

Sliding Balancer Track System -
with Pneumatic Grabber[®]

SBTA

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 SBTA system.

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



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

	<p>ATTENTION Incorrectly applied or installed electrical controls and switches can result in component damage or a reduction in product life. Wiring or application errors, such as, undersizing the wire or motor, incorrect or inadequate supply voltage, or excessive ambient temperatures can result in malfunction of the system.</p>
	<p>ATTENTION The electrical controls and switches may contain ESD (Electrostatic Discharge) sensitive parts and assemblies. Static control precautions may be required when installing, testing, servicing or repairing this assembly. Component damage can result if ESD control procedures are not followed.</p>

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.

	<p>WARNING! Identifies information about practices or circumstances that can cause an explosion in a hazardous environment, which may lead to personal injury, death, property damage, or economic loss.</p>
	<p>ATTENTION Identifies information about practices or circumstances that can lead to personal injury or death, property damage, or economic loss. Attention helps you identify a hazard, avoid a hazard, and recognize the consequent.</p>

IMPORTANT

Identifies information that is critical for successful application and understanding of the product.

	<p>SHOCK HAZARD Labels may be on outside or inside of the equipment, for example control box, to alert people that dangerous voltage may be present.</p>
	<p>ARC FLASH HAZARD Labels may be on outside or inside of the equipment, for example control box, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protection Equipment (PPE). Follow ALL regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).</p>

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 SBTA 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:

	ATTENTION A remark with additional information for the user. A remark brings possible problems to the user's attention.
	CAUTION! Procedures, if not carried out with the necessary caution, could damage the product, the workshop or the environment.
	WARNING! Procedures which, if not carried out with the necessary caution, may damage the product or cause serious personal injury.
	CAUTION! Risk of electric shock.
	WARNING! 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 Sliding Balancing Track (SBTA) with Pneumatic Grabber removes toxic exhaust gasses within the fire station.

1.2 Product combinations

SBTA can be used in back in and drive through applications with multiple vehicles inline. Systems are available in Back In bays for up to 66 ft. (20 m) from exit door to tailpipe and in Drive-Through bays for up to 72 ft. (22 m) from door to door.

1.3 Technical data

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

The hose kit includes a Safety Disconnect Handle that protects the system from damage in the unlikely event that the Pneumatic Grabber remains attached to the vehicle. The hose is suspended by a metal saddle that is attached to the balancer.

The balancer is connected to the aluminium track via a special trolley. This enables the trolley to move inside the aluminium profile which is positioned above and next to the tailpipe side of the vehicle. The aluminium profile is designed to a three (3) section principle of which two (2) sections have open areas, one on the underside and one on the overside. The overside open area is used for positioning the support legs, duct and exhaust hose connector and the release valve. The underside open area is used for positioning the end stops and for the sliding the trolley.

The SBT system is designed to connect to a vehicle tail pipe and capture virtually 100% of the exhaust emissions. The SBT is fully automatic, from the fan activation to the automatic nozzle release from the exiting vehicle. Designed for either a single back-in or drive-through bay, SBT can handle a vehicle in with a tailpipe that is up to 12 meters (40 ft.) from the door.

1.4 Method of use

SBTA is designed for under carriage tailpipe vehicles. As the vehicle exits the station, the extraction hose, connected to the exhaust by a special device called a Grabber® to the tailpipe connector moves along with the vehicle.

Harmful exhaust is captured at the source by the Grabber, and continues through the extraction hose and into the ducting and extraction fan before escaping outside. As the vehicles drive out through the doors, the trolley moves to the end of the track, There the balancer locking cable restricts the balancer to unwind pulling the Grabber from the tailpipe connector allowing it to disconnect.

When the vehicle returns to the station, an operator reconnects the Grabber to the tailpipe. At the same time the fan automatically starts up and the vehicle continues through the station with the Grabber secured.

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 ft (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.

	ATTENTION!
	<p>Stay alert and pay attention during the installation. Do not use the product when you are under the influence of drugs or alcohol.</p> <p>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.</p>

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.

	ATTENTION!
	<p>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.</p>

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).

	ATTENTION
	<p>The SBTA 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.</p>

	WARNING!
	<p>Do not put hands or other body parts in the Grabber.</p>

2 SBTA COMPONENTS

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

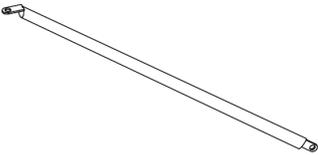
Support leg

The aluminium support leg is used for both vertical and horizontal mounting. The standard length is 19 ft (5,7 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).



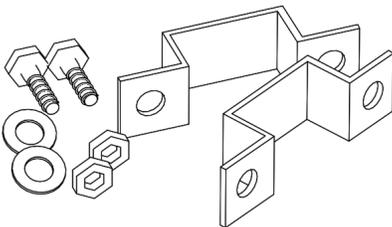
Side brace

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.

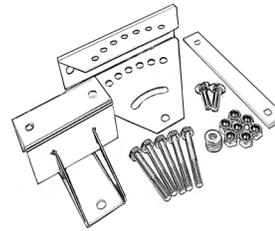


Adjustable mounting kit (vertical)

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



Adjustable mounting kit (horizontal) The bracket that is used against the wall is the same as for the vertical kit (see above) but this kit includes a bracket that is connected with two bolts to the support leg.



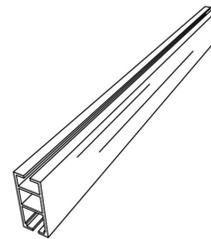
SBTA Track

The SBTA track is delivered in 2 lengths:

SBT track 19 feet (5790 mm)

SBT track 9.5 feet (2895 mm)

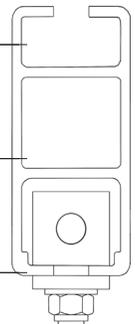
Track Structure



Support section

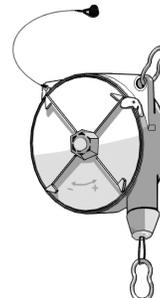
Stabilizer

Trolley section



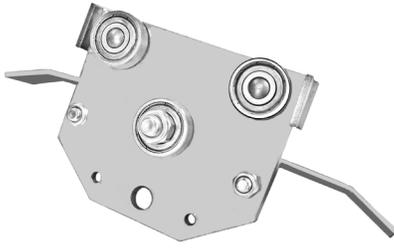
Balancer

The non-locking spring recoil balancer has a lifting capacity of 8 - 17 kg (17.6 - 37 lbs) with a cable length of 2.2 m (6.6 ft). The balancer is designed to lift the hose and control the hose assembly as the vehicle exits the facility and the sliding crab hits the trip plate, releasing the Pneumatic Grabber from the tailpipe.



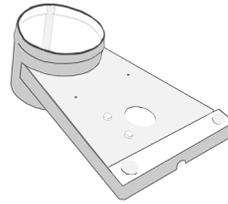
Trolley

The sliding crab runs inside of the track.



SBT Riser Bracket

The riser bracket connects the hose to the ductwork and faces away from the vehicle.



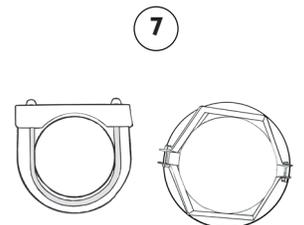
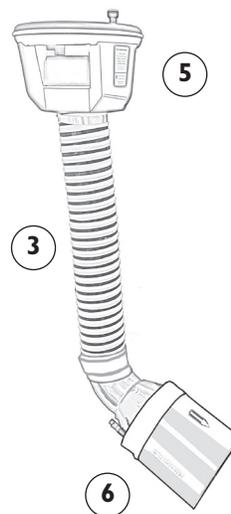
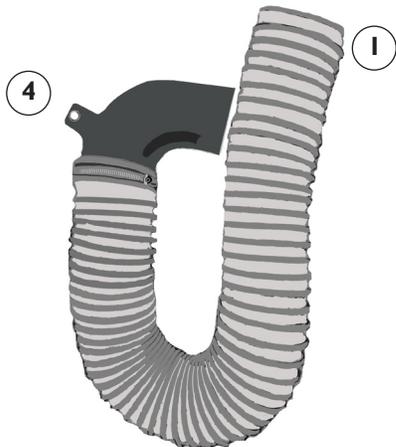
Hose Kit

Hose kits available:

- ST (standard temperature) hose: 400°F (205°C) continuous, 500°F (260°C) intermittent
- HT (high temperature) hose: 480°C (900°F) continuous, 570°C (1,050°F) degrees intermittent (upper, mid and lower hose)
- Hose diameter is either 4 or 5 in. (100 mm or 125 mm)
- Pneumatic Grabber is either 3, 4 or 5 in. (75, 100, or 125 mm)

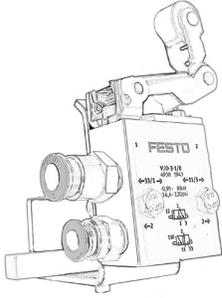
The different hose packages which contain the following parts:

- 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)
- Pneumatic Grabber® nozzle (6)
- Pneumatic Grabber® stop plate (7)



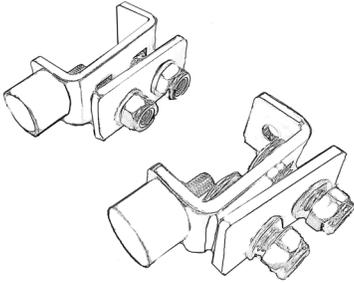
SBT Uncoupling / Release Valve Assembly

This assembly includes Festo fittings and mounting bracket.



SBT End Stops

The sliding crab runs inside of the track.



3 TAKE MEASUREMENTS

3.1 Measuring the Track Height

- Determine the installation height of the track (measured from the bottom of the track) (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.



ATTENTION

It's important that you determine an accurate balancer locking cable length to ensure that the Grabber releases from the truck as it exits the station. The Plymovent SBTA Submittal document contains a system sizing chart that details the track length vs. mounting elevation and track start point from the exit door.

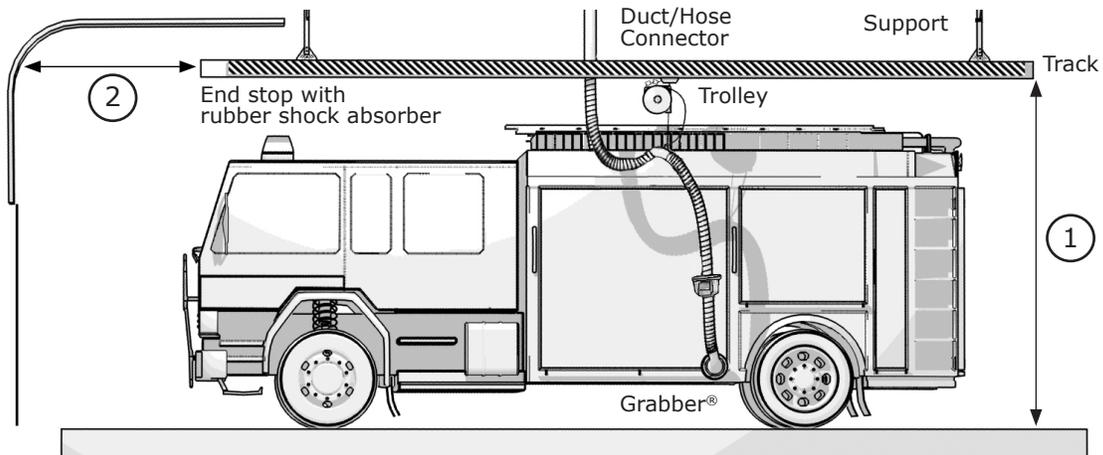
Installation Table:

Track height			Distance End stop / door	
Feet	m		Feet	m
12	3,7	min	5.0	1,5
		Recomended	5.5	1,7
		max	6.0	1,8

Track height			Distance End stop / door	
Feet	m		Feet	m
13	4	min	5.5	1,7
		Recomended	6.0	1,8
		max	6.5	2,0

Track height			Distance End stop / door	
Feet	m		Feet	m
14	5	min	6.5	2,0
		Recomended	7.0	2,1
		max	7.5	2,3

Side View



3.2 Back-In Measurements

Please determine the position of:

