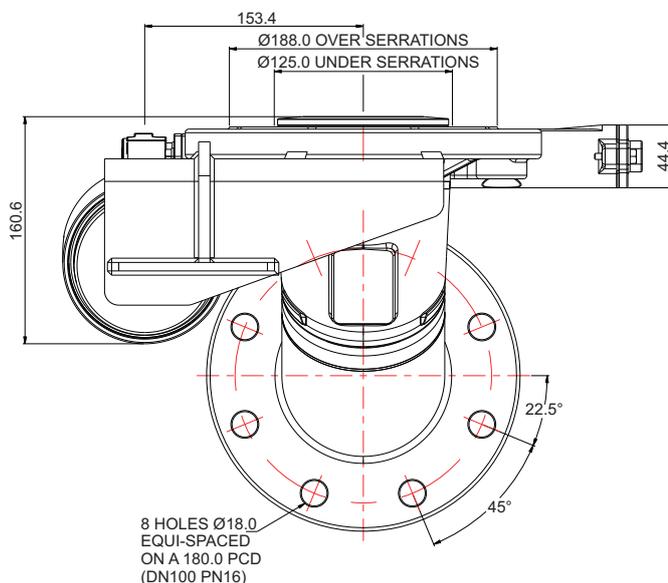
Part No.	Specification
875/4800SS	Superseat with std. poppet
875/4800SSRX	Std. poppet; replaceable seat
875/4800SSHRX	Conical poppet; replaceable seat; steam heated.

**Associated Parts**

Description	Part No.
Tank pad	854/9000
Stud kit (875/4800SS only)	875/2044
CNAF/PTFE inlet gasket	5005-467
CNAF/PTFE outlet gasket	5005-468
Mating flange – DN100 PN16	875/4150
Bolting kit for mating flange (875/4150)	875/4160

**Fitting Details**

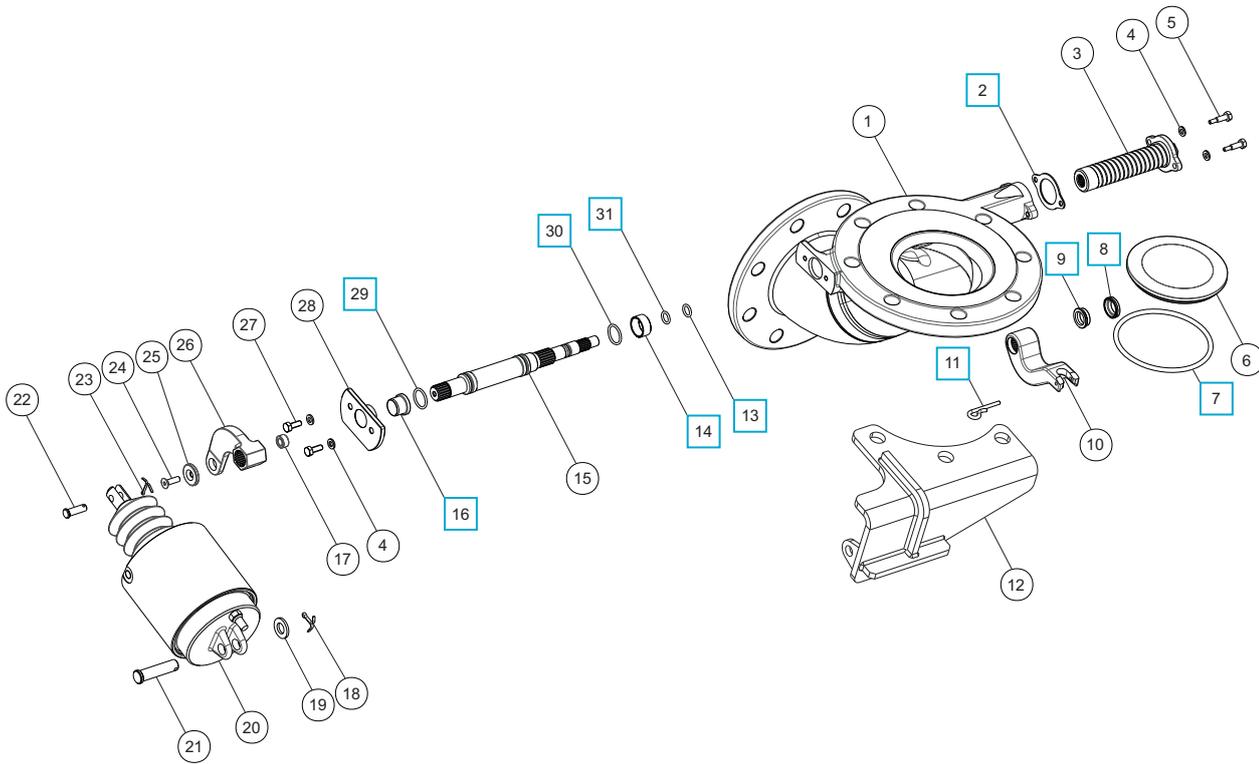
Part No. 875/4800SS



## Parts drawing



Part Number: 875/4800SS



Item	Description	Part No.
1	Body	875/4110B
2	Spring boss gasket	5005-846 <input type="checkbox"/>
3	Spring assembly	875/0050
4	Spring washer (4)	5113-008
5	Clamp screw (2)	845/0017
6	Poppet	875/0040
7	Fortyt O ring	5005-349 <input type="checkbox"/>
8	PTFE bottom bush seal	845/0064 <input type="checkbox"/>
9	Bottom seal energizer	845/0063 <input type="checkbox"/>
10	Lifting fork	875/0010
11	Retaining pin	845/0015 <input type="checkbox"/>
12	Pneumatic cylinder bracket	845/8064
13	Perfluoroelastomer O ring	10133PHT <input type="checkbox"/>
14	PTFE spindle bearing	845/0062 <input type="checkbox"/>
15	Main spindle	875/0200
16	PTFE spindle stuffing seal	845/0061 <input type="checkbox"/>

Item	Description	Part No.
17	Bronze bush	844/2011
18	Split pin	5220-008
19	Plain washer	5113-006
20	Pneumatic cylinder	875/2125
21	Clevis pin	875/2122
22	Clevis pin	844/2121
23	Split pin	5118-016
24	Countersunk bolt	5111-019
25	Retaining washer	20370/2
26	Crank arm	844/2049
27	Hex bolt (2)	5111-022
28	Stuffing clamp flange	845/0066
29	Viton O ring	5005-336 <input type="checkbox"/>
30	Perfluoroelastomer O ring	5005-384 <input type="checkbox"/>
31	PTFE O ring	5005-008 <input type="checkbox"/>



### SELF ADHESIVE DECAL

Part No. 845/0320

Text in English, German & French

### SEAL KIT

Part number **875/00SK** contains all parts marked



**3" 90° Highlift Footvalve** - inlet flange drilled 4 x 18mm holes on a 160mm PCD; outlet flange drilled 4 x 18mm holes on a 160mm PCD with flat milled at 72mm to horizontal centre line. Contact parts manufactured in 316 stainless steel with Fortyt O ring to main poppet as standard.

**Options** - alternative seal materials and different outlet flange configurations available. Pneumatically actuated version. Steam heated option. Full range of 30°, 45° and 180° Highlift footvalves. Replaceable Seat version available.

**Specification** **Range**

Weight	9.3 Kgs *See note
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

Part No.	Outlet flange drilling
294/7200XX	4 hole outlet, manually operated valve
294/7500	4 hole inlet/6 hole outlet, pneumatically operated

**\*NB** Weight and dimensions vary according to valve specification

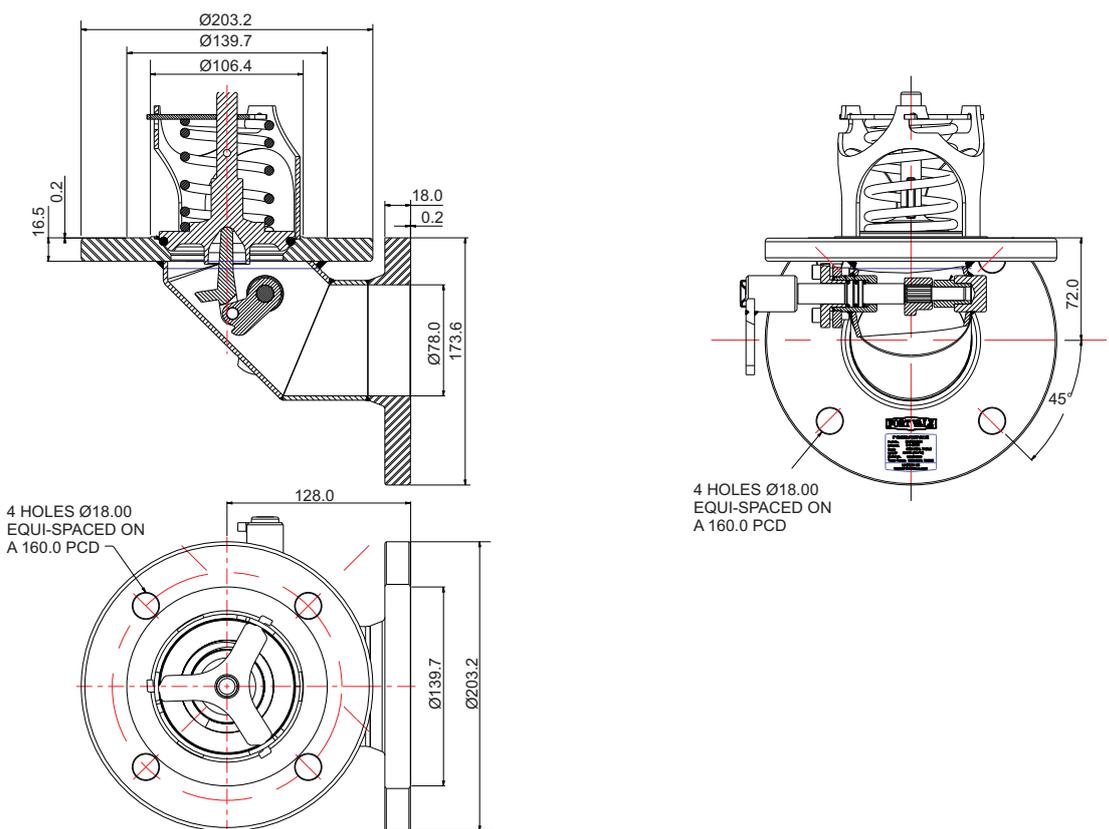
**Associated Parts**

To ensure that the tank remains sealed in the event of an accident, the valve body incorporates a shear groove, designed to fail in such a way as to leave the internal part of the valve closed and attached to the tank body.

Associated Parts	Part No.
Tank pad	312/0013
Inlet gasket	5005-093
Stud kit	311/3050
Pipework mating flange (4 hole)	294/0080
Bolting kit	311/3500
Outlet gasket	5005-052

**Fitting Details**

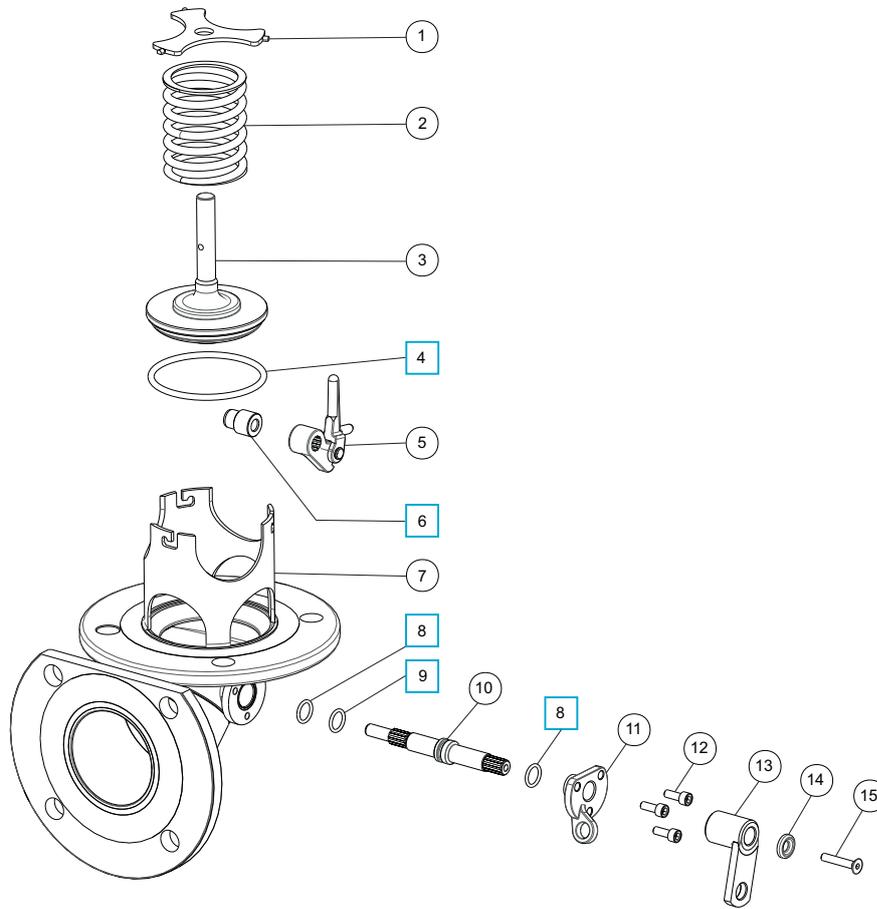
**Standard 3" 90° Highlift - Part No. 294/7200**



## Parts drawing



Example shown: 294/7200



Item	Description	Part No.
1	Bayonet cap	20334/A
2	Spring	5104-971
3	Solid poppet	324/2020
4	Fortyt Poppet O ring <b>*See Note</b>	5005-104 <input type="checkbox"/>
5	Crank block assembly, compr. Lifting finger Pivot pin Crank block 5mm plain washer	821/0052 821/0034 821/0025 5113-015
6	PTFE crankshaft end bush	20362 <input type="checkbox"/>
7	Body	294/7010
8	PTFE O ring (2)	20363 <input type="checkbox"/>
9	Spindle O ring <b>*See Note</b>	20361 <input type="checkbox"/>
10	Spindle	821/0010
11	Stuffing clamp	324/1004/2
12	M6 capscrew (3)	5111-017
13	Crank arm	324/7633
14	Retaining washer	20370
15	Retaining screw	5111-028

**\*Note:** Part number varies according to valve specification.

## SEAL KIT

Part number **826/00SK** contains all parts marked



3" 90° Tankstream Footvalve - 3" to 3" 90° footvalve assembly. Inlet flange drilled 12 x 14mm holes on a 6.25" PCD. 6 inlet holes are plugged with a plastic plug. Outlet flange drilled 8 x 10.5mm holes on a 124mm PCD. Contact parts manufactured in 316 stainless steel with Fortyt or Viton O ring.

Options - 3" to 2" footvalve assembly version.

**Specification**

Weight	7.5 Kg
Design Pressue (MAWP)	4 Bar (58 PSI)
Service Test Pressure	6 Bar (87 PSI)
Design Temperature Range	-20°C to +200°C -4°F to +392°F

**Range**

Part No.	Description
28F/0000F	3" to 3" footvalve with Fortyt seal
28F/0000V	3" to 3" footvalve with Viton seal

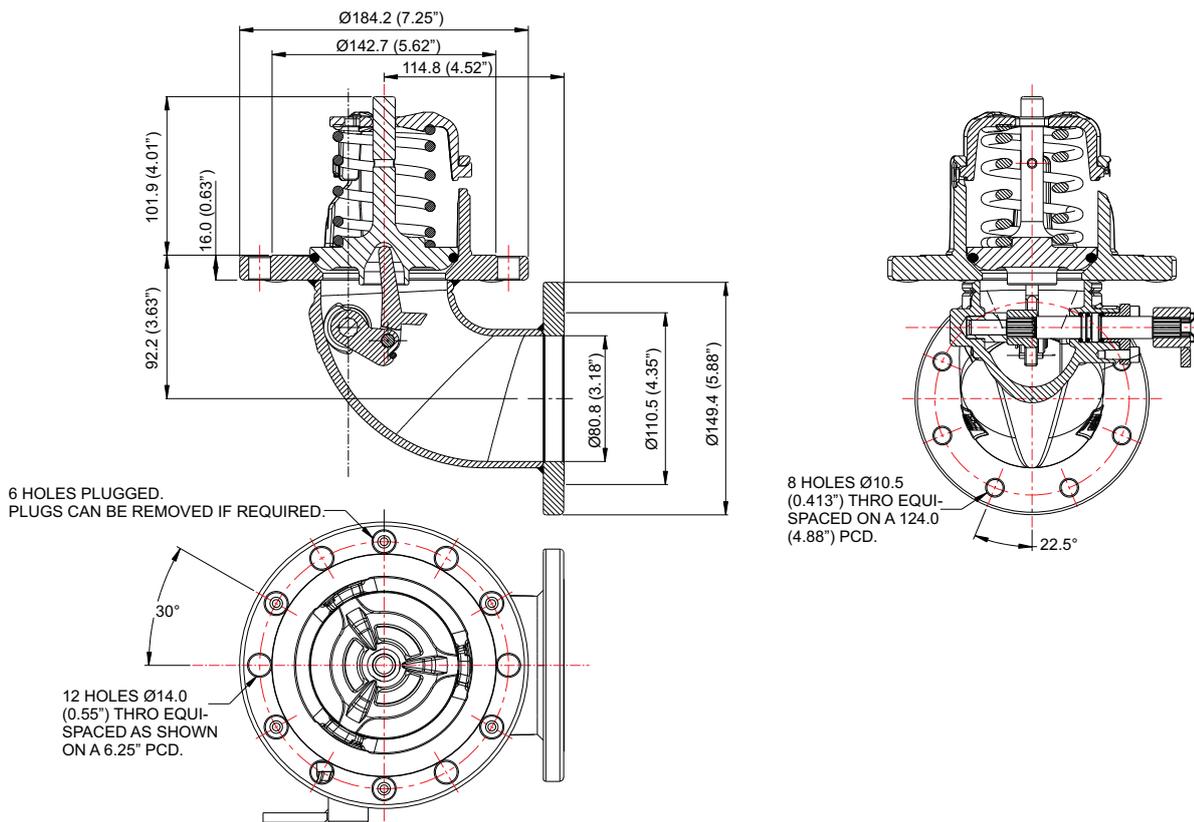
**Associated Parts**

Part Number	Description
11954/S	Tank weld in flange
290/1300	M12 stud kit
5005-016	Tank to footvalve PTFE gasket
299/7116	3" TTMA mating flange
5005-445	Outlet gasket

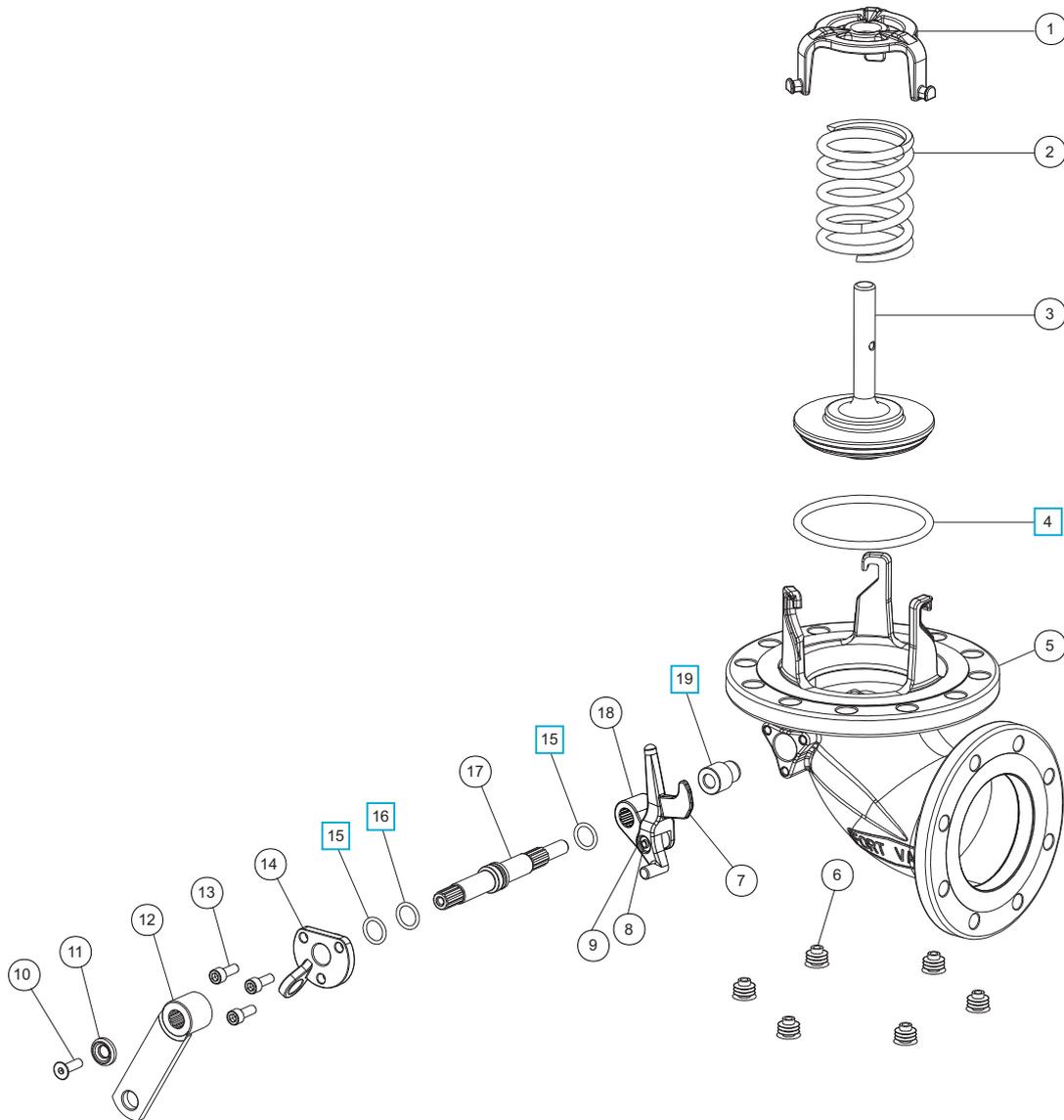
To ensure that the tank remains sealed in the event of an accident, the valve body incorporates a shear groove, designed to fail in such a way as to leave the internal part of the valve closed and attached to the tank body.

