

VARIBOX®



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Safety and liability

Important safety instructions

Read this user guide carefully to learn about liability and the usage of the VARIBOX FC.

When setting up and using your VARIBOX FC, remember the following:

- Read all the instructions carefully before you use the VARIBOX FC.
- Keep these instructions at hand for reference by you and others.
- Follow all instructions and warnings regarding your VARIBOX FC.
- Maintenance on the VARIBOX FC should only be done in line with UN ADR regulations
- Use only original spare parts for the VARIBOX FC

WARNING!

Service and maintenance on the VARIBOX FC must always be done in line with UN ADR regulations

Liability

RPC Promens has developed the VARIBOX FC with the utmost care. RPC Promens shall not be liable for any incidental or consequential damages or other damages including but not limited to, loss of profits, loss of revenue, loss of use of the product or any associated equipment, downtime and purchaser's time or for breach of any express or implied warranty, breach of contract, negligence, strict liability or any other legal theory related to this product.

Introduction

Congratulations on purchasing your VARIBOX FC

The VARIBOX FC is a unique IBC developed for safe packing and transport of dangerous materials. It has a capacity of 1,000 litres and has been tested extensively on durability and intensive usage. The VARIBOX FC features double containment: The inner bottle is surrounded by a second containment box.

The pallet has three runners for a smooth transport on roller conveyors. The rounded pallet runners are designed to withstand the impact imposed by hand pallet trucks.

The ergonomic positions of the fill opening and optional extractor tube improve safe handling throughout the supply chain.

Multiple label fields are available for your obligatory product information on all sides of the VARIBOX FC. These label fields are recessed to protect your product labels and keep them readable for your customer.

Product description

Rugged and tough – the VARIBOX FC takes the daily beatings. Benefit from many decades of knowledge and proven reliability in containers. The double layer cover has built-in reinforcement and protects the container. The VARIBOX FC pallet and outer box are built to last for 10 years.

The automatic venting avoids errors by your customers when discharging your product.

A pressure release system is available for products that build up pressure.

Extractor tubes with leak free quick connectors for top discharge are available as an option.

All main parts of the VARIBOX FC are made of Polyethylene and are made by the rotational moulding process; this production process ensures a tension free product with high mechanical impact strength.

Cleaning

Before putting the VARIBOX FC into use, make sure the VARIBOX FC will be cleaned/disinfected according your company standard. See chapter “Cleaning the VARIBOX FC” for additional recommendations.

Restrictions

Although the product has many advantages, some restrictions must be taken into account.

Important is the cleaning temperature, it may not exceed 60°C to prevent the VARIBOX FC from deformation.

RPC Promens and the environment

At RPC Promens, we recognize our responsibility to minimize the environmental impacts of our operations and products. Visit our website for more information.

Your VARIBOX FC and its components

The VARIBOX FC includes the following components

- 800 or 1,000 litre container with a high chemical resistance and with a sloped bottom and top for optimal drainage and cleaning
- Outer box, fully closed
- Pallet that can be replaced when damaged
- 150 mm screw lid with EPDM or FPM gaskets
- Vacuum vent for equalizing pressure during emptying
- Membrane filter for de-aeration during pressure build-up
- Steel stacking tubes for extra rigidity when supporting a stacked load
- Marking with UN ADR information
- Marking with DIBt information
- Optional: different types of extractor tubes
- Optional: empty level and/or full level sensors

