



Vehicle Square Rail with External Trolley -  
with Magnetic Grabber<sup>®</sup>

## VSRX

Thank you for buying this Plymovent product. Before you put this system into operation please read this product manual carefully, and follow the instructions.

This manual is intended to be used as a work of reference for an authorized professional to safely install, use, maintain and service the Plymovent VSRX system.

This manual should be handed over and kept by the service department after the installation.



User manual

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**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 anytime to change or amendment, and the right to change or amend is hereby expressly reserved. Changes may be made with or without notification, it is the users responsibility to ensure they have attained the most recent copy of this document for their files. 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.

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## **GENERAL PRECAUTIONS**

### **IMPORTANT USER INFORMATION**

Read this document in entirety before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

In no event will Plymovent be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Plymovent cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Plymovent with respect to use of information, circuits, equipment, or software that may be described in this manual. Throughout this manual, when necessary, notes may be used to make you aware of safety considerations.

The operation of exhaust extraction systems can be affected by various factors including but not limited to proper design of the system, operating procedures, service and maintenance. Fume exhaust exposure levels should be checked upon installation and periodically thereafter to ensure that they fall within applicable regulations and exposure limit values.

Plymovent systems are made code compliant, please ensure the system is properly designed, operated, serviced and maintained.

**BE SURE THAT ALL INSTALLATION, OPERATION, MAINTENANCE AND REPAIR PROCEDURES ARE PERFORMED ONLY BY QUALIFIED INDIVIDUALS.**






## PREFACE

### Using this manual

This manual serves as a work of reference for professional, well trained and authorized users to be able to safely install, use, maintain and repair the VSRX system. This manual should be handed over and kept by the service department after the installation.

### Pictograms and symbols

The following pictograms and symbols are used in this manual:

	<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.
	<b>WARNING!</b> Procedures which, if not carried out with the necessary caution, may damage the product or cause serious personal injury.
	<b>CAUTION!</b> Risk of electric shock.
	<b>WARNING!</b> Fire hazard! Important warning to prevent fire.

### 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

## 1 INTRODUCTION

### 1.1 General description

The Vehicle Square Rail - External Crab Trolley (VSRX) with Magnetic Grabber removes toxic exhaust gasses within the fire station.

### 1.2 Product combinations

VSRX can be used in back in and drive through applications with multiple vehicles inline. Systems are available from 20 ft to 120 ft (6 to 37 m) in length with available hose diameters of 4 and 5 in. (100 and 125 mm).

### 1.3 Technical data

VSRX consists of a number of parts of which the Plymovent yellow and black extraction hose assembly is most visible to the user.

The extraction hose has a Safety Disconnect Coupling built in, which protects the system from damage in the unlikely event that the Magnetic Grabber catches on the vehicle. The hose is suspended by a metal saddle that is attached to the balancer.

The balancer is connected to the aluminum suction rail via a special trolley and sealed to the suction rail via flexible rubber lips. This enables the trolley to move along the suction rail as the vehicle moves inside the fire station.

The VSRX system consists of a strong rectangular aluminium profile with a section area of 43.4 square in. (280 cm<sup>2</sup>). The underside of the rail is an open area sealed with rubber lips. The profile is connected to the ducts system by a 6.3 in. (160 mm) flexible hose.

### 1.4 Method of use

An automatic, magnetic exhaust gas extraction system, specifically designed for exhaust extraction of fire and rescue vehicles with low level, undercarriage exhaust pipes. The system is used to remove toxic vehicle exhaust at the emission source, the exhaust pipe.

As a vehicle moves within the facility, the extraction hose, connected to the tailpipe by the Plymovent Magnetic Grabber®, moves along with the vehicle.

Exhaust passes from the Grabber through the extraction hose and into the ducting and extraction fan before escaping to the atmosphere.

As the vehicles travel within the facility, the trolley moves to the end of the rail. There the balancer locking cable restricts the balancer to unwind, pulling the Grabber from the conical tailpipe adapter, allowing it to disconnect.

On the return of the vehicle to the station, the Grabber can be easily reconnected to the exhaust pipe. At the same time the fan automatically starts up and the vehicle continues to its standard park position.


### 1.5 Installation

The installation of this system should only be performed by trained and authorized persons. If others are involved in the installation, it should be done under the supervision of a responsible and authorized person.

Please use appropriate lifting materials and equipment when working in an area over 6.5 feet (2 m).

Never install the product in front of entries, exits or passage ways that are used by fire and emergency service personnel.

Before starting the installation, confirm that the walls and/or roof structures can support the weight of the system.

	<b>ATTENTION!</b>
	Stay alert and pay attention during the installation. Do not use the product when you are under the influence of drugs or alcohol.  Diesel or gasoline engine exhaust emissions, which may contain carbon monoxide, benzene, naphthalene, pyrene, PAH's, etc., should NEVER be recirculated. These emissions must always be exhausted outside.

### 1.6 Use

- a. Inspect the product and check for damages. Verify the functioning of the safety features.
- b. Check the working area. Please keep unauthorized people away from the working area.
- c. Protect the product against water and humidity.
- d. The user of the product always has full responsibility for the correct execution of the safety guidelines and instructions. These are all the safety guidelines and instructions which apply to the use of the system.

### 1.7 Service, maintenance and repairs

Observe the maintenance intervals given in this manual. Overdue maintenance can lead to high costs for repair and revisions and can render the warranty null and void.

Always 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.

Safety features which have been removed for service, maintenance or repairs, must be put back immediately after finishing these jobs and it must be checked that they still function properly.


Please ensure that no vehicle enters or exits the station during the service, maintenance and repair activities.

### 1.8 Tools

These tools are needed to install this Plymovent System:

- cordless drill
- cordless impact driver
- drill bits
- wrenches
- hammer drill
- anchors
- tape measure
- plumb bob or laser plumb
- level
- screwdrivers
- reciprocating saw
- core drill
- scissor lift

Please note that additional tools and machines may be needed depending on the installation situation (installation height, building construction, space available, etc).

	<b>ATTENTION!</b>
	After shutting down the ventilation system wait a minimum of 10 seconds before handling the system and products when performing service, maintenance and or repairs.

## 2 AREA OF USE

The VSRX system is used in fire and emergency service stations, where there are multiple vehicles parked behind an exit door waiting for an emergency call.

The VSRX system is designed to be connected to the vehicle while standing in an upright position. The operator will not need to bend over, which will reduce her/his exposure to harmful exhaust emissions.

### ATTENTION



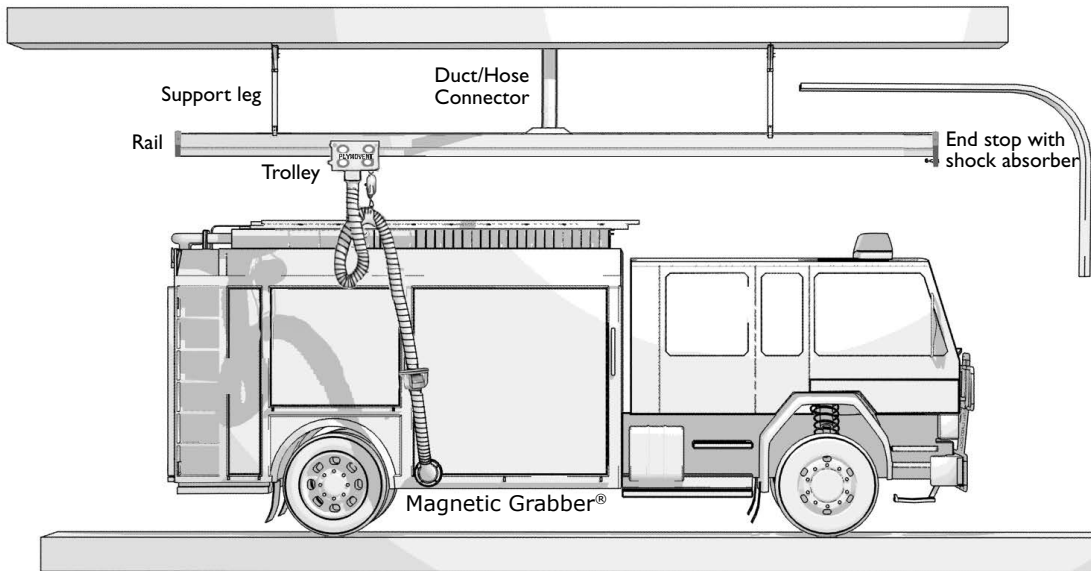
The VSRX system is designed to operate under standard vehicle performance conditions. DPF (diesel particulate filter) re-generation on 2007 and newer vehicles is not considered to be a standard vehicle performance condition and should never be performed inside the fire or EMS station.

### WARNING!



Do not put hands or other body parts in the Grabber.

### Side View



### 3 DELIVERY

All of the VSRX models are built from the following standard components.

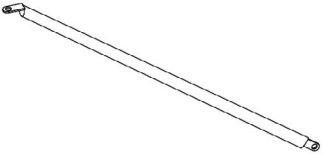
#### Support leg

The aluminium support leg is used for both vertical and horizontal mounting. The standard length is 19 ft (5790 mm) and has to be cut to proper lengths. The dimension is 2 in. x 2 in. x 0.1 in. (50 x 50 x 2.5 mm).



