



Specification

Nominal size

20" (500mm)

Cover

6 point, double skin

Neckring options

8" deep, 0.24" thick (203mm / 6mm)

10" deep, 0.24" thick (254mm / 6mm)

Properties

Cover with 1/4" NPT test point

Materials

Contact parts: 316 stainless steel

Fasteners: stainless steel swingbolts and handnuts

Seal: supplied separately

Design Conditions

Weight - 8" deep assembly: 73.9 Lb (33.5 Kg)

Weight - 10" deep assembly: 88.2 Lb (40 Kg)

Design Pressure (MAWP): 50 PSI (3.45 Bar)

Test Pressure: 75 PSI (5.17 Bar)

Design Temperature Max: 450°F (232°C)

NOTE: The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

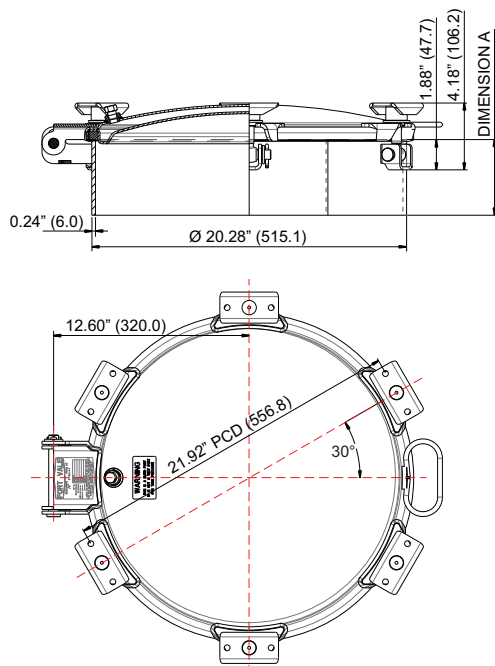
This manlid assembly fully obeys CFR-49 178.345-5 Manhole assemblies.

Range

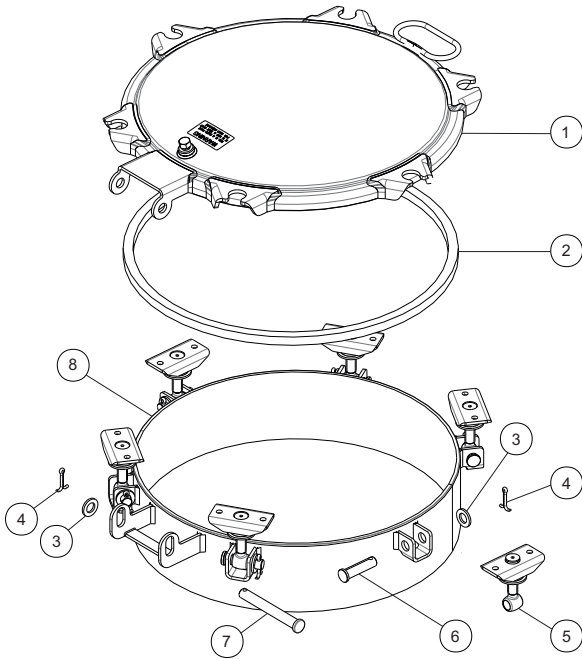
Description	Part No.
Assembly with 8" deep neck *Note	859/995008
Assembly with 10" deep neck *Note	859/995010

NOTE: Refer to the Section View: Dimension A

Section View



Parts Drawing

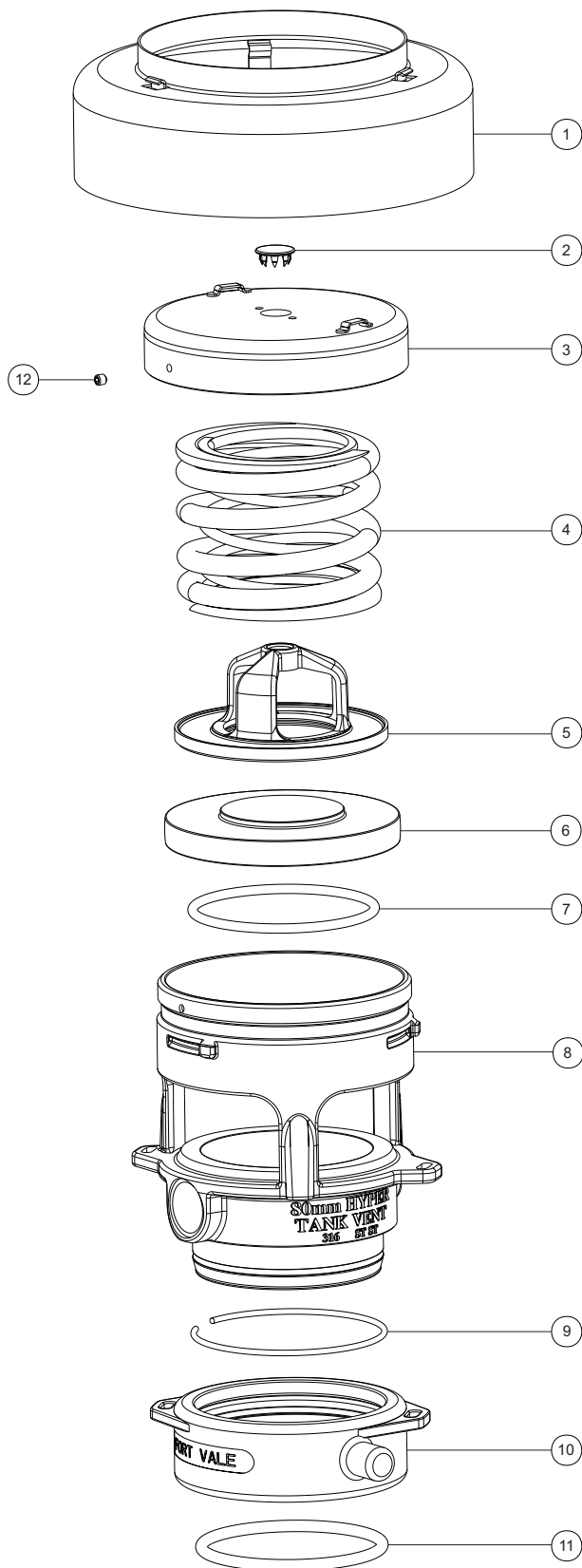


Parts List

Item	Description	Part No.
1	Cover	740/5000
2	Seal (not included) *Note	5005-50XXX
3	M16 washer (7)	5113-011
4	Split pin (7)	5118-043
5	Swingbolt assembly (6)	495/2010
6	Swingbolt hinge pin (6)	10917SS
7	Cover/neck hinge pin	600/1075
8	8" deep neck	629/995008
	10" deep neck	629/995010

NOTE: The specification changes the Part No.

Parts Drawing



Parts List

Item	Description	Part No.
1	Low profile weatherproof cowl	176/6250
2	Stainless steel plug	10978
3	Top cap *Note	1760/09XXXX
4	Spring set *Note	610X-XXXX
5	Spider spring locator *Note	1760/004X
6	Pressure plate *Note	1760/009XA
7	Fortyt pressure O ring	ORB337F0
8	Body	1760/0980
9	Retaining ring clip	5120-025
10	3" NPSL lug nut	1780/0710
11	PTFE lug nut O ring	5005-103
12	Anti-tamper screw	5121-001

NOTE: The valve specification changes the Part No.



