

# Looped Rail Systems

Looped rail systems are designed to meet any moving vehicle application.

For over two decades, PlymoVent has designed the most state-of-the-art exhaust rail systems in the world today.



If your application requires you to drive in the building, we have a system to handle your demands or production rates.

## Features and benefits

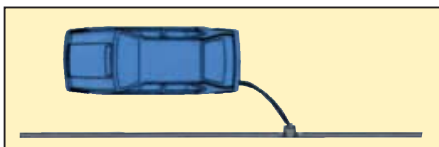
- Unlimited rail length
- Compact design
- Overhead hose storage
- Accommodates overhead and under-carriage exhaust
- Motorized return to start of production line
- Custom suction and return rail bends
- Parallel return rail switches
- Computer PLC controls
- Variable air volume controls



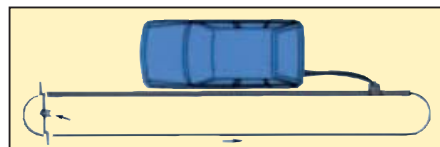
*Pictures from:  
Mercedes-Benz plant  
in Juiz de Fora, Brazil.  
For further information,  
see page 43.*



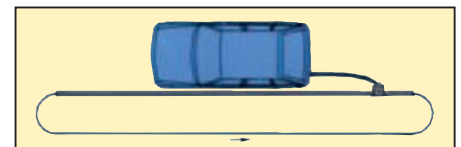
## System solutions



**Straight rail.** Consisting of only one exhaust fume rail. The crabs are returned to the starting position by pulling them back along the rail. If several rails are mounted side by side, the minimum distance between the rails has to be 400 mm/15.7".

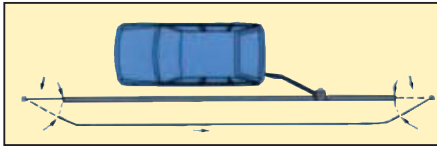


**Crab carousel.** The crab carousel ensures that the crab will not stop at the end of the return rail. This is especially important when the rail is intensively used, or where hoses are automatically disconnected from vehicles.

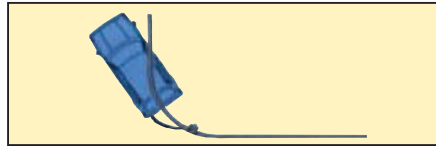


**Looped rail.** One of the halves is designed as a return rail, which is a simple type of rail not connected to the extractor fan. This can be sloping to enable the crab to return to its initial position by gravity.

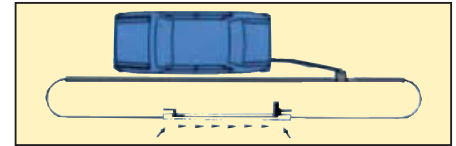
# Looped Rail Systems



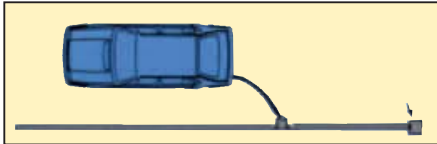
**Terminal switch.** Transfers the crab from the exhaust duct to the return rail. Terminal switches are used where space is too limited to permit use of semicircular track. The switch is operated either manually or automatically.



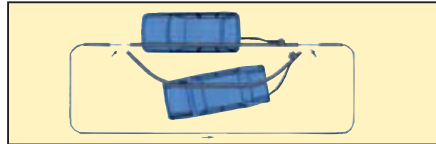
**Curved rail.** If the driving route is curved, bends can be fitted both on the exhaust air rail and the return rail. Standard bend radius of the exhaust rail is 3000 mm/118", and the return rail 900 mm/35".



**Crab transporter.** In locations with a low ceiling, or where the rail system needs to be so long that its slope cannot be inclined enough for crabs to return by gravity. These permit the return rail to be divided into several steeper slopes. The amount of vertical transport height is variable.

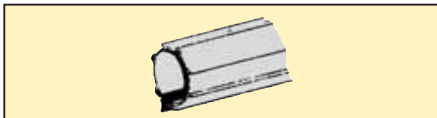


**Winch.** In locations where the driving direction is straight through and you want to have the hose returned to the start position, disconnection from the exhaust pipe can be automatic. Extraction rails may have various layouts.

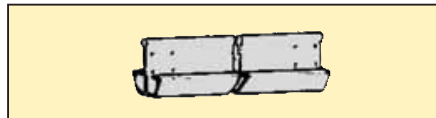


**2-way switch.** In locations where more than one rail is required, branches can be arranged with this switch used to guide the crab to the required rail.

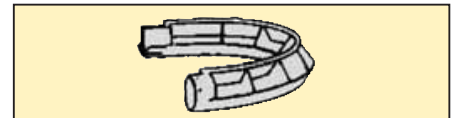
## Choose length of rail



Prod. no.	Description
RR-5.8	VAU-profile, L=5.8 m/19 ft.
RR-X	VAU-profile, cut into lengths of 1-5 m/3.3-16.4 ft.
RRR-X	Low friction rubber seal
61012	Extraction bend 45°, R=3 m/10 ft



Prod. no.	Description
40110	VAU-return profile, L=6 m/19.7 ft
40111	Return profile, cut into lengths of 1-5 m/3.3-16.4 ft.