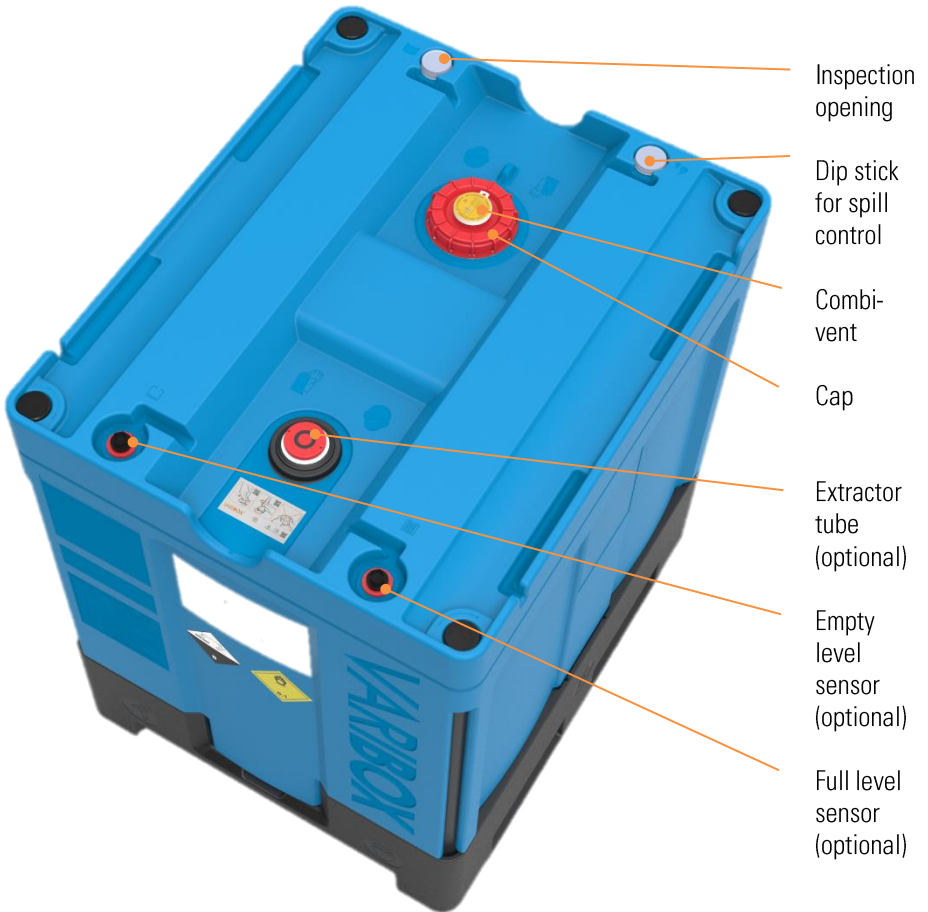
The VARIBOX FC is UN approved

- The UN certification number of the VARIBOX FC is:
- UN 31HH1/Y/**-- /NL/TCPI- PROMENS3-140531/3750/2028
- Packaging groups : 2 and 3
- Sea transport : According IMDG specification
- Road transport : According ADR specification
- Railway transport : According RID specification

The VARIBOX FC is DIBt approved

- DIBt certification number: Allgemeine bauaufsichtliche Zulassung (abZ) Z-40.21-534

Your VARIBOX FC and its connections



Product handling

Filling the VARIBOX FC

Use the 150 mm opening to fill the VARIBOX FC. Make sure the optional extractor tube is vented during filling: open the extractor tube by connecting it. Make sure that potentially dangerous gases are sucked away.

Closing the VARIBOX FC

Verify the correct placement of the vacuum vent. Inspect the membrane filter for de-aeration; this should be dry and clean to prevent pressure build-up.

CAUTION:

Membrane filters for de-aeration are developed for one-time use. The filters may block when contaminated or when wet and will lose their capacity to prevent pressure build-up. Replace the membrane filter after use to secure venting.

Use the original 150 mm screw lid with Combi-vent to close the VARIBOX FC. Close the lid with a torque of 60 Nm. The Combi-vent is closed with a torque of 15 Nm. Put a cap on the Combi-vent.

CAUTION:

Always put a cap on the Combi-vent to prevent blocking or entering of (rain-) water.

The optional CDS extractor tube and CDS insert are closed with a torque of 25 Nm.