1. Tailpipe
2. Exit door
3. Distance from Exit door to the tailpipe

- a. Determine the location of the tailpipe (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

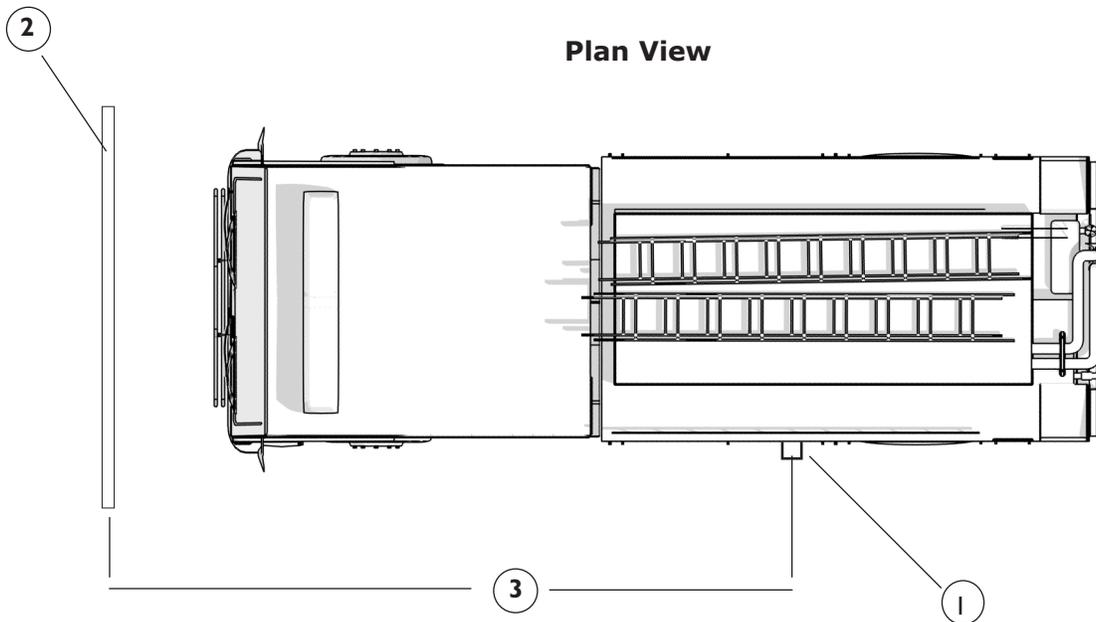
Determine the height that the track can be installed under the door when fully raised. The height should be in line with the specifications indicated in this manual in order to ensure correct product performance.

- c. Measure the distance between the door and the tailpipe (3). This is the required minimum length of the SBTA track. Check before installation that this is the minimum required length of the SBTA in back-in application.

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

	WARNING
	PRODUCT MAY CONTAIN SHARP EDGES Use care when servicing unit. Failure to do so could result in minor personal injury.

	CAUTION
	Be sure to order the right Grabber dimension. If a incorrect version is used on the tailpipe, the system could be damaged or will not properly remove exhaust from the facility.



3.3 Drive-Through Measurements

Please determine the position of:

1. Tailpipe
- 2.1 Entrance door
- 2.2 Exit door
3. Distance between entrance and exit door

a. Determine the location of the tailpipe (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 to see if the tailpipe needs to be modified. 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 track can be installed. The height should be in line with the specifications indicated in this manual in order to ensure correct product performance.

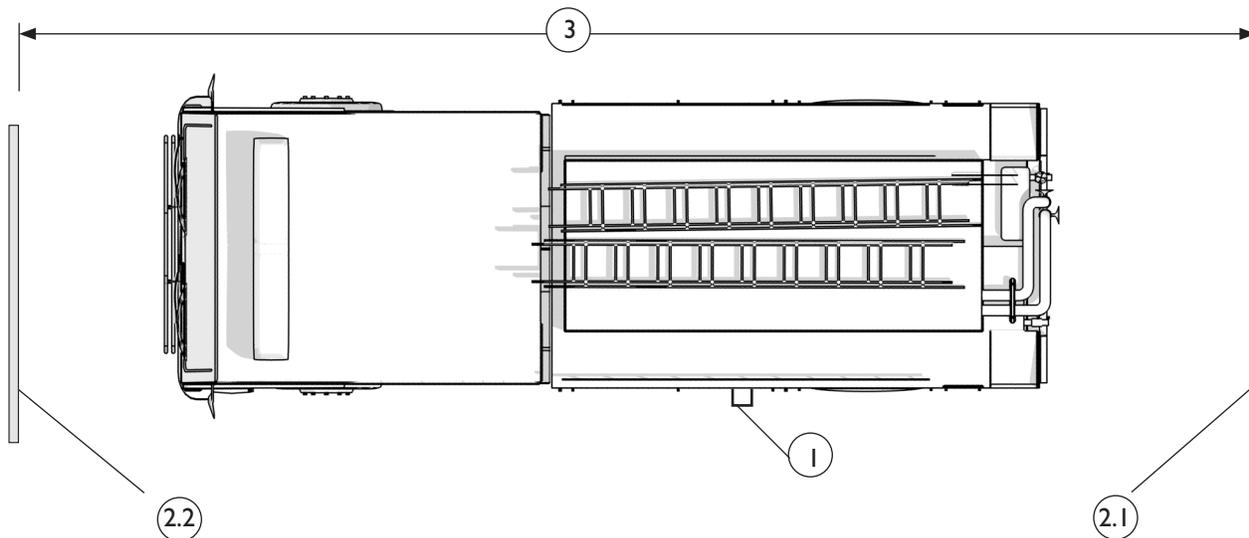
c. Measure the distance between the entrance door and exit door minus two (2x) times the distance between the end of the track and the exit door (3) distance shown in the Installation Table on page 10.

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

	WARNING
	PRODUCT MAY CONTAIN SHARP EDGES Use care when servicing unit. Failure to do so could result in minor personal injury.

	CAUTION
	Be sure to order the right Grabber dimension. If an incorrect version is used on the tailpipe, the system could be damaged or will not properly remove exhaust from the facility.

Plan View

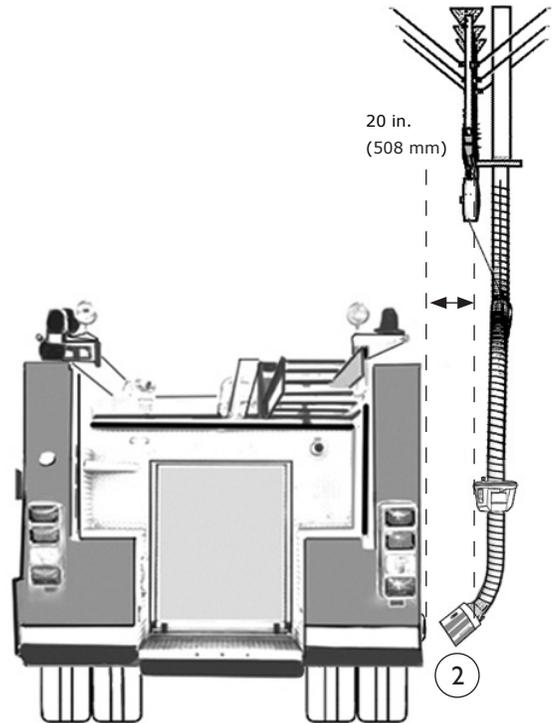


3.4 SBTA Track Measurements

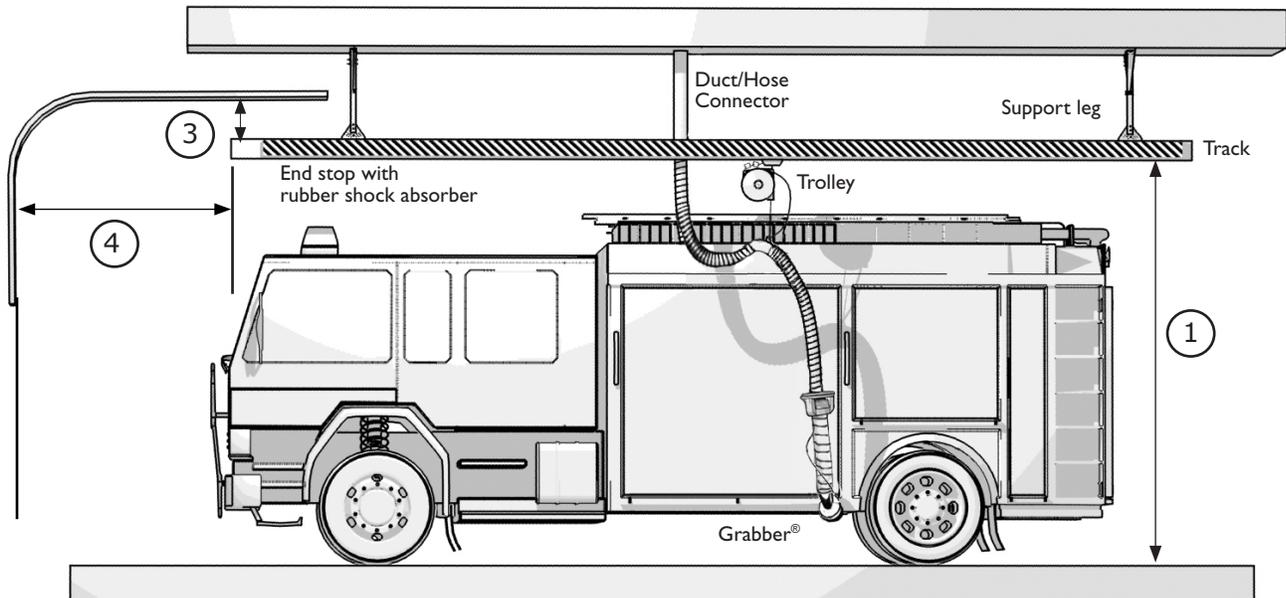
1. Track height
 2. Distance to vehicle
 6. Distance from track to exit door
- a. The SBTA track (1) is mounted between 10 and 16 ft (3 and 5 m) above the finished floor on the side in which the tailpipe is located.
 - b. Mount the track approximately 20 in. (508 mm) from the tailpipe side of the vehicle body (2). The distance between the hanging hose and the vehicle should be between 14 and 18 in. (350 and 450 mm). Measure the garage door and truck width in order to determine the track mounting position.
 - c. The track should be mounted immediately under a sectional door (3) with a clear height from the track to the door of 4 to 6 in. (100 to 150 mm).
 - d. The recommended distance from the end of the track to the door(s) (4) can be found in the table on page 10.

