

Pressure and vacuum relief Valves



Emission control and safety equipment, for low pressure storage tanks



DESCRIPTION

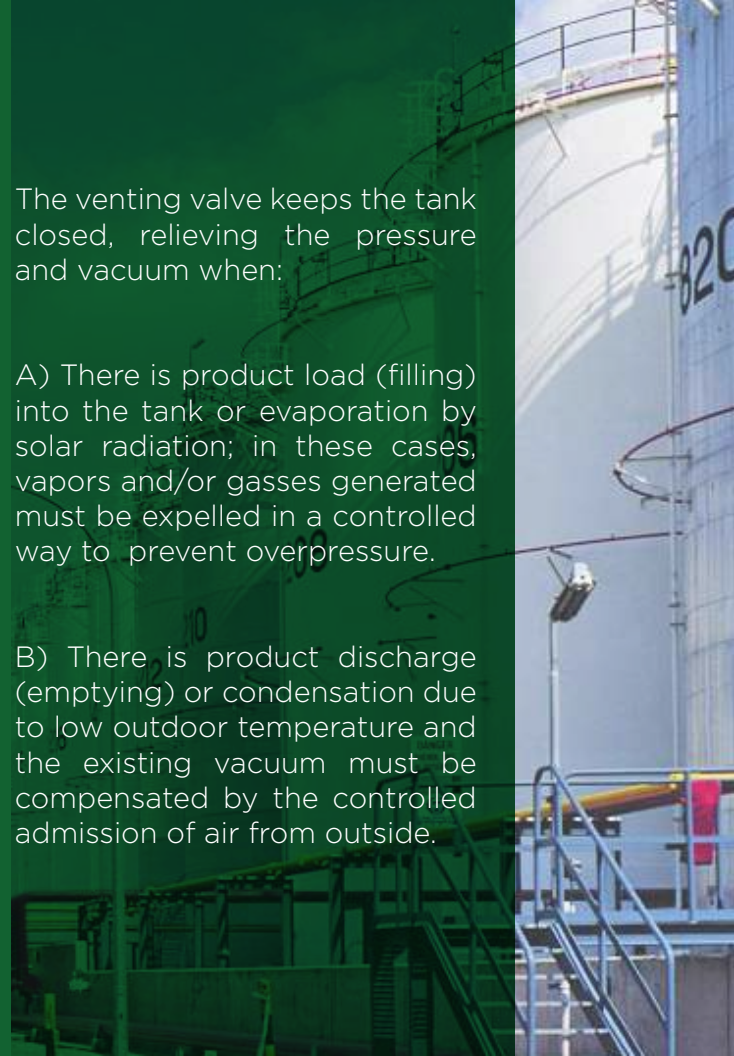
Its main function is to control outbreathing and inbreath of the atmospheric or semi-pressurized storage tanks, getting as the main benefit, the control of emissions into the atmosphere, this will generate savings, environmental protection, and tank operational safety.

The day-to-day operation of the storage tanks makes it mandatory to have venting regulation devices, because in absence of such devices, product vapors could be emitted into the atmosphere, which besides leading to excessive spending and waste, it pollutes the air with gasses that may damage our health, in addition to represent a fire hazard of the organization.

The venting valve keeps the tank closed, relieving the pressure and vacuum when:

A) There is product load (filling) into the tank or evaporation by solar radiation; in these cases, vapors and/or gasses generated must be expelled in a controlled way to prevent overpressure.

B) There is product discharge (emptying) or condensation due to low outdoor temperature and the existing vacuum must be compensated by the controlled admission of air from outside.





The design, manufacture and characteristics of the valves meets the guidelines issued by international standards: API 2000 seventh edition, and ISO 28300, this all concerning standard venting in atmospheric storage tanks.

Likewise local standards conceived to specify, service and test these devices issued by chemical and petrochemical plants are met.

The protection of a storage tank is the combination of a relief valve mounted on a flame arrester, this assembly is called venting equipment.



Series 55

Vent valve
to the atmosphere



Series 56

Pipe away vent valve

Different to series 55 that freely vents vapors to the atmosphere, series 56 (also called Pipe away vent valve) has a chamber and a discharge with a flanged type connection, that can be connected to a collection pipe to send these vapors into a further processing, like confinement, incineration or recovery.

All the other features are identical to series 55



Series 57

Directed vacuum and atmospheric vent valve

Whenever due to process requirement or stored liquid incompatibility is not convenient to permit air entry to the tank to compensate vacuum, series 57 allows an injection of a different gas through a connection in the valve's vacuum chamber that isolates air inlet. There is a variant of this series that combines the discharge chamber of series 56 to achieve more sophisticated emissions control systems.

All other features are identical to series 55.





Series 58

Blanketing systems

Series 58 comprises a full blanketing system combining series 57 and 55 valves to achieve a controlled injection of a seal or blanketing gas (nitrogen, carbon dioxide, natural gas) with two main objectives.

1) Avoid air contact with the product contained in the tank with the purpose of preventing deterioration or changes thereof for pollution or reaction with oxygen.

2) Injecting gas in a controlled manner will move and eliminates the air inside the tank and therefore the oxygen that in combination with an energy source may generate a combustion. If it is not controlled, it could end in an internal explosion that will damage the tank.

The combination of valves series 55 shall provide the system with a coordinated and trustable relieve. In case of failure on the injection valve or lack of seal gas supply, this shall avoid a possible risk to the tank.

The system should include a regulator and all the necessary accessories for the proper operation of these units. If you need help with the design of this system, contact our engineering department for a customized solution.

All other features are identical to series 55.



Series 59

Vacuum breaker valve.