**Fitting Details**

Part Number : 28F/0000X



Parts drawing



Item	Description	Part No.
1	Spring top plate	290/6104
2	Closure spring	5104-971
3	Solid poppet	324/2020
4	Fortyt O ring <b>*See Note</b>	5005-104 <input type="checkbox"/>
5	3" to 3" footvalve body assembly	28F/0003
6	Plastic plug (6)	5028-227
7	Lifting finger	821/0056
8	Pivot pin	821/0034
9	Plain washer	5113-015
10	Countersunk bolt	5111-019

Item	Description	Part No.
11	Retaining washer	20370
12	Crank arm	20607
13	Capscrew (3)	5111-017
14	Stuffing clamp	324/1001
15	PTFE O ring (2)	20363 <input type="checkbox"/>
16	Viton O ring	20361 <input type="checkbox"/>
17	Spindle	821/0010
18	Crank block	821/0025
19	Crankshaft end bush	20362 <input type="checkbox"/>

**\*Note:** Part number varies according to specification.

**SEAL KIT**

Part number **826/00SK** contains all parts marked

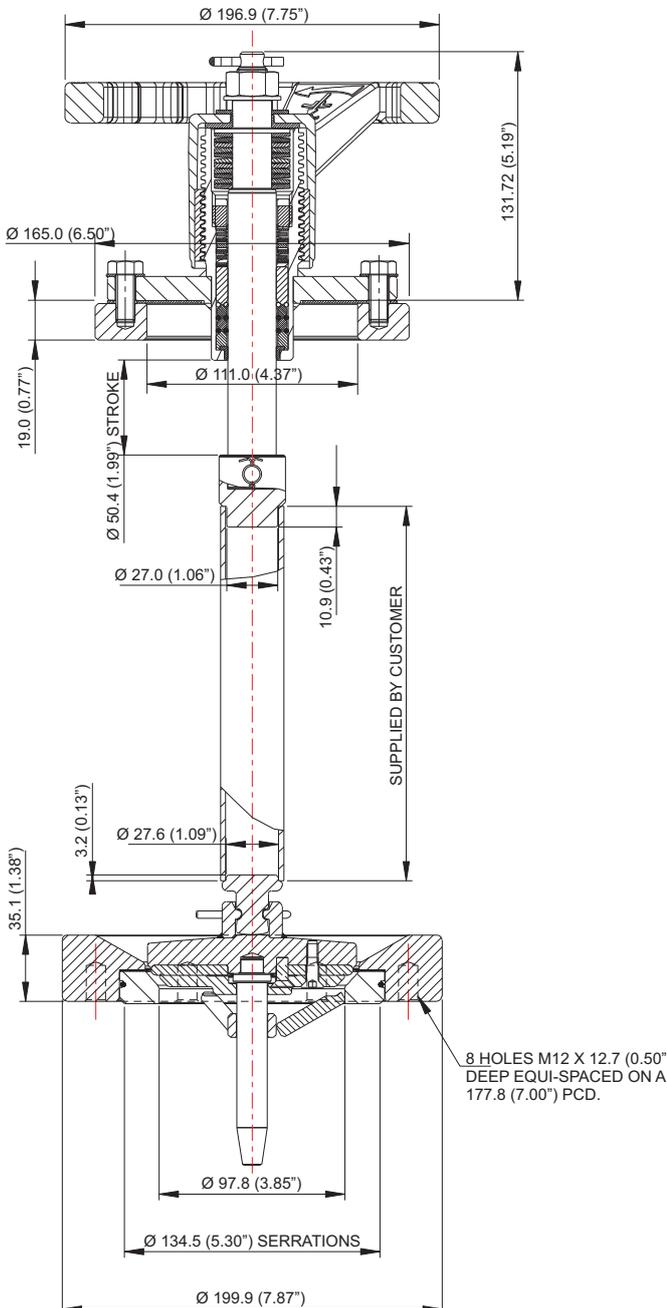


**4" Screwdown Valve** - comprising: top tank weld-in pad, stud kit and PTFE gasket; spring-loaded top operator; 4" poppet assembly with PTFE seal disc; 4" NB bottom tank weld-in pad with replaceable seat area. Contact parts manufactured in 316 stainless steel.  
 NOTE : 1" Sched. 10 tube not supplied.

**Options** - High nickel alloy replaceable seat. Steam heated bottom pad. High temperature seals. Range of 3½" Screwdown valves.

**Fitting Details**

Part Number : 270/0000RX



**Specification**

Weight	16.2 Kg
Design Pressure (MAWP)	4 Bar (58 PSI)
Test Pressure	6 Bar (87 PSI)
Design Temperature	-40°C to 250°C (-40°F to 482°F)

Pre-load: 4479 N (1007 LbF) @ 5.25mm  
 Max. solid washers: 10.50mm  
 Stroke: 50mm

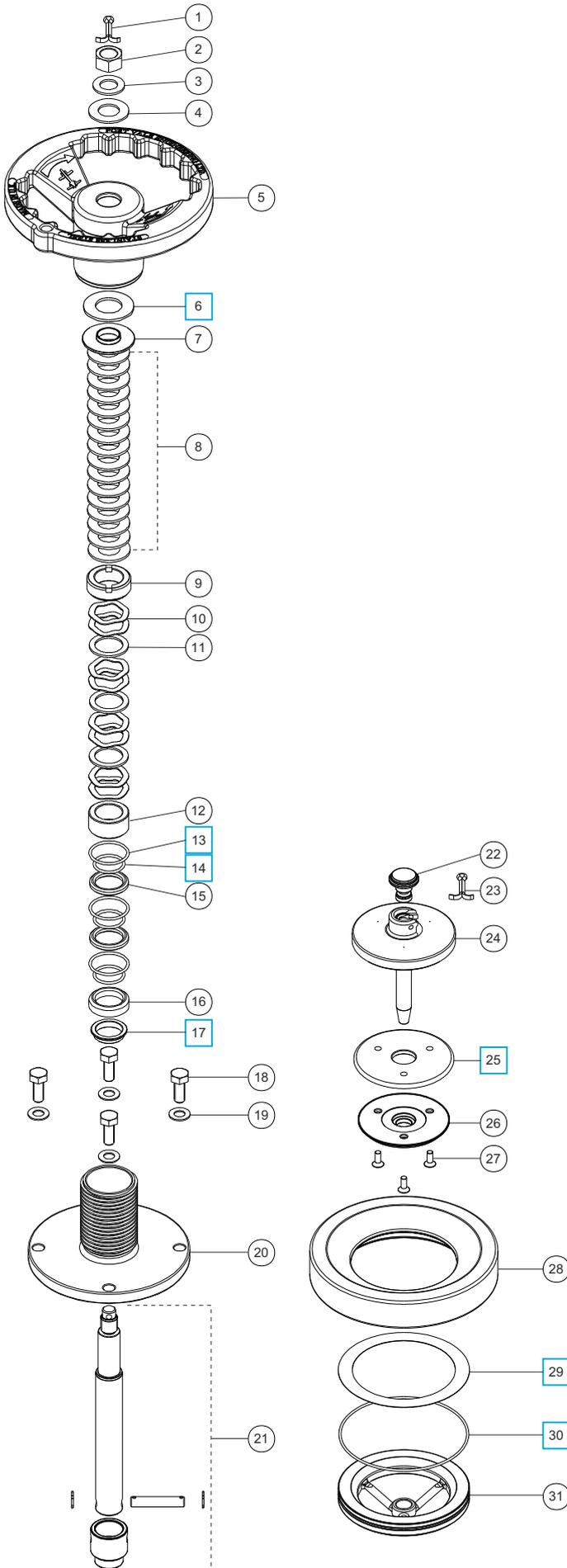
**Range**

Part No.	Description
270/0000RS	4" Screwdown valve assembly with stainless steel replaceable seat & bottom weld in flange.
270/0000RH	4" Screwdown valve assembly with high nickel alloy replaceable seat/stainless steel bottom weld in flange.

**Associated Parts**

Associated Parts	Part No.
Top PTFE gasket	5005-985
High nickel alloy replaceable seat	267/3715H
Outlet mating flange	294/0087
Outlet stud kit	324/2050
Outlet mating gasket	5005-015

Parts drawing



Item	Description	Part No.	
1	Split pin	5118-043	
2	M16 castle nut	5112-026	
3	M16 plain washer	5113-057	
4	Handwheel bearing pad	270/0019	
5	Handwheel assembly	270/0020	
6	PTFE thrust washer	270/0026	□
7	Handwheel bearing pad	270/0018	
8	Belleville washer (16)	5113-048	
9	Stuffing bush	270/0016	
10	5 wave spring (8)	5104-212	
11	Spacing washer (3)	270/0014	
12	Top bearing bush	270/0015	
13	PTFE O ring (3)	5005-560	□
14	PTFE O ring (3)	5005-558	□
15	Stuffing bush (2)	270/0013	
16	Bearing backing ring	270/0012	
17	Bottom bearing	270/0011	□
18	M10 hex bolt (4)	5111-042	
19	M10 plain washer (4)	5113-009	
20	Body assembly	270/0025	
21	Spindle sub-assembly	270/0032	

Item	Description	Part No.	
22	Bottom stem end	266/1015	
23	Split pin	5118-019	
24	4" poppet weld assembly	269/7019	
25	4" PTFE poppet seal disc	269/7023A	□
26	4" poppet seal clamp plate	269/7028A	
27	Countersunk setscrew (3)	5111-030	
28	4" tank pad	267/3741	
29	Wafer gasket	267/3719G	□
30	Silicone O ring	5005-788HT	□
31	4" replaceable seat	267/3715	

SEAL KIT

Part number 270/00SK contains all parts marked □



4" 90° Pneumatic "Sealty" Extended Footvalve - inlet flange drilled 8 x 14mm holes equi-spaced on a 190mm PCD; outlet flange drilled 8 x 14mm holes equi-spaced on a 150.1mm PCD. Manufactured in 316 stainless steel with elastomer core PTFE main seal.

Options - hydraulically operated version. TW80 outlet flange drilling available. 4" to 3" option. 105° angled option.

## Specification

Weight 22 Kg  
 Design Pressure (MAWP) 4 Bar (58 PSI)  
 Test Pressure 6 Bar (87 PSI)  
 Design Temperature -20°C to +200°C (-4°F to +392°F)

Maximum Pneumatic Cylinder Operating Pressure : 7 Bar (101.5 PSI)

Approved to BS EN14433

## Range

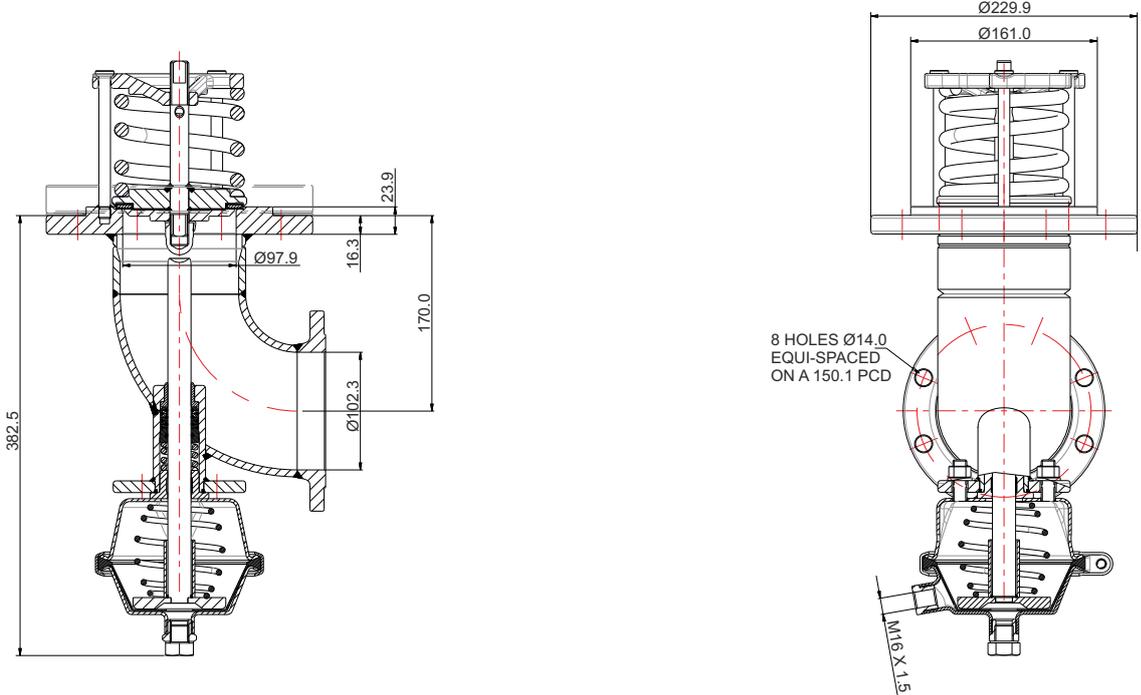
Part No.	Description
299/7000PN	4" 90°, pneumatic operation
299/7050PN	4" to 3" 90°, pneumatic operation, TW80 outlet
299/7200PN	4" 105°, pneumatic operation
299/7250PN	4" to 3" 105°, pneumatic operation, TW80 o/let

## Associated Parts

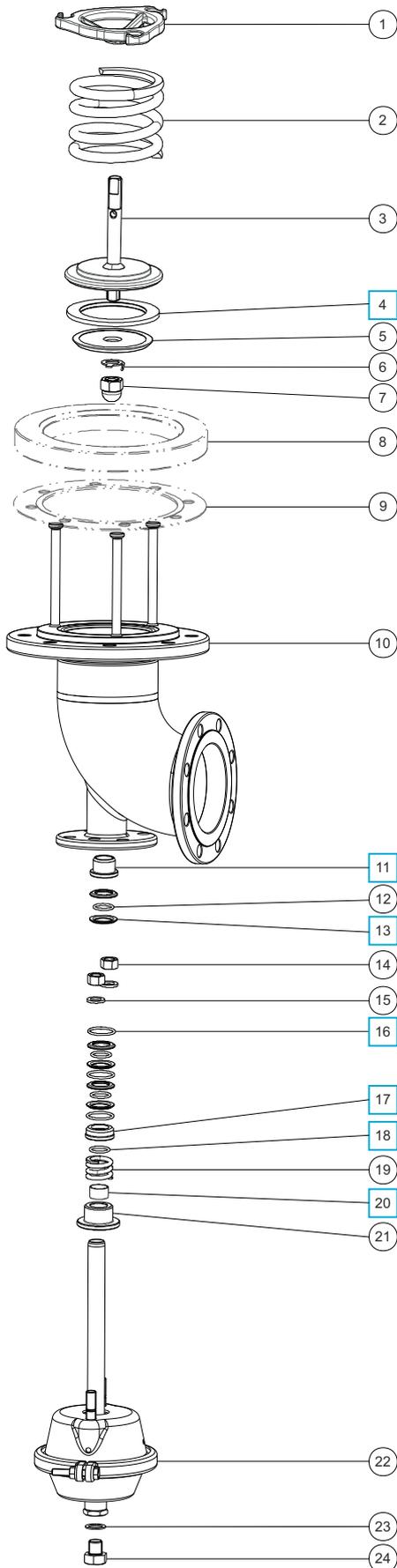
Associated Parts	Part No.
Tank pad	299/7001
Stud kit	299/7060
Inlet gasket	5005-945
Outlet gasket	5005-835

## Fitting Details

Part Number : 299/7000PN



Parts drawing

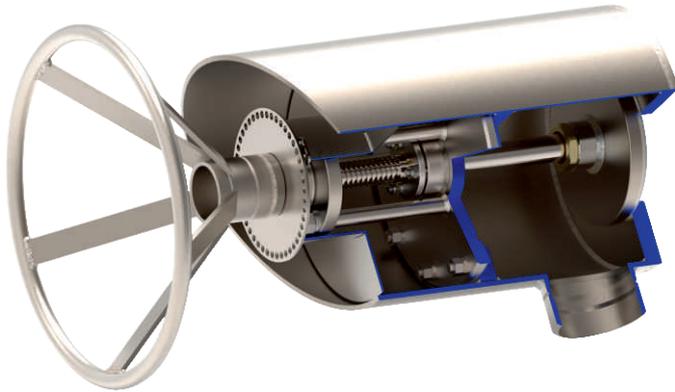


Item	Description	Part No.	
1	Spring top plate	299/7017	
2	Closure spring	5104-981	
3	Poppet seal housing	299/7034	
4	Poppet composite seal	299/7035	<input type="checkbox"/>
5	Poppet seal clamp plate	299/7036	
6	Locking tab washer	299/7031	
7	M12 dome nut	5112-052	
8	Tank pad (supplied separately)	299/7001	
9	PTFE/CNAF gasket (separate)	5005-945	
10	4" 90° Body <b>*See Note</b>	299/7010	
11	Top bearing	299/7011	<input type="checkbox"/>
12	PTFE O ring (3)	5005-926	<input type="checkbox"/>
13	Stuffing bush (6)	299/7013	
14	M12 full nut (2)	5112-006	
15	M12 spring washer (2)	5113-010	
16	PTFE O ring (3)	5005-927	<input type="checkbox"/>
17	Bottom bearing bush	299/7015	<input type="checkbox"/>
18	Viton O ring	5005-928	<input type="checkbox"/>
19	Seal housing spring	5104-982	
20	Scarf bearing	299/7032	<input type="checkbox"/>
21	Stuffing bush	299/7016	
22	Pneumatic cylinder	299/7020	
23	M16 Dowty washer	5005-696	
24	M16 bolt	5111-138	

**Note** : Part number varies according to valve specification.

### SEAL KITS

Part number **299/70SK** contains all parts marked



150mm Reedley Hot Product Valve - suitable for discharge of bitumen and other heavy oils. Designed for mounting horizontally in the side of the vessel.

150mm inlet, 100mm weld prepared outlet. Manually operated via a handwheel. Complete with a fixed splash guard and a padlock security system. Contact parts manufactured in 304/316 stainless steel, spindle manufactured in 1.4462 duplex. Poppet seal manufactured in 25% glass filled PTFE. Handwheel assembly and outlet pipe machined with a shear groove to ensure that the valve stays closed in case of accidental impact.

**Specification**

Weight	65 Kg
Design Pressure (MAWP)	3.5 Bar (51 PSI)
Test Pressure	5.25 Bar (76 PSI)
Design Temperature Range	-20°C to 250°C (-4°F to 482°F)

Approved to BS EN14433.