WARNING	
	<p>PRODUCT MAY CONTAIN SHARP EDGES Use care when servicing unit. Failure to do so could result in minor personal injury.</p>

End View



Side View



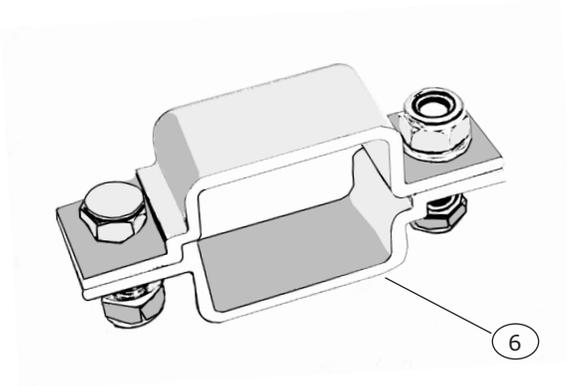
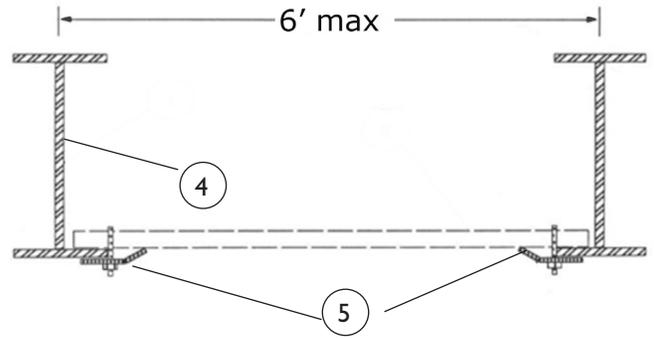
ATTENTION	
	<p>Based on the door height and distance from end of the track, a cantilever under the door may be required, so that the vertical hanger leg does not obstruct the door track. Typically, the cantilever is required once in a Back In system and twice on a Drive Through system.</p>

3.5 Vertical Support Measurements

1. Front Support
2. Rear Support
3. Additional Support

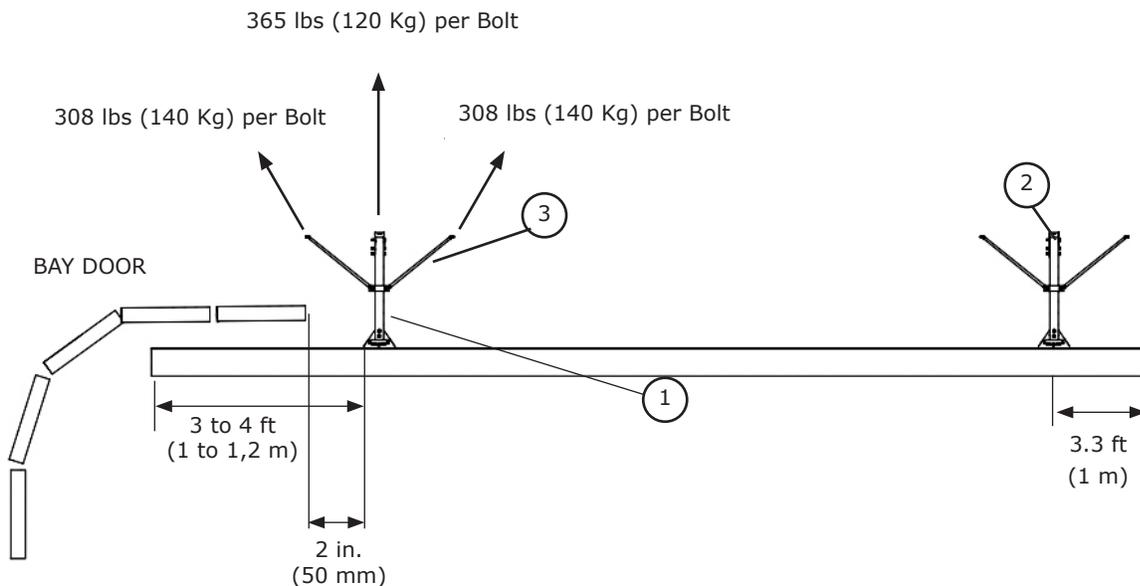
- a. Determine the position of the front support (1) based on the distance from the exit door. The front support should be installed at least 2 in. (50 mm) from the exit door when the door is open. The front of the track can be at least 5 ft (1,5 m) from the exit door. If the the front of the track is more than 5 ft from the exit door, install a wall mounting bracket to attach the front support.
- b. The rear support (2) should be 3.3 ft (1 m) from the rear of the track. If the SBT track is more than 20 feet (6 m), additional supports should be used. Supports should be spaced approximately 10 ft (3 m) apart.
- b. If you are attaching the Support Legs (4) to steel beams, use Unistrut bar clamps (5). To attach to the top or bottom of a bar joist, use a thru bolt in the slot of the bar joist.
- c. Mount the Support Leg to the roof or to beams. The first leg will be approximately 3 to 4 ft (0,9 m to 1,2 m) from the end of the track. Leg assemblies will need to be placed every 10 to 12 ft. (3 m to 3,7 m) and braced side to side using the appropriate length side brace kit.

Note: Longer braces can be made out of 3/4 in. EMT conduit and attached to the leg using a Plymovent leg/brace mounting kit (6). Plymovent article number is 0000105233 (formerly 8130-1011). You should have at least one long brace running front to back.



ATTENTION!	
	The length of track that extends to the exit door beyond the first hanger should not exceed 4 ft. (1.5 m). If the length is more than 4 ft., you will need to cantilever the first hanger beneath the door track.

SIDE VIEW



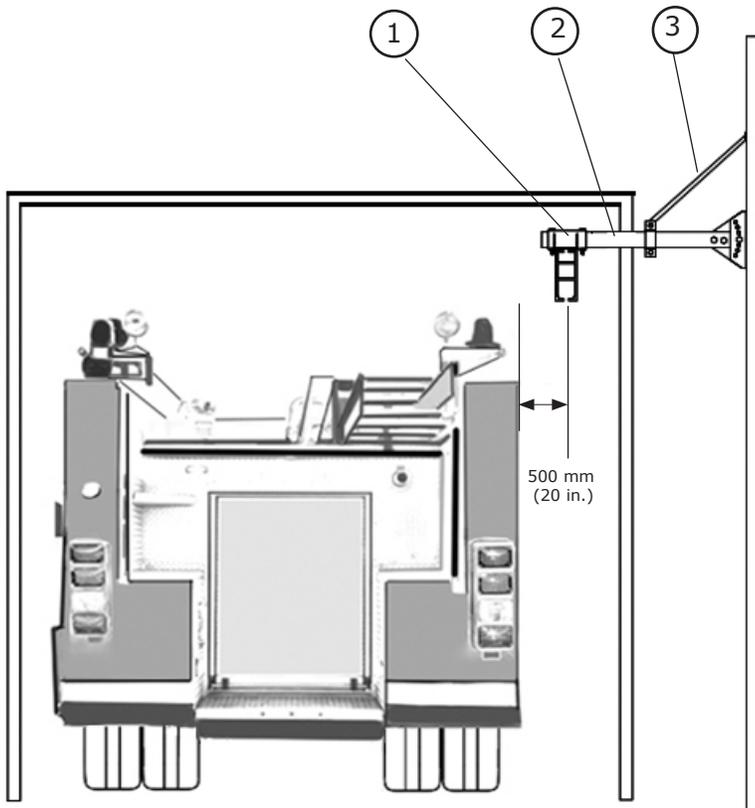
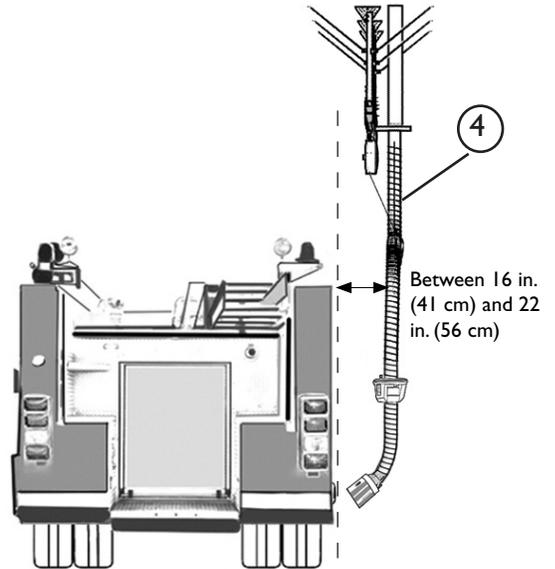
4 MOUNT TO WALL

1. SBT track
 2. Support leg
 3. Additional Brace
- a. The position of the SBT track (1) is determined first and should be between 16 and 22 in. (41 cm and 56 cm) from the tailpipe. The profile is positioned within the gap of the open door.
- b. The support leg (2) is then measured versus the mounting position at the wall.
- c. Depending on the length of the SBT track, you may have to mount additional supports. The first installation bracket should be at least 5 ft (1,5 m) from the beginning of the track.
- d. Hose location: The hose (4) should be located between 16 in. and 22 in. (41 cm and 56 cm) from the tailpipe.

Note: Because of the offset to the riser bracket, measure the distance from the edge of the vehicle to the center of the riser bracket, not the track.

WARNING	
	PRODUCT MAY CONTAIN SHARP EDGES Use care when servicing unit. Failure to do so could result in minor personal injury.

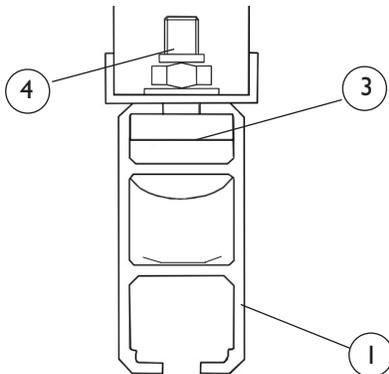
CAUTION	
	Before lifting the track be sure that end stops have been installed. This to avoid injury if the track is not level as it is lifted, causing the trolley to move.



5 INSTALL THE SUSPENSIONS

1. SBTA track
 2. Support leg
 3. Mounting clamp
 4. Carriage bolts M10x30 with washers and locking nuts
 5. Bolts M10x70 with washers and locking nuts
 6. Brackets
 7. Upper Bracket
 8. Uncoupling / Release Valve
- a. Cut the support legs (2) to the proper length. Install the SBT Track and install the SBT stop.
 - b. Insert the mounting clamp (3) with two M10x30 bolts (4) for the suspensions in the profile (1). Make sure to insert the bolts into the correct side of the profile. Insert the Uncoupling / release valve bracket (8) between the first and second suspension leg.
 - c. Drill two holes in the support leg (2), one for the upper and one for the lower bracket (6). Mount the brackets (6) to the support leg (2), the upper bracket can be adjusted by up to 30 degrees if needed.
 - d. After adjusting the track, drill a second and a third hole through the brackets (5) into the support legs (2). Use the pre-drilled holes in the brackets (6) and fasten with carriage bolts.
 - e. Install at least one diagonal brace from the lower portion of the support leg up to the roof to prevent swaying along the track length.

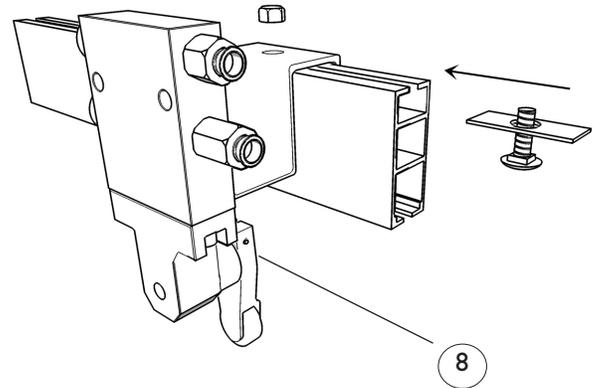
BACK VIEW



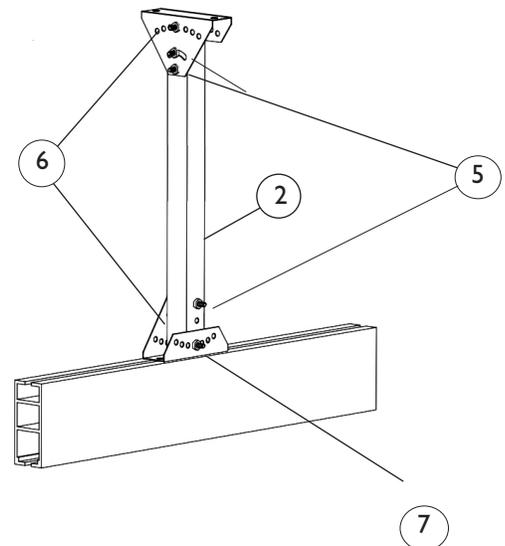
CAUTION



Before lifting the track be sure that end stops have been installed. This to avoid injury if the track is not level as it is lifted, causing the trolley to move.



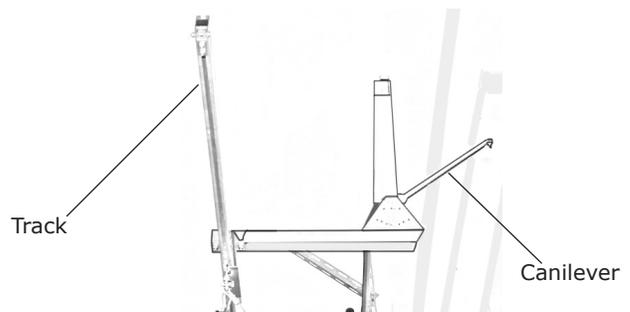
SIDE VIEW



ATTENTION!



If the length of track beyond the first hanger is more than 4 ft. (1.5 m) to the exit door, cantilever the first hanger beneath the door track, as shown below.