In some cases the protection against vacuum generation within a container is required without a pressure relieve, for this application series 59 (vacuum breaker valve) permits just to have an air controlled access to a predefined adjustment point, this valve generally works together or as backup to a series 55 valve and can also have a piped vacuum connection similar to the one of series 57.

All other features are identical to series 55.

SPECIFICATIONS

Body materials:

Aluminum, carbon and stainless steel 316.

Internal Materials:

Pressure trim and vacuum trim stainless steel 316 (plate, support, screws, bolts, nuts, guides and pressure screen).

Nominal Connection Size:

2", 3", 4", 6", 8", 10" and 12" diameter.

Connections:

ANSI/ ASA flanges 150#, flat face type (FF) for aluminum valves, raised face (RF) for steel valves. (Other options available)

Standard Setpoint Weight loaded:

Standard of 1/2 oz/sq inch up to 2.32 oz/sq inch, both in pressure as well as in vacuum.

Spring Loaded :

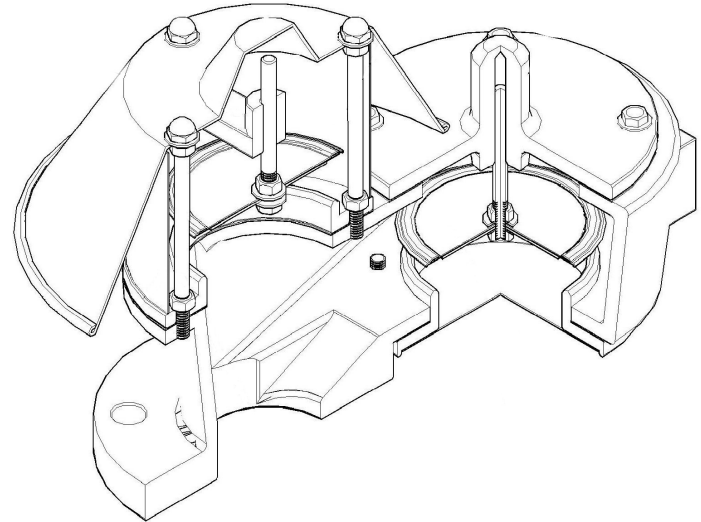
Higher than 2.32 oz/sq inch and up to 15 Psi.

Diaphragm:

Floating-type FEP (Teflon).

Flow Capacity Test:

Certified flow capacity by an accredited flow laboratory issued by the Mexican Accreditation Entity (ema) , with international traceability recognition agreement (ILAC), for pressure and for vacuum, in accordance with ISO 28300, API2000 Seventh edition.



Maximum Leak Rate Test:

Maximum leak rate 1 SCFH; at 90% of set point for all sizes. Exceeds the ISO28300 - API 2000 requirement. All valves will include this test report.

Coating:

High-solids polyurethane for marine environment meets ISO 12944. Other methods upon request.

Operation Test:

Pressure and vacuum setpoint test to meet ISO28300 - API 2000 standards. Each valve will include a test report with a graphic chart for Pressure/ vacuum, and leak rate test. All testing procedures are made on a certified test bench with an international traceability recognition agreement (ILAC).

Packing:

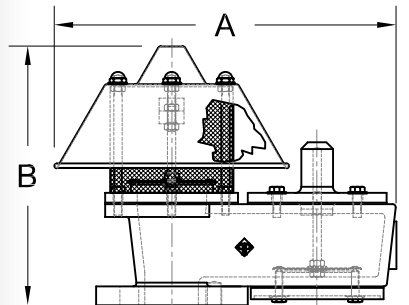
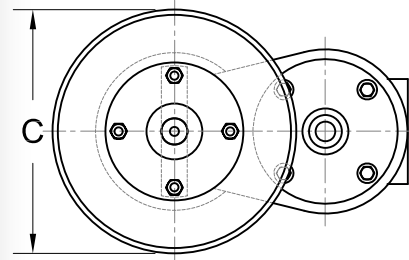
Includes protection for international transportation and storage.

Certification:

Certified ISO 9001:2015 Quality Management System for designing, manufacturing, service and testing by international IQNet.



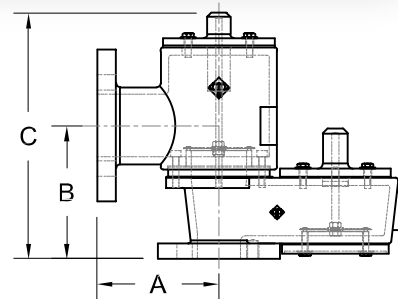
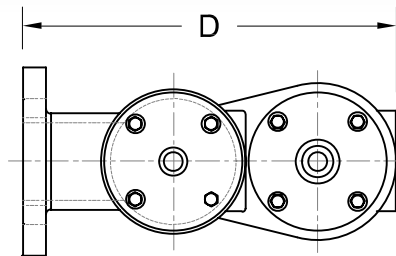
Connection Size	Dimension			Approximate weight	
	A	B	C	Aluminum	Steel
2" (50.8mm)	13 1/2" (342.90mm)	10 1/4" (260.35mm)	9 3/8" (238.13mm)	7.5 kg (16.5 lbs)	20 kg (44 lbs)
3" (76.2mm)	16 3/8" (415.92mm)	11 1/2" (292.10mm)	10 7/8" (276.23mm)	12 kg (26.5 lbs)	25 kg (55 lbs)
4" (101.6mm)	19 1/8" (485.78mm)	12 3/4" (323.85mm)	12 1/2" (317.50mm)	20 kg (44 lbs)	37 kg (81.5 lbs)
6" (152.4mm)	25 1/8" (638.18mm)	16" (406.40mm)	16 1/2" (419.10mm)	29kg (63.9 lbs)	58 kg (127.8 lbs)
8" (203.2mm)	32 3/16" (817.57mm)	19 5/8" (498.47mm)	20 3/16" (512.77mm)	47 kg (103.5 lbs)	104 kg (229 lbs)
10" (254mm)	36" (914.40mm)	20 5/32" (511.96mm)	22 1/2" (571.50mm)	62 kg (136.6 lbs)	126 kg (277.5 lbs)
12" (304.8mm)	40 1/2" (1028.70mm)	21" (533.40mm)	25 1/8" (638.17mm)	75 kg (165.2 lbs)	169 kg (372.2 lbs)



