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Description:

- 1) Manhole Cover is equipped on the top of tank truck.
- 2) It is the entrance of fluid transfer operation inspection and maintaining the inside tank. It can protect the tank when involving in an emergency.
- 3) Under normal practice, vent is closed. When loading and unloading and temperature variation, it will cause the pressure variation inside the tank, such as air pressure and negative vacuum pressure, the vent of manhole cover will be closed automatically in order to keep the tank under a normal pressure.
- 4) When involving in emergency, such as a car accident, the Emergency Exhaust Valve will open the inside tank, meets the setting, in order to prevent explosion.

Features:

- Fixing: clamp the weld ring, load & unload fastly, with weld skirt.
- Vent with spring can open automatically, which meet NTTC DOT406 standard, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
- Two-stage opening allows safe release of residual compartment pressure before fully opening the fill cap.
- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Technique Specification:

- Positive opening pressure: 6~8kpa
- Negative opening pressure: -2~-3kpa
- Setting pressure of emergency exhaust valve: 23~26kpa
- Pressure resistance: 0.254Mpa

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

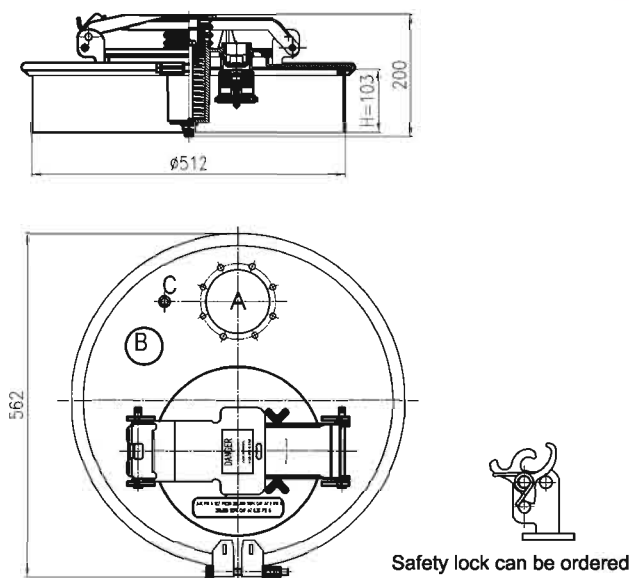
Materials:

Lever, Cover & Weld Ring: galvanized steel
Emergency Exhaust Valve Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | A | B | C | Safe Lock | Vent Hole A | Probe Hole B |
|-------------------|------------------------------------|-----------|------------|-----------|-----------|---------------------|---------------------|
| | | Vent Hole | Probe Hole | Test Hole | | With blockage cover | With blockage cover |
| G-20-203 | clamped 20 " 3 holes steel manhole | Yes | Yes | Yes | -- | -- | -- |
| G-20-203-AQS | clamped 20 " 3 holes steel manhole | Yes | Yes | Yes | Yes | -- | -- |
| G-20-203-BoAo-AQS | clamped 20 " 3 holes steel manhole | Yes | Yes | Yes | Yes | Yes | Yes |
| G-20-202 | clamped 20 " 2 holes steel manhole | Yes | Yes | -- | -- | Yes | -- |
| G-20-201 | clamped 20 " 1 holes steel manhole | Yes | -- | -- | -- | -- | -- |
| G-20-200 | clamped 20 " 0 holes steel manhole | -- | -- | -- | -- | -- | -- |

◆ Can be custom made



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- 3) Under normal practice, vent is closed. When loading and unloading and temperature variation, it will cause the pressure variation inside the tank, such as air pressure and negative vacuum pressure, the vent of manhole cover will be closed automatically in order to keep the tank under a normal pressure.
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Features:

- Fixing: clamp the weld ring, load & unload fastly, with weld skirt.
- Vent with spring can open automatically, which meet NTTC DOT406 standard, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
- Two-stage opening allows safe release of residual compartment pressure before fully opening the fill cap.
- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Technique Specification:

- Positive opening pressure: 6~8kpa
- Negative opening pressure: -2~-3kpa
- Setting pressure of emergency exhaust valve: 23~26kpa
- Pressure resistance: 0.254Mpa

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

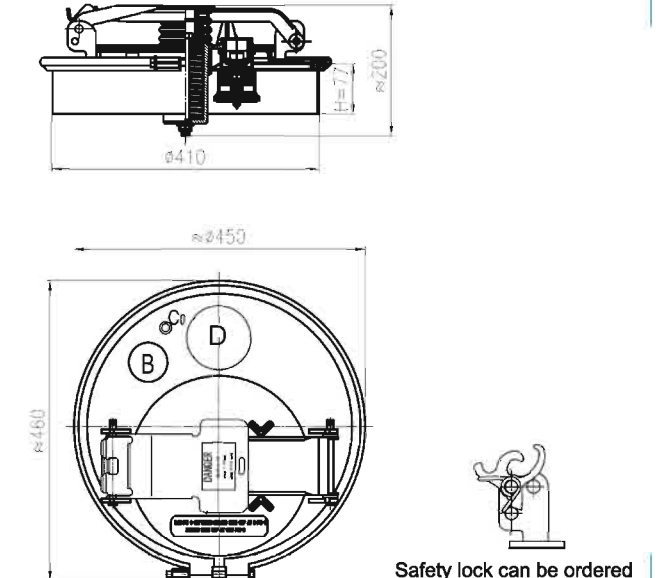
Materials:

Lever, Cover & Weld Ring: galvanized steel
Emergency Exhaust Valve Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | D | B | C | Safe Lock | Vent Hole A | Probe Hole B |
|-------------------|------------------------------------|-----------|------------|-----------|-----------|---------------------|---------------------|
| | | Vent Hole | Probe Hole | Test Hole | | With blockage cover | With blockage cover |
| G-16-103 | clamped 16 " 3 holes steel manhole | Yes | Yes | Yes | -- | -- | -- |
| G-16-103-AQS | clamped 16 " 3 holes steel manhole | Yes | Yes | Yes | Yes | -- | -- |
| G-16-103-BoDo-AQS | clamped 16 " 3 holes steel manhole | Yes | Yes | Yes | Yes | Yes | Yes |
| G-16-102 | clamped 16 " 2 holes steel manhole | Yes | Yes | -- | -- | -- | -- |
| G-16-102-Do | clamped 16 " 2 holes steel manhole | Yes | Yes | -- | -- | Yes | -- |
| G-16-101B | clamped 16 " 1 holes steel manhole | -- | Yes | -- | -- | -- | -- |
| G-16-101 | clamped 16 " 1 holes steel manhole | Yes | -- | -- | -- | -- | -- |
| G-16-100 | clamped 16 " 0 holes steel manhole | -- | -- | -- | -- | -- | -- |

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- 4) When involving in emergency, such as a car accident, the Emergency Exhaust Valve will open the inside tank, meets the setting, in order to prevent explosion.

Features:

- Vent with spring can open automatically, which meet NTTC DOT406 standard, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
- Two-stage opening allows safe release of residual compartment pressure before fully opening the fill cap.
- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Technique Specification:

- Positive opening pressure: 6~8kpa
- Negative opening pressure: -2~-3kpa
- Setting pressure of emergency exhaust valve: 23~26kpa
- Pressure resistance: 0.254Mpa

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

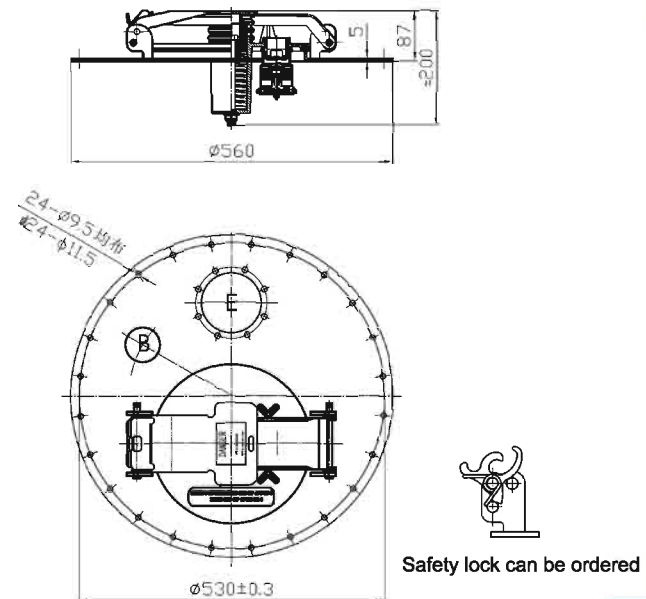
Materials:

Lever, Cover & Weld Ring: galvanized steel
Emergency Exhaust Valve Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | E | B | Safe Lock | Vent Hole A | Probe Hole B |
|---------------|------------------------------------|-----------|------------|-----------|---------------------|---------------------|
| | | Vent Hole | Probe Hole | | With blockage cover | With blockage cover |
| F-20-602 | Flanged 20"2 holes steel manhole | Yes | Yes | -- | -- | -- |
| F-20-602-BoEo | Flanged 20"2 holes steel manhole | Yes | Yes | -- | Yes | Yes |
| F-20-601 | Flanged 20"1 holes B steel manhole | Yes | -- | -- | -- | -- |
| F-20-600 | Flanged 20"0 holes steel manhole | -- | -- | -- | -- | -- |

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- 4) When involving in emergency, such as a car accident, the Emergency Exhaust Valve will open the inside tank, meets the setting, in order to prevent explosion.