Sealing

The 150 mm screw lid can be sealed. A tamper evidence cable can be fed through holes in the lid and the hole in the top cover of the VARIBOX FC. The Combi-vent must be sealed by using a common cap. For example: Tri-Sure SambaCap TSF-505040. The extractor tube can be sealed with a corresponding cap; consult the extractor tube supplier for advice.



Sealing point

Combi-vent: seal with cap

Screw lid: seal with the sealing point using a tamper evidence cable

Transport of the VARIBOX FC

Follow local, national and international regulations for securing the VARIBOX FC for transport. During transport, the UN marking is visible at the front of the outer container. The UN marking of the inner container can be checked through the inspection opening at the top.

Product handling

Handling the VARIBOX FC



When stacking, put the VARIBOX on top of another VARIBOX. Do not shove the VARIBOX onto it when stacking.

Using the full containment outer box

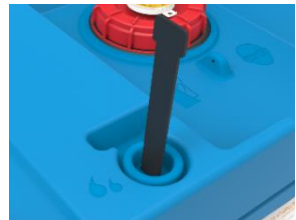
This VARIBOX FC (full containment) comes with a fully closed outer box. The volume of this outer box is the volume of the inner bottle +10%, in line with typical regulations.

CAUTION:

It's prohibited to add a connection or hole to the outer box.

Use of outer box:

- Users of the VARIBOX FC need to be trained before using the product
- The product needs to be placed on an even and stable floor
- When the product is placed outside, it needs to be protected from wind
- Be sure the product is protected from collisions with moving vehicles
- Placement has to be in line with fire regulations
- Check the spill container weekly on leakage, by checking the dipstick in the top cover (see picture)
- When detecting fluid between inner bottle and outer box, remove fluid immediately
- It is not allowed to apply forces on the outside of the box
- Do not use the product on places where earthquakes may occur
- Maximum application temperature: 30°C (short term 40°C)
- Products which are damaged so they cannot function any longer cannot be used
- Repairing the product can only be done by authorized personnel
- The outer box needs to be inspected and cleaned (if necessary) on annual basis; this inspection needs to be documented
- All legal requirements need to be met on local, national and international level



Product handling

Emptying using a CDS extractor tube

The VARIBOX FC is available with CDS extractor tubes in an EPDM and Aflas version. The EPDM version has a stainless-steel spring. The Aflas version has a Hastelloy spring. Tube and housing are made of Polyethylene. The standard CDS extractor tube has an inner tube diameter of 24 mm. The capacity of this extractor tube is 20 litre/minute. After emptying about 0,1 litre remains in the VARIBOX FC. In the CDS extractor tube itself about 0,4 litre will remain. These indications are based on water and will vary upon condition and type of chemical. The CDS extractor tube may be protected by a Tamper-evident dust cap that needs to be removed before connecting. Visit the website for videos on connecting and disconnecting.



Emptying using a Camlock extractor tube

The VARIBOX FC is available with Camlock extractor tubes in an EPDM and FPM version. The EPDM version has a 2" female outlet. The FPM version has a 2" male outlet. Tube and housing are made of Polyethylene. The extractor tube has an inner tube diameter of 23 mm. The connector has an inner diameter of 15 mm. The capacity of this extractor tube is 20 litre/minute. After emptying about 0,1 litre remains in the VARIBOX FC. In the extractor tube itself about 0,4 litre will remain. These indications are based on water and will vary upon condition and type of chemical. The camlock cap may be sealed to the outlet to get tamper-evidence. Visit the website for videos on connecting and disconnecting.



Emptying using a Quick Connector extractor tube

The VARIBOX FC is available with Quick Connector extractor tubes in an EPDM and FPM version and quick connectors for spill-free connecting to a pump as well as for connecting an optional return line. Tube and housing are made of Polyethylene, connectors are made of Polypropylene. The extractor tube has an inner tube diameter of 8 mm and is equipped with a non-return valve at the bottom. The capacity of this extractor tube is 5 litre/minute. After emptying about 0,1 litre remains in the VARIBOX FC. In the extractor tube itself about 0,05 litre will remain. These indications are based on water and will vary upon condition and type of chemical. Visit the website for videos on connecting and disconnecting.



