



## FLUID HANDLING | SOLUTIONS

### OPW FTG TANK TRUCK EQUIPMENT

WORLD-CLASS TECHNOLOGY, SERVICE AND SUPPORT



## Introduction

### Welcome to the OPW Fluid Transfer Group

For over 50 years OPW Fluid Transfer Group Europe is dedicated to provide expert solutions for the safe handling, processing, monitoring and transportation of hazardous bulk products. A motivated team of professionals understand customer needs as well as applicable legislation and local requirements. Engineering skills and a sophisticated production facility in combination with modern logistics offer our clients the flexibility and innovation required to keep and enhance their marketplace. This together with our long expertise and customer focus makes OPW Fluid Transfer Group what it is today, one of the global leaders in the market. Our focus is primarily on Hydrocarbon and Chemical products. Our expertise concentrates on road tankers and railcar transport; loading-, unloading- and transloading facilities and the safe quick and dry-disconnect coupling systems. Nowadays safeguarding the environment, equipment and people is key, OPW Fluid Transfer Group line of products offer world class solutions for your Transportation needs as well as your Loading Terminal facilities.

Zero Harm, Total Integrity is our motto.

Sincerely yours,  
OPW Fluid Transfer Group Europe BV

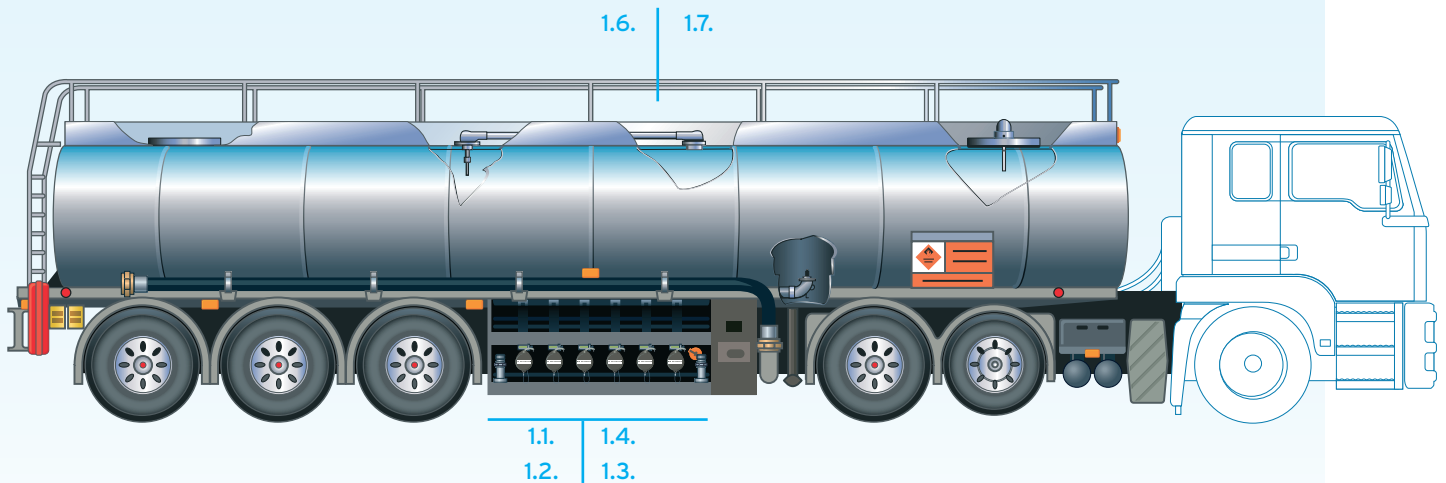
Edwin H.C. Smit  
Managing director



<b>Introduction</b>	<b>3</b>
<b>Index</b>	<b>5</b>
<b>1 Bottom Loading Components</b>	<b>7</b>
1.1. API Tank Truck Adaptor	891-series 8
1.2. Dust Cap	875-AL40 10
1.3. Gravity Coupler	876-series 11
1.4. Air Interlock for VR-Adaptor	300/301 12
1.5. Bottom Valve	EURO100-series 14
1.6. Pressure/Vacuum-Vent	NV4000E 15
1.7. Manhole Cover	T400-series 18
<b>2 Vapor Recovery Components</b>	<b>21</b>
2.1. Vapor Recovery Adaptor	633LVB-301 22
2.2. Vapor Recovery Valve	T195-series 24
2.3. Vapor Line Valve	1995TWD-2B 26
<b>3 Overfill Prevention System</b>	<b>27</b>
3.1. Overfill Prevention Sensor	K1-5110E-18 5-Wire optic sensor 28
	K1-5550U-18 2-Wire optic sensor
	5300E-18 5-Wire optic sensor probe, no housing
	5650U-18 2-Wire optic sensor probe, no housing
3.2. Socket	4103-X001 30
	4403-X001
3.3. Retain Overfill Monitoring	3205E 32
3.4. Tester	1397E-E003 33
	1398E-E003
3.5. Retain Sensor	5002E 34
	5032U
<b>4 OPW FTG Manifold</b>	<b>35</b>
4.1. Manifold	36
<b>5 Manifold Order Specification</b>	<b>38</b>



1.1.	API Tank Truck Adaptor 891-series	8
1.2.	Dust Cap 875-AL40	10
1.3.	Gravity Coupler 876-series	11
1.4.	Air Interlock for VR-Adaptor 300/301	12
1.5.	Bottom Valve EURO100-series	14
1.6.	Pressure/Vacuum-Vent NV4000E	15
1.7.	Manhole Cover T400-series, 20" Bolted Aluminium / Stainless Steel	18





## API Tank Truck Adaptor

CIVACON's API bottom loading adaptors are precisely engineered to match standard loading couplers and increase service performance.



891BA, API Adaptor



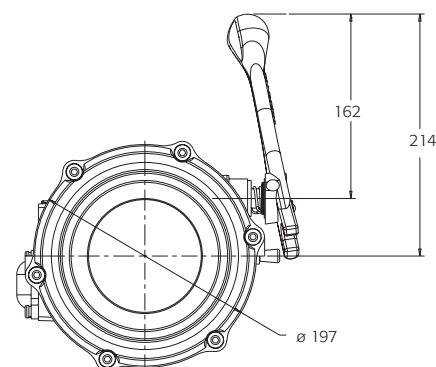
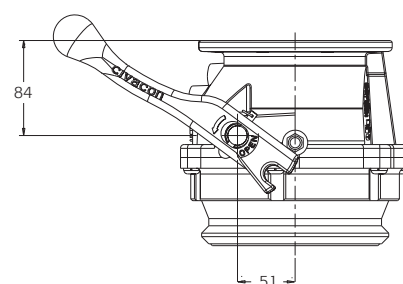
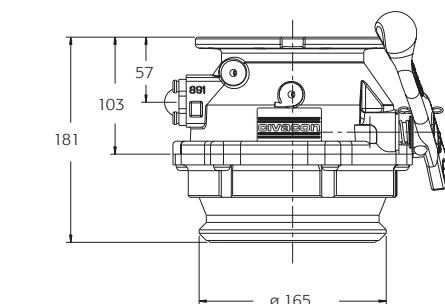
891NB, API Adaptor

### Features and Benefits

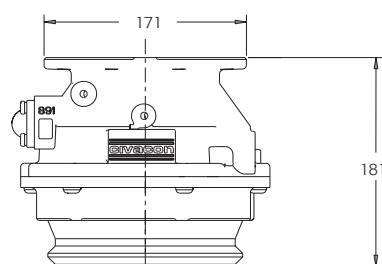
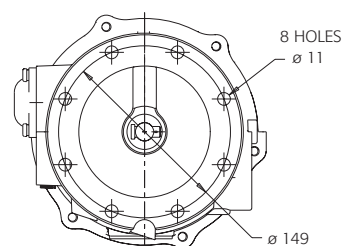
- **Designed in accordance** with API RP 1004 and EN13083
- **Two piece** lightweight aluminium construction for maximum strength and weight reduction
- **4" TTMA** mounting flange
- **Nominal size 4"** or DIN100
- **Rotatable** hard-coated nose piece for maximum service life
- **Flat bottom** ensures complete drainage
- **Minimum number of internals** to minimize pressure drop and improve flow rate
- **Bushed running surfaces** for efficient operation
- **Stainless Steel** internals for maximum service life
- **Viton GFLT** seals
- **Compatible** with diesel, bio diesel, gasoline, ethanol and methanol
- **Heavy duty** poppet with an acetal resin bearing for smoother opening characteristics
- **Easy-grip** aluminium lever
- **Mounting plugs** for model 300/301 air interlock valve
- **Grease nipple** on handle for easy maintenance

## Specifications

### 891BA API ADAPTER OPENABLE



### 891NB API ADAPTER NON-OPENABLE



All dimensions are in mm



## Spare parts

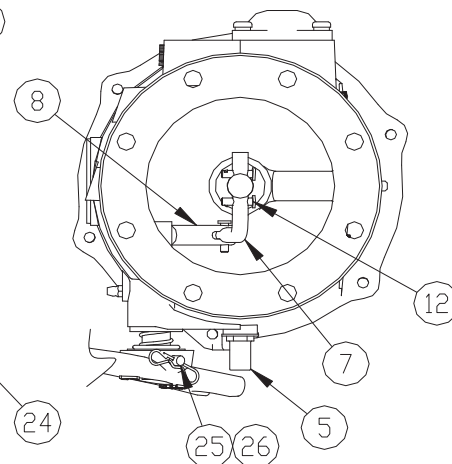
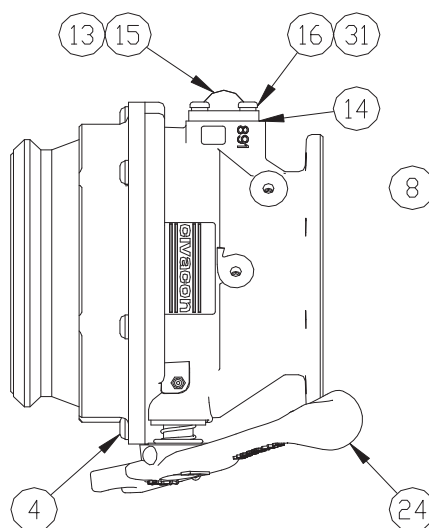
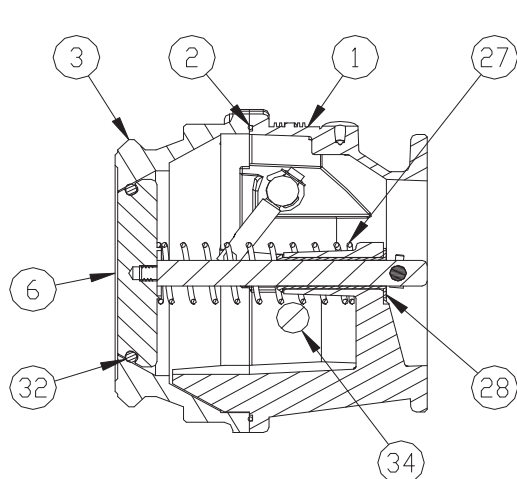
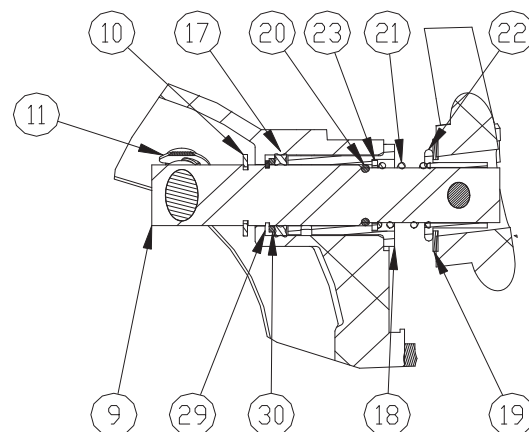
### REPAIR KIT

891HRK	Handle repair kit
891ORK	O-Ring Repair Kit
891SRK	Shaft Repair Kit
891BRK	Sight glass repair kit for 891-897-861

*Spare part only supplied as complete kit*

Item	Part Nr	Description	QTY	Item	Part Nr	Description	QTY
1	11549	BODY, MACHINED	1	18	11536 <sup>3</sup>	BEARING	1
2	11905 <sup>2</sup>	O-RING	1	19	10840 <sup>1,3</sup>	NYLON WASHER	1
3	11550	ADAPTOR FACE	1	20	H06924M <sup>2,3</sup>	O-RING	1
4	12514	BUTTO HEAD CAP SCREW	6	21	H20182M <sup>1,3</sup>	SPRING	1
5	12489	STOP PIN	1	22	11490 <sup>1,3</sup>	HUB	1
6	11850	POPPET	1	23	H20199M <sup>3</sup>	NYLON WASHER	1
7	12331	LINK, POPPET/HANDLE	1	24	11460 <sup>1</sup>	HANLDE	1
8	12330	LINK, SHAFT	1	25	H08901M <sup>1,3</sup>	FULCRUM PIN	1
9	11543 <sup>3</sup>	SHAFT	1	26	11623 <sup>1,3</sup>	BOWTIE CLIP	1
10	11661	E-CLIP	1	27	11664	SPRING	1
11	11662	E-CLIP	1	28	11665	BEARING	1
12	11618	CLEVIS PIN	3	29	11703 <sup>3</sup>	RETAINING RING	1
13	11365M <sup>4</sup>	SIGHT GLASS	1	30	11704 <sup>3</sup>	WASHER	1
14	H51437M <sup>4</sup>	O-RING	1	31	H20057M	LOCK WASHER	4
15	H51384M <sup>4</sup>	FLOAT BALL	1	32	H20058M <sup>2</sup>	O-RING	1
16	12490 <sup>4</sup>	SCREW	4	33	120491	PLUG, 3/8" NPT	1
17	11705 <sup>2,3</sup>	QUAD RING	1				

1-Included in 891HRK, 2-Included in 891ORK, 3-Included in 891SRK, 4-Included in 891BRK



## General specifications

● Nominal size	4" or DIN100
● Maximum flow rate	2.500 litre/minute
● Seal	Viton GFLT
● Working temp.	-40°C to +70°C other temp. on request
● Weight	891BA 5,1 Kg 891NB 4,2 Kg 891N 4,2 Kg

## Ordering specifications

Art. number	Description
891A	API Adaptor with Handle
891BA	4" API bottom loading adaptor with aluminium handle and sight glass
891NB	4" API non-openable bottom loading adaptor with sight glass
891N	4" API non-openable bottom loading adaptor

## Related products

Art. number	Description
300/301	Air interlock valve
875-AL40	API dust cap
11240	4" TTMA sight glass
11293M	Guard bar interlock
GASK0052	4" TTMA gasket
FAL0009	4" TTMA flange aluminium
FST0025	4" TTMA flange steel

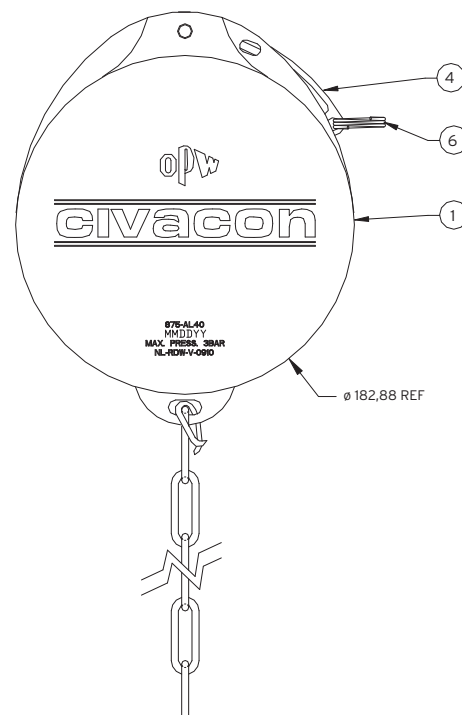
## 875 AL40 Dust Cap

CIVACON's 875 API Dust Cap is lightweight, corrosion resistant and designed for the protection of API RP 1004 tank-truck adaptors complying to ADR.



