

EXHAUST EXTRACTION

EXHAUST EXTRACTION RAIL SYSTEM

APS

Exhaust extraction aluminium rail for worksites with moving vehicles.



The APS is the flexible solution for extraction of fumes from moving vehicles.

Modern design of the profile rail offers the following advantages at installation, use and maintenance:

- The supporting aluminium rail, at the same time the suction duct, has only one rubber seal placed on top of the duct.
- The rubber seal will in a natural way tighten the air gap and effectively eliminate the risk of unnecessary leakage.
- The new design means that the trolley has the lowest pressure drop available in the market, providing very low running costs. No risk of the trolley running heavy due to friction against the rubber seal; low noise level.
- Flexible mounting thanks to telescoping ceiling and wall brackets, as well as a profile edge that keeps the rail in place during installation.
- The rubber seal is easy to mount. No tools are required for mounting or maintenance.

The rail may be supplied with automatic return control and all other kind of equipment for automatic control.

E.g. at welding, the rail may be supplied with one or more trolleys equipped with Fumex extraction arms R or RX.

Rubber hoses for the APS are available in dimensions 75, 100, 125 and 150 mm. Standard length is 5 m, longer hoses are available at 2.5 m intervals. The hose is supported by a balancing block with a wire of 4.2 m. Different nozzles are available and can be selected from a separate leaflet.

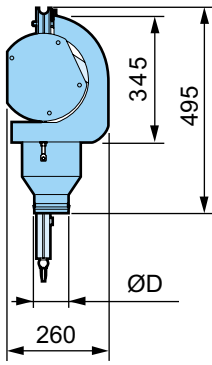
The exhaust extractor can be connected to a separate fan or a central extraction system.

The extraction rail is one of the products in the joint Fumex – Belima range

FUMEX[®]
LOCAL EXTRACTOR

Pure advantage

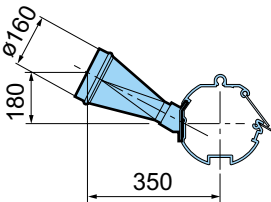
TROLLEY APS



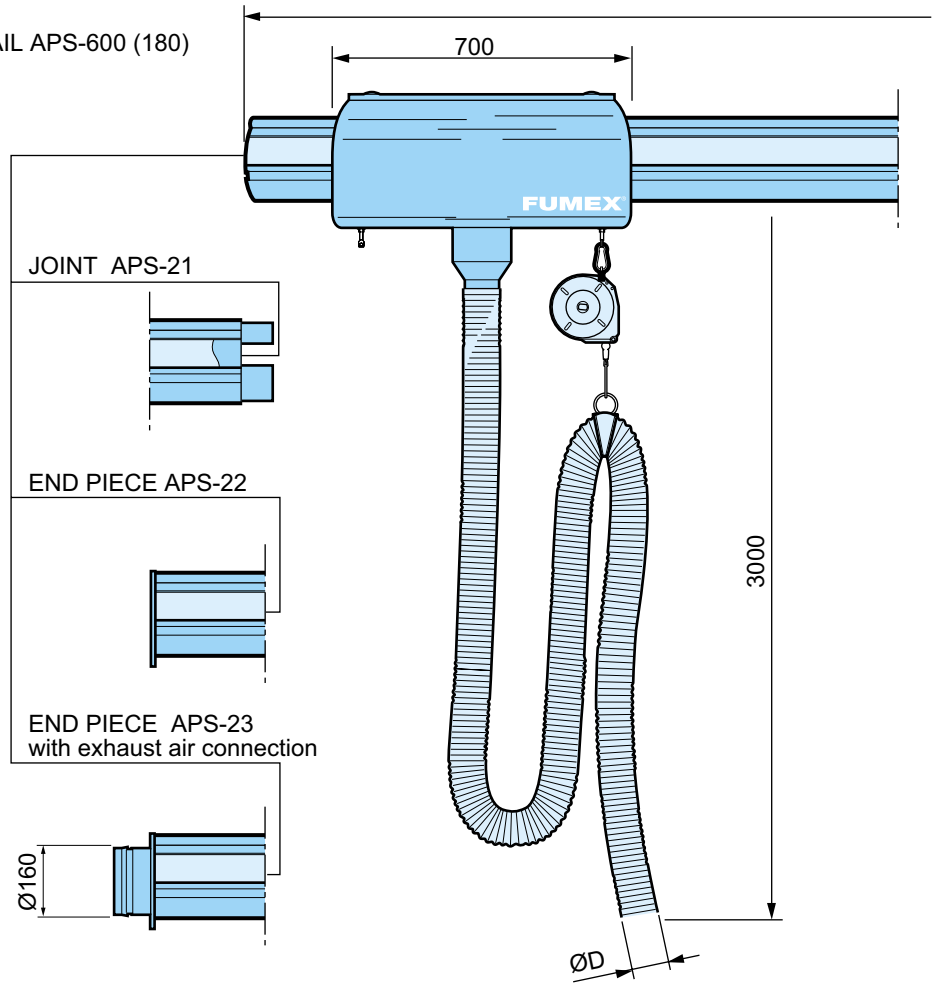
| | ØD (mm) |
|--------|---------|
| APS-11 | 75* |
| APS-12 | 100* |
| APS-13 | 125* |
| APS-14 | 150* |