Features:

- Vent with spring can open automatically, which meet NTTC DOT406 standard, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
- Two-stage opening allows safe release of residual compartment pressure before fully opening the fill cap.
- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Technique Specification:

- Positive opening pressure: 6~8kpa
- Negative opening pressure: -2~-3kpa
- Setting pressure of emergency exhaust valve: 23~26kpa
- Pressure resistance: 0.254Mpa

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

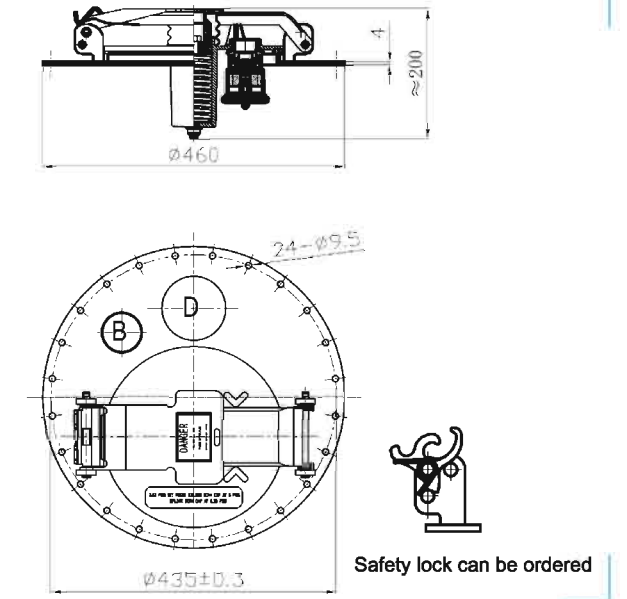
Materials:

Lever, Cover & Weld Ring: galvanized steel
Emergency Exhaust Valve Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | D | B | Safe Lock | Vent Hole D | Probe Hole B |
|-------------------|----------------------------------|-----------|------------|-----------|---------------------|---------------------|
| | | Vent Hole | Probe Hole | | With blockage cover | With blockage cover |
| F-16-303 | Flanged 16"2 holes steel manhole | Yes | Yes | -- | -- | -- |
| F-16-303-AQS | Flanged 16"2 holes steel manhole | Yes | Yes | Yes | -- | -- |
| F-16-303-BoDo-AQS | Flanged 16"2 holes steel manhole | Yes | Yes | Yes | Yes | Yes |
| F-16-302 | Flanged 16"2 holes steel manhole | Yes | Yes | -- | -- | -- |
| F-16-302-Dobo | Flanged 16"2 holes steel manhole | Yes | Yes | -- | Yes | Yes |
| F-16-301 | Flanged 16"1 holes steel manhole | Yes | -- | -- | -- | -- |
| F-16-300 | Flanged 16"0 holes steel manhole | -- | -- | -- | -- | -- |

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- 4) When involving in emergency, such as a car accident, the Emergency Exhaust Valve will open the inside tank, meets the setting, in order to prevent explosion.

Features:

- The emergency vent cover be compressed in eccentric way to avoid accidents due to overpress
- Vent with spring can open automatically, which meet NTTC DOT406, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
- Two-stage opening allows safe release of residual compartment pressure before fully opening the fill cap.
- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Technique Specification:

- Setting pressure of vent discharge: 6~8kpa
- Negative opening pressure: -2~-3kpa
- Setting pressure of emergency exhaust valve: 23~26kpa
- Pressure resistance: 0.254Mpa

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

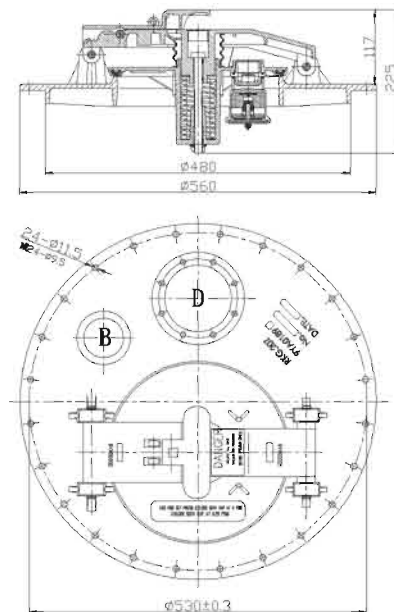
Materials:

Lever: galvanized steel
Cover and Emergency Exhaust Valve: Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | D | | B | | Vent Hole D With blockage cover | Probe Hole B With blockage cover | Install Hole Diameter mm |
|---------------------|---|-----------|------------|-----------|------------|------------------------------------|-------------------------------------|-----------------------------|
| | | Vent Hole | Probe Hole | Vent Hole | Probe Hole | | | |
| F-20L-702-9.5 | Flanged 20"2 holes aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- | Ø9.5 |
| F-20L-702-AoBo-9.5 | Flanged 20"2 holes aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- | Ø9.5 |
| F-20L-702-Bo-9.5 | Flanged 20"2 holes aluminum alloy manhole | Yes | Yes | Yes | Yes | -- | -- | Ø9.5 |
| F-20L-702-AoBo-11.5 | Flanged 20"2 holes aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- | Ø11.5 |
| F-20L-701-9.5 | Flanged 20"1 holes aluminum alloy manhole | Yes | -- | Yes | Yes | -- | -- | Ø9.5 |
| F-20L-701-11.5 | Flanged 20"1 holes aluminum alloy manhole | Yes | -- | -- | -- | -- | -- | Ø11.5 |
| F-20L-700-11.5 | Flanged 20"0 holes aluminum alloy manhole | -- | -- | -- | -- | -- | -- | Ø11.5 |

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Features:

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- Vent with spring can open automatically, which meet NTTC DOT406, can avoid the explosion effectively.
- Automatic sealing of the P/V vent in a roll over situation prevents dangerous and costly spillage.
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- 250mm(10")fill hole for easy drop pipe insertion when top loading.

Standard:

Meet the NTTC DOT406 Standard
Meet the International GB18564.1 Standard

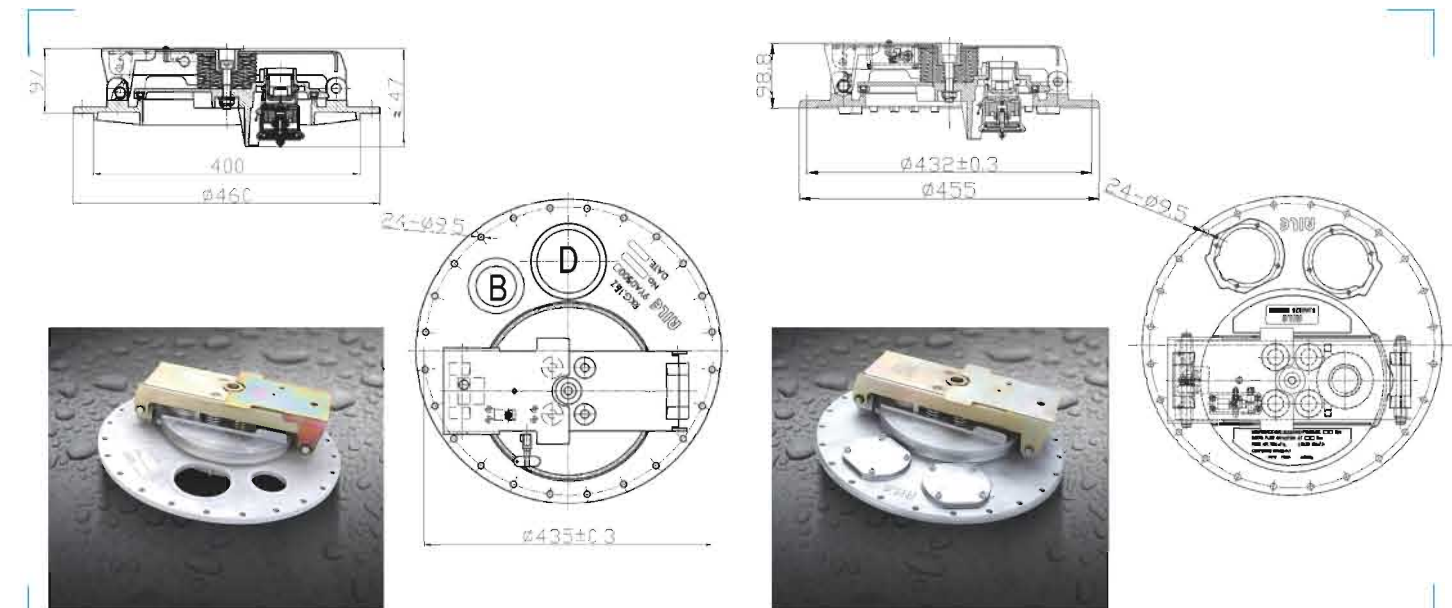
Materials:

Lever: galvanized steel
Cover and Emergency Exhaust Valve: Aluminum Alloy
Seal Ring: Nitrile or fluoro

Order Specification:

| Item No | Product | D | | B | | Vent Hole D With blockage cover | Probe Hole B With blockage cover |
|----------------|---|------------------------------|------------|-----------|------------|------------------------------------|-------------------------------------|
| | | Vent Hole | Probe Hole | Vent Hole | Probe Hole | | |
| F-16L-402 | Flanged 16"2 holes aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- |
| F-16L-402-BoDo | Flanged 16"2 holes aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- |
| F-16L-401 | Flanged 16"1 hole aluminum alloy manhole | Yes | Yes | Yes | Yes | -- | -- |
| F-16L-400 | Flanged 16"0 hole aluminum alloy manhole | Yes | Yes | -- | -- | -- | -- |
| F-16L-502 | Flanged 16"2 holes aluminum alloy manhole | Details as following drawing | | | | | |

◆ Can be custom made



Description:

REV Series Vapor Vent Valve installed on the manhole with head inside, connected with vapor recovery pipeline by Aile SQG hose, used for vapor recovering or ventilation when load and unload.
 Open the vapor vent valve and close side vent valve for vapor recovering and ventilation when load and unload.
 Close the vapor vent valve for effectively sealing the tank during transportation, also prevent spillage in emergency accident.

