

STORAGE TANK FITTINGS

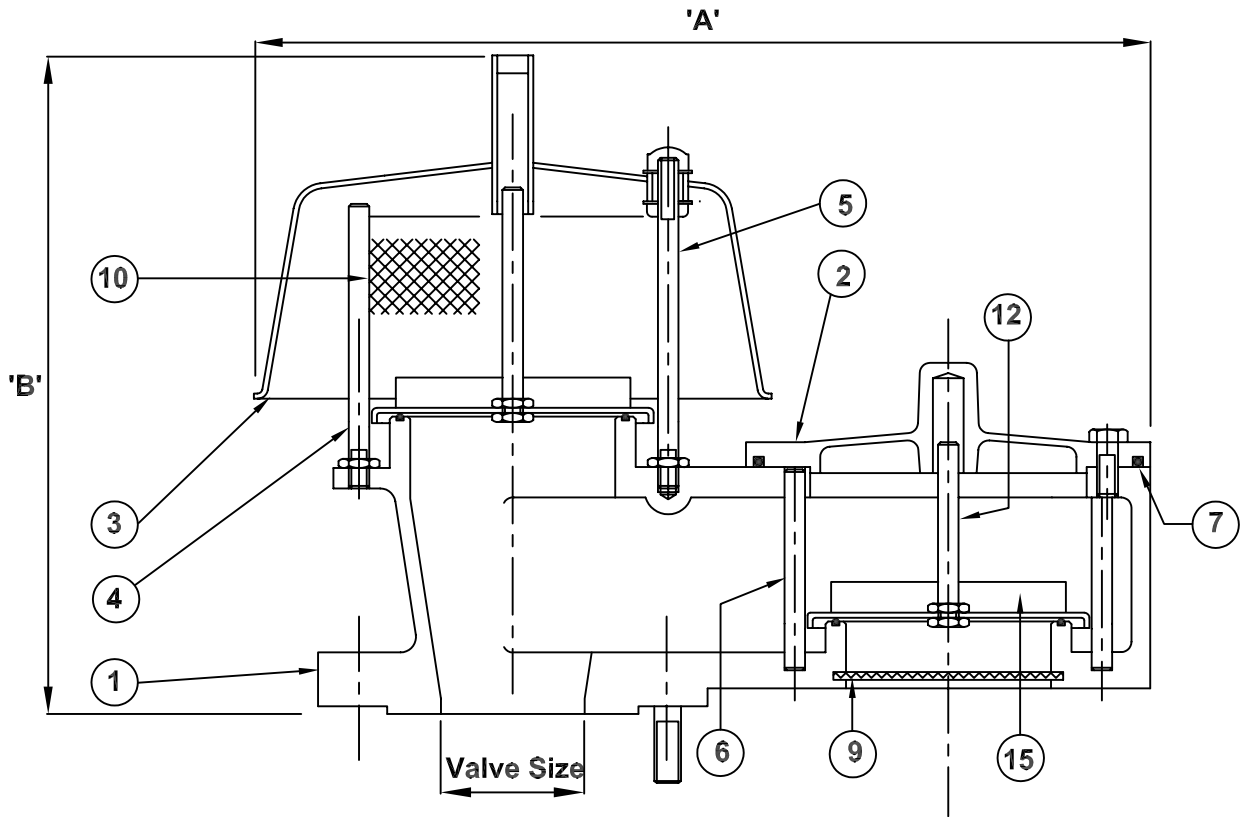
CNC 380 PRESSURE & VACUUM RELIEF VALVE



Motherwell
Tank Protection

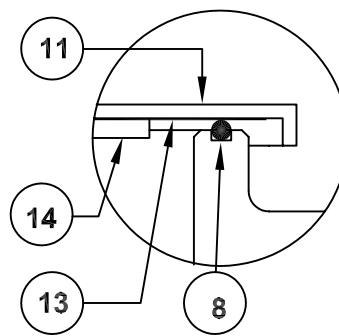
CNC 380

Pressure Relief - To Atmosphere
Vacuum Relief - From Atmosphere

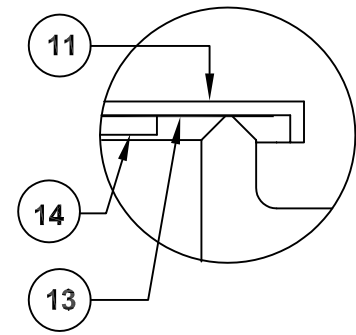


PARTS LIST

ITEM	DESCRIPTION
1	Body
2	Cover
3	Hood
4	Pressure Guide Post
5	Pressure Guide Post
6	Vacuum Guide Post
7	'O' Ring
8	'O' Ring
9	Mesh
10	Mesh
11	Pallet
12	Pallet Stem
13	Diaphragm
14	Retaining Disc
15	Weights