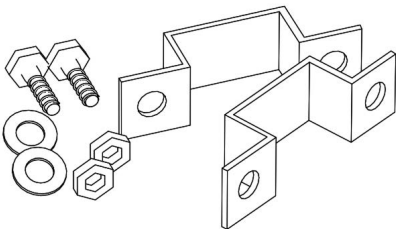
#### Side brace

There are three different lengths available, 20 in. (500 mm), 30 in. (750 mm) and 6 ft (1800 mm). The brace can be mounted separately or in pairs using the same brackets.



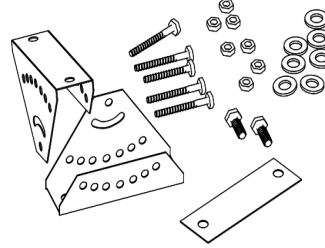
#### Side brace clamp kit

The kit includes two aluminium brackets for one or two side braces.



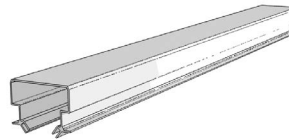
#### Adjustable mounting kit (vertical)

The two brackets are similar. They can also be used if the roof is angled and they can be mounted in both directions. Maximum angle is 30 degrees.



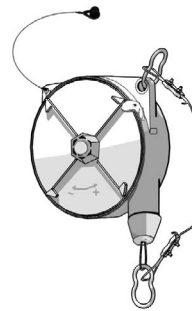
#### VSR extraction rail

The VSR-rail is 19 ft (5,8 m) and ordered in 5 ft (1,5 m) increments. The rubber lip seal that is delivered has been measured for the rail that is ordered, and must be inserted into the rail.



#### Balancer

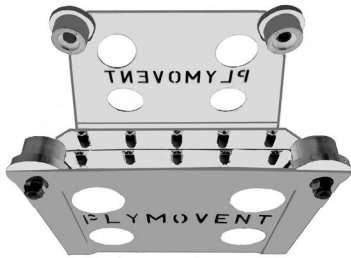
The non-locking spring recoil balancer has a lifting capacity of 17.6 - 37 lbs (8 - 17 kg) with a cable length of 6.6 feet (2.2 m). The main function of the Balancer Locking Cable (BLC) is to control the point of disconnection. As the hose reaches its maximum length, the BLC will bottom out, in turn pulling the Magnetic Grip nozzle from the moving vehicle.





### Crab Trolley

The ventilated sliding crab runs outside of the rail and can be positioned anywhere along the rail.



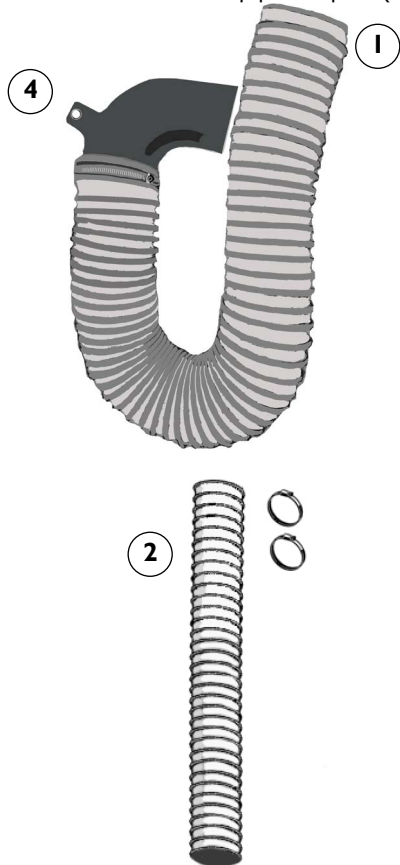
### Hose Kit

Hose kits available:

- ST (standard temperature) hose, 400°F (204°C) continuous, 500°F (260°C) intermittent,
- HT (high temperature) hose, 900°F (480°C) continuous, 1,050°F (567°C) degrees intermittent (upper, mid and lower hose)
- Hose diameter is either 4 in. (100 mm) or 5 in. (125 mm)
- Magnetic Grabber 3 in. (75 mm), 4 in. (100 mm) 5 in. (125 mm)

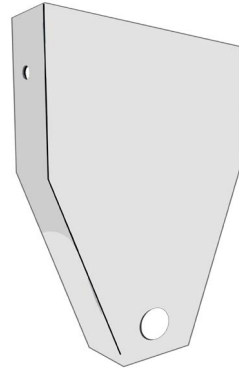
The different hose packages which contain the following parts:

- Transition parts
- Exhaust removal hose with clamps (1)
- Hoses: (1) Upper, (2) Mid and (3) Lower hose
- Metal hose saddle (4)
- Safety disconnect handle (5)
- Magnetic Grabber® nozzle (6)
- Magnetic Grabber® conical tailpipe adapter (7)



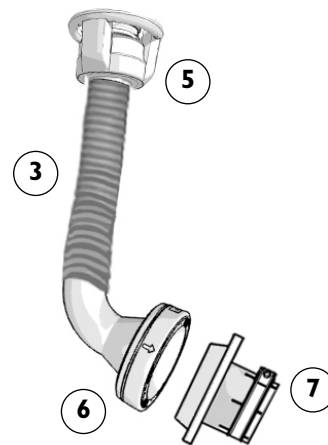
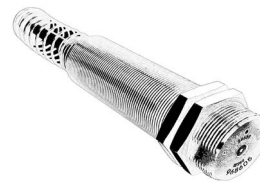
### VSRX End Caps

The metal end cap is 13.3 in. (338 mm) in length, and 9.3 in. (236 mm) in width, and should be bolted to each end of the rail, as it allows for safe and effective stopping of the trolley.



### Shock Absorber

The hydraulic shock absorber is inserted into bottom of the VSRX End Cap on the entry door side, and secured with two hex nuts that are included.

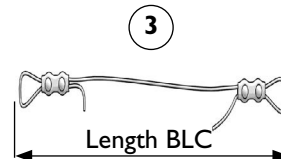


## 4 INSTALLATION

### 4.1 Mounting instructions

- Determine the installation height of the rail (measured from the bottom of the rail) (1).
- Determine the recommended distance from the end stop to the door in the Installation Table (2).
- Determine the recommended balancer locking cable (BLC) length in the Installation Table (3).
- After installation, fine tune the BLC if the disconnection point is not close enough to the door.

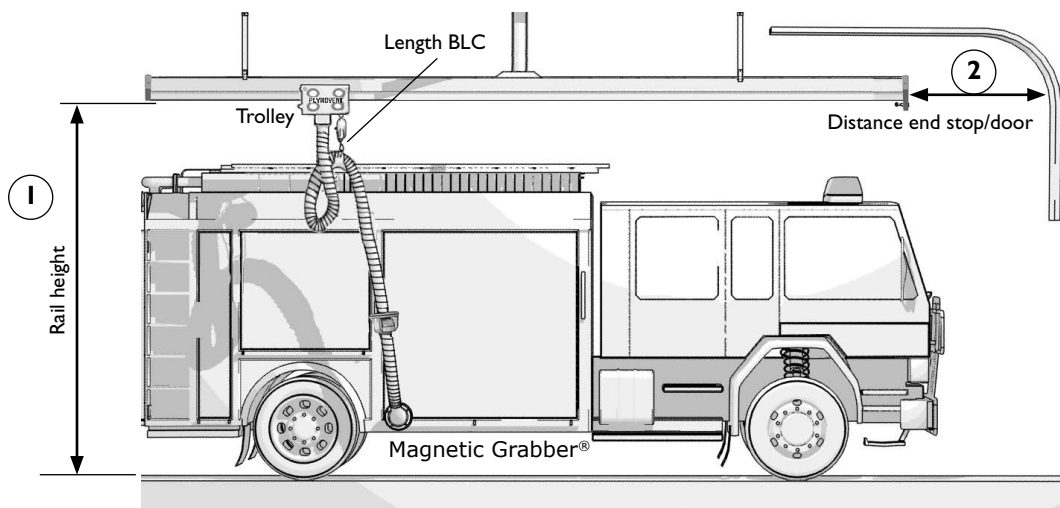
#### Installation Table:



Rail height			Distance end stop / door (2)		Length BLC(3)	
Feet	m		Feet	m	Inch	cm
12'	3	min	5.5	1.7	26	66,0
		Recommended	6.0	1.8	30	76,2
		max	7.0	2.1	32	81,3

Rail height			Distance end stop / door (2)		Length BLC (3)	
Feet	m		Feet	m	Inch	cm
13'	4	min	6.5	1.9	26	66,0
		Recommended	7.0	2.1	30	76,2
		max	8.0	2.4	32	81,3

Rail height			Distance end stop / door (2)		Length BLC (3)	
Feet	m		Feet	m	Inch	cm
14'	5	min	7.5	2.3	26	66,0
		Recommended	8.0	2.4	30	76,2
		max	9.0	2.7	32	81,3



## 4.2 Back-In Measurements

Please determine the position of:

1. Exhaust pipe
  2. Garage / Exit door.
  3. Distance from Exit door to the tailpipe.
- a. Determine the location of the exhaust pipe (1) on the vehicle:
- Which side of the vehicle is the tailpipe positioned?
  - Where does the exhaust exit the vehicle?
  - What is the diameter of the tailpipe?