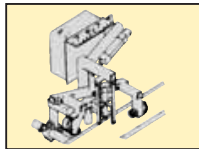


Prod. no.	Description
10522	Return bend 180°, R=0.9 m/3 ft
10524	Return bend 90°, R=0.9 m/3 ft
10525	Return bend 45°, R=0.9 m/3 ft
10523	Return bend 45°, R=2 m/6.5 ft

## Special equipment

### Air refilling station.

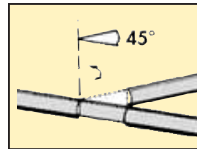
Is delivered complete with a control cabinet, the necessary sensors and suspension mounting parts.



Prod. no.	Description
70350	Air refilling station

### 2-way switch.

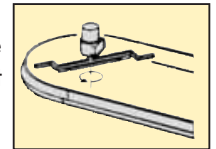
In applications with more than one rail, this switch is used to guide the crab to the required rail.



Prod. no.	Description
SWIDL	2-way switch left (electric)
SWIDR	2-way switch right (electric)

### Crab carousel.

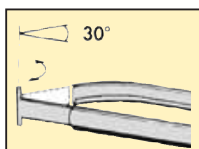
Ensures that the crab will not stop at the end of the return rail.



Prod. no.	Description
60400	Crab carousel

### Terminal switch.

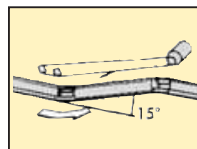
Transfers the crab from the exhaust duct to the return rail. Terminal switches are used where space is too limited to permit use of semi-circular track.



Prod. no.	Description
SWIE	Terminal switch

### Crab transporter.

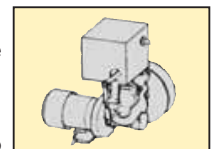
In locations with a low ceiling, or where the rail system needs to be so long that its slope cannot be steep enough for crabs to return by gravity.



Prod. no.	Description
60213	Crab transporter

### Winch.

In locations where the driving direction is straight through and you want to have the hose returned to the start position.

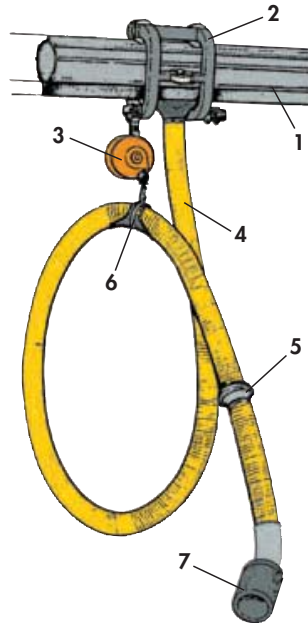


Prod. no.	Description
WR-1000	Winch

# Looped Rail Systems

## External crabs

The external crab assembly is a proven product that has been used in many of the world's most prestigious and demanding auto and truck manufacturing plants. The external crab assembly allows for the turns and bends required in following the vehicle along the assembly line or driving lane. Below are a few of the standard crab configurations, other custom solutions are available.



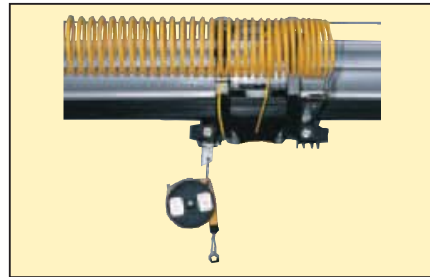
1. Round Rail profile
2. External crab
3. Balancer
4. Exhaust hose
5. Safety disconnect coupling
6. Suspension belt
7. Grabber® nozzle

## TECHNICAL DATA



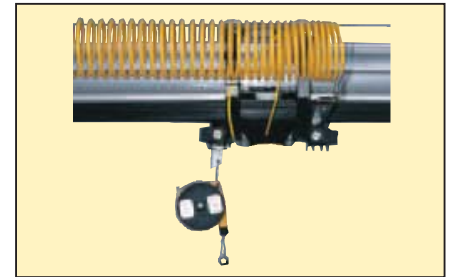
External crab (EC) for mechanical nozzle with vise grip, balancer and suspension belt.

Prod. no.	Hose connection
EC-75	Ø 75 mm/3"
EC-100	Ø 100 mm/4"
EC-125	Ø 125 mm/5"
EC-150	Ø 150 mm/6"



External crab with constant air supply and Grabber® with automatic disconnection (ECCA). Balancer included.

Prod. no.	Hose connection
ECCA-75	Ø 75 mm/3"
ECCA-100	Ø 100 mm/4"
ECCA-125	Ø 125 mm/5"
ECCA-150	Ø 150 mm/6"



External crab with constant air supply and Grabber® with manual disconnection (ECCM). Balancer included.

