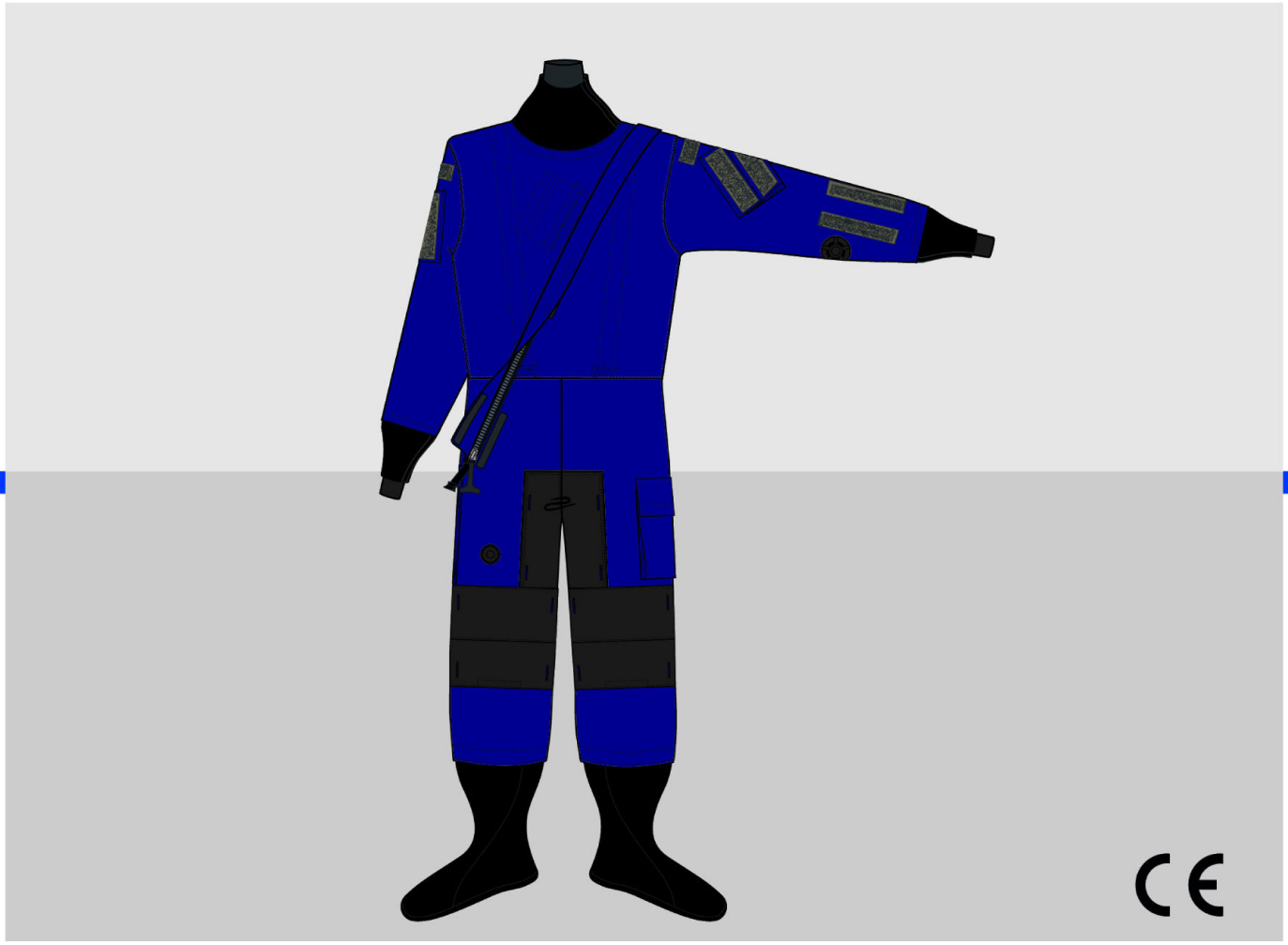
SECUMAR®

PROFESSIONAL

User instructions

CONTRA 170

Drysuit



Contents

Change history

Revision	Changes	Date, Name
01	Basic edition	10/01/2023, SBI
01.1	Supplement application note	08/03/2023, SBI

1 For your safety

Observe instructions for use

Any activity on the suit requires full knowledge and the full observance of these instructions for use. The suit is intended for the described use only.

Servicing and repair

Regular inspections and servicing of the suit must be carried out by experts. Repairs to the suit must only be carried out by experts. Only use original SECUMAR parts for any repair work.

Safety symbols used in these instructions for use

These instructions for use also describe various warnings describing risks and hazards which may occur when the suit is used. These warnings include "signal words" which indicate the hazard degree to be expected.