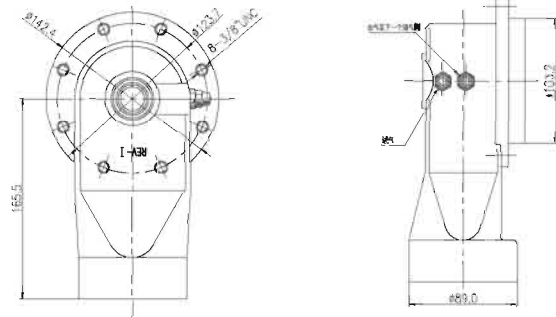
Features:

- ◆ Material of body: cast aluminum alloy. Seal: Fluoro and Nitrile.
- ◆ 4" high-capacity design provides superior flow for faster assembly
- ◆ RC1/4" thread
- ◆ Working pressure: 0.8mpa, minimum opening pressure: 0.2mpa
- ◆ Safe inward opening valve, easy maintenance of viton ORing seals

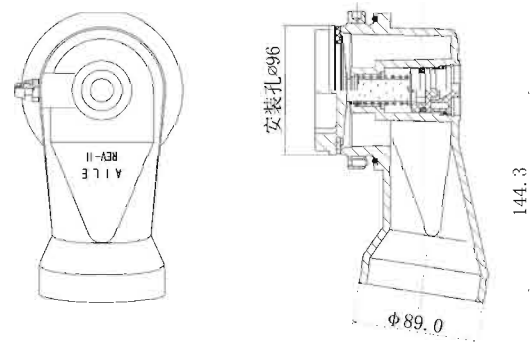
Order Specification:

| Item No | Product | Used For | Package | Package Size |
|---------|------------------|-------------------|-------------|-------------------------|
| REV-I | Vapor Vent Valve | 20" Manhole Cover | 13.5kg/8pcs | 58*26*27cm ³ |
| REV-II | Vapor Vent Valve | 16" Manhole Cover | 12.0kg/8pcs | 53*24*25cm ³ |
| REV-F | Vapor Vent Valve | 20" Manhole Cover | 15.0kg/8pcs | 58*26*27cm ³ |
| REV-C | Vapor Vent Valve | 20" Manhole Cover | 17.0kg/6pcs | 58*26*27cm ³ |

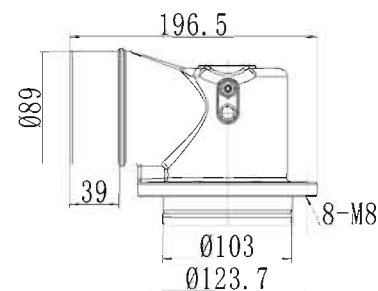
REV-I



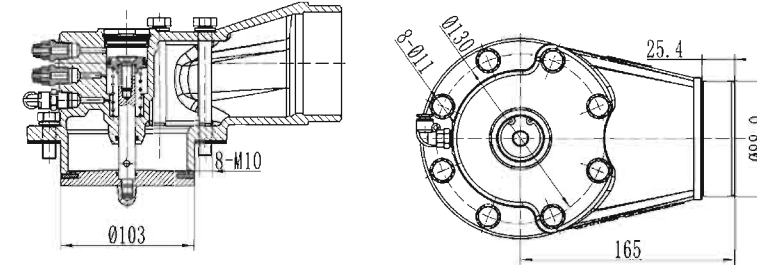
REV-II



REV-F



REV-C



REV Side Plate Vent Valve

Description:

Aile REV Side Plate Vent Valve is installed in the end of 4" vapor recovery pipe on top of tank truck, with the valve head in the pipe and body outside, the angle is 45 degree outside and remain open, used for ventilation when load and unload.
 Tank truck for diesel mixed with gasoline or just gasoline need vapor recovery, a vapor vent valve is also necessary for non-vapor recovery tank trucks to assure the safety and convenience.

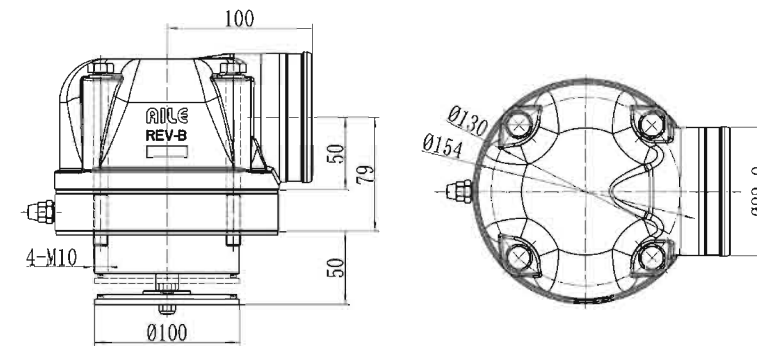
Features:

- ◆ Material of body: cast aluminum alloy. Seal: Fluoro and Nitrile.
- ◆ Height of opening the valve: 14mm
- ◆ Working Pressure: 0.8mpa, Minimum pressure of closing valve: 0.4mpa
- ◆ Remain open for ventilation, remain close for vapor recovery.
- ◆ Integrated head and body for easy maintenance.

Order Specification:

| Item No | Product | Used For | Package | Package Size |
|---------|------------------|-----------------------|-------------|-------------------------|
| REV-B | Vapor Vent Valve | 4"vapor recovery hose | 17.0kg/6pcs | 58*26*27cm ³ |

REV-B



Description:

Aile FV Series 3 inch emergency foot valve, as a safety valve, is installed on the bottom of tank truck, it has a shear sump which will break and separate when accident happens, the valve seal components remain inside the tank to assure the safety and prevent leakage. The sump meets the 49CFR 178.345-8 American Safety Standard. The foot valve flange located on the tank hull while the poppet inside the tank, which meets NTTC DOT406 safety standard.

Material:

Body and Cover: cast aluminum Alloy
Main Valve Plate and Gland: high strength aluminum alloy
Spring of main valve: stainless steel
Main valve shaft and air chamber shaft: stainless steel
Seal: Fluoro

Order Specification:

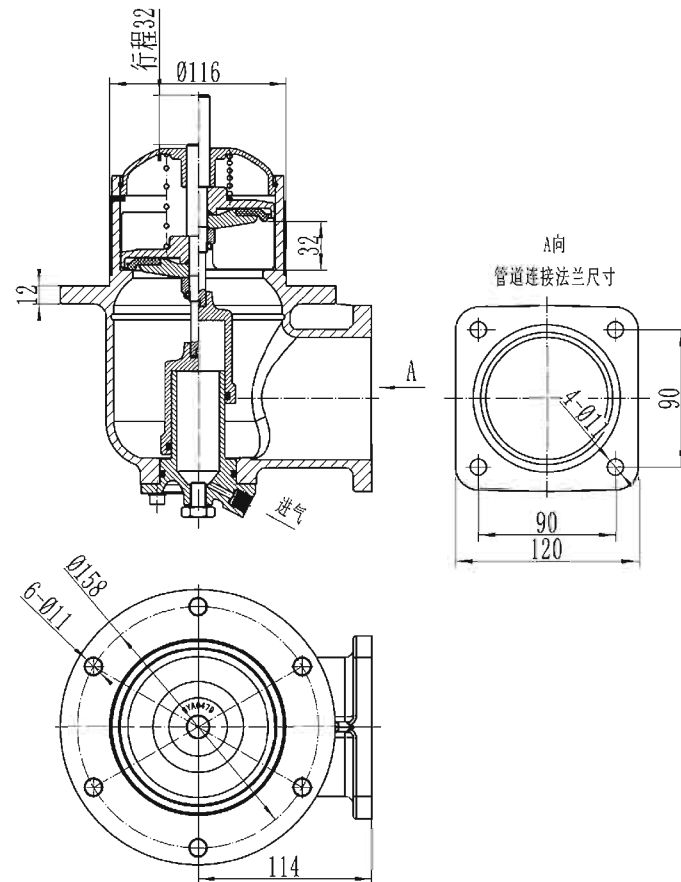
| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|------------|-------|--------------------------------------|--------------------|-------------|
| FV-B-3-D-F | 3.00" | Square Flange with internal cylinder | European Standard | 3.6kg |

Features:

- ◆ Specification : DN80PN10 Non pressure balance valve
- ◆ Method: pneumatic
- ◆ Minimum Pressure: 0.25Mpa
- ◆ Replaced M10 bolt with M10*45 in emergency hole
- ◆ The closure pressure of spring: 185N
- ◆ With filter

Standard:

The flange according to EN13308 or TTMA



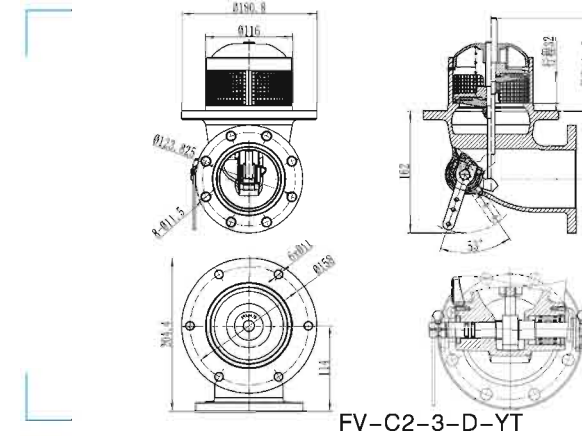
Features:

- ◆ Specification : DN80PN10 Non pressure balance valve
- ◆ Method: manual
- ◆ Minimum Pressure: 0.25Mpa

- ◆ Pull the lever directly to open the valve for emergency.
- ◆ The closure pressure of spring: 185N
- ◆ With filter

Order Specification:

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|--------------|-------|------------------------|--------------------|-------------|
| FV-C-3-D-YE | 3.00" | Round Flange Manual | European Standard | 3.8kg |
| FV-C-3-D-YT | 3.00" | Round Flange Manual | American Standard | 3.8kg |
| FV-C2-3-D-YT | 3.00" | Round Flange Bi Manual | American Standard | 3.9kg |



Spare part: manual device

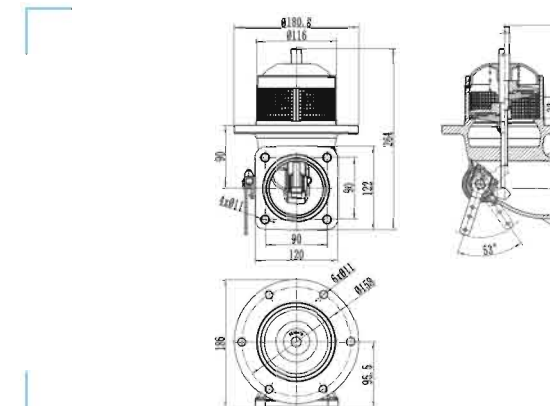
Features:

