

## BALANCER-450 SERIES



**EN** Installation and user manual for balancer-450 series

---

---

## TABLE OF CONTENTS

<b>ENGLISH</b>		<b>Page</b>
Preface		3
1. Introduction		3
2. Product description		3
3. Safety instructions		4
4. Installation		4
5. Use		6
6. Maintenance		6
7. Troubleshooting		6
8. Spare parts		6
9. Disposal		6
CE declaration		7

### EN – ORIGINAL INSTRUCTION

All rights reserved. The information given in this document has been collected for the general convenience of our clients. It has been based on general data pertaining to construction material properties and working methods known to us at the time of issue of the document and is therefore subject at any time to change or amendment and the right to change or amend is hereby expressly reserved. The instructions in this publication only serve as a guideline for installation, use, maintenance and repair of the product mentioned on the cover page of this document. This publication is to be used for the standard model of the product of the type given on the cover page. Thus the manufacturer cannot be held responsible for any damage resulting from the application of this publication to the version actually delivered to you. This publication has been written with great care. However, the manufacturer cannot be held responsible, either for any errors occurring in this publication or for their consequences.




*To improve comprehension for people whose first language is not English, we have written parts of this manual in Simplified Technical English (STE). STE is a controlled language originally developed for aerospace industry maintenance manuals. It offers a carefully limited and standardized subset of English, along with specific writing rules.*

## PREFACE

### Using this manual

#### Pictograms and symbols

The following pictograms and symbols are used in this manual:

	<b>TIP</b> Suggestions and recommendations to simplify carrying out tasks and actions
	<b>ATTENTION</b> A remark with additional information for the user. A remark brings possible problems to the user's attention.
	<b>CAUTION!</b> Procedures, if not carried out with the necessary caution, could damage the product, the workshop or the environment.

#### Text indicators

Listings indicated by "-" (hyphen) concern enumerations. Listings indicated by "•" (bullet point) describe steps to perform.

#### Service and technical support

For information about specific adjustments, maintenance or repair jobs which are not dealt with in this manual, please contact the supplier of the product. He will always be willing to help you. Make sure you have the following specifications at hand:

- product name
- serial number

You can find these data on the identification plate.

#### Product indications

Unless specifically stated, the contents of this manual applies to the balancer-450 series.

## 1 INTRODUCTION

### 1.1 Identification of the product

The identification plate contains, among other things, the following data:

- product name
- serial number

### 1.2 General description

Balancer with constant force lifting and on-off spring tension locking device to hold and lift the hose of a vehicle exhaust system.


The integrated safety wire is to be attached to the system's trolley or mounting device.

The BRC-450/13-16-HB ensures a soft close retraction.

## 1.3 Technical specifications

### 1.3.1 Balancers

	BRC-450/13-16	BRC-450/13-16-HB
Article no.	0000105030	0000115287
Wire length	4,5 m (15 ft.)	4,5 m (15 ft.)
Spring tension	13- 16 kg (29 - 35 lbs)	13- 16 kg (29 - 35 lbs)
Angle from plumb line	max. 30°	max. 30°

	Refer to the available product data sheet for detailed product specifications.
---	--

### 1.4 Options and accessories

The balancers-450 are prepared for microswitch BRC-MS. The microswitch activates the moterdriven damper or engages the fan starter. The micro switch has to be ordered separately.

Article no.	Description
0000105122	BRC-MS

## 2 PRODUCT DESCRIPTION

### 2.1 Product components

The product consists of the following main components and elements:

Fig. 2.1

- A safety chain
- B fire brigade snap hook  $\varnothing$  10 mm ( $\frac{3}{8}$  in.)
- C spring tension lock
- D balancer body
- E balancer wire stop
- F wire
- G fire brigade snap hook  $\varnothing$  6 mm ( $\frac{1}{4}$  in.)