These signal words and the relevant hazards are as follows:

⚠ DANGER

Death or serious physical injury may result from potentially hazardous situations if the relevant precautions are not taken.

⚠ CAUTION

Physical injury or material damage may result from potentially hazardous situations if the relevant precautions are not taken. Can also be used as a warning against careless handling/use.

NOTE

Additional information on how to use the suit

2 Warnings

DANGER

This suit may only be used by a person specifically trained in its use or supervised by an industry-approved diving instructor.

DANGER

Improper use of the drysuit can expose you to thermal risks. Rapid overheating or cooling of the body can lead to heat stroke, hypothermia and death. Note the loss of thermal insulation in deep water.

DANGER

Improper use of the drysuit may result in loss of buoyancy control, i.e., uncontrolled ascents and descents that may result in serious injury or death.

DANGER

There is a risk that the contents of the suit's compressed air bottle will not be sufficient for the entire dive. The filling level must be checked in advance and a redundant compressed air bottle carried if necessary.

CAUTION

There is a risk that the suit’s buoyancy will change depending on the depth of the dive.

CAUTION

A drysuit is a tool to protect you from the cold of the water and therefore to make diving easier. However, it is not a substitute for a buoyancy control jacket and proper diving and swimming skills.

CAUTION

There is a risk that materials in the suit may cause allergic reactions in individuals.

CAUTION

Use air to inflate the suit. All other gas mixtures, such as argon and oxygen-enriched air, require special training.

CAUTION

The maximum depth of use depends on the user's level of training.

⚠ CAUTION

Taking water temperature, exposure to high ambient temperature and personal metabolism into consideration, work performance differs depending on the different tolerances of different divers.

⚠ CAUTION

Diving in environments with chemical, biological, or nuclear contamination is extremely risky and should not be done without specialised equipment and training. The SECUMAR drysuit you have purchased is not designed for use in polluted or unnatural environments. In cases such as these, the warranty claim is void.

⚠ CAUTION

This user's guide is NOT a substitute for a drysuit diving course by a qualified instructor. DO NOT USE a drysuit until you have learned practical drysuit diving skills, including emergency skills, under the supervision of an industry-approved instructor.

3 General information

3.1 Technical details

Type	CONTRA 170
Part number	17490
Model type	725
Weight (excluding accessories)	Approx. 2.9 kg
Limits of use water temperature	+2 °C to +30 °C see also 3.4 "Area of use"
Standards	DIN EN 14225-2

Tab. 1 Technical details

3.2 Product description

The SECUMAR CONTRA 170 is a two-part drysuit pursuant to DIN EN ISO 14225-2.

The SECUMAR CONTRA 170 consists of a suit torso with attached dual-layer neoprene neck and wrist cuffs.

The one-piece outer suit is made from waterproof and vapour-permeable 3-layer laminate with waterproof-welded seams.

Neoprene boots are attached directly to the suit.

The suit is compatible with open-circuit aqualungs worn on the chest or back.

3.3 Service life

The service life and usage duration of the suit is 10 years from the date of manufacture.

Depending on usage, the service life might be considerably shorter.

3.4 Area of use

The area in which the suit is intended to protect the body against cooling depends on the clothing worn underneath, the wearer and the activities performed.

Recommended underclothing:

- Underpants, long legs
- Undershirt, long sleeved
- Thermal undersuit
- Socks
- Boots
- Neoprene hood
- Neoprene gloves

Variations of clothing allow for the suit to be used in different temperature ranges, depending on the purpose of use.

3.5 Size specifications

The SECUMAR CONTRA 170 is available in three standard sizes for heights from 1,71 to 2,05 m. The suit is equally suitable for men and women.

Size	L	XL	XXL
Height [cm]	171-193	179-201	187-205
Chest circumference [cm]	100-112	108-120	116-128
Socks (Neoprene)	UK 10 (44-45)	UK 11 (45-46)	UK 12 (47)
Neck circumference [cm]	40-45 (L)	>45 (XL)	>45 (XL)
Cuff circumference [cm]	18,1-21,5 (L)	>21,5 (XL)	>21,5 (XL)
Gloves [cm]	23,5-25,5 (9)	25,5-28,5 (10)	>28,5 (11)
Head circumference [cm]	57-59 (L)	59-62 (XL)	62-64 (XXL)

Tab. 2 Table of sizes

4 Design

NOTE

Sides (left, right) are indicated from the viewpoint from the front.

NOTE

Numbers in brackets indicate components that are not visible.