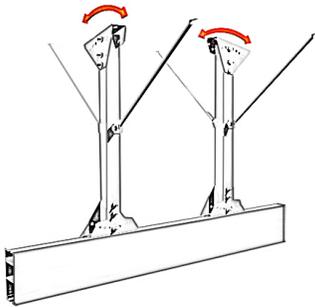
6 INSTALL LEG SUPPORTS

1. SBT Track
 2. Side brace
 3. Longitudinal brace
 4. Bolts M10x20 and locking nuts
- a. Mount both side braces (2) on the same bracket.
 - b. Mount the longitudinal brace (3) in a separate bracket. Use M10 x 20 and a locking nut (4), and make sure the support is plumb before fastening the bolts.

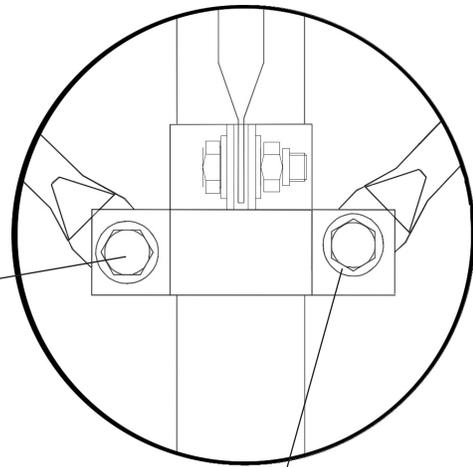


CAUTION

Before lifting the track be sure that end stops have been installed. This to avoid injury if the track is not level as it is lifted, causing the trolley to move.

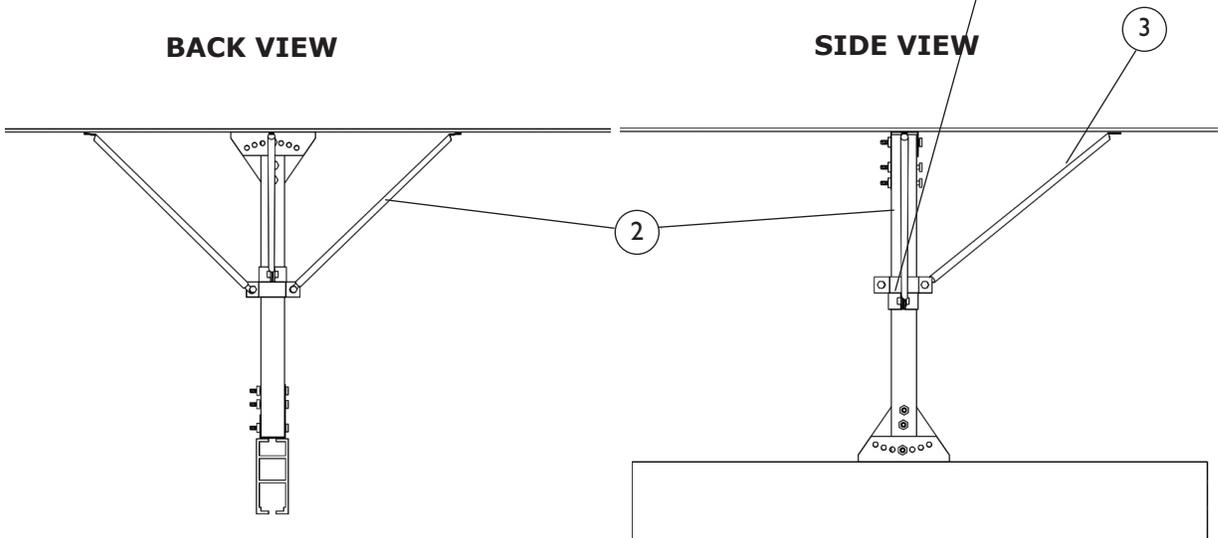


4



BACK VIEW

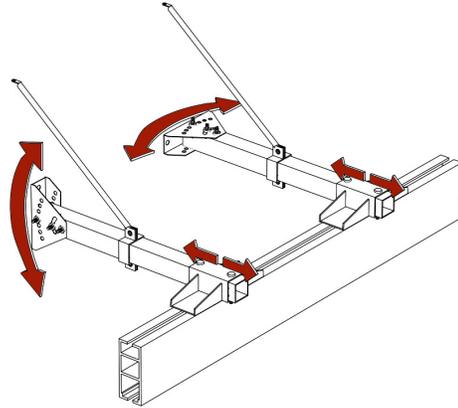
SIDE VIEW



7 INSTALL WALL SUPPORTS

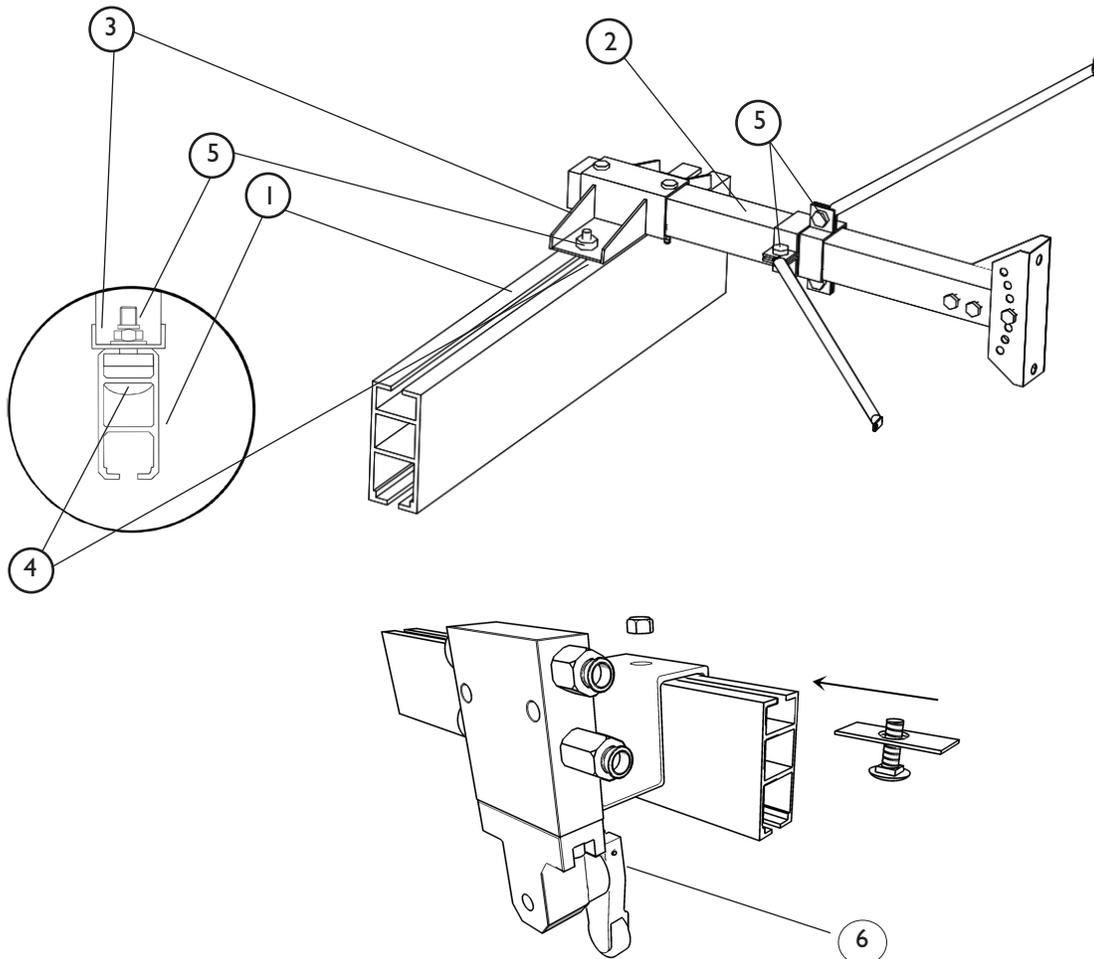
1. SBT Track
 2. Horizontal wall support
 3. Mounting clamp
 4. Carriage bolts M10x30 with washers and locking nuts
 5. Nuts M10 with clamp for aligning wall supports
- Measure from the wall to center of the track and add 3 in. (76,2 mm) to determine the length of the square tube.
 - Center the foot on the end and drill 2- 13/32 in. (10 mm) holes to mount the foot. Fix the mounting clamp (3) with two M10x30 bolts (4) to the SBT-Profile (1).
 - Insert the mounting clamp for the hose bracket (see riser bracket mounting procedure). Insert the Uncoupling / release valve bracket (6) between the first and second suspension leg.
 - Mount clamps (3) and supports (2) together on SBTA track using washers and locking nuts M10.
 - Loosen the nuts (5) to adjust the track.

CAUTION	
	Before lifting the track be sure that end stops have been installed. This to avoid injury if the track is not level as it is lifted, causing the trolley to move.



BACK VIEW

SIDE VIEW



8 INSTALL THE RISER BRACKET

8.1 For back-in bays

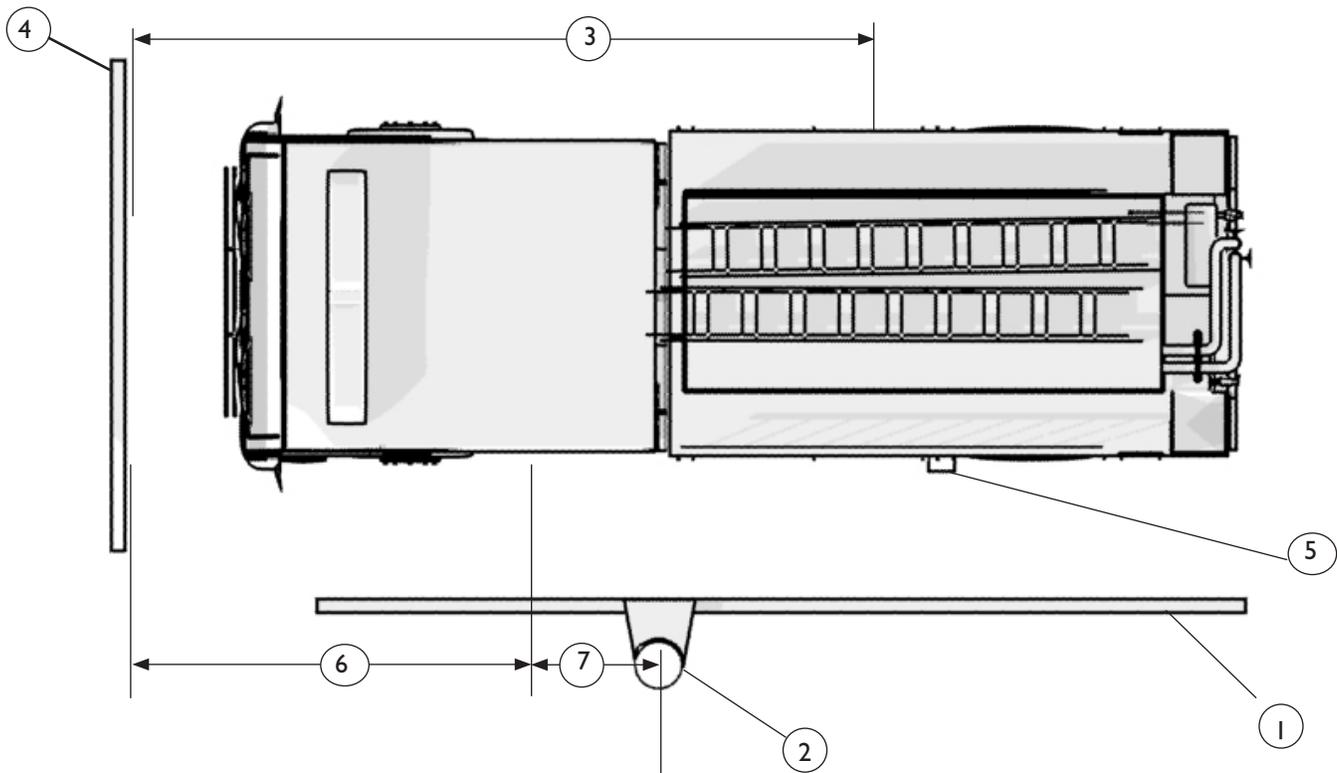
1. SBT Track
 2. Riser bracket
 3. Distance from the door to tailpipe
 4. Exit door
 5. Tailpipe
 6. Half the distance from exit door to the tailpipe
 7. Distance to riser bracket
- a. Before installing the hose, identify where the tailpipe is located when the vehicle is parked.
 - b. Position the riser bracket (2) on the same side of the vehicle as the tailpipe (5).
 - c. Mount the riser bracket (2) on the SBT track facing away from the vehicle. To measure the distance that the riser bracket must be from the exit door, use this calculation:
 - Measure the distance from exit door to the tailpipe (3), divide that number in half (6), and then add 20 in. (500 mm) (7).