* complete with 5 m hose

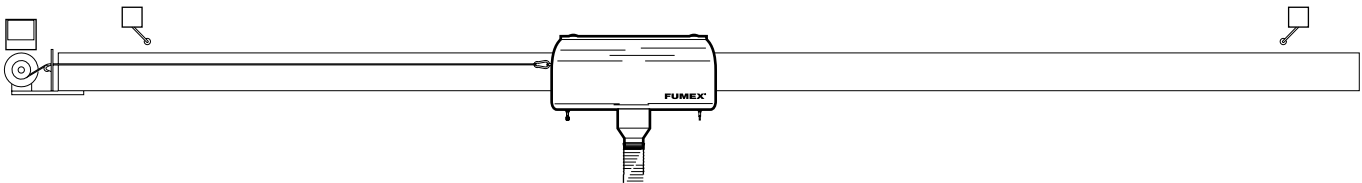
DUCT CONNECTION APS-24



RAIL APS-600 (180)



Automatic trolley return equipment for drive-through workplaces.

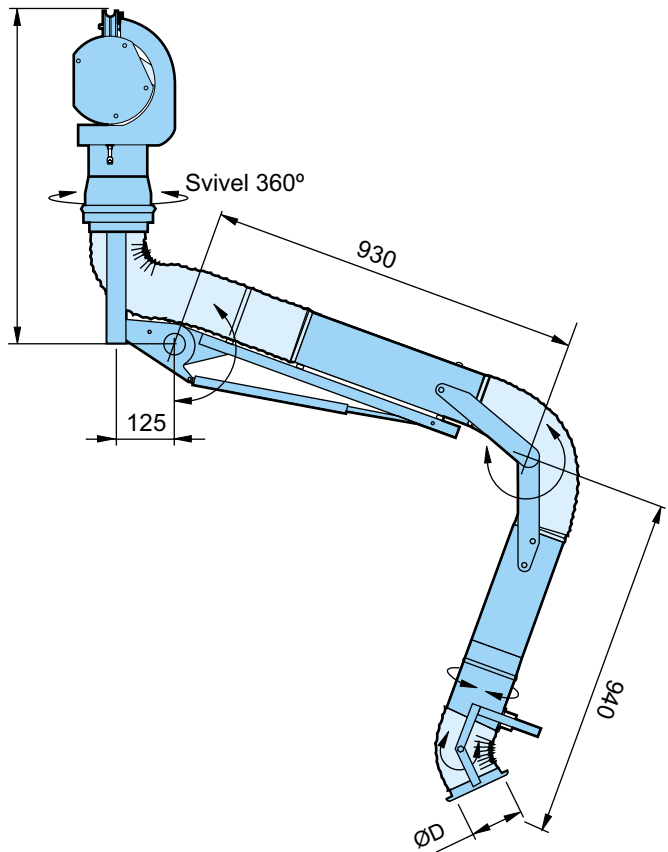
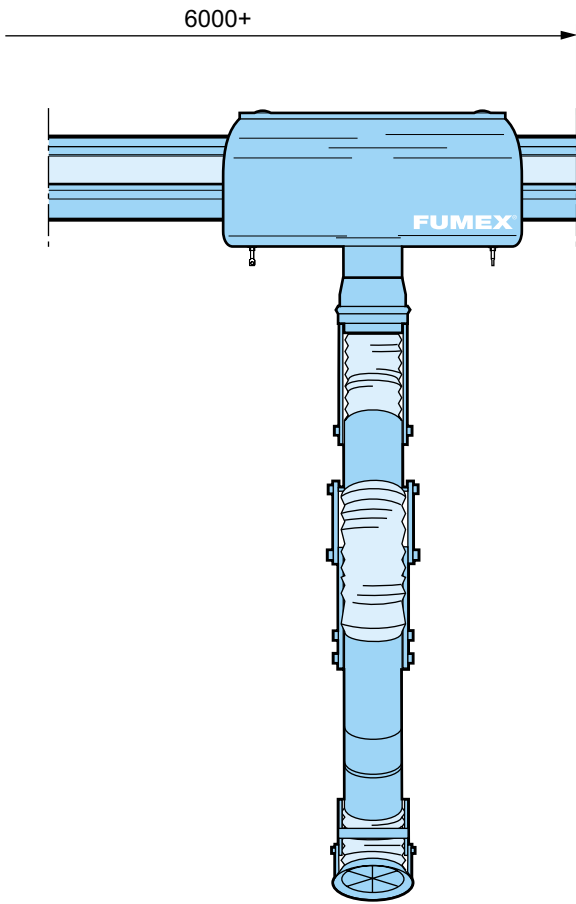


The vehicle pulls the trolley to the far end of the profile rail where automatic or manual disconnection takes place. When the trolley is in return position, the limit switch at the far end of the rail is activated. Before return has begun, an adjustable time delay will also allow nozzle and hose to take return position. Return is controlled by an electric motor with variable speed and a cable connected to the trolley. Back in starting position, the trolley will be disconnected from the automatic return system and ready for use. Delivery design: electric motor with automatic control for variable speed and time delay, limit switch, return cable and mounting brackets.