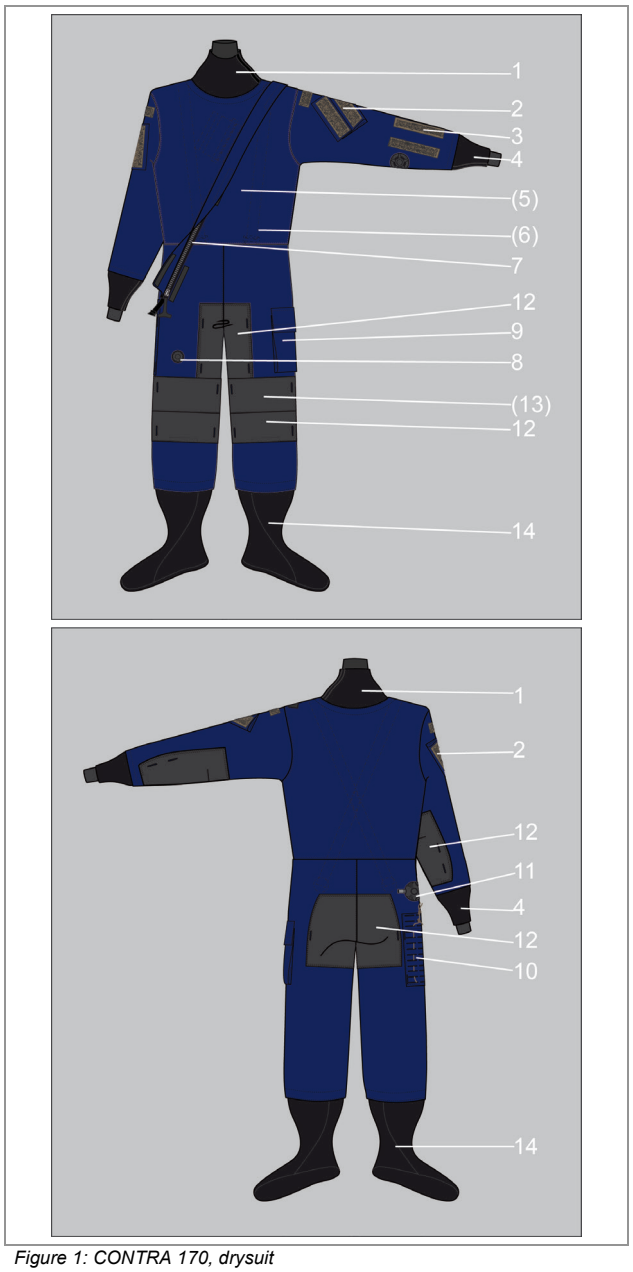


Figure 1: CONTRA 170, drysuit

1 Dual-layer neck cuff
2 Upper arm cuff (with Velcro area)
3 Lower arm Velcro area
4 Dual-layer wrist cuff
5 Inside pocket (optional)
6 Braces (optional)
7 Zipper
8 Urination valve
9 Thigh pocket
10 Bag for pressurised gas bottle
11 Valve for compressed air
12 Reinforcement
13 Knee pads (optional; insertable)
14 Boot
15 Elbow pads (optional; insertable)

The one-piece CONTRA 170 drysuit is made of waterproof and vapour-permeable 3-layer laminate. The seams have been welded watertight from the inside.

The outer polyamide fabric is partly reinforced with fabric. The suit features a flexible and compact design, and is therefore not bulky.

The amount of air in the suit can be regulated by an inlet valve with inflator hose in the hip area and a pressure relief valve on the arm.

⚠ CAUTION

The amount of air enclosed in the suit is solely for a comfortable feel and to prevent pressure points that can be caused by water pressure, as well as insulation from the cold.

The suit is not a substitute for a buoyancy control jacket (BCD).

The suit can be put on easily, thanks to a watertight zipper that runs diagonally across the chest from the top left to the bottom right. The suit can be closed without assistance. The cover that is kept in place with Velcro protects the waterproof zipper against mechanical impact.

The suit is reliably sealed by the attached dual-layer neck and wrist cuffs that are made from neoprene with antifriction coating. The skin is not constricted, thanks to the pleasant surface structure.

The neoprene boots are attached to the suit with a watertight seal and are worn inside regular boots.

An air inlet and outlet valve allows for air volume regulation in the suit.

Furthermore, the sleeves and legs are equipped with various pockets for holding accessories. A Velcro area for waterproof pockets (with and without a transparent window) is provided on the lower arms. Accessories include a neoprene hood and neoprene gloves. Scope of delivery

Another optional pocket is attached to the inside of the suit at chest height.

