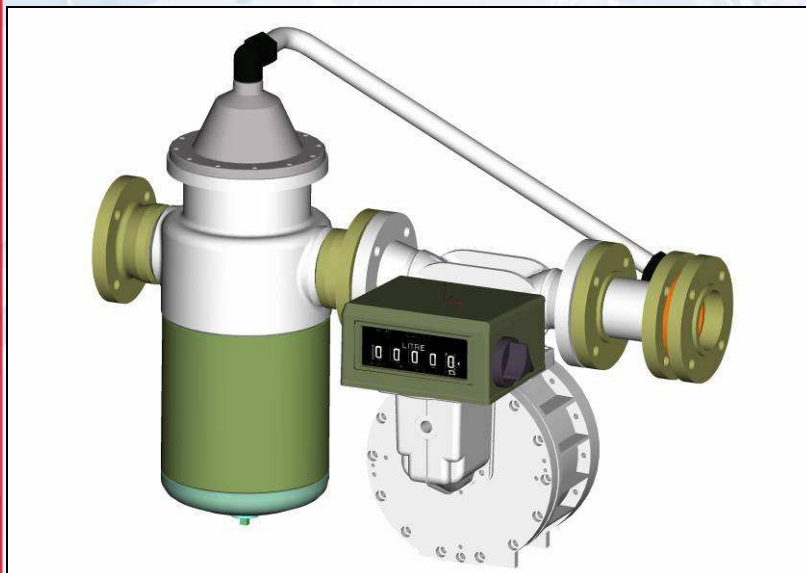
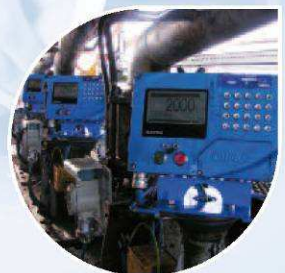


## 3" and 4" RECEPTION UNIT

### ZCE 29

### Description - Installation - Start-up operation – Maintenance

U516322-e– Revision 1 – Feb. 14<sup>th</sup>, 2014



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## 1. General points

The purpose of the SATAM ZCE 29 reception units 3" and 4" is to receive, or to receive and load, hydrocarbons (ordinary petrol, premium-grade petrol, petroleum, kerosene, diesel and heating oil), which are delivered by truck tankers and then loaded into upper ground storage tanks.

Any additional instructions for accessories are supplied separately.

*Main specifications of the 3" reception unit :*

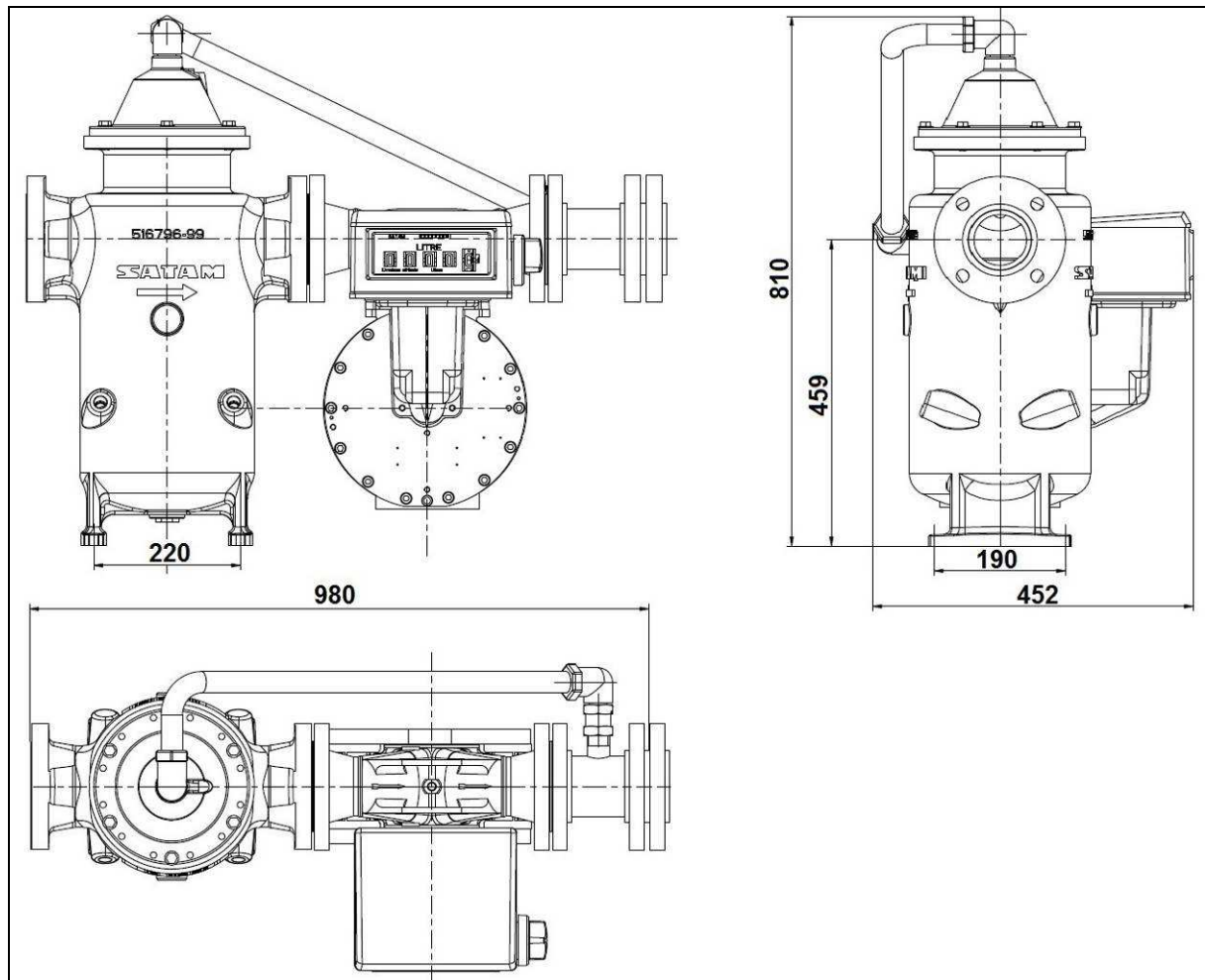
- Maximum outflow : 60 to 80 m<sup>3</sup>/h (depending on the type of pump used)
- Pressure loss of the unit : 1 – 1,2 bars
- Minimum reception or delivery : 500 litres