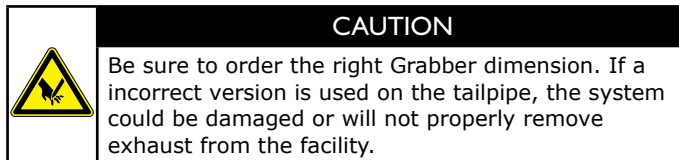
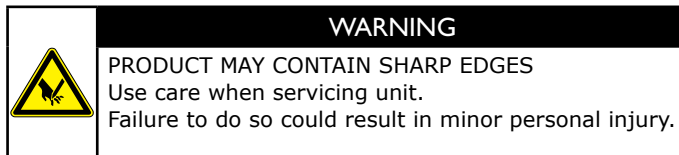
Determine if tailpipe modification is necessary, see "Modify the tailpipe" in this manual.

- b. Measure the height and width of the garage (2). Determine the type of bay doors:
- Rollup Door
  - Segmented Panel Overhead Door (four-fold doors)
  - Other type

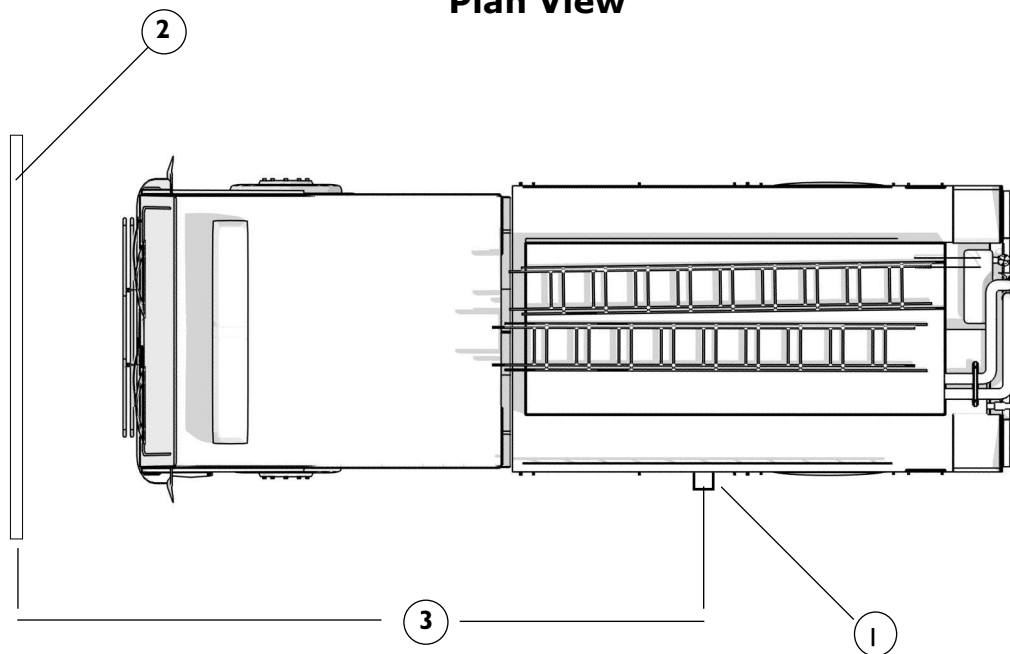
Determine the height that the rail can be installed under the door when fully raised. The height should be in line with the specifications indicated in this manual in order to ensure correct product performance.

- c. Measure the distance between the door and the exhaust pipe (3). This is the required minimum length of the VSRX rail. Check before installation that this is the minimum required length of the VSRX in back-in application.

The distance from the end of the rail to the door(s) must be in line with the installation table on page 10.



**Plan View**



### 4.3 Drive-Through Measurements

Please determine the position of:

1. Tailpipe
  - 2.1 Entrance door.
  - 2.2 Exit door.
  3. Distance between Entrance door / Exit door.
- a. Determine the location of the exhaust pipe (1) on the vehicle:
- Which side of the vehicle is the tailpipe positioned?
  - Where does the exhaust exit the vehicle?
  - What is the diameter of the tailpipe?

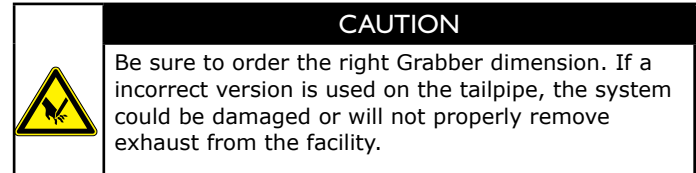
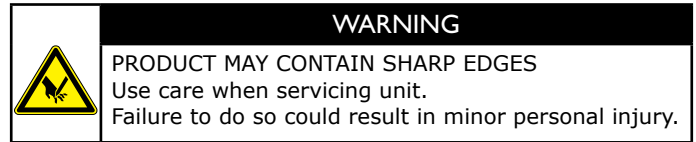
Check if exhaust pipe modification is necessary, see "Modify the Tailpipe" in this manual.

- b. Measure the height and width of the garage (2.1 and 2.2).  
Check the type of bay door:
- Rollup door
  - Segmented panel overhead door (four-fold doors)
  - Other type

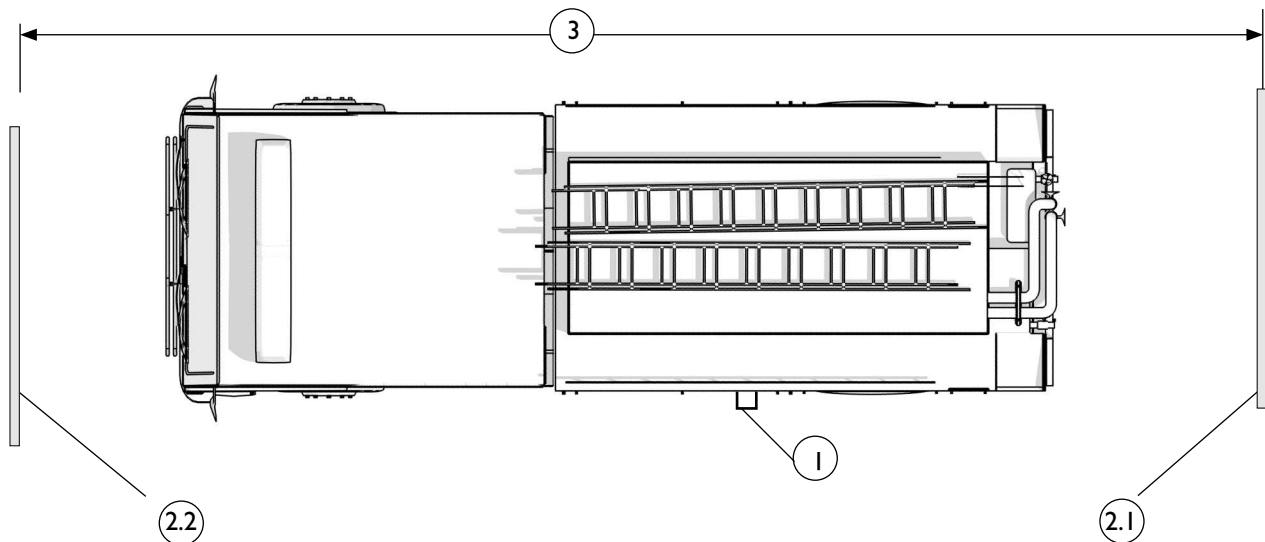
Check at what height the rail can be installed. The height should be in line with the specifications indicated in this manual in order to ensure correct product performance.

- c. Measure the distance between the entrance door and exit door minus two (2x) times the distance between the end of the rail and the exit door (3) distance shown in the Installation Table on page 10.

The distance from the end of the rail to the door(s) must fall in the distance shown in the Installation Table on page 10.