4.1 Scope of delivery

- CONTRA 170 drysuit
- Hood (neoprene)
- Gloves (1 pair neoprene)
- Boots (1 pair)
- Undershirt
- Underpants
- Thermal undersuit
- Socks (1 pair)
- Instructions for use

The compressed air bottles can be configured in two different ways:

Configuration A	Configuration B
Compressed air bottle 0.4 l (TN 10993)	Compressed air bottle aluminium 0.35l, diameter approx. 6.05cm, length approx. 25.5cm, 0.79kg (TN n.n.)
Bottle valve M18x1.5 (TN 16662)	Bottle valve M18x1.5, 300bar (TN n.n.)
Medium pressure hose 100cm with Int`l type connector and UNF 3/8"-24 connection socket (TN16336)	Medium pressure hose XXcm with CEJN type connectors (TN n.n.)
Pressure reducer w. 300bar, with UNF 3/8"-24 connection socket (TN 16824)	Pressure reducer w. 300bar, with CEJN type connectors (TN n.n.)
Connection adapter CEJN for inlet valve (TN 17134)	

Tab. 3 Compressed air bottle configurations

4.2 Labelling

The suit is equipped with identification labels with product and size information on the inside. Servicing work performed by an authorised maintenance centre is also recorded on these labels.

The neoprene hood and neoprene gloves are also labelled with size information.

NOTE

The symbols relating to care of the suit are explained in the "Washing" chapter (see also 9 "Cleaning").

5 Before use

⚠ DANGER

The suit must be serviced after any use other than for the intended purpose.

Carefully inspect the suit for visible damage before wearing it (at least monthly).

– Check that all parts of the suit are present and complete (e.g. neoprene hood, neoprene gloves).
– Inspect the suit fabric for tears, frayed, worn or molten areas and stains. If soiling is detected, the suit should be cleaned. Cleaning Check that all seams are stable and intact.
– Check that the Velcro surfaces are sufficiently adhesive.
– Neck cuff:
  Inspect the neck cuff for holes, tears and wear. Check that the cuff is attached to the suit securely and firmly.
– Neoprene hood:
  Check the neoprene hood for damage to the material and any open seams.
– Wrist cuffs:
  Inspect the wrist cuffs for holes, tears and wear. Check that the cuffs are attached to the suit securely and firmly.
– Neoprene gloves:
  Check the gloves for damage to the material and any open seams.
– Zips:
  Open the zip.
  Inspect the teeth of the zips. All teeth must be in place and fully intact.
  Move the zipper sliders' pull tags to ensure that they close up correctly and all the way.
  Check that the zipper sliders' pull tags are in perfect condition and securely attached.
– Inner seam sealing tapes:
  Turn the suit inside out. Inspect **all** seam sealing tapes on the suit for damage and ensure they are firmly attached.
– Attached boots:
  Inspect the material of the boots for holes, tears and wear.

Any damage to the suit should be repaired by the manufacturer (address: see 10 "Service").

⚠ CAUTION

Proper function and operation of the valves are essential safety aspects. Familiarise yourself with its handling under the supervision of an industry-approved diving instructor.

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

The drysuit is equipped with air inlet and outlet valves. This serves to regulate the air volume inside the suit. The inlet valve is located near the hip, the outlet valve on the left forearm.

Before initial use, check whether the valves or the internal part are each hand-tightened.

5.1 Assembly of the compressed air system

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

Figure 2:

Connect the pressure reducer to the ISO connection of the bottle valve with a torque of 15 Nm.

Figure 3:

Connect the medium pressure hose with UNF 3/8" thread to the pressure reducer with a torque of 15 Nm.

The Int'l connection of the medium pressure hose is suitable for the standard connection on the suit valve.

For the use of other compressed air systems with CEJN connection, an adapter for the suit valve (incl. assembly instructions) is enclosed.

6 Use

6.1 Donning

⚠ CAUTION

The watertight zips must be fully closed in order to ensure their waterproofing function. The neoprene neck and wrist cuffs must be flat and lie on the skin without any folds. Pay attention to the cuffs of the clothes worn underneath.

⚠ CAUTION

Wrist watches, necklaces or other sharp objects can cause damage to the neoprene cuffs and reduce their sealing properties.

⚠ CAUTION

Insert the left arm into the sleeve first, followed by the right arm.

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

- Put on appropriate clothes for the expected temperatures.
- Open the zipper completely.
- Let the top part of the suit fall down to your hips.
- Put on the suit, starting by placing one of your legs in the trouser area. Insert your foot into the trouser area all the way down to the boot.
- Proceed in the same way with the other trouser leg.
- Pull the suit up to your hips and put on the braces.
- Connect the hose to the urination valve (observe the notes and operating instructions of the attachment manufacturers).
- Place your left arm in the sleeve and put your wrist through the cuff. You might have to carefully pull on the sleeve to do so. Slightly widen the cuff with stretched fingers and slide it over the heel of your hand up to your wrist. Avoid putting pressure on individual points of the cuff with your fingertips or fingernails!
- Proceed in the same way with the right arm.
- Put your head through the neck cuff. Stretch the cuff with your stretched fingers of both hands if needed, to move the cuff over your head and down to your neck. Avoid putting pressure on individual points of the cuff with your fingertips or fingernails!
- Fully close the zipper starting on the top left hand side and all the way to its end point on the right. Then close the cover using the Velcro fastener.
- Check if all cuffs (neck and wrists) are flat against the body and that no garments worn underneath (cuffs, etc.) are located in the sealing areas.
- Turn the inner cuff at neck and wrists inward by about 3-4 cm.
- Put on hood and gloves as needed. The seams are positioned between the two neoprene layers of the cuffs.