CAUTION:

The non-return valve blocks the return stream but cannot guarantee a full sealing.

Product handling

Emptying using other extractor tubes

Next to the CDS extractor tubes, the VARIBOX FC is also approved for the extractor tubes:

- Quick Connect QC, from [AS Strömungstechnik](#)
- Drum valve DV, from [Micromatic](#)
- Composite Drum valve CDV, from [Micromatic](#)
- Drumquick Pro, from [Colder](#)

Full level sensor (right side)

The VARIBOX FC is available with level sensors, which indicate the VARIBOX FC is almost full or is almost empty. The level sensors are two-core cable and fail-safe. The connector of the full sensor (option) has a 3-pin plug. The circuit of the full sensor is opened when the VARIBOX FC is almost full, or the cable of the switch is damaged. The correct socket for this plug is: Bulgin standard Buccaneer PX0731/S (screw termination). The sockets are available from for example:

[Distrelec.com](#), [Conrad.com](#), [Farnell.com](#), [RS-components.com](#)



Low level sensor (left side)



The connector of the low level sensor (option) has a 2-pin plug. The circuit of the low level sensor is opened when the level in the VARIBOX FC is low: at approximately 50 litres of remaining content. The sensor opens also when the cable of the switch is damaged. The correct socket for this plug is: Bulgin standard Buccaneer PX0736/S (screw termination). The sockets are available from for example:

[Distrelec.com](#), [Conrad.com](#), [Farnell.com](#), [RS-components.com](#)

Empty level sensor (left side)



The connector of the empty sensor (option) has a 2-pin plug. The circuit of the empty sensor is opened when the VARIBOX FC is almost empty: at approximately 1 litre of remaining content. The sensor opens also when the cable of the switch is damaged. The correct socket for this plug is: Bulgin standard Buccaneer PX0736/S (screw termination). The sockets are available from for example:

[Distrelec.com](#), [Conrad.com](#), [Farnell.com](#), [RS-components.com](#)

Maintenance

The VARIBOX FC is a UN ADR Certified product. Because of this, repair and maintenance on the product must be executed in line with UN ADR regulations. Routine maintenance means operations such as:

- Cleaning
- Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, confirming to our original specifications, provided that the leak tightness of the IBC is verified
- Restoration of structural equipment not directly performing a dangerous goods containment function to conform to the design provided that the containment function of the IBC is not affected.

(De-) assembling the VARIBOX FC

This is a limited de-assembly instruction. Every repair or maintenance that involves work on the inner container (including extractor tube or vent) may be carried out by authorised personnel only and is not in this instruction.

CAUTION:

Make sure the VARIBOX FC is empty and has been cleaned before de-assembling.

Stacking bars



To replace the stacking bars, remove the four flange caps in the corners on top of the cover.



Use an Allen key (size 12mm) to unscrew the stacking bar 90 degrees in counter-clockwise direction.



Pull the four stacking corner upwards out of the cover.

To re-assemble the stacking bars, follow the same procedure in reverse order.

Maintenance

Cover



To remove the cover of the VARIBOX FC, start by removing the stacking bars (See Stacking bars).
Unscrew the lid from the tank.



Remove the seal ring around the filling opening.



Remove the seal ring around the extractor tube.
Note for Camlock type extractor tubes: unscrew the extractor tube and remove.



Remove the dipstick



Lift the top cover from the outer body.
Disconnect the electrical plug(s) (optional).



Remove the 4 top connectors (metal strips) from the outer body.

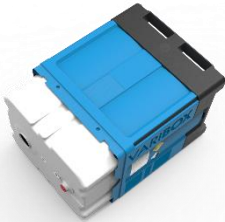
Maintenance



Lift the 8 wall support bars out of the outer body.

