

↗ DOMETIC CLIMATE CONTROL DRS



DRS2

EN **Dust Reduction System**
Installation and Operating Manual

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Please read these instructions carefully and follow all instructions, guidelines, and warnings included in this product manual in order to ensure that you install, use, and maintain the product properly at all times. These instructions MUST stay with this product.

By using the product, you hereby confirm that you have read all instructions, guidelines, and warnings carefully and that you understand and agree to abide by the terms and conditions as set forth herein. You agree to use this product only for the intended purpose and application and in accordance with the instructions, guidelines, and warnings as set forth in this product manual as well as in accordance with all applicable laws and regulations. A failure to read and follow the instructions and warnings set forth herein may result in an injury to yourself and others, damage to your product or damage to other property in the vicinity. This product manual, including the instructions, guidelines, and warnings, and related documentation, may be subject to changes and updates. For up-to-date product information, please visit documents.dometic.com, dometic.com.

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Explanation of symbols



WARNING!

Safety instruction: Indicates a hazardous situation that, if not avoided, could result in death or serious injury.



CAUTION!

Safety instruction: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.



NOTICE!

Indicates a situation that, if not avoided, can result in property damage.



NOTE

Supplementary information for operating the product.

Safety instructions

General safety



WARNING! Risk of injury and damage hazard

- Do not make any alterations or conversions to the device.



CAUTION! Risk of injury and damage hazard

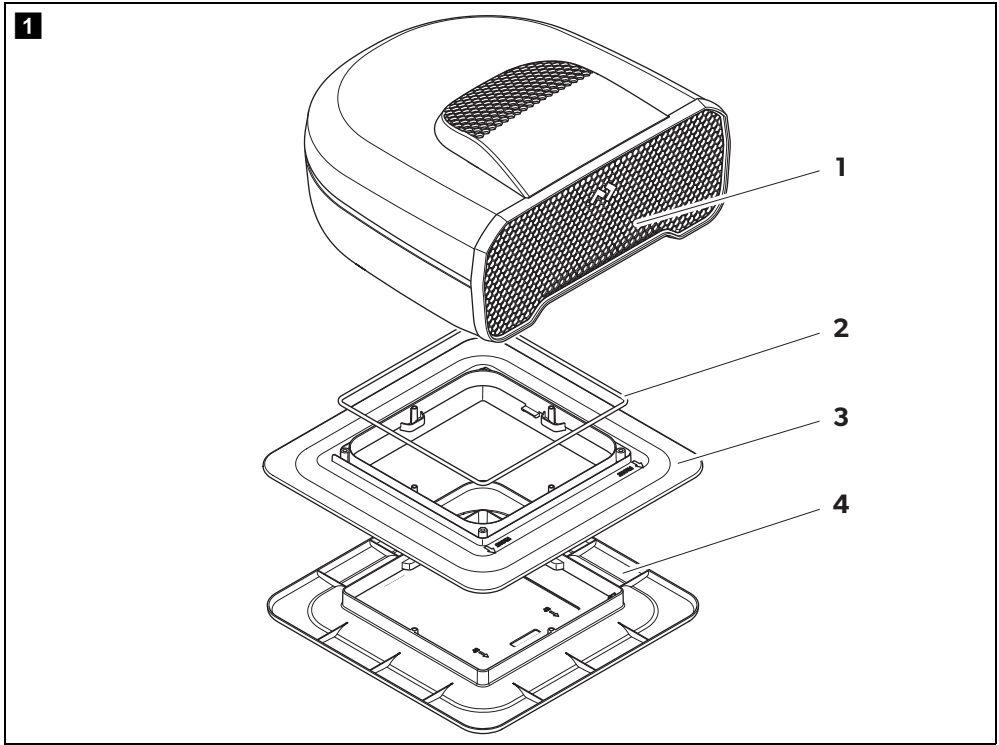
- The dust reduction system must be installed securely.
- Do not insert any foreign objects into the device.



NOTICE! Damage hazard

- Never drive through automatic car washes when the dust reduction system is mounted.
- Please ask your vehicle manufacturer if a technical inspection is required after fitting the dust reduction system and whether the height entered in your vehicle documents needs to be altered.

Scope of delivery



Item in fig. 1, page 4	Quantity	Explanation
1	1	DRS2 assembly
2	1	Rubber seal
3	1	Top roof flange
4	1	Bottom ceiling flange with ceiling cover, blocking plate and insect filter
-	4	Reinforcing battens
-	4	10G x 80 mm self-tapping screws
-	4	10G x 60 mm self-tapping screws
-	4	10G x 34 mm self-tapping screws
-	16	10 mm long spacer
-	4	5 mm long spacer
-	1	Filter
-	1	Self-adhesive roof seal

Intended use

The Dust Reduction System 2 (DRS2) is intended for installation on the roof of towed vehicles such as caravans, camper trailers and horse floats. It is intended for vehicles with roof thicknesses of 30 mm to 65 mm.