*Main specifications of the 4" reception unit :*

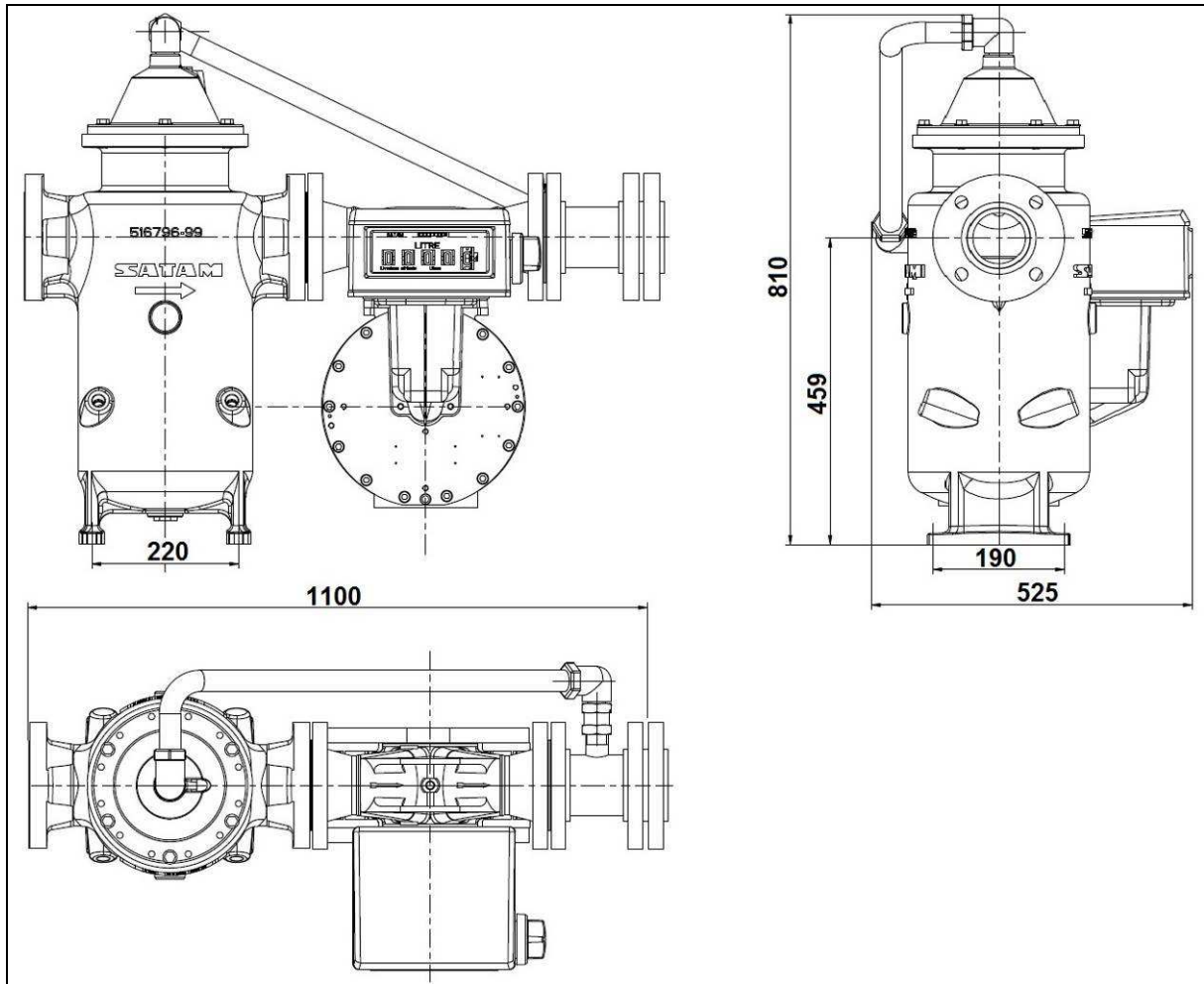
- Maximum outflow : 120 to 150 m<sup>3</sup>/h (depending on the type of pump used)
- Pressure loss of the unit : 1,5 – 1,7 bars
- Minimum reception or delivery : 500 litres