Specification

Nominal size

3" (DN80)

Tank connection

3" NPSL swivel lug nut

Set pressure

From 3 PSI to 50 PSI

Set vacuum

From 1"Hg to 22"Hg

Properties

Valve body with TIR, 1/4" NPS and 3/4" NPS connections
With low profile weather-proof cowl

Materials

Contact parts: 316 stainless steel

Pressure O ring: Fortyt

Vacuum O ring: Fortyt

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 12.8 Lb (5.8 Kg) *Note
Design Pressure (MAWP): 75 PSI (5.2 Bar)
Test Pressure: 147 PSI (10.1 Bar)
Design Temperature Min: -67°F (-55°C) *Note
Design Temperature Max: 392°F (200°C) *Note

NOTE: The valve specification can change the weight.
The working temperature of the pressure O ring can change the temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

TTMA RP No: 81-97

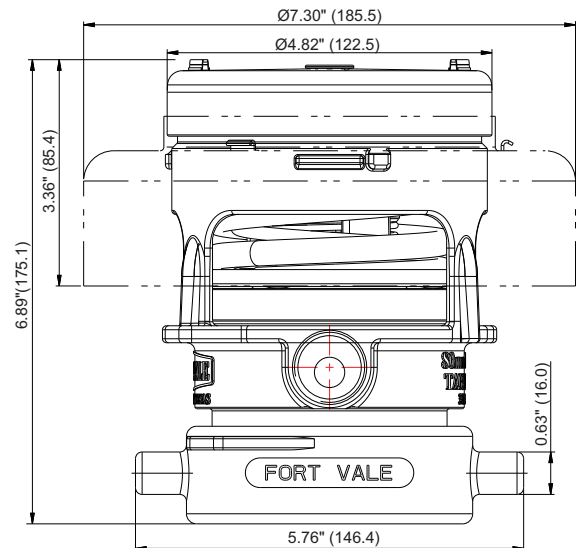
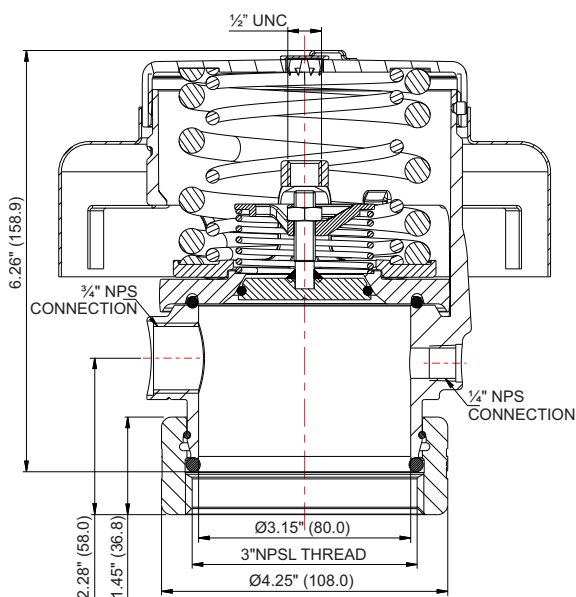
Range

Description	Part No.
Pressure/vacuum	R408/1XXXX
Pressure only	R408/1XX00

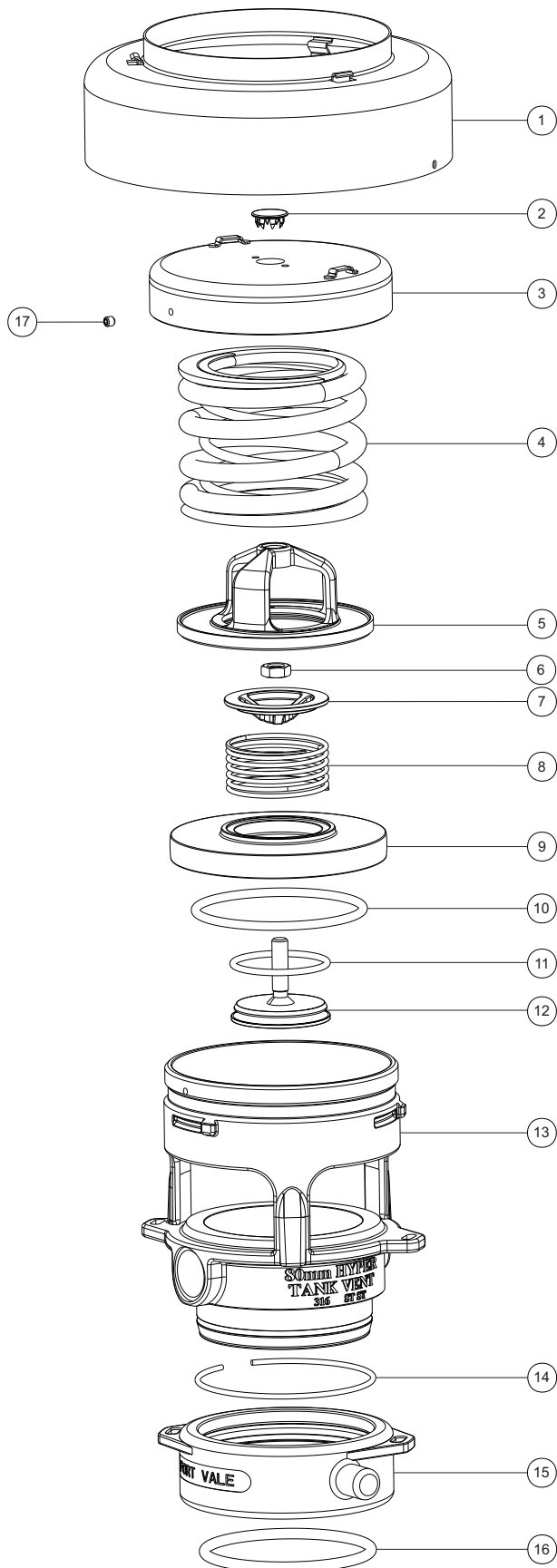
Related Parts

Description	Part No.
3/4" NPT female socket ball valve	US007
1/4" NPT pressure gauge: 0-60 PSI	US000
60 PSI air charge kit	US100
Jacking tool	400/0104

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Low profile weatherproof cowl	176/6250
2	Stainless steel plug	10978
3	Top cap *Note	1760/098XXX
4	Spring set *Note	610X-XXXX
5	Spider spring locator *Note	1760/004X
6	M8 half nut	5112-004
7	Vacuum spring pad	85/1009
8	Vacuum spring *Note	5104-XXX
9	Pressure plate	1760/0091A
10	Fortyt pressure O ring	ORB337F0
11	Fortyt vacuum O ring	5005-118
12	Vacuum poppet	85/1033
13	Body	1760/0980
14	Retaining ring clip	5120-025
15	3" NPSL log nut	1780/0710
16	PTFE lug nut O ring	5005-103
17	Anti-tamper screw	5121-001

NOTE: The valve specification changes the Part No.