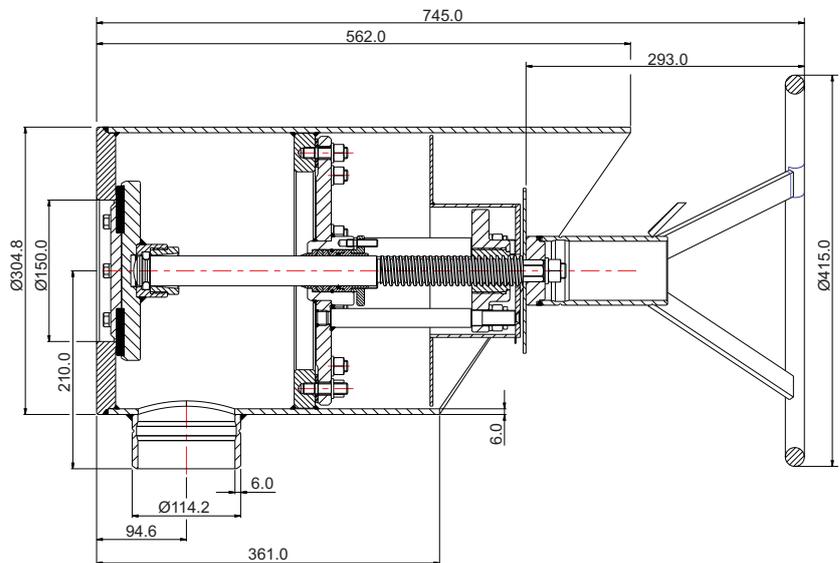
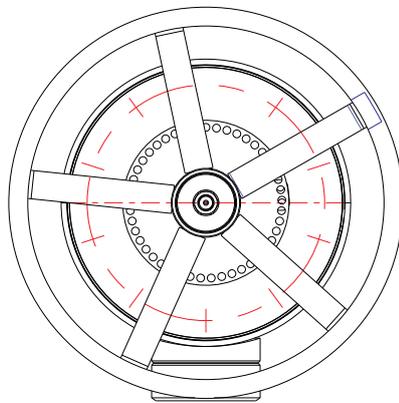
**Associated Parts**

Associated Parts	Part No.
100mm butterfly valve with congealing cargo closure plate - manually actuated	468/75HTB
100mm butterfly valve with congealing cargo closure plate - pneumatically actuated	468/75HTBPN

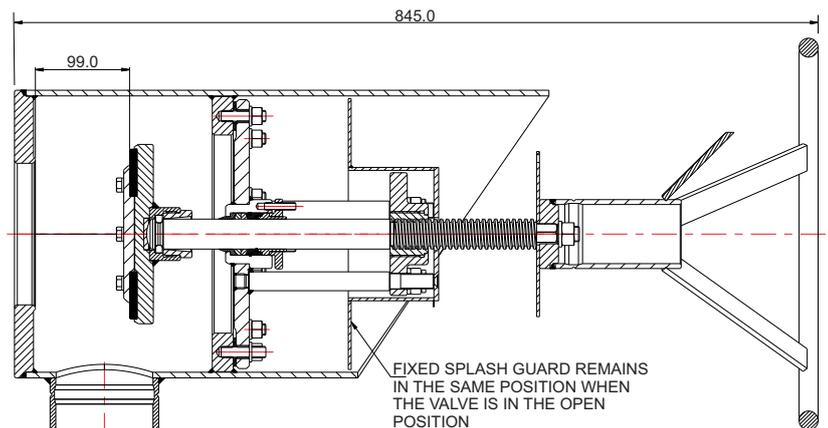
**Fitting Details**

Part Number: 262/2000

Valve shown in the CLOSED position

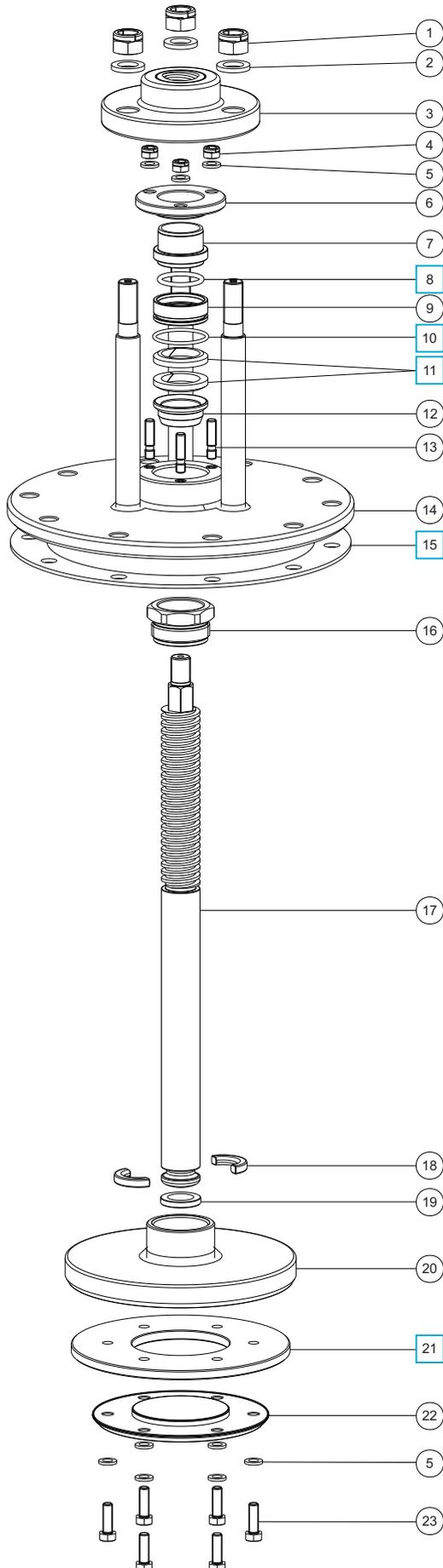


Valve shown in the OPEN position



## Parts drawing

Part number: 262/2150 - Internal Assembly



Item	Description	Part No.
1	M16 self locking nut (3)	5112-053
2	M16 spring washer(3)	5113-012
3	Threaded flange assembly	262/1037
4	M8 self locking nut (3)	5112-031
5	M8 spring washer (9)	5113-003
6	Stuffing clamp	262/1035
7	Packing clamp bush	262/1051
8	Viton O ring	ORB218VR <input type="checkbox"/>
9	Wiper bearing	262/1052
10	Viton O ring	ORB129VR <input type="checkbox"/>
11	Gland packing (2)	262/1024 <input type="checkbox"/>
12	Wiper bearing	262/1049
13	M8 x 33mm stud (3)	S0396/10
14	Tie bar weld assembly	262/1059
15	Sigma gasket *See Note	262/1007 <input type="checkbox"/>
16	Stuffing nut	262/1033
17	Spindle	262/2003
18	Thrust bearing pair	262/1028
19	Thrust bearing	262/1027
20	Poppet	262/1013
21	Poppet seal disc	262/1026 <input type="checkbox"/>
22	Seal clamp plate	262/1025
23	M8 x 25mm hex bolt (6)	5111-048

**Note:** Item 15 Sigma gasket 262/1007 is not included in 262/2150 internal assembly and must be purchased separately.

## SEAL KIT

Part number **262/20SK** contains all parts marked



SECONDARY  
CLOSURE  
DISCHARGE  
VALVES  
//







3" Blacko Ball Valve - inlet flange drilled 6 x 14mm holes (see below) on a 168.3mm PCD; 3" BSP male outlet connection. Left hand operated with TIR facility to handle. Contact parts manufactured in 316 stainless steel with PTFE seals.

Options - Right hand operation. Steam heated version.

**Specification**

Weight	15.9 Kg
Design Pressure (MAWP)	7 Bar (101.5 PSI)
Hydraulic Test Pressure	10.5 Bar (152.3 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

M12 bolts torque setting : 65 Nm (48 LBF FT)

Approved to BS EN14432 & BS EN14025

**Range**

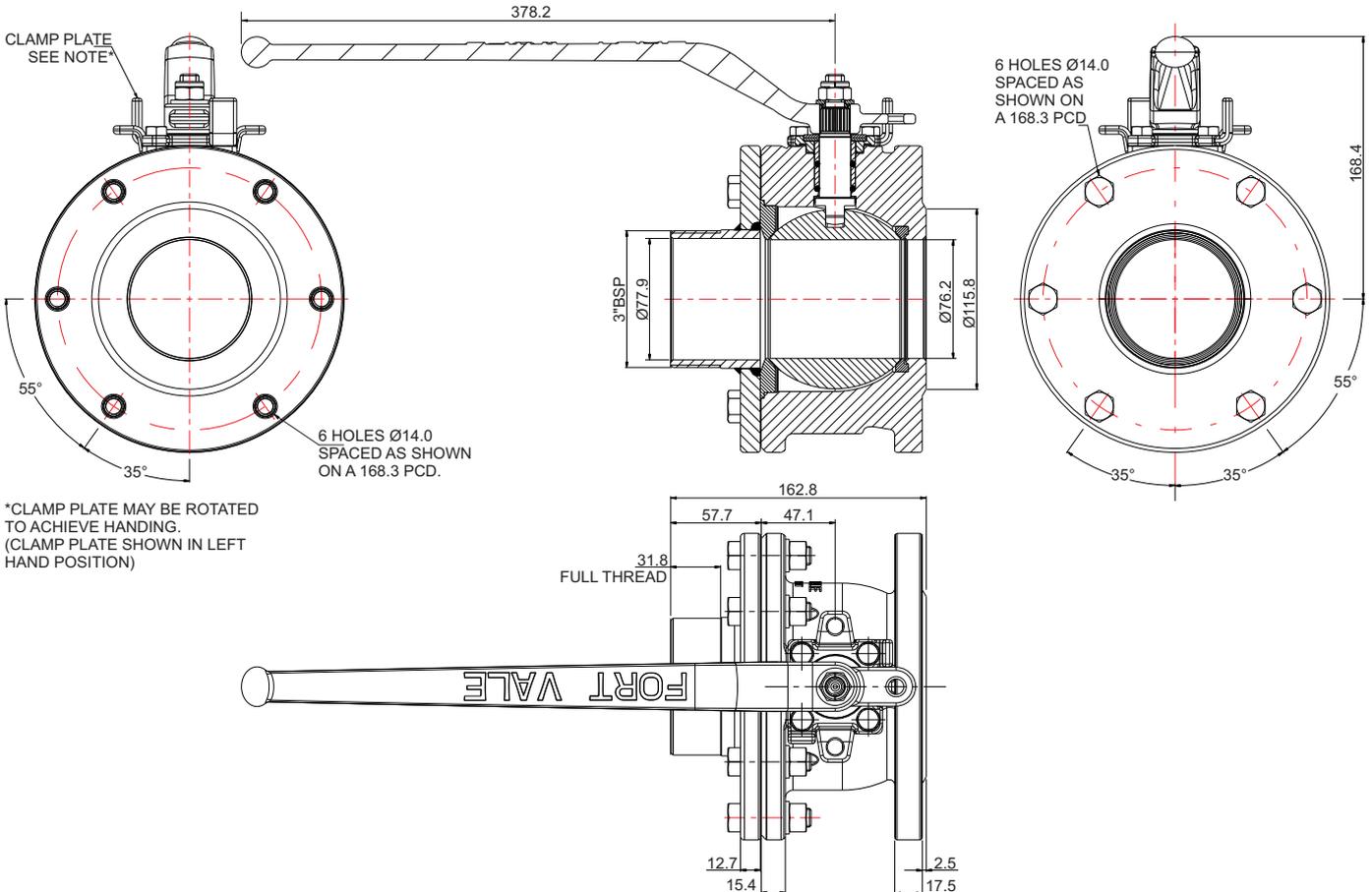
Part No.	Description
360/5000L	Left hand operated, TIR
360/5000R	Right hand operated, TIR
360/5000XSH	Steam heated, left or right hand operated

**Associated Parts**

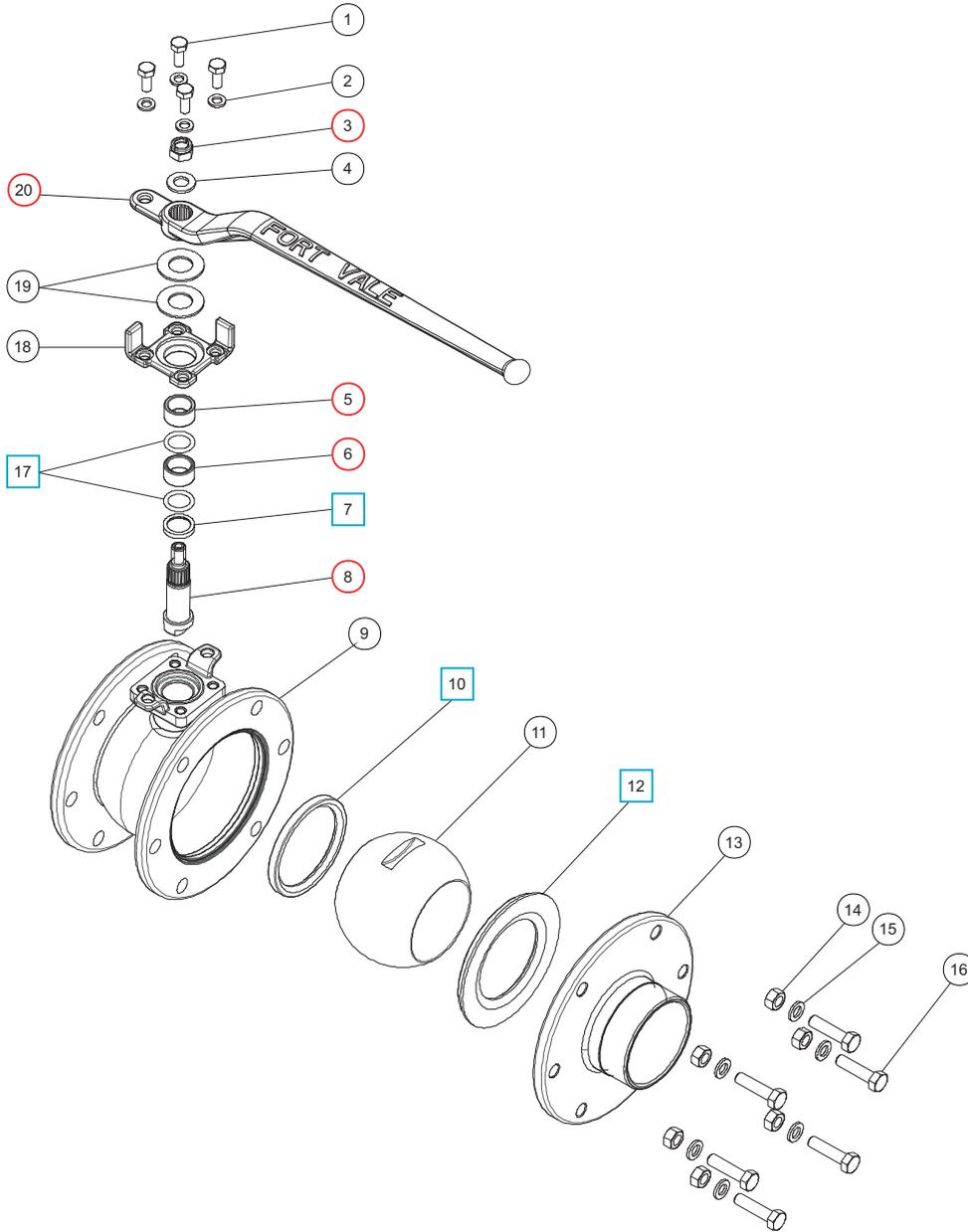
Part No.	Description
20378	Mating flange
360/0300	Inlet bolting kit
20406	Bobbin adaptor for 3" table D outlet
5005-036	Outlet gasket 3" Table D
360/8070	Blind flange
311/3000	Outlet bolting kit
10303PS	3" BSP dust cap with PTFE washer
10329P	3" dust cap washer

**Fitting Details**

Example shown : 360/5000L



Parts drawing



Item	Description	Part No.
1	M8 hex head bolt (4)	5111-822
2	M8 flat section spring washer (4)	5113-003
3	M12 self locking nut	5112-007 ○
4	M12 washer	5123-003
5	Top stuffing collar	360/3412 ○
6	Bottom stuffing collar	360/3413 ○
7	Bottom bearing	360/3421 □○
8	Spindle	360/3422 ○
9	3" flanged ball valve body	360/5014
10	Back seal	360/3402 □○

Item	Description	Part No.
11	Solid ball plug	360/3401
12	Front seal	360/3405 □○
13	3" BSP male outlet flange	20409/14
14	M12 full nut (6)	5112-006
15	M12 flat section spring washer (6)	5113-010
16	M12 hex head bolt (6)	5111-023
17	PTFE O ring (2)	5005-113 □○
18	Clamp plate	360/5005
19	20mm Belleville washer (2)	5113-041
20	Handle weld assembly	360/3416 ○

**SEAL KIT** part number **360/50SK** contains all parts marked □

**REPAIR KIT** part number **360/50RK** contains all parts marked ○



3" Blacko Ball Valve Assembly - inlet flange drilled 6 x 14mm holes on a 168mm PCD. Slotted 4 hole outlet flange. Left hand operated. Contact parts manufactured in 316 stainless steel with PTFE seals.

Options - right hand operation. Steam heated version. Available with high temperature seals. A version with 4 hole inlet is also available.

**Specification**

Weight	12.5 Kg
Design Pressure (MAWP)	7.5 Bar (108.8 PSI)
Hydraulic Test Pressure	11.25 Bar (163.2 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

Approved to BS EN14432

**Associated Parts**

Associated Parts	Part No.
Outlet flange	368/0500
Outlet gasket	5005-417
Blind flange	360/8095
Bolting kit (outlet)	311/3500
Mating flange	20378
Inlet gasket to suit 20378 mating flange	5005-169
Bolting kit (inlet)	360/0300

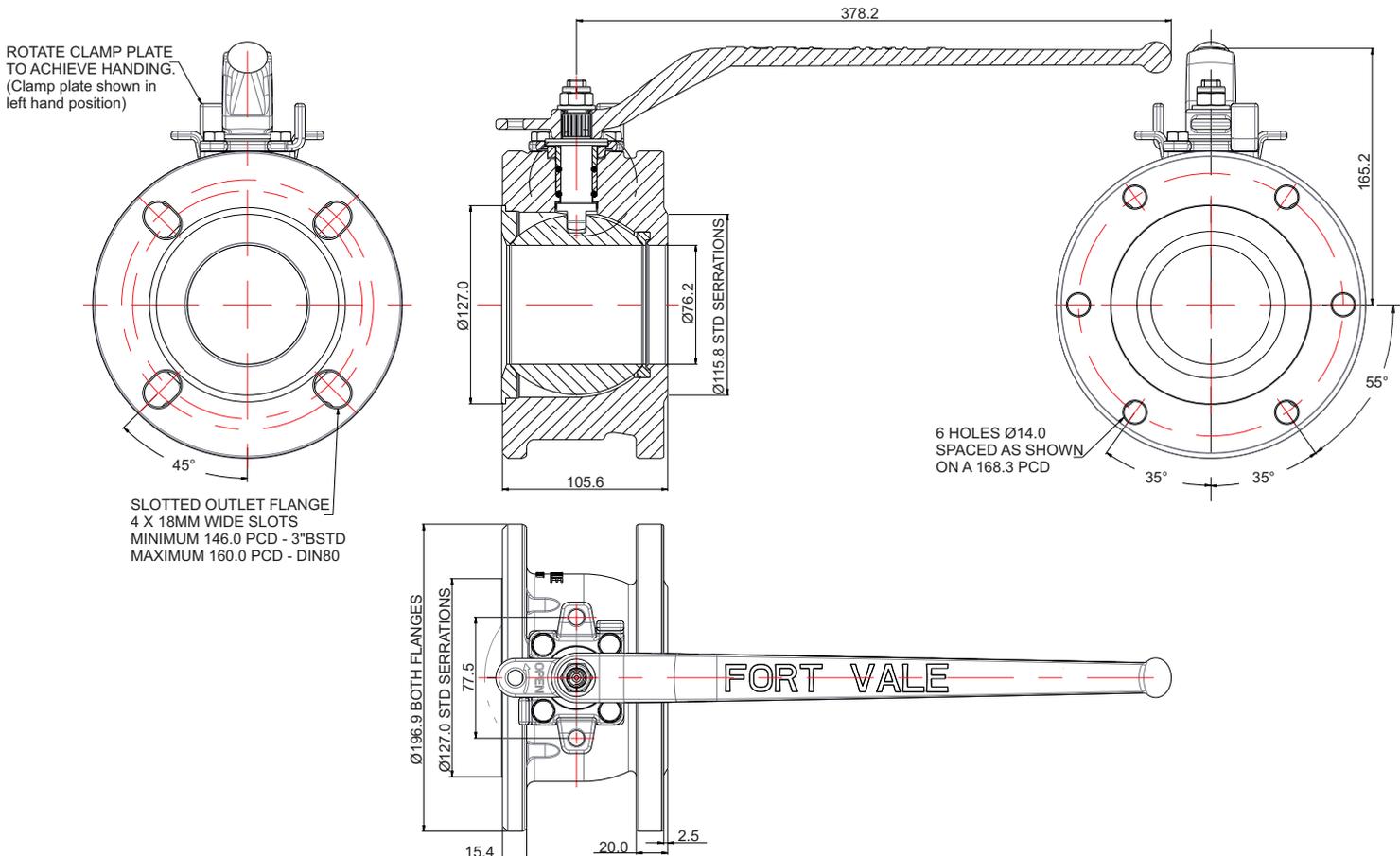
**Range**

Part No.	Description
360/5050X	3" standard ball valve, 6 hole inlet, 4 hole outlet
360/5050XHT	Fitted with high temperature seals
360/5050XSH	Steam heated valve
360/5030X	3" standard ball valve, 4 hole inlet, 4 hole outlet
360/5030XSH	Steam heated valve