## Specifications

### 875 AL40 DUST CAP



All dimensions are in mm

## Features and Benefits

- **Certified** per ADR 4.3.4.1.1 up to 3 bar
- **Lightweight pressure** die-cast aluminium construction for maximum strength and weight reduction
- **Easy use** due to radial cam and lug design
- **Buna-N seal**
- **Glass-filled nylon** cams to reduce wear
- **Locking hole** for wire security seal
- **Private branding** on API Dust Cap is optional

## General specifications

- Maximum working pressure 3 bar
- Working temp. -40°C to +70°C other temp. on request
- Weight 1 Kg

## Spare parts

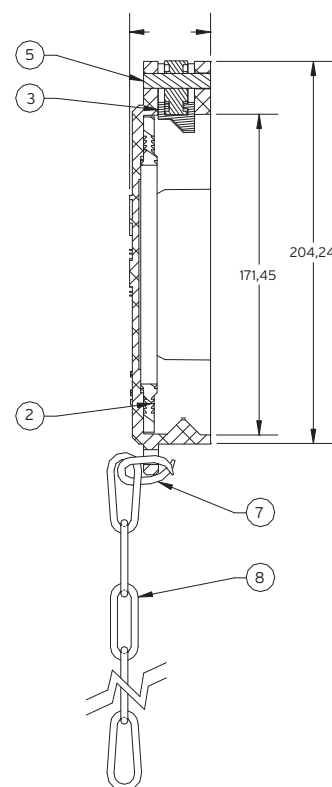
Item	Part number	Description	QTY
1	H71131	Cap	1
2	H71271	Gasket	1
3	H71132 <sup>1</sup>	Locking Block	1
4	H71133 <sup>1</sup>	Cam Lever	1
5	H71149 <sup>1</sup>	Cam Pin	1
6	H20550M <sup>1</sup>	Finger Ring	1
10919	Kit Chain:		
7	H08328M <sup>2</sup>	Connector Ring	1
8	H20325M <sup>2</sup>	Chain, Zinc Plated	1
1-Included in Cam Lever Repair Kit			
2-Included in Kit Chain			

## Related products

Art. number	Description
891-series	4" API Bottom Loading Adaptors

## Ordering specifications

Art. number	Description
875-AL40	API Dust Cap
875-AL40-NOLABEL	API Dust Cap without inscription
875-AL40-(private label)	API Dust Cap with private branding
10919	Kit Chain
11474	Cam Lever Repair Kit



All dimensions are in mm

## Gravity Coupler

The 876 Gravity Coupler optimizes the connection between 4" API Adaptors and 3" or 4" hose connections, ensuring safe and fast unloading. The 876 has been designed with an over center CAM for easy connection.



## Features and Benefits

- **Designed in accordance** with API RP 1004, ADR and EN13083
- **Pressure die-cast** lightweight aluminium construction for maximum strength and weight reduction
- **Innovative design** for:
  - improved high-flow rates
  - minimum pressure drop
  - complete draining capacities to prevent contamination
- **Compatible with** diesel, bio diesel, gasoline, ethanol and methanol
- **Viton GFLT** seal
- **Over Centre CAM** - holds on adaptor top & bottom
- **No wear** of API adaptor surface
- **15° angle** for improved unloading
- **Single piece** 3" and 4" CAM and Groove
- **One hand** operation, simple robust mechanism

## Related products

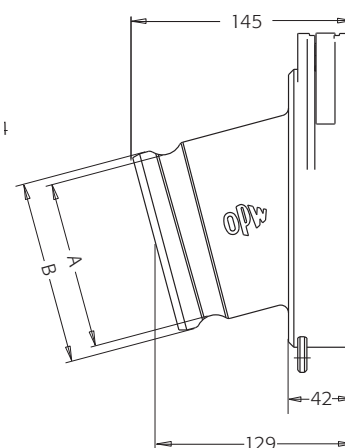
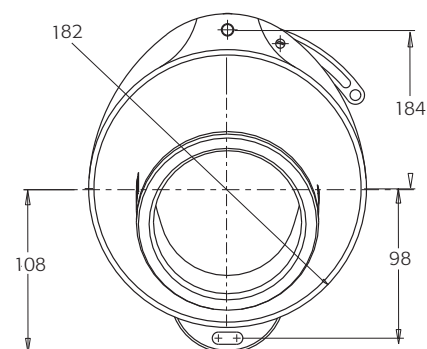
Art. number	Description
891-series	4" API Bottom Loading Adaptor

## Ordering specifications

Art. number	Description
876C-AL40	4" Gravity Drop Adaptor with 4" male kamlok outlet
876C-AL4030	4" Gravity Drop Adaptor with 3" male kamlok outlet

## Specifications

### 876-SERIES



	A	B
3"	72,1	91,4
4"	109,2	119,6

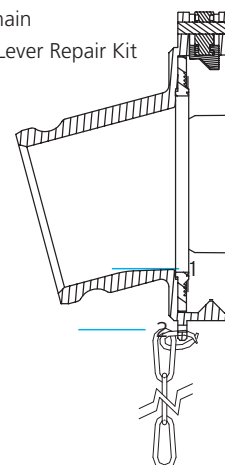
## General specifications

- Nominal size 4" or DIN100
- Working temp. -40°C to +70°C  
other temperatures on request
- Weight 3" kamlok outlet 1,4 Kg  
4" kamlok outlet 1,8 Kg

## Spare parts

### REPAIR KIT

H71271	Buna-N seal
10919	Kit Chain
11474	Cam Lever Repair Kit



All dimensions are in mm

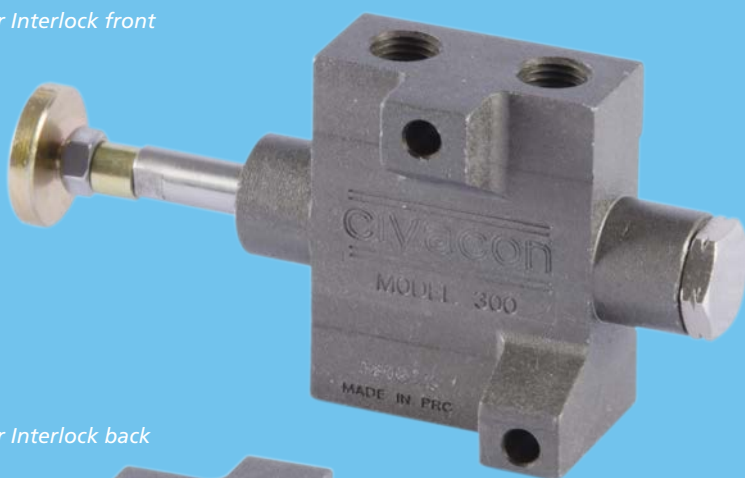
## 300 / 301 Air Interlock Valve

Civacon's New Model 300 Series Air Interlock Valve is the perfect solution for all your petroleum transport interlock needs. From drive-off protection on APIs and Vapor Adaptors, to interlocking guard bars and cabinet doors, our Model 300 Air Interlock Valve fits right in. The Model 300 valve is a drop-in replacement for our earlier models and for competitive brands. The fit and function remain identical to previous models. Their new durable yet lightweight hard-coat anodized aluminum body, stainless steel internals and hardware deliver extreme durability, extended life and provide superior protection from chemicals and the elements.

This completely new design uses industry standard Parker Brand™, premium AS568B standard O-rings. Our valve features a unique and innovative "closed loop breather" design that requires no vent hole in the rear end cap.

This provides a completely sealed design that won't "breath in" moisture or contamination while in use. Maintenance requirements have been minimized for long, trouble-free operation.

300, Air Interlock front



300, Air Interlock back

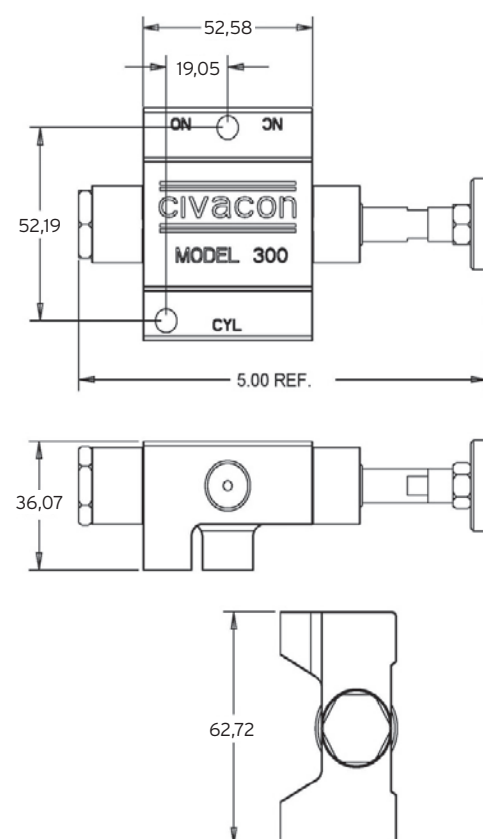


### Features and Benefits

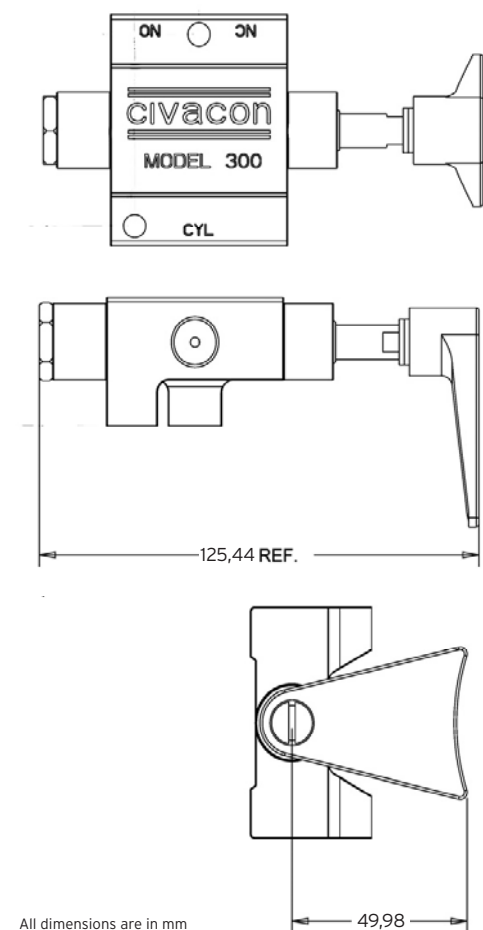
- **Corrosion resistant** nickel-plated aluminium body
- **Main shaft** wiper seal will prevent contaminations from entering seal area
- **Universal mounting** fits all civacon API bottom loading adaptors and vapor recovery adaptors
- **Stainless steel** operating shaft and spring eliminating corrosion
- **Lightweight** aluminium end cap
- **Different end cap** designs possible to meet specific requirements
- **Electrically** continuous

### Specifications

#### MODEL 300

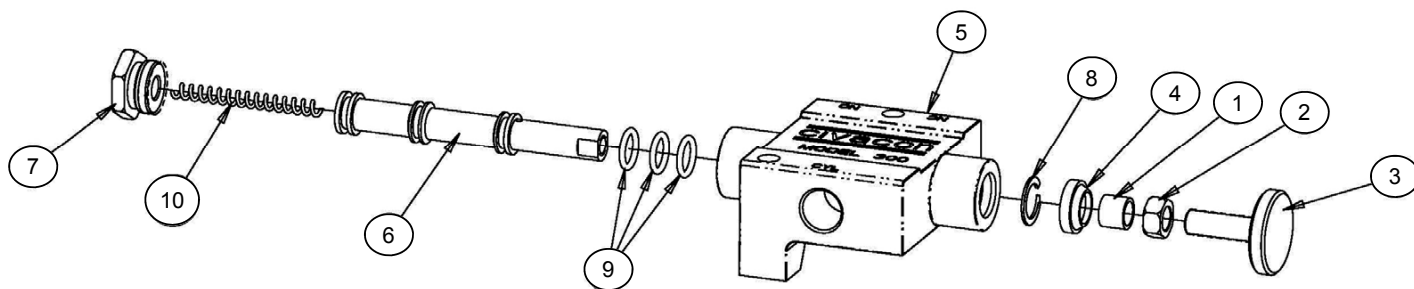


#### MODEL 301



All dimensions are in mm

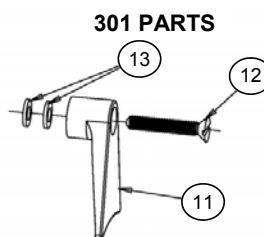
## Spare parts



Item	Art. number	Description	QTY
1	200 - 5 <sup>1</sup>	Brass Spacer Sleeve	1
2	200 - 6 <sup>1</sup>	Hex Nut , 1/4 x 20 SS	1
3	H20488M	Stem Adjuster	1
4	12159	Wiper Seal	1
5	12165	Body	1
6	12167 <sup>2</sup>	Stainless Steel Shaft	1
7	12168	Rear End Cap / Spring Retainer	1
8	12199	Spiral Retaining Ring	1
9	H20506M <sup>2</sup>	O - Ring Size 2-012 Buna N (Parker)	3
10	H20507M <sup>2</sup>	Spring	1

### Model 301 Parts

11	11393	Push Plate	1
12	12013	Screw FLHD 1/4 x 20 x 1 1/2 LG 18- 8 SS	1
13	H20312M	Flat Washer	2



<sup>1</sup>- included in 200 RK

<sup>2</sup>- included in 300 RK

## General specifications

### 300 / 301 Air Interlock Valve

● Valve type	3-way
● Air connection	1/4" NPT
● Air hose	6 mm
● Weight	model 300 250 g model 301 265 g

## Related products

Art. number	Description
633LVB	4" High flow vapor recovery adaptor equipped with sight glass
891-series	4" API bottom loading adaptor

## Ordering specifications

Art. number	Description
300	Air Interlock Valve with push button, 3-way, for 4" 891-series API bottom loading adaptor
301	Air Interlock Valve with elongated push button, 3-way, for 4" 633LVB high flow vapor recovery adaptor

## EURO-Line Bottom Valves

CIVACON's EURO100-Line Bottom Valves are designed for increased safety, durability and service performance. The EURO100-Line high flow bottom valves are available as Compact 100-1 series, Super Compact 100-2 series, 4" TTMA or TW 100-3 series and T-Shape 100-4 series.