The product reduces dust ingress while driving by pressurising the vehicle with filtered air. Additionally it provides ventilation while stationary when air flow passes through a secondary air path.

- The product is **not** suitable for installation in construction machines, agricultural machines or similar equipment. It will not work properly if exposed to strong vibrations.
- The product is **not** recommended for motor-homes due to the airflow noise through the product while driving.

This product is only suitable for the intended purpose and application in accordance with these instructions.

This manual provides information that is necessary for proper installation and/or operation of the product. Poor installation and/or improper operating or maintenance will result in unsatisfactory performance and a possible failure.

The manufacturer accepts no liability for any injury or damage to the product resulting from:

- Incorrect assembly or connection, including excess voltage
- Incorrect maintenance or use of spare parts other than original spare parts provided by the manufacturer
- Alterations to the product without express permission from the manufacturer
- Use for purposes other than those described in this manual

Dometic reserves the right to change product appearance and product specifications.

Technical description

The product is intended to provide clean, filtered air entry into the vehicle and avoid dirty air being sucked in from other sources.

The product works from vehicle speeds of 25 km/h and above. The product is assisted by airflow so it becomes more effective with increased vehicle speed.

Winds can affect the operation of the product, particularly driving in a tail-wind.



NOTE

- Some dust can still enter the caravan momentarily when there are changes in wind direction, low vehicle speeds and human traffic in and out of the vehicle.
- The product is designed to filter the air, even when driving behind another vehicle in a trail of airborne dust, but dust entry is best minimized by avoiding this condition, where possible. It is best to travel a distance behind to minimize driving in the dust cloud.

The product can separate and remove water from the incoming air. While driving in heavy rain, the majority of water is directed to outlets on the product.

Installation

Notes on installation



CAUTION! Risk of injury

Improper installation of the product can result in irreparable damage to the device and put the safety of the user at risk.



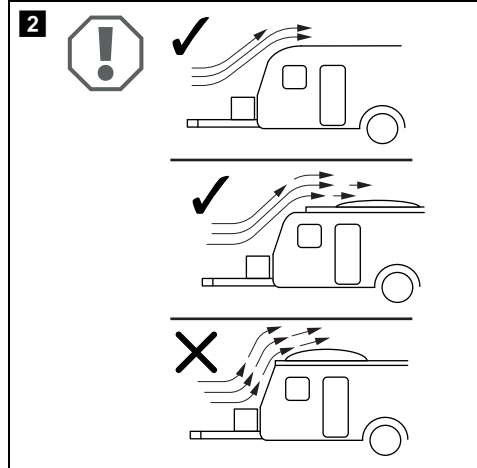
NOTICE! Damage hazard

- Observe the structural engineering of the vehicle and seal off all openings made when installing the product.
- Check whether the roof of the vehicle is able to support the weight of a person before climbing onto it. Ask the vehicle manufacturer about the permissible roof loads.



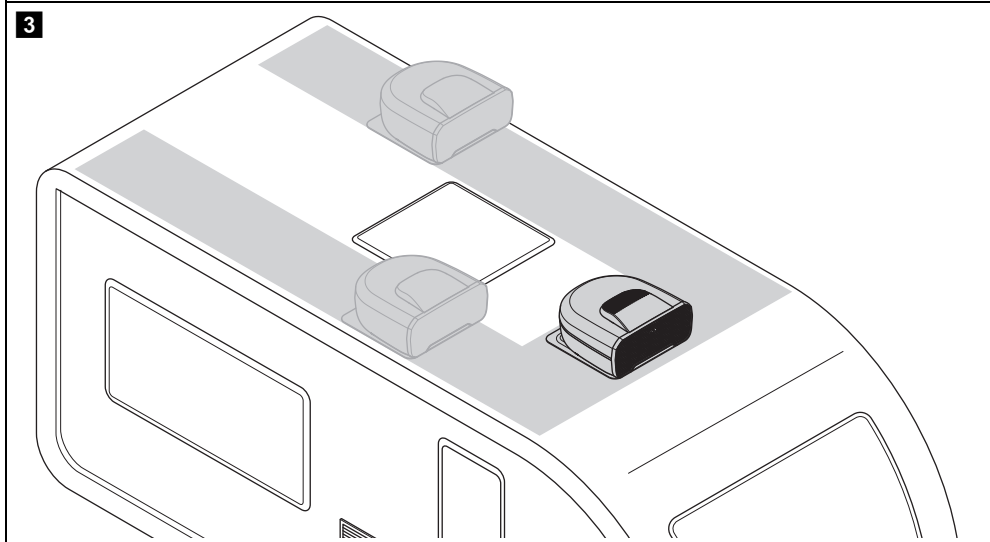
NOTE

- The entire front inlet (large hex grille) of the product must be unobstructed for the full length of the roof in front of the product.
- There must be a minimum of 20 mm clearance to other objects (e.g. solar panels, air conditioners) all around the product.
- Ensure an installation opening of at least 290 x 290 mm to avoid fitting issues.