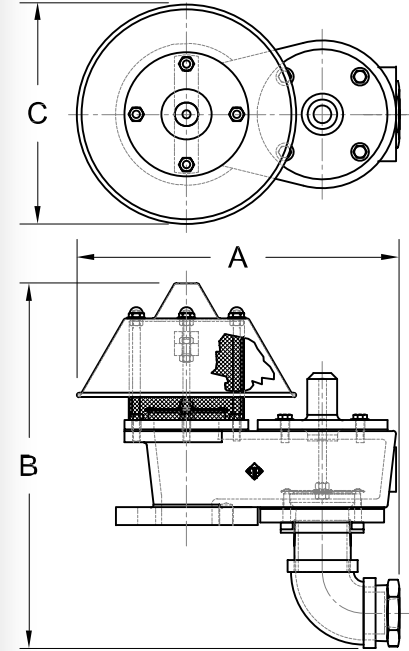
Dimensions s-55

Connection Size	Dimension				Approximate weight	
	A	B	C	D	Aluminum	Steel
2" x 3" (50.8mm x 76.2mm)	6" (152.40mm)	6 9/16" (166.69mm)	12 1/8" (307.98mm)	14 7/8" (377.83mm)	13 kg (28.6 lbs)	30 kg (66 lbs)
3" x 4" (76.2mm x 101.6mm)	6 1/2" (165.20mm)	7 9/16" (192.09mm)	13 5/8" (346.08mm)	17 3/8" (441.32mm)	18 kg (39.6 lbs)	43 kg (94.7 lbs)
4" x 6" (101.6mm x 152.4mm)	7 1/8" (180.97mm)	9 9/16" (242.89mm)	16 3/4" (425.25mm)	20 1/4" (511.18mm)	29 kg (63.9 lbs)	61 kg (134.3 lbs)
6" x 8" (152.4mm x 203.2mm)	9 1/8" (231.78mm)	12 3/16" (309.56mm)	20 3/4" (527.05mm)	26" (660.40mm)	42kg (92.6 lbs)	115kg (253.3 lbs)
8" x 10" (203.2mm x 254mm)	11" (279.40mm)	15 9/16" (395.27mm)	26" (660.40mm)	33 1/8" (841.38mm)	60 kg (103.5 lbs)	148 kg (326 lbs)
10" x 12" (254mm x 304.8mm)	12.000 (304.80mm)	17.000 (431.79mm)	28.875 (73.43mm)	36.750 (933.45mm)	71 kg (156.4 lbs)	193 kg (425.1 lbs)
12" x 14" (304.8mm x 355.6mm)	15.500" (393.70mm)	18.313" (812.80mm)	32.000 (812.80mm)	43.375 (1101.73mm)	101 kg (222.4 lbs)	264 kg (581.5 lbs)

Dimensions s-56



Connection Size	Dimension			Approximate weight	
	A	B	C	Aluminum	Steel
2" (50.8mm)	13 3/4" (349.25mm)	15 3/4" (400.05mm)	9 3/8" (238.13mm)	9.5 kg (20.9 lbs)	22 kg (48.5 lbs)
3" (76.2mm)	16 3/8" (415.92mm)	16 3/8" (415.68mm)	10 7/8" (276.23mm)	14 kg (30.9 lbs)	25 kg (59.5 lbs)
4" (101.6mm)	19 1/8" (485.78mm)	17 5/8" (447.68mm)	12 1/2" (317.50mm)	22 kg (48.5 lbs)	39 kg (86 lbs)
6" (152.4mm)	25 1/8" (638.18mm)	20 7/8" (530.23mm)	16 1/2" (419.10mm)	31 kg (68.3 lbs)	60 kg (132.3 lbs)
8" (203.2mm)	32 3/16" (817.55mm)	23 1/8" (587.37mm)	20 3/16" (512.75mm)	49 kg (103.6 lbs)	106 kg (233.7 lbs)
10" (254mm)	36" (914.40mm)	23 5/8" (600.07mm)	22 1/2" (571.50mm)	64 kg (141 lbs)	128 kg (282.2 lbs)
12" (304.8mm)	40 1/2" (1028.70mm)	24 3/8" (619.12mm)	25 1/8" (638.18mm)	77 kg (169.8 lbs)	171 kg (377 lbs)