6.2 Inflating/Deflating the suit

⚠ DANGER

There is a risk that the contents of the suit's compressed air bottle will not be sufficient for the entire dive. The filling level must be checked in advance and a redundant compressed air bottle carried if necessary.

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

The air inlet valve at the waist allows you to add air to your drysuit during descent or on the surface, as needed.

The air outlet valve on the left forearm is used to release unneeded air from the drysuit. The air outlet valve can be used to release air automatically or manually. To release air in automatic mode, bring the valve to the highest point in the suit, e.g. by raising your arm.

To release air in manual mode, bring the valve to the highest point and push the valve in completely. The valve can be operated in automatic mode or manually in partially closed position.

6.3 Diving with the drysuit

⚠ CAUTION

This user's guide is NOT a substitute for a drysuit diving course by an industry-approved diving instructor. DO NOT USE a drysuit until you have learned practical drysuit diving skills, including emergency skills, under the supervision of an industry-approved instructor.

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

- Open the air outlet valve fully by turning it anticlockwise as far as it will go.
- Allow excess air to escape from the drysuit. To do so, slide a finger under the neck cuff and kneel down to push all the air out of the drysuit.
- Remove your finger from under the cuff and stand up.
- Don the remaining equipment.

Entering the water

- Add air to your Buoyancy Control Device (BCD) before entering the water.
- Ensure that the air outlet valve is completely open before entering the water.
- A big step is the usual way to enter the water from the boat. When you enter the water feet first, the excess air in your suit is forced into the upper parts of the suit.
- Establish neutral buoyancy at the surface.

⚠ CAUTION

The amount of air enclosed in the suit is solely for a comfortable feel and to prevent pressure points that can be caused by water pressure, as well as insulation from the cold.

The suit is not a substitute for a buoyancy control jacket (BCD).

⚠ CAUTION

Do not jump into the water with excess air in your suit. The excess air in the suit is forced upward as it enters the water. Jumping from a greater height with excess air in the suit can result in serious injury.

Descent

Empty your BCD and dive. After you have descended 3 m, your descent speed will increase. Do not close the air outlet valve. Add air to your drysuit in small bursts, a small volume at a time. The small bursts of air control the volume of air that enters your suit. Add only enough air to eliminate the uncomfortable pressure. Too much air will stop your descent.

⚠ DANGER

There is a risk that the suit's buoyancy will change depending on the depth of the dive. Do not close the air outlet valve while under water. Closing the valve increases the amount of air in the drysuit and may cause loss of control. A rapid ascent is dangerous and can lead to air embolism or decompression sickness, both of which can result in serious injury or death.

⚠ CAUTION

Note that diving with a drysuit also requires pressure equalisation. The basic skills and knowledge of diving are not described here.

Achieving neutral buoyancy at depth

When you reach the desired depth, add just enough air to the BCD to achieve neutral buoyancy. Remember to add small amounts of air at a time. Check the result before you add more air. One of the key factors of dry-diving is to dive with as little air in the suit as necessary. Proper weight selection is essential to dive with the least volume of air in the suit. Use your BCD to adjust your buoyancy.

⚠ CAUTION

Use air to inflate the suit. All other gas mixtures, such as argon and oxygen-enriched air, require special training.

Buoyancy control during the dive

An essential part of buoyancy control is control over the air in the suit, which is compressed or decompressed depending on the depth of the dive. The air always moves to the highest point of the drysuit, whichever way you change your swimming position. Too much migrating air can cause problems. It is recommended to keep the air volume constant and to control buoyancy via the BCD. If the air begins to expand, release the excess air to maintain neutral buoyancy.

⚠ DANGER

The user must provide the amount of air in the drysuit that will provide sufficient protection from the cold. Hypothermia can lead to serious injury and even death.

⚠ CAUTION

The amount of air enclosed in the suit is solely for a comfortable feel and to prevent pressure points that can be caused by water pressure, as well as insulation from the cold.

The suit is not a substitute for a buoyancy control jacket (BCD).

Ascent

At the end of the dive, take a moment to check the air outlet valve of your drysuit before beginning your ascent. Make sure that the air outlet valve is fully open by turning it anticlockwise as far as it will go. Your ascent must be slow and controlled. As soon as you start your ascent, your buoyancy becomes positive as the air in your drysuit and/or BCD expands. Release as much air through the air outlet valve of your drysuit and/or from the BCD as necessary to remain neutrally buoyant. You should be able to stop your ascent at any time just by exhaling.