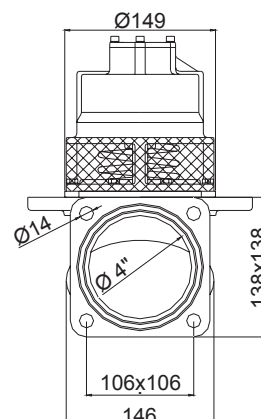
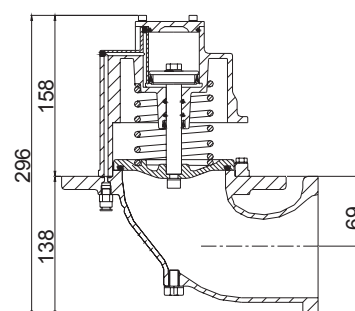
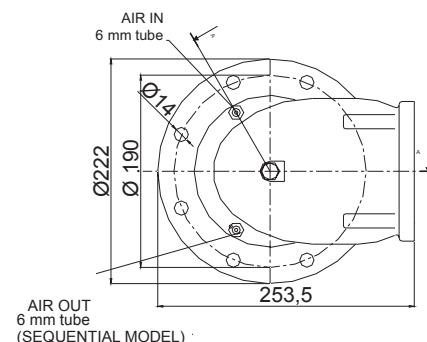
EURO100-1 series

### Features and Benefits

- **All EURO100-Line Bottom Valves** in accordance with EN13308 (Non Pressure Balanced), EN13316 (Pressure Balanced), ADR and API RP 1004
- **Available models:** Compact, Super Compact, 4" TTMA or TW outlet and T-Shape
- **Pressure balanced** or non pressure balanced operation
- **Sequenced** or non-sequenced operation
- **4" or DN100** connection
- **Lightweight pressure** die-cast for improved strength and reduced weight
- **Hard anodized** and stainless steel internals
- **Stainless steel** filter/strainer
- **Shear Groove** to prevent spillage in case of an accident
- **Superior flow rate:**
  - up to 2.500 litres/minute
  - no moving parts in the flow path
- **Viton GLFT seals**
- **Valve service** inside of the compartment
- **Manually openable** in case of emergency

### Specifications

#### EURO100-1 SERIES



### General specifications

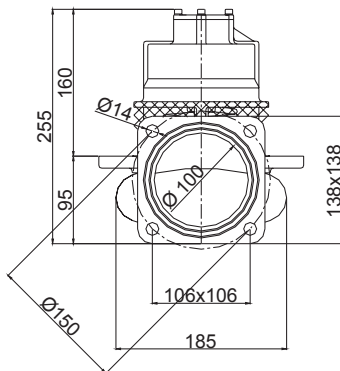
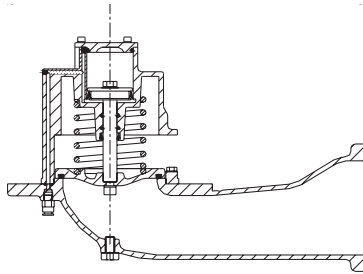
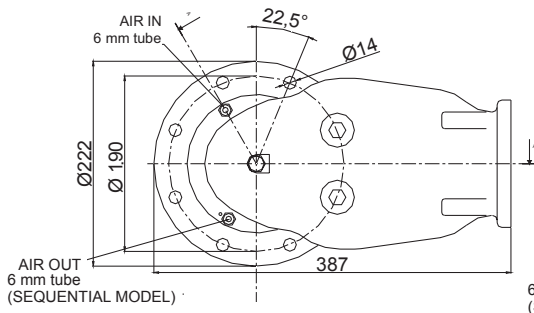
- Nominal size 4" or DN 100
- Working pressure 5 bar (500 kPa)
- Operating air pressure 4 bar
- Maximum flow rating 2.500 litre/minute
- Seals Viton GFLT
- Working temperature -20 °C to 70 °C  
other temperatures on request
- Weight
 

EURO100-1	4,6 kg
EURO100-2	5,5 kg
EURO100-3	4,7 kg
EURO100-4	5,8 kg

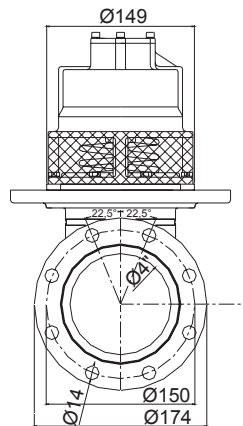
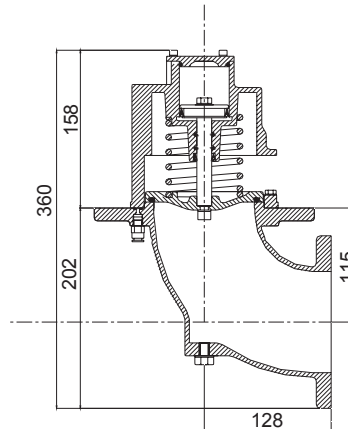
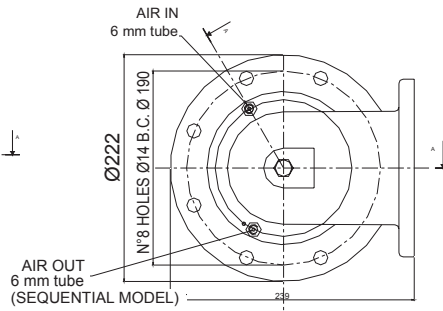


## Specifications

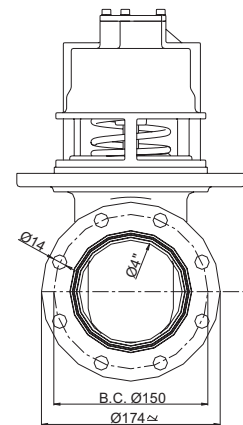
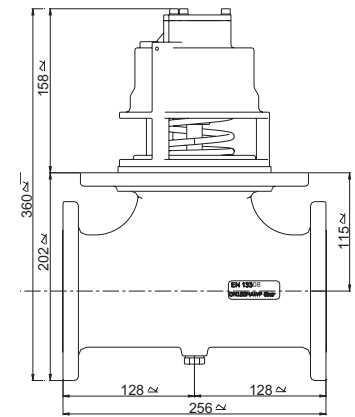
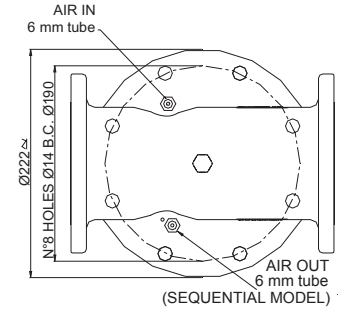
### EURO100-2 SERIES



### EURO100-3 SERIES



### EURO100-4 SERIES



# EURO-Line Bottom Valves

## Spare parts

### Repair kit

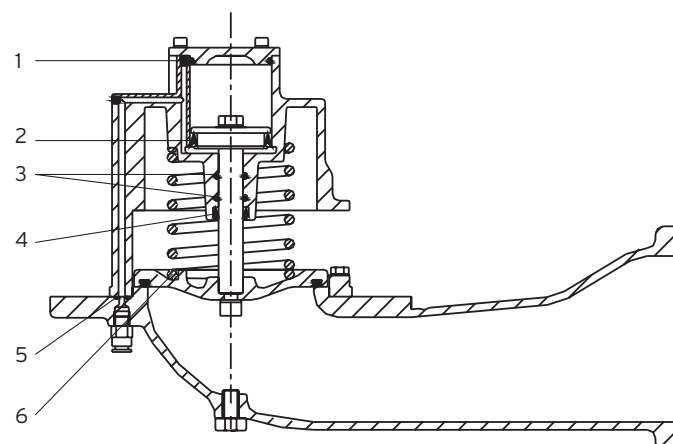
EURO100RK Seal kit for EURO100-series  
Bottom Valve

### Contents EURO100RK Repair kit

Item	Part number	Description
1	89-60-75/V	O-ring (Viton)
2	26-60-27	Gasket (Viton)
3	26-60-26	O-ring (Viton)
4	82-30-53	Gasket (Viton)
5	89-60-76/V	O-ring (Viton)
6	92-60-70	O-ring (Viton)

## Related products

Art. number	Description
SF-100-ST40	Steel sump flange
10-02-43	Aluminium sump flange
10-01-74/EU	Aluminium square outlet flange
10-01-84	Gasket for square outlet flange



## Ordering specifications

### Compact Model: EURO100-1 series

EURO100-1-AL40	4" non-pressure balanced, non sequenced
EURO100-1S-AL40	4" non-pressure balanced, sequenced
EURO100-1B1/V15-AL40	4" pressure balanced, non sequenced
EURO100-1B1S/V15-AL40	4" pressure balanced, sequenced

### Super Compact Model: EURO100-2 series

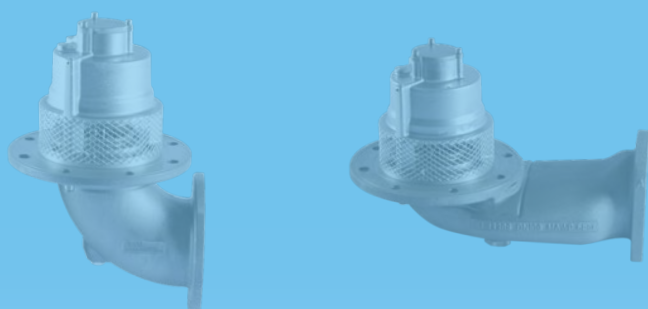
EURO100-2-AL40	4" non-pressure balanced, non sequenced
EURO100-2S-AL40	4" non-pressure balanced, sequenced
EURO100-2B1/V15-AL40	4" pressure balanced, non sequenced
EURO100-2B1S/V15-AL40	4" pressure balanced, sequenced

### 4" TTMA Outlet Model: EURO100-3 series

EURO100-3-AL40	4" non-pressure balanced, non sequenced
EURO100-3S-AL40	4" non-pressure balanced, sequenced
EURO100-3B1/V15-AL40	4" pressure balanced, non sequenced
EURO100-3B1S/V15-AL40	4" pressure balanced, sequenced

### 4" T-Shape Model: EURO100-4 series

EURO100-4-AL40	4" non-pressure balanced, non sequenced
EURO100-4S-AL40	4" non-pressure balanced, sequenced
EURO100-4B1/V15-AL40	4" pressure balanced, non sequenced
EURO100-4B1S/V15-AL40	4" pressure balanced, sequenced



## NV4000E Series Pressure Vacuum Vent

High-Flow pressure vacuum vent with rollover protection is built for durability and performance that meets worldwide regulations Civacon's NV4000E Series Pressure Vacuum Vent has a design that reduces part count by 45% for easier and quicker maintenance. The NV4000E is installed on the bottom of the manlid poppet via a 15/16" hex nut and has been built to withstand the extreme shocks, high G-forces, excessive surge forces and vibrations that can occur when petroleum products are being transported.



NV4000E Series Pressure Vacuum Vent

### Features and Benefits

- Flow capacity of 1,600 SCFH at 3-PSIG venting
- Flow capacity of 3,900 SCFH at 1-PSIG vacuum
- Can be installed in existing 10" manlids
- J-Slot design with external snap ring for easy removal and cleaning
- Lightweight, durable design (14.4 oz.)
- Temperature range from -40OF to 158OF (-40OC to 70OC)
- Push and twist body assembly
- No tools required for maintenance or cleaning
- Improved poppet springs for better sealing
- Dust screen keeps foreign material out of poppets

### Spare parts

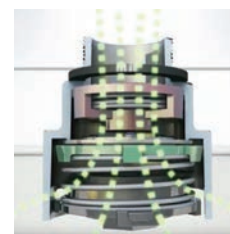
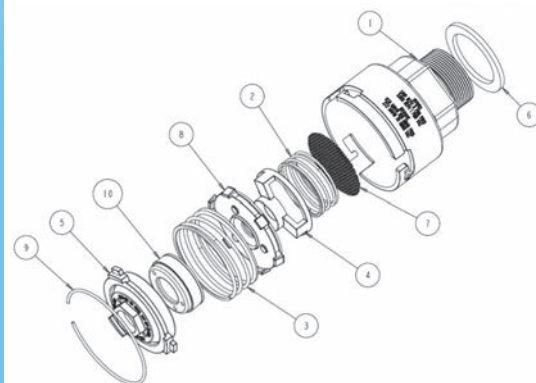
*Spare part only supplied as complete kit*

#### Contents

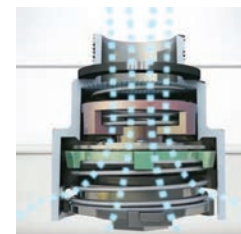
Item Article Nr. Description Qty.

## Specifications

### NV4000E SERIES PRESSURE VACUUM VENT



The NV4000 vacuum vent opens and allows the excess pressure in the tank to flow out through its sides and bottom ports.



The NV4000 lowers in conjunction with a vacuum poppet, allowing vacuum pressure to be pulled into the tank.