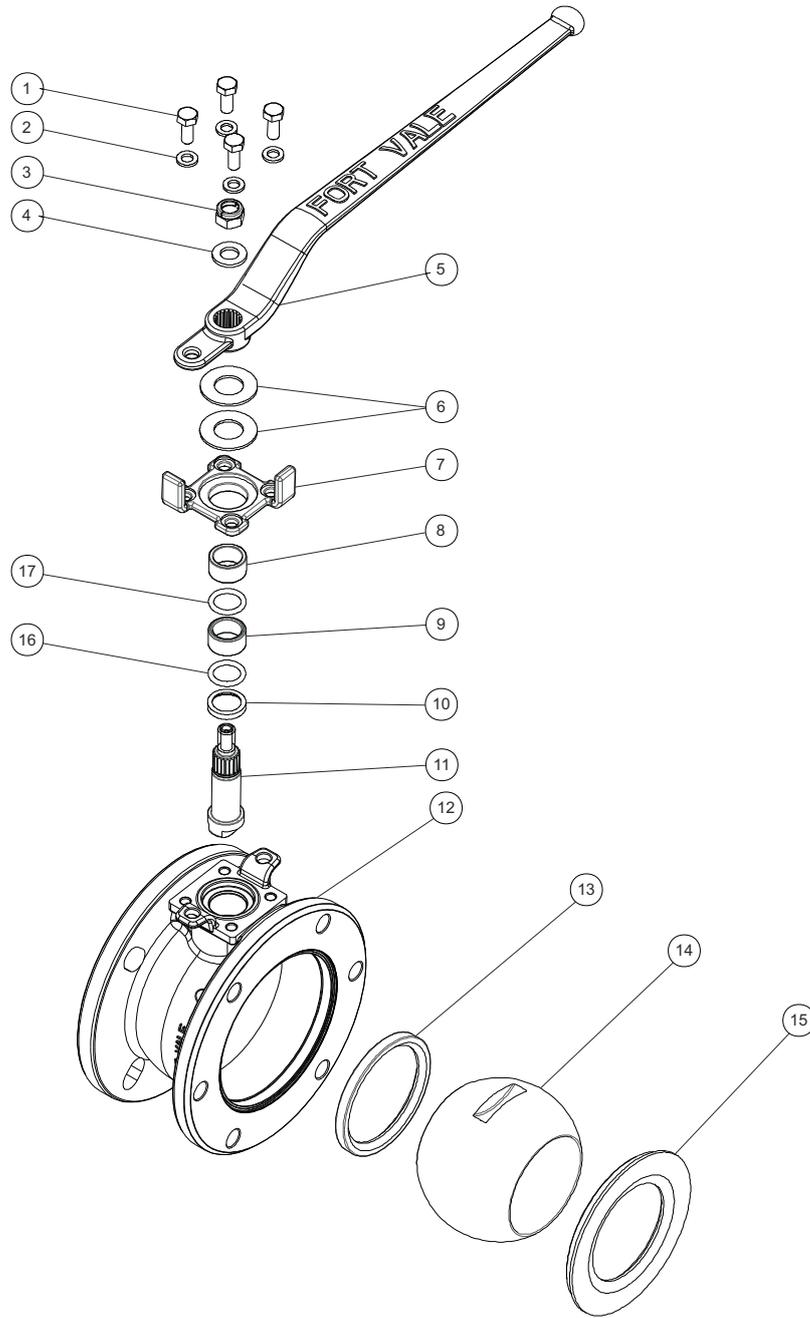
X in part number denotes whether left (L) or right (R) hand valve

**Fitting Details**

Example shown : 360/5050L



Parts drawing

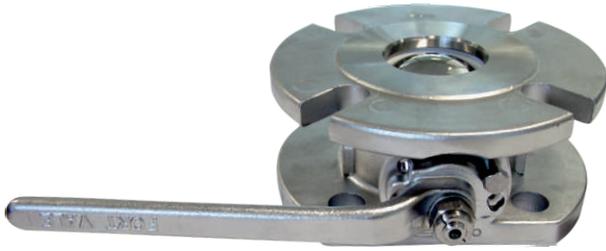


Item	Description	Part No.
1	M8 hex head bolt (4)	5111-822
2	M8 spring washer (4)	5113-003
3	M12 self locking nut	5112-007 <span style="color: red;">○</span>
4	M12 washer	5123-003
5	Handle	360/3416 <span style="color: red;">○</span>
6	20mm Belleville washer (2)	5113-041
7	Clamp plate	360/5005
8	Top stuffing collar	360/3412 <span style="color: red;">○</span>

Item	Description	Part No.
9	Bottom stuffing collar	360/3413 <span style="color: red;">○</span>
10	Bottom bearing	360/3421 <span style="color: blue;">□</span> <span style="color: red;">○</span>
11	Spindle	360/3422 <span style="color: red;">○</span>
12	3" flanged ball valve body	360/5015
13	Back seal	360/3402 <span style="color: blue;">□</span> <span style="color: red;">○</span>
14	Solid ball plug	360/3401
15	Front seal	360/3405 <span style="color: blue;">□</span> <span style="color: red;">○</span>
16	PTFE O ring (2)	5005-113 <span style="color: blue;">□</span> <span style="color: red;">○</span>

**SEAL KIT** part number **360/50SK** contains all parts marked □

**REPAIR KIT** part number **360/50RK** contains all parts marked ○

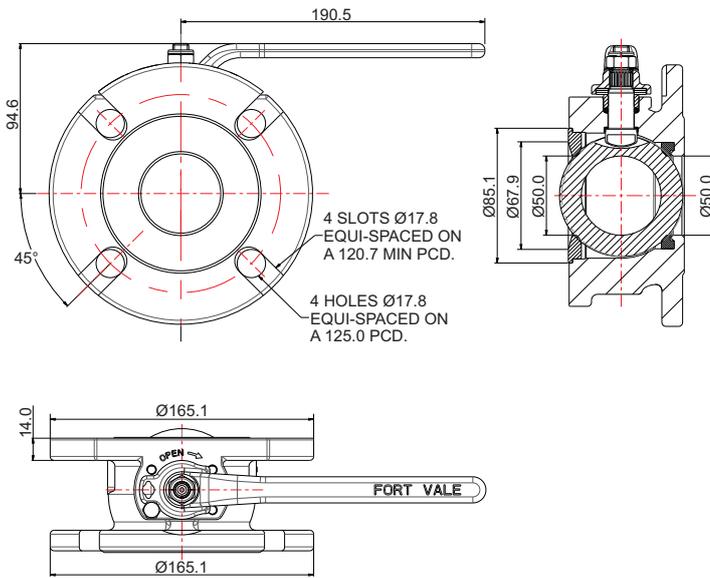


2" Full Bore Blacko Ball Valve - inlet flange drilled 4 x 18mm holes on a 125mm PCD (DIN50 PN16); outlet flange with 4 x 18mm open slots on a 120.7mm minimum diameter to suit 2" ASA150 and DIN50 PN40. Left hand operated with TIR facility to handle. Contact parts manufactured in 316 stainless steel with PTFE seals.

**Options** - A full range of air inlet and discharge ball valves is available, both manually and mechanically actuated. Steam-heated version.

**Fitting Details**

Part number : 370/0100



Recommended bolt torque 81 Nm (60 Lb/ft)

**Specification**

Weight	5.5 Kg
Design Pressure (MAWP)	7.5 Bar (108.8 PSI)
Hydraulic Test Pressure	15 Bar (217.5 PSI)
Design Temperature Range	-40°C to 205°C (-40° F to 400°F)

Design Approval by Lloyds Register of Shipping Approved to BS EN14432

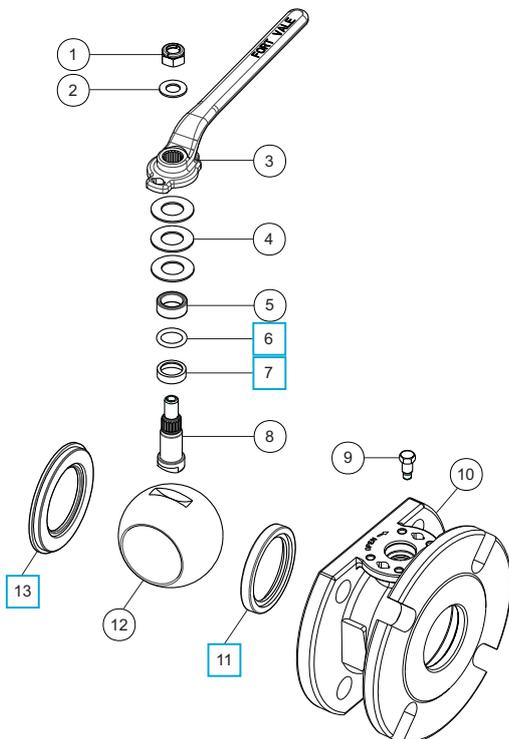
**Range**

Part No.	Description
370/0100SH	c/w steam heating provision
370/0140	c/w DN80 inlet adaptor & outlet blind flange
370/0150	c/w 2" BSP outlet spigot flange
370/0180	c/w outlet blind flange

**Associated Parts**

Associated Parts	Part No.
Tank weld-in pad	355/3100
Stud kit	311/3700
Outlet gasket	5005-361
Blind flange	370/4239CM
Bolting kit	311/3500

**Parts drawing**



Item	Description	Part No.
1	M10 self lock nut	5112-008
2	M10 plain washer	5113-009
3	Handle	370/0125
4	16mm Belleville washer (3)	5113-038
5	Stuffing collar	370/0103
6	PTFE O ring	5005-688 <input type="checkbox"/>
7	Bottom bearing	370/0104 <input type="checkbox"/>
8	Spindle	370/0120
9	Stop bolt	370/0107
10	2" ballvalve body	370/0110
11	PTFE seal	370/0102 <input type="checkbox"/>
12	50mm ball	370/3301
13	PTFE seal	370/0105 <input type="checkbox"/>

**SEAL KIT**

Part number 370/01SK contains all parts marked





3" NB Tank-Pro Butterfly Valve - weld-prepared inlet and 3"BSP threaded outlet. Lockable handle with T.I.R. as standard. Contact parts manufactured in 316 stainless steel with PTFE main seal.

Options - body may be supplied with or without 3/8"BSP venting port. Outlet may be supplied 3"BSP standard or extended, 3"NPT or weld-prepared. Congealing cargo closure plate may be incorporated.

**Features**

- Designed specifically to meet the needs of the road tanker industry and especially suited to chemical applications.
- Supplied as a complete unit requiring no extra parts to assemble the valve to the tank.
- The valve concept eliminates the need for the valve to be centralized when fitting to the tank, thus avoiding potential valve damage and/or leakage.
- Optional 3/8"BSP port integral to the valve body allows for a purge or sampling facility.
- Clean valve internal lines reduces the risk of contamination between successive cargoes.
- Eccentric outlet facilitates full self-draining.
- Simple maintenance procedure with all internal mechanism and seals common to the standard Fort Vale 3" butterfly valve, thus reducing the required stock of spare parts.
- Lockable handle with TIR facility as standard to meet ADR requirements. A removable square drive key is included with each valve.

**Specification**

Weight	6.07 Kgs
Design Pressure	6 Bar (87 PSI)
Body Hydraulic Test Pressure	10 Bar (145 PSI)
Design Temperature	-40°C to 200°C (-40°F to 392°F)

Lloyds Register of Shipping Design Appraisal document number **DCF9376/1**. Approved to **BS EN14432**. Rijksdienst voor het Wegverkeer Approval number **VLG S-9301**.

**Range**

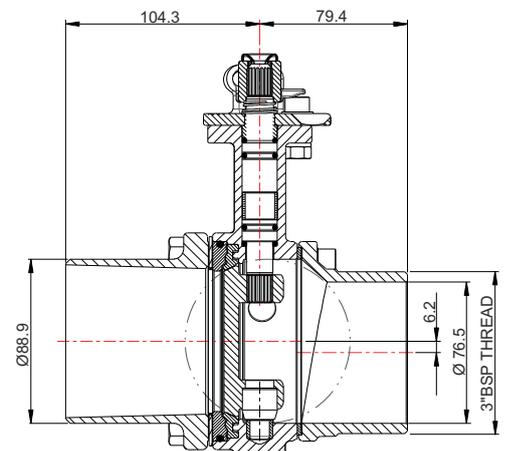
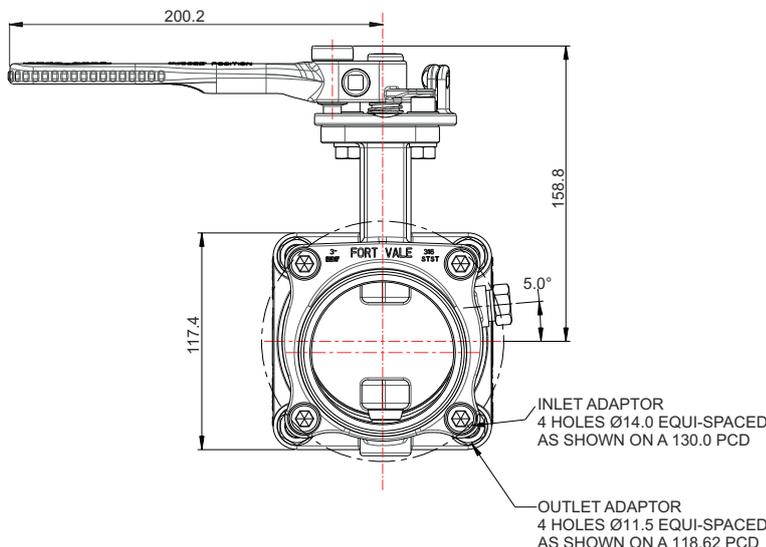
Part No.	Body	Outlet
368/9400SXBA	Non-vented	3"BSP standard
368/9400SVBA	Vented 3/8" BSP	3"BSP standard
368/9400SXEA	Non-vented	3"BSP extended
368/9400SVEA	Vented 3/8" BSP	3"BSP extended

**Associated Parts**

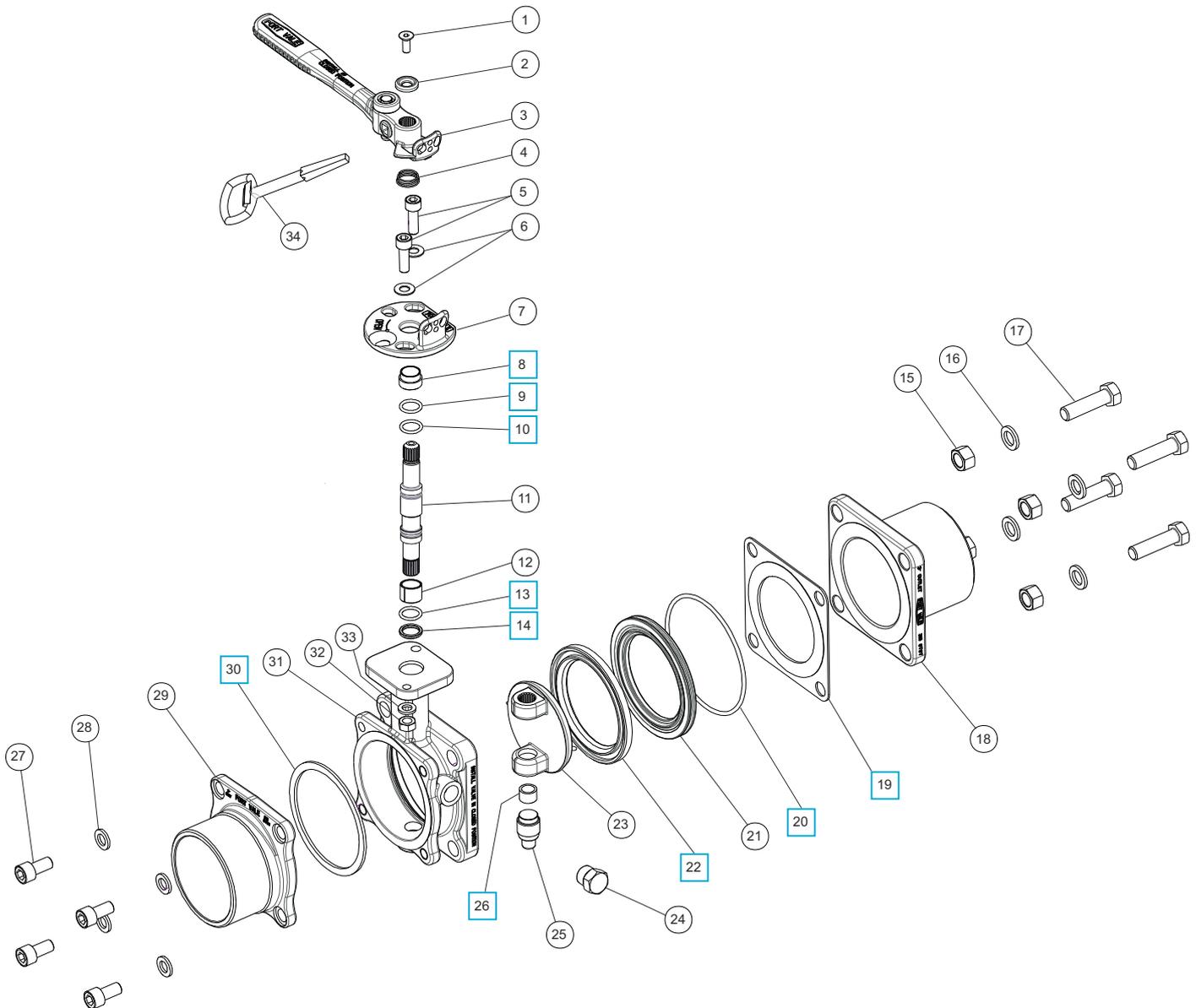
Associated Parts	Part No.
3" BSP blank cap with PTFE seal	10303PS
Conversion mounting kit	368/9401KIT

**Fitting Details**

Example shown : 3" Tank-Pro Butterfly Valve - part number 368/9400SXBA



## Parts drawing



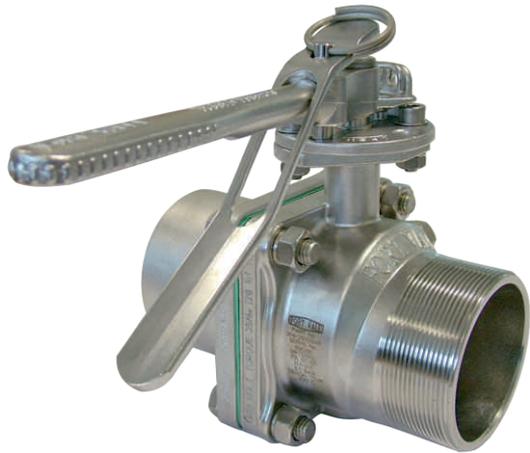
Item	Description	Part No.
1	M6 socket head set screw	5111-030
2	Washer	20370
3	Handle assembly	368/0075
4	Electrical continuity spring	368/0014
5	M8 socket head cap screw (2)	5111-148
6	M8 plain washer (2)	5113-005
7	Stuffing plate	368/0041
8	Stuffing clamp bush	368/0301 <input type="checkbox"/>
9	PTFE O Ring	20363 <input type="checkbox"/>
10	Viton O ring	20361 <input type="checkbox"/>
11	Spindle	368/0200
12	Split bearing <b>*See Note A</b>	252/0517
13	Perfluoroelastomer O Ring	5005-586 <input type="checkbox"/>
14	PTFE spindle seat	368/0009 <input type="checkbox"/>
15	M12 full nut (4)	5112-006
16	M12 spring washer (4)	5113-010
17	M12 hex head set screw (4)	5111-023

Item	Description	Part No.
18	Inlet adaptor <b>*See Note B</b>	368/9410
19	CNAF/PTFE inlet gasket	5005-707 <input type="checkbox"/>
20	Nitrile O ring	5005-342 <input type="checkbox"/>
21	Seal clamp	368/9148
22	PTFE main seal	368/0002 <input type="checkbox"/>
23	Closure plate	368/0400
24	3/8 Taper plug <b>*See Note B</b>	5128-0XX
25	Bottom spindle	368/0036
26	Bottom spindle bush	368/0035 <input type="checkbox"/>
27	M10 socket head cap screw (4)	5111-053
28	M10 spring washer (4)	5113-002
29	3" BSP outlet <b>*See Note B</b>	368/9430
30	PTFE outlet seal	5005-706 <input type="checkbox"/>
31	Body (non-vented) <b>*See Note B</b>	368/9420A
32	M8 full nut (2)	5112-001
33	M8 spring washer (2)	5113-003
34	Key	368/4625

**Note A :** Split bearing, part no. 252/0517 is used in valves manufactured since November 2011. Please order 252/0517 in addition to 368/00SK if it is required as a spare part.

**Note B :** Part number varies according to specification

**SEAL KIT** part number 368/94SK contains all parts marked



3" Unify Road Tanker Butterfly Valve - weld-prepared inlet and 3" BSP threaded outlet. Contact parts manufactured in 316 stainless steel with PTFE main seal.

Options - body may be supplied with or without 3/8" BSP venting port. Inlet adaptor available straight, angled or with 85mm I/D.