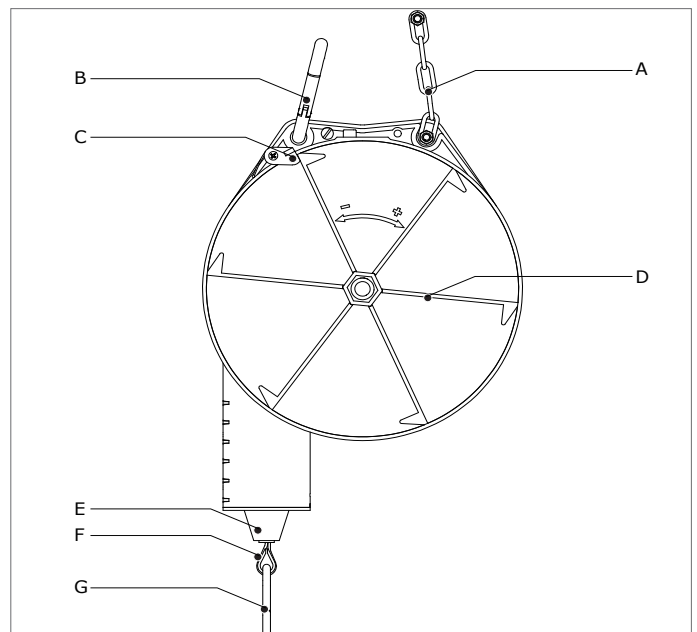


Fig. 2.1 Main components

### 3 SAFETY INSTRUCTIONS

#### General

The manufacturer does not accept any liability for damage to the product or personal injury caused by ignoring of the safety instructions in this manual, or by negligence during installation, use, maintenance, and repair of the product mentioned on the cover of this document and any corresponding accessories. Specific working conditions or used accessories may require additional safety instructions. Immediately contact your supplier if you detect a potential danger when using the product.

**The user of the product is always fully responsible for observing the local safety instructions and regulations. Observe all applicable safety instructions and regulations.**

#### User manual

- Everyone working on or with the product, must be familiar with the contents of this manual and must strictly observe the instructions therein. The management should instruct the personnel in accordance with the manual and observe all instructions and directions given.
- Do not change the order of the steps to perform.
- Keep the manual with the product.

#### Users

- The use of this product is exclusively reserved to authorised, trained and qualified users. Temporary personnel and personnel in training can only use the product under supervision and responsibility of skilled engineers.
- Stay alert and keep your attention to your work. Do not use the product when you are under the influence of drugs, alcohol or medicine.
- The product is not to be used by children or persons with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction.
- Children must be supervised not to play with the product.

#### Technical specifications

Do not change the specifications given in this manual.

#### Modifications

Modification of (parts of) the product is not allowed.

#### Installation

- The installation of this product is exclusively reserved to authorised, trained and qualified engineers.
- During installation, always use Personal Protective Equipment (PPE) to avoid injury. This also applies to persons who enter the work area during installation.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (6 ft. OSHA) (local restrictions may apply).
- Do not install the product in front of entrances and exits which must be used for emergency services.
- Mind any gas and water pipes and electric cables.
- Make sure that the workspace is well illuminated.
- Stay alert and keep your attention to your work. Do not install the product when you are under the influence of drugs, alcohol or medicine.

#### Use

- Inspect the product and check it for damage. Verify the functioning of the safety features.
- Check the working environment. Do not allow unauthorised persons to enter the working environment.
- Protect the product against water and humidity.
- Make sure the room is always sufficiently ventilated; this applies especially to confined spaces.
- Make sure that the workshop, in the vicinity of the product, contains sufficient approved fire extinguishers (suitable for fire classes ABC).