'O' Ring Seat



Solid Seat

Valve Size	Dim. 'A'	Dim 'B'	Width
2"	362	254	213
3"	417	273	267
4"	465	327	305
6"	602	423	416
8"	721	460	457
10"	914	597	590
12"	1111	737	722

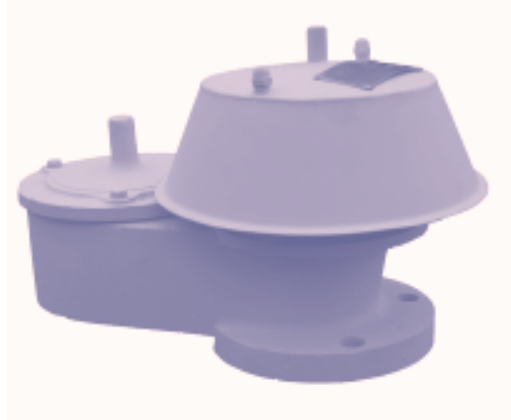
DETAILS AND DIMENSIONS SUBJECT TO CONFIRMATION BY MTP FOR PARTICULAR APPLICATIONS



DATASHEET

TANK BREATHER VALVES FOR BULK STORAGE TANKS

Opti-flow 380 Series (Weight Loaded) Pressure/Vacuum Relief Valves



APPLICATION

Motherwell Tank Protection (MTP) Opti-flow 380 Series direct acting **Pressure/Vacuum Relief Valves**, or **Breather Valves** are special types of relief valves which are specifically designed for tank protection.

The 380 range includes pressure only, vacuum only and combined pressure / vacuum valves, all available with flanged outlets or vented to atmosphere. The valves are compliant with European ATEX directives where applicable.

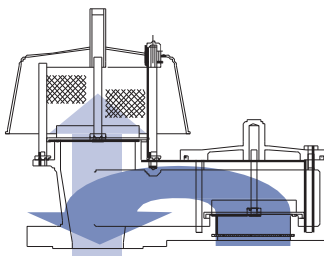
MTP 380 series valves are used extensively on **bulk storage tanks**, including floating roof tanks. The valves prevent the buildup of excessive pressure or vacuum which can unbalance the system or damage the storage vessel.

MTP 380 Series valves are manufactured by MTP in our UK manufacturing plant to exacting quality standards and backed by over 50 years' experience. Sizes range from 2" (50mm) to 12" (300mm).

BENEFITS

- **Opti-flow** technology provides **high gas flow** in compact valve size
- Range of **sizes and materials** to suit a wide range of applications
- Wide range of pressure and vacuum settings to provide **maximum tank protection** whilst ensuring minimum gas loss
- **FREE valve sizing** service assists optimum valve performance/cost specification.
- Proximity switches available for pressure and Vacuum
- ATEX Compliant to directive 2014/34/EU

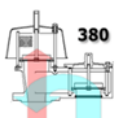
PRINCIPLE OF OPERATION



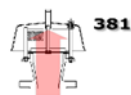
MTP Opti-flow valves have a cast body which is flanged for connection to the storage tank. A weather hood protects the pressure exhaust port and a mesh cover is fitted to prevent the ingress of foreign matter for valves vented to atmosphere. Piped-away versions are also available throughout the range.

Both the pressure and vacuum side of the valve incorporate a pallet and diaphragm assembly which rest on an 'O' ring seal to prevent leakage (Leak tested to API2521). This o-ring can be removed and the seat machined optically flat, producing a metal to metal seating arrangement if required.

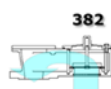
The weight of the pallet pushes the diaphragm against the seat to keep it closed. When the pressure or vacuum increases, the pallet and diaphragm lifts, and air / gas is allowed to flow.



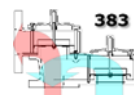
380
Pressure Relief to Atmosphere
Vacuum Relief from Atmosphere



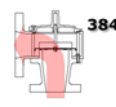
381
Pressure Relief to Atmosphere



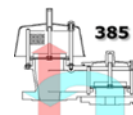
382
Vacuum Relief from Atmosphere



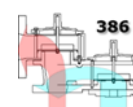
383
Pressure Relief to Closed Line
Vacuum Relief from Atmosphere