Dimensions s-57

Dimension

Connection Size

A

B

C

D

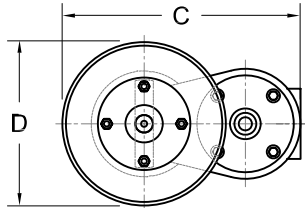
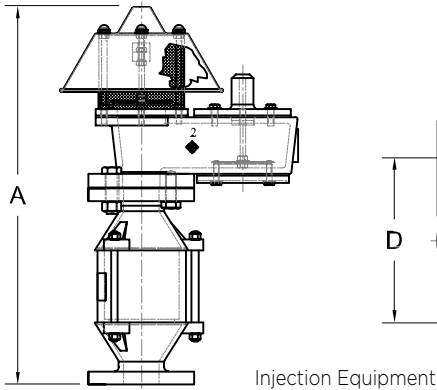
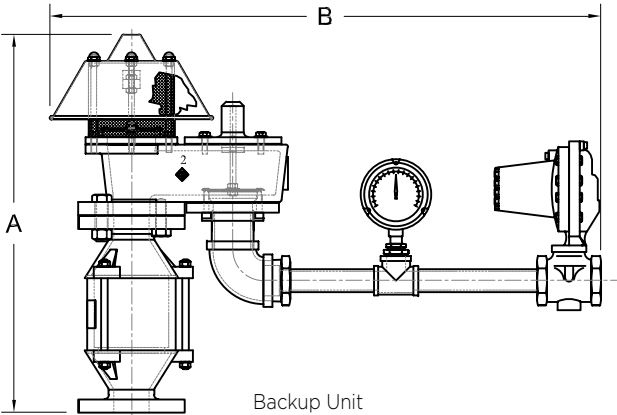
2"
(50.8 mm)

21 1/2"
(546.10mm)

31 5/8"
(803.28mm)

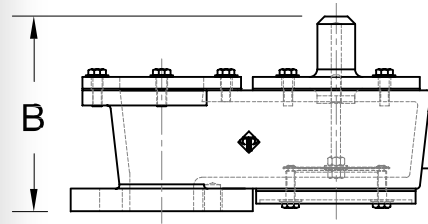
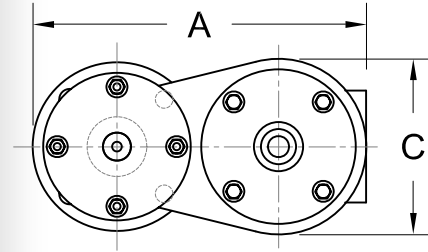
13 1/2"
(342.90mm)

9 3/8"
(238.13mm)



Dimensions s-58

Connection Size	Dimension			Approximate weight	
	A	B	C	Aluminium	Steel
2" (50.8mm)	11 7/8" (301.63mm)	6 1/2" (165.10mm)	6 1/4" (158.75mm)	6 kg (13.2 lbs)	18 kg (39.7 lbs)
3" (76.2mm)	14 5/8" (371.48mm)	7 1/8" (180.98mm)	7 3/4" (196.85mm)	9 kg (19.8 lbs)	22 kg (48.5 lbs)
4" (101.6mm)	17 3/8" (441.33mm)	8 5/8" (219.08mm)	9" (228.60mm)	16 kg (35.27 lbs)	33 kg (72.75 lbs)
6" (152.4mm)	22 3/8" (568.32mm)	10 3/8" (263.53mm)	12 1/4" (311.15mm)	24 kg (52.2 lbs)	53 kg (116.84 lbs)
8" (203.2mm)	28 7/8" (733.43mm)	13 3/16" (334.95mm)	16 1/4" (412.75mm)	41 kg (90.4 lbs)	98 kg (216 lbs)
10" (254mm)	32 7/8" (831.85mm)	14 1/8" (358.76mm)	18 1/2" (469.90mm)	55 kg (121.3 lbs)	119 kg (262.4 lbs)
12" (304.8mm)	37 3/8" (949.33mm)	15" (381.00mm)	20 3/4" (527.05mm)	68 kg (150 lbs)	161 kg (354 lbs)



Dimensions s-59

1) Connection diameter

	Series 55	Series 56	Series 57	Series 58	Series 55
02	2"	2" x 3"	2"	2"	2"
03	3"	3" x 4"	3"	3"	3"
04	4"	4" x 6"	4"	4"	4"
06	6"	6" x 8"	6"	6"	6"
08	8"	8" x 10"	8"	8"	8"
10	10"	10" x 12"	10"	10"	10"
12	12"	12" x 14"	12"	12"	12"

2) Body Material

01	356 type aluminum
05	Carbon steel
06	Polypropylene
09	316 Stainless Steel

3) Inside materials

06	Polypropylene
09	316 Stainless Steel

4) Diaphragm

03	Teflon
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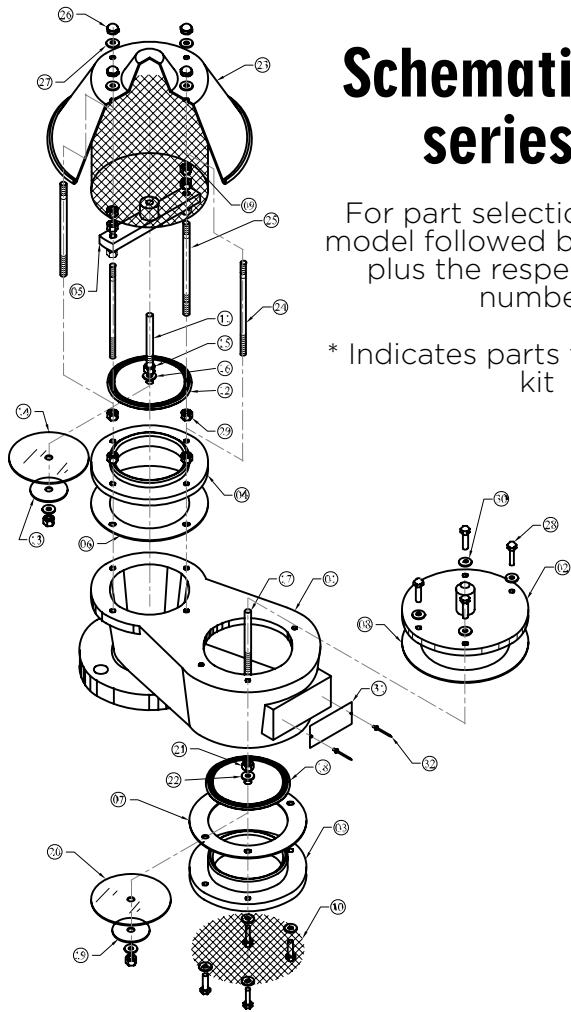
5) Calibration type

00	Calibration by specific weight (STD) (0.5 up to 2.3 oz/ inch ²).
01	Spring loaded for high calibration (Higher than 2.3 oz/sq inch up to 15 PSI)
	Special options

Model Selection

Ordering Example:
55-02-01-09-03-00

Refers to a series 55 free vent valve, 2" diameter connection, aluminum body and 316 stainless steel internal materials, Teflon (FEP) diaphragm. Set for ½ ounce per square inch (STD) pressure - vacuum .