- ◆ Specification : DN80PN10 Non pressure balance valve
- ◆ Method: manual
- ◆ Minimum Pressure: 0.25Mpa

- ◆ Pull the lever directly to open the valve for emergency.
- ◆ The closure pressure of spring: 185N
- ◆ With filter

Order Specification:

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|------------|-------|----------------------|--------------------|-------------|
| FV-C-3-D-F | 3.00" | Square Flange Manual | European Standard | 3.6kg |



Spare part: manual device

► **Description:**

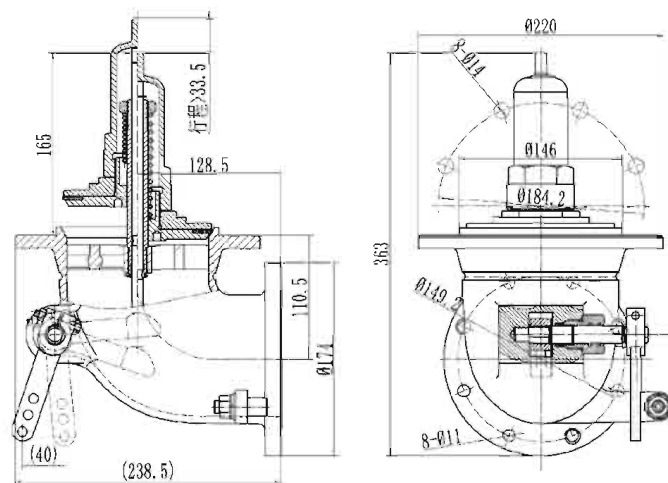
Aile FV Series 4 inch emergency foot valve, as a safety valve, is installed on the bottom of tank truck, it has a shear sump which will break and separate when accident happens, the valve seal components remain inside the tank to assure the safety and prevent leakage. The sump meets the EN13308 Standard. The foot valve flange located on the tank hull while the poppet inside the tank, which meets NTTC DOT406 safety standard.

► **Standard:**

The flange according to EN13308 or TTMA

► **Order Specification:**

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|-------------|-------|-------------------------------------|--------------------|-------------|
| FV-A-4-W-YE | 4.00" | Round flange with external cylinder | European Standard | 8kg |
| FV-A-4-W-YT | 4.00" | Round flange with external cylinder | American Standard | 8kg |
| FV-C-4-W-YE | 4.00" | Round flange manual operation | European Standard | 7.8kg |
| FV-C-4-W-YT | 4.00" | Round flange manual operation | American Standard | 7.8kg |



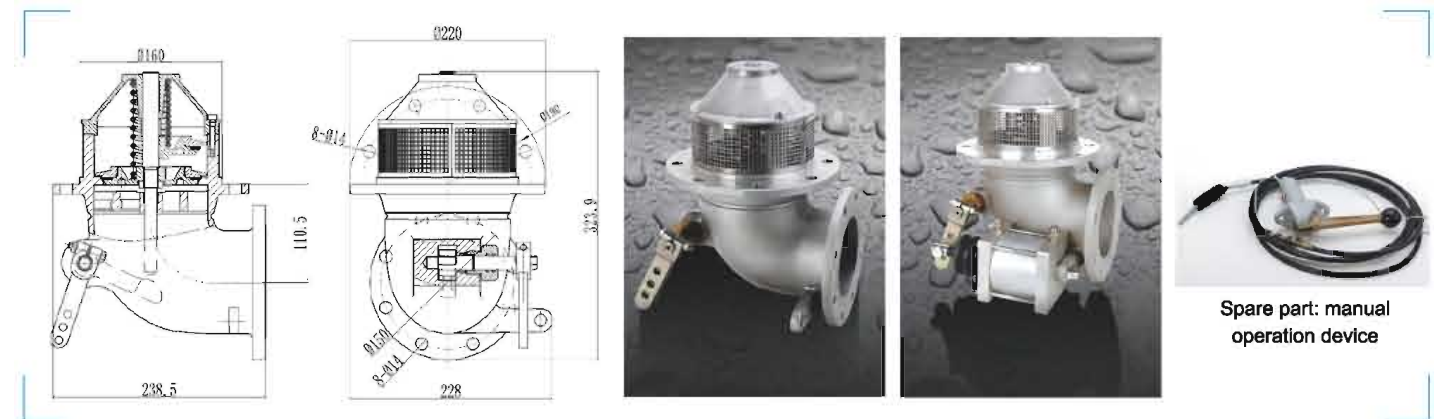
Spare part: manual operation device

► **Features:**

- ◆ Specification : DN100PN10 Non pressure balance valve
- ◆ Method: pneumatic or manual operation
- ◆ Minimum Pressure: 0.25Mpa
- ◆ External cylinder is more convenient for replacement
- ◆ Open the valve through the emergency handle directly
- ◆ The closure pressure of spring: 205N

► **Order Specification:**

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|-------------|-------|-------------------------------------|--------------------|-------------|
| FV-C-4-D-YE | 4.00" | Round flange manual operation | European Standard | 8kg |
| FV-A-4-D-YT | 4.00" | Round flange with external cylinder | American Standard | 8kg |

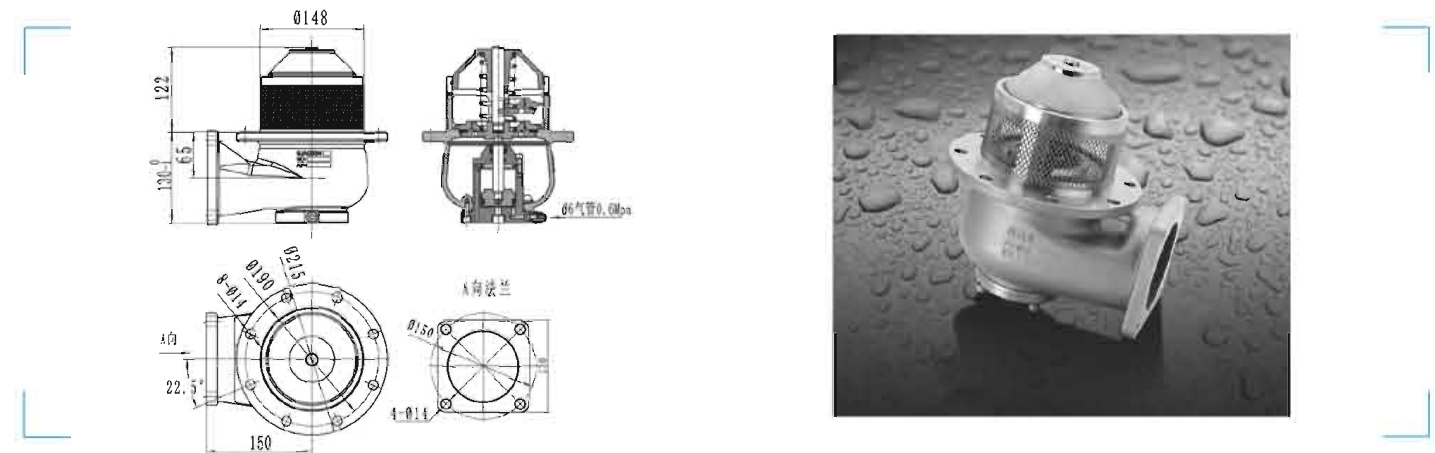


► **Features:**

- ◆ Specification : DN100PN10 Non pressure balance valve
- ◆ Method: pneumatic
- ◆ Minimum Pressure: 0.25Mpa
- ◆ With filter and internal cylinder
- ◆ Replaced M12 bolt with M12*50 in emergency hole
- ◆ The closure pressure of spring: 205N

► **Order Specification:**

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|-------------|-------|--------------------------------------|--------------------|-------------|
| FV-B-4-D-FE | 4.00" | Square Flange with internal cylinder | European Standard | 7.3kg |
| FV-B-4-D-FT | 4.00" | Square Flange with internal cylinder | American Standard | 7.3kg |

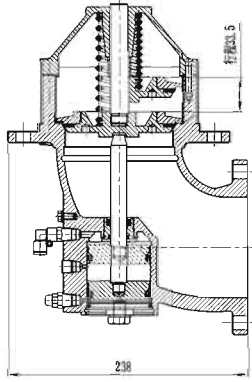
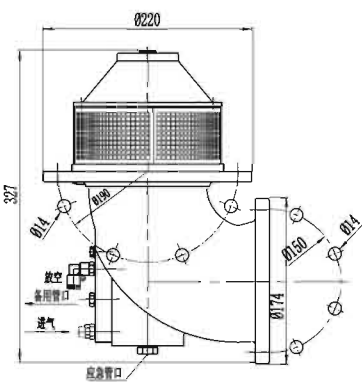


► **Description:**

- ◆ Specification : DN100PN10 Non pressure balance valve
- ◆ Method: pneumatic
- ◆ Minimum Pressure: 0.25Mpa
- ◆ With filter and internal cylinder
- ◆ Replaced M12 bolt with M12*50 in emergency hole
- ◆ The closure pressure of spring: 333N

► **Order Specification:**

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|-------------|-------|-------------------------------------|--------------------|-------------|
| FV-B-4-D-YE | 4.00" | Round flange with internal cylinder | European Standard | 5.4kg |
| FV-B-4-D-YT | 4.00" | Round flange with internal cylinder | American Standard | 5.4kg |

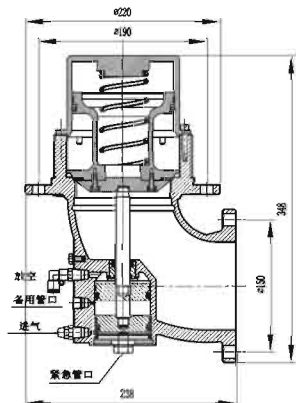


► **Description:**

- ◆ Specification : DN100PN10 pressure balance valve
- ◆ Method: pneumatic
- ◆ Minimum Pressure: 0.25Mpa
- ◆ With filter and internal cylinder
- ◆ Replaced M12 bolt with M12*50 in emergency hole
- ◆ The closure pressure of spring: 333N

► **Order Specification:**

| Item No | Size | Discription | Standard of Flange | Weight (kg) |
|----------------|-------|-------------------------------------|--------------------|-------------|
| FV-PH400-00 | 4.00" | Round flange with internal cylinder | European Standard | 5.4kg |
| FV-PH400-00-YT | 4.00" | Round flange with internal cylinder | American Standard | 5.4kg |



► **Description:**

SYF-Q1 is installed on the side at the bottom of the tank truck. And be used for open (loading/unloading) oil and close the oil. As the safety valve for the tank transport pipe line, it can make the unloading more convenient. Using the handle to control the loading and unloading. It's superior because the light wight and high speed for unloading. The flange installed on the tank shell.