Specification

Nominal size

3½" (87mm)

Tank connection

4" NPSL swivel lug nut

Set pressure

25 PSI, 30 PSI, 36 PSI, 42 PSI

Properties

Valve body with TIR, ¼" NPS and ¾" NPS connections
With low profile weather-proof cowl

Materials

Contact parts: 316 stainless steel

Pressure O ring: Fortyt

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 12.1 Lb (5.5 Kg) *Note

Design Pressure (MAWP): 75 PSI (5.2 Bar)

Test Pressure: 147 PSI (10.1 Bar)

Design Temperature Min: -67°F (-55°C) *Note

Design Temperature Max: 392°F (200°C) *Note

NOTE: The valve specification can change the weight.
The working temperature of the pressure O ring can change the temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Code

TTMA RP No: 81-97

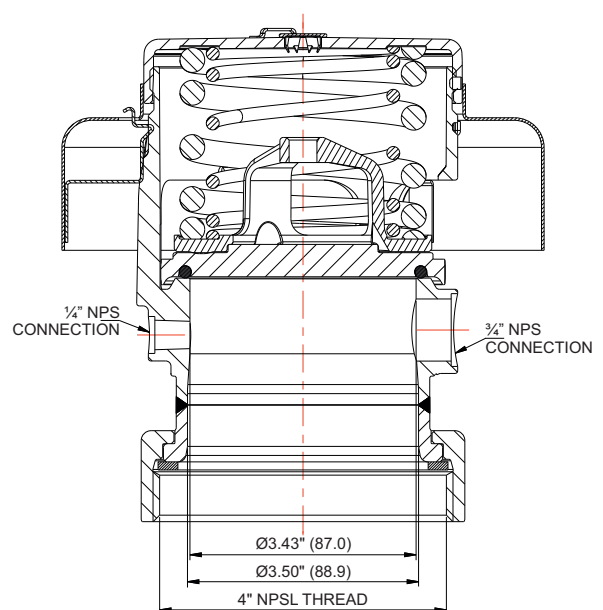
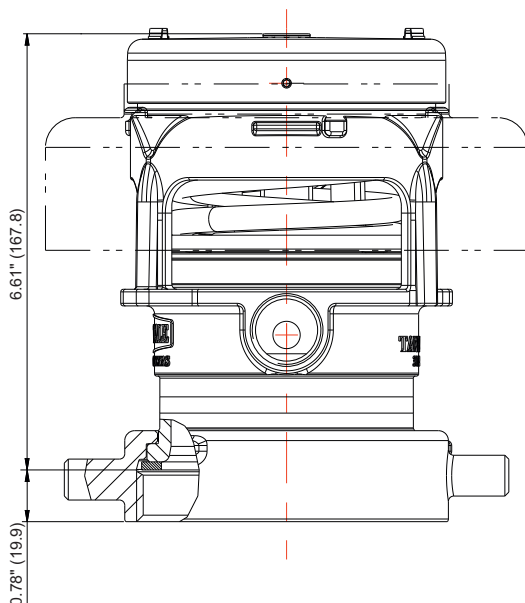
Range

Description	Part No.
Pressure only	R408/1XX00/4
Pressure/vacuum	R408/1XXXX/4

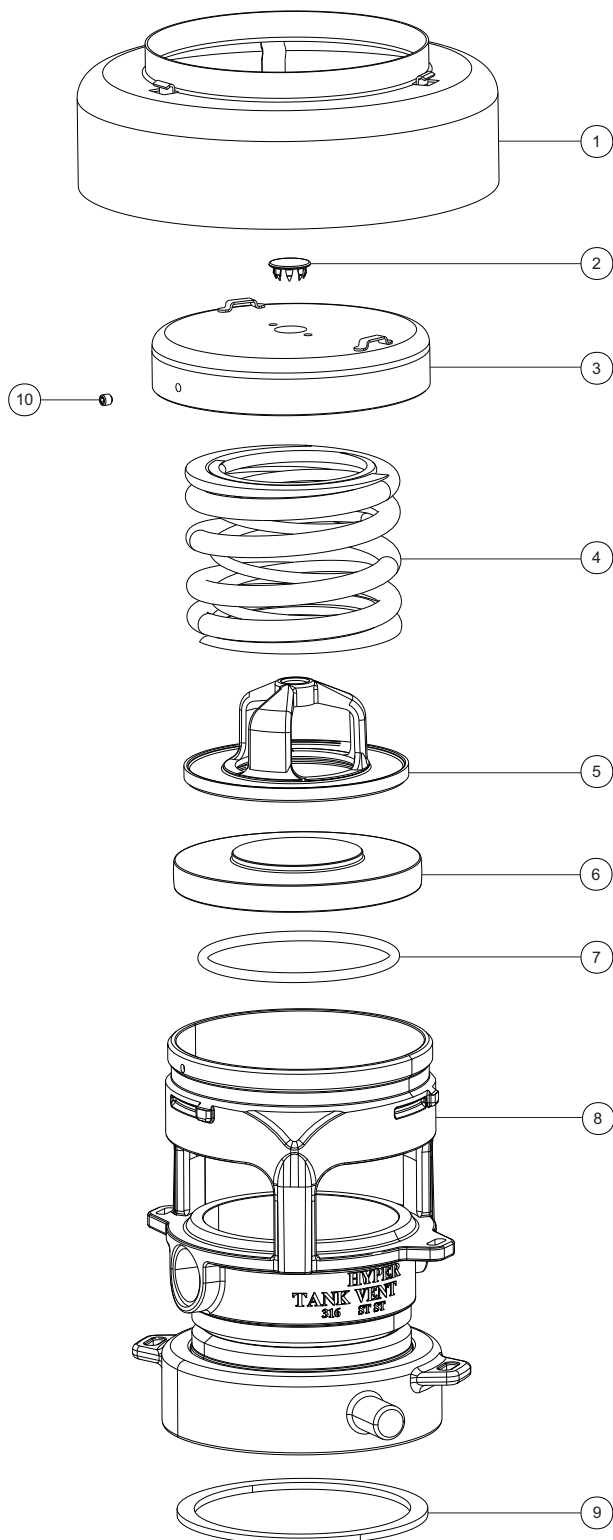
Related Parts

Description	Part No.
¾" NPT female socket ball valve	US007
¼" NPT pressure gauge: 0-60 PSI	US000
60 PSI air charge kit	US100
Jacking tool	400/0104

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Low profile weatherproof cowl	176/6250
2	Stainless steel plug	10978
3	Top cap	1760/098565
4	Spring set *Note	6104-XXXX
5	Spider spring locator	1760/0043
6	Pressure plate	1760/0112A
7	Fortyt pressure O ring	5005-542
8	Body	1760/0920
9	4" PTFE seal	10330P
10	Anti-tamper screw	5121-001

NOTE: The valve specification changes the Part No.