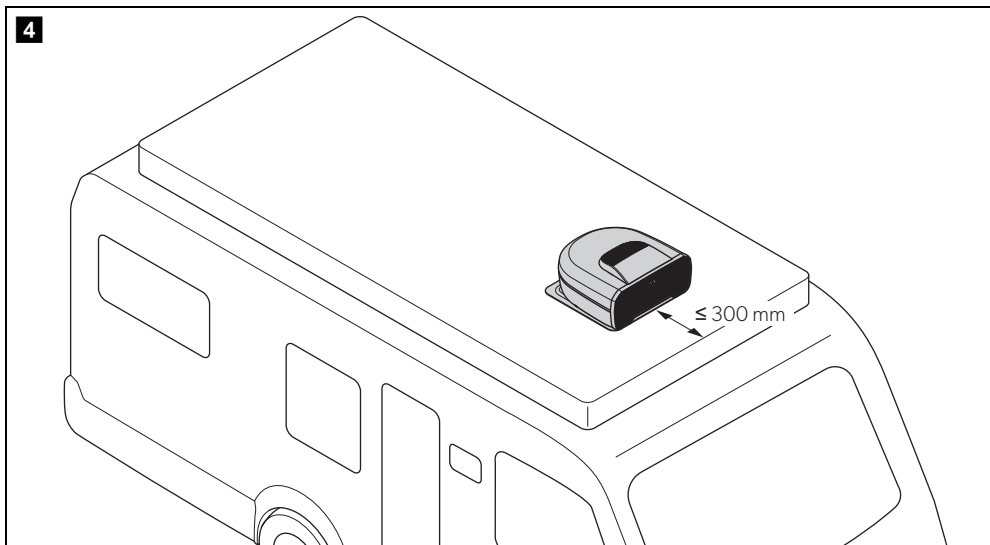


- Ensure the caravan roof shape is suitable for the product (fig. 2, page 6)
- Compatible with a roof thickness from 30 mm to 65 mm.
- Compatible with an opening size from 290 x 290 mm to 400 x 400 mm.
- If the roof thickness is less than 40 mm, the 10G x 80 mm self-tapping screws need to be replaced with 10G x 60 mm screws.
- Add wooden battens to form a frame.
- Mounting position on the roof – front of caravan – is optimal.
- Ensure the product is mounted in a position with unobstructed airflow (no objects in front of the product such as air conditioners, solar panels or antennas)(fig. 3, page 7, fig. 4, page 7).
- Possible to mount on a roof with a less than 30° slope.

Caravan – can be installed in any position



Pop-top – must be installed at front

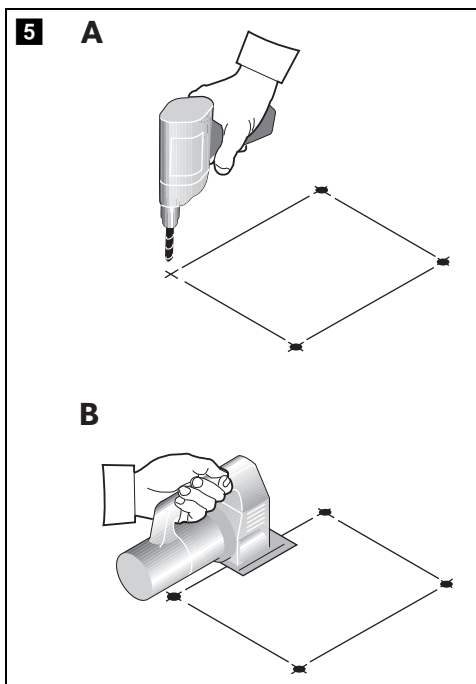


Installing the DRS2

There are two ways of installing the system:

- Making a new opening (chapter "Making a new opening" on page 8). In this case the opening must be reinforced by an appropriate frame.
- Using the existing roof hatch openings in the vehicle (chapter "Installing in an existing opening" on page 8).