CAUTION

Before lifting the track be sure that end stops have been installed. This to avoid injury if the track is not level as it is lifted, causing the trolley to move.

PLAN VIEW



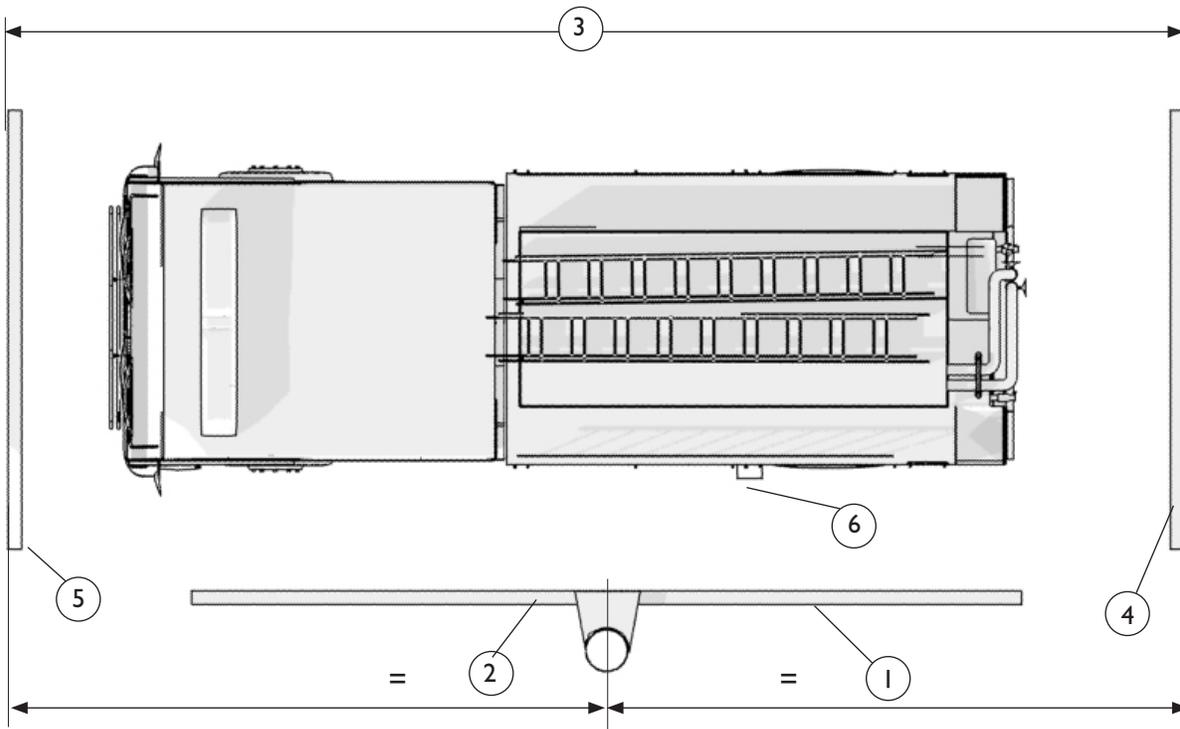
8.2 For drive-through bays

1. SBT track
2. Riser bracket
3. Distance entrance gate-exit gate
4. Bay entrance door
5. Bay exit door
6. Tailpipe

- a. The riser bracket (2) is positioned on the same side of the vehicle as the tailpipe (5). It is mounted on the SBT track facing away from the track.
- b. For drive-through stations, position the riser bracket (2) on the SBT track (1) half-way between the bay entrance door (4) and the exit door (5).



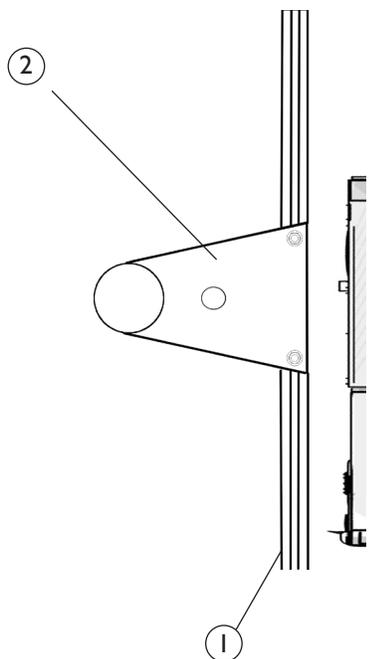
PLAN VIEW



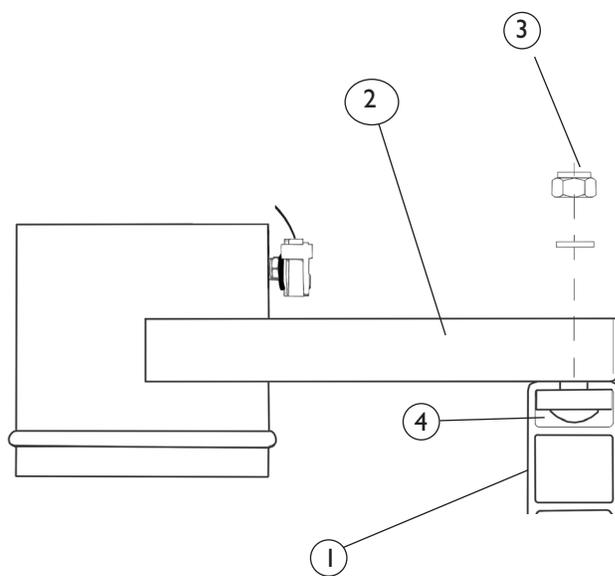
8.3 Insert the mounting clamp

1. SBTA track
 2. Riser bracket
 3. Mounting clamp
 4. Carriage bolts M10x30 with washers and locking nuts
- a. Insert the mounting clamp (3) with two M10x30 bolts (4) for the riser bracket into the track (1). You will also install the mounting clamps for the support legs during this step.
- b. Tighten the riser bracket (2) with washers and locking nuts. The riser bracket should be facing away from the track and vehicle.

PLAN VIEW



ELEVATION VIEW



9 SPLICE THE TRACK

1. SBT track
2. Splicing sleeves
3. Bolts M6*50 and locking nuts

- Place the track splice sleeves on the track, centered over the joint and clamp with a C- clamp, making sure the sections are straight and covering equal lengths of the SBT track, as shown in fig. 9.2.
- Drill 1/4 in. (6 mm) holes from each side of the track using the pre-drilled splice sleeve holes. Install 4- 1/4 in. bolts and tighten snug. Do not over tighten, as you will need to make sure that the trolley travels smoothly.
- Assemble the splicing sleeve with the four M6*50 bolts and locking nuts (3).

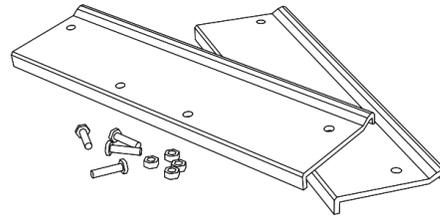


Fig. 9.1 SBT splice sleeves and hardware

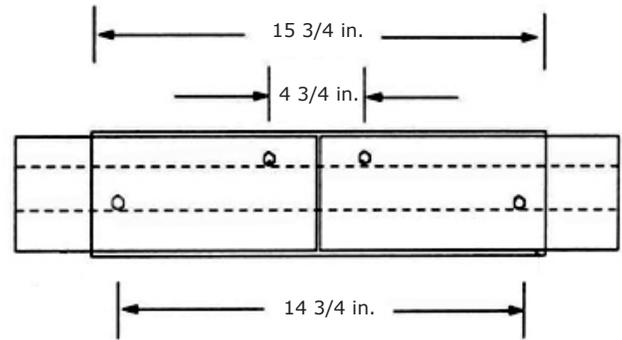
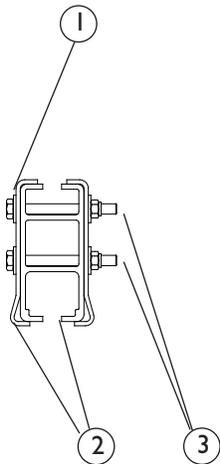
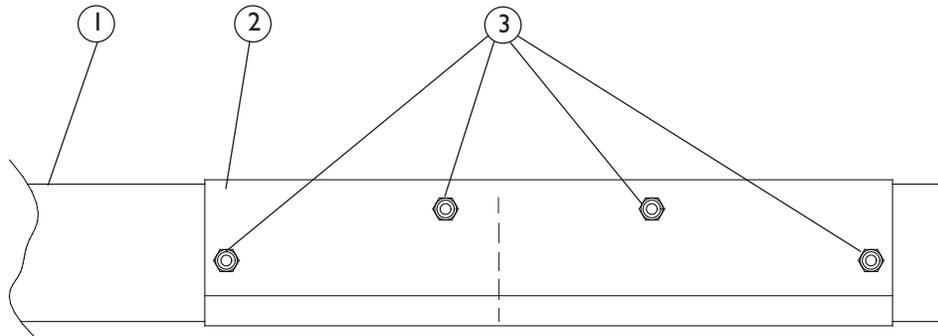


Fig. 9.2 Lining up splice sleeves

ELEVATION VIEW



SIDE VIEW



WARNING	
	<p>AVOID BOLTS IN TROLLEY AREA Make sure not to not drill holes in the lower portion of the track, so the trolley moves freely.</p>

10 CONNECT TO DUCT / LIFT THE TRACK

1. SBTA track
 2. Hazard tape
 3. Plymovent sticker
- a. Before lifting the track, apply the Plymovent hazard tape and Plymovent sticker to the SBTA track (1) before the track is lifted. First, clean the SBTA track with a cloth and solvent before putting on tape and stickers. Apply the hazard tape (2) to the SBTA track on both sides.
 - b. Apply the Plymovent stickers (3) on both sides of the SBTA track (1) directly on the hazard tape (2), 24 in. (600 mm) from the exit end of the track.
 - c. To prepare the track for lifting, on the top of the SBT Track, lay out 3/8 in. holes for the leg mounting feet locations, to match the distances between the leg assemblies previously hung from the ceiling. The maximum end of rail to the first hanger leg should be 1,2 to 1,4 m (4 to 5 ft). A cantilever under the garage door may be required.
 - d. 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.

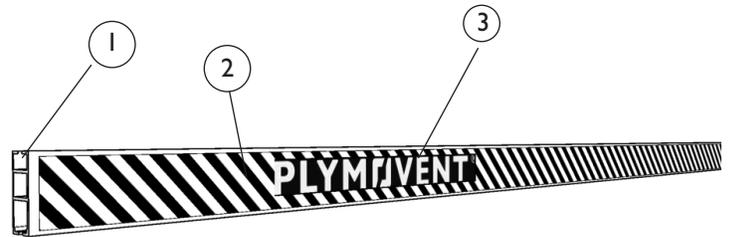
Note: Plymovent recommends lifting a continuous length of SBTA track up to 40 ft (12 m) maximum.

Top suspension:

- a. Lift the track according to the instruction and fix the bolts on the RRTS lower bracket.
- b. Tighten the bolts on the suspensions.

Side suspension:

- a. The leg is connected to the vertical support legs with couplings
- b. Make sure track is level, then tighten the bolts on the suspensions.