Prod. no.	Hose connection
ECCM-75	Ø 75 mm/3"
ECCM-100	Ø 100 mm/4"
ECCM-125	Ø 125 mm/5"
ECCM-150	Ø 150 mm/6"



External crab with refilling air supply and Grabber® with automatic disconnection (ECRA). Balancer included.

Prod. no.	Hose connection
ECRA-75	Ø 75 mm/3"
ECRA-100	Ø 100 mm/4"
ECRA-125	Ø 125 mm/5"
ECRA-150	Ø 150 mm/6"



External crab with refilling air supply and Grabber® with manual disconnection (ECRM). Balancer included.

Prod. no.	Hose connection
ECRM-75	Ø 75 mm/3"
ECRM-100	Ø 100 mm/4"
ECRM-125	Ø 125 mm/5"
ECRM-150	Ø 150 mm/6"

External electrical crab with call function and photo-cell. Incl. 6 m yellow/black hose, balancer and suspension halter.

Prod. no.	Hose connection
10332-3	Ø 75 mm/3"
10333-3	Ø 100 mm/4"
10334-3	Ø 125 mm/5"

# Looped Rail Systems

**Hose package** for Grabber® nozzles with automatic or manual release – the choice is yours. There are two styles of Grabber® hose packages to choose from:

## Automatic release

The HPA hose package is designed to work with the ECCA-style crab assembly. The trip valve on the ECCA-crab will auto-release the Grabber® when the moving vehicle passes the trip-plate mounted on the looped rail upon reaching the exit door. The manual fill and deflation valve mounted to the hose allows the service technician to manually fill or deflate the Grabber®.

## Manual release

The HPM hose package is designed to work with the ECCM-style crab assembly. The HPM-hose package comes with a barrel type slide valve which allows the operator to manually fill and release the Grabber® from the vehicle. However, with this option you do not have the auto-release function. You can purchase a standard up-grade kit at any time.

## TECHNICAL DATA

### Hose package – for automatic disconnection

Prod. no.	Hose connection	Grabber®
HPA-75-6-100	Ø 75 mm/3"	Ø 100 mm/4.0"
HPA-75-6-120	Ø 75 mm/3"	Ø 120 mm/4.7"
HPA-100-6-120	Ø 100 mm/4"	Ø 120 mm/4.7"
HPA-100-6-160	Ø 100 mm/4"	Ø 160 mm/6.3"
HPA-125-6-160	Ø 125 mm/5"	Ø 160 mm/6.3"
HPA-150-6-160	Ø 150 mm/6"	Ø 160 mm/6.3"

### Hose package – for manual disconnection

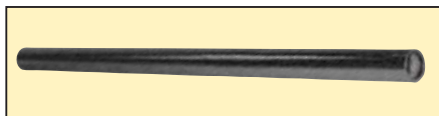
Prod. no.	Hose connection	Grabber®
HPM-75-6-100	Ø 75 mm/3"	Ø 100 mm/4.0"
HPM-75-6-120	Ø 75 mm/3"	Ø 120 mm/4.7"
HPM-100-6-120	Ø 100 mm/4"	Ø 120 mm/4.7"
HPM-100-6-160	Ø 100 mm/4"	Ø 160 mm/6.3"
HPM-125-6-160	Ø 125 mm/5"	Ø 160 mm/6.3"
HPM-150-6-160	Ø 150 mm/6"	Ø 160 mm/6.3"

## Round Rail Side Suspension (RRSS)

The RRSS is the specified suspension for the automotive industry and is required when working with heavy vehicle or high traffic installations.



## Suspension for pipe clamp system



The **TUB**-pipe is made from heavy duty galvanized pipe. It is supplied in 3 m/10 ft and 6 m/20 ft lengths and is 48 mm/1.5" in diameter.

### Prod. no. Description

TUB-3	Support pipe, L=3 m/9.8 ft, Ø 48 mm/1.9"
TUB-6	Support pipe, L=6 m/19.7 ft, Ø 48 mm/1.9"

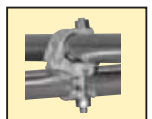
The **BUC-W** clamp is used for attaching to a fixed surface and can be welded or bolted in place.



The **BUC-M** clamp is used when two pipes must cross. It can swivel to allow for angle adjustment by the swivel joint built into the clamp.



The **BUC-F** clamp is used when you have two pipes cross and want a fixed 90° intersection.



### Prod. no. Description

BUC-W	Single fixed weldable construction coupling
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### Prod. no. Description

BUC-M	Swivel double construction coupling
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### Prod. no. Description

BUC-F	Fixed double construction coupling
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The **KEC-F** clamp is used when you want to fix a pipe end to the ceiling, wall or floor. Dual set screws hold the pipe in place.



The **KEC-S** clamp is used when you want to make an angle brace to the vertical support or when providing a lift brace to the horizontal wall support.



The **KEC-M** clamp is used when you want to make a pipe to surface connection at an angle.



### Prod. no. Description

KEC-F	Fixed construction coupling, wall
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### Prod. no. Description

KEC-S	Swivel construction coupling, tube
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### Prod. no. Description

KEC-M	Swivel construction coupling, wall
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