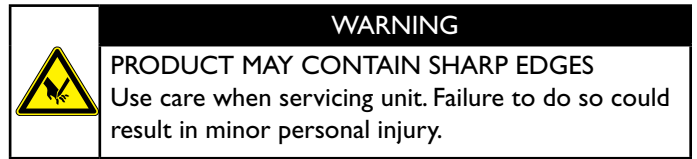


#### Plan View

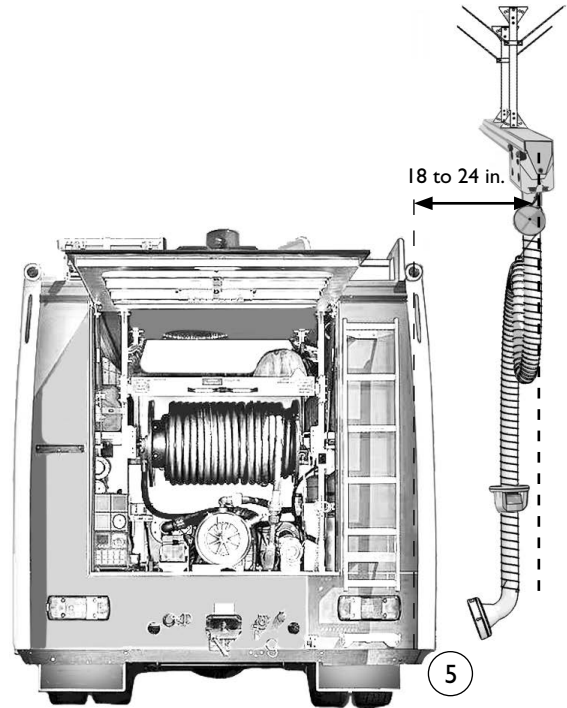


#### 4.4 VSRX-Rail Location

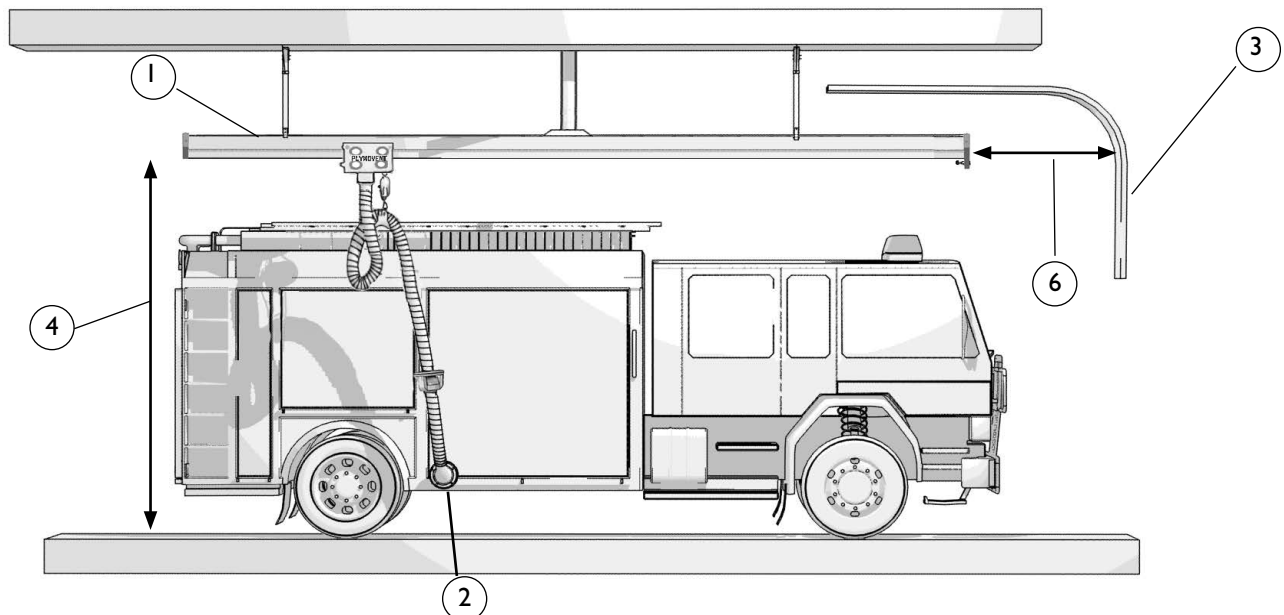
1. VSRX-Rail
  2. Tailpipe
  3. Bay door
  4. Rail height
  5. Distance to vehicle
  6. Distance to exit door
- a. The VSRX-Rail (1) is mounted at a height (4) between 12 ft (3,7 m) and 14 ft (4,3 m) over the floor on the side in which the tailpipe (2) is located.
- b. The rail should be mounted 18 in. to 24 in. (457,2 to 609,6 mm) from the body of the vehicle (5), and positioned on the tailpipe side of the vehicle. Preferably the rail is on or within the boundaries of the exit door.
- c. The rail should be mounted immediately under a sectional door with a clear height from the track to the door of 4 in. (100 mm) to 6 in. (150 mm).
- d. The recommended distance from the end of the rail to the door(s) (6) can be found in the table on page 10.



End View



Side View



## 4.5 Assemble the Legs and Rail

### 1. Support Legs

### 2. Unistrut bar clamps

### 3. Side Braces

### 4. Rail

a. If you are attaching the Support Legs (1) to the top or bottom of a steel beam, use Unistrut bar clamps (2). To attach to the top or bottom of a bar joist, use a thru bolt in the slot of the bar joist.

b. Mount the Support Leg to the roof or to beams. The first leg will be approximately 3 to 4 ft (0,9 to 1,2 m) from the end of the track or rail. Leg assemblies will need to be placed every 10 to 12 ft. and braced side to side using the appropriate length side brace kit.

Note: Longer braces can be made out of 3/4 in. (19 mm) EMT conduit and attached to the leg using a Plymovent 8130-1011 leg/brace mounting kit. You should have at least one long brace running front to back.

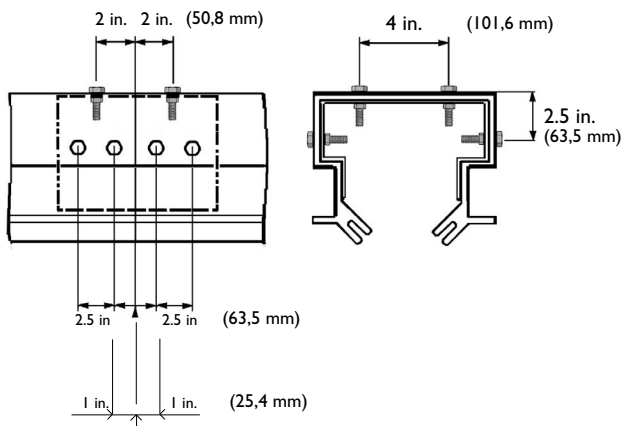
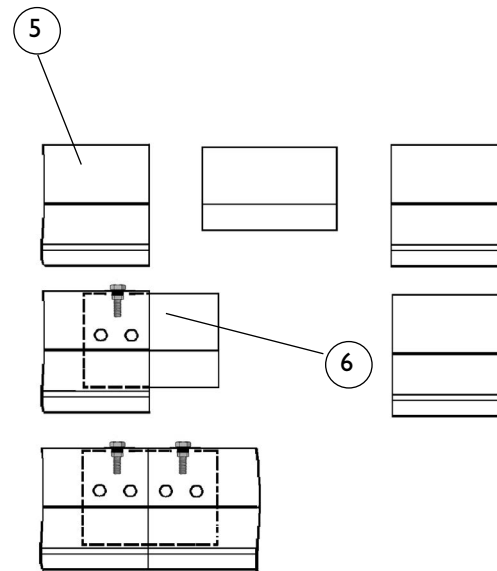
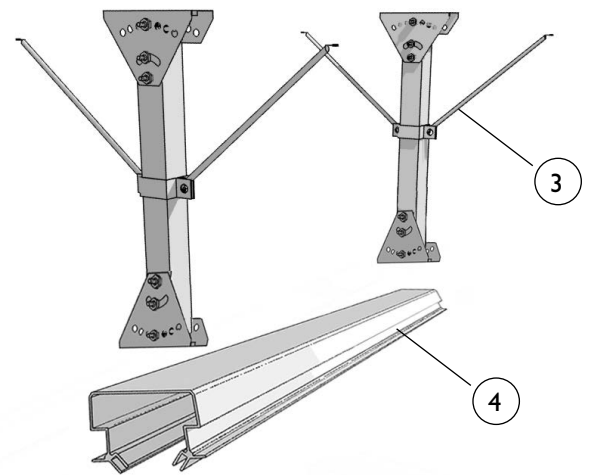
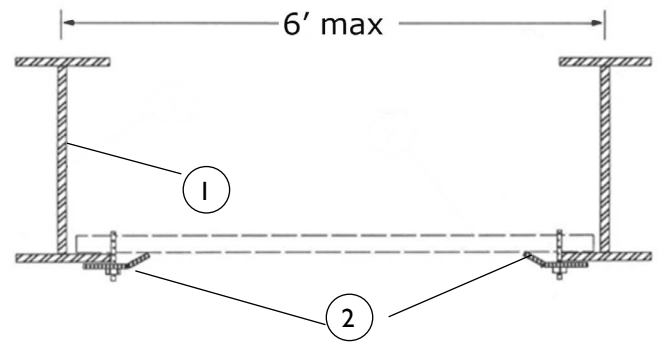
c. To calculate the leg length, determine the mounting height of the rail, then subtract that dimension from the bottom of the strut. Cut the aluminum square tube to this length.

Center a triangular foot and drill 2- 13/32 in. holes to attach foot. Repeat for the bottom foot positioned perpendicular to the rail (4). Attach the leg assembly to the strut on ceiling using 3/8 in. strut hardware. Attach the side brace kit (3).

For multiple legs, turn the side braces perpendicular to the rail and install one long front to back brace. Repeat for each leg assembly.

d. To splice two rails, position the rail sections on saw horses. Insert and center a splice plate (6) inside the rail (5), clamp in place with a C-Grip and drill 2- 5/16 in. (8 mm) holes on top 2 in. from the joint and 4 in. apart.

On both sides, drill the first 5/16 in. (8 mm) hole 2.5 in. (63,5 mm) from the top of the rail and 1 in. from the joint. Drill the second 5/16 in. (8 mm) hole 2.5 in. (63,5 mm) from the first hole. Insert the bolts but leave them loose. Silicone the joint and slide the other rail section onto the splice. Line up straight in both directions and clamp. Drill the same holes on the mating rail. Tighten the bolts in sequence - first tighten the top 4 bolts, and then the remaining 8 bolts on the sides for a total of 12 bolts.