11 INSTALL HOSES AND GRABBER®

1. Upper hose
2. Metal Saddle
3. Balancer
4. Mid hose
5. Safety Disconnect

- As noted in the Installation Table, the SBT track height and riser bracket location will determine the ideal height of the hose loop and riser bracket. The track height should be at least 11.5 feet (3,5 m) above the finished floor (6). Mount the upper hose (1) to the riser bracket using a hose clamp.
- Attach the upper hose to the short side (from the tab) of the metal saddle (2). You may need to twist the hose to to have the u-bend or loop positioned away from the vehicle in the 3 o'clock position if looking down at the riser bracket, with the balancer at the 12 o'clock position.
- Install the balancer (3) in the lower suspension hole. Ideally, 6 in. (15 cm) of the Balancer cable should be exposed when the Grabber nozzle is connected to the vehicle.
- 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.
- 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. Make sure the position of the MFD valve is facing away from the vehicle (making it easily accessible by operators).
- The height of the Grabber nozzle (7) should be 10 to 12 in. (25 to 30 cm) above the finished floor.
- The hose loop should be at least 6.5 ft (2 m) above the floor so it is out of the way of operators (8).
- Insert the 8 mm Grabber airline into the lower hole of the SDCH, as shown in fig. 11.1. Make sure the hole in the coupling with the teeth are seen through the recess hole in the SDCH housing. The coupling should have a pull strength of 5 to 7 lbs. You may have to adjust the seating if the tube is too easy or too difficult to pull out.

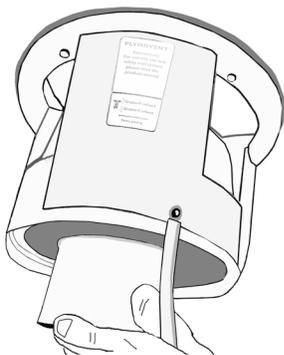
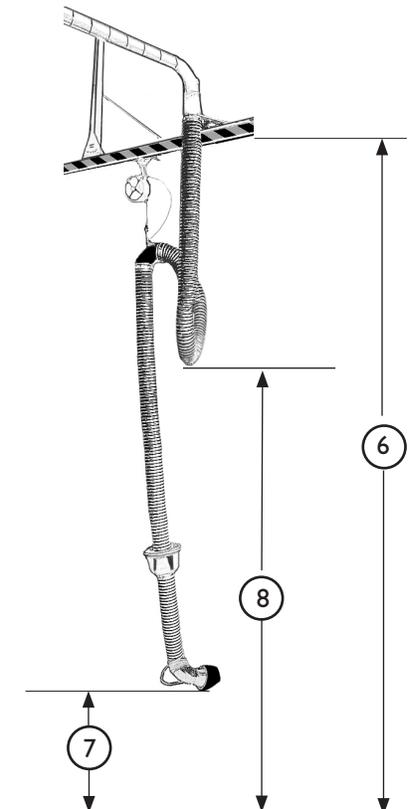
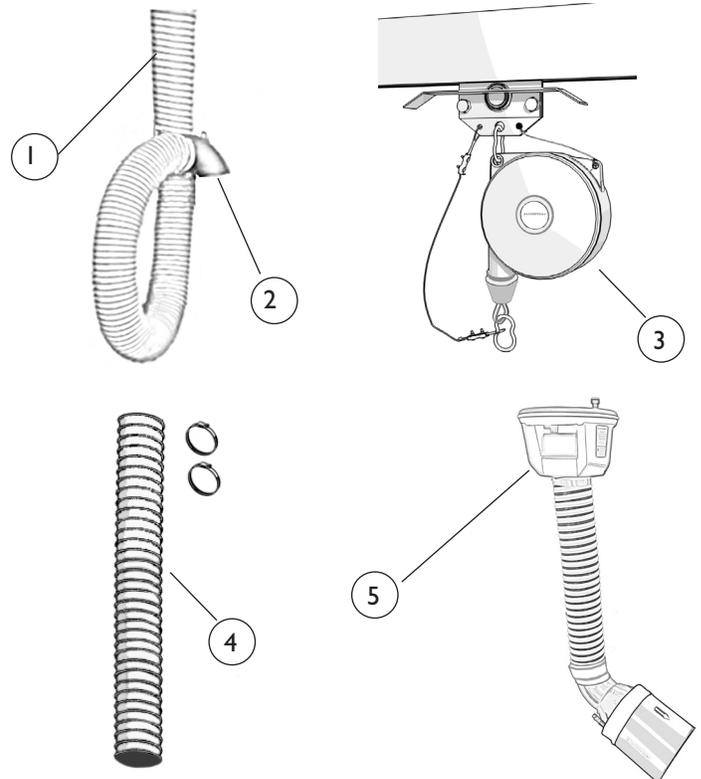


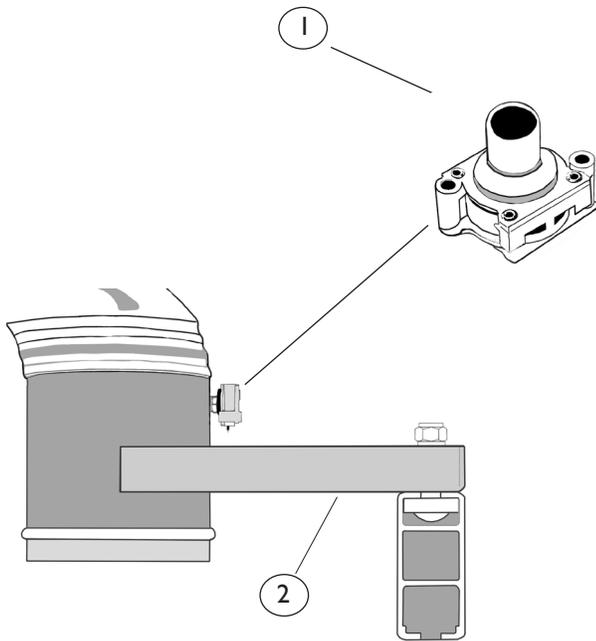
Fig. 11.1 Inserting the airline into the SDCH

	<p>WARNING</p> <p>PRODUCT MAY CONTAIN SHARP EDGES</p> <p>Use care when servicing unit. Failure to do so could result in minor personal injury.</p>
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12 INSTALL THE PRESSURE SWITCH

1. PC-500 pressure switch
 2. Drill with 4 in. (10 mm) drillbit
 3. Measurement from ducting/hose approx. 100mm / 4"
- a. The pressure switch (1) should be installed in the duct below the Back Draft Damper, if one is installed, and above the hose connection. Drill a hole in the ducting above the riser bracket (2).
 - b. Mount the pressure switch (1) by screwing it into the duct.
 - c. Connect the electric wires with the supplied connection tags. If you are using wireless transmitters, connect the PC-500 pressure switches to the transmitters.
 - d. To connect the pressure switch wiring to the control box, refer to the control box manual.



WARNING

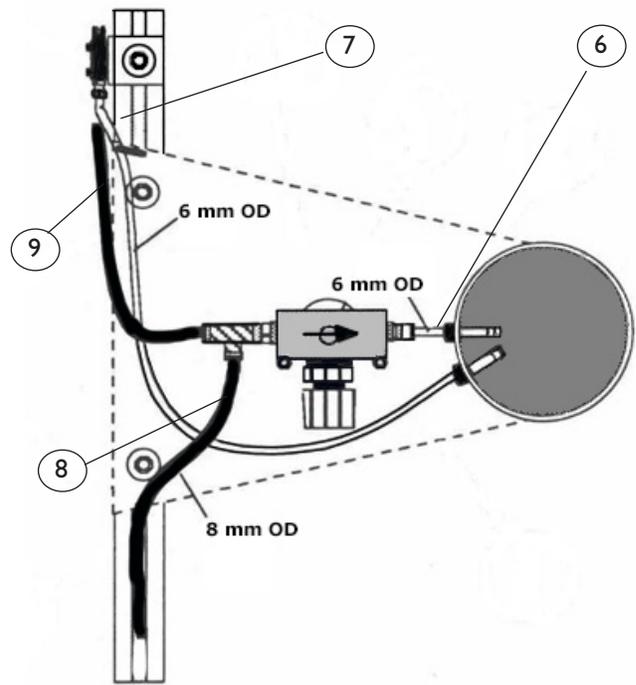


If you are using additional pressure sensors, make sure to mount them parallel with original pressure sensor.

13 INSTALL THE RELEASE VALVE

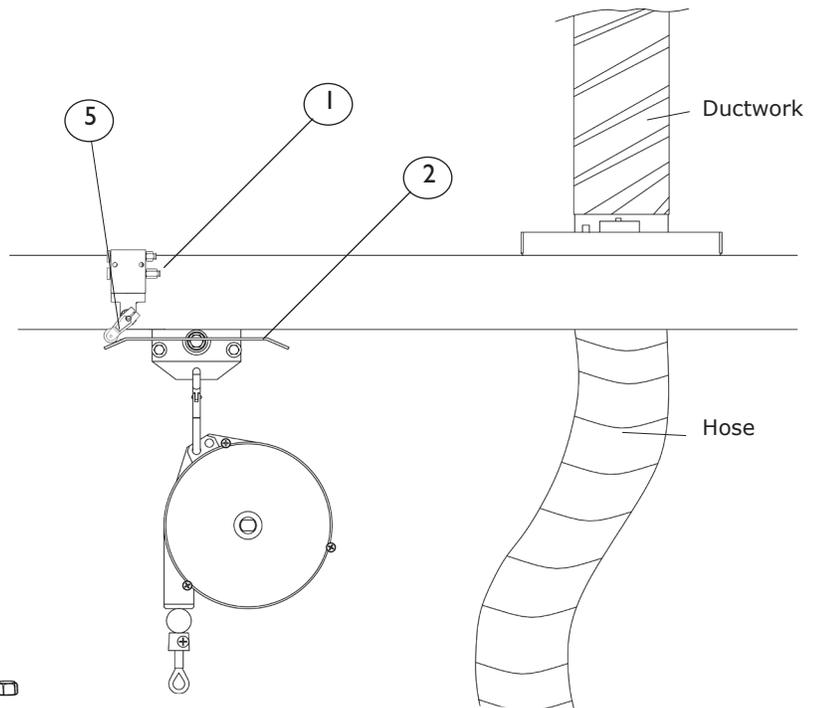
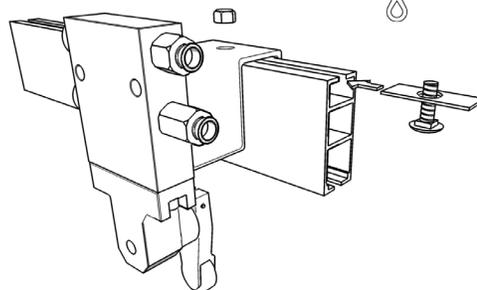
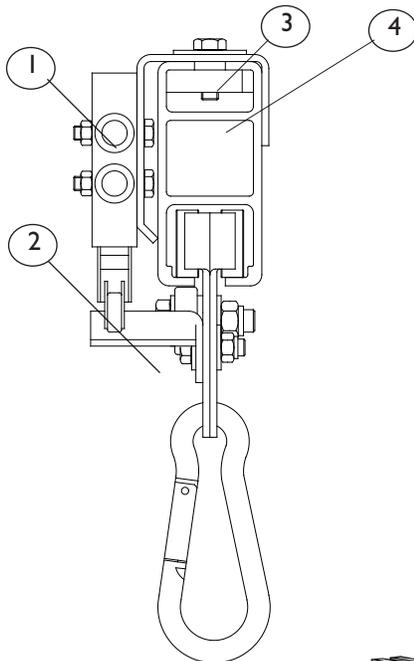
- 1 Release valve
- 2 Release plate
3. M6x20mm bolt and washer
4. Mounting clamp
5. Toggle joint of the release valve.

- Mount the release valve (1) to the truck-side of the SBT-profile with the toggle joint (5) pointing towards the bay door, approximately 6 ft (1,8 m) from the end of the track.
- The valve is fitted with the mounting clamp (4), M6x20mm bolt and washer (3).
- Check that the release plate (2) pushes the release valve and provides 1 mm clearance.
- Push some slack back into the hose before cutting to length.
- Connect the short yellow airline from the hose assembly to the regulator (6).
- Connect the longer white airline to the small fitting on the trip switch (7).
- Insert the 8 mm black line coming from the air compressor to the tee fitting on the regulator (8); insert the other 8 mm line to the larger air fitting on the trip switch (9).
- Insert the airlines inside the slider bar compartment of the SBT track and secure with 1 in. cardboard squares or similar material.