CAUTION:

Wall support bars are no longer held in place when lifting the cover and can come out.



Remove the inner receptacle. You could turn the Varibox FC on its side when lifting tools are not available.

To re-assemble the cover, follow the same procedure in reverse order.

Pallet

To replace the pallet, first make sure the container is empty. The pallet is a hollow product; rain- or cleaning water may have entered the core of the pallet and may drip out when tilting. Start with removing the stacking bars (See Stacking bars) and the cover (See Cover)



Lift the container from the pallet. You could turn the Varibox FC on its side when lifting tools are not available.

To re-assemble the pallet, follow the same procedure in reverse order.

Cleaning the VARIBOX FC

The VARIBOX FC can be cleaned inside and outside.

Cleaning inside



Cleaning the inside can be done by means of a high-pressure water jet with a maximum temperature of 60°C. The tank can be cleaned internally with a special nozzle. Nozzle type, temperature, pressure, volume and other conditions should be adapted to the specific situation. Picture: examples of high pressure water jet nozzles.

CAUTION:

Make sure not to fill the VARIBOX with hot water (or any other hot liquid).
Continuously pump out the water when cleaning with hot water.

Cleaning outside



Do not use high pressure on the overlap between top cover and outer container.
Cleaning angle min. +45° from horizontal

Professional cleaning companies can provide this cleaning service, like:

Alpak bvba
Nieuwlandlaan 141
B - 3200 Aarschot
Belgium
Tel. +32 (0) 16 50 20 05
info@alpak.be

Sens Interclean BV
Onyxstraat 12
7554 TP Hengelo
The Netherlands
Tel. +31 (0) 74 2424381
info@sensinterclean.nl

Periodic inspection and test

The VARIBOX FC is a UN / ADR Certified product. Inspections and tests of the product have to be executed periodically in line with UN / ADR regulations.

Inspection unit

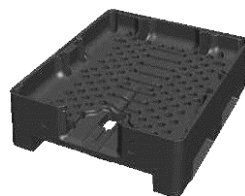
An inspection unit carrying out inspections and tests must be authorised by the competent authority, in line with UN / ADR regulations. The inspection unit may be from the company of the owner of the VARIBOX FC or from a company offering this service.

The national competent authorities can inform which companies can offer this service. This information is typically available on the website of the national competent authority. A list of these competent authorities is included in the ADR regulations.

Service parts

Replacement parts VARIBOX FC

Part description	Pallet
Part number	EV2231ABA401



Service parts

Part description	Wall support bar with end cap, Galvanized steel / Polyethylene
Part number	5700406



Part description	Stacking tube with end cap, Galvanized steel / Polyethylene
Part number	5700402