## 2. Overall dimensions

**3" ZCE 29 reception unit :**



**4" ZCE 29 reception unit :**



Note : 3" and 4" ZCE 29 reception units are assembled and packed into a special container. In case damages are detected at receipt, please mention all necessary reserves to the carrier as soon as possible and notify SATAM accordingly.

**2.1. Pump selection**

The SATAM ZCE29 reception unit is designed to be linked up to a centrifugal pump located upstream.

As an example for centrifugal pumps :

The following table gives the discharge head of the reception units, in accordance with the capacity of the pump selected :

Pump Capacity (kW)	Flow rate (m <sup>3</sup> /h)	Discharge head (m) *
5.5	60	9 *
7.5	60	14 *
11	60	24 *

\* Results achieved using a KSB Etachrom BC 50-160/X centrifugal pump

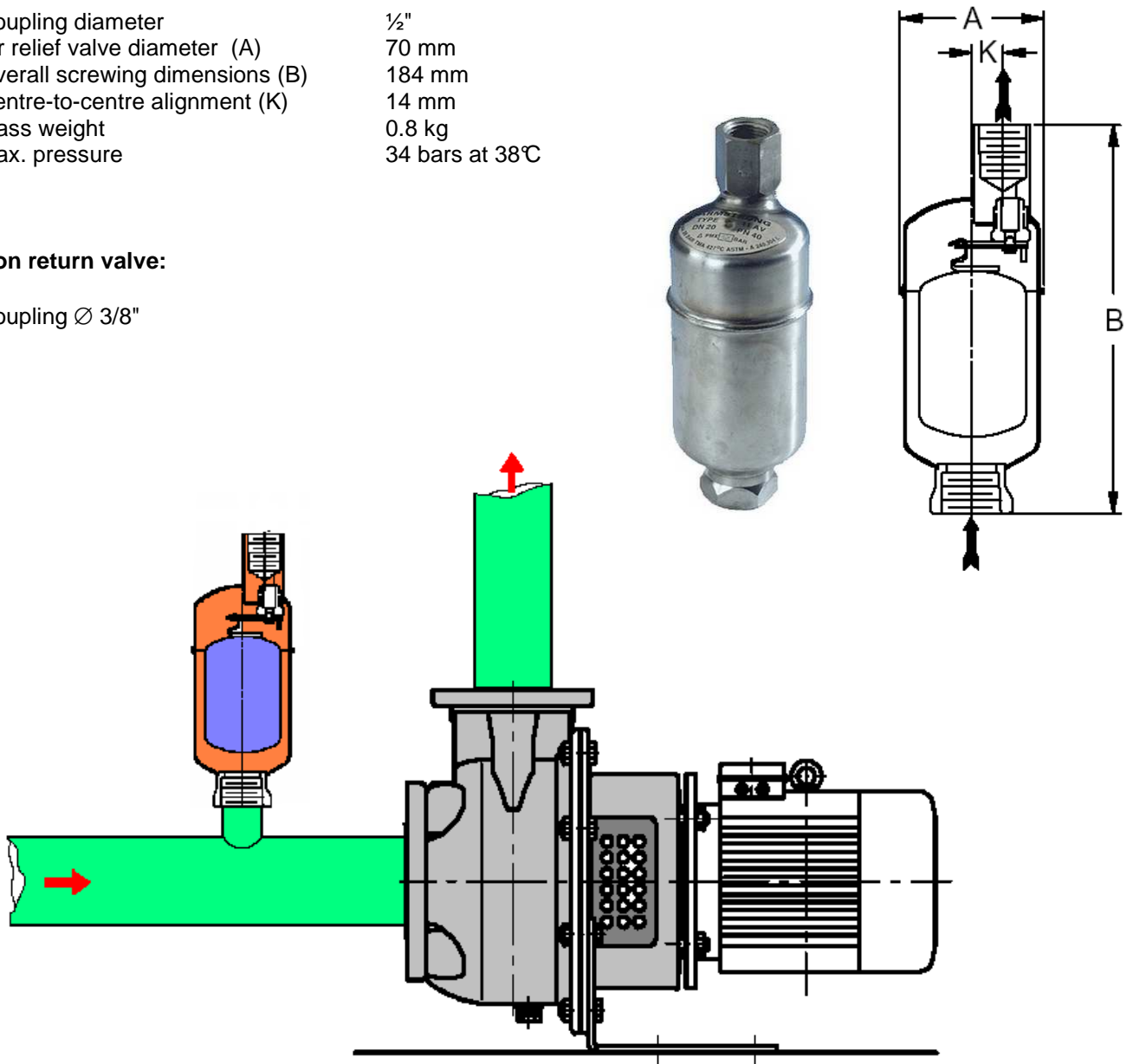
## 2.2. Air relief valve:

It is recommended to install the air relief valve supplied with the reception unit upstream from the centrifugal pump (see diagram below):

Coupling diameter	1/2"
Air relief valve diameter (A)	70 mm
Overall screwing dimensions (B)	184 mm
Centre-to-centre alignment (K)	14 mm
Mass weight	0.8 kg
Max. pressure	34 bars at 38°C

### Non return valve:

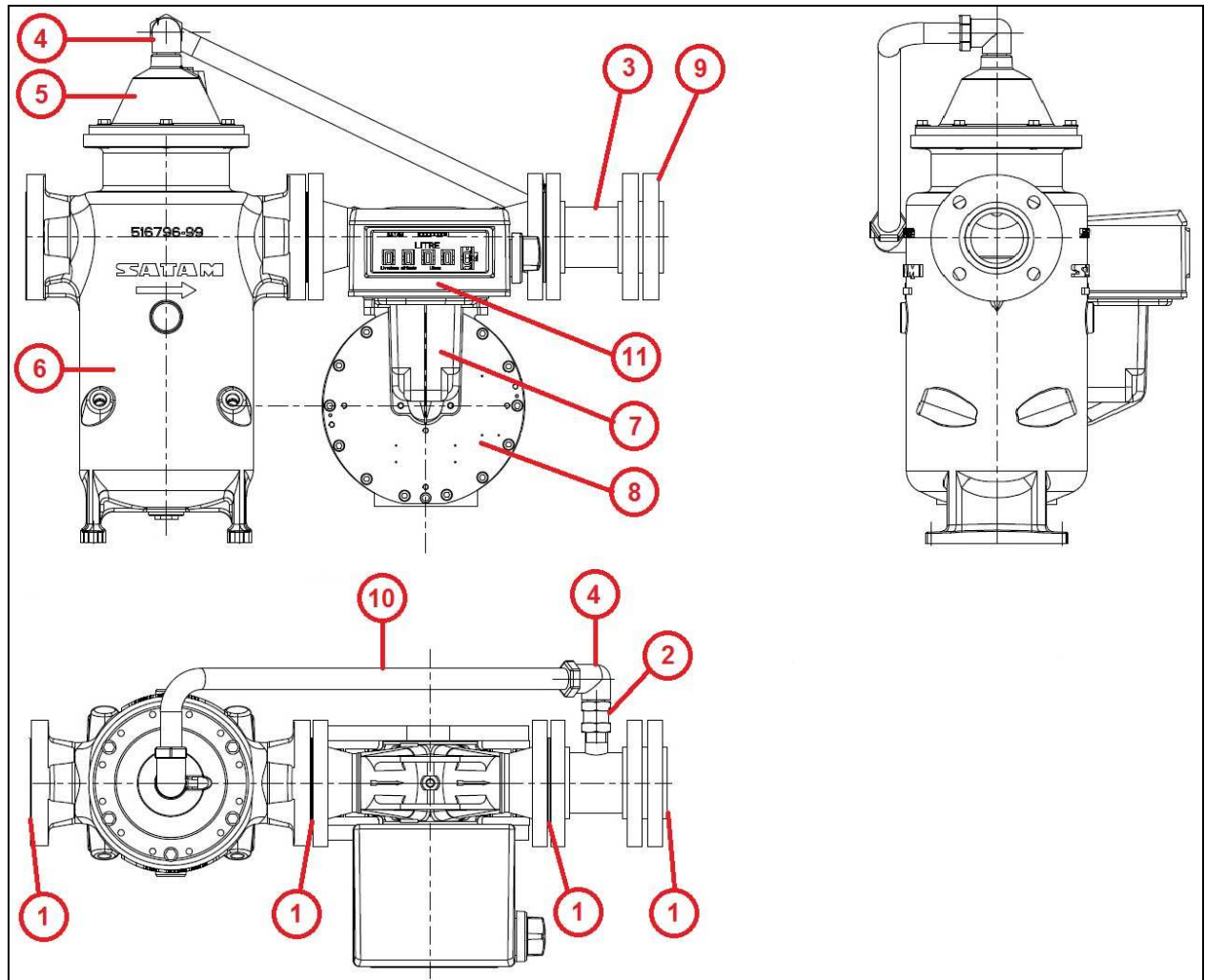
Coupling  $\varnothing$  3/8"