► **Material:**

Body&Ball: Cast Aluminum Alloy
 Interface: H62 Brass
 Handle: Q23A Galvanized
 Seals: Fluorous Rubber & Nitrile Rubber

► **Features:**

- ◆ With advantages such as compact structure, light weight, small volume, convenient to use and so on.
- ◆ Safe and reliable.

► **Package:**

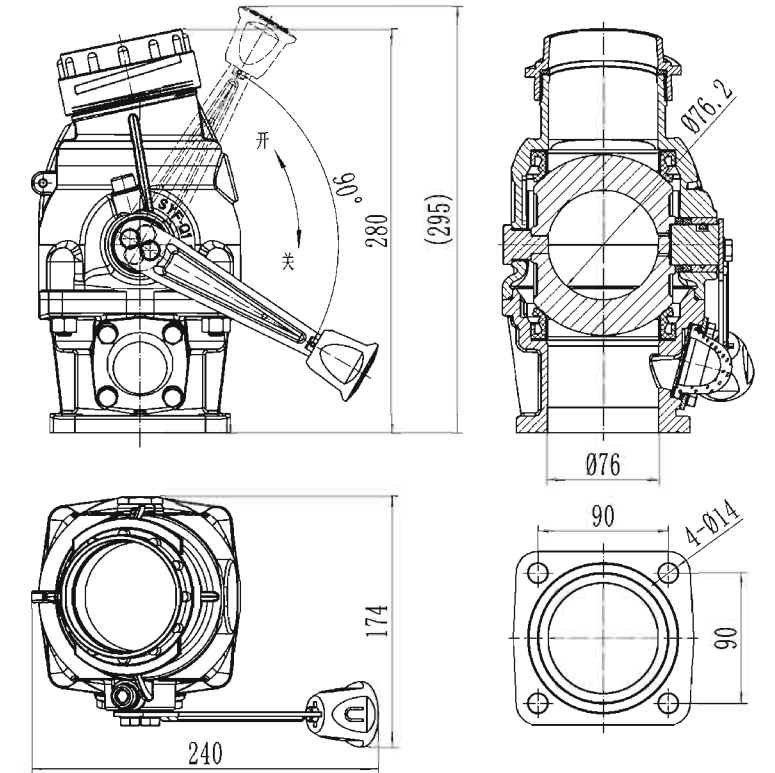
- ◆ Net Weight: 42kg/6PCS
- ◆ Gross Weight: 45kg/6PCS
- ◆ Volume: 74*55*31cm3/case of 6PCS

► **Standard:**

Both the engineering design and testing are meeting the EN13083 European Standard

► **Order Specification:**

| Product# | Type | Size | Flange Type |
|------------|----------|-------|-------------------|
| SYF-Q1-301 | Standard | 3.00" | American Standard |



► **Description:**

HYF-O is installed at the side of tank truck's bottom for loading and unloading, normally, only used for loading without a handle, while for loading & unloading with a handle. Two-position in handle can effectively adjust the flow. With the advantage of light weight and high flow, HYF-O meet EN13083 standard in both designing and testing, and also compatible with API adaptors. The cover of HYF-O is anti-friction hard alumina.

► **Material:**

Body, cover: cast aluminum alloy
 Poppet: stainless steel/ aluminum alloy
 Latch plate for shaft: stainless steel
 Handle: H62 brass
 Seals: Viton and Nitrile

► **Standard:**

Meet EN13083 European Standard

► **Order Specification:**

| Item No | Type | Size | Standard of Flange | NW |
|---------|----------------|-------|--------------------|-------|
| HYF-O1 | Standard | 4.00" | American Standard | 5.0kg |
| HYF-O2 | Without handle | 4.00" | American Standard | 5.0kg |

► **Features:**

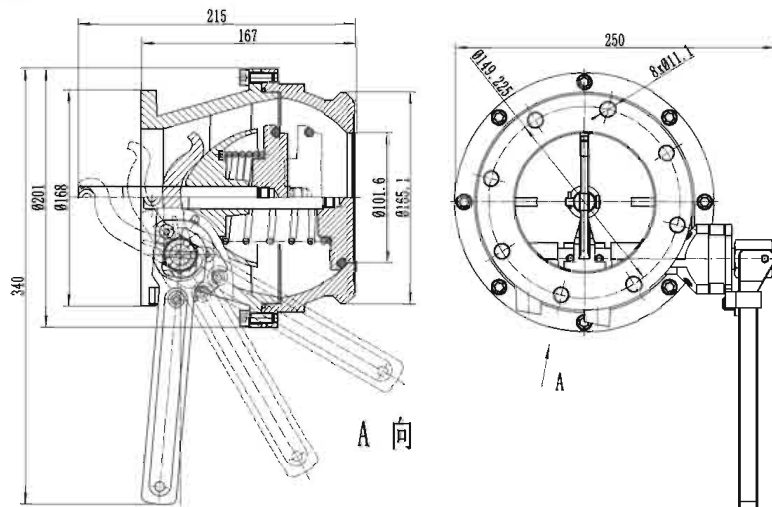
- Aluminum alloy body, cover and mail valve.
- compatible with API adaptors, meet API RP1004 and TTMA standard.
- Two-position in the aluminum handle is convenient for adjusting the flow.
- Viton seals for high octane fuels and additives.
- Hydrodynamic internal design minimize the pressure drop in high flow rates.
- The stainless shaft, spring and valve rod ensure the durability.

► **Spare Parts:**

Seal ring for mail valve: Viton External $\varnothing 104 \times \varnothing 7$
 Seals for operating shaft: Viton External $\varnothing 6.2 \times \varnothing 2.6$

► **Package:**

- NW: 20kg/4 pcs
- GW: 22kg/4 pcs
- 74*41*22cm3/4 pcs/1 case



► **Description:**

HYF-U is installed at the side of tank truck's bottom for loading and unloading, normally, only used for loading without a handle, while for loading & unloading with a handle. Two-position in handle can effectively adjust the flow. With the advantage of light weight and high flow, HYF-U meet EN13083 standard in both designing and testing, and also compatible with API adaptors. The cover of HYF-U is anti-friction hard alumina.

► **Material:**

Body, cover: cast aluminum alloy
 Poppet: stainless steel/ aluminum alloy
 Latch plate for shaft: stainless steel
 Rolling wheel: H62 brass
 Handle: Aluminum alloy
 Seals: Viton and Nitrile

► **Standard:**

Meet EN13083 European Standard

► **Order Specification:**

| Item No | Type | Size | Standard of Flange |
|----------|----------------|-------|--------------------|
| HYF-U-01 | Standard | 4.00" | American Standard |
| HYF-U-02 | Without handle | 4.00" | American Standard |
| HYF-U-03 | Standard | 4.00" | European Standard |
| HYF-U-04 | Without handle | 4.00" | European Standard |

► **Features:**

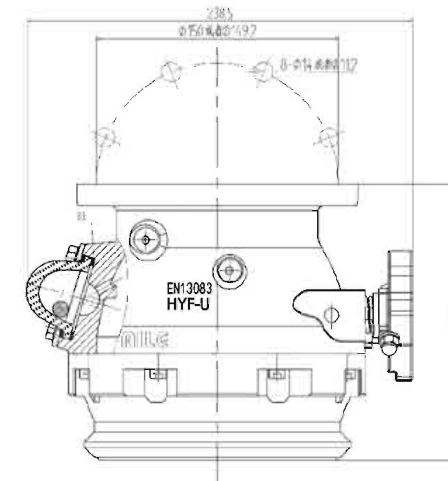
- Aluminum alloy body. Anodizing cover and main valve.
- compatible with API adaptors, meet API RP1004 and TTMA standard.
- Two-position in the aluminum handle is convenient for adjusting the flow.
- Viton seals for high octane fuels and additives.
- Hydrodynamic internal design minimize the pressure drop in high flow rates.
- The stainless shaft, spring and valve rod ensure the durability.
- Sight glass for observing the flow.

► **Order Specification:**

Seal ring for mail valve: Viton External $\varnothing 104 \times \varnothing 7$
 Seals for operating shaft: Viton External $\varnothing 17.5 \times \varnothing 2.6$

► **Package:**

- NW: 36kg/6 pcs
- GW: 38kg/6 pcs
- 74*41*22cm3/6 pcs/1 case



Description:

HYF-W is installed at the side of tank truck's bottom for loading and unloading, normally, only used for loading without a handle, while for loading & unloading with a handle. Two-position in handle can effectively adjust the flow. With the advantage of light weight and high flow, HYF-W meet EN13083 standard in both designing and testing, and also compatible with API adaptors. The cover of HYF-W is anti-friction hard alumina.