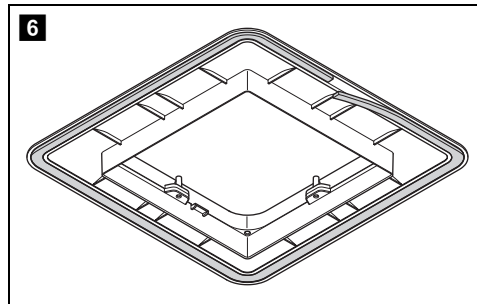
Making a new opening



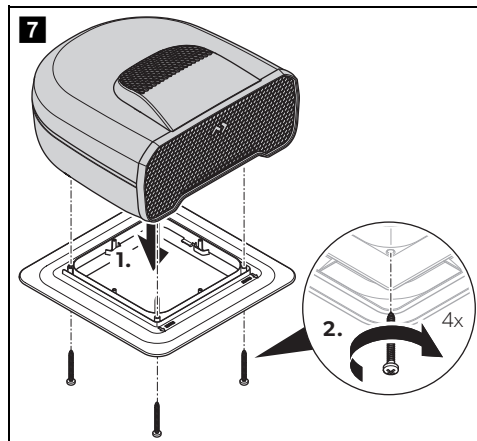
1. Select an area on the roof between two longitudinal supports.
2. Mark the position and size of the opening. A 290 x 290 mm opening is recommended but can be as large as 400 x 400 mm.
3. Drill out the corners (**A**).
4. Carefully cut out the opening on the roof using a jigsaw or a similar tool (**B**).
5. Ensure that no electrical power cables are damaged.
6. Before installation, check whether the roof hole needs reinforcing.

7. Use battens to create a frame around the cut-out made in the roof.
8. If needed, remove the insulation foam according to the width of your reinforcing battens.
9. Fit the reinforcing battens.

Installing in an existing opening



1. Use a clean, dry cloth to wipe around the underside perimeter of the top roof flange to remove any dust or residues.
2. Remove the backing paper of the self adhesive foam seal and fit onto the bottom surface of the top roof flange. There is a slight recess on the outer perimeter for the foam to be located. The foam seal will easily stretch to bend around the corners while staying flat.



3. Ensure that the arrows on the top surface are pointing to the front of the caravan.

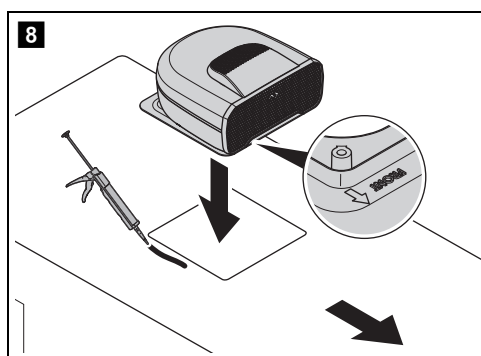
- Position the top roof flange centrally within the opening and mark the two rear corners on the roof.



NOTICE! Damage hazard

Overtightening of the screws can cause damage to the threads and lead to distortion of the product.
To avoid compromised fastening use a hand torque wrench and observe the specified torque.

- Remove the top roof flange and screw onto the product assembly in the four corners using the 10G x 34 mm screws and tighten to a torque of 1.5 Nm using a hand torque wrench.

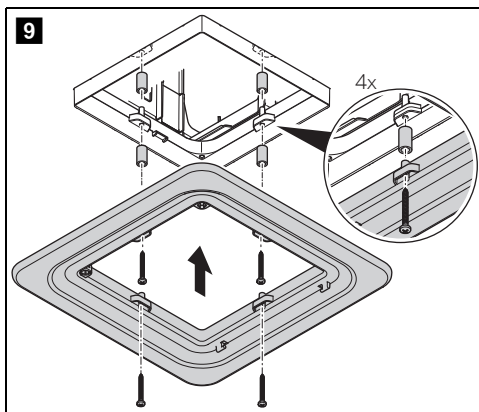


- Fit the top roof flange with the product assembly to the center of the opening and seal using silicone adhesive around the perimeter. It is permitted to apply silicone over the seal as this will not affect the seal function and will improve sealing.
- Place the product assembly onto the top roof flange on the caravan roof.
- Choose the most suitable orientation for the hinged cover for easy access (hinges can face either the front or rear of the caravan).

- From inside the caravan, check the spacer length required by holding the bottom roof flange in place and measuring the distance between the bottom roof flange and top roof flange screw boss. Choose the combination of 10 mm and/or 5 mm spacers so that the total length of the stacked spacers is 5 mm shorter than the gap. This is to ensure the bottom roof flange and top roof flange deform sufficiently to clamp on the roof.