Specification

Nominal size

3½" (87mm)

Tank connection

4" NPSL swivel lug nut

Set pressure

25 PSI, 30 PSI, 36 PSI, 42 PSI

Set vacuum

From 1"Hg to 22"Hg

Properties

Valve body with TIR, ¼" NPS and ¾" NPS connections
With low profile weather-proof cowl

Materials

Contact parts: 316 stainless steel

Pressure O ring: Fortyt

Vacuum O ring: Fortyt

Alternatives are available, refer to the Design Options page

Design Conditions

Weight: 12.8 Lb (5.8 Kg) *Note
Design Pressure (MAWP): 75 PSI (5.2 Bar)
Test Pressure: 147 PSI (10.1 Bar)
Design Temperature Min: -67°F (-55°C) *Note
Design Temperature Max: 392°F (200°C) *Note

NOTE: The valve specification can change the weight.
The working temperature of the pressure O ring can change the temperature limits. The Design Conditions and Section View dimensions are for the specified part number only.

Design Codes

TTMA RP No: 81-97

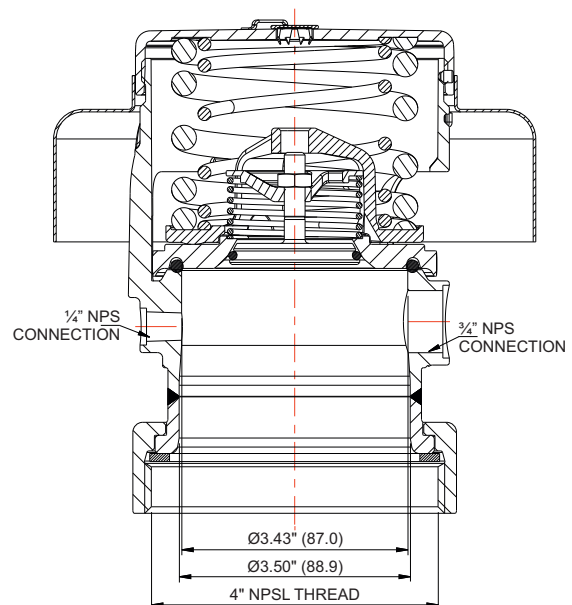
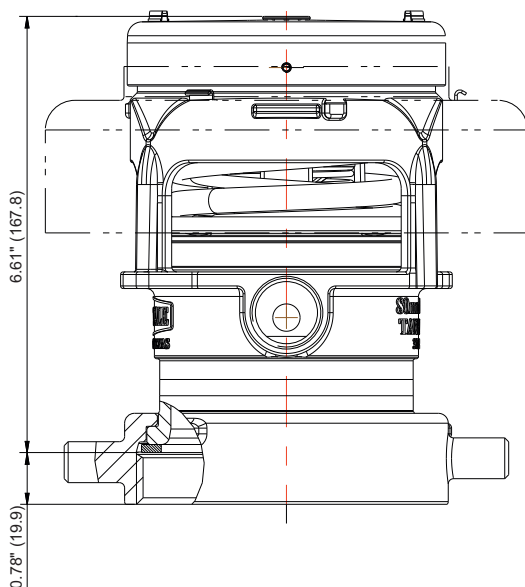
Range

Description	Part No.
Pressure/vacuum	R408/1XXXX/4
Pressure only	R408/1XX00/4

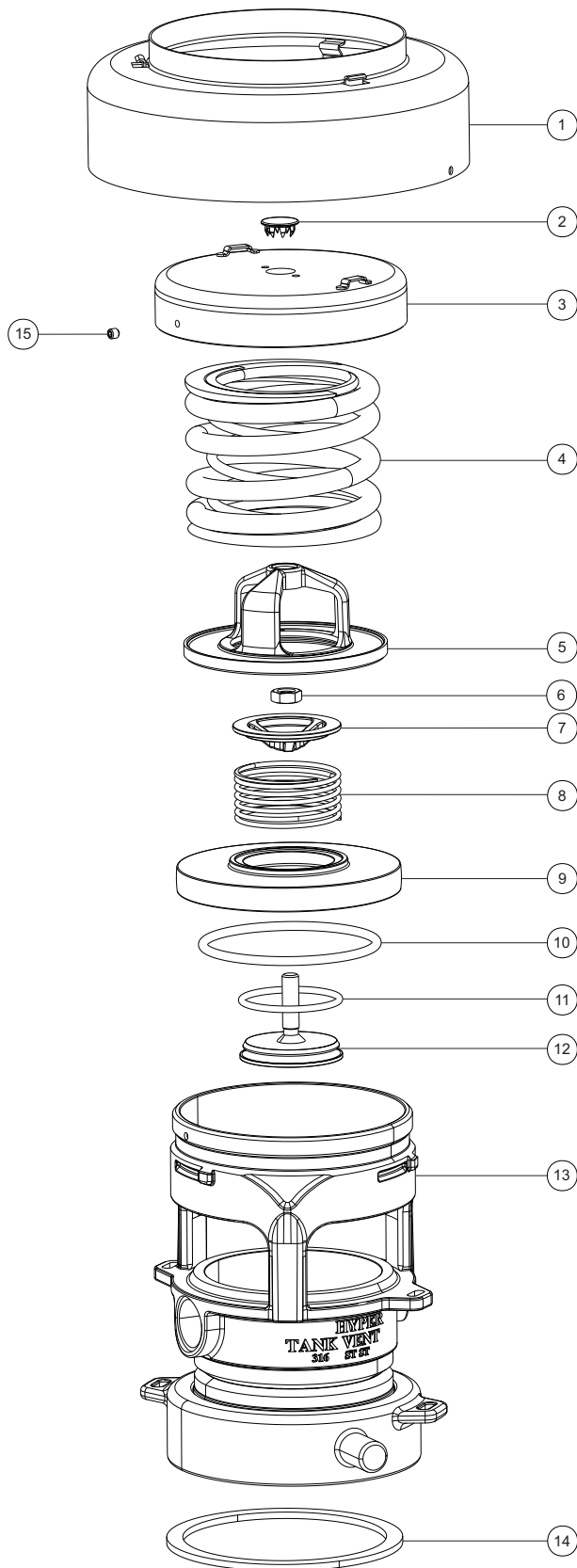
Related Parts

Description	Part No.
¾" NPT female socket ball valve	US007
¼" NPT pressure gauge: 0-60 PSI	US000
60 PSI air charge kit	US100
Jacking tool	400/0104

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Low profile weatherproof cowl	176/6250
2	Stainless steel plug	10978
3	Top cap	1760/098565
4	Spring set *Note	6104-XXXX
5	Spider spring locator	1760/0043
6	M8 half nut	5112-004
7	Vacuum spring pad	85/1009
8	Vacuum spring *Note	5104-XXXX
9	Pressure plate *Note	1760/011XA
10	Fortyt pressure O ring	5005-542
11	Fortyt vacuum O ring	5005-118
12	Vacuum poppet	85/1033
13	Body	1760/0920
14	4" PTFE seal	10330P
15	Anti-tamper screw	5121-001

NOTE: The valve specification changes the Part No.

0-60 PSIG Air Charge Kit



Part No: US100

Includes all items in the Parts List table.