Control your ascent rate using the dive computer. Stay within the limits of your dive computer. Be ready to stop your ascent at any time. Control your ascent speed so that you can make a safety stop at 3-5 m. Once at the surface, inflate your BCD before swimming back to shore or the boat.

⚠ DANGER

An uncontrolled and/or too rapid ascent can lead to serious injuries and even death. Familiarise yourself with appropriate emergency skills during your drysuit diving course.

Emergency skills

⚠ CAUTION

The following emergency skills must be learnt in a supervised environment (such as a swimming pool) under the supervision of an industry-approved instructor before using the drysuit in open water.

Learn the following emergency skills before using the drysuit without the supervision of an industry-approved instructor. Your personal instructor will teach you the exact procedure of the exercises:

- Inverted position (air in the legs)
- Air inlet valve blocked in open position
- Air inlet valve blocked in closed position
- Air outlet valve blocked in closed position
- Low air loss at air inlet valve
- Flooded drysuit
- Dropped/Lost lead belt

7 Handling after use

7.1 Doffing

⚠ CAUTION

Be careful when doffing the suit, to avoid damaging the neck and wrist cuffs.

NOTE

The sleeves are easier to take off if the pockets on the lower arms are first removed from the Velcro area.

NOTE

Sides (left, right) are indicated from the wearer's viewpoint.

– Take off the neoprene hood and gloves.
– Open the front zipper from the bottom right to the top left.
– Pull your head through the neck cuff and allow the suit to slide down your shoulders.
– Carefully pull your arms out of the sleeves and the wrist cuffs (hold on to the cuffs if necessary) one by one (first the right then the left one).
– Remove the braces.
– Now fully remove the suit.

When using the urination valve

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

Squeeze as much urine as possible out of the hose, from the uridome to the outside and through the valve. Close the tap between the hose and the uridome. Remove the uridome from the tap. Uridomes should preferably be used once only.

7.2 General inspection after use

⚠ DANGER

The suit requires servicing after it has been subjected to unusual strain.

After taking off the suit, carefully inspect it for obvious, visible damage or soiling.

– Rinse the suit with fresh water after it has been used in salt water or chlorinated water.
– Remove light soiling.
– Wash if necessary.
– Any damage to the suit should be repaired by the manufacturer (address: see 10 "Service").

7.3 Folding the suit

⚠ CAUTION

Avoid kinks with a radius of less than 5 mm in the zip.

⚠ CAUTION

Only fold the suit if it is completely dry.

Fold the suit as you would a conventional overall.