### Related products

Art. number	Description
T400-series	Manhole cover assembly

### Ordering specifications

Art. number	Description
NV4000E	Pressure vacuum vent
Material	Aluminum Housing
Disc	Die Cast Aluminum, Stainless Steel, Acetal, Viton®
Weight	0.90 lbs (0.41 kg)
Temperature range from	-40OF to 158OF (-40OC to 70OC)

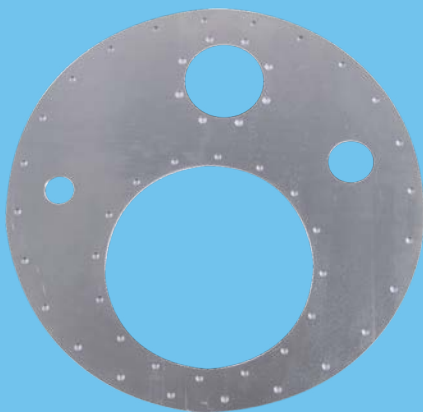
ITEM	PART NUMBER	DESCRIPTION	QTY.
1	13154	Body	1
2	13155	Spring, Pressure	1
3	13156	Spring, Vacuum	1
4	13157	Poppet, Pressure	1
5	13159	Housing, Rollover Puck	1
6	13163	Gasket, Flat	1
7	13167	Flame Arrestor	1
8	13192	Assembly, Vacuum Poppet	1
9	13207	Ring, Wire External Snap	1
10	13208	Assembly, Shutoff Puck	1
	13212	Instruction Sheet	

The design and operation of the NV4000E meets DOT 406, MC306, ADR and European EN14595 standards for rollover protection and has been designed to also pass California Air Resources Board (CARB) regulations regarding airborne emissions.

## Manhole Cover T400-series

CIVACON T400 manhole-cover is designed to achieve optional customer flexibility for manhole-cover applications.

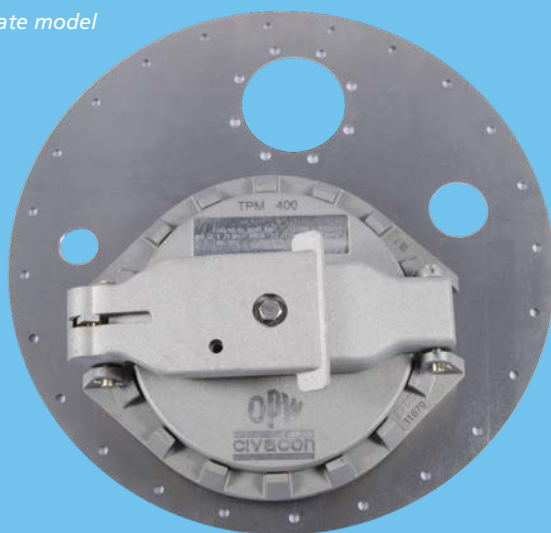
The T400 is composed from a Pressure-activated Fill-cover for additional tanker security and separate base-cover to meet specific requirements.



H71521, Base Plate model



T400-PFC01A, Pressure Activated Fill-cover



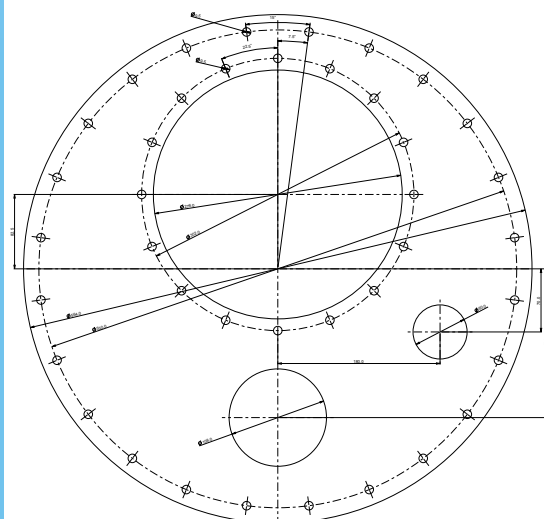
K1-T400-240217GJ

## Features and Benefits

- **Complies** with EN13314 (fill-cover) and EN13317 (base-cover)
- **Pressure and vacuum vent** fitted as standard for tank breathing  
Various ratings available to suit operational requirements  
Two vents may be fitted if required
- **Spring-loaded Pressure-activated fill cap** provides emergency fire engulfment and venting
- **Emergency venting** capacity 7000m<sup>3</sup>/h air at 350mb
- **Automatic sealing of the P/V vent** in a roll over situation
- **20" base-plate** for access compliance with ADR
- **Two-stage opening** allows safe release of residual compartment pressure before fully opening fill cap
- **Lockable** – available with key lock
- **Secure 24-bolt fixing** as required by ADR
- **Lightweight pressed aluminium base-plate** material complies with EN13094
- **Security facility** for padlock, wire or plastic seal

## Specifications

### BASE PLATE EXAMPLES



H71523, Base Plate model



## General specifications

- Base plate
  - Standard 20"
  - Customer specified (material, hole pattern, dimension)
- Weight 20"
 

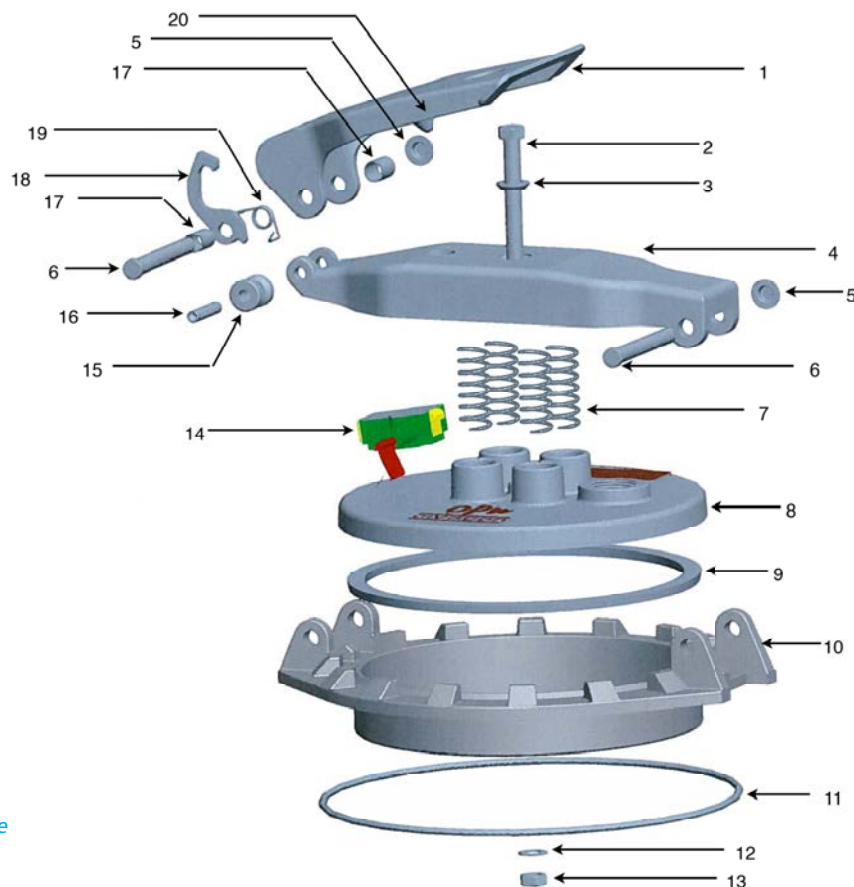
Aluminium	2,8 Kg
base plate Carbon steel	7,8 Kg
Stainless Steel	7,9 Kg
- Weight PAF 6,7 Kg

All dimensions are in inches

# Manhole Cover T400-series

## Spare parts

Item	Art. number	Description	QTY
1	11733	Latch	
2	11735	Screw	
3	11737	Swivel Plug	
4	11731	Strong Back	Obsolete
5	1020	Pal Nut	
6	4679	Hinge Pin	
7	11728	Spring	
8	11682	Fill Lid	
9	12022	Cover Seal	
10	11680	Frame	
11	11740	O-Ring	
12	9874	Seal Washer	
13	1926	Nut	
14	11979	Lock Assembly (Optional)	
15	11730	Latch Roller	
16	11732	Roller Pin	
17	11743	Latch Bushing	
18	11736	Latch Hook	
19	11729	Latch Spring	
20	11952	Lock Pin (Optional)	



*Spare part only supplied as complete kit.*

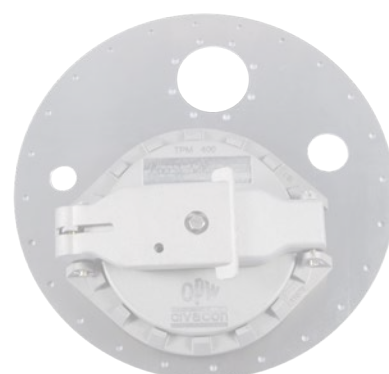
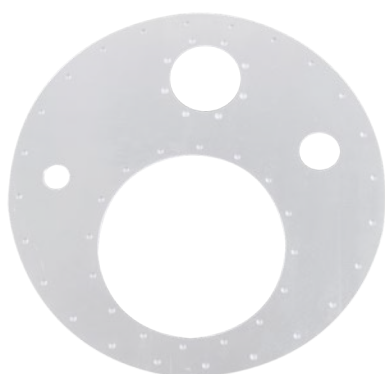
*For safety only qualified installers, are allowed to change pressurized parts.*

## Related products

Art. number	Description
T195-series	3" Vapor recovery valve
LC01013	Dip tube assembly, L= 2 m
6836	Gasket

## Ordering specifications

Art. number	Description
T400-PFC01A	Pressure activated fill-cover (PAF) with lock
K1-T4002402...	All types



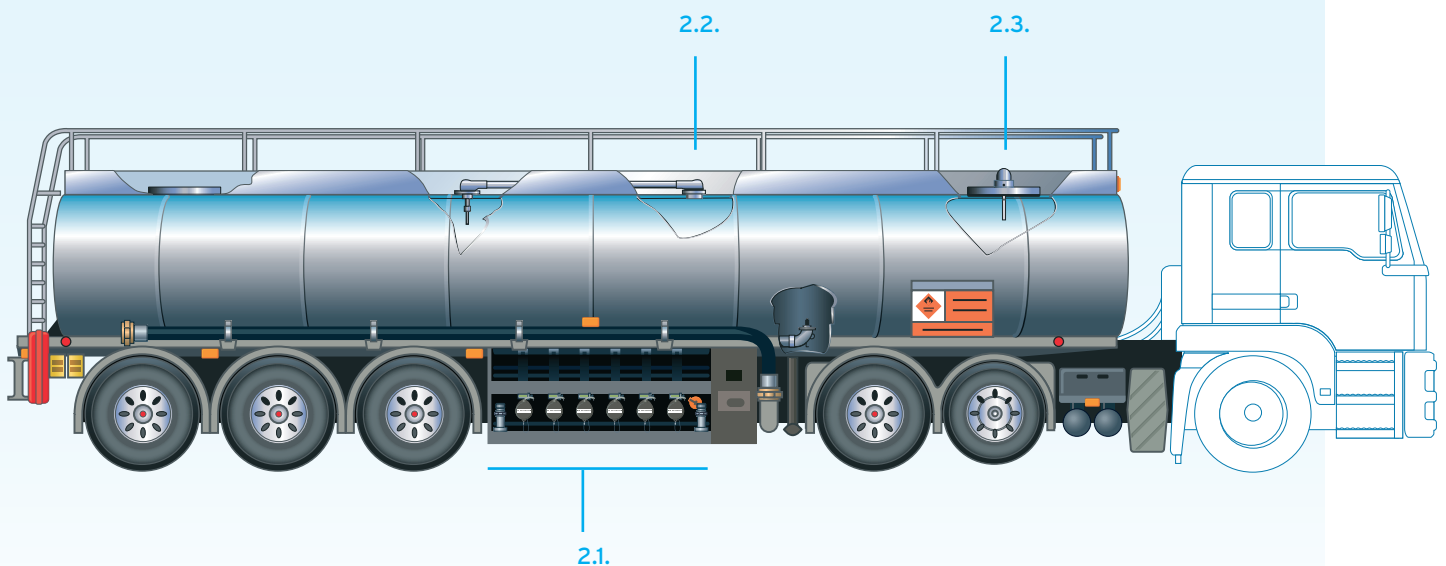


# CIVACON WORKSHEET FOR SPECIFYING MANHOLE COVERS

A TYPE	B MATERIAL & STYLE	C BASE COVER	D WELD RING	E WELD RING GASKET	F PAF FILL COVER GASKET	G ACCESS. HOLE OPTION	H ACCESSORIES OPTIONS
T400	0	0	0	0	0	0	0 no accessories options A additional 70mm coupler hole B additional 1,25" BSP coupler
	1 20" CENTER PAF-NV3000E	1 PLATED STEEL	1 ALUMINIUM	1 BUNA-N	1 BUNA-N	1 3,84" VPR 2,38" SNSR	C additional 4,25 vapor hole D additional 2,36", 60mm hole, 45 dia E 30,5 mm dip tube hie
	2 20" OFFSET PAF-NV3000E	2 PLATED STEEL, BOLTED	2 STEEL	2 NITRILE	2 NITRILE	2 4,25" VPR 2,38" SNSR	F sight glass hole G additional 1 1/4 BSP coupling H 90mm bolted vapor hole
	3 16" CENTER PAF-NV3000E	3 ALUMINIUM	3 ALUMINIUM BOLTED	3 VITON	3 VITON	3 3,5" VPR 2,38" SNSR	I J manhole lock K Extra TM presVac vent hole
	4 16X14 CENTER PAF-NV3000E	4 ALUMINIUM BOLTED	4 STEEL	4 EPDM	4 EPDM	4 3,84" VPR 3" NPT CPL	L dip tube lock M PAF mounted on base plate N PAF 180° operable
	5	5 STEEL	5 90mm STEEL	5 BUNA-N BOLTED	5	5 107 mm VPR SLT 60MM SNSR	O P Q
	6	6 STEEL BOLTED	6 16X14 ALU, BOLTED	6 BUNA-N FLAT	6	6 4,25" VPR NO SENSOR	R T195SV vapor recovery vent S T
	7	7 STAINLESS	7 16" ALU BOLTED	7 16" BUNA-N BOLTED	7	7 108mm VPR BLT 60MM SNSR	U V W
	8	8 STAINLESS BOLTED	8	8 16X14 BUNA-N BOLTED	8	8 TW-3 108mm VPR BLT 60MM SNSR 1 1/4 THD SH	X Y Z 1
	9	9	9	9	9	9 TW-3 108mm VPR BLT 2X DIP LOCK HL	2 3 4



2.1.	Vapor Recovery Adaptor 633LVB	22
2.2.	Vapor Recovery Vent T195-series	24
2.3.	Vapor Line Valve 1995TWD-2B	26



## Vapor Recovery Adaptor

CIVACON's 4" Vapor Recovery Adaptor is designed to maximize efficiency and service performance of vapor recovery with a minimum pressure drop.