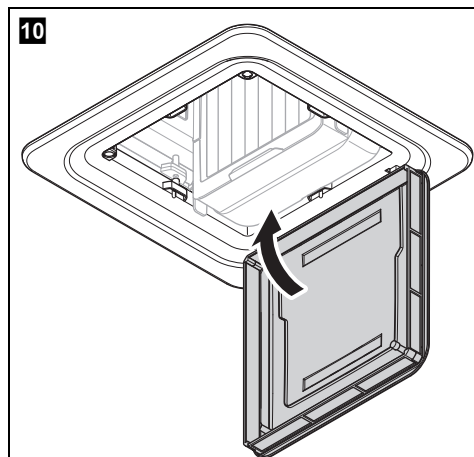
Fitment of bottom ceiling flange

Roof thickness (mm)	Screw 10G x 60 mm	Screw 10G x 80 mm	Spacer length (mm)
30	x		5
35	x		10
40	x (recommended)	x	15
45	x (recommended)	x	20
50		x	25
55		x	30
60		x	35
65		x	40



1. Choose the suitable screws according to the table and fit them through the holes in the bottom ceiling flange.
2. Slide the spacer over the protruding part of the screw so that the spacer will be fitted between the bottom ceiling flange and the top roof flange.
3. Tighten the screws so that the joint can clamp down on the sleeve.
4. Continue tightening the screws until there is no gap between the sleeve and the top and bottom ceiling flange.
5. Ensure that the joint has not overly deformed and caused gaps between the bottom roof flange and ceiling. If this occurs, increase the total length of the sleeves by 5 mm, or unscrew by half a turn.

If there is no deformation (sleeves too long), then there will be insufficient clamping of the joint. In that case the sleeves must be shortened by 5 mm by choosing a different combination of 10 mm and 5 mm long sleeves.



6. Ensure that the filter is inserted into the filter holder, and the filter holder inserted into the product.
 7. Close the ceiling cover.
- ✓ The installation is complete.

Operation

Ventilation while driving

Observe the following notes:

- In extremely heavy or prolonged rain, a small amount of water is expected to reach the filter.
- In that case no additional care or steps need to be taken.
 - Keep the filter in the filter holder for the water to evaporate.

The product operates automatically from vehicle speeds of 25 km/h.

The product is suitable for use in the rain.

- Prior to travel ensure that the blocker plate is removed (fig. 12, page 11).

Otherwise the product will not function to reduce dust entry.

Ventilation while stationary

Observe the following notes:

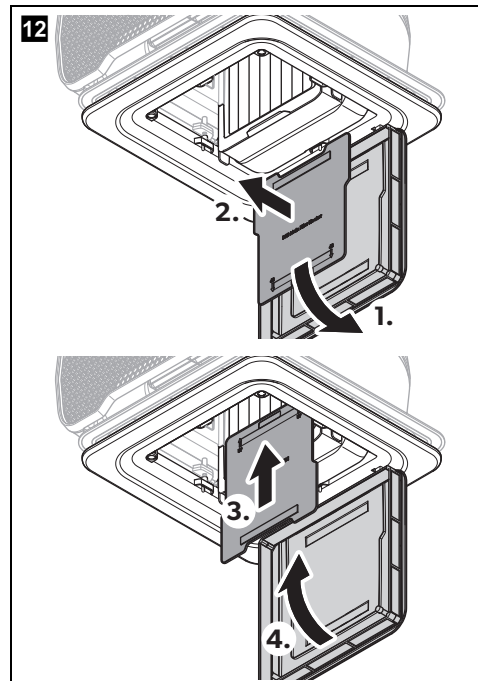
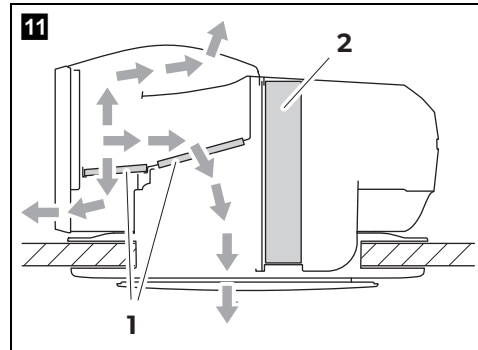
- Cross-flow ventilation is still maintained with the blocker plate fitted.
- Do not block any openings around or inside the product. All air paths (excluding the filter) are required for free ventilation.

The product provides 150 cm² of passive ventilation via a secondary air path through the ventilation chamber (fig. 11 1, page 11). Air bypasses the filter (fig. 11 2, page 11) when the vehicle is stationary only. This is required to maintain fresh air exchange. A small amount of airflow around the vent may be noticeable.

If the product is used as the primary ventilation point of the vehicle without any additional ventilation possibilities:

- Check local regulations regarding passive ventilation and add according warning labels to the ceiling cover.

The warning labels must be well visible.