Parts List

Description	Part No.
0-60 PSIG pressure gauge, 1/4" NPT	US000
3/4" NPT crow's foot fitting	US006
3/4" NPT crow's foot blank cap	US031
3/4" NPT socket ball valve	US007
3/4" NPT x 1.5" nipple	US017
1/4" NPT x 2" SCH 40 nipple	US025
1/4" NPT 45° elbow	US026

Tankvent Relief Valve Caging Tool



Part No: 400/0104

The Tankvent relief valve caging tool lets you safely compress the spring so that you can service the valve.

Compatibility

1/2" UNC connecton: compatible with R407/ and R408/ Hyper Tankvent relief valves.



Specification

Nominal size/body angle

2" / 90°

Inlet connection

3" NPSL lug nut

Outlet connection

Dual outlet: 2" NPT both ends

Vacuum setting

0.5"Hg to 20"Hg

Properties

Hydraulically actuated, 1/8" NPT connection

Indicator to show when the valve is open

Materials

Valve poppet: alloy C276

Contact parts: 316 stainless steel

Main seal: Fortyt

Design Conditions

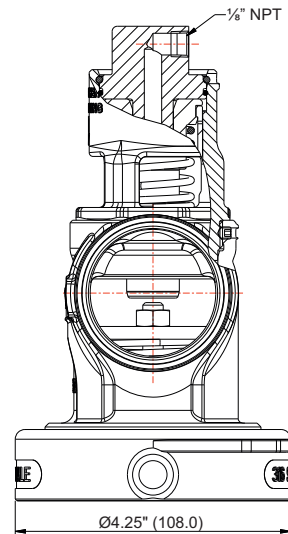
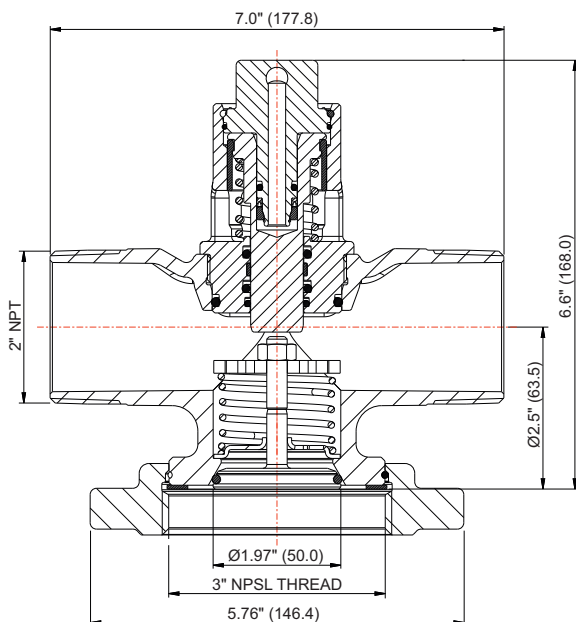
Weight:	9.2 Lb (4.2 Kg)
Design Pressure (MAWP):	58 PSI (4 Bar)
Test Pressure:	87 PSI (6 Bar)
Design Temperature Min:	-4°F (-20°C)
Design Temperature Max:	212°F (100°C)

NOTE: The Design Conditions and Section View dimensions are for the specified part number only.

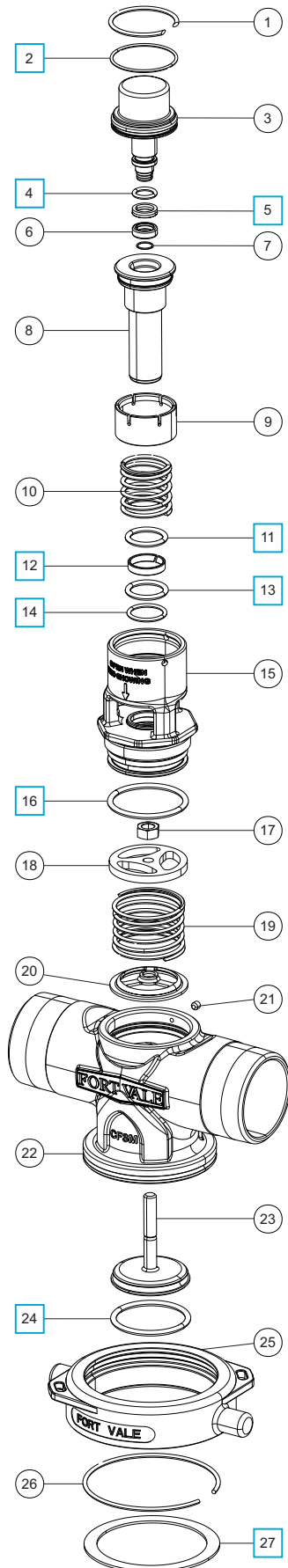
Related Parts

Description	Part No.
2" NPT cap with chain and PTFE seal	10301NPTP

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Retaining ring clip	5120-092
2	Neoprene O ring	ORB519CR ☐
3	Cylinder core	178/0441
4	Nitrile O ring	10133 ☐
5	Stem seal	5005-709 ☐
6	Hydraulic plunger seal head	178/0455
7	Retaining ring clip	5120-089
8	Piston sleeve	178/0451
9	Indicator bearing	178/0446
10	Return spring	178/0449
11	Nitrile O ring	5005-121 ☐
12	PTFE scarf cut bearing	178/0447 ☐
13	Viton O ring	5005-112 ☐
14	Perfluoroelastomer O ring	5005-384 ☐
15	Body top	178/0443
16	Fortyt O ring	ORB224F0 ☐
17	M8 full nut	5112-001
18	Spring pad	85/1002
19	Spring *Note	5104-XXX
20	Spring pad	85/1003
21	3/16" set screw	5121-001
22	Body	178/0450
23	Poppet	85/1015
24	Fortyt O ring	5005-118 ☐
25	3" NPT lug nut	10957/1
26	Retaining ring clip	5120-090
27	PTFE seal	10329TP ☐

Seal Kit

Description	Part No.
All parts marked ☐ in the Parts List	57G/10SK



Specification

Nominal size/body angle

3" / 90°

Inlet connection

Flanged: 8 x 0.58" holes on a 7.25" PCD (4" TTMA)

Outlet connection

Flanged: 8 x 0.44" holes on a 4.88" PCD (3" TTMA)

Properties

Hydraulic actuator with 1/8" NPT connection

Materials

Seating area: Superseat (alloy 625)

Contact parts: 316 stainless steel

Lifting fork: high nickel alloy

Main seal: Fortyt

Alternatives are available, refer to the Design Options page

Design Conditions

Weight:	21 Lb (9.5 Kg)
Design Pressure (MAWP):	58 PSI (4 Bar)
Test Pressure:	105.9 PSI (7.3 Bar)
Design Temperature Min:	-40°F (-40°C)
Design Temperature Max:	392°F (200°C)

NOTE: The Design Conditions and Section View dimensions are for the specified part number only.