### 3. Composition

#### 3.1. 3" unit

The 3" unit is composed of the following parts:

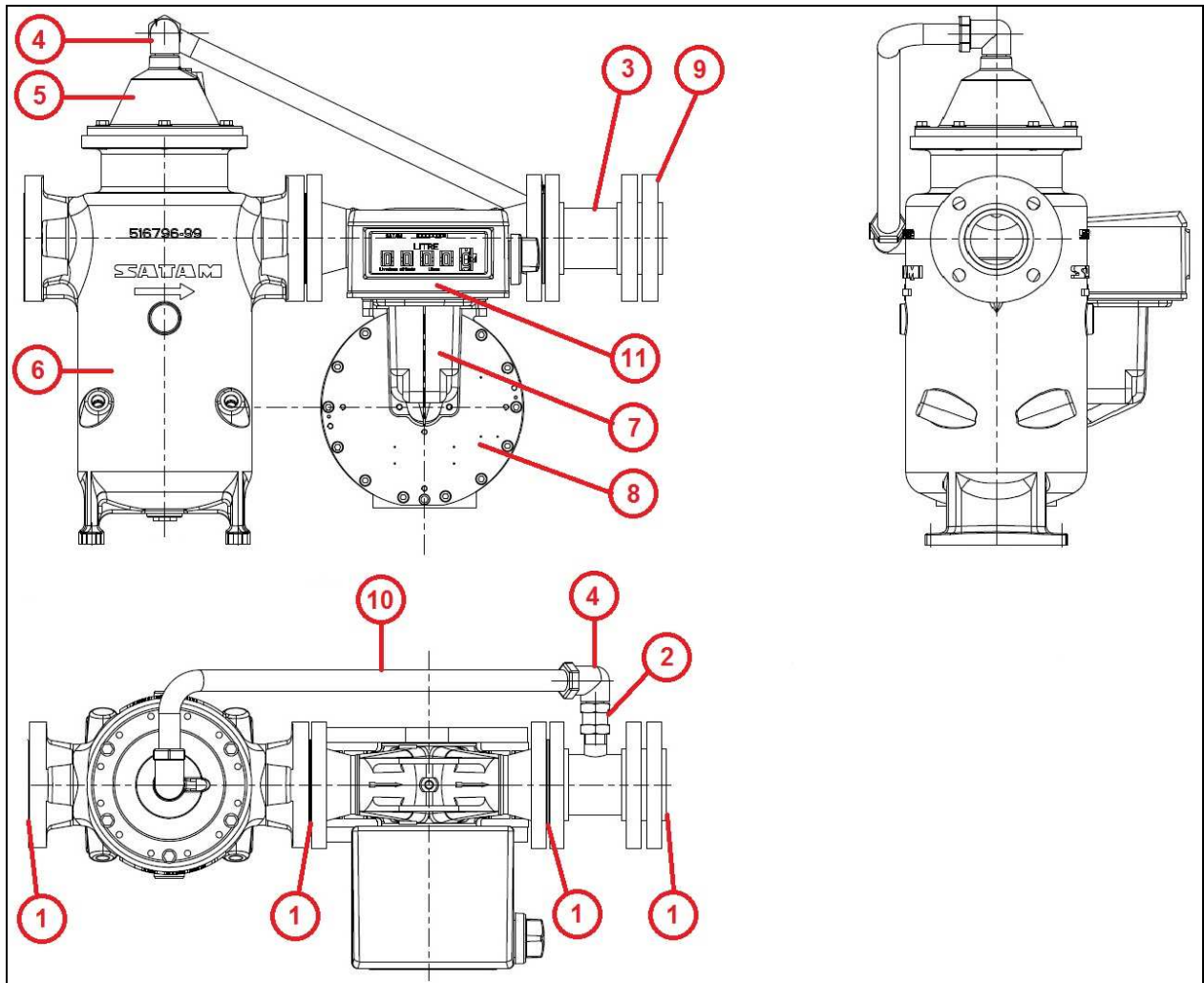


N°	Designation	Qty
1	Flat joint	4
2	1" non-return valve	1
3	3" over-sleeve	1
4	Well-curved elbow joint	2
5	Separator head	1
6	EC31 separator drain-valve	1

N°	Designation	Qty
7	AB21 adjusting device	1
8	MA21-80/80 chamber	1
9	ASA 150 "Slip-on" 3" flange (DN 80)	1
10	Draining tube	1
11	VR7887 meter	1

### 3.2. 4" unit

The 4" unit is composed of the following parts:



N°	Designation	Qty
1	Flat joint	4
2	1" non-return valve	1
3	4" over-sleeve	1
4	Well-curved elbow joint	2
5	Separator head	1
6	EC32 separator drain-valve	1

N°	Designation	Qty
7	AB21 adjusting device	1
8	MA21-80/150 chamber	1
9	ASA 150 "Slip-on" 4" flange (DN 100)	1
10	Draining tube	1
11	VR7887 meter	1