If the main air path into the product through the filter needs to be blocked for any reason, the blocker plate is designed to slide into a groove in front of the filter and rest on the locating tab shown (fig. 12, page 11):

1. To fit the blocker plate, open the interior ceiling cover by pulling on the edge marked "PULL HERE TO OPEN".
2. Remove blocker plate from the ceiling cover, which is held by magnetic strips.
3. Insert the blocker plate upwards.
4. Close the interior ceiling cover by rotating the cover upwards and pushing gently until the magnets engage to hold the cover closed.

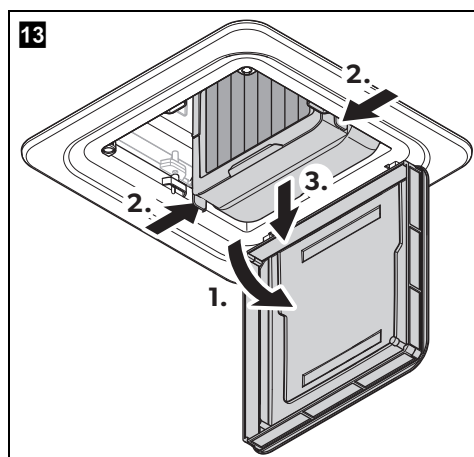
Maintenance

Inspecting the filter

The time for the filter to reach full capacity can vary greatly based on the road conditions:

Driving condition	Filter inspection interval	Filter replacement interval
Sealed roads	2000 km	10,000 km
Dusty roads	1000 km	5000 km
Following another vehicle on extremely dusty roads	300 km	1000 km

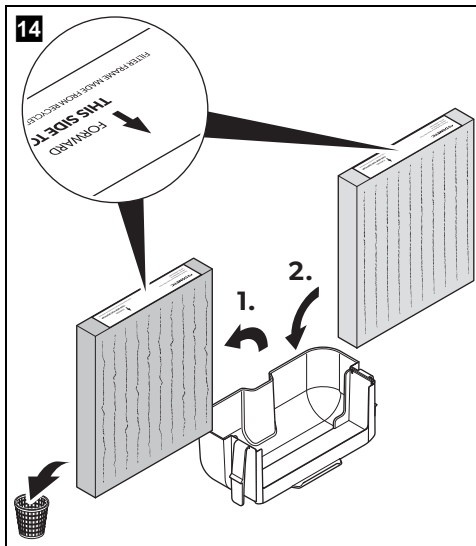
To inspect or change the filter proceed as follows:



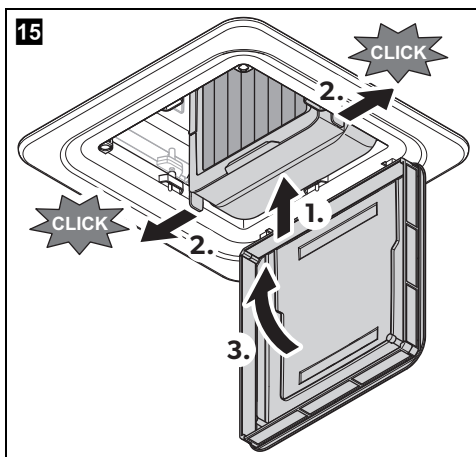
1. Open the interior ceiling cover. The ceiling cover is hinged on one side and held closed by magnets on the opposite side.
2. Open the ceiling cover by pulling down on the side marked "PULL HERE TO OPEN".
3. Remove the filter holder by pushing the two tabs inwards and pulling down on the filter holder gently (fig. 13, page 12).
4. Slide the filter out of the filter holder and check the condition and color for dust accumulation.

Changing the filter

1. Depending on the discoloration, tap the filter lightly to remove excess dust. It can continue to be used for some more time.



2. If there are signs of damage (filter media becomes furry or separates) replace filter (available).



3. When replacing, ensure that the filter is slid back into the filter holder with the arrow on the filter pointing to the front of the caravan and the pleats are vertical (fig. 15, page 13).

Cleaning debris inside of the DRS2

After a long period of time, the product may accumulate some dust and debris.

1. Remove the debris from inside the filter and filter holder by following the steps in chapter "Inspecting the filter" on page 12.
2. If debris are located between the front grille and the filter (main compartment), remove the filter or the ventilation frame to gain access to the rear of the cavity (fig. 16, 2, page 14).
3. If greater access is required, the product can be removed from the roof by following the steps in chapter "Installation" on page 6 in reversed order.