Material:

Body, cover: cast aluminum alloy
 Poppet: stainless steel/ aluminum alloy
 Latch plate for shaft: stainless steel
 Handle: Aluminum alloy
 Seals: Viton and Nitrile

Standard:

Meet EN13083 European Standard & DOT Design Stand

Order Specification:

| Item No | Type | Size | Standard of Flange | NW | Remark |
|----------|----------------|-------|--------------------|-------|--------------------|
| HYF-W-01 | Standard | 4.00" | American Standard | 4.5kg | |
| HYF-W-02 | Without handle | 4.00" | American Standard | 4.5kg | |
| HYF-W-03 | With handle | 4.00" | European Standard | 4.5kg | |
| HYF-W-04 | Without handle | 4.00" | European Standard | 4.5kg | |
| HYF-W-05 | With handle | 4.00" | American Standard | 4.5kg | Without sightglass |

Features:

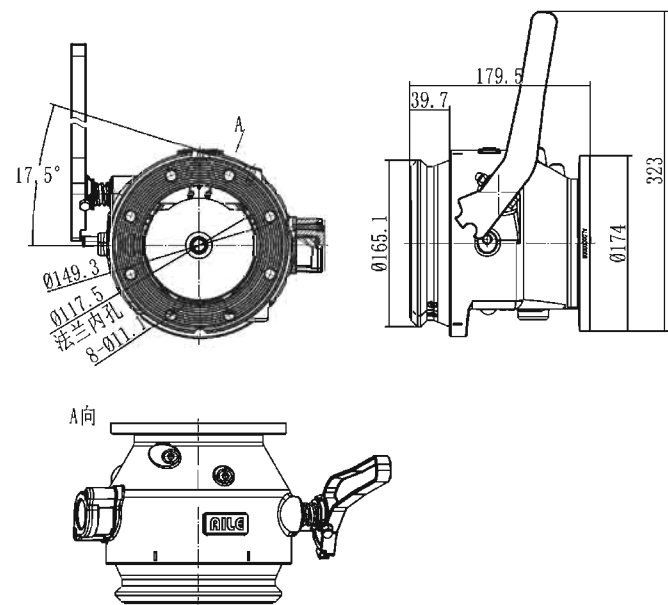
- Aluminum alloy body. Anodizing cover and main valve.
- The cap can be replaced for several times to prolong service time.
- Compatible with API adaptors, meet API RP1004 and TTMA standard.
- Two-position in the aluminum handle is convenient for adjusting the flow.
- Viton seals for high octane fuels and additives.
- Hydrodynamic internal design minimize the pressure drop in high flow rates.
- The stainless shaft, spring and valve rod ensure the durability.
- Sight glass for observing the flow.

Spare Parts:

Seal ring for mail valve: Viton Internal $\varnothing 1.44 \times \varnothing 5.33$
 Seals for operating shaft: Viton External $\varnothing 24 \times \varnothing 5$

Package:

- NW: 28kg/6 pcs
- GW: 30kg/6 pcs
- 74*41*22cm 3/6 pcs/1 case



Anodizing cap could be dispatched and replaced, and screw hole has been reserved for convenient replacement to reduce your cost.

Description:

VRF-308(with probe) makes vapor recovery safer and easier, when it is connected with vapor recovery valve through vapor hose, the probe will open the valve and form a vapor route, the vapor recovery valve will close automatically when the route cut off to prevent leakage effectively.

Order Specification:

| Item No | Type | Connected with | Package | Size |
|------------|----------------|----------------|---------------|-------------------------------|
| VRF-308-01 | clamp | Vapor Hose | 38.00kg/18pcs | 55.5*49.5*39.5cm ³ |
| VRF-308-02 | cam and groove | Vapor Hose | 38.00kg/18pcs | 55.5*49.5*39.5cm ³ |



Features:

- Body and probe: Heat treated aluminum alloy.
- Handle: Copper alloy, Seals: Nitrile
- Opening height: >41.3mm
- 3" vapor hose and 4" female head meet API standard.

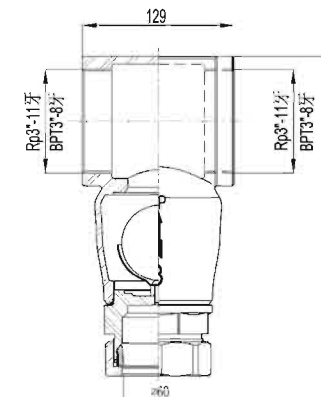
EEV-3T TEE BALL VALVE

Description:

EEV-3T is installed in 3" pipe of underground tank for gas station, where the same oil tank could be parallel connected with 4" pipe for vapor recovery. And also could be used for parallel connection of two non-vapor recovery tank.

Order Specification:

| Item No | Type | Package | Size |
|---------|----------------|---------------|---------------------------|
| EEV-3T | Tee Ball Valve | 28.02kg/12pcs | 55*41*17.5cm ³ |



Features:

- Body: Aluminum alloy. Ball: Stainless steel. Seals: Nitrile
- Simple structure is convenient for refitting of gas station's pipe
- The thread can be custom-made on request.

Description:

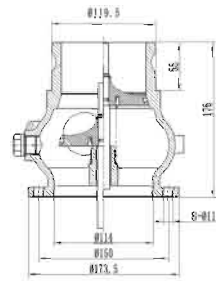
VRV-A is installed at the end of flange located in vapor recovery pipe of tank truck, or on the separating vapor recovery pipe of underground tank. The cam and groove type is connected with coupler of vapor recovery pipe for bottom loading vapor recovery.

Features:

- ◆ Body: Cast aluminum alloy. Seals: Viton and Nitrile.
- ◆ 46 Opening height>46mm
- ◆ Hard-coated body prolong the durability.
- ◆ Meet API RP1004 Standard

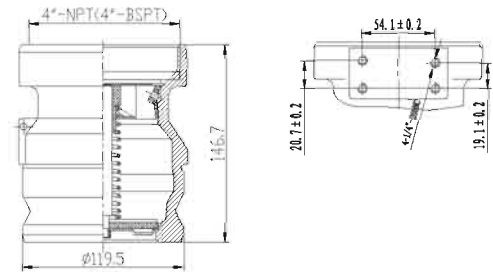
Order Specification:

| Item No | Product | Connected with | Package | Size |
|---------|------------------------|------------------------------|--------------|-------------------------|
| VRV-A | Vapor Recovery Adaptor | Vent Valve & Side vent valve | 30.20kg/8pcs | 42*40*38cm ³ |



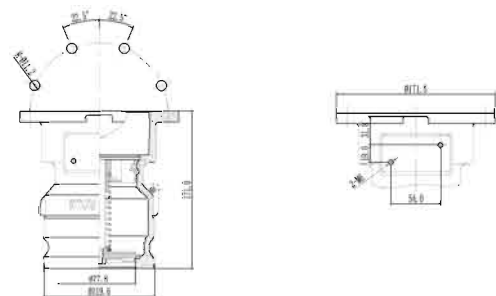
Order Specification:

| Item No | Product | Connected with | Package | Size |
|----------------|------------------------|----------------|---------------|---------------------------|
| VRV-E-801-NPT | Vapor Recovery Adaptor | NPT4" | 24.02kg/12pcs | 55*41*17.5cm ³ |
| VRV-E-802-BSPT | Vapor Recovery Adaptor | BSPT4" | 24.02kg/12pcs | 55*41*17.5cm ³ |



Order Specification:

| Item No | Product | Connected with | Package | Size |
|--------------|------------------------|-------------------------------|--------------|---------------------------|
| VRV-E-803-FT | Vapor Recovery Adaptor | 4" American Flange Connection | 25.6kg/12pcs | 55*41*17.5cm ³ |



Description:

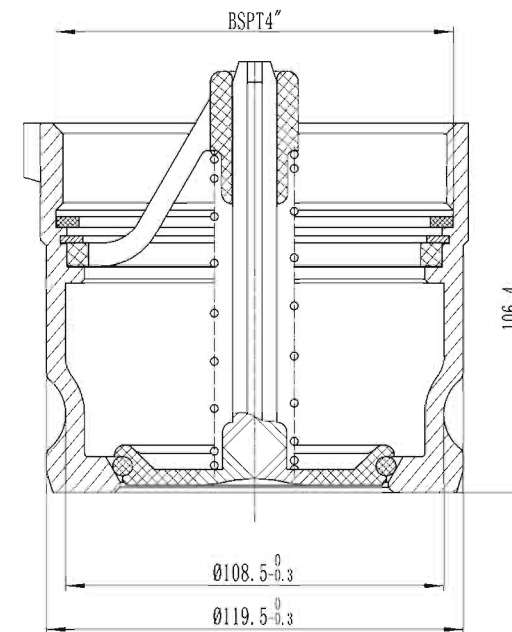
ZHF-V is installed on 4" standing pipe of underground tank's separating vapor recovery system, used for opening or closing the related route. Separating vapor recovery system offered an easy operating and economic device, in which collecting vapor is faster than in coaxial system. The male head of cam and groove can be connected with vapor recovery elbow, the route will be shut down when the elbow be dispatched.

Features:

- ◆ Body: Aluminum alloy.
- ◆ Compatible with all 4" female vapor recovery elbow.
- ◆ Hard-coated body prolong the durability.

Order Specification:

| Item No | Product | Connected with | Type | Package | Size |
|-----------|------------------------|----------------|---------------|---------------|-----------------------------|
| ZHF-V-801 | Vapor Recovery Adaptor | NPT4" | Internal bolt | 70.20kg/36pcs | 36.5*48.5*40cm ³ |
| ZHF-V-802 | Vapor Recovery Adaptor | BSPT4" | Internal bolt | 70.50kg/36pcs | 36.5*48.5*40cm ³ |



Description:

This light weight API Dust Cap shields valuable bottom loading valves from outside collision and dust, couples easily and seals reliably with Buna-N gasket to avoid leakage, highly corrosion-resistant with forged brass cam arms and heavy-duty chain.

Features:

- Meets API Rp1004 Specifications
- Operation with one handle;
- Die cast aluminium alloy body;
- With lock hole device to keep the bottom loading valve from accidental opening and damage;
- Fit with loading valve;

Package:

Net Weight: 15.00kg/20PCS
 Gross Weight: 18.00kg/20PCS
 Volume: 48*44*40cm³ /20PCS/Cartron

Order Specification:

| Product# | Operating Direction |
|----------|---------------------|
| DG-API-D | Side Handle |
| DG-API-A | Front Handle |

API-D



API-A



JDKJ Gravity Couplers

Description:

AILE JDKJ series gravity couplers are reducers designed for quick connect between hose and API bottom loading valve or any adapters made in accordance with API Rp1004.