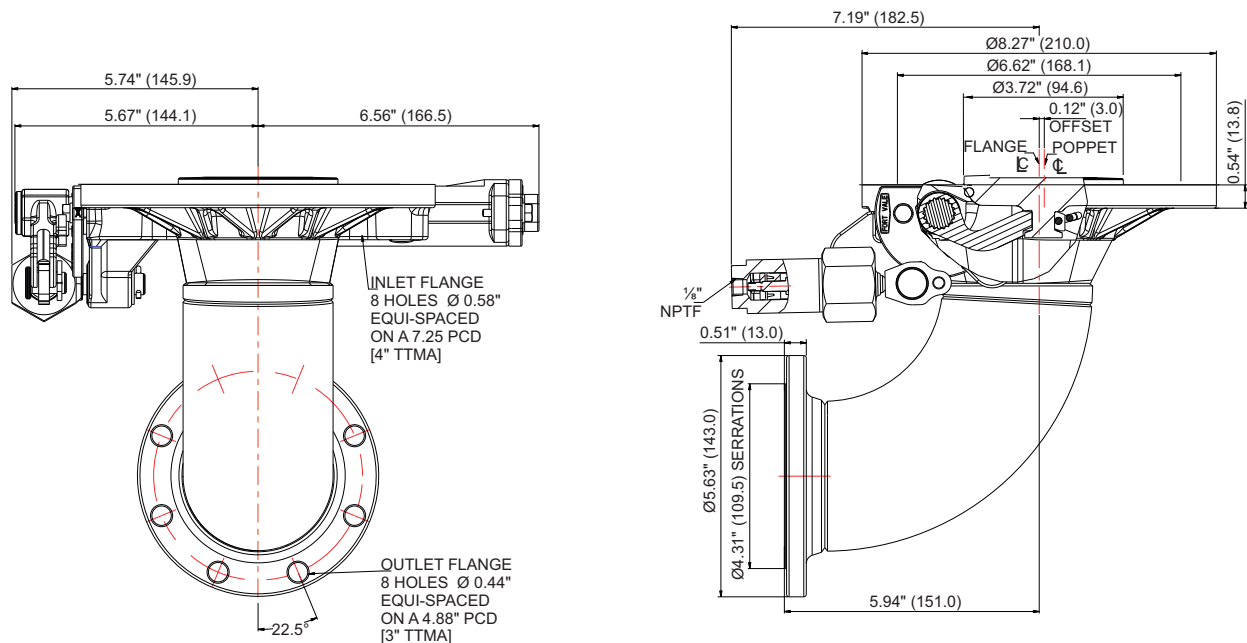
Important

If this valve is installed on a tank that contains solidifying cargo, the hydraulic pressure must not be more than 3000 PSI (207 Bar). Install a compatible relief valve.

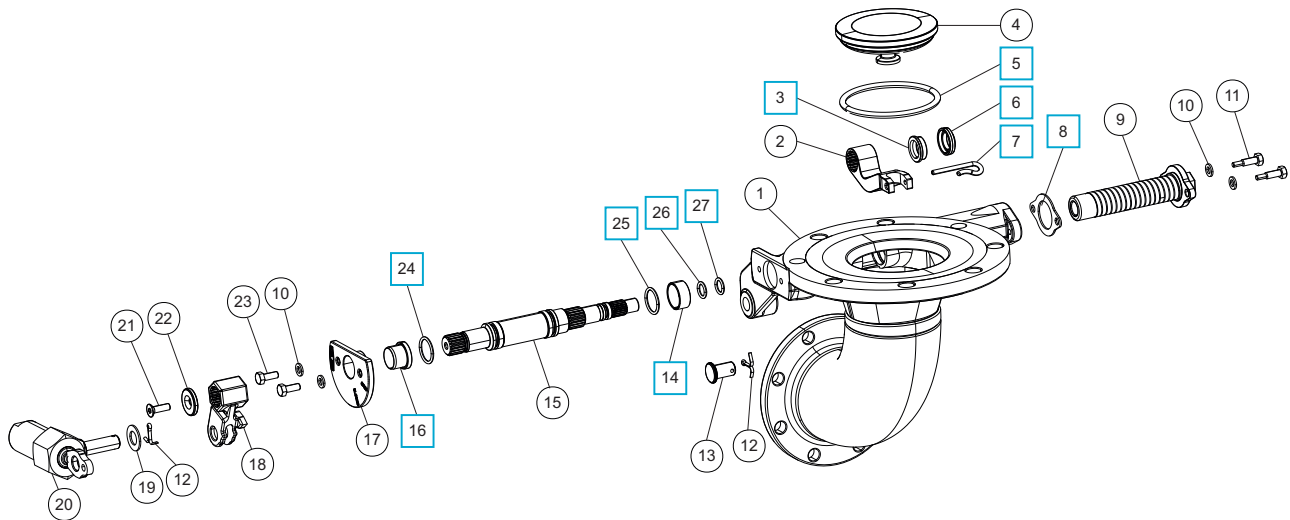
Related Parts

Description	Part No.
Weld-in flange	299/0102
CNAF/PTFE inlet gasket	5005-441
CNAF/PTFE outlet gasket	5005-445

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Body	844/9150B
2	Lifting fork	845/H010A
3	Seal energizer	845/0063 ☐
4	Poppet	845/0040
5	Fortyt O ring	5005-104 ☐
6	Bush seal	845/0064 ☐
7	Retaining pin	845/0015 ☐
8	Spring boss gasket	5005-845 ☐
9	Torsion spring assembly	845/0050
10	Spring washer (4)	5113-008
11	Clamp bolt (2)	845/0017
12	Split pin (2)	5220-008
13	Pivot pin	324/7658
14	Spindle bearing	845/0062 ☐
15	Spindle	845/0200
16	Stuffing seal	845/0061 ☐
17	Stuffing clamp	845/0069
18	Crank arm	324/8112
19	Plain washer	5113-006
20	Hydraulic actuator assembly	840/0381
21	Countersunk screw	5111-019
22	Retaining washer	20370/2
23	Clamp bolt (2)	5111-022
24	Viton O ring	5005-336 ☐
25	Perfluoroelastomer O ring	5005-384 ☐
26	PTFE O ring	5005-008 ☐
27	Perfluoroelastomer O ring	10133PHT ☐

Seal Kit

Description	Part No.
All parts marked ☐ in the Parts List	845/00SK



Specification

Nominal size/body angle

6" / 150mm / 180°

Inlet connection

Flanged: 12 x 0.6" (14.0) holes equi-spaced on a 9.3" (234.95) PCD - 6" TTMA sump specification

Outlet connection

Flanged: 12 x 0.44" (11.1) holes equi-spaced on a 8.13" (206.4) PCD - 6" TTMA flange specification

Properties

Hydraulically actuated with 1/8" NPT connection

Materials

Contact parts: 316 stainless steel

Main seal: Fortyt

Design Conditions

Weight:	68.7 Lb (31.2 Kg)
Design Pressure (MAWP):	58 PSI (4 Bar)
Test Pressure:	100.1 PSI (6.9 Bar)
Design Temperature Min:	-4°F (-20°C)
Design Temperature Max:	302°F (150°C)

Hydraulic Actuator MAWP: 1305.3 PSI (90 Bar)

Max.Internal Pressure on Opening: 20 PSI (1.38 B) Ambient
Max.Internal Pressure on Opening: 15 PSI (1.03 B) At Temp.