### 3.3. Operating principle

- An EC31 3" or EC 32 4" type air separator drain-valve (6) is placed upstream the meter (8). The air separator is composed of a filter and a vapour relief valve (5) for evacuating gases,
- A SATAM ZC17 80/80 or ZC17 80/150 type meter (8) on which can be fitted additional devices (e.g. ticket printer, pre-defining gauge, impulse transmitter),
- A 3" or 4" over-sleeve (3) placed downstream the meter to collect drips from the vapour relief valve (5),
- A 3" or 4" non-return valve (9)
  - 3" : Inlet: ASA 150 3" flange (DN 80)  
 Outlet: ASA 150 "Slip-on" 3" flange (DN 80)
  - 4" : Inlet: ASA 150 4" flange (DN 100)  
 Outlet: ASA 150 "Slip-on" 4" flange (DN 100)

## 4. Installation

### 4.1. Hydraulic connectors

The whole unit should be fixed onto a base.

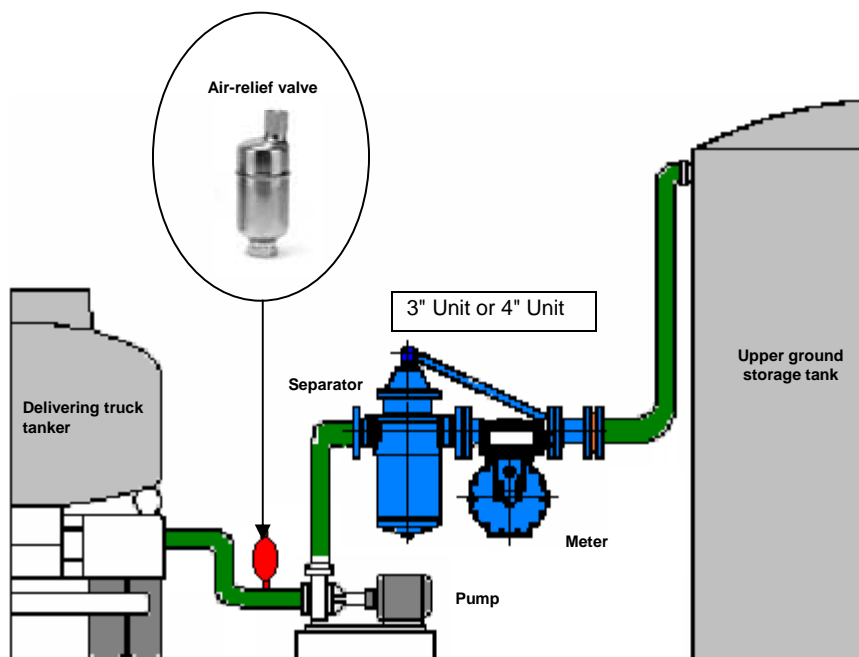
The measuring unit inlet connector should be fitted onto the air separator drain-valve filter using an ASA 150 3" flange (DN 80) or ASA 150 4" flange (DN 100).