#### 4.6 Mount the Rubber Seal

1. VSR profile
2. Rubber seal
3. Tool no. 0000102158

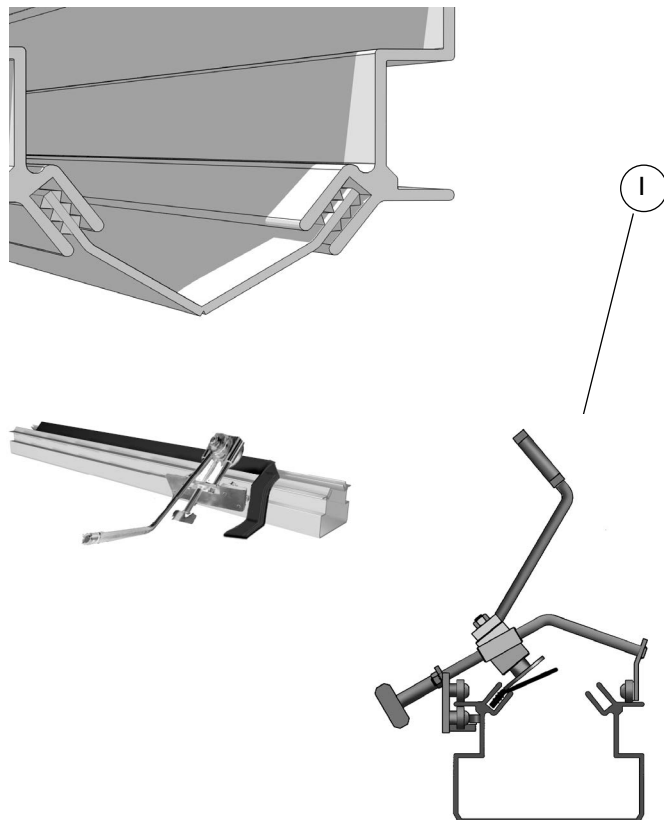
a. Turn the rail profile with the opening upwards.

The rubber lip seal can be easily installed with the Plymovent VSR Lip Tool before hanging the rail from the support legs; or you can install the lip after the rail is hung from the support legs.

The rubber lip seals are directional and must be installed with the inside bend towards the center of the rail or facing each other. With the rail still on saw horses, install the rubber lip with the bend facing inward. To make this easier, spray the lip and aluminum channel with a soapy solution.

Start installing the first 6 in. (15 cm) of rubber lip by hand using a screwdriver and then position the lip tool on the rail to roll the rest of the lip into the bend (1). Cut the ends at a 90 degree flush with the end of the rail. Repeat for the other side.

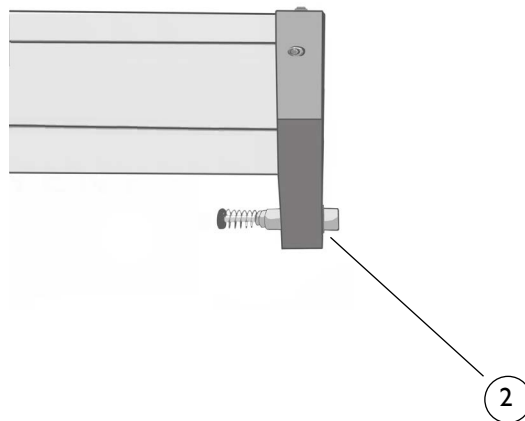
Note! The rubber seal must be angled inward.



#### 4.7 Install the End Caps

Place each end cap on the rail and drill 4 3/8 in. (9,53 mm) holes through the pre-punched holes in the end caps. Secure the end cap with the provided hardware. Repeat for the back end cap, but do not install until the rail is hung, so you can install the crab/trolley.

For the front end cap (nearest the door), install the shock absorber centered in the end cap (2), apply Blue Loctite on nuts and tighten securely.

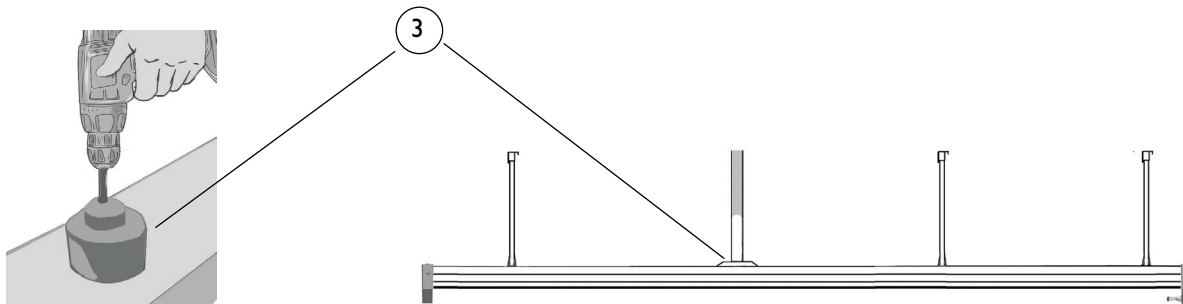


#### 4.8 Hang the Rail and Connect to Duct

On the top of the rail, lay out 3/8 in. (9,53 mm) holes, for the leg mounting feet locations, to match the distances between the leg assemblies previously hung from the ceiling.

Pre drill these holes. Raise the pre assembled rail using multiple scissor lifts or lifting mechanisms such as a chain fall. Position rail under leg assemblies and attach with hardware.

For each of the duct connection locations along the length of the rail, cut a 6 in. (15 cm) diameter hole in the top of the rail (3). Apply silicone sealeant to the bottom flange of the duct connector and attach with the provided self-drilling Tek screws. Repeat this step if you are using multiple duct connections on longer rails.



#### 4.9 Assemble and Hang the Hose and Grabber

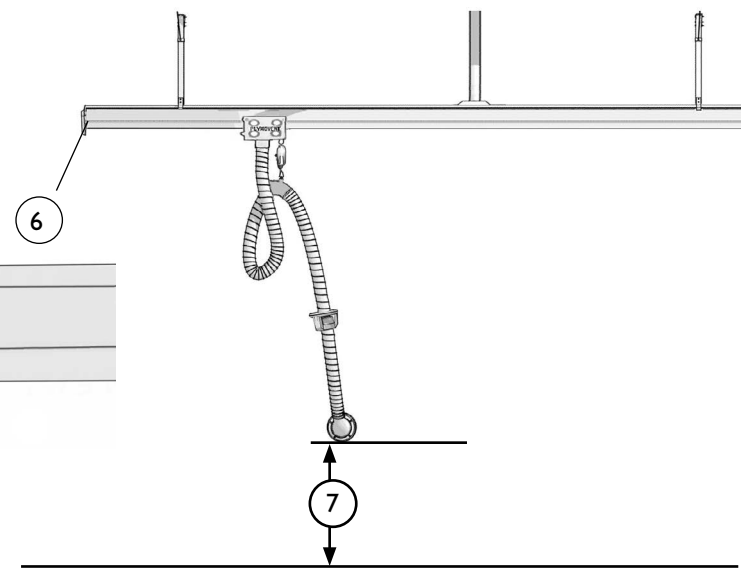
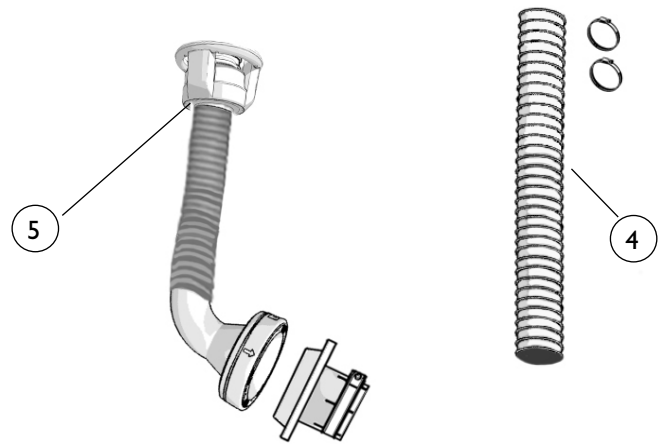
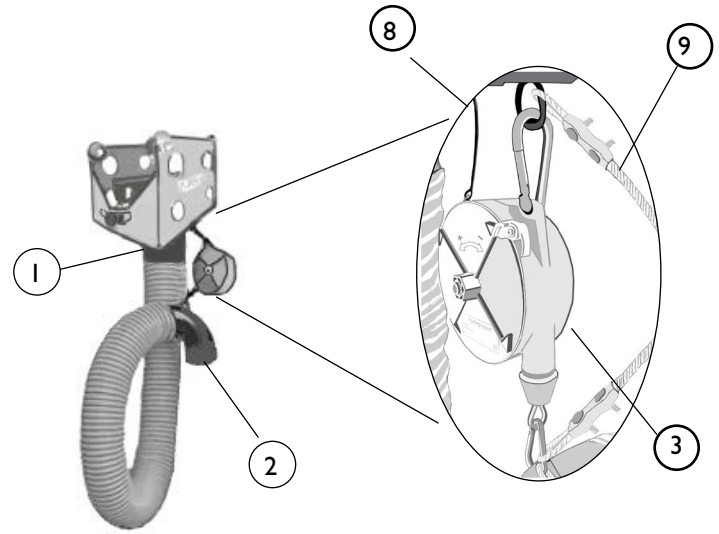
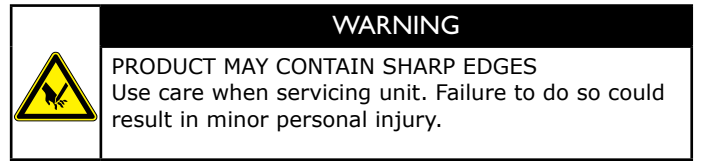
1. Upper Hose
2. Metal Saddle
3. Balancer
4. Mid Hose
5. Lower Hose Assembly (Safety Disconnect Handle)
6. End Plate

Follow these steps to assemble and align the exhaust hose assembly:

- a. Mount the upper hose (1) to the trolley using a hose clamp.
- b. Attach the upper hose to the short side (from the tab) of the metal saddle (2). You may need to twist the hose to have the u-bend or loop positioned away from the vehicle in the 3 o'clock position if looking down at the crab trolley, with the balancer at the 12 o'clock position.
- c. Install the balancer (3) using the caribiner hook and safety cable (8), and attach the Balancer Locking Cable (BLC) to the trolley (9). Assemble the BLC using the length listed in the Installation Table on page 10. Ideally, 6 in. (15 cm) of the Balancer cable should be exposed when the Grabber nozzle is connected to the vehicle.