## Range

Part No.	Body	Inlet Adaptor
368/2500AVA	Vented 3/8" BSP	Angled
368/2500ANA	Non-vented	Angled
368/2500SVA	Vented 3/8" BSP	Straight
368/2500SNA	Non-vented	Straight
368/2500BVA	Vented 3/8" BSP	85mm I/D
368/2500BNA	Non-vented	85mm I/D
368/2500NVA	Vented 3/8" BSP	No inlet adaptor
368/2500NNA	Non-vented	No inlet adaptor

## Specification

Weight	5.76 Kgs
Design Pressure (MAWP)	6 Bar (87 PSI)
Service Test Pressure	10 Bar (145 PSI)
Design Temperature Range	-40°C to 200°C -40°F to 392°F

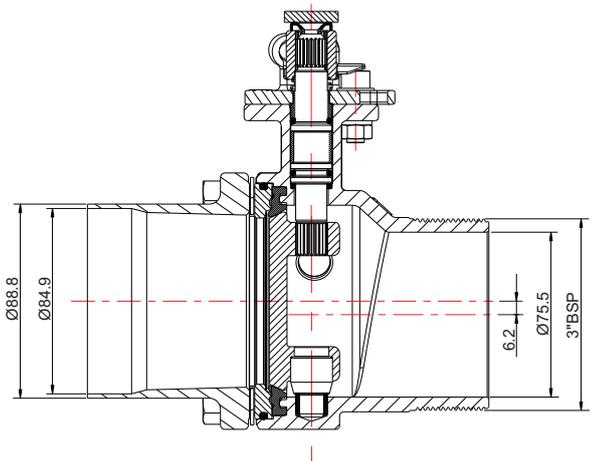
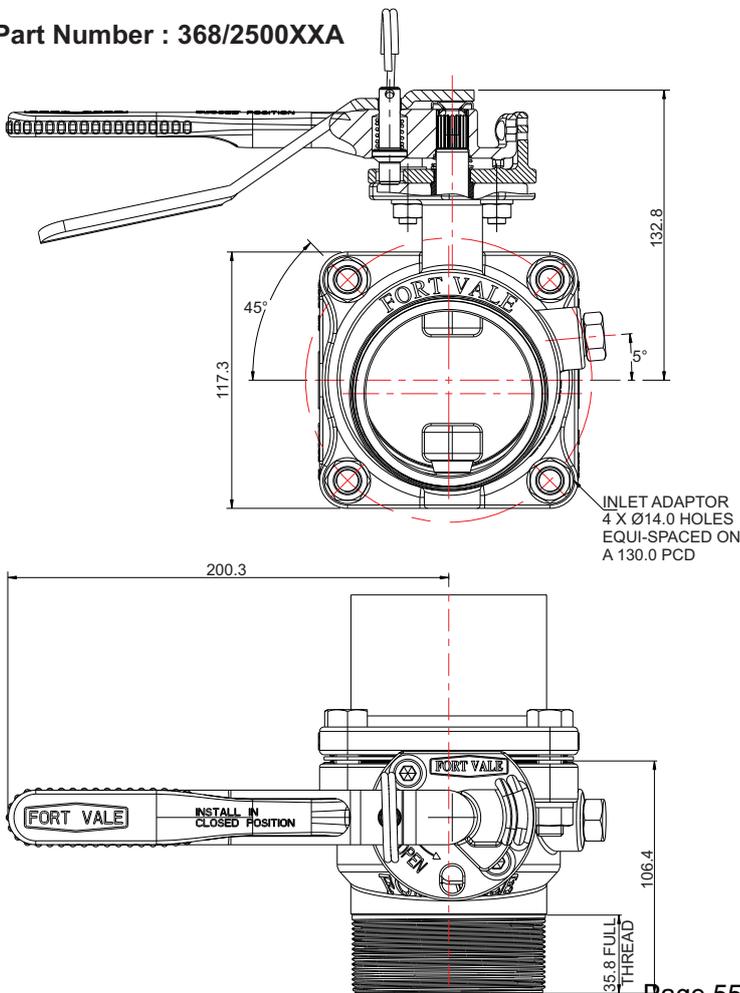
Approved to BS EN14432.

## Associated Parts

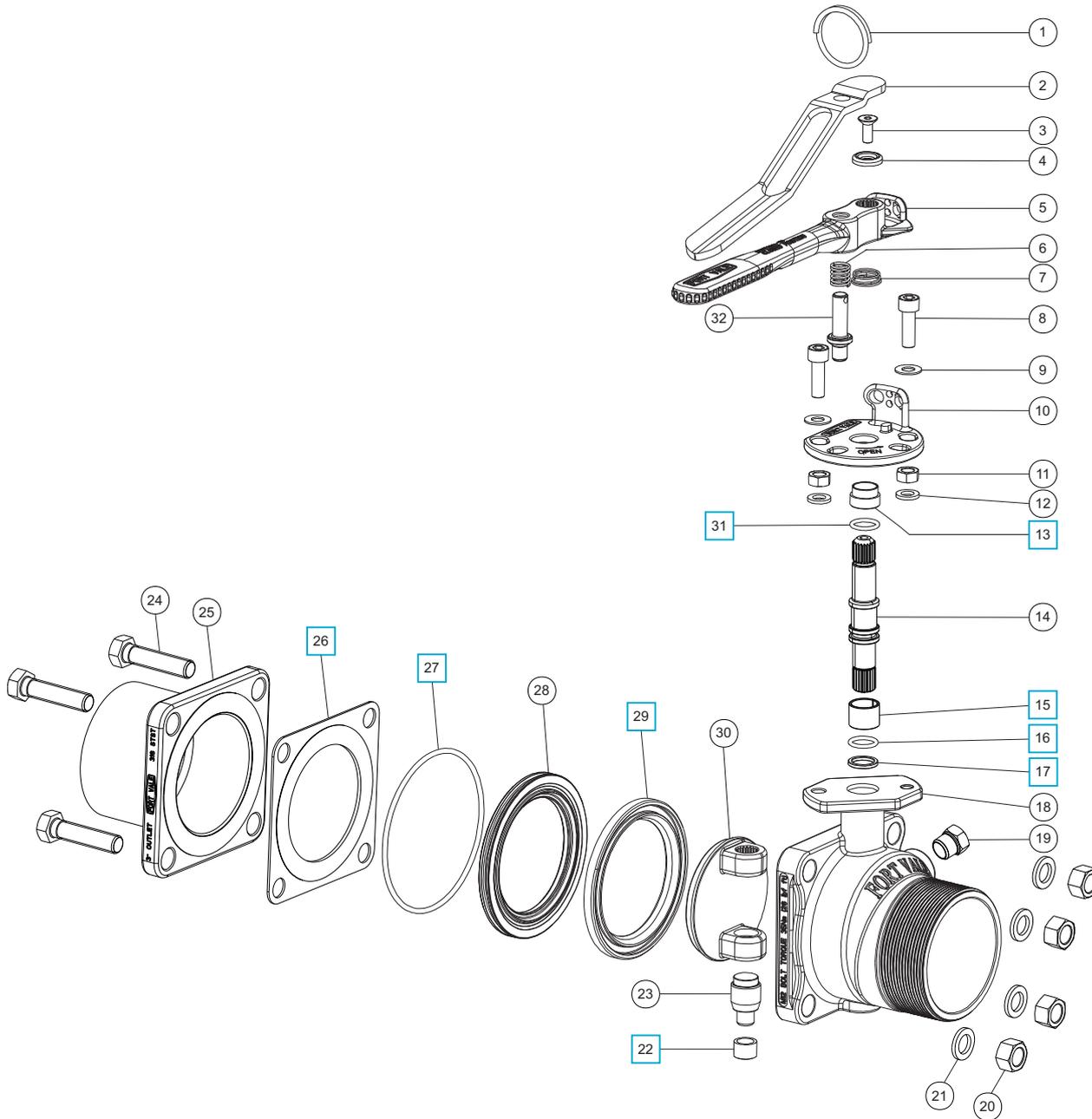
Part Number	Description
10303PS	3" BSP blank cap with PTFE seal

## Fitting Details

Part Number : 368/2500XXA



## Parts drawing



Item	Description	Part No.
1	Split ring	368/0011
2	Handle lever	368/9837
3	Countersunk bolt	5111-030
4	Retaining washer	20370
5	Butterfly handle	368/0050
6	Handle spring	368/0012
7	Electrical continuity spring	368/0014
8	M8 cap screw (2)	5111-148
9	M8 plain washer (2)	5113-005
10	Stuffing clamp	368/0040
11	M8 full nut (2)	5112-001
12	M8 spring washer (2)	5113-003
13	Stuffing clamp bush	368/0301 <input type="checkbox"/>
14	Spindle	368/0201
15	Split bearing	252/0517 <input type="checkbox"/>
16	Viton O ring	20361 <input type="checkbox"/>
17	PTFE spindle seat	368/0009 <input type="checkbox"/>

### SEAL KIT

Part number **368/25SK** contains all parts marked

Item	Description	Part No.
18	Butterfly valve body with vent	368/2520
	Butterfly valve body without vent	368/2510
19	3/8" BSP taper plug <b>*See note</b>	5128-011
20	M12 full nut (4)	5112-006
21	M12 spring washer (4)	5113-010
22	Bottom bush	368/0035 <input type="checkbox"/>
23	Bottom spindle	368/0036
24	M12 hex bolt (4)	5111-032
25	Inlet flange <b>**See note</b>	368/94XX
26	CNAF/PTFE gasket	5005-707 <input type="checkbox"/>
27	Nitrile O ring	5005-342 <input type="checkbox"/>
28	Seal clamp	368/9148
29	PTFE main seal	368/0002 <input type="checkbox"/>
30	Closure plate	368/0400
31	PTFE O ring	20363 <input type="checkbox"/>
32	Handle location pin	368/0010

**\*Note** Item 19 is required only on the vented assembly.  
**\*\*Note** Item 25 part no. varies according to specification.



**3" Clamped Butterfly Valve** - left hand operated with TIR to handle and padlock facility. Contact parts manufactured in 316 stainless steel with PTFE main seal.

**Options** - lockable handle. "Congealing cargo" version with semi-spherical closure plate. Right hand operated version. Range of 2" and 4" clamped valves. TW style body available.

**Specification**

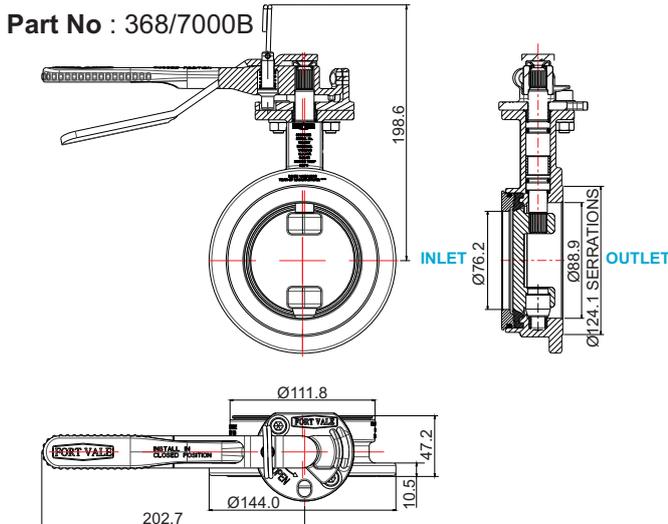
Weight	3.5 Kg
Design Pressure (MAWP)	6 Bar (87 PSI)
Test Pressure	10 Bar (145 PSI)
Design Temperature	-40°C to 200°C (-40°F to 392°F)

Design approvals by Lloyds Register of Shipping, Rijksdienst, SNCF, RMRS. Approved to BS EN14432

**Range**

Part No.	Description
368/7000B	Left hand standard butterfly valve
368/9110B	Left hand with semi-spherical closure plate
368/4000A	Right hand standard butterfly valve

**Fitting Details**

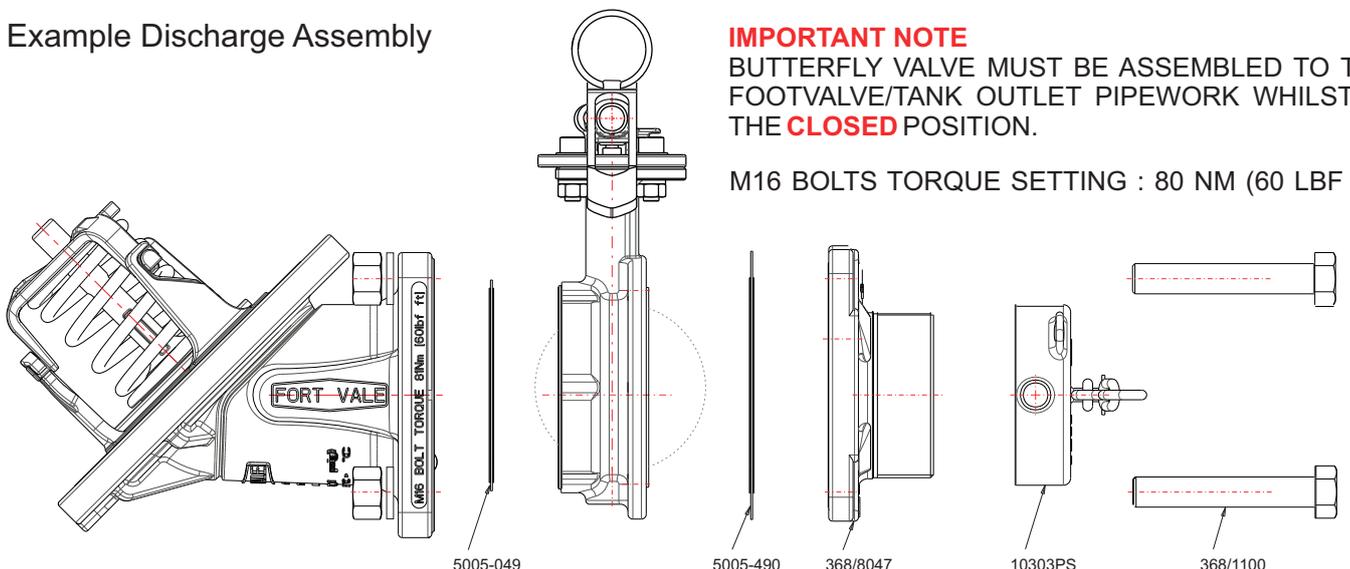


**Associated Parts**

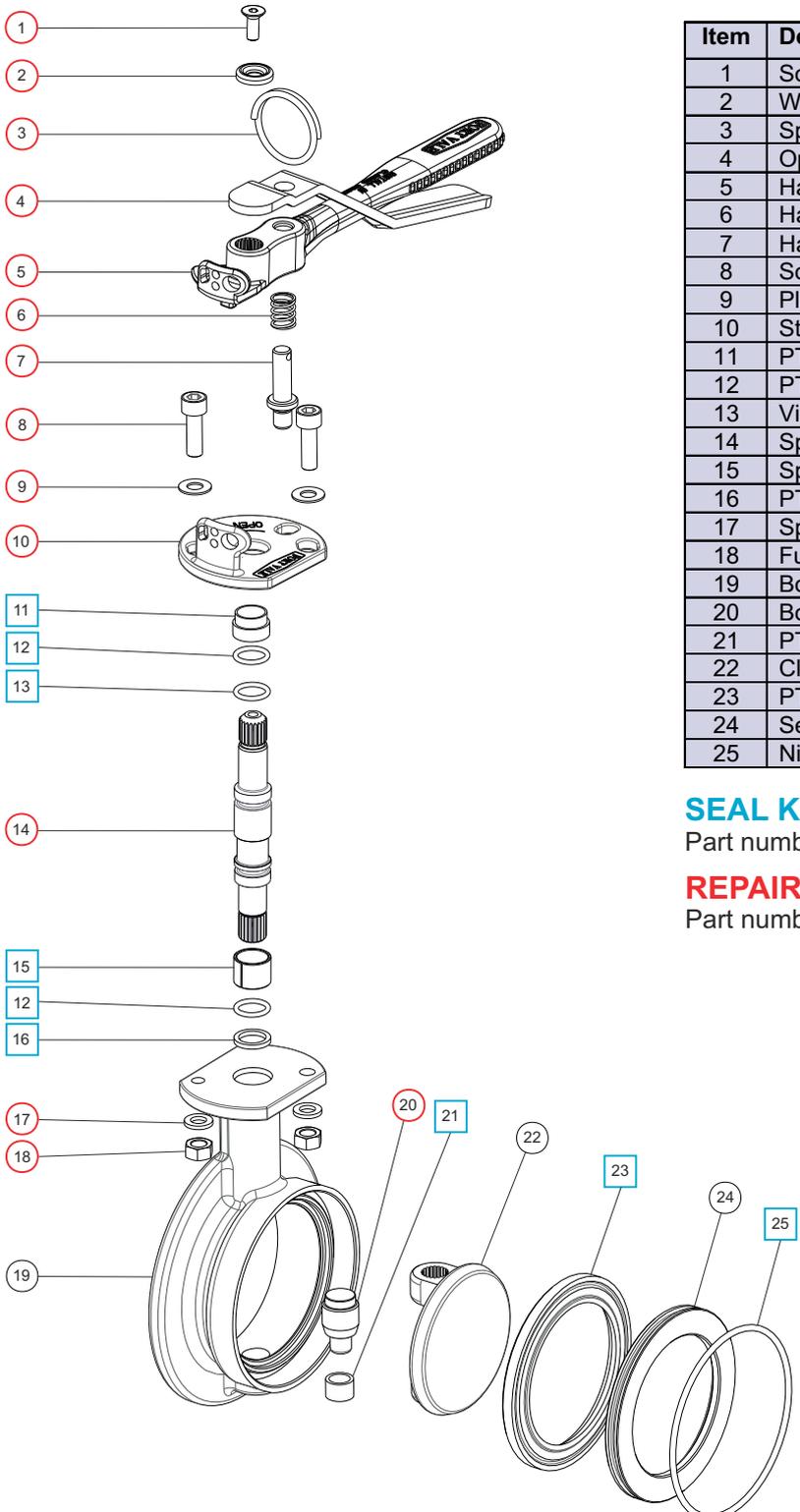
Associated Parts	Part No.
CNAF/PTFE inlet gasket	5005-049
CNAF/PTFE outlet gasket	5005-490
CNAF/PTFE square inlet gasket - 4 hole	5005-198
CNAF/PTFE square outlet gasket - 4 hole	5005-195
Bolting kit	368/1100
3" BSP outlet flange	368/8047
3" BSP blank cap with PTFE washer	10303PS
3" Camlock outlet flange	368/8058
3" Camlock blank cap	90/DC300
3" NPT outlet flange	368/8049
3" NPT blank cap with PTFE washer	425/3250

**Assembly Details**

Example Discharge Assembly



## Parts drawing



Item	Description	Part No.	
1	Sockethead setscrew	5111-030	○
2	Washer	20370	○
3	Split ring	368/0011	○
4	Operating lever	368/9837	○
5	Handle	368/0050	○
6	Handle location spring	368/0012	○
7	Handle location pin	368/0010	○
8	Sockethead capscrew (2)	5111-148	○
9	Plain washer (2)	5113-005	○
10	Stuffing clamp	368/0040	○
11	PTFE stuffing clamp bush	368/0301	□
12	PTFE O ring (2)	20363	□
13	Viton O ring	20361	□
14	Spindle	368/0200	○
15	Split bearing	252/0517	□
16	PTFE spindle seat	368/0009	□
17	Spring washer (2)	5113-003	○
18	Full nut (2)	5112-001	○
19	Body	368/0150	
20	Bottom spindle	368/0036	○
21	PTFE bottom bush	368/0035	□
22	Closure plate	368/0400	
23	PTFE main seal	368/0002	□
24	Seal clamp plate	368/0045	
25	Nitrile O ring	5005-342	□

### SEAL KIT

Part number **368/00SK** contains all parts marked □

### REPAIR KIT

Part number **368/00RKA** contains all parts marked ○



### SELF ADHESIVE DECAL - PART NO. 368/0300

Text in English, German and French

A detailed step-by-step repair manual is now available for our range of discharge butterfly valves. Please contact our Sales team for further information.



3" Clamped Butterfly Valve with Spring Return Pneumatic Actuator - valve connection to actuator to ISO 5211 / DIN 3337 standards. Counter-clockwise opening. Contact parts manufactured in 316 stainless steel with PTFE seal.