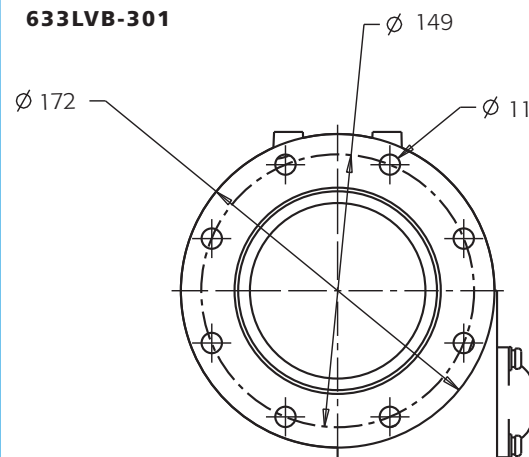
633LVB, Vapor Recovery Adaptor  
with 301 Air Interlock

### Features and Benefits

- **In accordance** with API RP 1004, ADR and EN13081
- **Lightweight** pressure die-cast construction for maximum strength and weight reduction
- **4" TTMA** mounting flange
- **Nominal size** 4" or DIN100
- **Minimum number of internals** to minimize pressure drop and improve flow rate
- **Bushed running surfaces** for efficient operation
- **Stainless Steel** internals for maximum service life
- **Viton GFLT** seals
- **Compatible** with diesel, bio diesel, gasoline, ethanol and methanol
- **Heavy duty** poppet for smoother opening characteristics
- **Mounting plugs** for model 300/301 air interlock valve
- **Standard equipped** with sight glass and drain plug

### Specifications

#### 633LVB-301



### General specifications

- Nominal size 4" or DIN100
- Flange 4" TTMA
- Working temp. -40°C to +70°C other temperatures on request
- Weight 3,5 Kg

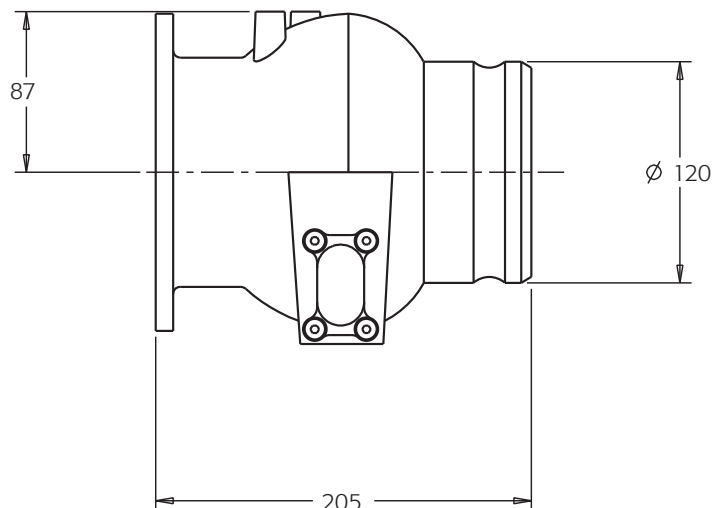
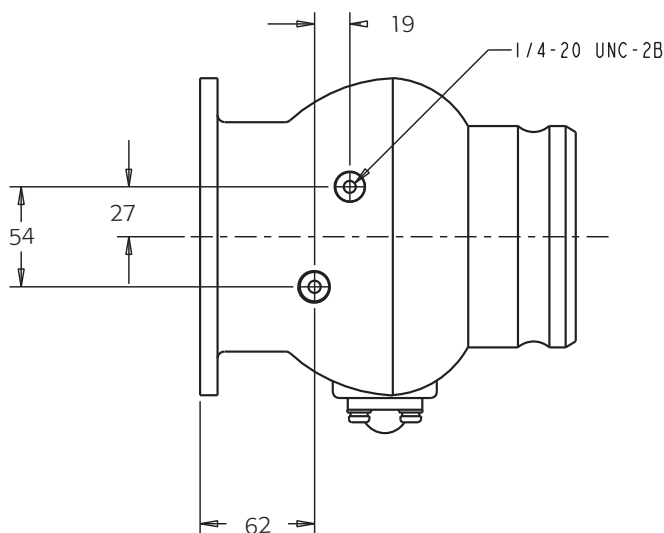
### Related products

Art. number	Description
1711T-CA-PL	Duratuff cap with cable
300/301	Air interlock valve (3-way)
T195-series	High flow vapor recovery valve
1995TWD-2B	Vapor line valve
NV4000E	Pressure vacuum vent

### Ordering specifications

Art. number	Description
633LVB	4" High flow vapor recovery adaptor equipped with sight glass
633LVB-301	4" High flow vapor recovery adaptor equipped with sight glass and model 300/301 interlock valve





## Spare parts

### REPAIR KIT

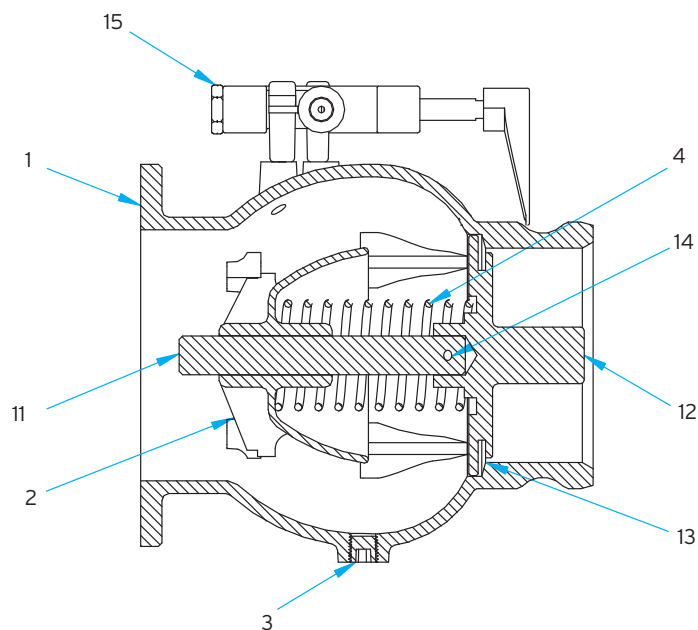
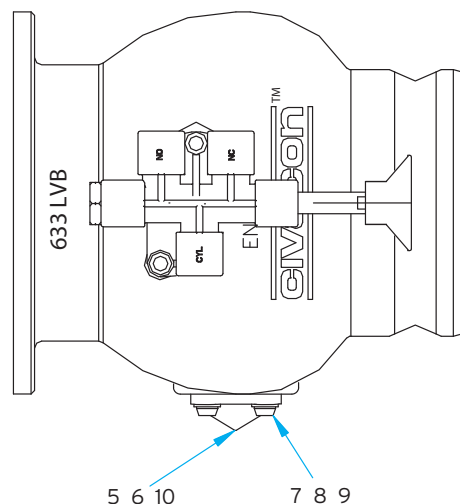
H20009 Poppet Assembly

891BRK Sight Glass Repair Kit

*Spare part only supplied as complete kit*

Item	Part Nr	Description	QTY
1	11666	BODY, MACHINED	1
2	C02779M	DEFLECTOR	1
3	10068	PLUG, 1/4"NPT	1
4	H20007M	SPRING	1
5	11365M <sup>2</sup>	SIGHT GLASS	1
6	H51384M <sup>2</sup>	FLOAT BALL	1
7	12490 <sup>2</sup>	SCREW	4
8	H20057M	LOCK WASHER	4
9	H20312M	WASHER	4
10	H51437M <sup>2</sup>	O-RING	1
11	H08841RA <sup>1</sup>	SHAFT	1
12	C51410A <sup>1</sup>	POPPET, MACHINED	1
13	H20750M <sup>1</sup>	VITON GASKET	1
14	H09193M <sup>1</sup>	COTTER PIN	1
15	301	INTERLOCK VALVE	1

1-Included in H20009. 2-Included in 891BRK



## Vapor Recovery Vent

The Civacon T195SVFE Vapor Recovery Vent is designed and tested for temperature range rated at -40°C to 71°C. A new cap design threads into the top of the vent allows for a better seal and corrosion free design. The new design retrofits the current 1985SV and 1986SV. The presence of a locking ring prevents additional leak paths that were created by the bolt on feature of the previous 1985SV.

The locking ring allows more freedom for mounting the vent to the normal TTMA bolt pattern. Seals have been improved to be more compatible with chemicals that could potentially come into contact with them.



T195SVFE, Vapor Recovery Vent

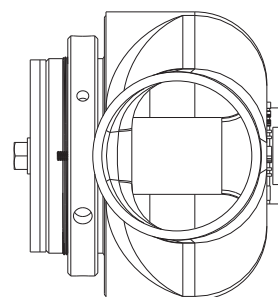
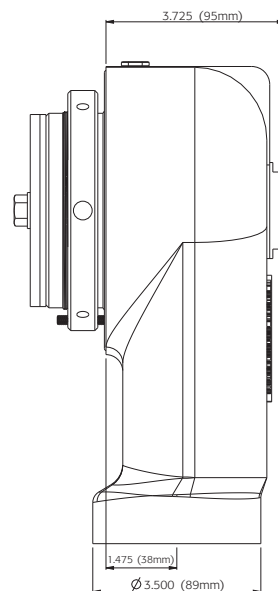
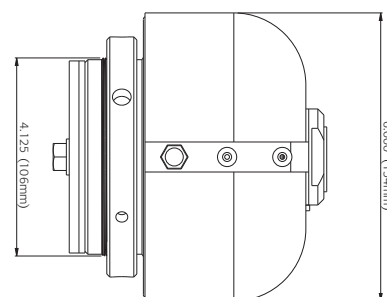
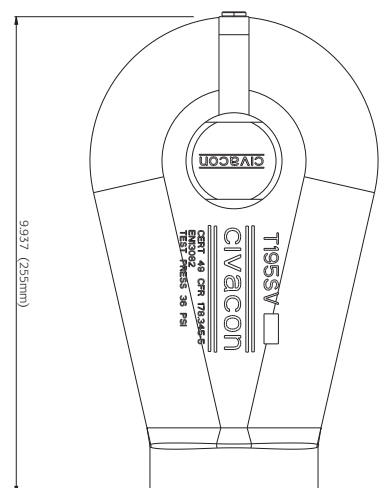


## Features and Benefits

- **Lightweight** aluminum body
- **Valve stroke increased** by 50% (1-1/2" total seat opening)
- **Increased** Spring Tension for a quick, tight closure
- **Dual fluor silicon piston** O-ring seals and a new lower shaft seal and wiper protects the air system
- **New added external** exhaust port for quicker opening and closing of vent's poppet
- **Viton GF** Gaskets and Seals
- **Thread-in** Cap Design eliminates snap ring
- **Improved** flow rating and less pressure drop
- **New rotatable mounting** design eases retrofits
- **Will fit in place of** all TTMA flange mounted vents
- **Single O-ring** seal to manhole plate minimizes potential mounting leak paths of bolted designs

## Specifications

### VAPOR RECOVERY VENT T195SVFE



## General specifications

### T195SVFE

- Pressure Drop 0,5 mbar at 2,400 lpm
- Connections 1/8" BSP
- Weight 2,5 kg

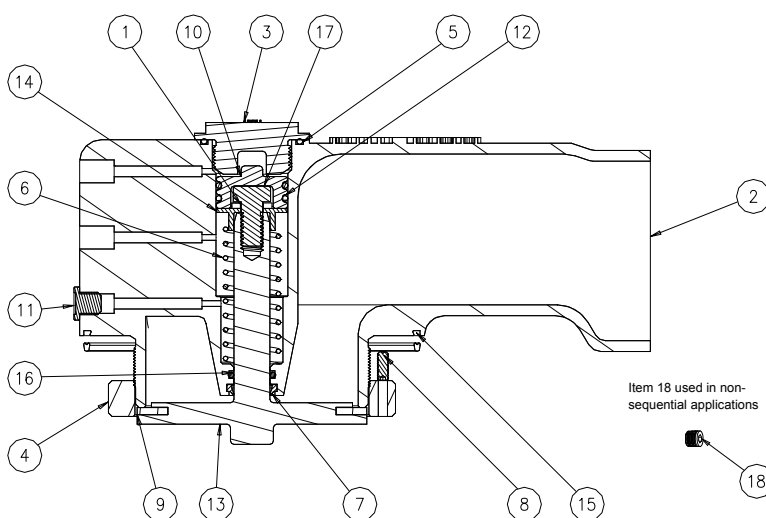
## Spare parts

### REPAIR KIT

T195SVRK

Item	Art. Number	Description	QTY.
1	11672	CAP TRHEADED GLASS FILLED NYLON	1
2	11678	LOCKING RING	1
3	11692 <sup>1</sup>	O-RING 2-129 VITON GF	1
4	11694	SPRING	1
5	11696 <sup>1</sup>	WIPER	1
6	11697	SET SCREW #10-24X ½ LG	1
7	11699 <sup>1</sup>	GASKET, VITON GF	1
8	11772 <sup>1</sup>	PISTON	1
9	11776 <sup>1</sup>	O-RING, FLUOROSILICON	2
10	12803	SA-T195SVFE MACHINED BODY	1
11	11985	POPPET MACHINED	1
12	11990 <sup>1</sup>	SPRING GUIDE	1
13	12174 <sup>1</sup>	O-RING	1
14	10681M <sup>1</sup>	O-RING, VITON GF	1
15	12532 <sup>1</sup>	SCREW HH3/8-16X5/8 SS	1

<sup>1</sup> Included in repair kit



## Related products

Art. number	Description
T400-series	Manhole cover assembly
NV4000E	Internal pressure/vacuum vent

## Ordering specifications

Art. number	Description
T195SVFE	Vapor Recovery Vent, 20" Manhole

## Vapor Line Valve

CIVACON's vapor line valve provides additional safety and security when carrying hazardous liquids. Pressure is vented into the atmosphere when it is not sealed for vapor transfer. In case of vapor transfer, vapor line valve is closed.