Install the BLC so that it is on the back side of the balancer and away from the adjustment locking clip. This will keep the BLC from coming into contact and potentially breaking the locking clip. The balancer snap hook should be oriented with the catch or door of the hook on the same side of the balancer as the locking clip. This will ensure that the BLC does not open the snap hook, allowing the BLC to come loose. The BLC attachment to the metal saddle snap hook should be opposite of the catch or door so that it does not open it.

- d. Attach the mid hose (4) to the long side of the metal saddle with the supplied hose clamp. The mid hose is directional, so install with directional arrow pointing up or with the airflow.
- e. With the balancer holding the hose all the way up cut the mid hose at approx 4 ft (1,2 m) from the floor and attach to the Safety Disconnect Handle (5) with the supplied hose clamp.
- f. The height of the Grabber nozzle should be in. 14 to 18 in. (35,5 to 45,7 cm) from the finished floor (7).
- g. Secure the back end cap using the holes previously drilled (6).





#### 4.10 Install the PC-500 Pressure Switch

Please refer to Wireless Manual (article #100716) for installation.

### 5 MODIFYING THE TAILPIPE

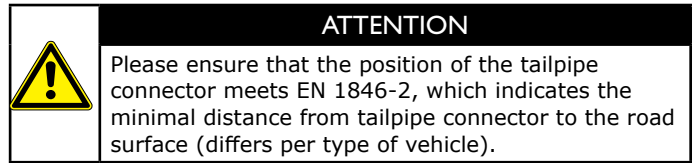
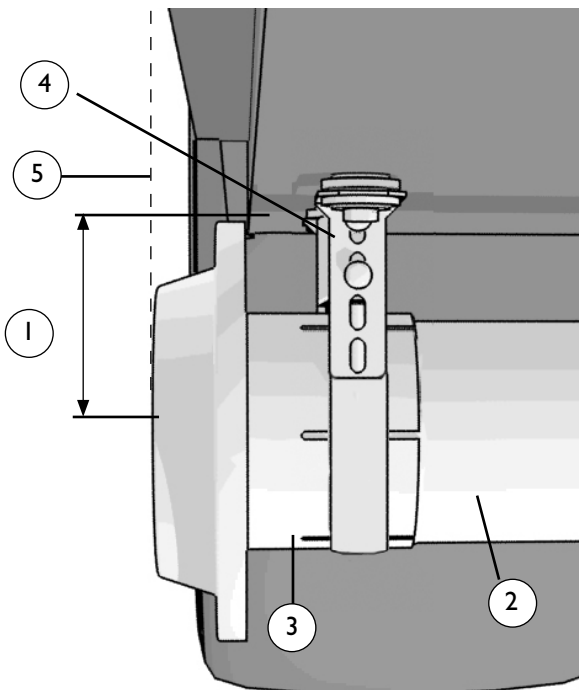
#### 5.1 Install the Tailpipe Connector

1. Distance exhaust pipe-truck body
  2. Tailpipe
  3. Conical tailpipe adapter
  4. Tailpipe bracket
- a. The distance between the middle point of the tailpipe and the body of the vehicle (1) must be at least:
- 3 in. (75 mm) in all directions when using a 3 in. system
  - 4 in. (100 mm) in all directions when using a 4 in. system
  - 5 in. (125 mm) in all directions, when using a 5 in. system

This should be checked before the conical tailpipe connector is attached.

- b. The end of the tailpipe (2) must be cut in a 90° angle and all sharp edges must be ground off.
- c. The conical tailpipe adapter (3) is positioned on the tailpipe. When attached the minimum space between the tailpipe connector and the body of the vehicle should now be at least 0.6 in. (15 mm) from the top and both sides of the tailpipe adaptor.
- d. The tailpipe support/hanger (4) must be positioned within 20 in. (500 mm) from the exhaust pipe end (2). If not, the optional tailpipe bracket must be installed. (see: option: installing the tailpipe brackets)

#### Example of Tailpipe Connector on Truck Body

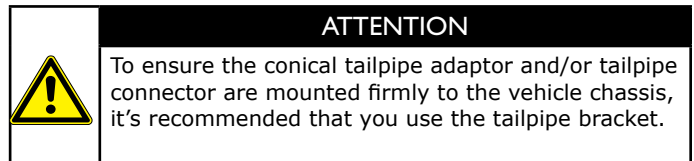


- e. The exhaust pipe must be in a 90° angle to the truck body with a max inclination of 5°.
- f. The distance between the exhaust pipe and the wheel must be a minimum 12 in. (300 mm).
- g) The tailpipe adapter shall be installed flush with the body of the vehicle in accordance to NFPA1500 (5). Make sure you meet EN-1846-2 requirements related to minimal clearance to the road.

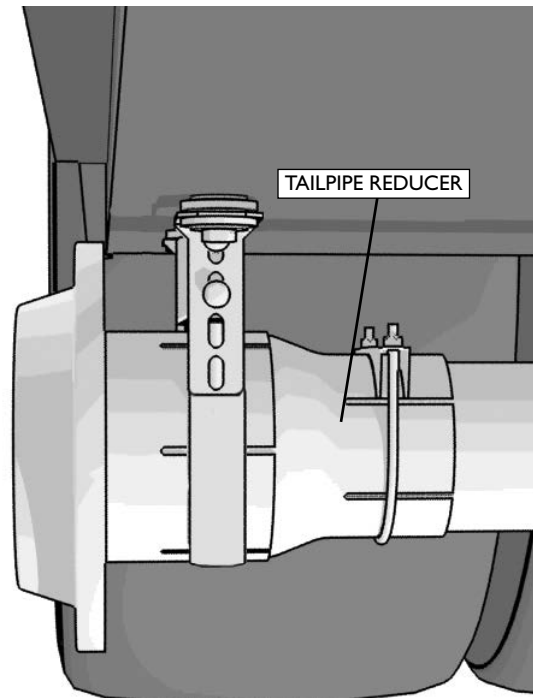
#### 5.2 Modify the Tailpipe

##### Option: Installing the Tailpipe Reducer

In case you want to install a 5 in. (125 mm) conical tailpipe adapter and the vehicle uses a 4 in. (100 mm) tailpipe, you will have to install a tailpipe reducer. The tailpipe reducer is a part that adapts the 4 in. (100 mm) tailpipe into a 5 in. (125 mm) tailpipe so the conical tailpipe adaptor can be installed. The tailpipe reducer is positioned over the existing tailpipe and fixed using a 4 in. (100 mm) tailpipe clamp. Product number: Refer to your FIRE Price list for specific product numbers.



#### Example of Tailpipe Connector on Truck Body with Tailpipe Reducer



### 5.3 Check the Balancer Tension

The balancer is delivered from the factory with pre-tension already set. After every component of the system is installed, you may need to adjust the balancer pre-tension to its final setting, to ensure that the balancer is functioning properly. Increase or decrease the spring tension until the rubber stop loosely hits the balancer housing and cable is retracted.

It's possible the balancer tension needs to be fine-tuned after the total system is installed and a test run is done.

### 5.4 Safety Disconnect Handle

#### Function:

The safety coupling disconnect opens in case of missue of the system or failure of the disconnection and can allways be re-used.

#### Adjustment:

The Safety Disconnect Coupling is delivered completely assembled with a preset tension. The standard setting on delivery gives you a release force at 450N and a reconnection force of 150N.

#### Release Force:

You can adjust the safety coupling disconnect by using different springs available from Plymovent. These are not included, so please contact your Plymovent authorized distributor.

### 5.5 Tailpipe Modification Options

#### Tailpipe Reducer

The tailpipe adaptor is used when an exhaust tailpipe needs to be converted from a smaller size to a larger size to allow the conical tailpipe adapter to be installed.

New Art. #	Old Art. #	Description
00000113613	90365-1011	Tailpipe Reducer, 5 in. (127 mm) Male to 4 in. (101,6 mm) Female w/clamp

#### Tailpipe support bracket

The tailpipe support bracket can be used for various dimension exhaust tailpipes and ensures a secure connection between the tailpipe and body / chassis. In some cases, you may need to divert the exhaust flow from the tailpipe to the side of the vehicle. The Magnetic Grabber® connector can then be installed to this modification.