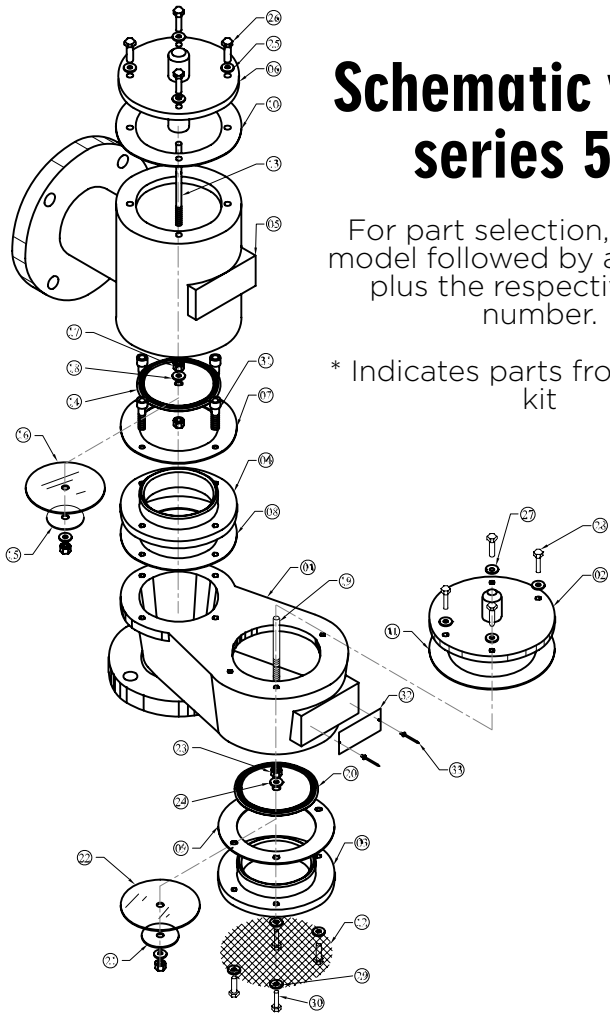
Schematic view series 55

For part selection, indicate model followed by a diagonal plus the respective part number.

* Indicates parts from service kit

List of Materials

	Quantity	Description
01	1 piece	Valve Body
02	1 piece	Vacuum lid
03	1 piece	Vacuum seat
04	1 piece	Pressure seat
05	1 piece	Pressure guide
06	*1 piece	Pressure gasket
07	*1 piece	Vacuum gasket
08	*1 piece	Vacuum lid gasket
09	1 piece	Pressure screen
10	1 piece	Vacuum screen
11	1 piece	Pressure guide bolt
12	1 piece	Pressure plate
13	1 piece	Pressure plate support
14	*1 piece	Diaphragm for pressure plate
15	1 lot	2 hex nuts f/vacuum plate
16	1 lot	2 flat washers for pressure plate
17	1 piece	Vacuum guide bolt
18	1 piece	Vacuum plate
19	1 piece	Support for vacuum plate
20	*1 piece	Diaphragm for vacuum plate
21	1 lot	2 hex nuts f/vacuum plate
22	1 lot	2 flat washers f/vacuum plate
23	1 piece	Protective hood
24	1 lot	2 Hood support bolts
25	1 lot	2 Guide support bolts
26	1 lot	4 Cap nuts
27	1 lot	4 Flat washers for hood
28	1 lot	8 Hex head bolts
29	1 lot	12 hex nuts f/support
30	1 lot	8 flat washers for vacuum lid
31	1 piece	Identification plate
32	1 lot	2 Pop rivets



Schematic view series 56

For part selection, indicate model followed by a diagonal plus the respective part number.