**Options** - a full range of manually operated valves are available.

## Specification

Weight	14 Kg
Design Pressure (MAWP)	6 Bar (87 PSI)
Test Pressure	10 Bar (145 PSI)
Max Actuator Pressure	8 Bar (116 PSI)
Valve Design Temperature Range	-40°C to 200°C (-40°F to 392°F)
Actuator Design Temperature Range	-20°C to 80°C (-4°F to 176°F)
M16 clamping bolts torque setting	81 NM (60 LBF FT)

### Operating Pressure Requirements

Start to open	3.1 Bar (45 PSI)
Fully open	3.8 Bar (55 PSI)

Butterfly valve approved to BS EN14432

## Range

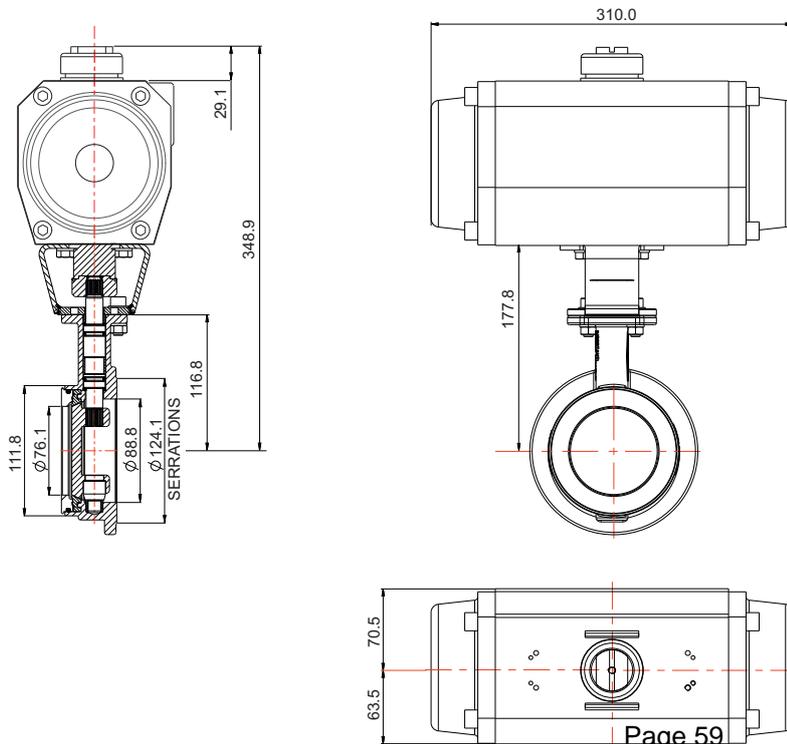
Part No.	Description
368/7000B	Standard manually operated butterfly valve
368/7000BPN	Butterfly valve with pneumatic actuator

## Associated Parts

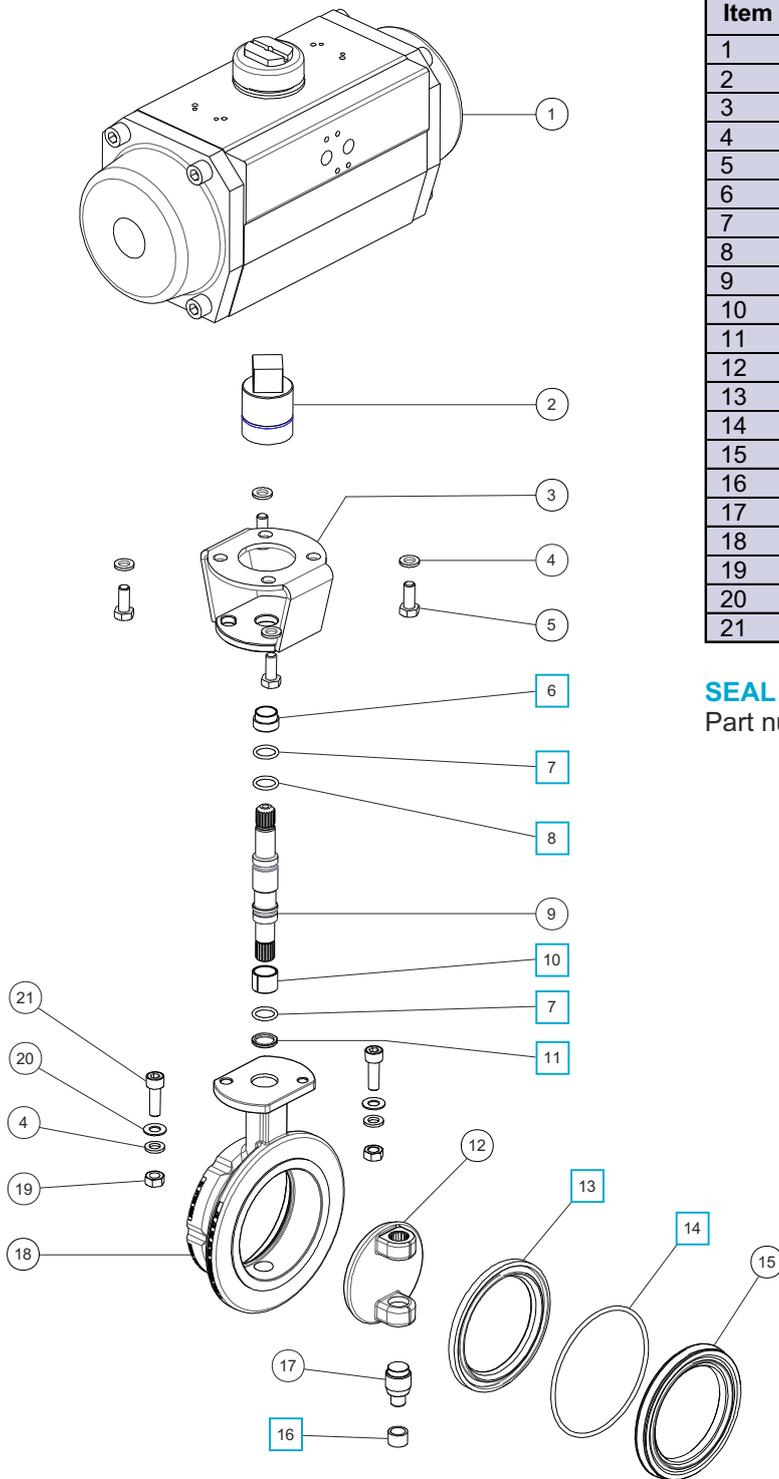
Part No.	Associated Parts
5005-049	CNAF/PTFE inlet gasket
5005-490	CNAF/PTFE outlet gasket
368/1100	Bolting kit
368/8047	3" BSP outlet flange
10303PS	3" BSP blank cap with PTFE washer
368/8058	3" Camlock outlet flange
90/DC300	3" Camlock blank cap
368/8049	3" NPT outlet flange
425/3250	3" NPT blank cap with PTFE washer

## Fitting Details

Part Number : 368/7000BPN



Parts drawing



Item	Description	Part No.	
1	Spring return actuator	5127-115	
2	Drive adaptor assembly	368/2824	
3	Bridge assembly	368/2820	
4	M8 flat section spring washer (6)	5113-003	
5	M8 x 20mm hex head bolt (4)	5111-822	
6	Stuffing clamp bush	368/0301	<input type="checkbox"/>
7	PTFE O ring (2)	20363	<input type="checkbox"/>
8	Viton O ring	20361	<input type="checkbox"/>
9	Spindle	368/0200	
10	Split bearing	252/0517	<input type="checkbox"/>
11	PTFE spindle seat	368/0009	<input type="checkbox"/>
12	Closure plate	368/0400	
13	Main seal	368/0002	<input type="checkbox"/>
14	Nitrile O ring	5005-342	<input type="checkbox"/>
15	Seal clamp plate	368/0045	
16	Bottom bush	368/0035	<input type="checkbox"/>
17	Bottom spindle	368/0036	
18	Body	368/0150	
19	M8 full nut (2)	5112-001	
20	M8 plain washer (2)	5113-005	
21	M8 x 25mm socket capscrew (2)	5111-148	

**SEAL KIT**

Part number **368/00SK** contains all parts marked



4" Clamped Butterfly Valve - left hand operated with TIR to handle and padlock facility. Contact parts manufactured in 316 stainless steel with Flexityt main seal.

Options - lockable handle. "Congealing cargo" version with semi-spherical closure plate. Version with high temperature seals. Pneumatic actuator available.

Range of 2" and 3" clamped valves is available.

**Specification**

Weight	4 Kg
Design Pressure (MAWP)	6 Bar (87 PSI)
Test Pressure	10 Bar (145 PSI)
Design Temperature Range	-40°C to 250°C (-40°F to 482°F)

The above information varies according to the valve specification.

Design approval by Lloyds Register of Shipping. Approved to BS EN14432.

**Range**

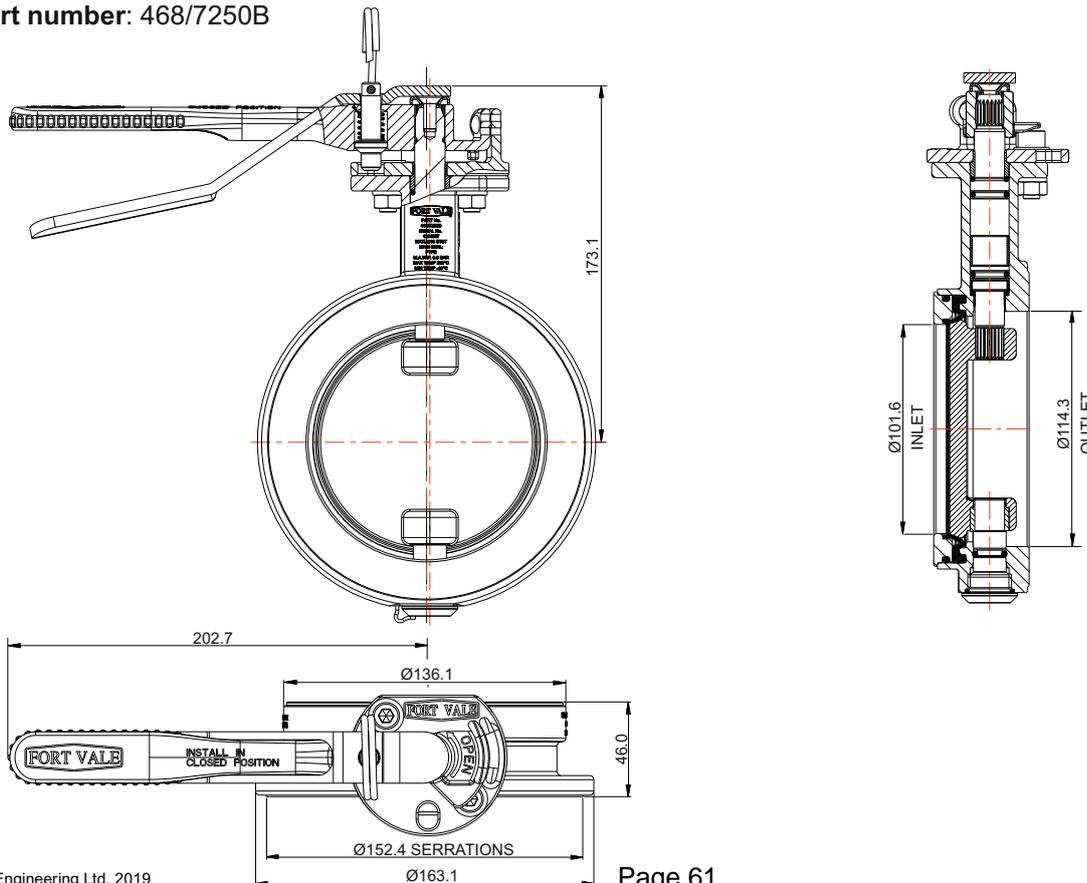
Part No.	Description
468/7250B	Standard butterfly valve
468/7200BPN	Pneumatically actuated
468/725HTB	Fitted with high temperature seals
468/7260SHB	St.heated, semi-spherical closure plate

**Associated Parts**

Associated Parts	Part No.
CNAF/PTFE inlet gasket	5005-468
CNAF/PTFE outlet gasket	5005-469
Bolting kit (8 x bolts, nuts, washers)	468/1100
4" BSP outlet flange	468/8047
4" BSP blank cap with PTFE washer	10304PSC
4" NPT outlet flange	468/8049
4" NPT blank cap with PTFE washer	425/4000

**Fitting Details**

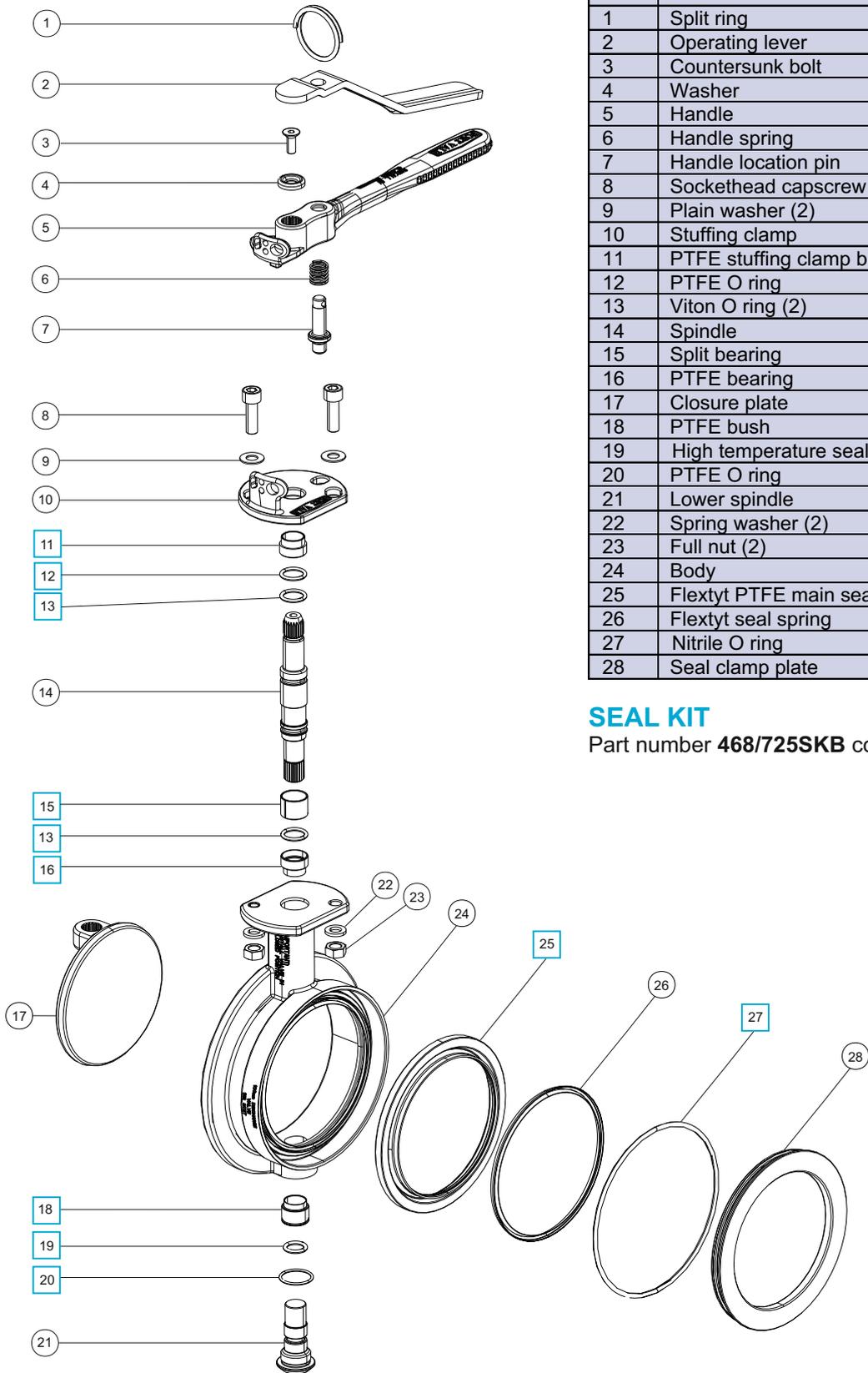
Part number: 468/7250B



## Parts drawing



Part number : 468/7250B



Item	Description	Part No.	
1	Split ring	368/0011	
2	Operating lever	368/9837	
3	Countersunk bolt	5111-030	
4	Washer	20370	
5	Handle	368/0050	
6	Handle spring	368/0012	
7	Handle location pin	368/0010	
8	Sockethead capscrew (2)	5111-148	
9	Plain washer (2)	5113-005	
10	Stuffing clamp	368/0040	
11	PTFE stuffing clamp bush	368/0301	<input type="checkbox"/>
12	PTFE O ring	20363	<input type="checkbox"/>
13	Viton O ring (2)	20361	<input type="checkbox"/>
14	Spindle	368/0205	
15	Split bearing	368/0039	<input type="checkbox"/>
16	PTFE bearing	368/0009HT/1	<input type="checkbox"/>
17	Closure plate	468/0400	
18	PTFE bush	468/0035	<input type="checkbox"/>
19	High temperature seal	ORB614K1	<input type="checkbox"/>
20	PTFE O ring	5005-160	<input type="checkbox"/>
21	Lower spindle	468/0005	
22	Spring washer (2)	5113-003	
23	Full nut (2)	5112-001	
24	Body	468/0200	
25	Flextyt PTFE main seal	468/0030	<input type="checkbox"/>
26	Flextyt seal spring	468/0031	
27	Nitrile O ring	5005-357	<input type="checkbox"/>
28	Seal clamp plate	468/0033	

### SEAL KIT

Part number **468/725SKB** contains all parts marked

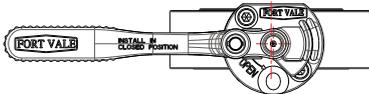
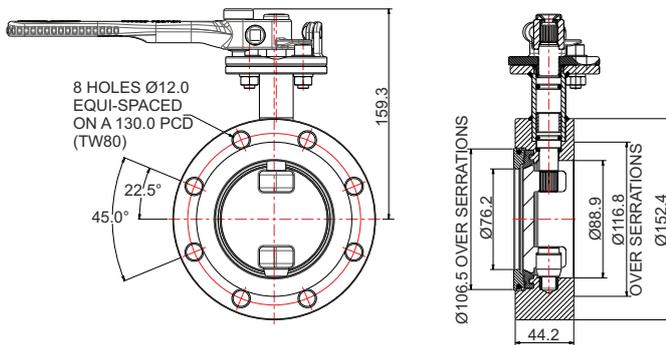


80mm Clamped Butterfly Valve - drilled TW 80. Designed to clamp between two TW80 flanges with the bolts passing through the valve body holes. Left hand operated lockable handle with T.I.R. Contact parts manufactured in 316 stainless steel with PTFE seal.

Options - TW100 style body.

**Fitting Details**

Example shown : 368/5500B



**Specification**

Weight 5.4 Kg  
 Design Pressure (MAWP) 6 Bar (87 PSI)  
 Test Pressure 10 Bar (145 PSI)  
 Design Temperature -40°C to 200°C  
 (-40°F to 392°F)

Design approval by AIB Vincotte.  
 Approved to BS EN14432

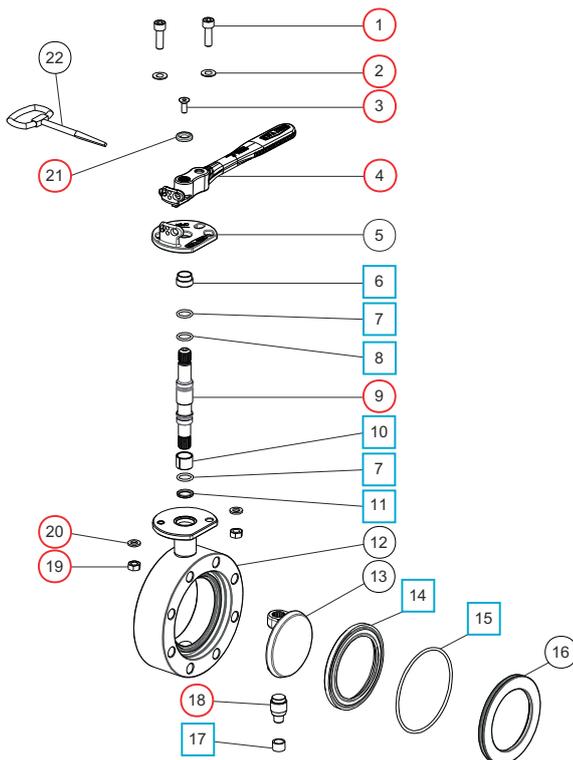
**Range**

Part No.	Description
368/5500B	TW80 clamped butterfly valve
468/5500B	TW100 clamped butterfly valve

**Associated Parts**

Part No.	Associated Parts
5005-715	PTFE/CNAF TW80 envelope gasket
845/8001	TW80 mating flange
368/5513	3" BSP eccentric TW80 outlet flange

**Parts Drawing**



Item	Description	Part No.
1	M8 socket capscrew (2)	5111-148
2	M8 plain washer (2)	5113-005
3	M6 countersunk setscrew	5111-030
4	Barrel lock handle	368/0075
5	Stuffing clamp	368/0041
6	Stuffing clamp bush	368/0301
7	PTFE O ring (2)	20363
8	Viton O ring	20361
9	Butterfly valve spindle	368/0200
10	Split bearing	252/0517
11	PTFE spindle seat	368/0009
12	Body	368/5510
13	Closure plate	368/0400
14	Main seal	368/0002
15	Nitrile O ring	5005-342
16	Seal clamp	368/9148
17	Bottom bush	368/0035
18	Bottom spindle	368/0036
19	M8 full nut (2)	5112-001
20	M8 flat section spring washer (2)	5113-003
21	Washer	20370
22	Operating key (sold separately)	368/4625

**SEAL KIT 368/00SK** contains all parts marked   
**REPAIR KIT 368/50RKB** contains all parts marked

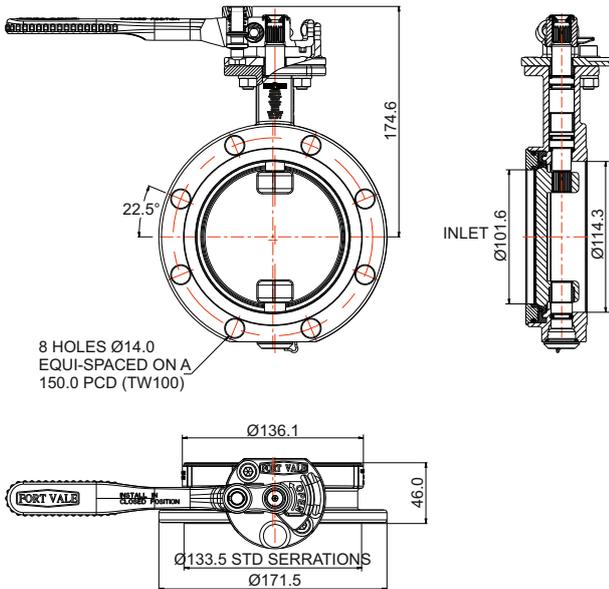


100mm Clamped Butterfly Valve - drilled TW100. Designed to clamp between two TW100 flanges with the bolts passing through the valve body holes. Left hand operated lockable handle with T.I.R. Contact parts manufactured in 316 stainless steel with Flextyt main seal.

Options - TW80 style body.