#### Service, maintenance and repairs

- Obey the maintenance intervals given in this manual. Overdue maintenance can lead to high costs for repair and revisions and can render the guarantee null and void.
- Always use Personal Protective Equipment (PPE) to avoid injury. This also applies for persons who enter the work area.
- Make sure the room is sufficiently ventilated.
- Use tools, materials, lubricants and service techniques which have been approved by the manufacturer. Never use worn tools and do not leave any tools in or on the product.
- Use sufficient climbing gear and safety guards when working on a higher level than 2 metres (6 ft. OSHA) (local restrictions may apply).
- Clean the area afterwards.

### 4 INSTALLATION

#### 4.1 Tools and requirements

The following tools and requirements are needed to install the product:

- slotted screwdriver size 6
- allen key size 6
- wrench 27 mm
- phillips screwdriver (for installing the micro switch)
- allen key size 5 (for installing the micro switch)

#### 4.2 Activating the locking device

The balancer is delivered with the spring tension lock deactivated.

To activate the locking device, perform the following steps:

- Unscrew the plastic screw (B) and the metal screw (A).
- Put the plastic screw (B) back where the metal screw (A) was to deactivate the magnetic locking mechanism.
- Put the metal screw (A) back where the plastic screw (B) was.
- Pull out 0,5 m (2 ft.) of cable. The locking device is now activated.

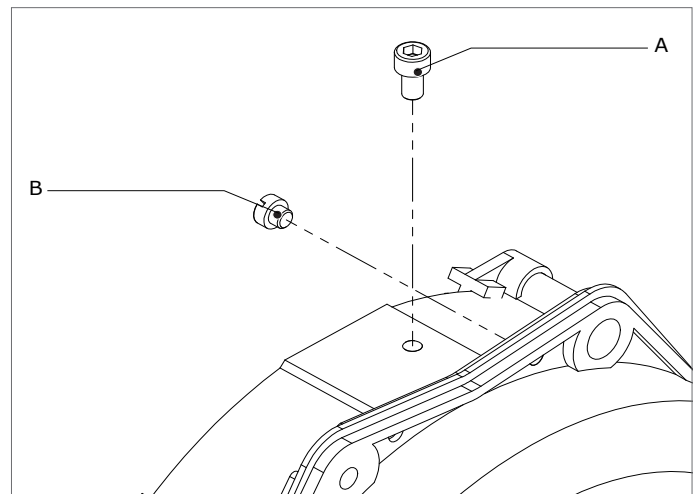


Fig. 4.2 Activating the locking device

#### 4.3 Mounting

The balancer can be mounted to the following devices:

- crab of STR system
- crab of Crab Return System
- drops
- VSRX

#### 4.3.1 Mounting to trolley of STR system

- Position the fire brigade snap hook  $\varnothing$  10 mm ( $\frac{3}{8}$  in.) in the trolley.
- Mount the safety chain to the trolley and fasten with the M6 x 25 bolt and 6 mm hex nut.
- Position fire brigade snap hook  $\varnothing$  6 mm ( $\frac{1}{4}$  in.) in the steel elbow or rubber saddle.