Features:

- 15 oangle design makes it Easier to connect with discharging hoses;
- Solid connection with API bottom loading valves;
- Easy for operator to handle;
- Available with CAM LOCK or NPT/BSP Female threads at the hose connection;
- Aluminium alloy body and Buna-Nseals;

Package:

Net Weight: 16.50kg/8PCS
 Gross Weight: 17.20kg/8PCS
 Volume: 43*43*32cm³/8PCS/Cartron

Order Specification:

| Product# | Connect | Size | N.W/kg |
|----------|------------------|------|--------|
| JDKJ-801 | Cam and groove | 3" | 1.81 |
| JDKJ-802 | Cam and groove | 4" | 2.27 |
| JDKJ-803 | NPT Male thread | 3" | 1.81 |
| JDKJ-804 | BSPT Male thread | 3" | 1.81 |
| JDKJ-805 | NPT Male thread | 4" | 1.96 |
| JDKJ-806 | BSPT Male thread | 4" | 1.96 |
| JDKJ-807 | BSPT Male thread | 2.5" | 1.65 |
| JDKJ-808 | Cam and groove | 2.5" | 1.65 |



Description:

SYWG-01Delivery Elbow is designed for connection between delivering hose and spill container when tank trucks discharge oil to underground storage tanks in gas station. It's fixed and clapped on the sleeve of spill container, top with male cam and groove quick connect structure for easy on and off coupling with hose adapters.

Features:

- Light weight cast aluminum alloy body;
- Fits for 4" top seal adapter;
- Copper cam and groove;
- Unique cam locking handle for easy on/off coupling;

Package:

Net Weight: 5.8kg/pc
 Gross Weight: 6.5kg/pc
 Volume: 54*33*24cm³ /pc /Cartron

Order Specification:

| Product# | Connection | Application |
|-------------|--------------------|-----------------|
| SYWG-01-801 | 4" Male cam&groove | O1 Pipe Adapter |
| SYWG-01-802 | NPT4" Male Thread | O1 Pipe Adapter |
| SYWG-01-803 | BSPT4" Male Thread | O1 Pipe Adapter |



SYWG-E1 Delivery Elbow

Description:

SYWG-E1Delivery Elbow is designed for connection between delivering hose and spill container when tank trucks discharge oil to underground storage tanks in gas station. It's fixed and clapped on the sleeve of spill container, top with male cam and groove quick connect structure for easy on and off coupling with hose adapters.

Features:

- Light weight cast aluminum alloy body;
- Fits for 4" radial seal adapters;
- Copper cam and groove;
- Unique cam locking handle for easy on/off coupling;
- Operator can watch the flow from sight glass;

Package:

Net Weight: 5.8kg/pc
 Gross Weight: 6.5kg/pc
 Volume: 54*33*24cm³ / pc / Carton

Order Specification:

| Product# | Connection | Application |
|-------------|--------------------|----------------|
| SYWG-E1-504 | 4" Male cam&groove | E1Pipe Adapter |
| SYWG-E1-604 | NPT4" Male Thread | E1Pipe Adapter |
| SYWG-E1-704 | BSPT4" Male Thread | E1Pipe Adapter |



Description:

SYWG-V Vapor Recovery Elbow is designed for connection between vapor recovery hose and check valve on vertical pipe of under ground storage tank for vapor recovery when discharging oil from tank truck to the gas station. The check valve opens to start vapor recovery after fixing the vapor recovery elbow and closes automatically to stop after disassemble the elbow when finish oil discharging. Its adapter can be replaced to meet with different hoses specifications.

Features:

- Die cast aluminium alloy body;
- With lock hole device to keep the bottom loading valve from accidental opening and damage;
- Fit with loading valve;

Package:

Net Weight: 5.8kg/pc
Gross Weight: 6.5kg/pc
Volume: 54*33*24cm³/pc/ctn

Order Specification:

| Product# | Connection |
|------------|--------------------|
| SYWG-V-201 | 3" Male Cam&Groove |
| SYWG-V-202 | 4" Male Cam&Groove |



SYG-T Composite Vapor Recovery Hose

Description:

SYWG-T series composite hose, its inner tube is polypropylene film and outside tube is PVC plastic cloth, and both inside and outside of the composite hose are circled with galvanized steel wire to enhance strength and electricity conductivity; Its connection between hose and adapter utilizes AILE patent technology to resist pressure and leakage; It's specially used for delivering liquid like oil, methanol and ethanol, and oil vapor recovery, and it can replace traditional rubber tube and pipe.

Order Specification:

| Diameter/mm | | Working Pressure bar | Bursting Pressure bar | Bending Radius mm | Max Length m | Weight kg/m | |
|-------------|-----|----------------------|-----------------------|-------------------|--------------|-------------|------|
| I.D | O.D | | | | | | |
| 1" | 25 | 37 | 10 | 40 | 65 | 30 | 0.67 |
| 1.25" | 32 | 43.5 | 10 | 40 | 70 | 30 | 0.92 |
| 1.5" | 38 | 51.7 | 10 | 40 | 100 | 30 | 1.29 |
| 2" | 50 | 62.5 | 10 | 40 | 180 | 30 | 1.78 |
| 2.5" | 65 | 78.5 | 10 | 40 | 220 | 30 | 2.82 |
| 3" | 76 | 90 | 10 | 40 | 280 | 30 | 3.13 |
| 4" | 100 | 21 | 10 | 40 | 340 | 30 | 5.94 |

◆ Can be custom made

Features&Benefits:

- Aromatic contents no more than 40%
- Good flexibility in sub-zero temperatures
- Simple operation, hose length as per customer's need;
- Work temperature: -30~80 degrees Celsius
- Electricity Conductivity: <10 ohm



Description:

MO-FV Compact Mechanical Operator levers the emergency foot valves (AILE-FV-A series) by 1-5 powder coated steel cables from the central position of tank truck, with fusible connections to melt when temperature reaches the limit of 120°, and loses the tight non-slip cable connector to keep the emergency valves close, effectively avoid possible accidents.

Features:

- Compact design for easy operation;
- With heat fusing device for emergency shut off;
- Aluminum alloy lever and bracket;
- Stainless steel rotation axis;
- Copper alloy closing bracket;

Order Specification:

| Product# | Lever Qty. | Weight(lb) | Width(inch) |
|----------|------------|------------|-------------|
| MO-FV-1 | 1 | 7.1 | 4.2 |
| MO-FV-2 | 2 | 9.5 | 4.2 |
| MO-FV-3 | 3 | 12.7 | 7.75 |
| MO-FV-4 | 4 | 15.1 | 7.75 |
| MO-FV-5 | 5 | 17.5 | 7.75 |
| MO-FV-6 | 6 | 19.9 | 11.2 |
| MO-FV-7 | 7 | 22.3 | 11.2 |
| MO-FV-8 | 8 | 24.8 | 11.2 |
| MO-FV-9 | 9 | 17.2 | 11.2 |



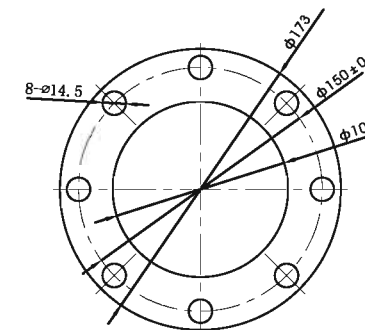
SF-API-B Sightglass Flange

Description:

SF-API-B Sightglass flange connects between the bottom loading valve and the truck tank, functions to watch the flow and color of liquid. Its bolt holes meet TTMA standard, can fit behind the flange of bottom loading valve. It's optional for API adapters, customers can order AILE HYF series bottom loading valve with or without sightglass flange.

Order Specification:

| Product# | Thickness (mm) |
|-------------|----------------|
| SF-API-B-25 | 25 |
| SF-API-B-30 | 30 |
| SF-API-B-35 | 35 |
| SF-API-B-40 | 40 |



Description:

AILE PCS Pneumatic Control Switch is designed for centralized control of API Bottom loading valve, emergency foot valve, vapor valve, vapor recovery adapter, and vent valve on the tank truck. With one combined PCS, operators can control the opening of multiple parts of tank truck at one time. And emergency shut off can be also realized by adding one more pneumatic part and change of combination.

Order Specification:

| Product# | Compartment Control Qty. | Emergency Control | Total Control keys |
|----------|--------------------------|-------------------|--------------------|
| PCS-1 | 1 | NO | 1 |
| PCS-2 | 2 | NO | 2 |
| PCS-2-K | 2 | YES | 3 |
| PCS-3 | 3 | NO | 3 |
| PCS-3-K | 3 | YES | 4 |
| PCS-4 | 4 | NO | 4 |
| PCS-4-K | 4 | YES | 5 |
| PCS-5 | 5 | NO | 5 |
| PCS-5-K | 5 | YES | 5 |
| PCS-6 | 6 | NO | 6 |
| PCS-6-K | 6 | YES | 6 |

Features:

- ◆ Compact design for easy installation and durable operation;
- ◆ Meet with Tanker Safety Standards, international applicable;
- ◆ Adjustable combination to meet different needs of tank trucks with multiple compartments
- ◆ Optional emergency control switch to shut off all air paths;



AIL Air Interlock

Description:

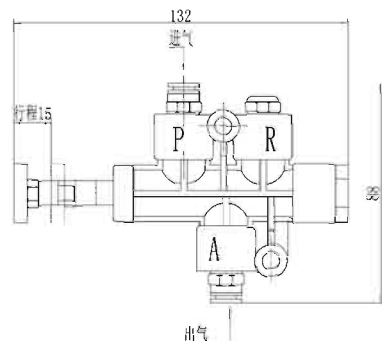
AIL series Air Interlocks are installed on API bottom loading valve and vapor recovery adapter, for coordinated control of pneumatic valves on loading/discharging system and vapor recovery system. It's a three-way air valve as showed on the drawing, P for inlet, A for outlet, and R for recovery.