**Fitting Details**

Part Number: 468/5600B



**Specification**

Weight	3.85 Kg
Design Pressure (MAWP)	6 Bar (87 PSI)
Test Pressure	9 Bar (130.5 PSI)
Design Temperature Range	-40°C to 200°C (-40°F to 392°F)

Approved to BS EN14432

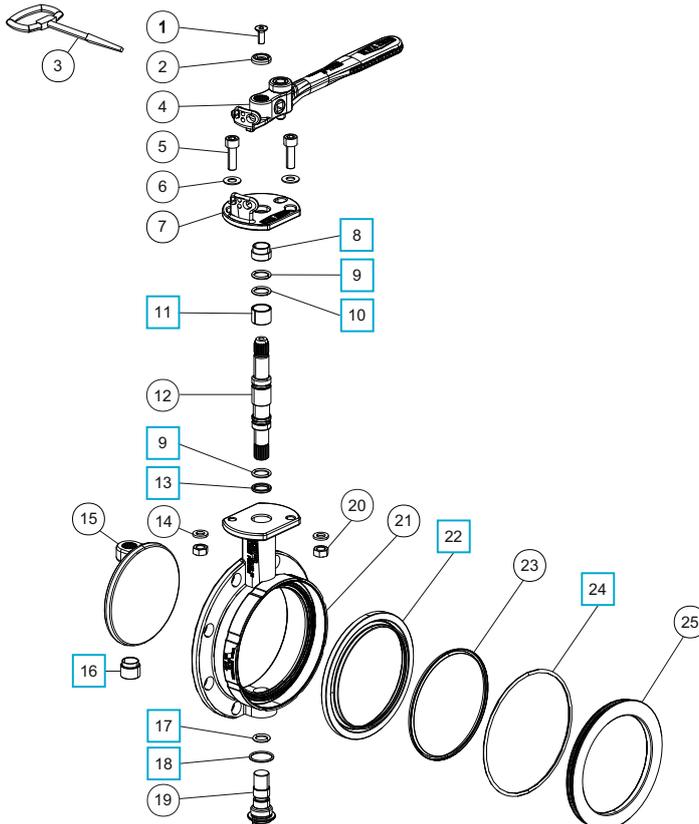
**Range**

Part No.	Description
468/5600B	TW100 clamped butterfly valve
368/5500B	TW80 clamped butterfly valve

**Associated Parts**

Part No.	Associated Parts
5005-832	PTFE/CNAF TW100 inlet gasket
5005-832/1	PTFE/CNAF TW100 outlet gasket
875/8001	TW100 mating flange
468/5175	4" BSP eccentric TW100 outlet flange

**Parts drawing**

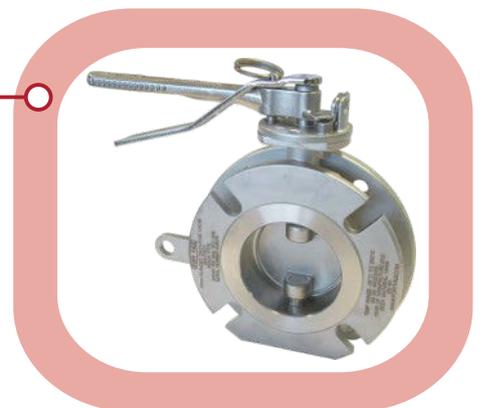


Item	Description	Part No.
1	M6 countersunk setscrew	5111-030
2	Washer	20370
3	Operating key	368/4625
4	Barrel lock handle	368/0075
5	M8 socket capscrew (2)	5111-148
6	M8 plain washer (2)	5113-005
7	Stuffing clamp	368/0041
8	Stuffing clamp bush	368/0301 <input type="checkbox"/>
9	PTFE O ring (2)	20363 <input type="checkbox"/>
10	Viton O ring	20361 <input type="checkbox"/>
11	Split bearing	252/0517 <input type="checkbox"/>
12	Spindle	368/0200
13	PTFE spindle seat	368/0009 <input type="checkbox"/>
14	M8 flat section spring washer (2)	5113-003
15	Closure plate	468/0400
16	Bottom bush	468/0035 <input type="checkbox"/>
17	Perfluoroelastomer O ring	ORB614K1 <input type="checkbox"/>
18	PTFE O ring	5005-160 <input type="checkbox"/>
19	Bottom spindle	468/0005
20	M8 full nut (2)	5112-001
21	4" Butterfly valve body	468/0170
22	Flextyt PTFE main seal	468/0030 <input type="checkbox"/>
23	Flextyt seal spring	468/0031
24	Nitrile O ring	5005-357 <input type="checkbox"/>
25	Seal clamp plate	468/0033

SEAL KIT 468/56SKB contains all parts marked



TOP  
DISCHARGE  
PROVISION  
//







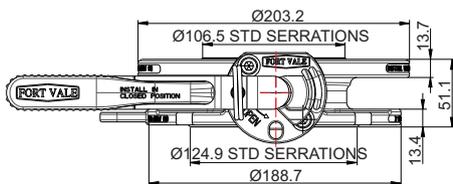
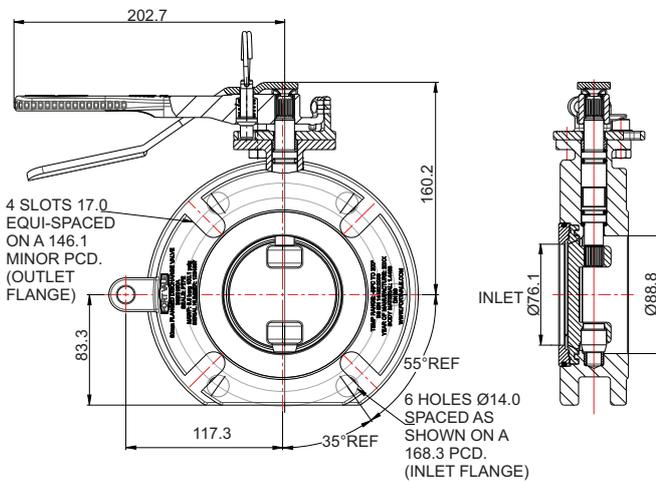
**3" Flanged Butterfly Valve** - inlet flange drilled 6 x 14mm holes spaced as shown below on a 168mm PCD; outlet flange with 4 slots 17mm equi-spaced on a 146mm PCD. Left hand operated with TIR and padlock facility to handle. Contact parts manufactured in 316 stainless steel with PTFE seals.

**Options** - alternative inlet flange drilling. "Congealing cargo" version with semi-spherical closure plate. Steam heated option.

**Fitting Details**

**Part Number : 368/3160A**

**M12 BOLTS TORQUE SETTING : 50 NM (37 LBF FT)**



**Specification**

Weight	7 Kgs
Design Pressure (MAWP)	6.9 Bar (100 PSI)
Test Pressure	10.35 Bar (150 PSI)
Design Temperature	-55°C to 200°C (-67° to 392°F)

Design approvals by Lloyds Register of Shipping, Rijksdienst, SNCF, RMRS. Approved to BS EN14432

**Range**

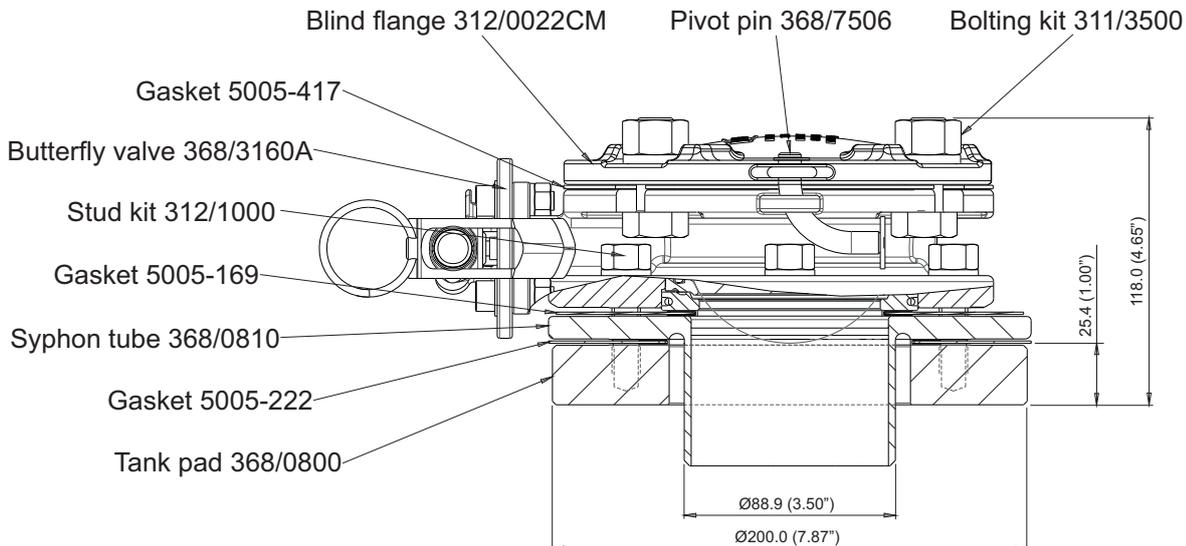
Part No.	Description
368/3160A	Inlet flange with flat, drilled 6 holes
368/3180A	Inlet flange dual drilled, 4 hole/4 hole
368/3280A	Inlet flange dual drilled, 6 hole/4 hole

**Associated Parts**

Associated Parts	Part No.
CNAF/PTFE inlet gasket	5005-169
Solid PTFE outlet gasket	5005-417
Dished blind flange	312/0022CM
Bolting kit	311/3500
Pivot pin	368/7506

**Assembly Details**

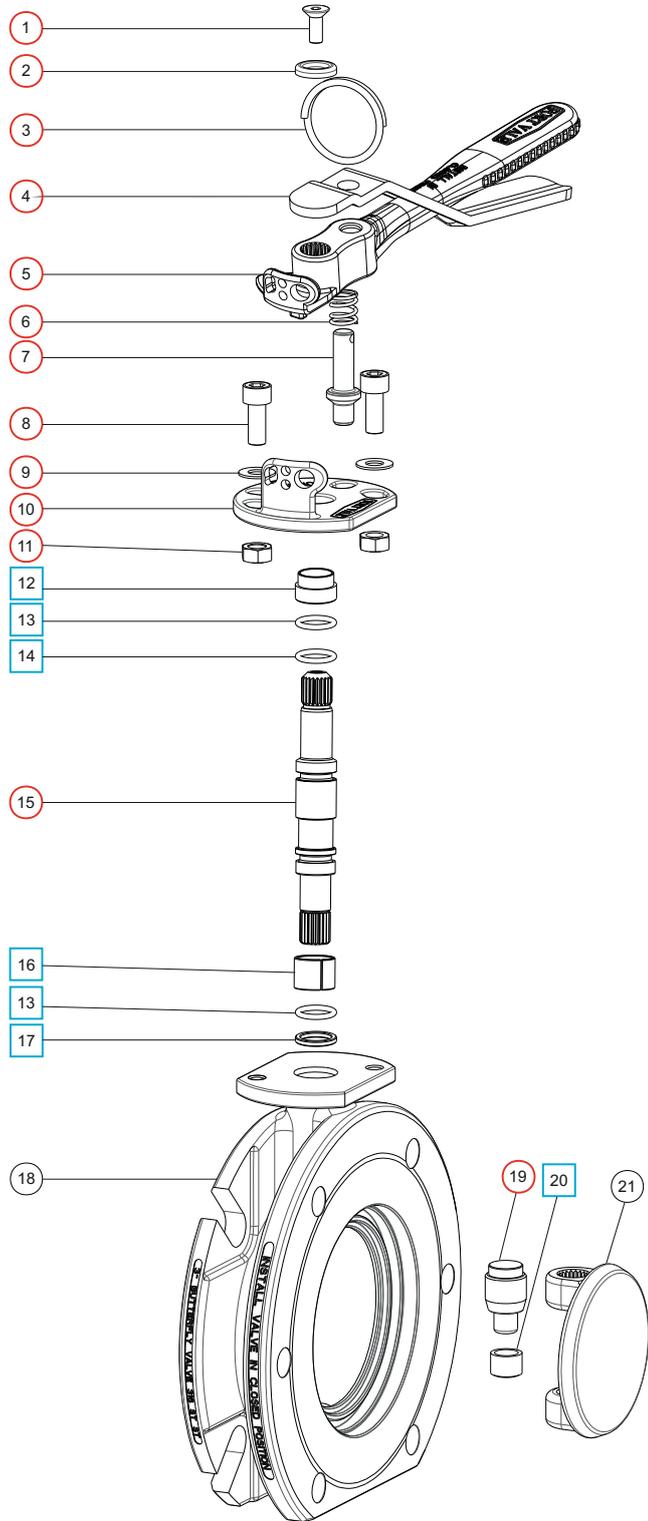
**Example Top Discharge Assembly**



## Parts drawing



Part number: 368/3160A



Item	Description	Part No.	
1	Countersunk setscrew	5111-030	○
2	Washer	20370	○
3	Split ring	368/0011	○
4	Operating lever	368/9837	○
5	Handle	368/0050	○
6	Handle location spring	368/0012	○
7	Handle location pin	368/0010	○
8	Sockethead capscrew (2)	5111-255	○
9	Plain washer (2)	5113-005	○
10	Stuffing clamp	368/0040	○
11	Full nut (2)	5112-001	○
12	PTFE stuffing clamp bush	368/0301	□○
13	PTFE O ring (2)	20363	□○
14	Viton O ring	20361	□○
15	Spindle	368/0200	○
16	Split bearing	252/0517	□○
17	PTFE spindle seat	368/0009	□○
18	Body	368/9141	
19	Bottom spindle	368/0036	○
20	PTFE bottom bush	368/0035	□○
21	Closure plate	368/0400	
22	PTFE main seal	368/0002	□○
23	Nitrile O ring	5005-342	□○
24	Seal clamp plate	368/9148	

### SEAL KIT

Part number **368/00SK** contains all parts marked □

### REPAIR KIT

Part number **368/316RKA** contains all parts marked ○



### SELF ADHESIVE DECAL Part No. 368/0300

Text in English, German & French



3" Flanged Butterfly Valve - inlet flange dual drilled: 6 x 14mm holes on a 168.3mm PCD and 4 x 18mm holes on a 160mm PCD. Outlet flange with 4 x 17mm open slots on a 146.1mm minor PCD. Left hand operated with TIR and padlock facility to handle. Contact parts manufactured in 316 stainless steel with PTFE main seal.

Options - different flange drillings and seal materials are available. Semi-spherical closure plate for congealing cargo.

**Specification**

Weight	6.9 Kgs
Design Pressure (MAWP)	6.9 Bar (100 PSI)
Test Pressure	10.35 Bar (150 PSI)
Design Temperature	-40°C to 200°C (-40°F to 392°F)

Approved to BS EN14432

**Range**

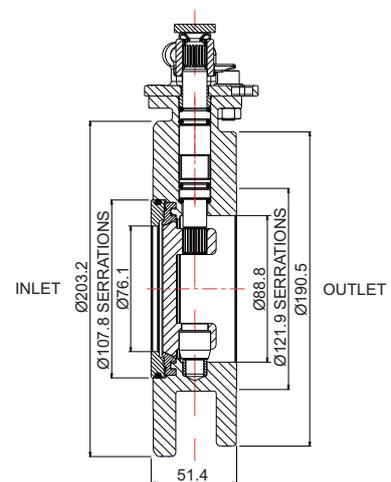
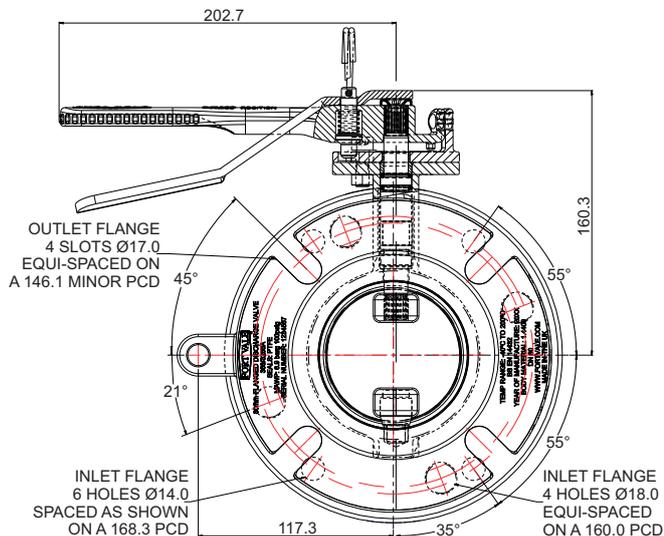
Part No.	Description
368/3280A	Inlet flange dual drilled, 6 hole/4 hole
368/3180A	Inlet flange dual drilled, 4 hole/4 hole
368/3160A	Inlet flange with flat, drilled 6 holes

**Associated Parts**

Associated Parts	Part No.
CNAF/PTFE dual drilled inlet gasket	5005-770
CNAF/PTFE inlet gasket - 6 hole	5005-222
CNAF/PTFE inlet gasket - 4 hole	5005-034
Solid PTFE outlet gasket	5005-417
Dished blind flange	312/0022CM
Outlet bolting kit	311/3500
Pivot pin	368/7506

**Parts drawing**

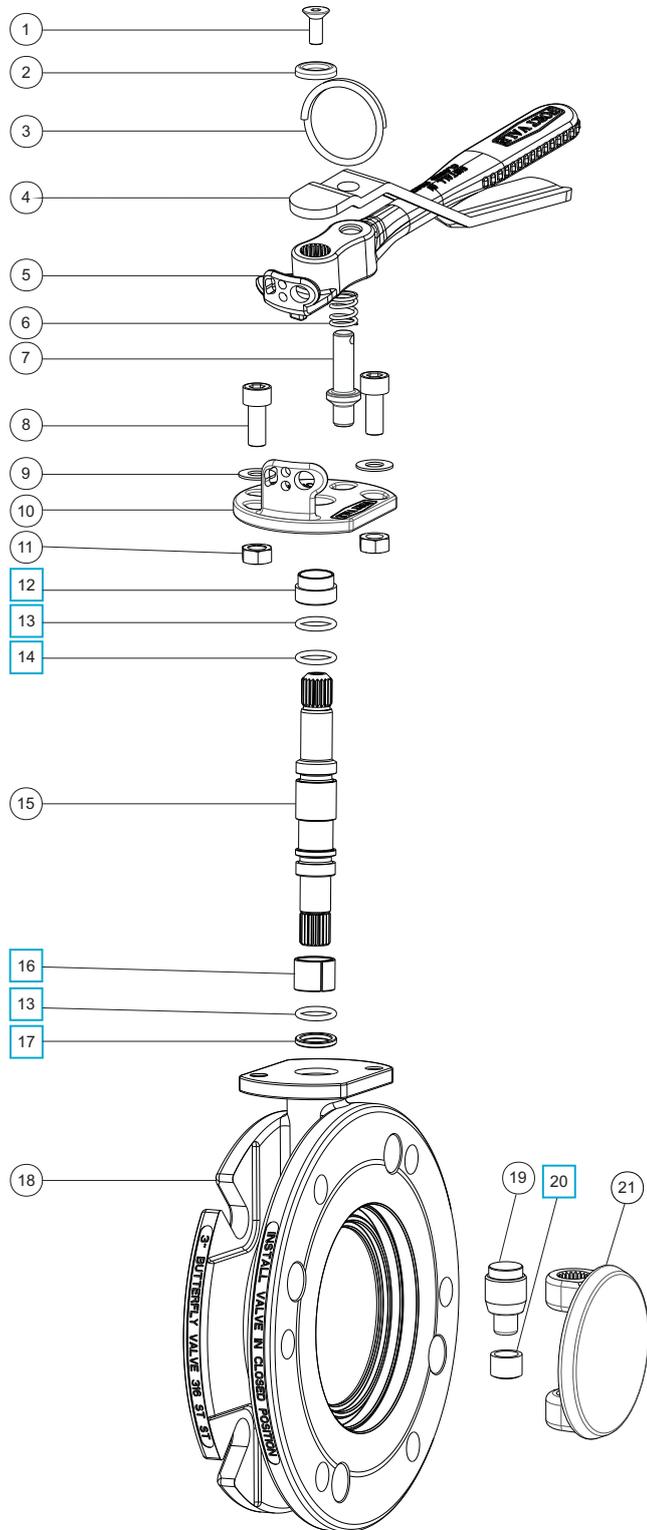
Part number: 368/3280A



## Parts drawing



Part number: 368/3280A



Item	Description	Part No.	
1	Sockethead setscrew	5111-030	
2	Washer	20370	
3	Split ring	368/0011	
4	Operating lever	368/9837	
5	Handle	368/0050	
6	Handle location spring	368/0012	
7	Handle location pin	368/0010	
8	Sockethead capscrew (2)	5111-255	
9	Plain washer (2)	5113-005	
10	Stuffing clamp	368/0040	
11	Full nut (2)	5112-001	
12	PTFE stuffing clamp bush	368/0301	<input type="checkbox"/>
13	PTFE O ring (2)	20363	<input type="checkbox"/>
14	Viton O ring	20361	<input type="checkbox"/>
15	Spindle	368/0200	
16	Split bearing	252/0517	<input type="checkbox"/>
17	PTFE spindle seat	368/0009	<input type="checkbox"/>
18	Body	368/9192	
19	Bottom spindle	368/0036	
20	PTFE bottom bush	368/0035	<input type="checkbox"/>
21	Closure plate	368/0400	
22	PTFE main seal	368/0002	<input type="checkbox"/>
23	Nitrile O ring	5005-342	<input type="checkbox"/>
24	Seal clamp plate	368/9148	

### SEAL KIT

Part number **368/00SK** contains all parts marked



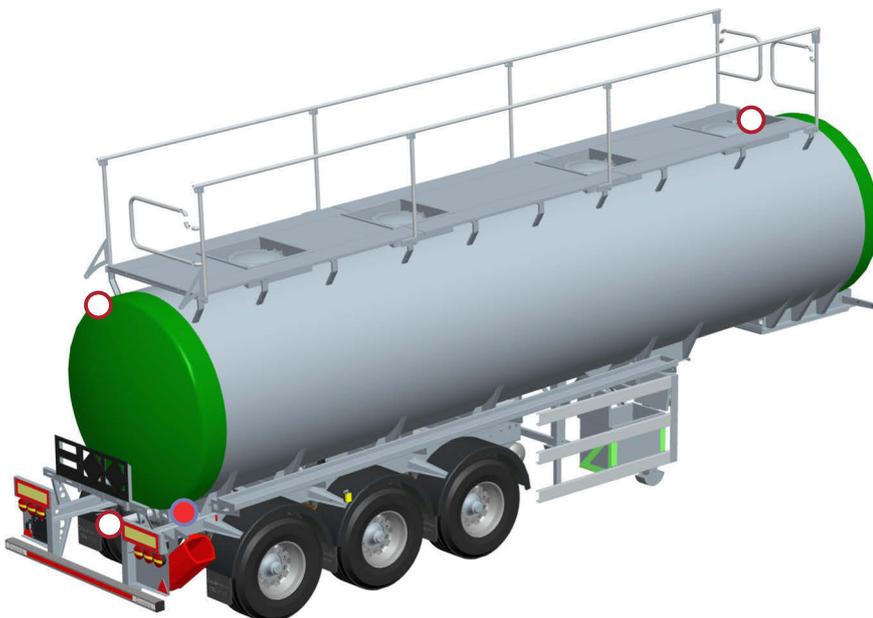
### SELF ADHESIVE DECAL - PART NO. 368/0300

Text in English, German and French



# ANCILLARIES

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## Threaded Blank Caps

A range of stainless steel check caps is also available. The part numbers have a **'CK'** suffix instead of the 'PS'.