NOTE: The Design Conditions and Section View dimensions are for the specified part number only.

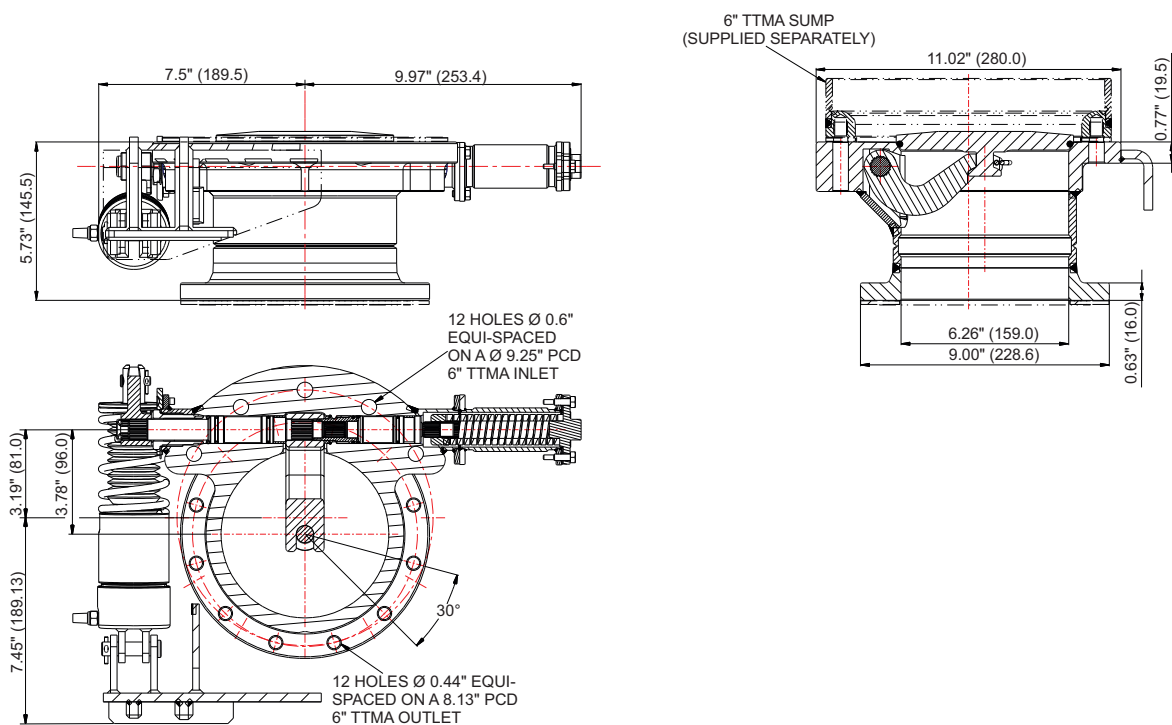
Design Code

BS EN 14433

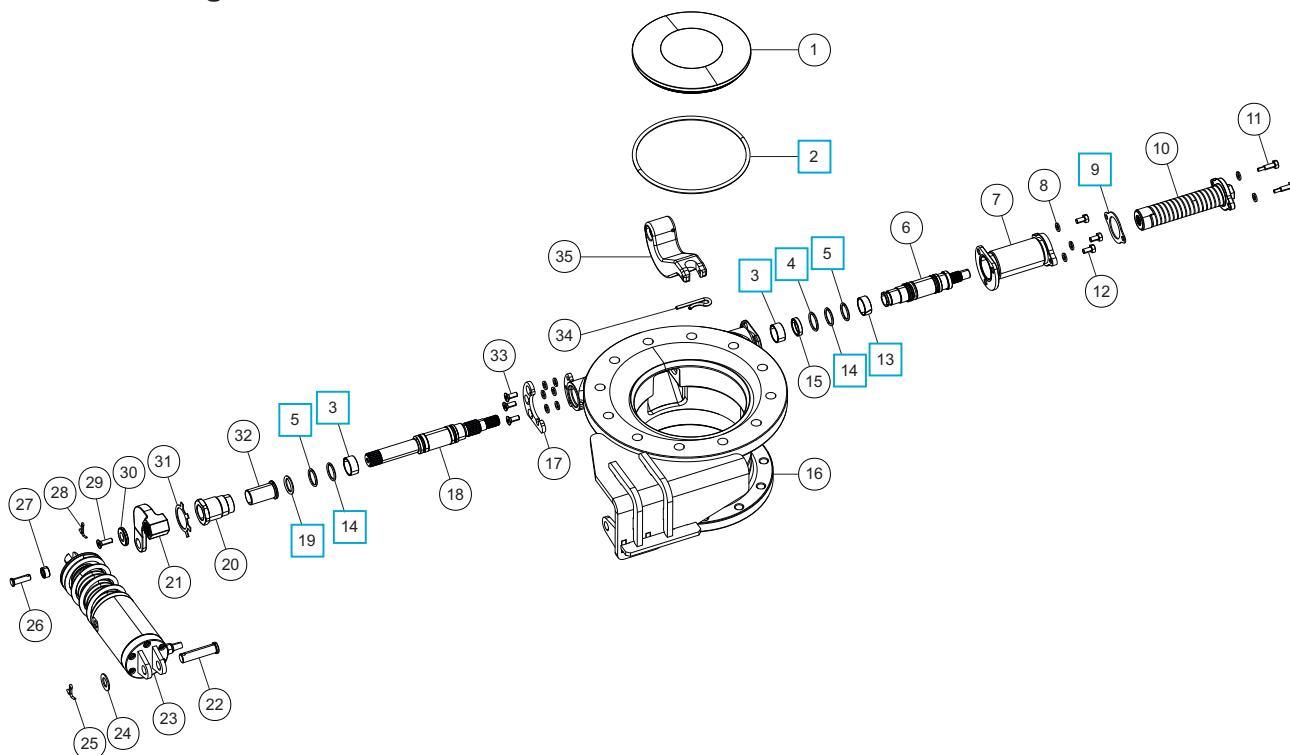
Related Parts

Description	Part No.
Sump weld-in flange - 1/2" UNC holes	874/0040
Sump weld in flange - M12 holes	874/0055
Stud kit - 1/2" UNC	874/00SK
Stud kit - M12	874/00MSK
CNAF/PTFE inlet gasket	874/0041
CNAF/PTFE outlet gasket	874/0042

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	Poppet	874/0015
2	Fortyt O ring	ORB360FO □
3	Spindle bearing (2)	845/0062 □
4	PTFE O ring	5005-319 □
5	Viton O ring (2)	5005-336MF □
6	Bottom extension spindle	874/0025
7	Spring extension housing	874/0014
8	M6 spring washer (11)	5113-008
9	Spring housing gasket	5005-846 □
10	Torsion spring	875/0050
11	M6 hex screw (2)	845/0017
12	M6 hex bolt (3)	5111-050
13	Split bearing	874/0023 □
14	Perfluoroelastomer O ring (2)	5005-384 □
15	Bottom seal energizer	874/0027
16	Body	874/0100
17	Indicator plate	874/0019
18	Main spindle	874/0020
19	PTFE O ring	5005-113 □
20	Stuffing gland nut	874/0016
21	Extended crank arm	844/2067
22	Clevis pin	875/2122
23	Hydraulic cylinder *Note	875/2160N ▲
24	M12 plain washer	5113-006
25	1/8" split pin	5220-008