1995TWD-2, Vapor Line Valve

### Features and Benefits

- In accordance with API RP 1004 and EN13082
- **Stainless Steel** flame arrestor covering inlet/outlet port
- **Mounting flange** 3" TW
- **Compact design** in 3"
- **Constructed of Aluminum** with corrosion-resistant trim
- **Operates** in temperature range of -20°C to +70°C
- **Self-opening** at vacuum of 6 kPa (60 mbar)
- **VITON® GFLT seals** compatible with all fuel grades and additives

### Ordering specifications

Art. number	Description
1995TWD-2B	3" Sequenced vapor line valve with TW-flange

### General specifications

#### 1995 TWD-2 Vapor Line Valve

● Nominal size	3"
● Working pressure	5 bar (500 kPa)
● Working temperature	-20°C to +70°C
● Mounting flange	3" TW
● Seals	Viton GFLT
● Weight	2,2 Kg

### Related products

Art. number	Description
T195-series	Vapor recovery valve
633LVB-301	Vapor recovery adaptor

### Spare parts

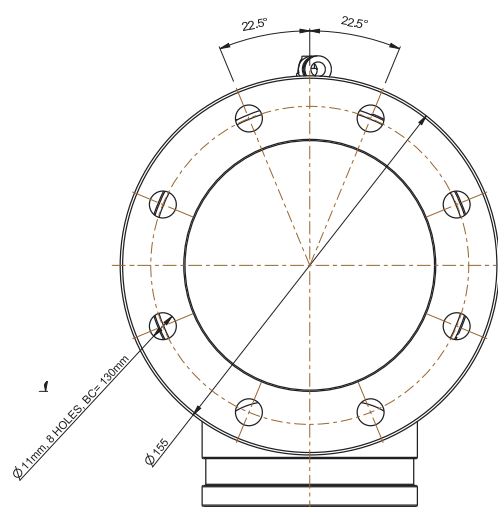
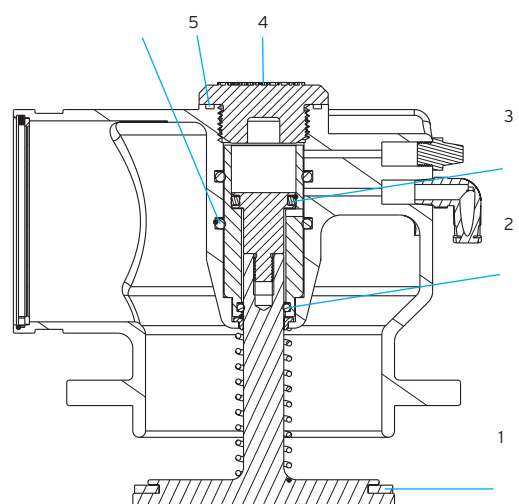
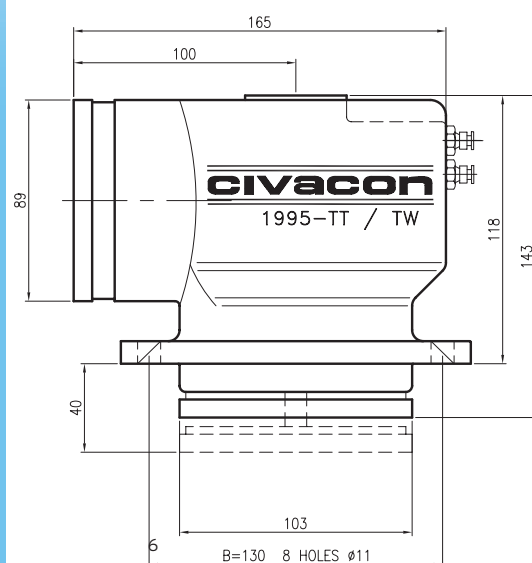
#### REPAIR KIT 1995TWD-2BRK

Item	Part Nr	Description
1	H20069M	Disc Viton
2	H70312	O-ring
3	H70311	Quad-ring
4	11672	Cap
5	11692	O-ring Viton
6	H70216	O-ring

*Spare part only supplied as complete kit*

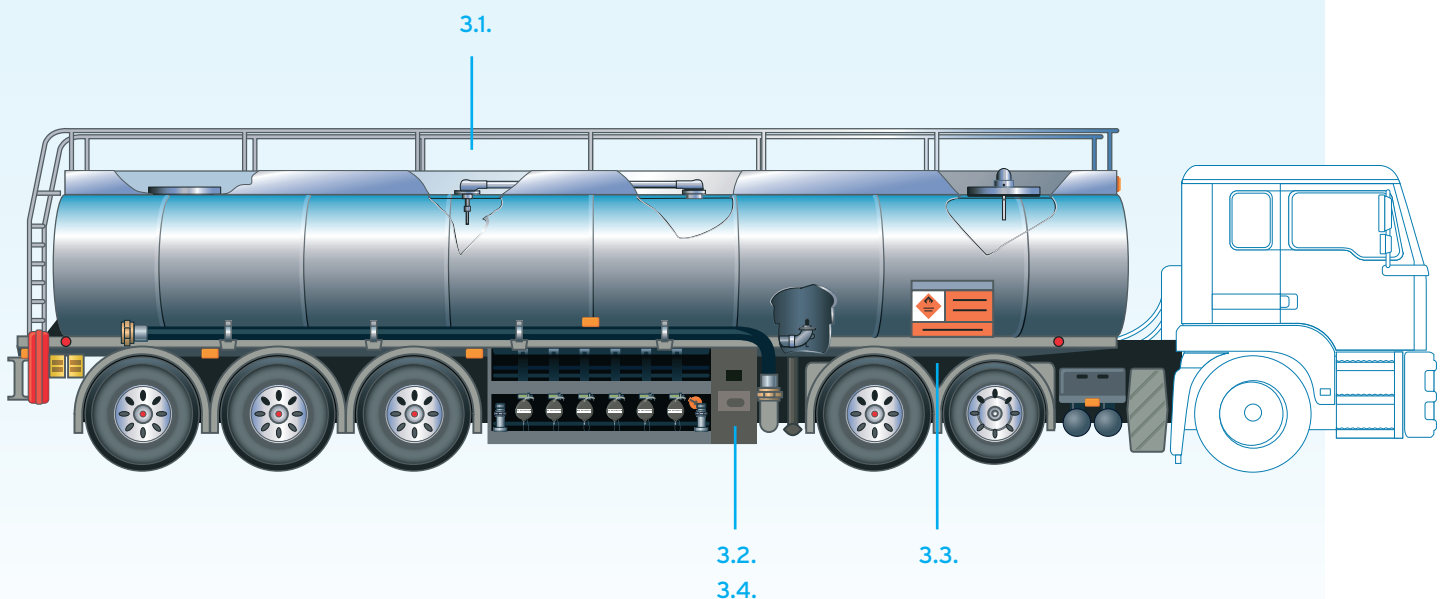
### Specifications

#### 1995TWD





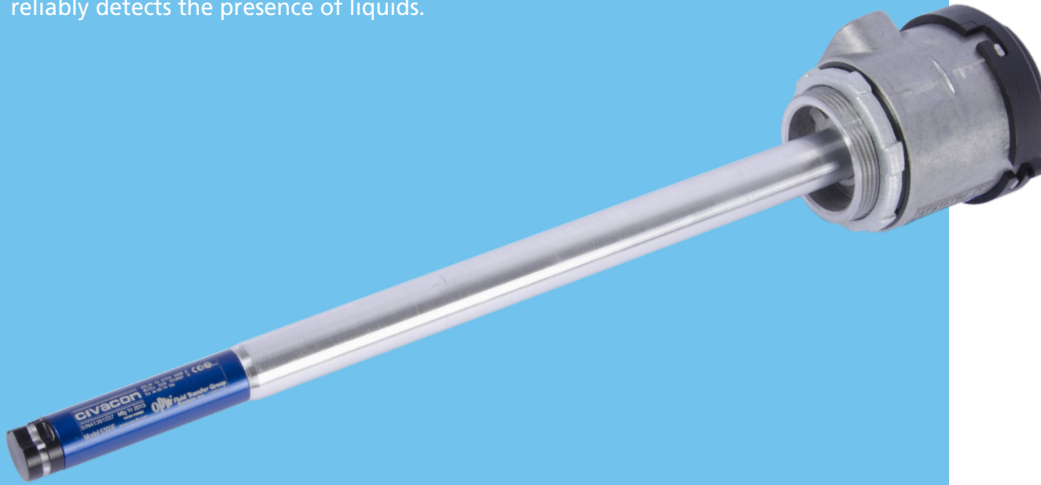
<b>3.1.</b>	<b>Overfill Prevention Sensor</b> <i>K1-5110E-18 5-Wire optic overfill sensor</i> <i>K1-5550U-18 2-Wire optic overfill sensor</i>	<b>28</b>
<b>3.2.</b>	<b>Socket</b> <i>4103-X001</i> <i>4403-X001</i>	<b>30</b>
<b>3.3.</b>	<b>Retain Overfill Monitoring</b> <i>3205E</i>	<b>32</b>
<b>3.4.</b>	<b>Tester</b> <i>1397E-E003</i> <i>1398E-E003</i>	<b>33</b>
<b>3.5.</b>	<b>Retain Sensor</b> <i>5002E</i> <i>5032U</i>	<b>34</b>



## 2 & 5-Wire Overfill Sensors

The CivaStar™ Advanced Overfill Sensors detect the presence of liquid at a preset level. The CivaStar™ Advanced Overfill Sensor 2& 5-wire sensor is fully compatible with all our current sensors and Monitors, as well as all industry standard signal formats. CivaStar™ Advanced Overfill Sensors feature an exclusive, digital electronic circuitry design that will work directly with 2&5-wire loading racks when wired directly to a blue optic socket, as well as with all onboard monitors.

The CivaStar™ Advanced Overfill Sensor is the future of overfill prevention technology. With advanced design, construction and unique LED visual verification system, CivaStar™ Advanced Overfill Sensor accurately and reliably detects the presence of liquids.



### Ordering Specifications

- K1-5110E-18 5-Wire optic sensor
- K1-5550U-18 2-Wire optic sensor
- 5300E-18 5-Wire optic sensor probe
- 5650U-18 2-Wire optic sensor probe

#### Assured reliability

CivaStar's advanced design, construction and unique LED visual verification feature optimizes probe reliability and permissive readings at the loading rack so your trucks get loaded on time and our customer get their deliveries on schedule.

### Features and Benefits

#### You're set forever

Set it and forget it. The specially engineered replaceable optic sensor head provides for reliable liquid detection and trouble-free installation or replacement without the need to ever reset probe heights.

#### Lighting the way

Save time and money tracking down the source of non-permissive readings. CivaStar features a unique LED light in the tip of the probe to provide immediate visual verification and diagnostics of non-permissive probe readings

### Spare parts

#### REPAIR KIT

12435 Probe Housing & Cap

Item	Part Nr	Description	QTY
1	5300E	Replacement optic overfill sensor no housing 18" probe	1
2	H52840	Housing machined	1
3	H52936M	Cap probe housing with u-cup	1
4	H52842M	O-ring 2-021 buna	2
5	H52477M	Lock ring	1
6	H52898M	Screw	1

## Specifications



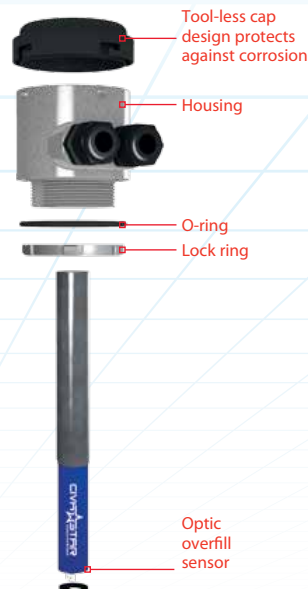
### General specifications

Sensor Cap	Glass-filled nylon
Cap O-ring seals	Silicone
Sensor length adjustability	Sensor housing aluminium
Locking nut	Plated steel
Product range	Sensor Shaft – aluminium
Viscosity	less than 1000 SSU prism
Snap ring	stainless
Weight	0.521 kg
Operating temperature	-40°C to 70°C
Storage temperature	-56,6°C to 137,7°C
5 years warranty	
In accordance with	EN13922
Approvals	ATEX & IECeX & FM
Intrinsically safe operation	
Continuously self checking	



CivaStar goes beyond overfill prevention. Real-time diagnostics keep your trucks on the road and delivering loads, something the competition can't deliver.

Feature	Benefit	CivaStar	Other
Detects the presence of a liquid	Provides overfill protection	Yes	Yes
5-year warranty	Peace of mind	Yes	No
LED diagnostics	Eliminates time-consuming and expensive guesswork	Yes	No
Tool-less cap	Quick removal and protects against corrosion	Yes	No
Tool-less spring adjustment	Set length once with torsion spring	Yes	No
Sensor replacement	Rapidly swap sensor without removing tube	Yes	No



## Ordering specifications & Cross-Reference

5-Wire replacement probe part numbers	
CivaStar™ Sensor Part #	Old-Style Part #
5300E-18	1301-0018GEB
5300E-18	1301-007GEB

2-Wire replacement probe part numbers Gray-Gray - Uni Colors	
CivaStar™ Sensor Part #	Old-Style Part #
5650U-18	1651-0018B
5650U-18	1651-007B

2-Wire replacement probe part numbers Red-Black-ROM	
CivaStar™ Sensor Part #	Old-Style Part #
5350E-18	1351-0018B

5-Wire probe with housing part numbers	
CivaStar™ Sensor Part #	Old-Style Part #
K1-5110E-18	K1-1112-0018EB
K1-5110E-18	K1-1112-007EB

2-Wire probe with housing part numbers Gray-Gray - Uni Colors	
CivaStar™ Sensor Part #	Old-Style Part #
K1-5550U-18	1551-0018JB
K1-5550U-18	1551-007B

2-Wire replacement probe part numbers Red-Black-ROM	
CivaStar™ Sensor Part #	Old-Style Part #
To be advised	1051-0018B

5-Wire replacement probe part numbers N/A Colors	
CivaStar™ Sensor Part #	Old-Style Part #
5300N-18	-

2-Wire replacement probe part numbers Black-White	
CivaStar™ Sensor Part #	Old-Style Part #
5650E-18	1651-0018B

5-Wire probe with housing part numbers N/A Colors	
CivaStar™ Sensor Part #	Old-Style Part #
K1-5110N-18	-

## Related products

Art. number	Description
2110E-L30	30 m 5-Wire straight cable conform EN13922
EL05154	Cable gland HSK-K-EX: m20x 1,5; 6-12 mm blue
EL00001	Ground bolt
3205E-XR1M	ROM onboard monitoring system, right handed, with 2W rack interface, metric
3205E-XL1M	ROM onboard monitoring system, left handed, with 2W rack interface, metric
1398E-E003	Truck tester, 4-J-slotted, black plug
1397E-E003	Truck tester, 3-J-slotted, blue plug
4103E-X001	6-Pin socket for optic sensors
4103PS-E001	4103E with pressure switch conform 94/63EC (VOC) 2+5-Wire
4403B-X001	10-Pin socket with pressure switch for optic and sensor, black label and cap, in accordance with EN13922 and VOC
4403E-X001	10-Pin socket for thermistor sensors with green label and cap

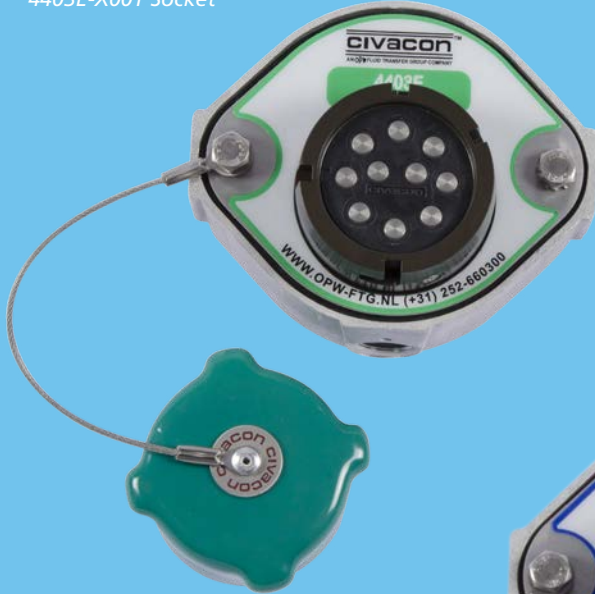
## Ordering specifications

Art. number	Description
K1-5110E-18	5-Wire optic sensor
K1-5550U-18	2-Wire optic sensor
5300E-18	5-Wire optic sensor probe, no housing
5650U-18	2-Wire optic sensor probe, no housing

## Sockets

CIVACON's Sockets are designed for optimal communication between tank-truck and EN13922 rack systems.