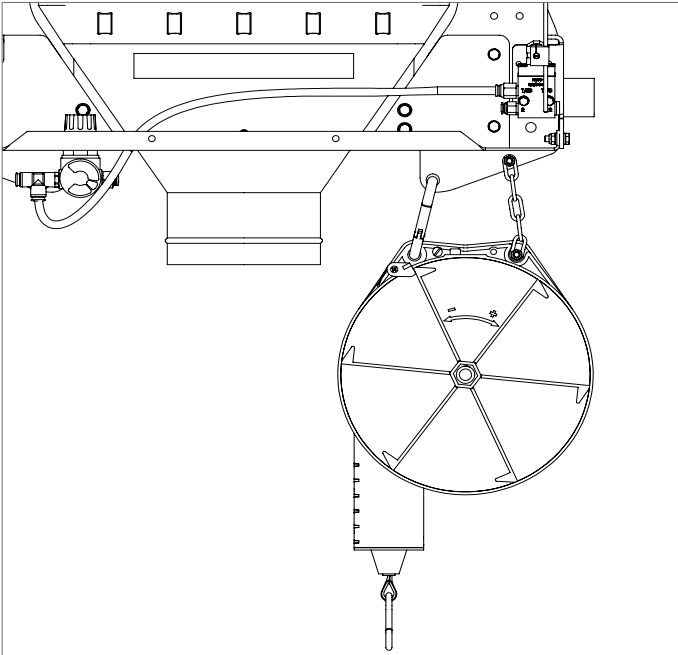


Fig. 4.3.1 Mounting balancer to STR system

#### 4.3.2 Balancers used in drops

Drops have no provision to mount the safety chain. Instead it can be mounted to the wall or ceiling construction, e.g. by means of a mounting plate.

- Mount the balancer to the drop in question.
- If desired, attach the safety chain to the wall or ceiling construction.



#### CAUTION

The safety chain connection is strong enough to hold the weight of the entire configuration (ca. 20 kg (44 lbs)). Make sure not to exceed this weight.

#### 4.4 Functioning and setting

The balancer is delivered with 3 turns of pre-tension from zero position (loose cable). Normally this should suffice, but if necessary the balancer spring tension can be adjusted.

Increase as follows:

- Hold the balancer steady.
- Turn casing cap max. 2 turns clockwise (direction +) using a wrench 27 mm.
- Put the spring tension lock back on. Make sure the lock is back in its locking position.

Decrease as follows:

- Hold the balancer steady.
- Lift the spring tension lock.
- Turn casing cap max. 2 turns anti-clockwise (direction -) using a wrench 27 mm.
- Put the spring tension lock back on. Make sure the lock is back in its locking position.



#### CAUTION

Do **not** increase spring tension more than 5 turns from zero position to avoid serious damage to the balancer.

#### 4.5 Installing the micro switch

If you want to use the balancer with the micro switch, please perform the following steps to install the micro switch:

- Mount the balancer so that the wire (A) can be pulled out slightly.
- Mount the micro switch bracket with two screws (C) in the pre-drilled holes (B) on the side of the balancer. Refer to fig. 4.4 below.
- Mount the micro switch to the threaded holes of the bracket with 2 screws (D) using an allen key size 5. Refer to fig. 4.4 below.
- Release the wire. The micro switch is now ready for electrical installation.

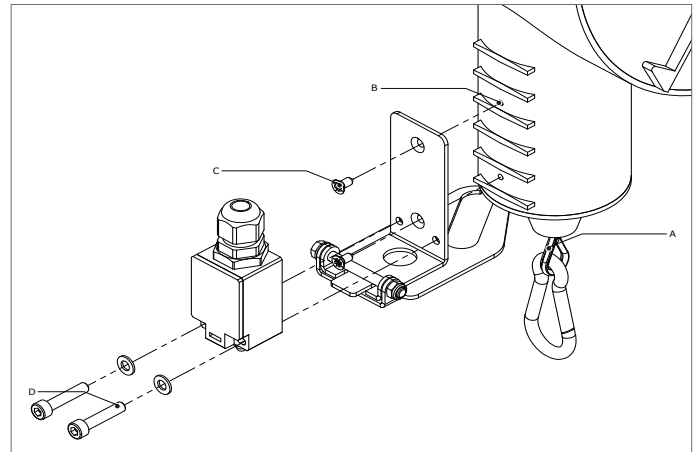


Fig. 4.5 Installing the micro switch

#### 4.5.1 Electrical installation

The micro switch contains a 2-pole electrical switch with two normally closed (NC) contacts to be used for the control of an electrical damper and/or a fan starter. The switch is IP-65 and has 6A 230 VAC rating.

## 5 USE

#### BRC-450/13-16

The balancer is used to keep the exhaust extraction hose clear of the ground, thus minimising the risk of damage to the hose and surroundings. It also enables easy operation of the exhaust extraction system. The balancer is designed to balance a load within 0 - 4,5 m (0 - 15 ft.) with a maximum angle of 30° from the plumb line. The balancer is equipped with a spring tension lock which holds the wire in extended position. The locking function can easily be turned on or off depending on area of use.