When a tailpipe modification is needed, Plymovent recommends you consult the manufacturer of the vehicle.

As an example, the image on the next page shows the Plymovent tailpipe support bracket being used with a 3rd party tailpipe reducer pack. This ensures a support a correct and sturdy installation of the Magnetic Grabber® connector.

New Art. #	Old Art. #	Description
00000105131	90370-1011	Tailpipe Support Hanger

**WARNING**

The Balancer is delivered under tension. Be careful when unwinding this balancer.



**WARNING!**

After the Safety Disconnect has released please check if all spring blocks in the product are free of damage and functioning correctly. Any damaged parts should be replaced and the correct functioning should be verified. If the Safety Disconnect is not functioning correctly, it can potentially cause damage to person or property.

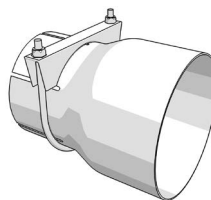


Image: Tailpipe reducer

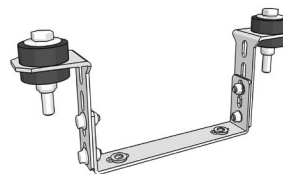


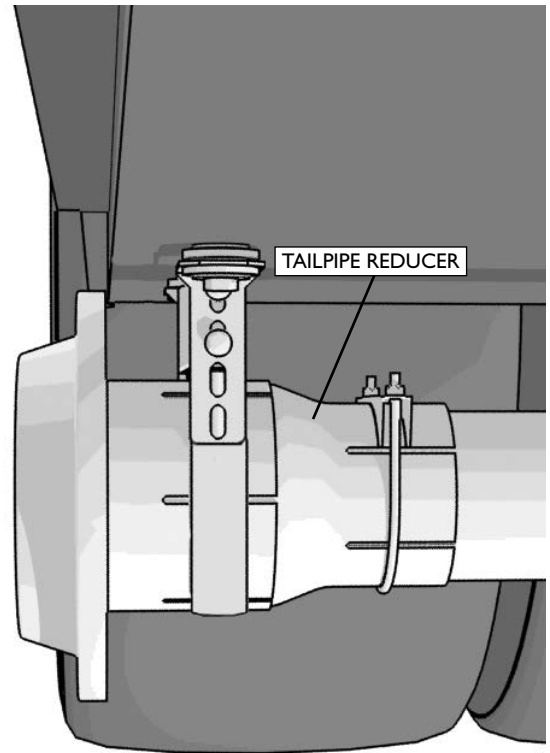
Image: Tailpipe support bracket

### Tailpipe reducer packs

The tailpipe reducer pack enables vehicles with different tailpipe sizes to connect to the Plymovent Magnetic Grabber tailpipe connector.

This product can be used in combination with the Magnetic Grabber tailpipe bends as well as direct onto the Magnetic Grabber tailpipe connector. The tailpipe reducer pack allows a wide range of exhaust pipes to connect to the Plymovent system.

New Art. #	Old Art. #	Description
00000113613	90365-1011	Tailpipe Reducer, 5 in. (127 mm) Male to 4 in. (101,6 mm) Female w/clamp
00000115892	702014-K	Tailpipe Reducer, 5 in. (127 mm) Male to 3.5 in. (88,9 mm) Female w/clamp
0000105131	90370-1011	Tailpipe Support Hanger



## 6 USER AND MAINTENANCE INSTRUCTIONS

### 6.1 Operating the Magnetic Grabber

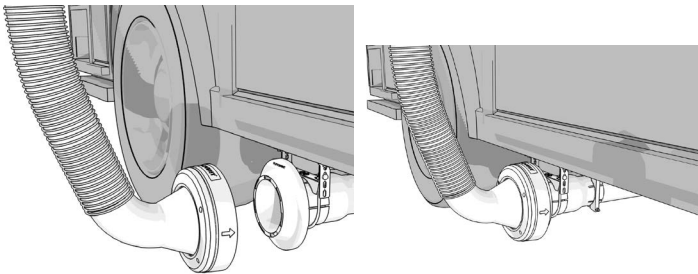
#### 6.1.1 Connecting the Magnetic Grabber

Please ensure that, on the side of the vehicle where the system is installed, no persons are present in an area of 3 feet (1 m) under and / or around the VSRX system and /or between the vehicle and the entry / exit door when the vehicle exits the building. This way possible injuries can be avoided by a possible backwards motion of the Grabber in the direction of the station and park position.

When a vehicle returns to its bay the Magnetic Grabber nozzle can easily be attached to the conical tailpipe adaptor.

The Magnetic Grabber nozzle must be placed straight onto the conical tailpipe adaptor, but to connect it is easiest to first attach the top of the Magnetic Grabber and then press down on the safety disconnect in order to attach the lower part of the Magnetic Grabber.

The conical design of the connection surface ensures safe and easy positioning.



#### 6.1.2 Disconnecting the Magnetic Grabber

- a. Automatic disconnect - The Magnetic Grabber nozzle will disconnect automatically when the vehicle exits the bay.
- b. Manual disconnect - To manually disconnect the Magnetic Grabber nozzle; hold the safety disconnect with two hands and push it downwards.

#### 6.1.3 Cleaning Instructions

To ensure a good magnetic connection at all times, you will need to occasionally clean a few components:

- a) Make sure you keep the connection surface of the conical tailpipe adaptor clean of soot and other contaminations.
- b) Using a damp cloth (rubbing alcohol, degreaser, or other fast-evaporating solvent), wipe the connection surface of the Magnetic Grabber®.
- d) Using a damp cloth, wipe the entire vertical face/sealed flange of the conical tailpipe adaptor. Diesel soot build-up may occur when idling or driving at slow speeds.

### 6.2 Inspection and Maintenance

We recommend that you add the following activities to your truck cleaning schedule:

1. Check if the magnets on the Magnetic Grabber are all in place and clean.
2. Check if the conical tailpipe adaptor is clean and there are no obstructions that can prevent the magnets from positioning themselves on the product.
3. Remove the hose assembly from the balancer and check the hose for any defects.
4. Make sure the metal saddle and Magnetic Grabber are still fixed tightly to the hose.
5. Check to make sure the trolley runs smoothly through the rail and correct stop at the end-stops.
6. Clean the inside of the rubber lip.

#### ATTENTION!

Service and maintenance only to be done by qualified and trained persons (in EU according to TRGS 554.)



Use sufficient safety gear and guards when working on a higher level than 6.6 ft. (2 m)

Only carry out service and maintenance when the system is fully disconnected from main circuit.

Be sure no vehicle can enter the station/bay when carrying out service/maintenance.

## 7 CLEANING AND FAQ

### 7.1 Hose package

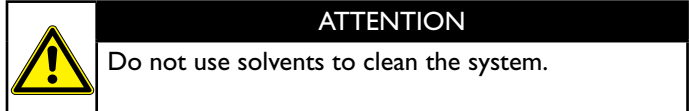
Spot clean with a soap and water solution.

### 7.2 Other Components

Use compressed air to blow equipment clean.

### 7.3 VSRX-Rail and Suspensions

Clean the exterior with a soap and water solution.



You observe that....	Possible Cause	Actions to Take
The Grabber does not connect tightly to the tailpipe connector.	The magnets in the Grabber cannot make a clear connection.	Clean the tailpipe connector from any soot or dirt.
The Grabber is dragging over the floor.	1. The balancer cable doesn't retract. 2. The hose drop is too long.	1. Increase the balancer pre-tension (refer to "Check the Balancer Tension" in this manual) 2. Disconnect the saddle and reposition the hose.
The Grabber is transported out of the Station too far.	1. The BLC is too long 2. The end stop is located too close to the door.	1. Shorten the BLC. 2. Shorten the rail.
The swing-back of the hose drop after disconnection is too extreme.	1. The balancer pre-tension is too strong. 2. The BLC is too long. 3. The distance between the vehicle and the standard hose position is not correct. 4. The end stop is located too far from the door.	1. Decrease the balancer pre-tension. 2. Shorten the BLC. 3. Make sure the vehicle and rail are positioned correctly. 4. Reposition the rail closer to the entry door.
The Grabber disconnects prematurely.	1. The BLC is too short 2. The end stop is located too far from or too close to the door. 3. The distance between the vehicle and the standard hose position is not correct. 4. Too much friction between the trolley and the rail.	1. Lengthen the BLC. 2. Reposition the rail closer to the entry door. 3. Make sure the vehicle and rail are positioned correctly. 4. Clean the inside of the rubber lips and/or install a aluminum trolley.
The hose drop swings back into the station too far after disconnection.	1. The balancer pre-tension is too strong. 2. The BLC is too long.	1. Decrease the balancer pre-tension. 2. Shorten the BLC.

## 8 DISPOSAL

The level of service and maintenance on the Plymovent systems is relatively low. The service and maintenance department of Plymovent consists of well trained personnel who can offer you a service and maintenance contract which ensures your system will function for many years to come, and protects your personnel and investment.