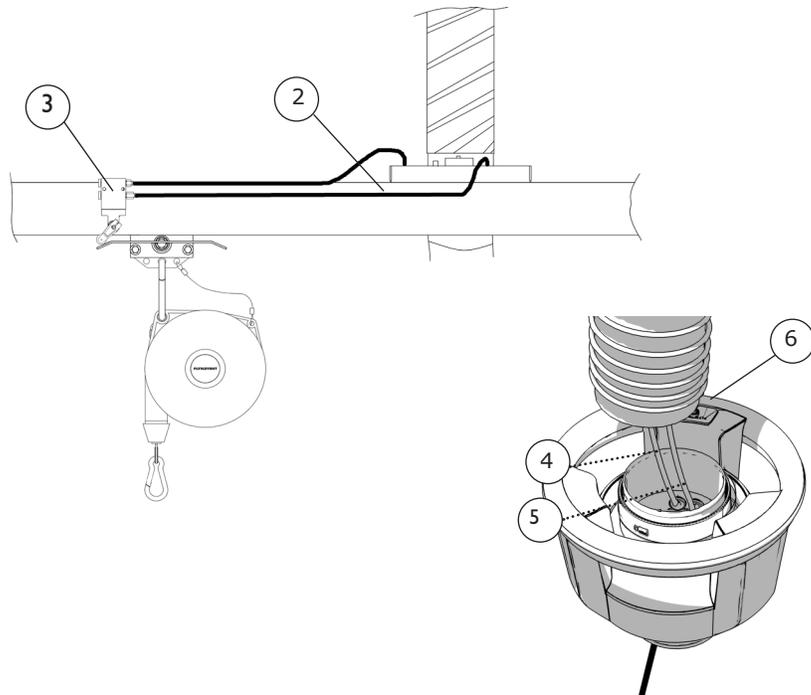
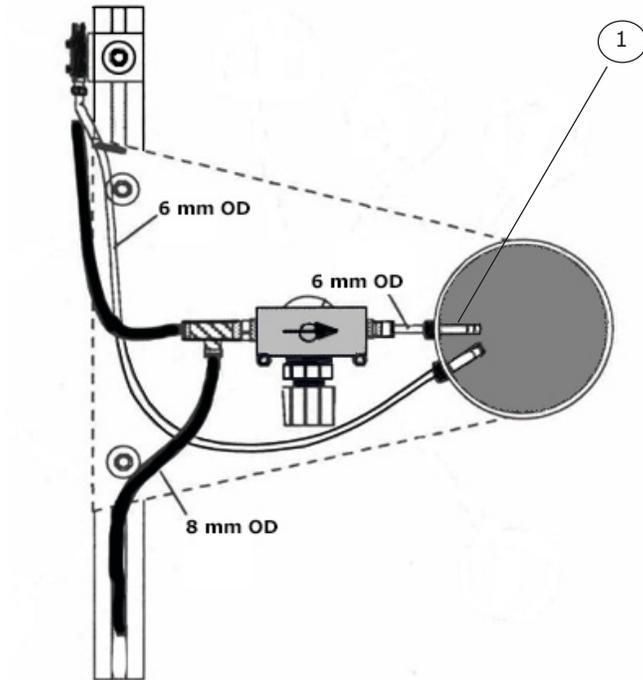
TRUCK-SIDE VIEW

BACK VIEW



14 CONNECT TO COMPRESSED AIR

- Connect the compressed air to the compressed air feeder (1). The maximum psi is 90 (8 bar).
- Connect the 8 mm unregulated air hose (1) to the release valve (2). Then connect the unregulated air from the release valve down through the exhaust hose and connected to fitting S on the MFD valve.
- Connect the regulated air (4) from the regulator down through the exhaust hose to the side of the MFD valve (6).
- Connect the 8 mm air hose from the MFD valve (6) to the Grabber®.



MFD Valve in the Safety Disconnect Handle

In case of maintenance or adjustment of the MFD valve inside the Safety Disconnect Handle, please note the following:

Upper fitting	P	10 - 15 psi (0,7 - 1 bar) in
Lower fitting	S	90 psi (8 bar) in
Grabber® connection	A	
Release	R	(leave open)

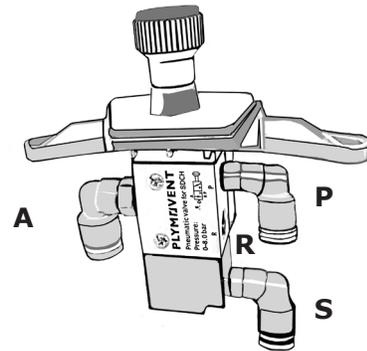


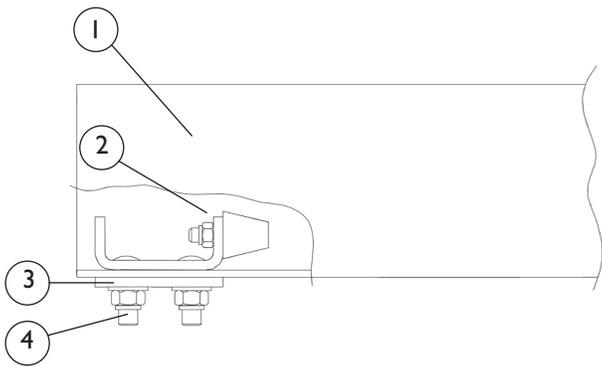
Fig. 12.1 MFD valve in the SDCH

15 INSTALL THE END STOPS

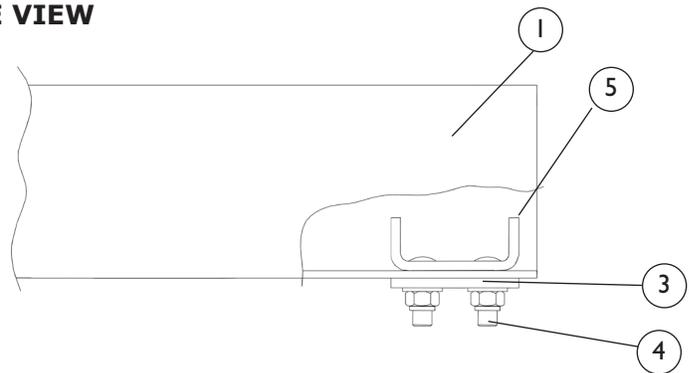
1. SBT track
2. End stop with rubber shock absorber
3. Mounting clamp
4. Carriage bolts M8 with washers and locking nuts
5. Endstop

The end stop is used to determine the release point of the Pneumatic Grabber®.

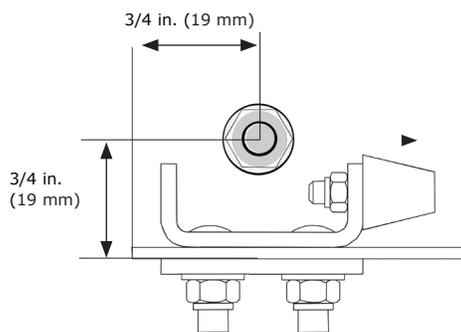
- Mount the endstop with rubber shock absorber (2) into the exit end of the SBT track (1).
- Push the end stop with rubber shock absorber (2) into the SBT track (1) with the mounting clamp (3) on the underside of the track, and tightly fasten the locking nuts on the carriage bolts (4).
- Mount the endstop without the shock absorber (5) on the entrance/parking end of the SBT track.
- On both end stops, drill a 1/4 in. (6,4 mm) hole that is 3/4 in. (19 mm) from the end of the track and 3/4 in. (19 mm) from the bottom of the track. Insert the 1/4 in. (6,4 mm) security bolt (6). Slide the end stop against the bolt and tighten the nyloc nuts.



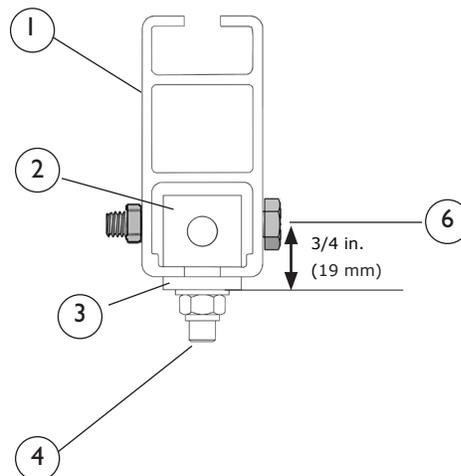
SIDE VIEW



**SIDE VIEW
(SECURITY BOLT)**



**BACK VIEW
(SECURITY BOLT)**

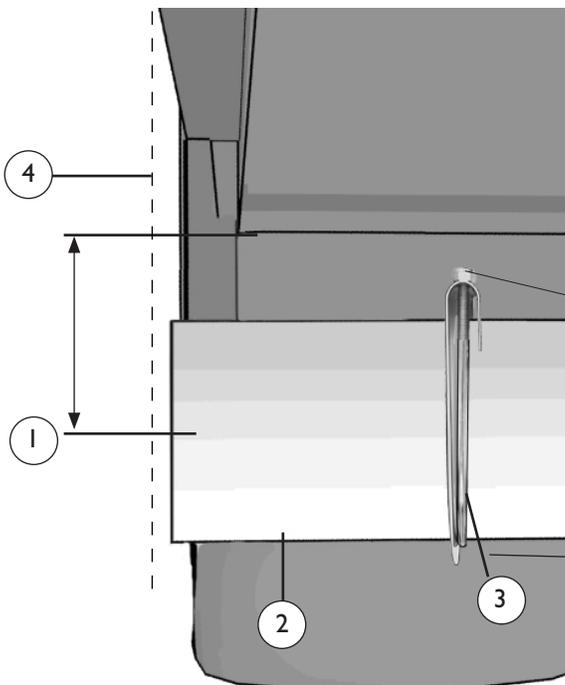


16 MODIFY THE TAILPIPE

16.1 Install the Tailpipe Connector

1. Distance exhaust pipe-truck body
 2. Tailpipe
 3. Pneumatic Grabber Stop Plate
- a. Measure the height from the center of the tailpipe to the body of the vehicle (1). The height must be:
- 3 in. (75 mm) in all directions for a 3 in. (75 mm) system
 - 4 in. (100 mm) in all directions for a 4 in. (100 mm) system
 - 5 in. (125 mm) in all directions for a 5 in. (125 mm) system
- This should be checked before the Pneumatic Grabber stop plate 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 Pneumatic Grabber tailpipe stop plate (3) is positioned on the tailpipe. When attached the minimum space between the tailpipe stop plate and the body of the vehicle should be at least 0.6 in. (15 mm) from the top of the tailstop plate. The Tailpipe Stop ranges in size from 2 in. (51 mm) through 6 in. (150 mm) in diameter.
- d. The exhaust pipe must be in a 90° angle to the truck body with a max inclination of 5 in (125 mm). There must be a minimum required clearance of 3.5 in. (90 mm) between the top radius of the tailpipe and the carriage or body of the vehicle.
- f. The distance between the tailpipe and the wheel must be a minimum 300 mm (12 in.).

Example of Tailpipe Stop on Truck Body



ATTENTION	
	Please ensure that the position of the tailpipe connector meets EN 1846-2, which indicates the minimal distance from tailpipe connector to the road surface (differs per type of vehicle).

- e. The distance between the exhaust pipe and the wheel must be a minimum of 12 in. (300 mm).
- f. The tailpipe adapter must be installed flush with the body of the vehicle in accordance to NFPA1500 (4).

16.2 Modify the Tailpipe

The Grabber tailpipe stop is supplied based on tailpipe diameter, Use the tables below for tailpipe adapter placement guidelines. If an apparatus tailpipe hanger is used, it should be within 24 in. (610 mm) of the end of the tailpipe edge; a tailpipe clearance of 12 in. (305 mm) must be maintained between tailpipe and outside edge of the rear wheel.