#### BRC-450/13-16-HB\*

The balancer is used to keep the exhaust extraction hose clear of the ground, thus minimising the risk of damage to the hose and surroundings. It also enables easy operation of the exhaust extraction system. The balancer is designed to balance a load within 0 - 4,5 m (0 - 15 ft.) with a maximum angle of 30° from the plumb line and ensures a soft close retraction until the balancer is completely retracted. The retraction speed (v) is approximately 6 m/min.

\* To see the soft close retraction, please take a look at our Crab Return System [video](#).

## 6 MAINTENANCE


### 6.1 Periodic maintenance

The product has been designed to function without problems for a long time. In order to guarantee this some simple, regular maintenance activities are required which are described in this chapter.

The maintenance activities in the table below can be carried out by the user.

Component	Action	Frequency: every X months	
		X=6	X=12
Housing	Check for crack and loose screws. Replace balancer when housing shows cracks.	X	
Wire	Check wire for visible damage e.g. broken threads.	X*	

\* Before every use

	<p><b>WARNING!</b> The balancer contains a powerful spring, which can result in serious injury if the unit is disassembled. Disassembling the unit is not recommended and will void all warranties for the unit. Never open the spring cassette to avoid personal injury.</p>
--	---

## 7 TROUBLESHOOTING

Problem	Possible cause	Solution
Wire is not retracted when nozzle is disconnected.	Spring tension too low.	Increase spring tension. Refer to section 4.4 (Functioning and setting).
	Spring is broken.	Replace balancer.
Vehicle exhaust system disconnects too quick from tail pipe.	Spring tension too high.	Decrease spring tension. Refer to section 4.4 (Functioning and setting).
	Friction trolley/rail too high	Reduce friction in the system.
The kickback of the hose drop after disconnection is too powerful.	Spring tension too high.	Decrease spring tension. Refer to section 4.4 (Functioning and setting).
	Use the BRC-450/13-16-HB.	

## 8 SPARE PARTS

Position	Article number	Description
1	0000117632	Set of tension lock (5 pcs)

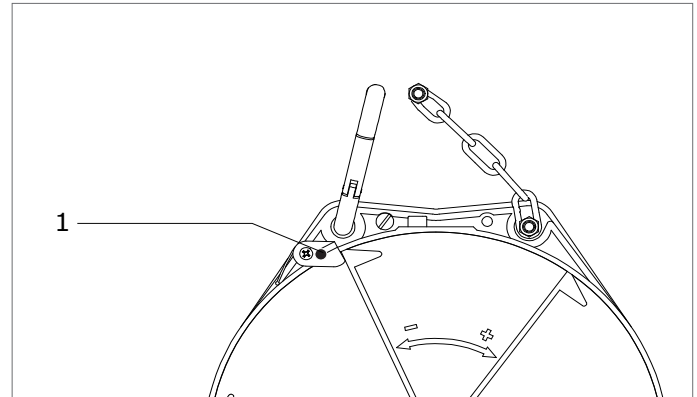


Fig. 8 Spare parts

## 9 DISPOSAL

After life of the product, dispose it of in accordance with federal, state or local regulations.

## CE DECLARATION

### CE declaration of conformity for machinery

We, Plymovent, Koraalstraat 9, 1812 RK Alkmaar, the Netherlands, herewith declare, on our own responsibility, that the product(s):

- Balancer

which this declaration refers to, is/are in accordance with the conditions of the following Directive:

- 2006/42/EC

and is/are in conformity with the following harmonized standard(s) and/or other such normative documents + amendments, if any:

- DIN 15112

Alkmaar, the Netherlands, November 5<sup>th</sup>, 2018



Kees Janssen  
Product Manager EE