Features:

- ◆ With standardized TTMA and API mounting holes;
- ◆ Excellent Sealing Design for durable service life;

Order Specification:

| Product# | Application |
|----------|---------------------------------------|
| AIL-01 | For AILE VRV-A Vapor Recovery Adapter |
| AIL-02 | For AILE VRV-A Vapor Recovery Adapter |
| AIL-03 | For AILE VRV-E Vapor Recovery Adapter |



Description:

FYTG-01 Overfill Protection Probe is an optical sensor installed on the manhole cover of tank truck to prevent spilling, designed according optical principle that beam divergences in dry glass prism and wet glass prism are different, with epoxy coated intrinsically-safe circuit, power limit $P_i=U_i \cdot I_i \leq 9W$. According to explosion-proof electrical products requirements, its current cables must be connected inside the probe terminal box; Its installation height(from probe sensor point to the tank ceiling) is $3\%+0.227m^3$ of tank volume, actual filling height should be $97\%-0.227m^3$ according to tank figure or tank capacity table. After connecting with 3-hole plug at oil depot when oil loading, it keeps transmitting loading signals to the overfill protection monitor until filling height reaches the sensor point, the monitor will be off automatically, shut off the valve and stop oil loading.

Technical Parameters:

- Aluminum alloy terminal box and extension probe;
- Optical glass sensor point;
- Epoxy coated circuit board and cables;
- Unique optical reflection system for precision. Repeatability $\pm 0.5mm$
- Temperature range from $-40^\circ C$ to $60^\circ C$
- Protection Level: IP66
- Design Pressure: 600Kpa

Features:

- ◆ Adjustable probe length according to user's requirements between (136.5-184.1)mm
- ◆ Installation hole $\varnothing 60$ or M60*2, Thickness=12mm.
- ◆ Universally applicable and compatible;
- ◆ Meet with API Rp1004 standards
- ◆ Net weight: 1.1kg



CZ 01 Slot Truck Plug

Description:

CZ 01 Slot Truck Plug is a trislot plug designed specially for tank trucks according to API Rp1004 standards, it has 10 wire terminals for connection of 5-cable probe(FYTG01) and earthing bolt: Terminal 4 for yellow cable, 5 for green, 6 for brown, 8 for red, 8 for earthing bolt, 10 for black cable and plug housing, all cables should be connected inside the plug housing according to explosion-proof electrical products requirements. After connecting with 3-hole plug at oil depot loading platform, the 5-cable FYTG01 probe is power on and starts input/output loading signals , probe, tank truck and the plug are safely grounded. Its connection with earthing bolt ensures safe loading of tank truck by effectively eliminating electrostatic.

Features:

- ◆ Meets the requirements of API Rp1004
- ◆ Matching with 3-hole plug at oil depot;
- ◆ Aluminum alloy housing and interface surface, brass earthing bolt;
- ◆ Interface surface is hard anodized for durable service;



Earthing Bolt

Description:

Earthing bolt connects between the tank truck plug and tank truck bracket for electrostatic elimination on truck tank body.

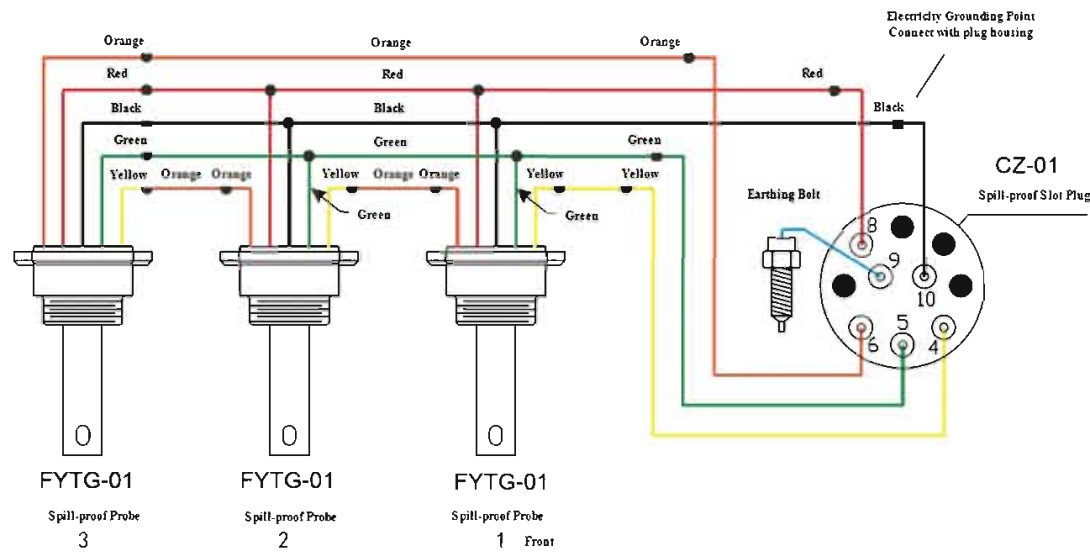
Features:

- ◆ Meet with international standards;
- ◆ Effectively avoid potential electrostatic dangers on personal and equipment safety.
- ◆ One-way directional electrostatic release;



Spill-proof electrostatic sensor can be divided into three parts: FYTG-01 Probe, CZ-01 Slot Sensor Plug and Earthing Bolt. It's installation instruction as follows:

► **Circuit Installation:**



Notice: Terminal 10 on the slot plug must connect with tank body through plug housing box, and ensure electricity conductive between terminal 10 and tank body;

► **Installation Instruction:**



► **Description:**

AILE AST-C1 Optical Tester is used to test cable connections in the spill proof and electrostatic grounding system (including 5-cable probe, Trislot Plug and Earthing bolt) of tank truck with single or multiple compartments.

After finishing installation of spill-proof and electrostatic grounding system, connect the plug of AST-C1 tester to the tank truck socket, power on the tester, connect all the 5 clips to color matched probe cables, and watch the spill proof and electrostatic indicator light, both bright green still lights indicate qualified system.

Bright red spill proof light indicates wrong probe connection or bad probe sensor;

Bright red electrostatic light indicates wrong connection of the black cable or earthing bolt, or failed grounding;

Bright green flashing electrostatic light indicates failed grounding of plug housing;

► **Features:**

- Powered by built in battery, light weight convenient to hold, and easy to operate with instructions.



Description:

DG-VC Vapor Cap used for the Vapor Recovery Adapter like AILE VRV-A to prevent dust and debris. It also protect the adapter from Human-caused damage and Vapor leakage. Orange in color and lockable to prevent misuse. Fits all 4" male quick couplings and the cam action creates a solid push down and pull up movement for fast, easy removal and replacement of cap.

Features:

- Aluminum Alloy Body for durable service
- Stainless steel Chain
- Padlock capability
- Iron-copper infiltrated 4"cams

Package:

Net Weight: 18.9.00kg/30PCS
 Gross Weight: 19.00kg/30PCS
 Volume: 57*38*40cm3/case of 30PCS

Order Specification:

| Product# | Size |
|----------|------|
| DG-VC | 4" |



AILE SQG Vapor Hose

Description:

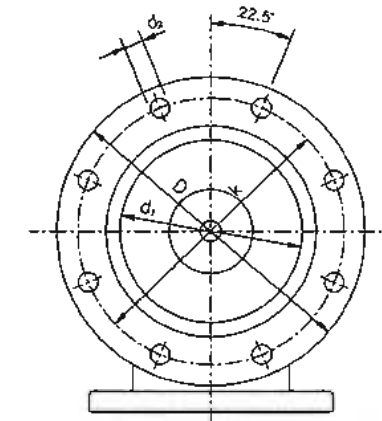
Used to connect to vapor collection pipe.

Features:

- Easy to connection and durable
- The length can be choose according to customers' requirement

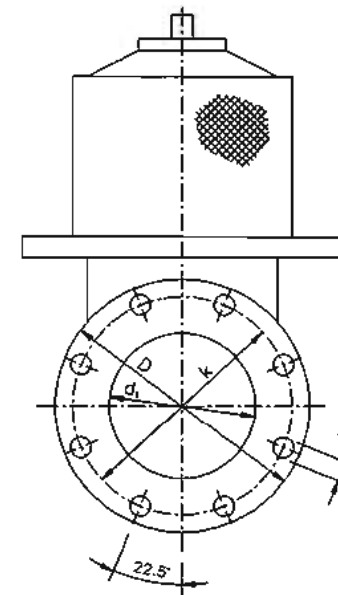


Attachment 1: Flange for 4" Emergency Foot Valve and API series Bottom Loading Valve

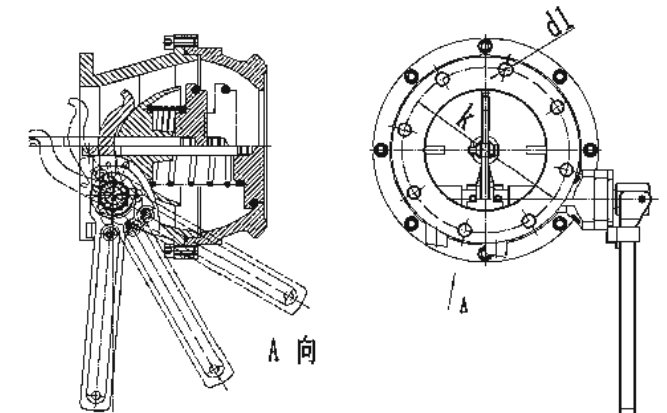


The specification of the flange between foot valve and tank

| Diameter | | Drilling position and size | | |
|------------------------------|-------------------------------|---|---|--|
| Out Dia. of the flange/ Dmax | Main Dia./ d _{1 max} | Diameter of screw hole position circle /K | Number of Screw hole (Evenly distributed) | Dia. Of the screw hole/ d2 |
| 230 | 163 | 190 ± 0.5 | 8 | 14 ^{+0.05} / _{-0.03} |



The specification of the flange between foot valve and pipe (Round)



The specification of flange for API series Bottom Loading/Unloading Valve

| Flange Standard | Diameter | | Drilling position and size | | |
|--|------------------------------|---------------------------------|---|---|--|
| Standard# | Out Dia. of the flange/ Dmax | Inner hole Dia./ d ₁ | Diameter of screw hole position circle /K | Number of Screw hole (Evenly distributed) | Dia. Of the screw hole/ d2 |
| Euro. :EN13308:2002 Nation:QC/T932-2012 | 175 | 100 ± 1.0 | 150 ± 0.5 | 8 | 14 ^{-0.05} / _{-0.03} |
| Amer., TTMA | 175 | 100 ± 1.0 | 149.2 ± 0.5 | 8 | 11.5 ^{+0.05} / _{-0.03} |