* Indicates parts from service kit

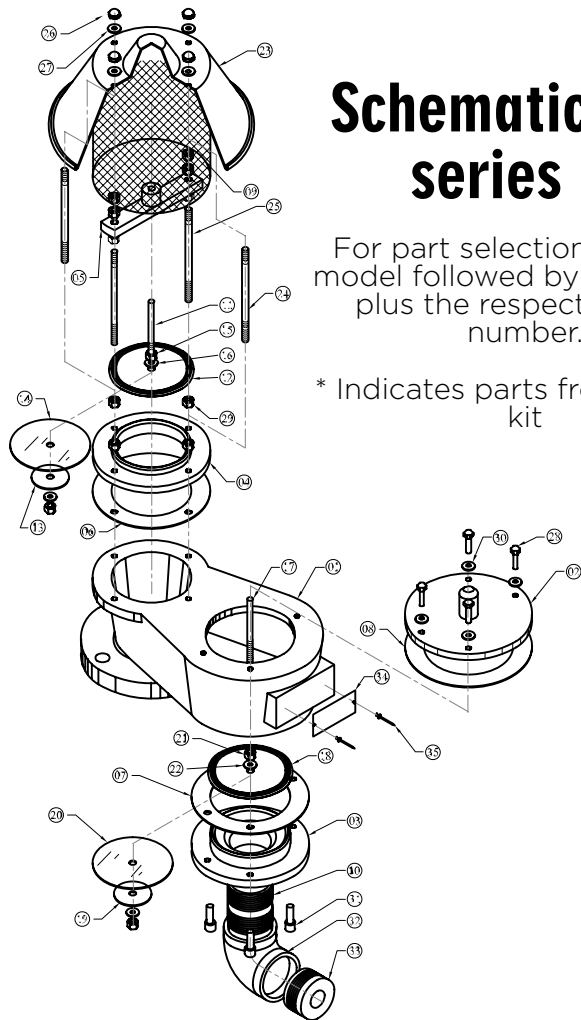
List of Materials

	Quantity	Description
01	1 piece	Valve Body
02	1 piece	Vacuum lid
03	1 piece	Vacuum seat
04	1 piece	Pressure seat
05	1 piece	Pressure chamber
06	1 piece	Pressure gasket
07	*1 piece	Pressure lid gasket
08	*1 piece	Pressure seat gasket
09	*1 piece	Vacuum seat gasket
10	*1 piece	Pressure gasket
11	*1 piece	Vacuum lid gasket
12	1 piece	Vacuum screen
13	1 piece	Pressure guide pin
14	1 piece	Pressure plate
15	1 piece	Pressure plate holder
16	*1 piece	Diaphragm for pressure plate
17	1 lot	2 flat washers pressure plate
18	1 lot	2 hex nut pressure plate
19	1 piece	Vacuum guide bolt
20	1 piece	Vacuum plate
21	1 piece	Support for vacuum plate
22	*1 piece	Diaphragm for vacuum plate
23	1 lot	4 hex nuts f/vacuum plate
24	1 lot	4 Flat washers f/vacuum plate
25	1 lot	4 flat washers for pressure cap
26	1 lot	4 Hex bolts for pressure cap
27	1 lot	4 Flat washers for vacuum lid
28	1 lot	4 Hex bolts for pressure seat
29	1 lot	4 Allen bolts pressure seat
30	1 piece	Identification plate
31	1 lot	2 Pop rivets

Schematic view series 57

For part selection, indicate model followed by a diagonal plus the respective part number.

* Indicates parts from service kit



	Quantity	Description
01	1 piece	Valve Body
02	1 piece	Vacuum lid
03	1 piece	Vacuum seat
04	1 piece	Pressure seat
05	1 piece	Pressure guide
06	*1 piece	Pressure gasket
07	*1 piece	Vacuum gasket
08	*1 piece	Vacuum lid gasket
09	1 piece	Pressure screen
10	1 piece	Vacuum screen
11	1 piece	Pressure guide bolt
12	1 piece	Pressure plate
13	1 piece	Pressure plate holder
14	*1 piece	Diaphragm for pressure plate
15	1 lot	2 hex nuts f/vacuum plate
16	1 lot	2 flat washer f/pressure plate
17	1 piece	Vacuum guide bolt
18	1 piece	Vacuum plate
19	1 piece	Support for vacuum plate
20	*1 piece	Diaphragm for vacuum plate
21	1 lot	2 hex nuts f/vacuum plate
22	1 lot	2 Flat washers f/vacuum plate
23	1 piece	Protective hood
24	1 lot	2 Hood support bolts
25	1 lot	2 Guide support bolts
26	1 lot	4 cap nuts
27	1 lot	4 Flat washers for hood
28	1 lot	8 Hex head bolts
29	1 lot	12 hex nuts f/support
30	1 lot	8 flat washers for vacuum lid
31	1 piece	Identification plate
32	1 lot	2 Pop rivets
33	1 lot	12 hex nuts f/support
34	1 lot	8 flat washers for vacuum lid
35	1 piece	Identification plate

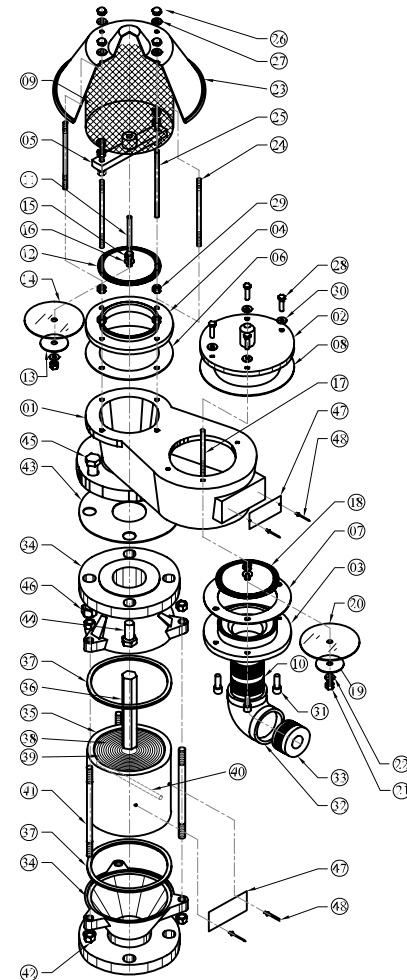
	Quantity	Description
01	1 piece	Valve Body
02	1 piece	Vacuum lid
03	1 piece	Vacuum seat
04	1 piece	Pressure seat
05	1 piece	Pressure guide
06	*1 piece	Pressure gasket
07	*1 piece	Vacuum gasket
08	*1 piece	Vacuum lid gasket
09	1 piece	Pressure screen
10	1 piece	Straight string nipple
11	1 piece	Pressure guide bolt
12	1 piece	Pressure plate
13	1 piece	Pressure plate holder
14	*1 piece	Diaphragm for pressure plate
15	2 pieces	Hex nuts f/pressure plate
16	2 pieces	Flat washer f/pressure plate
17	1 piece	Vacuum guide bolt
18	1 piece	Vacuum plate
19	1 piece	Support for vacuum plate
20	*1 piece	Diaphragm for vacuum plate
21	2 pieces	Hex nut f/vacuum plate
22	2 pieces	Flat washer f/vacuum plate
23	1 piece	Protective hood
24	2 pieces	Hood support bolt
25	2 pieces	Guide support bolt
26	4 pieces	Cap nut
27	4 pieces	Flat washer for hood
28	4 pieces	Hex head screw