Parts List

Item	Description	Part No.
26	Clevis pin	844/2121
27	Bronze bush	844/2011
28	3/32" split pin	5118-016
29	6mm countersunk bolt	5111-019
30	Retaining washer	20370/2
31	Locking washer	853/7029
32	Spindle guide bush	874/0024
33	M6 countersunk bolt (3)	5111-030
34	Retaining pin	845/0015
35	Lifting fork	874/0018

Seal Kits

Description	Part No.
Seal kit for footvalve 874/0000: contains all parts marked □ in the Parts List	874/0000SK
▲ Seal kit for hydraulic cylinder 875/2160N, includes silencer	875/2160NSK

NOTE: A hydraulic cylinder with BSP connections and a compatible seal kit is available. Please contact Fort Vale.



Specification

Nominal size

3"

Tank connection

Flanged: 8 x 0.44" holes on a 4.88" PCD (3" TTMA)

Outlet/process connection

3" Camlock

Properties

Right hand operated with TIR

Materials

Contact parts: 316 stainless steel

Main seal: PTFE

Alternatives are available, refer to the Design Options page

Design Conditions

Weight:	35.6 Lb (16.2 Kg)
Design Pressure (MAWP):	101.5 PSI (7 Bar)
Test Pressure:	185.6 PSI (12.8 Bar)
Design Temperature Min:	-67°F (-55°C)
Design Temperature Max:	392°F (200°C)

NOTE: The Design Conditions and Section View dimensions are for the specified part number only.

Design Codes

BS EN 14332

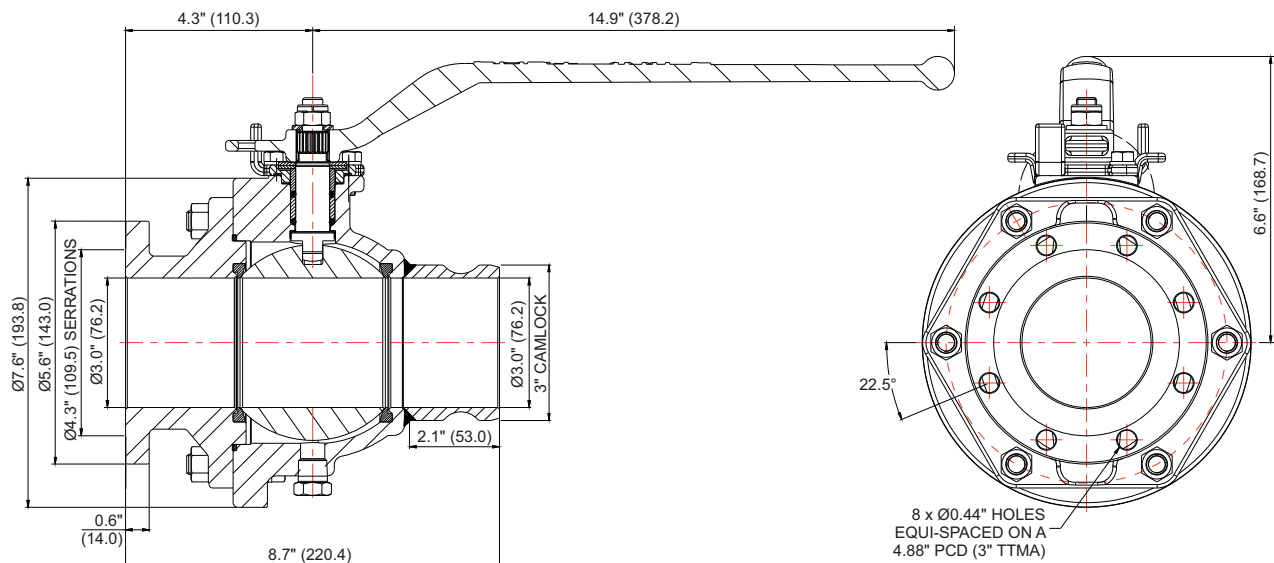
Range

Description	Part No.
3" TTMA inlet / 3" Camlock outlet	360/9000
3" TTMA inlet & outlet	360/9090

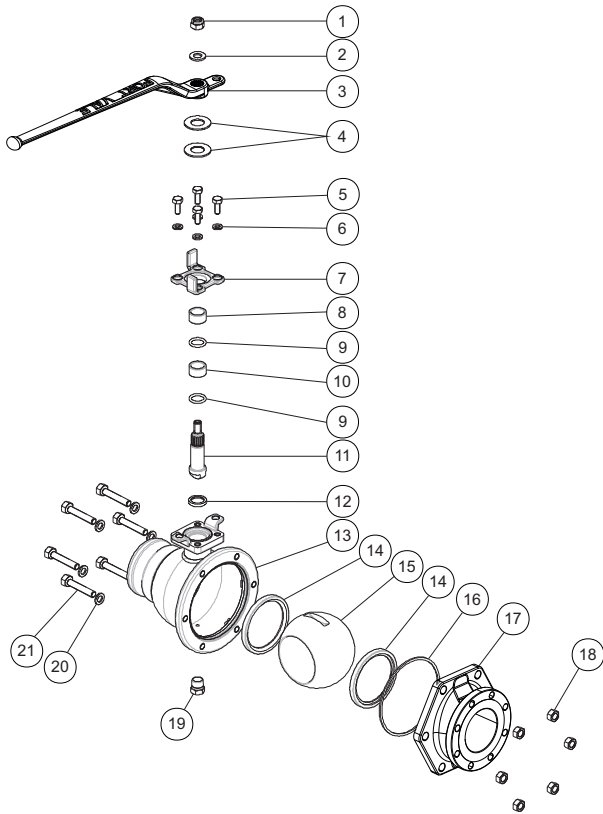
Related Parts

Description	Part No.
CNAF/PTFE inlet gasket	5005-445
Inlet bolting kit	US039
3" Camlock cap	90/DC300

Section View



Parts Drawing



Parts List

Item	Description	Part No.
1	M12 locking nut	5112-007
2	M12 spring washer	5123-003
3	Handle	360/3416
4	20mm Belleville washer (2)	5113-041
5	M8 hex head bolt (4)	5111-046
6	M8 spring washer (4)	5113-003
7	Clamp plate	360/5005
8	Top stuffing collar	360/3412
9	PTFE O ring (2)	5005-113
10	Bottom stuffing collar	360/3413
11	Spindle	360/3422
12	Bottom bearing	360/3421
13	Body	360/9115
14	PTFE ball seal (2)	360/3402
15	Ball	360/3401
16	PTFE body seal	360/3403
17	3" TTMA inlet bobbin adaptor	360/9112
18	M12 full nut (6)	5112-006
19	3/8" NPT taper plug	5128-070
20	M12 spring washer (6)	5113-010
21	M12 hex bolt (6)	5111-032