The outlet connector should be fitted onto the non-return valve through welding an ASA 150 3" flange (DN 80) or ASA 150 4" flange (DN 100).

The storage tank should be linked up using Ø 80 mm (3") or Ø 100 mm (4") piping, whose length should be as short as possible to achieve maximum flow.

### 4.2. Earthing

To ensure a electrical continuity between the measuring unit and the installation, the "earth" connecting points must always be linked together and the vehicle itself must be earthed.





### 4.3. Upper ground storage tank

The pump, of centrifugal type with no self priming device, must always be placed upstream the measuring unit, itself equipped with an air relief valve upstream the pump.

This pump sends the liquid back towards the reception unit and then the measured liquid is pushed in the direction of the upper ground storage tank (*the reception unit outlet is equipped with a non-return valve*).

It is important to carefully choose the pump's specifications and its practical outflow in order to obtain the desired height for the backflow of liquid.

### 4.4. Notes

Whatever the type of pump, the motor should always be protected by a reverse current relay installed in the fuse box and set to maximum intensity in accordance with the motor's capacity.

It is further recommended to equip the circuit breaker with a thermal relay providing minimal power supply to prevent unexpected starting of the device after a short stop in the sector.

A Stop / Start button should be installed close to the reception unit and must be explosion proof approved.

## 5. Start-up operation

Once all the electrical and hydraulic connections have been secured, the reception unit can be put into service.

**Note:** never lose sight of the dangers of handling an explosive product and always comply with the safety measures (no-smoking area / always have a fire extinguisher available nearby / ...)

#### Reception unit:

- Earth the truck tanker.
- Reset the meter to zero by turning the handle. If the device is equipped with a ticket printer, insert a ticket with the printed side face down, then turn the handle until reaching the lock-stop and reset the meter to zero.
- Connect the flexible hosing between the reception unit and the truck tanker. The flexible hosing shall be the shortest possible within the (3") DN 80 or (4") DN 100 minimum range.
- Press the pump's "start" button to set into motion.
- Open the feed valve on the vehicle.

## 6. Maintenance

- Filter basket verification (at least once a month)
  - No particular tools are required to dismantle the filter basket.
  - The filter basket should be checked against an accumulation of particles blocking up the system.
  - This should be carried out at least once a month under normal conditions of use.
  
- Register head
  - Please refer to the user manual, which provides operating and maintenance instructions.
  
- Metrological control of the measuring chamber
  - Metrological verification has to be done at commissioning,
  - An annual metrological verification is required.

If during gauging, the measuring chamber proves to go beyond the limits, it can be readjusted using the AB21 continuous control system.