#### Disposal:

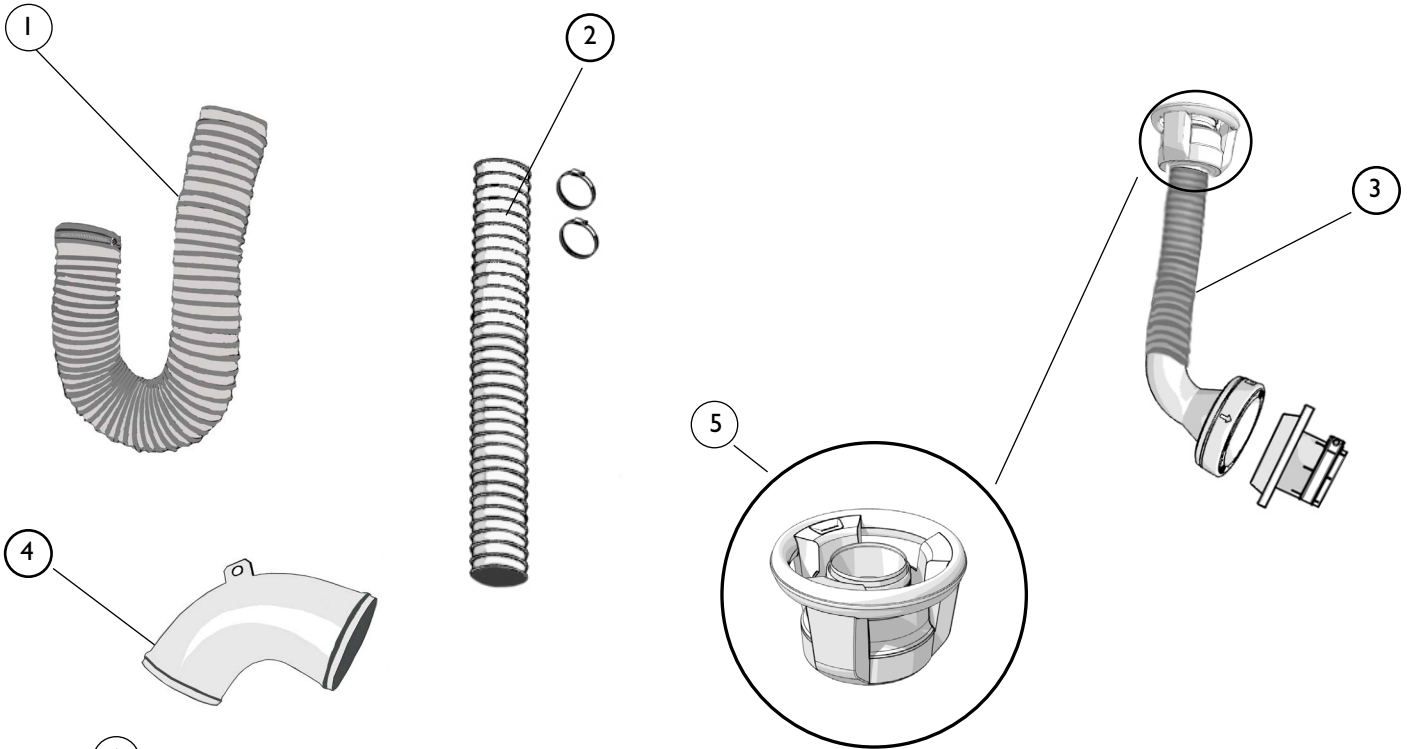
- Cardboard packaging	Recycle
- Aluminium profile	Recycle
- Hose	Rest waste
- Grabber® Nozzle	Rest waste

When dismantling the system please ensure to follow the similar safety precautions as mentioned in this manual for installation.

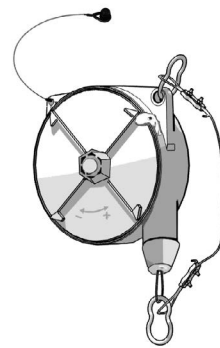
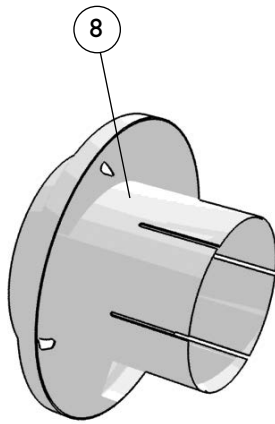
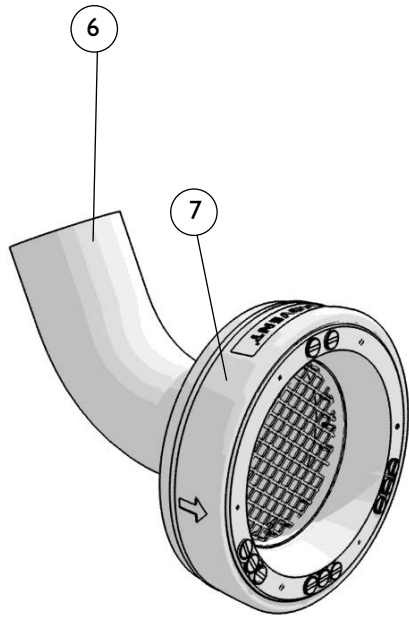
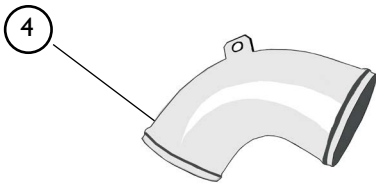
Dismantling must be done contrary to the installation instructions.

Dismount loose parts before the rail is dismantled.

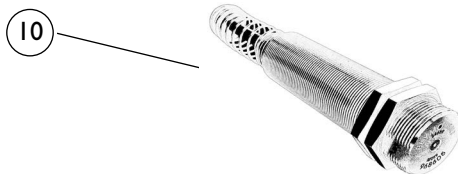
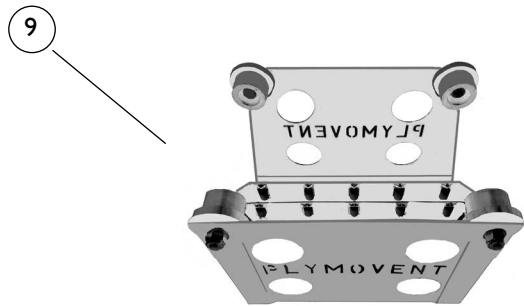
9 SPARE PARTS



See Separate SDCH manual



See Separate Balancer manual



<b>PLYMOVENT®</b>	<b>SPARE PART LIST</b>	BSAB No: I3.I Ser. No: VSRX Date: May-18
<b>VSRX</b>	©Copyright: All rights reserved. All information within this printed matter may not be reproduced, handed over, copied, or translated into another language, in any form or any means without written permission from Plymovent. Plymovent reserves the right to make design changes.	

A	All models	All models of VSRX
B	VSRX-20	
C	VSRX-30	
D	VSRX-40	
E	VSRX-45	
F	VSRX-50	
G	VSRX-55	
H	VSRX-60	
I	VSRX-65	
J	VSRX-70	
K	VSRX-75	
L	VSRX-80	
M	VSRX-85	
N	VSRX-90	
O	VSRX-100	
P	VSRX-120	

Note: Because all Plymovent hose systems are custom configured, please consult your authorized distributor/installer for the proper part needed for your system.

Pos	New Art. #:	Old Art. #:	Description	Note
1	Multiple Numbers		MG Upper Hose (various sizes are available)	Consult your authorized Plymovent distributor.
2	Multiple Numbers		MG Mid hose (various sizes are available)	Consult your authorized Plymovent distributor.
3	Multiple Numbers		MG Lower Hose (sold separately or in the Magnetic Grabber® Assembly, as noted below)	Consult your authorized Plymovent distributor.
4	00000112484	805507	Metal Hose Saddle Ø 4 in. (100 mm)	
	00000112483	805555	Metal Hose Saddle Ø 5 in. (125 mm)	
5	00000116005	702500-1	SDCH 4 in. (100 mm) for Magnetic Grabber	Separate SDCH parts are available. Refer to your SDCH manual or consult your authorized Plymovent distributor.
	00000115885	702501-1	SDCH 5 in. (125 mm) for Magnetic Grabber	Separate SDCH parts are available. Refer to your SDCH manual or consult your authorized Plymovent distributor.
6	00000116733	702008-1	Magnetic Grabber® 4 in. (100 mm) for 4 in. (100 mm) hose connection	An assembly kit is also available that includes the Magnetic Grabber, Lower Hose and Tailpipe components.
	00000115888	702010-1	Magnetic Grabber® 5 in. (125 mm) for 5 in. (125 mm) hose connection	An assembly kit is also available that includes the Magnetic Grabber, Lower Hose and Tailpipe components.
7	00000112739	90380-3	Magnetic Grabber® protection collar 4 in. (100 mm)	
	00000112741	90360-3	Magnetic Grabber® protection collar 5 in. (125 mm)	
8	00000112504	90380-1	MG/Tailpipe connector 4 in. (100 mm)	
	00000112505	90360-1	MG/Tailpipe connector 5 in. (125 mm)	
	00000112499	90360-6	MG/Tailpipe connector 6 in. (150 mm)	
	00000112500	90360-7	MG/Tailpipe connector 7 in. (150 mm)	
9	00000114922	804002	External Crab 6 in. (150 mm)	
10	00000116074	704077	Shock Absorber for External Crab	