4403E-X001 Socket



4103E-X001 Socket

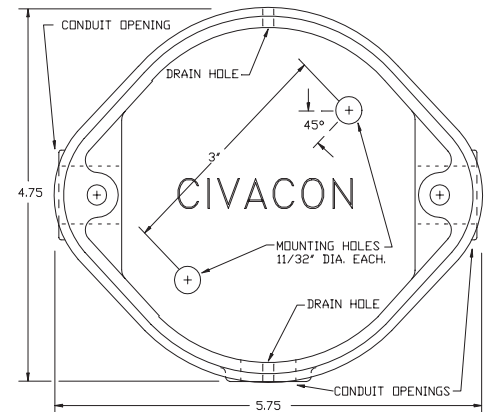


## Features and Benefits

- In accordance with API standards
- 4403B-model in accordance with EN13922
- Pressure switch standard on 4103PS and 4403B in accordance to VOC requirements
- Simple and durable connection using 3 J-slots (4103-model) or 4 J-slots (4403-model)
- Color coded labels and caps for easy identification
- Grounding pin incorporated in all models
- Connecting up to
  - 8 2-wire optic sensors
  - 12 5-wire optic sensors

## Specifications

4103-X001/4403-X001



4403B-X001 Socket



## General specifications

- Weight
 

4103E-EURO	1,1 Kg
4103PS	1,3 Kg
4403B & 4403E	1,2 Kg

## Spare parts

### 4150-4150 REPAIRKIT FOR 4103E:

1	H50025M	DUST CAP, BLUE
2	H50288M	CABLE

### 4450-4450 REPAIRKIT FOR 4403E:

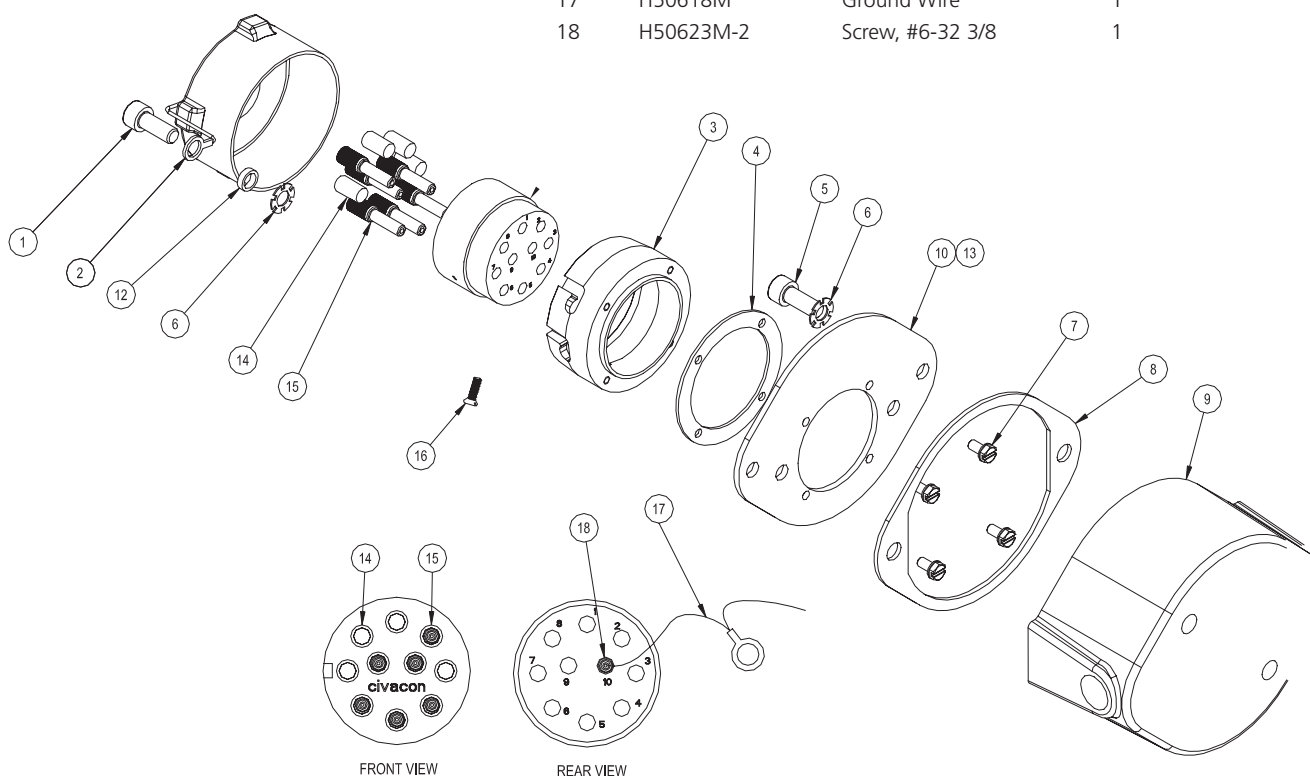
1	H50065M	DUST CAP, GREEN
2	H50288M	CABLE

### 4450B REPAIRKIT FOR 4403B:

1	H52535M	DUST CAP, BLACK
2	H50288M	CABLE

ITEM	PART NR	DESCRIPTION	QTY
1	H52538M	SCREW, M8 X 1.25 X 20MM	2
2	H50288M	Cable	1
3	C40151A-3	"J" SLOT SOCKET - 3	1
4	H52479M	GASKET, NEOPRENE	1
5	H52538M	SCREW, M8 X 1.25 X 20MM	2
6	H50250M	WASHER, 5/16 SS	2
7	H53048M	SCREW, #8-32 3/8"	4
8	H50064M	GASKET, NEOPRENE	1
9	D52537A	BODY	1
10	H52962M	Plate	1
12	H50291M	Spacer	1
13	H53038M-4103E	Label	1
14	H50617M	Insert	4
15	H50616M	Contact, Button	6
16	H50074M	Screw, #6-32 1/2"	1
17	H50618M	Ground Wire	1
18	H50623M-2	Screw, #6-32 3/8	1

*Spare part only supplied as complete kit*



## Related products

Art. number	Description
2110E-L30	30 m 5-Wire straight cable conform EN13922
EL05154	Cable gland HSK-K-EX: m20x 1,5; 6-12 mm blue
EL00001	Ground bolt
3205E-XR1M	ROM onboard monitoring system, right handed, with 2W rack interface, metric
3205E-XL1M	ROM onboard monitoring system, left handed, with 2W rack interface, metric
1398E-E003	Truck tester, 4-J-slotted, black plug
1397E-E003	Truck tester, 3-J-slotted, blue plug
K1-5110E-18	5-Wire optic overfill sensor
K1-5550U-18	2-Wire optic overfill sensor
5032U	Retain sensor

## Ordering specifications

Art. number	Description
4103E-X001	3J Slot 6-Pin socket for optic sensors 5W, BASEEFA
4103PS-E001	4103E with pressure switch conform 94/63EC (VOC)
4403B-X001	10-Pin socket with pressure switch for optic and thermistor 4J Slot sensors, black label and cap, in accordance with EN13922 and VOC
4403E-X001	10-Pin socket for thermistor sensors 2W with green label and cap

## Retain Overfill Monitoring 3205E

OPW Model 3205E ROM (Retain Overfill Monitoring) monitor secondary overfill prevention system incorporating retained product monitoring used in tank truck loading operations. ROM indicates Wet/dry conditions, wire short cuts, grounding conditions and shorted sensors by means of advanced diagnostics by means of LED and separate display.



### Features and Benefits

- **In accordance with EN13922**
- **Compartment empty and overfill detection** in one unit
- **Compatible** with all industry standard sensors and rack monitors
- **After system alerts**, loading cannot proceed without activation of the reset circuit
- **Reset circuit** for bottom sensors only
- **Bottom retain sensor** override timer cancels override timing when plug is removed from socket
- **Monitor automatically** closes bottom valves for additional security if connected.
- **Support for up to 8 compartment tankers** using 2-wire optic overfill and bottom sensors
- **Support for up to 12 compartments** using 5-wire optic overfill sensors
- **Number of installed sensors** automatically configured at installation
- **Timer with progress indicator**
- **Individual LED indication** per auxiliary input device
- **LED indication per compartment and status** symbols on display
- **Rack monitor connection** status for proper connection assurance
- **Working temperature** from -40°C to +70°C
- **Graphic display** showing error codes
- **Infrared** bypass key

### General specifications

#### ROMII Plus Onboard Monitoring System

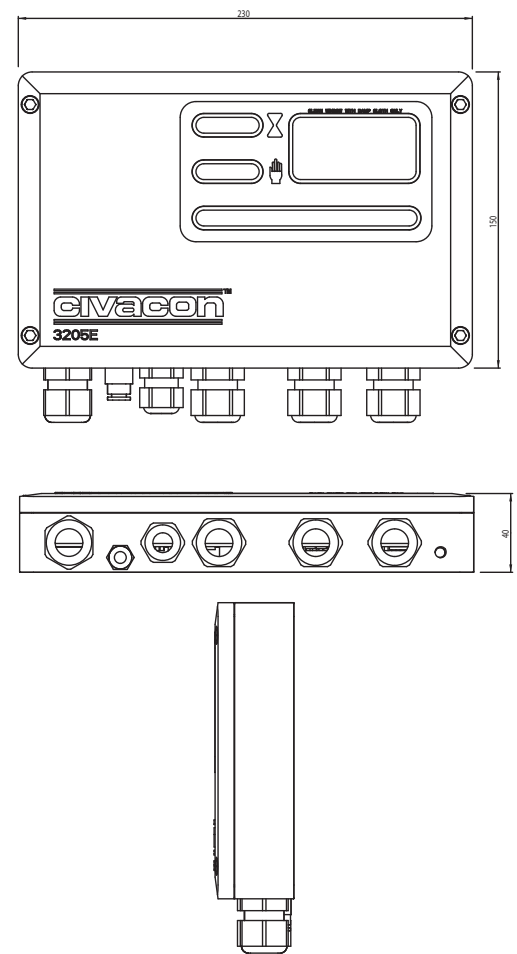
- Power 24 VDC
- Working temperature -40°C to +70°C
- Weight 2,2 Kg

### Ordering specifications

- | Art. number | Description   |
|-------------|---|
| 3205E-XR1M  | ROM onboard monitoring system, right handed, with 2W rack interface, metric |
| 3205E-XL1M  | ROM onboard monitoring system, left handed, with 2W rack interface, metric  |

### Specifications

#### 3205E ROM



### Related products

- | Art. number | Description  |
|-------------|--|
| 2110E-L30   | 30 m 5-Wire straight cable conform EN13922   |
| EL05154     | Cable gland HSK-K-EX: m20x 1,5; 6-12 mm blue   |
| EL00001     | Ground bolt  |
| 1398E-E003  | Truck tester, 4-J-slotted, black plug  |
| 1397E-E003  | Truck tester, 3-J-slotted, blue plug   |
| 4103E-X001  | 6-Pin socket for optic sensors, BASEEFA  |
| 4103PS-E001 | 4103E with pressure switch conform 94/63EC (VOC)   |
| 4403B-X001  | 10-Pin socket with pressure switch for optic and thermistor sensors, black label and cap, in accordance with EN13922 and VOC |
| 4403E-X001  | 10-Pin socket for thermistor sensors with green label and cap  |
| K1-5110E-18 | 5-Wire optic overfill sensor   |
| K1-5550U-18 | 2-Wire optic overfill sensor   |
| 5032U       | Retain sensor  |



## TESTER 1397E-E003 / 1398E-E003

The 1397E and 1398E tester is a new simple handheld tester for tank trucks equipped with 5-wire overfill sensors.

The 1397E and 1398E tester give users, the possibility to do a quick diagnosis from the grounding and the overfill sensors.



### LED indicator explanation

The tester is equipped with two LEDs on the back of the plug

One white led (with the text GND)

One bi-color LED (with the text dry/wet)

The white LED informs the user over the grounding status.

LED off: Bad or no grounding

LED flashing: grounding OK

The bi-color LED indicator flashes green when the sensors are permissive.

The bi-color LED indicator flashes red when the sensors are non-permissive.

The flash pattern of the LED indicator depends upon the number of compartments; LED indicator flashes every 5-seconds Number/times of flashes indicates number of sensors A long flash of 1-second represents 5-compartments A short flash of 250 ms represent 1-compartments Example; 7-compartments is indicated by one long and two short flashes.