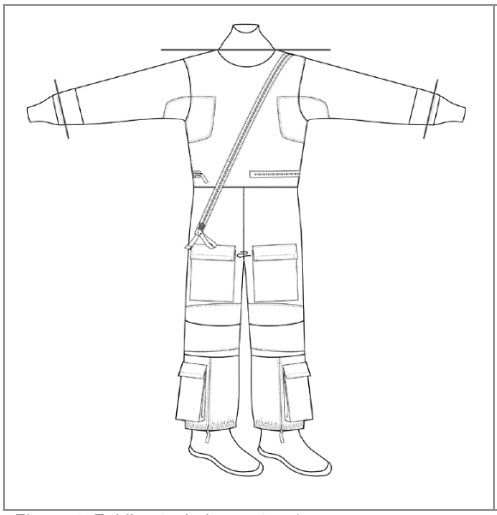


Figure 4: Folding technique, step 1

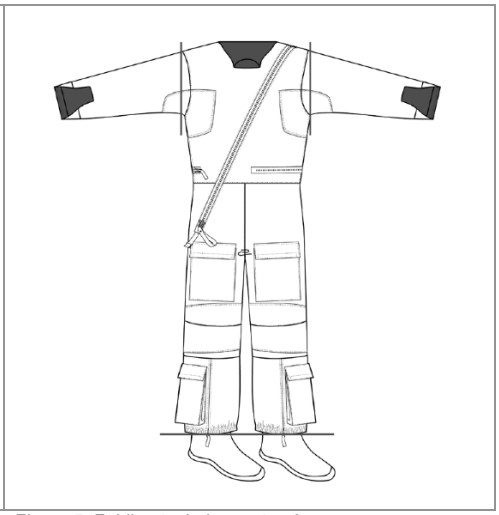


Figure 5: Folding technique, step 2

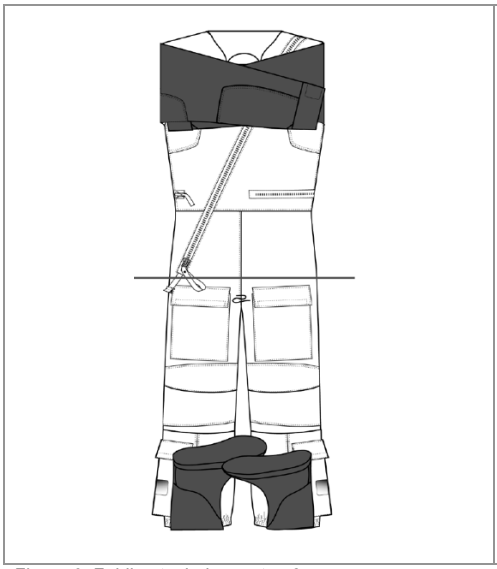


Figure 6: Folding technique, step 3

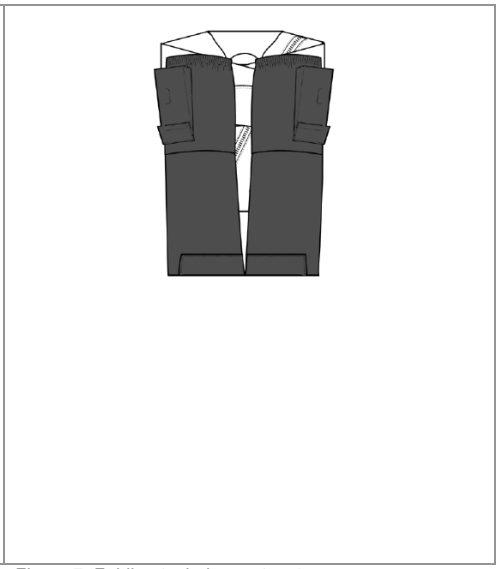


Figure 7: Folding technique, step 4

8 Storage

⚠ CAUTION

The suit must be stored at a moderate temperature that is as consistent as possible. It must be kept away from hot pipes and exposure to direct sunlight must be avoided.

⚠ CAUTION

The suit must not be stored in an environment that contains concentrated ozone or in the vicinity of acids, solvents, oils, fuels, or lubricants.

⚠ CAUTION

Pressure load on the folded suit should be avoided. Avoid contact with heavy and sharp-edged objects.

⚠ CAUTION

Only fold the suit if it is completely dry.

NOTE

For long-term storage, please grease the zips and then close them (Greasing the zips).

Storage temperature: -30 °C to +65 °C

Store the suit suspended on a coat hanger or in its own storage bag.

9 Cleaning

9.1 Cleaning after use in salt water or chlorinated water

NOTE

Remove all accessories from the inside and outside of the suit before rinsing/washing, wash these items separately if required.

Soak the suit in fresh water (recommendation: 30 minutes) after it has been used in salt water or chlorinated water.

After soaking, rinse with ample amounts of fresh water.

Dry the suit (Drying the suit).

9.2 Light soiling

Remove light soiling using a brush and water if needed.

Before washing, remove oil and grease-based soiling using a mild commercial detergent or a mild soap solution and a sponge. Soak if required.

9.3 Cleaning the valves

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

Air inlet valve

Prevent the quick connector of the valve and the medium pressure hose from coming into contact with water and sand. Use the protective cap whenever the hose is not connected.

Flush out the valve with fresh water after each deployment in water. After flushing, connect the medium pressure hose and blow air through the valve until it is clean and dry. If the press stud for blowing out becomes stiff, spray a suitable silicone-based spray into the quick coupling socket, and press the press stud/slide stud.

Air outlet valve

After each dive, especially if the water contains dirt and sand, rinse the air outlet valve thoroughly with fresh water by turning the lid back and forth. Ensure that the valve is empty when diving in cold water.

The outlet valve is equipped with a filter that prevents lint from your underwear from getting trapped in the check valve, which could cause the valve to leak. Flush the filter through the mounting nut.

Urination valve

After use, the hose and valve should be rinsed.

9.4 Cleaning/washing

⚠ CAUTION

After 20 washes, the suit must be presented to an authorised service station for servicing and inspection.

⚠ CAUTION

Remove all valves from the suit before washing it!

⚠ CAUTION

Observe the notes and operating instructions of the manufacturers of add-on parts!

Washing the suit

The suit is washed outside out.

– Open the front zipper by one third.
– Remove accessories (e.g. valve connections, knee and elbow pads, neoprene gloves, waterproof pockets, etc.).
– Wash no more than one suit at a time, in the washing drum of a common household washing machine. Place the suit in a laundry net.

Washing instructions:

– Wash at 40 °C in gentle / easy-care cycle
– Spin at reduced speed. max. 800 rpm
– Use a commercial (colour) detergent without optical brighteners (bleach)
– Do not use fabric softener
– Do not use bleach
– Do not tumble dry
– Do not iron
– Do not dry-clean

Washing accessories

Washable accessories can be placed in a laundry net and be washed according to the same instructions as the suit.