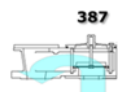
384
Pressure Relief to Closed Line



385
Pressure Relief to Atmosphere
Vacuum Relief from Closed Line



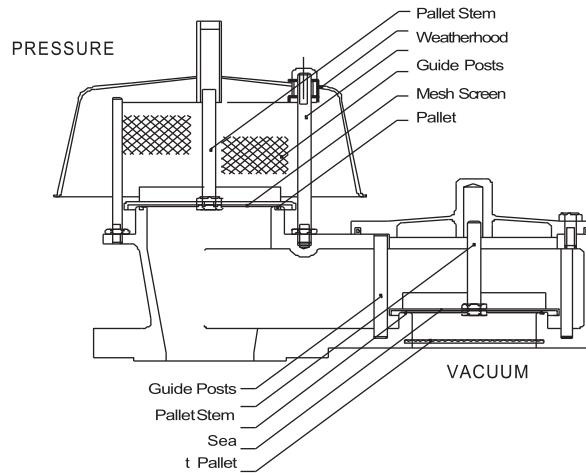
386
Pressure Relief to Closed Line
Vacuum Relief from Closed Line



387
Vacuum Relief from Closed Line

SPECIFICATION

Opti-flow 380 Series Pressure & Vacuum Relief Valves



GENERAL DESCRIPTION

MTP Opti-flow 380 Series, Pressure & Vacuum Relief Valves, Tank Breather Valves

APPLICATION

Bulk Storage Tanks, Chemical Tanks, Low pressure gas pipeline systems, Digesters, Gas Holders

PHYSICAL

Model 380, 381, 382, 383, 384, 385, 386, 387

Sizes 2", 3", 4", 6", 8", 10" 12"

Process Connection
 1. ANSI 150# (Standard)
 2. PN16
 3. Special (Flange drilling as required)

Materials
 1. Aluminium
 2. Cast Iron
 3. Carbon Steel
 4. Stainless Steel
 5. Special (Available upon request)

Pallet
 1. Stainless Steel
 2. Aluminium
 3. Special (Available upon request)

O-Ring Seals
 1. PTFE
 2. Nitrile rubber
 3. Viton
 4. Specials (Available upon request)

PROCESS

Vacuum Settings Min Low flow from 0.8"wg (2 mbar)
 Pressure Setting Weight Loaded 30"wg (75mbar)
 Spring loaded 200" WG (500 Mbarg)

ORDERING CODE

MODEL-SIZE-PROCESS CONNECTION-MATERIAL-TRIM-SEAL-DIAPHRAGM (+Settings)
e.g. 380-04-1311 (380 series, 4" ANSI 150# connection, carbon steel body, stainless trim, PTFE o-rings & PTFE diaphragm)

VALVE SIZING – FREE SERVICE

Computerised valve sizing to API 2000, contact us on the numbers below.

AFTER SALES SUPPORT

MTP provide comprehensive spares support, a **free valve inspection service** and term preventative maintenance schemes using product-trained technicians to service MTP and other brands of valves and fittings.

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Required Valve Type	Pressure/Vacuum with Atmospheric Vent
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Sizing based on	Sizing Data - Free Air
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Pressure	Loading:	Weight	units
Set Pressure		75.00000	mm water
Over Pressure		50.00	%
Out-Breathing Rate AIR		54.00	Sm3/h
Back Pressure		0.00000	mm water
Inlet Pressure Loss			mm water

Ratio of specific heats	K	1.4000	Air
Relief Temperature	T	273.0000	deg K
Molecular weight	M	28.0000	Air
Compressibility factor	Z	1.0000	
Atmospheric pressure	At	1.0130	Bara

Customer Name	
Company Name	
Customer Ref.	MPG-6825-A

Vacuum	Loading:	Weight	units
Set Pressure		25.00000	mm water
Over Pressure		50.00	%
In-Breathing Rate - AIR		196.00	Sm3/h
Inlet Pressure Loss			mm water

Figure number:	380
Valve type:	Pressure/Vacuum with Atmospheric Vent
Inlet Size:	4 inch
Outlet Size:	Not Piped Inch
Flange standard:	ANSI 150 FF
Body:	CS - SA216 WCB
Seat:	St St 316L
Trim (Internals):	St St 316L
Diaphragm:	PTFE
Spring Material (If app)	
Weatherhood	Carbon Steel
Offered Relief Area:	81.08 cm2
Capacity - Out:	993.11 Sm3/h AIR
Capacity - In:	315.72 Sm3/h AIR

MTP Ref.	Q19-
Date Quoted	07/11/2019
Item No	1
Quantity	1
Tag No	50-PSV-903

Pressure (Out-breathing)	Vacuum (In-breathing)
Calc. Size " 4	Calc. Size " 4
Required area (A)	Required area (A)
4.41 cm2	50.33 cm2
Min. Req'd	Min. Req'd
81.08 cm2	81.08 cm2
With AIR capacity of	With AIR capacity of
993.11 Sm3/h	315.72 Sm3/h

Comments	
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