Plymovent 6.25 in. (160 mm) Grabber	
Tailpipe Diameter (OD)	Distance of face of tailpipe
4 in. (100 mm)	4.25 in. (108 mm)
5 in. (125 mm)	3.5 in. (89 mm)
6 in. (150 mm)	3 in. (75 mm)

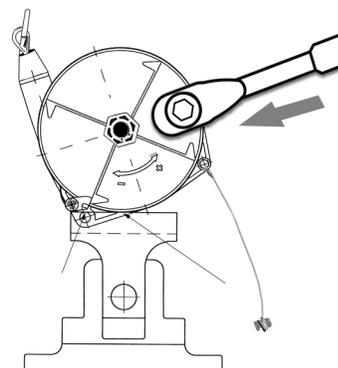
Plymovent 8 in. (200 mm) Grabber	
Tailpipe Diameter (OD)	Distance of face of tailpipe
6 in. (150 mm)	4.5 in. (114 mm)
7 in. (180 mm)	4 in. (100 mm)

Fig. 5.2a Tailpipe stop plate: 2 to 6 in. and 7 in. versions

16.3 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.



16.4 Safety Disconnect Handle

Function:

The safety coupling disconnect opens in case of missue of the systemor 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.

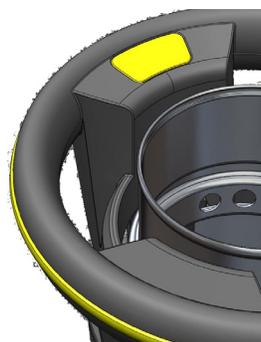
WARNING	
	The Balancer is delivered under tension. Be careful when unwinding this balancer.

16.5 Tailpipe Modification Options

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 Pneumatic Grabber® connector can then be installed to this modification.

When a tailpipe modification is needed, Plymovent recommends you consult the manufacturer of the vehicle, to ensure a correct and sturdy installation of the Pneumatic Grabber® connector.



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.

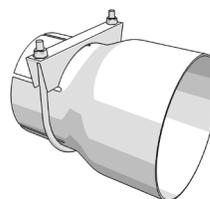


Image: Tailpipe reducer

17 USER AND MAINTENANCE INSTRUCTIONS

17.1 Operating the Pneumatic Grabber®

17.1.1 Connecting the Pneumatic Grabber

Please ensure that, on the side of the vehicle where the system is installed, no persons are present in an area of 1 m (3 ft) under and / or around the SBTA 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 Pneumatic Grabber nozzle can easily be attached to the tailpipe, and then inflated using the valve on the Safety Disconnect Handle.



17.1.2 Disconnecting the Pneumatic Grabber

- a. Automatic disconnect - The Pneumatic Grabber nozzle will disconnect automatically when the vehicle exits the bay.
- b. Manual disconnect - To manually disconnect the Pneumatic Grabber nozzle: press the valve button to empty the air from the bladder that creates the seal around the tailpipe, then remove the nozzle from the tailpipe.

17.1.3 Cleaning Instructions

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

- a) Every 12 months or so, spray the valve bracket with lubricant to ensure the o-ring continues to function.
- b) Use a damp cloth (rubbing alcohol, degreaser, or other fast-evaporating solvent) and wipe the inside of the Pneumatic Grabber®.

17.2 Inspection and Maintenance

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

1. Check the valve bracket and tubing for wear.
2. Check to see that the tailpipe stop plate is clean and there are no obstructions that can prevent the Grabber from positioning itself up to the stop plate.

3. Remove the hose assembly from the balancer and check the hose for any defects.
4. Make sure the metal saddle and Pneumatic Grabber are still fixed tightly to the hose.
5. Check to make sure the trolley runs smoothly through the track and stops at the end-stop (s).

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 2 m (6.6 ft).

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.



19 CLEANING AND FAQ

19.1 Hose package

Spot clean with a soap and water solution.

19.2 Other Components

Use compressed air to blow equipment clean.

19.3 SBTA-Rail and Suspensions

Clean the exterior with a soap and water solution.



ATTENTION

Do not use solvents to clean the system.

You observe that....	Possible Cause	Actions to Take
The Grabber does not connect tightly to the tailpipe connector.	The Grabber is not creating a seal.	Make sure the air pressure is 10 to 15 psi.
The Grabber does not create a seal when the valve knob is depressed.	1. The pressure air line in the hose is twisted and / or blocked. 2. The o-ring in the MFD valve is damaged.	1. Disconnect the hose and check the pressure air lines in the hose and un-twist / unblock them. 2. Inspect the o-ring within the MFD valve and replace, if needed.
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, as noted in this manual. 2. Disconnect the saddle and reposition the hose.
The Grabber does not connect tightly to the tailpipe	The pressure in the Grabber is not high enough.	Increase the regulator pressure to 10-15 psi (0,7-1,0 bar).
The Grabber is transported out of the Station too far.	1. The end stop is located too close to the door.	1. Shorten the track.
The swing-back of the hose drop after disconnection is too extreme.	1. The balancer pre-tension is too strong. 2. The distance between the vehicle and the standard hose position is not correct. 3. The end stop is located too far from the door.	1. Decrease the balancer pre-tension. 2. Make sure the vehicle and track are positioned correctly. 3. Reposition the track closer to the entry door.
The Grabber disconnects before the vehicle leaves the station.	1. The end stop is located too far from or too close to the door. 2. The distance between the vehicle and the standard hose position is not correct. 3. Too much friction between the trolley and the track.	1. Reposition the track closer to the entry door. 2. Make sure the vehicle and track are positioned correctly. 3. Clean the inside of the track and/or install a new trolley.
The hose drop swings back into the station too far after disconnection.	1. The balancer pre-tension is too strong.	1. Decrease the balancer pre-tension.

17 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.

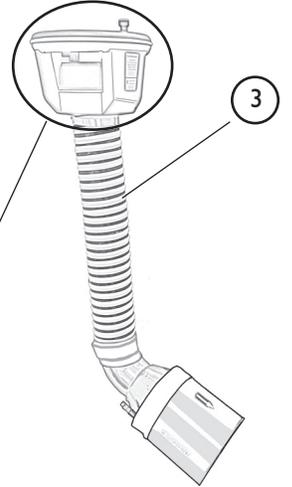
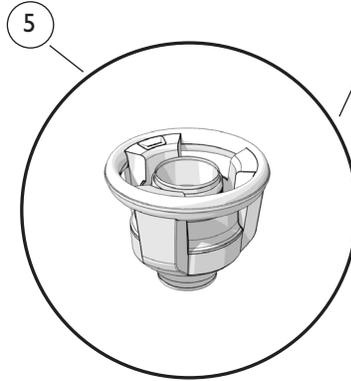
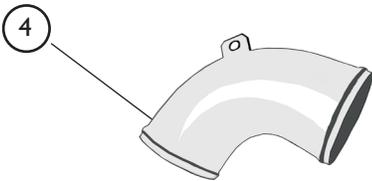
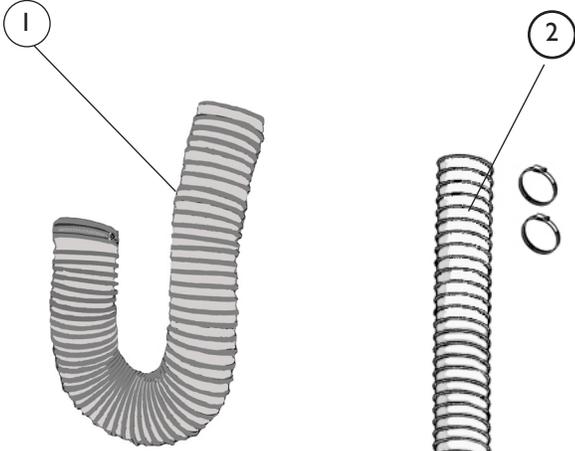
Disposal:

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

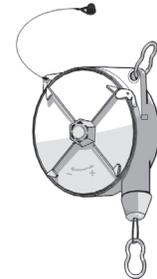
When dismantling the system please ensure to follow the similar safety precautions as mentioned in this manual for installation.

Dismantling must be done contrary to the installation instructions.

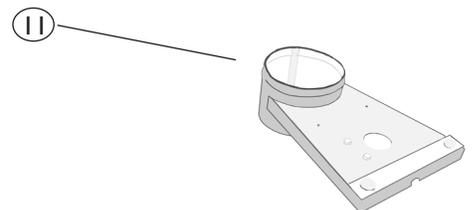
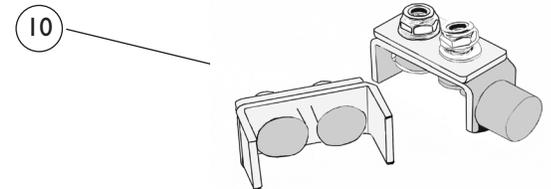
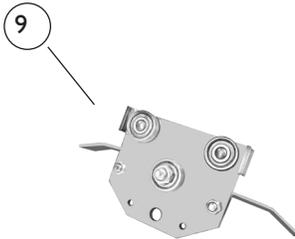
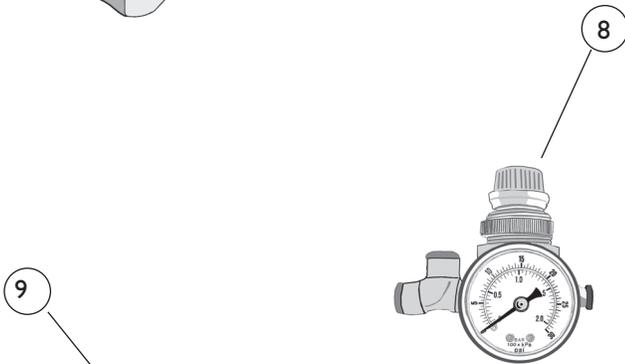
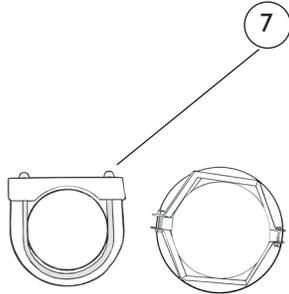
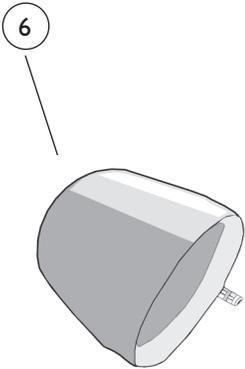
Dismount loose parts before the track is dismantled.



See Separate SDCH manual



See Separate Balancer manual



PLYMOVENT®	SPARE PART LIST	BSAB No: 13.1 Ser. No: SBTA-PG Date: May 2019
SBTA	©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.	

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

Pos	Art. No	Former Art. No:	Description	Note
1		Multiple Numbers	Pneumatic Upper Hose (various sizes are available)	Your authorized dealer will be able to identify the specific hose for your system.
2		Multiple Numbers	Pneumatic Mid hose (various sizes are available)	Your authorized dealer will be able to identify the specific hose for your system.
3		Multiple Numbers	Pneumatic Lower Hose (various sizes are available)	Your authorized dealer will be able to identify the specific hose for your system.
4	0000112484	805507	Metal Hose Saddle Ø 4 in. (100 mm)	
	0000112483	805555	Metal Hose Saddle Ø 5 in. (125 mm)	
5	0000116005	702500	SDCH 4 in. (100 mm) Pneumatic	
	0000116006	702501	SDCH 5 in. (125 mm) Pneumatic	
6	0000111331	90382-1011	Pneumatic Grabber® assy. SBTA 4 in. / 100 mm	
	0000111363	90362-1011	Pneumatic Grabber® assy. SBTA 5 in. / 125 mm	
	0000105261	8142-1011	Sidebrace L = 6 ft. / 1800 mm single	
7	0000112739	90380-3	Pneumatic Grabber® Tailpipe Stop Plate 4 in.	
	0000112505	90360-3	Pneumatic Grabber® rubber protection sleeve 5 in. (125 mm)	
8	0000116447	N/A	Valve / Regulatory Assembly - Regulator Body with Gauge 0-15 PSI and Fittings	
9	0000116652	805506	SBTA Trolley assembly (caribener and balancer included)	
	0000105144	516476	SBTA Trolley only	
10	0000105231	516617-US	Pair of SBTA end stops (one with rubber bumper)	
11	0000117247	516625-US	Riser Bracket 4 in. (100 mm)	
	0000105145	516641-US	Riser Bracket 5 in. (125 mm)	

PLYMOVENT[®]
clean air at work