This applies for:

– Knee pads
– Elbow pads
– Inside pocket

The following accessories must be washed by hand:

– Hood, neoprene
– Gloves, neoprene
– Forearm pockets
– Carrier bag

9.5 Drying the suit

⚠ CAUTION

The suit must be kept away from hot pipes/radiators and exposure to direct sunlight must be avoided

⚠ CAUTION

A temperature of 45 °C must not be exceeded for suspended drying of the suit in a suitable drying facility.

NOTE

Fold back one layer of the dual-layer cuffs to allow for thorough drying.

- Open all zips. Remove any water from inside the suit. Prevent the formation of water pockets, if required, hang suit upside down for a short while.
- Remove elbow and knee pads if necessary to allow for faster drying.
- For drying the outside of the product, hang the suit on a plastic coat hanger by the neck cuff. The coat hanger must have no sharp edges.
- For further drying, turn the suit inside out and place it back onto a coat hanger.
- No detectable (visible or tangible) moist patches must remain on the suit at the end of the drying process.

9.6 Greasing the zips

The retaining box of waterproof zips must be greased occasionally.

- Apply silicone grease (part number: 15278) to the front and back of the retaining box as well as to the inside of the transition area to the teeth.
- Open and close the zip, making sure that it moves freely and easily and that it closes fully.
- Repeat steps if necessary with other waterproof zips.
- Repeat this process before extended periods of storage.

10 Service

Every 12 months, the suit must be sent to an authorised service station or the manufacturer's factory for servicing.

BERNHARDT APPARATEBAU
GmbH u. Co.
Bredhornweg 39
25488 Holm/Germany
Phone: +49 4103 125-0
info@secumar.com
www.secumar.com

The date of the most recent service and the date of manufacture are indicated on the identification label.

11 Repairs

⚠ CAUTION

Only damage on the suit that can be covered with a single patch must be mended. Any larger damage must be fixed by the manufacturer.

⚠ CAUTION

Any damage that requires sewing work to be fixed must be repaired by the manufacturer only.

The suit is delivered with a set of patches in different sizes.

Only damage to the backing fabric must be mended.

– Identify the damaged area of the suit and select a suitable patch. The patch must surpass the damage by at least 10 mm on all sides.
– Place the adhesive surface of the patch on the lining side (grey) of the suit.
– Cover the patch with the provided protective film. The glossy side should face the patch. The protective film prevents soiling of the iron.
– In the “cotton/linen” setting (3 points, v) place the iron on the protective film with the patch underneath for about 20 seconds.
– Remove the protective film and rub off any glue residue before further use.
– If the patch is properly sealed to the suit, slight leakage of glue should be visible around the edges.

12 Spare parts

Prod. no.	Designation
17490	CONTRA 170
15158-01	Hood, neoprene, size S
15158-02	Hood, neoprene, size M
15158-03	Hood, neoprene, size L-XXL
15138	Gloves, neoprene, size S
15139	Gloves, neoprene, size M
14724	Gloves, neoprene, size L
15140	Gloves, neoprene, size XL
15141	Gloves, neoprene, size XXL
17133	Inlet valve
17132	Pressure relief valve
17480	Urination valve
14305	Boots, size 43/44
17482-03	Boots, size L (52-54)
17482-04	Boots, size XL (56-58)
17482-05	Boots, size XXL (60-62)
17483-03	Underpants, size L (52-54)
17483-04	Underpants, size XL (56-58)
17483-05	Underpants, size XXL (60-62)
17488-03	Thermal undersuit, size L (52-54)
17488-04	Thermal undersuit, size XL (56-58)
17488-05	Thermal undersuit, size XXL (60-62)
17484-02	Socks, size 40- 44
17484-03	Socks, size 45- 48
n.n.	Set of patches
17495	Instructions for use

Tab. 4: Spare parts

13 Declaration of Conformity

Certification/approval in accordance with Regulation (EU) 2016/425 by:

DGUV Test
Prüf- und Zertifizierungsstelle
Fachbereich PSA
Zwengenberger Straße 68
42781 Haan/Germany
Notified body 0299

The Declaration of Conformity is available for download:

www.secumar.com/doc/17490.pdf

Notes

Bernhardt Apparatebau GmbH u. Co.
Rettungsgeräte für Schifffahrt und Luftfahrt
P/O Box 1190 · 25487 Holm/Germany
Tel.: +49 4103 125 – 0
Fax.: +49 4103 125 – 100
Mail: info@secumar.com
www.secumar.com

P/N 17495-EN
Document-No.: 17490-HB
Ausgabe/Revision 01.1
Technische Änderungen vorbehalten
Subject to technical modifications
NATO CAGE Code: D2168