Please contact our Sales team if the size or material you require is not listed below.



### BSP - Stainless Steel

Description	Part No.
½" BSP stainless steel cap with wire & PTFE washer	10316PS
¾" BSP stainless steel cap with chain & PTFE washer	10306PS
1" BSP stainless steel cap with chain & PTFE washer	10305PS
1½" BSP stainless steel cap with chain & PTFE washer	10300PS
2" BSP stainless steel cap with chain & PTFE washer	10301PS
2½" BSP stainless steel cap with wire & PTFE washer	10302PS
3" BSP stainless steel cap with chain & PTFE washer	10303PS
4" BSP stainless steel cap with wire & PTFE washer	10304PSC

### BSP - Aluminium

Description	Part No.
¾" BSP aluminium cap with chain & leather washer	10706AL
1" BSP aluminium cap with chain & leather washer	10707AL
1½" BSP aluminium cap with chain & leather washer	10708AL
2" BSP aluminium cap with chain & leather washer	10709AL
2½" BSP aluminium cap with chain & leather washer	10710AL
3" BSP aluminium cap with chain & leather washer	10711AL

### NPT

Description	Part No.
1½" NPT stainless steel cap with chain and Teflon washer	10300NPTP
2" NPT stainless steel cap with chain and Teflon washer	10301NPTP
3" NPSL stainless steel cap with chain and Teflon washer	425/3240
3" NPT aluminium cap with brass chain and leather washer	10711NPT

### Washers

Description	Part No. LEATHER	Part No. PTFE
½" washer	-	10335P
¾" washer	10331L	10331P
1" washer	10319L	10319P
1½" washer	10326L	10326P
2" washer	10327L	10327P
2½" washer	10328L	10328P
3" washer	10329L	10329P

## Bursting Discs

Our range includes stocks of standard 65mm, 65mm XL and 80mm discs as well as more specialised discs for Gas Relief Valves (89mm) and Hydrogen Peroxide applications (250mm).

We can offer the following types:

- Forward Acting - cross scored solid metal disc
- Forward Composite - multi-layered (composite) disc, for settings of less than 3.67 Bar
- Reverse Acting disc
- Standard 250mm disc

**NOTE: Fitting a bursting disc derates the flow capacity of the valve. For deration factors, please contact Fort Vale.**



Part Number	Type	Set to burst at
<b>General Purpose Tank Containers / Road Tankers</b>		
862/X0228	65mm XL	2.28 Bar @ 20°C
862/X0241	65mm XL	2.41 Bar @ 20°C
862/X0269	65mm XL	2.69 Bar @ 20°C
862/X0310	65mm XL	3.10 Bar @ 20°C
862/X0367	65mm XL	3.67 Bar @ 20°C
862/X0410	65mm XL	4.10 Bar @ 20°C
862/X0440	65mm XL	4.40 Bar @ 20°C
862/X0484	65mm XL	4.84 Bar @ 20°C
<b>Compressed Liquefied Gas Tanks</b>		
864/X1210	89mm Reverse Acting	12.10 Bar @ 55°C
864/X1500	89mm Reverse Acting	15.00 Bar @ 55°C
864/X2200	89mm Reverse Acting	22.00 Bar @ 55°C
864/X2750	89mm Reverse Acting	27.50 Bar @ 55°C
864/X3450	89mm Reverse Acting	34.50 Bar @ 55°C
<b>Hydrogen Peroxide</b>		
865/1200	250mm Std	4.50 Bar @ 20°C
865/1250	250mm Std	4.50 Bar @ 60°C
865/1400	250mm Std	6.00 Bar @ 20°C

"X" in the above part numbers indicates a variable.  
Please contact our Sales Team for more information.

## Document Holders

Description	Part No.
75mm plastic document holder with st.st. cap retaining wire, plastic brackets	360/1101
75mm clear plastic document holder with st.st. cap retaining wire, plastic brackets	360/1101T
75mm plastic document holder with st.st. cap retaining wire and brackets	360/1101ABSS
75mm clear plastic document holder with st.st. cap retaining wire and brackets	360/1101TBSS
110mm plastic document holder with st.st. cap retaining wire, plastic brackets	460/1101
110mm clear plastic document holder, st.st. cap retaining wire, plastic brackets	460/1101T
110mm plastic document holder with st.st. cap retaining wire and brackets	460/1101ABSS
110mm clear plastic document holder with st.st. cap retaining wire and brackets	460/1101TBSS



## Associated Parts

Description	Part No.
75mm PVC cap with stainless steel cable	360/1010
110mm PVC cap with stainless steel cable	460/1010
75mm fixing bracket – plastic	360/1007
75mm fixing bracket – stainless steel	360/1007SS
110mm fixing bracket – plastic	460/1007
110mm fixing bracket – stainless steel	460/1007SS

## Clamped Gauze Rings

Clamped gauze rings are available for our 1", 1½", 2½", 65mm and 80mm relief valves. A clamped gauze fits around the valve body ports and offers flame protection to valves with a vacuum setting of 0.21 Bar (6"Hg) and above. For valves with a vacuum setting of less than 0.21 Bar, a clamped gauze is often fitted to provide dust protection.

Description	Part No.
Clamped gauze – 1" Minnow valves	179/0300
Clamped gauze – 1½" Twinact valves	200/5000
Clamped gauze – 2½" Twinact valves	130/5000
Clamped gauze – 2½"/65mm Super Maxi valves *	176/2900
Clamped gauze – 80mm Hyper Maxi 043/series & 049/series only *	176/2920



Fitting a clamped gauze to a Minnow or a Twinact relief valve reduces the valve flow rate.

Fitting clamped gauze 176/2900 to a 65mm Super Maxi relief valve reduces the valve flow rate by 1%.

Fitting clamped gauze 176/2920 to an 043/series or 049/series 80mm Hyper Maxi relief valve reduces the valve flow rate by 5.4%.

\* Please note that the 176/2900 and 176/2920 are NOT interchangeable. For further advice, please contact our Sales Department.

## Gauges

### Pressure Gauges

Description	Part No.
0-6 Bar (0-90 PSI) Pressure Gauge, 1/4" BSP connection, brass internals, glycerine filled.	921/06BBSP
0-6 Bar (0-90 PSI) Pressure Gauge, 1/4" BSP connection, st.st. internals, glycerine filled.	920/06BBSP
0-10 Bar (0-150 PSI) Pressure Gauge, 1/4" BSP connection, brass internals, glycerine filled.	921/10BBSP
0-10 Bar (0-150 PSI) Pressure Gauge, 1/4" BSP connection, st.st. internals, glycerine filled.	920/10BBSP



### Tell-Tale Pressure Gauges

Description	Part No.
Pressure gauge with Tell-Tale Pointer 0-6 Bar (0-90 PSI), 1/4" BSP connection, brass internals, glycerine filled.	921/06TTBBSP
Pressure gauge with Tell-Tale Pointer 0-6 Bar (0-90 PSI), 1/4" BSP connection, st.st. internals, glycerine filled.	920/06TTBBSP
Pressure gauge with Tell-Tale Pointer 0-10 Bar (0-150 PSI), 1/4" BSP connection, brass internals, glycerine filled.	921/10TTBBSP
Pressure gauge with Tell-Tale Pointer 0-10 Bar (0-150 PSI), 1/4" BSP connection, st.st. internals, glycerine filled.	920/10TTBBSP
Pressure gauge with Tell-Tale Pointer 0-16 Bar (0-230 PSI), 1/4" BSP connection, st.st. internals, glycerine filled.	920/16TTBBSP



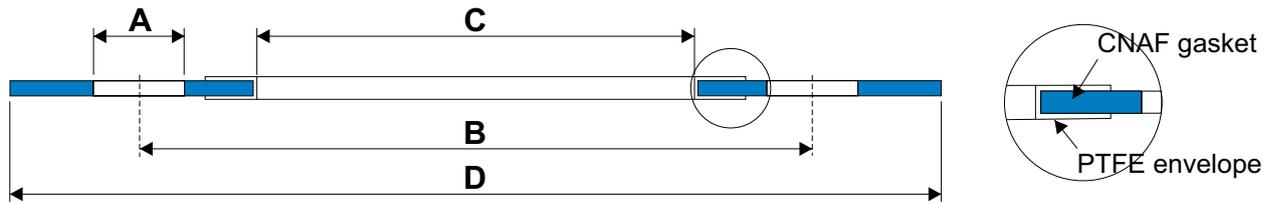
### Temperature Gauge

Description	Part No.
Analogue Temperature Gauge with 2500mm capillary. Silicone oil filled. Range : -20°C to 200°C / -4°F to 392°F	922/TEMP200
Analogue Temperature Gauge with 2500mm capillary. Silicone oil filled. Range : -20°C to 160°C / -4°F to 320°F	922/TEMP160
Analogue Temperature Gauge with 250mm st/st tube & brass thermo well probe. Range : -20°C to 200°C / -4°F to 392°F	922/TEMPT200
Analogue Temperature Gauge with 250mm st/st tube & brass thermo well probe. Range : -20°C to 160°C / -4°F to 320°F	922/TEMPT160
Digital Temperature Gauge with 2500mm capillary. Range : -50°C to 200°C / -58°F to 392°F	922/TEMPDIGI



**Please note that the temperature ranges apply to the capillary/probe only.**

## Valve Gaskets



Part No.	Material	No. of holes	A Hole Ø	B PCD	C Internal Ø	D External Ø	To fit
5005-015	CNAF/PTFE	8	14mm	178mm	114mm	203mm	45°/90° Cleanflow/Highlift footvalve inlet
5005-016	CNAF/PTFE	6	14mm	159mm	127mm	184mm	Parkfield footvalve inlet
5005-023	CNAF/PTFE	4	18mm	172mm	127mm	203mm	3" top discharge valve/30° footvalve inlet
5005-032	CNAF/PTFE	4	19mm	178mm	114mm	216mm	30° footvalve inlet
5005-036	SOLID PTFE	4	18mm	146mm	80mm	184mm	3" BSTD
5005-046	Black rubber /PTFE	-	-	-	75mm	90mm	2½" BSP relief valve tank seal
5005-049	CNAF/PTFE	-	-	-	78mm	112mm	3" clamped butterfly valve inlet
5005-052	CNAF/PTFE	-	-	-	78mm	142mm	3" clamped butterfly valve inlet
5005-055	CNAF/PTFE	4	17mm	114mm	55mm	152mm	2" BSTE
5005-169	CNAF/PTFE	6	13mm Not equi-spaced	168mm	78mm	197mm	3" flanged butterfly/3" ball valve inlet
5005-177	CNAF/PTFE	4	18mm	172mm	136mm	203mm	3" top discharge ball valve inlet
5005-191	CNAF/PTFE	-	-	-	75mm	90mm	2½" BSP relief valve tank seal
5005-193	SOLID PTFE	4	14mm	98mm	50mm	127mm	1.5"ASA 150 / 1.5" BSTD
5005-195	CNAF/PTFE	4	18mm	160mm	89mm	144mm SQUARE	3" clamped butterfly valve outlet
5005-222	CNAF/PTFE	6	14mm Not equi-spaced	168mm	102mm	203mm	3" top discharge butterfly valve inlet
5005-288	SOLID PTFE	4	18mm	152mm	78mm	184mm	3" ASA 150
5005-345	SOLID PTFE	6	11mm	119mm	89mm	140mm	3" composite butterfly valve outlet
5005-348	SOLID PTFE	4	18mm	110mm	37mm	152mm	1½" flanged airline ball valve outlet
5005-360	SOLID PTFE	4	18mm	125mm	49mm	165mm	2" flanged airline butterfly valve inlet
5005-361	SOLID PTFE	4	18mm SLOTS	114mm MINIMUM	50mm	165mm	2" flanged airline butterfly valve outlet
5005-398	CNAF/PTFE	6	11mm	105mm	75mm	127mm	2½" flanged relief valve tank pad
5005-417	SOLID PTFE	4	18mm SLOTS	146mm MINIMUM	83mm	190mm	3" flanged butterfly/ball valve outlet - 3"ASA/BSTD/DIN 80
5005-427	CNAF/PTFE	4	18mm SLOTS	146mm MINIMUM	83mm	190mm	3" flanged butterfly/ball valve outlet - 3"ASA/BSTD/DIN 80
5005-490	CNAF/PTFE	-	-	-	89mm	142mm	3" clamped butterfly valve outlet
5005-500	SOLID PTFE	4	11mm	100mm	50mm	95mm SQUARE	2"BSP butterfly valve inlet
5005-875	CNAF/PTFE	4	18mm	146mm	89mm	184mm	3" clamped butterfly valve outlet – 3" BSTD

**NOTE : ALL DIAMETERS ARE NOMINAL**

## Valve Main Seals and O Rings



Please contact our Sales team if the size or material you require is not listed below.

### Valve Main Seals



Description	Part No.
1½" Blacko airline ball valve PTFE front seal	5005-006
1½" Blacko airline ball valve PTFE rear seal	5005-007
2" Blacko ball valve PTFE front/rear seal	370/0102
2" Widdop airline butterfly valve PTFE main seal	355/0202
2½" BSP Maxi Highflow relief valve Tytan seal – Fortyt/EPDM (00/6XXXX series)	176/0052
3" Blacko ball valve PTFE front seal	20399
3" Blacko ball valve PTFE rear seal	11470
3" Widdop butterfly valve PTFE main seal	368/0002
3½" Emmott Screwdown valve PTFE main seal disc	269/1003



### Valve O Rings



Description	Part No.
EPDM O ring – 3" Butterfly valve clamping plate	5005-476
Fortyt 3" footvalve main O ring / 80mm Flgd Super Maxi	5005-104
Fortyt 2½"/65mm relief valve pressure O ring	5005-101
Fortyt Super Maxi relief valve vacuum O ring	5005-108H
EPDM O ring – 2" Butterfly valve clamping plate	5005-664
PFA spindle O ring – Cleanflow footvalve	5005-384
PTFE spindle O ring – Butterfly valve / Highlift footvalve	20363
PTFE spindle O ring – Cleanflow footvalve	5005-008
Viton 3" footvalve main O ring	5005-105
Viton 2½" relief valve pressure O ring	5005-102
Viton spindle O ring – Butterfly valve / Highlift footvalve	20361
Viton spindle O ring – Cleanflow footvalve	5005-336

## Manlid Packing & Seals



### Manlid Packing & Ancillaries



Description	Part No.
14x10x1650mm - silicone core - <b>Non gas tight</b>	5005-1410S165
15x10x1650mm - silicone core - <b>Non gas tight</b>	5005-1510S165
14x14x1650mm - without silicone core - <b>Non gas tight</b>	5005-1414D165
14x14x1650mm - silicone core - <b>Non gas tight</b>	5005-1414S165
14x14mm x 50 metre - silicone core - <b>Non gas tight</b>	5005-1414SR50
15x15x1650mm - silicone core - <b>Non gas tight</b>	5005-1515S165
16x16x1750mm - silicone core - <b>Non gas tight</b>	5005-1616S175
16x16mm x 30 metre - silicone core - <b>Non gas tight</b>	5005-1616SR30
<b>Ancillaries</b>	
Mitre seal cutter – ideal for braided PTFE packing	400/3100



### Manlid Seals



Description	Part No.
300mm Sweet white rubber seal – FDA compliant	5005-30SWR
500mm Sweet white rubber seal – FDA compliant	5005-50SWR
300mm Super Tanktyt - PTFE outer/Nitrile inner	5005-890
- PTFE outer/EPDM inner	5005-890EP
500mm Super Tanktyt - PTFE outer/Nitrile inner	5005-860
- PTFE outer/EPDM inner	5005-860EP

## AFTER SALES



The Fort Vale system does not stop at the supply of valves to tank manufacturers, we pride ourselves in offering a worldwide **after sales service** to all our end users.

With Fort Vale subsidiaries in Texas USA, Rotterdam, Moscow, Shanghai and Singapore and a genuine worldwide **distributorship network** holding substantial stocks of spares at controlled retail prices, your container can be repaired anywhere with minimum down-time.

To ensure that your staff can be trained to repair our valves quickly and competently, we offer a series of **maintenance manuals** on compact disc. Each is illustrated with step-by-step photos and concise instructions on how to repair our products and test them before re-fitting.

Sets of specialist **tools** are also available to ensure that all seals are fitted correctly and without damage to the seal or the valve, which in turn keeps costs and down-time to a minimum.

We can also supply a safety valve **test rig** for pressure and vacuum testing on calibrated high quality gauges for 2½ and 5 year tests.

In addition, we offer a **seat lapping** system which allows you to repair the seats of footvalves and safety valves in-house, avoiding expensive sub-contract work.

**FORT VALE**

## Repair & Maintenance Equipment



Fort Vale offer a full range of instruction manuals and proprietary tools for the repair, maintenance and testing of our valves.

Maintenance manuals may be provided electronically and in printed format. Training courses in valve refurbishment and testing are available on application.

**Fort Vale highly recommend the use of proprietary tools to ensure the quick and efficient refurbishment of valves without damaging the seals, and more importantly, to guarantee that the valve passes its pressure test once re-assembled.**

### Test Rig

**Pressure / Vacuum Test Rig** - is used for the testing of any pressure or vacuum Super Maxi, Twinact, Uniact, Minnow and Steam Relief Valve. Connection is by a 2½" BSP socket mounted on top of the rig with adaptors available upon request. The rig comprises of a digital pressure and vacuum gauge and two control valves.

The testing range of the rig is -10 PSI to 100 PSI (-0.7 Bar to 6.9 Bar).

Supply connection to the test rig is via a 1/4" BSP female socket on the back of the rig.



Part No. 400/8000

### Tool Kits

Description	Part No.
Relief Valve Test Rig – digital gauges	400/8000
Test rig adaptor flange, adapts 2½" BSP to 3" ASA150, DIN65 PN10 & DIN80 PN6	425/1000
C Spanner – to fit/remove Twinact relief valves	400/3000
C Spanner – to fit/remove Super Maxi relief valve	400/3001
Tightening tool for MKIII Super Maxi relief valve	400/8380
1½" & 2½" Twinact relief valve Tool Kit	400/2000
2½" BSP Maxi & Highflow relief valve Tool Kit	400/8100
65mm & 80mm Super Maxi Relief Valve Tool Kit	400/8300
Footvalve & Relief Valve Seat Repair Kit	400/2600
Box of 100 x 60 grit grinding discs	400/2610
Box of 100 x 80 grit grinding discs	400/2620
Box of 100 x 180 grit polishing discs	400/2630
Box of 100 x 600 grit polishing discs	400/2640
3" Cleanflow Footvalve Tool Kit	400/2150
3" Highlift Footvalve Tool Kit	400/2450
2" Butterfly Valve Tool Kit	400/2300
3" Butterfly Valve Tool Kit	400/2700
1½" Ball Valve Tool Kit	400/2500
3" Ball Valve Tool Kit	400/2200



Part No. 400/2600



Part No. 400/2000



Part No. 400/8300





**Fort Vale UK**  
**Head Office & Manufacturing Plant**

Tel : +44 (0)1282 687120  
Fax : +44 (0)1282 687110  
Email : sales@fortvale.com

**Fort Vale USA**

Tel : +1 281 471 8100  
Fax : +1 281 471 8116  
Email : ussales@fortvale.com

**Fort Vale Netherlands**

Tel : +31 (0)180 483333  
Fax : +31 (0)180 410797  
Email : bvsales@fortvale.com

**Fort Vale Russian Federation**

Tel : +7 916 682 0947  
Email : rw@fortvale.ru

**Fort Vale P.R. China**

Tel : +86 21 6442 1367  
Fax : +86 21 6442 1376  
Email : cnsales@fortvale.com

**Fort Vale Singapore**

Tel : +65 6515 9950  
Fax : +65 6515 3034  
Email : sgsales@fortvale.com

**Fort Vale Australia**

Tel : +61 7 3310 4854  
Email : ausales@fortvale.com

[www.fortvale.com](http://www.fortvale.com)

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