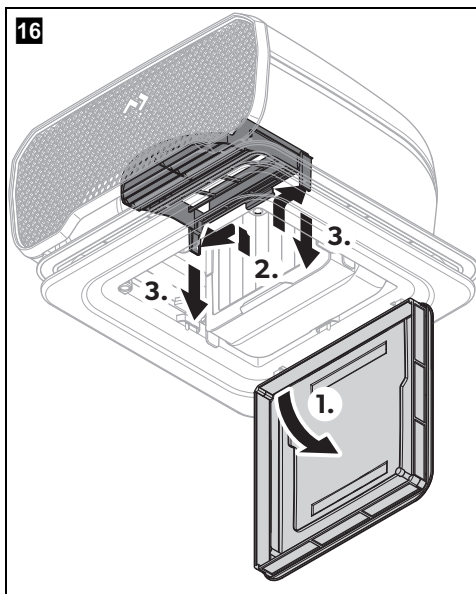
Cleaning the ventilation frame



CAUTION! Health hazard

- Not cleaning the ventilation frame may lead to the formation of harmful gases in the ventilation airflow.
- Check the frame at least every 6 months or more frequently if travelling in very dusty conditions.
- The check interval of the frame should match the one of the filter.

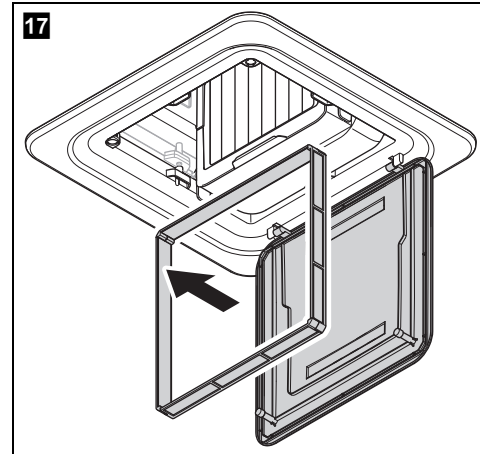
- Check the frame regularly for build up of debris. If debris is present, the frame will be discolored and must be cleaned and dried.



1. Remove the frame by pushing the two tabs outwards and pulling down gently (fig. 16, page 14).
2. Rinse the frame in water to clean any dust and dry it.
3. To re-insert the frame, angle the top of the frame upwards and insert into the space so that the cross-brace of the frame is resting on the housing.
4. Angle the rear edge upwards until the clip is pushed fully upwards.

Cleaning the insect screen

- Often visually check the insect screen for dust, insects and debris and clean it if any are present.



1. Remove the insect screen from the ceiling cover by carefully pulling it off. (fig. 17, page 14)
2. Rinse the insect screen in water to clean any dust and dry it.
3. Put the insect screen back onto the inside of the ceiling cover by carefully pressing it into the retaining groove.

Warranty

If the product does not work as it should, please contact your retailer or the manufacturer's branch in your country (see dometic.com/dealer). The warranty applicable to your product is 2 year(s).

For repair and warranty processing, please include the following documents when you send in the device:

- A copy of the receipt with purchasing date
- A reason for the claim or description of the fault

Australia only

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and for compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.

New Zealand only

This warranty policy is subject to the conditions and guarantees which are mandatory as implied by the Consumer Guarantees Act 1993(NZ).