Schematic view series 58

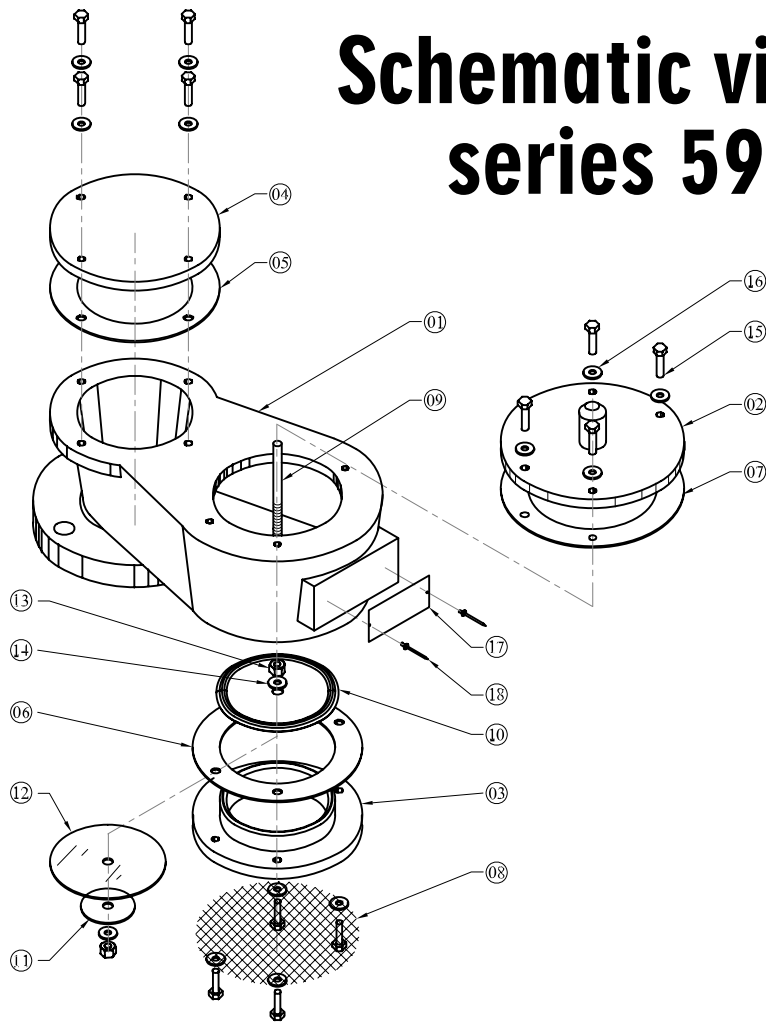
For part selection, indicate model followed by a diagonal plus the respective part number.

* Indicates parts from service kit

	Quantity	Description
29	12 pieces	Hex nut for support
30	4 pieces	Flat washer for lid
31	4 pieces	Allen screw
32	1 piece	Elbow
33	1 piece	Bushing reduction
34	2 pieces	Arrester cup
35	1 piece	Arrester body
36	1 piece	Flame cell
37	2 pieces	Gasket
38	1 piece	Flat sheet
39	1 piece	Corrugated sheet
40	1 piece	Cup bolt
41	3 pieces	Studs
42	6 pieces	Hex nut
43	1 piece	Gasket
44	2 pieces	Short hex head screw
45	2 pieces	Hex head screw
46	2 pieces	Hex nut
47	2 pieces	pieces Identification plate
48	4 pieces	Pop rivet