### Features and Benefits

- **No operating** action required
- **Led indicator** for amount of compartments
- **Separate Led indicator** for ground verification
- **Test ground** loop and ground bolt
- **Fitted** ATEX energizer battery
- **Available** for 3-J and 4-J slots
- **Extra diagnostic** information available
- **Small housing**, can be located in truck cabin
- **Auto switch off** when removed from socket

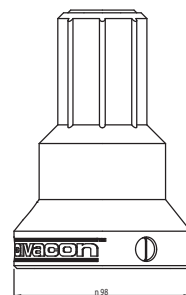
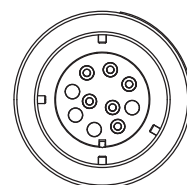
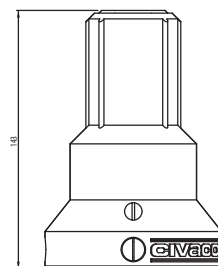
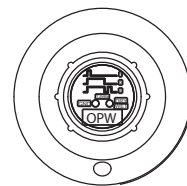
### Ordering specifications

Art. number	Description
1398E-E003	Truck tester, 4-J-slotted, black plug
1397E-E003	Truck tester, 3-J-slotted, blue plug

### Specifications

1397E-E003

1398E-E003



### Related products

Art. number	Description
2110E-L30	30 m 5-Wire straight cable conform EN13922
EL05154	Cable gland HSK-K-EX: m20x 1,5; 6-12 mm blue
EL00001	Ground bolt
3205E-XR1M	ROM onboard monitoring system, right handed, with 2W rack interface, metric
3205E-XL1M	ROM onboard monitoring system, left handed, with 2W rack interface, metric
4103E-X001	6-Pin socket for optic sensors, BASEEFA
4103PS-E001	4103E with pressure switch conform 94/63EC (VOC)
4403B-X001	10-Pin socket with pressure switch for optic and thermistor sensors, black label and cap, in accordance with EN13922 and VOC
4403E-X001	10-Pin socket for thermistor sensors with green label and cap
K1-5110E-18	5-Wire optic overfill sensor
K1-5550U-18	2-Wire optic overfill sensor
5032U	Retain sensor

## 2-Wire Optic Bottom Sensors

The CIVACON'S 2-Wire Optic Bottom Sensors are designed for compartment empty detection of liquid petroleum products. Not only are they instantly permissive and specially designed for optimal communication with our Rack Monitors (conforming to EN13922), but they are also compatible with all other brands of Rack Monitors which conforms to EN13922 standards.



### Features and Benefits

- **In accordance with:**
  - ATEX
  - API RP 1004
- **Certified** for use in zone 0
- **Intrinsically** safe signals
- Instant permissive signal (no warm up time)
- **Continuously checking** of system operation such as wiring, sockets and sensor itself
- **Temperature** range 40°C to +70°C
- **Immediate re-permit** in case of compartment 'dry' detection
- **Approvals** ATEX + IECEx & FM

### General specifications

#### Bottom Sensor

- Zone specification Zone 0
- Working Temp. -40°C to +70°C
- Signals Intrinsically safe
- Weight 320 g

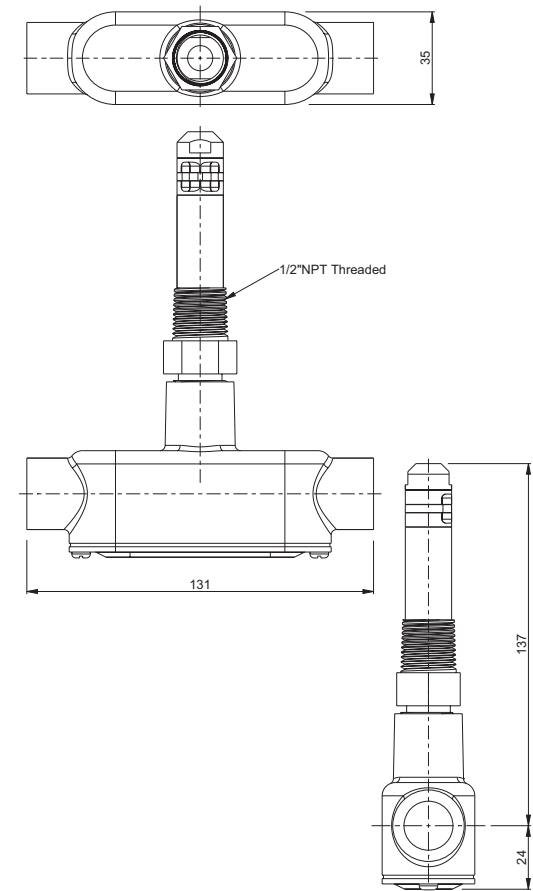
### Ordering specifications

Art. number	Description
5032U	Retain sensor

## Specifications

5032U

5002E

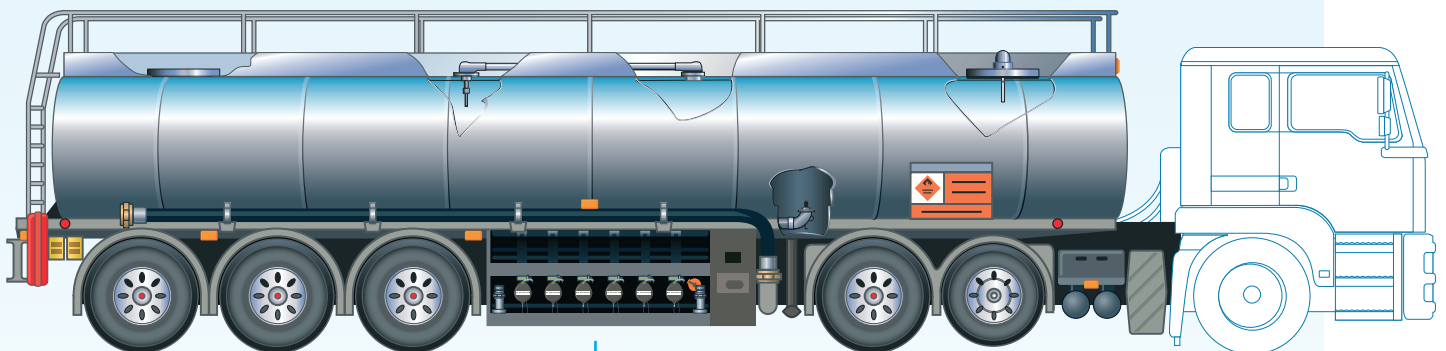


## Related products

Art. number	Description
2110E-L30	30 m 5-Wire straight cable conform EN13922
EL05154	Cable gland HSK-K-EX: m20x 1,5; 6-12 mm blue
EL00001	Ground bolt
3205E-XR1M	ROM onboard monitoring system, right handed, with 2W rack interface, metric
3205E-XL1M	ROM onboard monitoring system, left handed, with 2W rack interface, metric
1398E-E003	Truck tester, 4-J-slotted, black plug
1397E-E003	Truck tester, 3-J-slotted, blue plug
4103E-X001	6-Pin socket for optic sensors, BASEEFA
4103PS-E001	4103E with pressure switch conform 94/63EC (VOC)
4403B-X001	10-Pin socket with pressure switch for optic and thermistor sensors, black label and cap, in accordance with EN13922 and VOC
4403E-X001	10-Pin socket for thermistor sensors with green label and cap
K1-5110E-18	5-Wire optic overfill sensor
K1-5550U-18	2-Wire optic overfill sensor

4.1. OPW FTG Manifolds

36



4.1.

## OPW Manifold

The OPW FTG Single and double Manifold helps improve the quality and performance of your delivery service.



### Optional Product Return Spout

Designed to facilitate quick line changes, the product return spout is centrally located and angled to provide for easy connection. A sight glass on the spout allows the driver to see the return product flow to help facilitate accurate product changes.

### Guard Bar Assembly

An air interlock switch is activated from the system control panel to provide access to manifold connections. This feature prevents unauthorized access to fuel compartments and restricts access to the manifold/API couplers unless the PGI and Operator Interface Unit are coordinated during the offloading process to ensure that the appropriate fuel connections are made.

### Manifold Sight glass

No more guess work - Having made the compartment selection, the full width product site glass allows the driver to confirm his selection is correct.

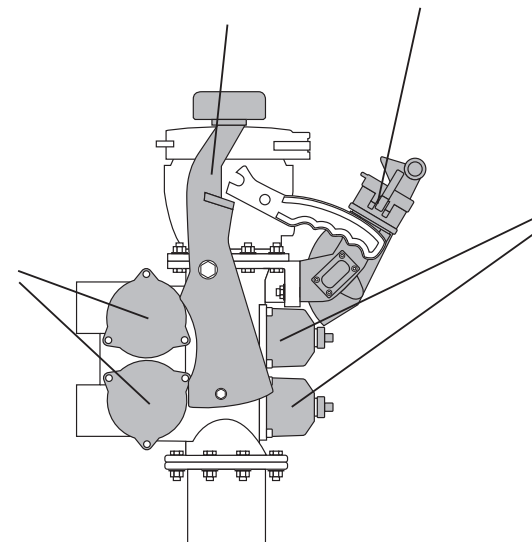


### Manifold Valve

The air activated manifold chamber is a double-acting cylinder assembly that guarantees valve opening/closing every time. Its closed loop pneumatic system keeps debris from entering the valve. The manifold chamber open/close status is clearly indicated by a "red" indicator visible through the transparent lens located on the top of each manifold valve.

### Interlocked/Independent Manifold Galleries

Two different fuel types can be dispensed from the same vehicle. By simply selecting between the two independent manifold galleries. The air activation system only allows one manifold to be opened at any time. The manifold galleries are specific to either the gasoline or the diesel PTO and pump, this means that the manifold chambers are discriminate depending on the fuel selected to ensure that cross contamination is never a problem.



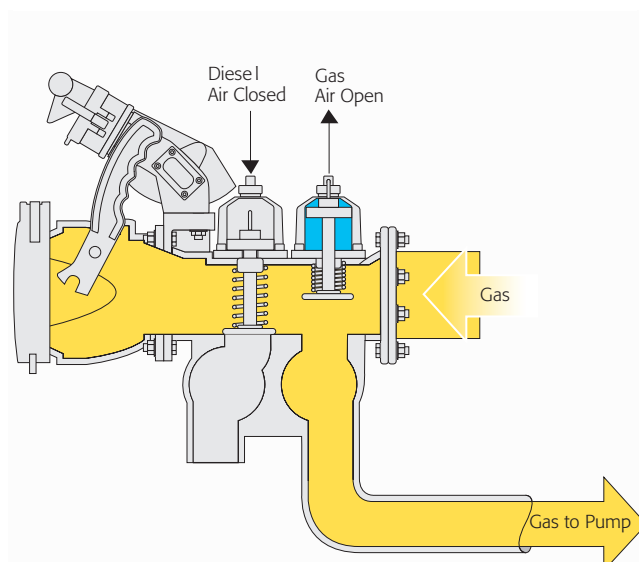
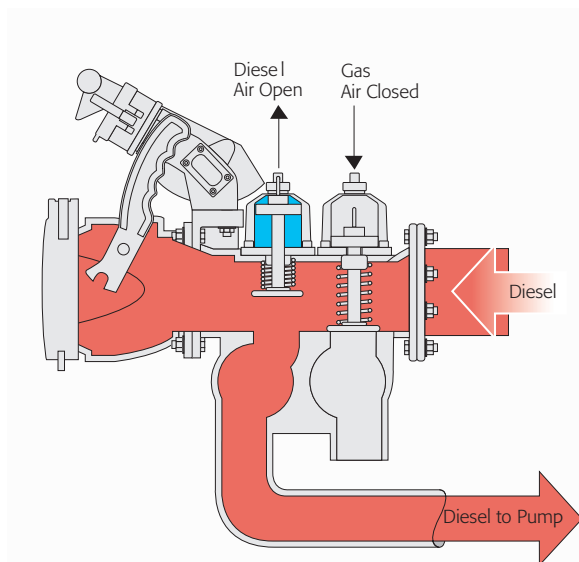
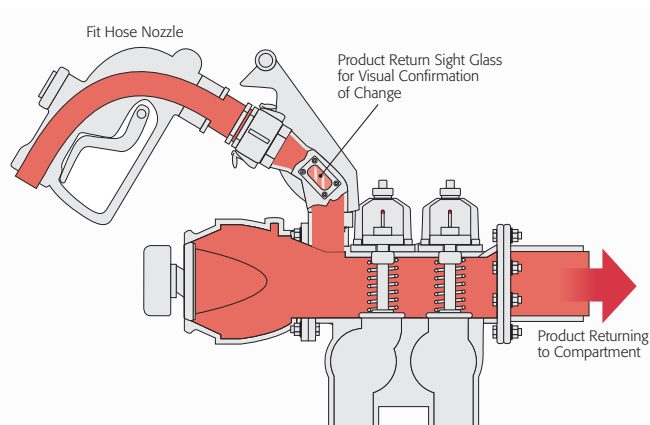
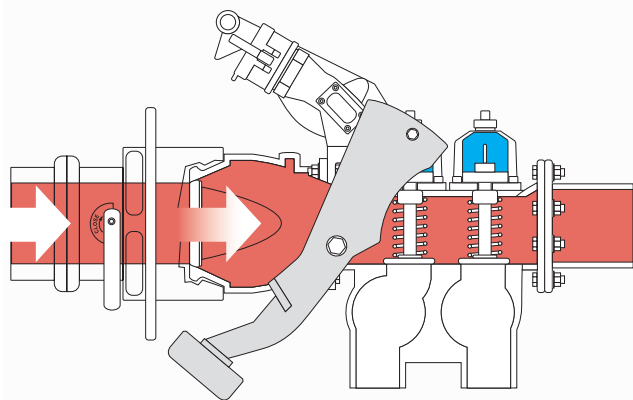




11530M-X001



Return Spout Blocking Valve



## Bottom Loading

The guard bar is released to provide access to the API coupler. Both manifold valves remain closed providing for high, unobstructed flow rates.

## Product Return

An interlock switch that receives a signal from the operator interface unit and main control unit releases the guard bar. A tight-fill nozzle is connected to the return spout to allow for the return of fuel left in the hose to the appropriate fuel compartment.

A sight glass on the spout allows the driver to see the return product flow to help facilitate accurate product changes.

## Pump Unloading – Manifold and Valve Operation

During pump unloading, the appropriate manifold and valve is selected to allow the flow of fuel into the collection tubes, through the pump and then dispensed through the meter and hose.



## EXAMPLE

MF - 151010

2010

111

MF\*-151010

\*

MFBA with API 891BA

MFBAS  
with API 891BA and TTMA sight glass

MEAS with API 891A and TTMA sight glass

MFNB with API 891NB

with API 891N and TTMA sight glass



## Notes



### ***OPW Global Operations***

- ① OPW Corporate Headquarters
- ② OPW Fuel Management Systems
- ③ OPW Retail Fueling
- ④ Civacon and OPW Engineered Systems
- ⑤ Midland Manufacturing
- ⑥ OPW Vehicle Wash Solutions
- ⑦ OPW Mexico

- ⑧ OPW Brazil
- ⑨ OPW FMS Poland
- ⑩ OPW Sweden and OPW KPS
- ⑪ OPW EMEA Headquarters and OPW Fibrelite
- ⑫ OPW FTG Europe
- ⑬ OPW India/Dover India
- ⑭ OPW Fueling Components



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