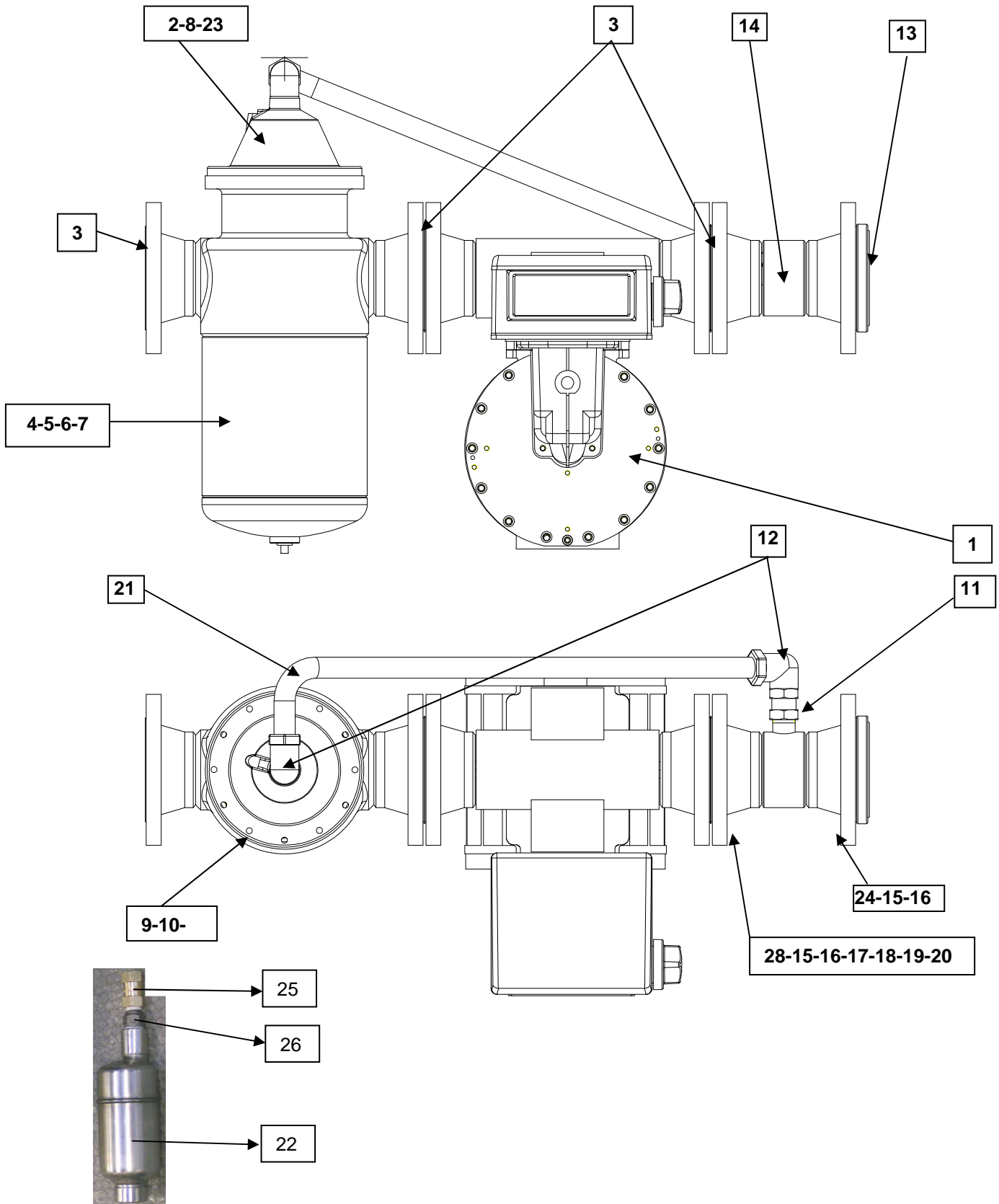
### **IMPORTANT NOTE:**

The metrological control on site is not the responsibility of the manufacturer.

The installer must imperatively have a gauge with a minimum capacity of 1000 liters to perform metrological control during the commissioning.

It is not recommended to clean the metering system using a high pressure water jet, which can damage the mechanical indicator.

## 7. Spare parts list



N°	REF	DESIGNATION	Qty
1		ZC 17 80/80 Measuring system ZC 17 80/150 Measuring system	1
2	27486	O'RING GASKET	1
3	353606	GASKET	2
4	363793	O'RING GASKET	1
5	436967 436968	EC 31 SEPARATOR DRAINE VALVE EC 32 SEPARATOR DRAINE VALVE	1
6	438481	FILTER BASKET 450 microns	1
7	995903	PLUG 1/2"	1
8	510745	SEPARATOR HEAD	1
9	21097	SCREW	6
10	903437-001	WASHER	6
11	438941	NO RETURN VALVE 1"	1
12	501035	WELL-CURVED ELBOW JOINT	2
13	437305	NO RETURN VALVE	1
14	515559-10	OVER-SLEEVE	1
15	20524	WASHER	16
16	20440	NUT	16
17	357999	SEALING SCREW	2
18	234858	SEAL HOUSING	2
19	26857	SREW	2
20	903177-002	LEAD SEAL	2
21	516203	DRAINING TUBE	1
22	516230	AIR-RELIEF VALVE	1
23	516297	DEFLECTOR	1
24	21978	SREW	8
25	515923	NO RETURN VALVE 3/8"	1
26	995533	NIPPLE	1
27	20411	NUT	6
28	21947	SCREW	16