Schematic view series 59

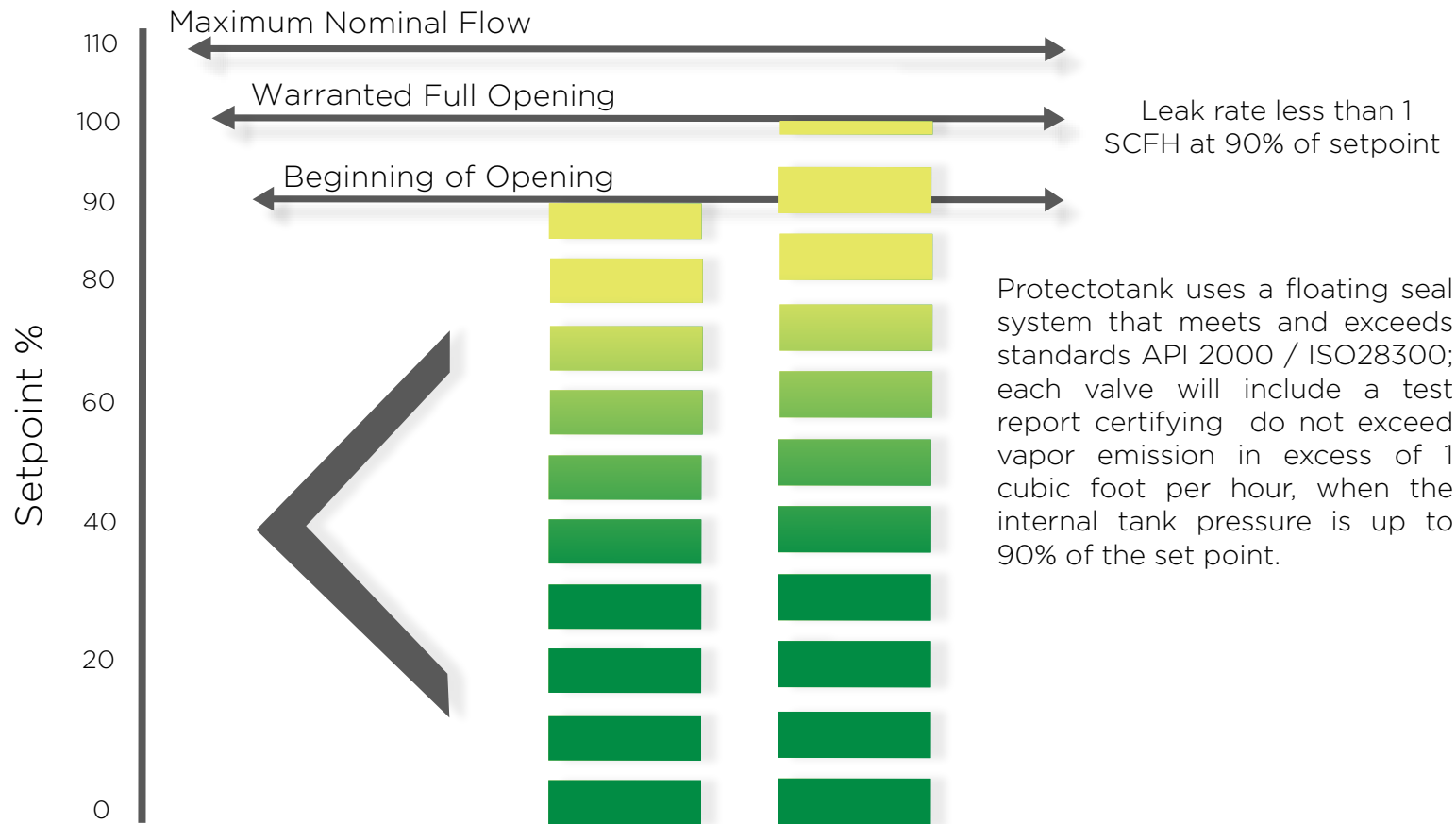


For part selection, indicate model followed by a diagonal plus the respective part number.

* Indicates parts from service kit

	Cantidad	Descripción
01	1 piece	Valve Body
02	1 piece	Vacuum lid
03	1 piece	Vacuum seat
04	1 piece	Pressure lid
05	*1 piece	Pressure gasket
06	*1 piece	Vacuum gasket
07	*1 piece	Vacuum lid gasket
08	1 piece	Vacuum screen
09	1 piece	Vacuum guide bolt
10	1 piece	Vacuum plate
11	1 piece	Support for vacuum plate
12	*1 piece	Diaphragm for vacuum plate
13	1 lot	2 hex nuts f/vacuum plate
14	1 lot	2 flat washers f/vacuum plate
15	1 lot	12 Hex head screws
16	1 lot	Flat washer f/vacuum lid
17	1 piece	Identification plate
18	1 lot	Pop rivet

Additional value for maximum control emissions



Environmental emissions control

Protectotank make possible savings in vapor emissions into the atmosphere which cause pollution and increase risks; this contributes into economical saving, increased safety in the operation of the tanks and reduces fire hazards.

The benefits and purpose of a venting equipment are:

Protection:

Against overpressure and overvacuum in the tank

Control:

Eliminate Free vapor exhaust.

Protection to the contained liquid:

The tank remains closed most of the time.

Financial Benefit:

Prevents constant product losses by evaporation.

Safety:

The permanent existence of a highly flammable vapor cloud.

Environment:

Stops the continuous emission of vapors to the atmosphere.





Our facilities meets ISO 17025 international standard “General requirements for the competence of testing and calibration laboratories” our test laboratories have been accredited by the Mexican accreditation entity (ema) for low pressure and vacuum valves pressure and flow testing , all valves we produce include a test report with legal validity through international traceability recognition agreement (ILAC).

ACCREDITED TEST LABORATORY



Maintenance, refurbish and adjustment services

Protectotank offer maintenance, refurbish and adjustment services through our rep network. there are also available service kits and technical support directly form factory.



Experience additional value

Protectotank have been in the market for over 25 years maintaining a constant innovation attitude, that continuously applies improvements to the products. Protectotank began to export in 2001 having customers in all America and some other countries around the world.

The facilities include the best in class CNC machinery and automated systems, accredited test benches and certified quality systems to meet the most demanding standards and all the customer requirements.

The engineering department may offer you a customized solution for all your applications with an affordable price and delivery time.



Certifications



Clean Industry



SIGE



IQ Net



Central Laboratory



Mobile Laboratory



Lesser



Product warranty

Protectotank warrants that products that are manufactured by Seller are manufactured in accordance with published specifications and free from defects in materials and / or workmanship for a period of (12) twelve months. Seller, at its option, will repair or replace any products returned intact to the factory, transportation charges prepaid, which Seller, upon inspection, could determine to be defective in material and / or workmanship. The foregoing shall constitute the sole remedy for any breach of Seller's warranty.

Protectotank shall be solely responsible for the design, development, supply, production, and performance of its products hereunder, and the protection of its trade name or names, if any. It assumes no responsibility, for products modified or changed by its agent or customer, or any other third party. Any such modifications or changes to products sold by Seller hereunder shall make the product limited warranty null and void.



Prolongación Industria Textil No. 13,
Col. Parque Industrial Naucalpan, Naucalpan
Estado de Mexico 5348
Phone: 52 55 53 01 12 95