Local support

Please find local support at the following link
address: dometic.com/dealer

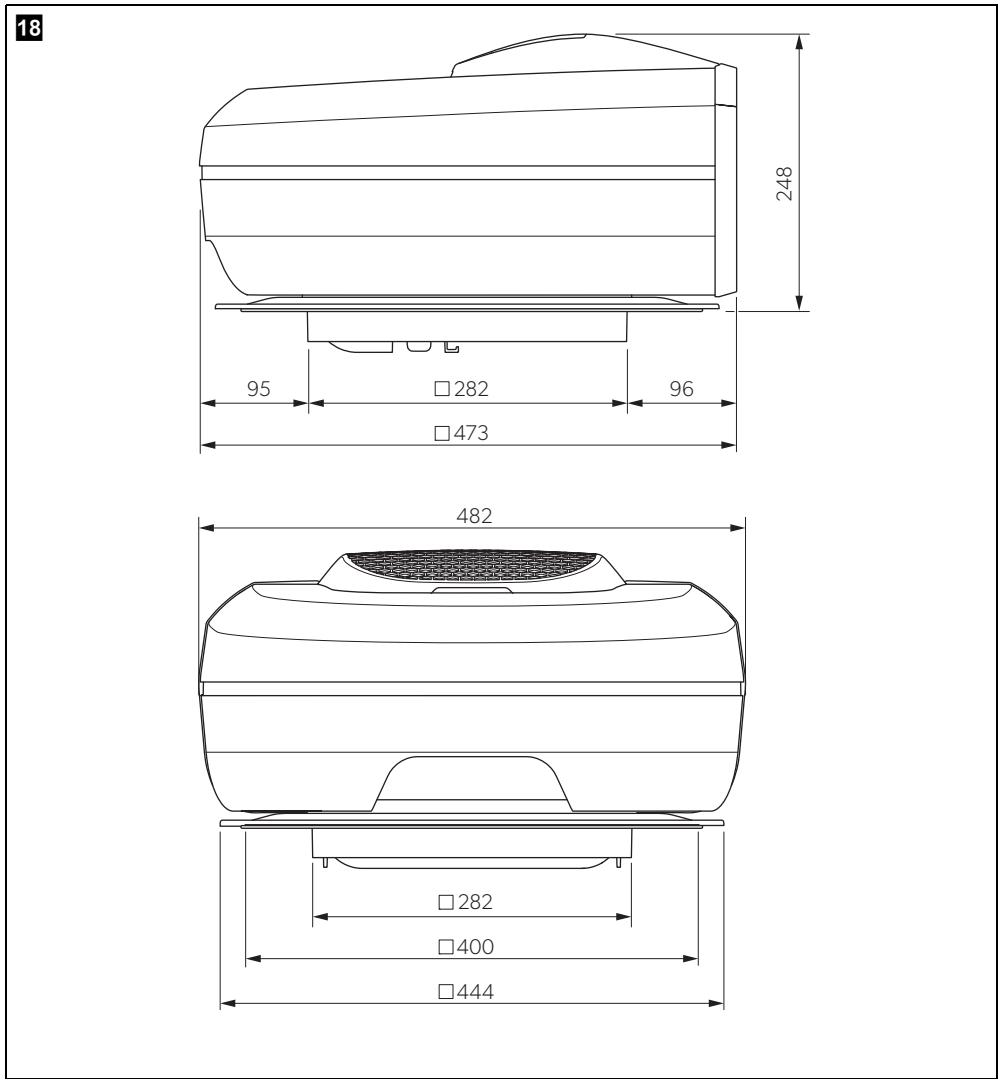
Disposal

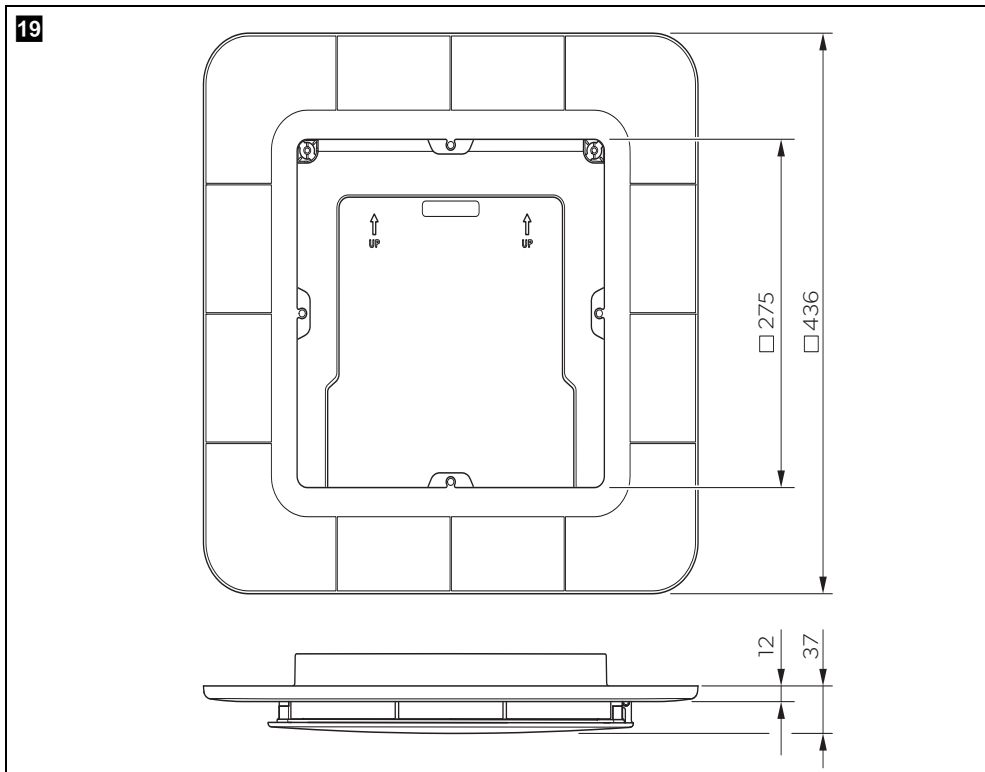


- Place the packaging material in the appropriate recycling waste bins wherever possible.
- Consult a local recycling center or specialist dealer for details about how to dispose of the product in accordance with the applicable disposal regulations.

Technical data

	DRS2
Ref. no. Dust Reduction System 2	9620008568
Ref. no. dust filter	9600025580
Dimensions (in mm) Tolerance: ± 3 mm	fig. 18, page 16 and fig. 19, page 17
Weight	5.0 kg







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