Part description	Connection strip long, Galvanized steel
Part number	5700405



Part description	Connection strip short, Galvanized steel
Part number	5700404



Part description	Tube cover stacking tube, Polyethylene
Part number	7120088



Part description	Flange cover stacking tube. Polyethylene
Part number	5840446



Part description	Cover inspection openings, Polyethylene
Part number	5820219



Part description	Seal ring filling opening, EPDM
Part number	6080057



Part description	Seal ring extractor tube, EPDM
Part number	6000245



Service parts

Extractor tubes

Part description	Extractor tube CDS1 EPDM Stainless steel D24
Part number	TriSure CLCD00307CLR0001 (5880400)
Part description	Extractor tube CDS1 Aflas Hastelloy D24
Part number	TriSure CLCD00308CLR0002 (5880401)
Part description	Extractor tube Camlock 2" female EPDM D15
Part number	5880414
Part description	Extractor tube Camlock 2" male FPM D15
Part number	5880415
Part description	Extractor tube Quick Connector EPDM D8
Part number	5880434
Part description	Extractor tube Quick Connector FPM D8
Part number	5880435
Part description	Extractor tube Quick Connect DT-series BCS 56x4, PP tube, PE seal, l=1100, flexible bellows
Part number	AS Strömungstechnik DT-56PP-XXX-1100-SF (5880386)
Part description	Extractor tube RSV Container valve (DV) BCS 56x4, HDPE down tube, flexible bellows, EPDM
Part number	IPL (Micromatic) 743-046 + 6790/1500
Part description	Extractor tube RSV Container valve (DV) BCS 56x4, HDPE down tube, flexible bellows, FPM
Part number	IPL (Micromatic) 743-047 + 6790/1500
Part description	Extractor tube Drumquick Pro BCS 56x4, HDPE tube, flexible bellows, EPDM
Part number	Colder DQPRO2056X4 + DQPRODT1100
Part description	Extractor tube Drumquick Pro BCS 56x4, HDPE tube, flexible bellows, FPM
Part number	Colder DQPRO2056X4202 + DQPRODT1100



Service parts

Caps

Part description	Cap complete set EPDM
Part number	7300203
Part description	Cap complete set FPM
Part number	7300204
Part description	TriSure SambaCap TSF-505040 for cap
Part number	5840456
Part description	CDS1 Tamper-evident dust cap EA10042
Part number	TriSure CLCS00115CLR0001



VARIBOX FC Tools

Part description	Wrench for extractor tube
Part number	For example: Tri-sure 101801299 Standard CDS 1 Pin Spanner - Option 3 (9.42 mm Square Adapter) 12-14 Nm
Part description	Key for 150mm top lid
Part number	For example: R. Täsler (D) RT00211-02600
Part description	Wrench for the vent housing
Part number	For example: Manutan (NL) 36030503



Technical data

VARIBOX FC

Material inner container	Polyethylene, recyclable
Material outer container	Polyethylene, with steel reinforcement, recyclable
Material cover	Polyethylene, recyclable
Material pallet	Recycled polyethylene, recyclable
Gross capacity	1025 l
Nominal capacity	1010 l
Width	1000 mm
Length	1200 mm
Height	1325 mm
Nett height (stacking)	1310 mm
Inlet height	1290 mm
Stacking height	2635 mm
Stacking load	2080 kg
Weight	122 kg
Transport quantity	52 per truck
DIBt approval number	Allgemeine bauaufsichtliche Zulassung (abZ) Z-40.21-534
UN certification number	UN 31HH1/Y/**--/NL/TCPI-PROMENS3-140531/3750/2028
Standard liquid approvals	Maximum density / hydraulic test pressure
Water	1900 kg/m ³ / 110 kPa
Wetting solution	1600 kg/m ³ / 110 kPa
n-Butyl acetate	1600 kg/m ³ / 110 kPa
White spirit	1600 kg/m ³ / 110 kPa
Acetic acid	1600 kg/m ³ / 110 kPa
Nitric acid 55%	1600 kg/m ³ / 110 kPa
Nitric acid 62% (max. 2 years)	1400 kg/m ³ / 110 kPa
Sopuroxid 15* (contains 15 % Peracetic acid)	1200 kg/m ³ / 100 kPa
Vacuum relief vent capacity	120 l/min
Overpressure vent capacity	60 l/h at ΔP 8 kPa
Optional level sensors	max. 48 V max. 0,5 A max. 10 W max. 10 VA

* Tradename of SOPURA, Rue de Trazegnies 199, 6180 Courcelles, Belgium

Learning More, Service and Support

More information about using the VARIBOX FC

For the latest information about the VARIBOX FC and for service and support, please visit www.varibox-ibc.com

Getting in touch with RPC Promens

For warranty related questions or for more information about this or more RPC Promens products, feel free to contact us

RPC Promens Deventer

Customer Service

Tel.: +31 (0)570 660706

deventer@promens.com

Obtaining warranty service

If the product appears to be damaged or does not function properly, please follow the advice in this booklet and the online resources.

If the product still does not function, contact RPC Promens Customer Service for instructions how to obtain warranty service.

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