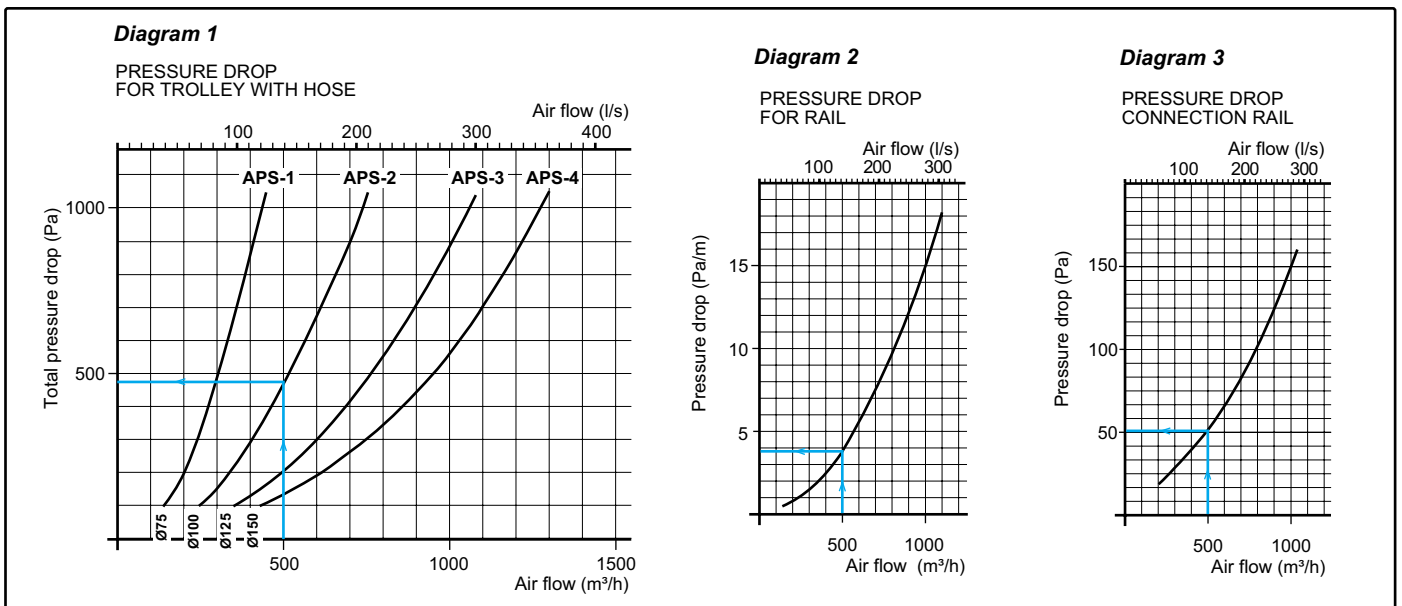
Table 1 Amount of exhaust fumes for different cylinder volumes at variable rotation speed, and the following variation in fume temperature.

| Vehicle, cylinder volume | Rotation speed, exhaust gas temperature | | |
|--------------------------|---|-----------------|----------------|
| | 1000 rpm 120°C | 3000 rpm 180°C | 6000 rpm 210°C |
| Private car 2,0 l | 100 m³/h | 300 m³/h | 600 m³/h |
| Private car 3,0 l | 150 m³/h | 450 m³/h | 900 m³/h |
| Private car 4,0 l | 200 m³/h | 600 m³/h | 1100 m³/h |
| Private car 8,0 l | 300 m³/h | 900 m³/h | 1800 m³/h |
| Vehicle, cylinder volume | 500 rpm 120°C | 1250 rpm 180°C | 2500 rpm 210°C |
| Lorry 8,0 l | 170 m³/h | 440 m³/h | 880 m³/h |
| Lorry 15,0 l | 330 m³/h | 825 m³/h | 1650 m³/h |
| Lorry 20,0 l | 440 m³/h | 1100 m³/h | 2200 m³/h |

Systems are normally designed for vehicles in idle state, but the air flow should be selected higher than stated exhaust gas flow. The system as a whole should be designed for a somewhat higher load than stated by minimum requirements.



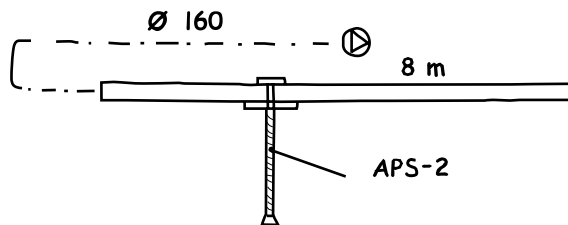
Exhaust extraction rail APS supplied with Fumex extractors type R or RX, equipped with a 360° swivel, is an excellent solution for worksites with e.g. welding along a production line.



EXAMPLE CALCULATION

1) **First outline a system**

N.B: to simplify, we have entered selected values in tables with bold face italics. In diagrams, they are marked with blue lines.



2) **Select suitable air quantity for your needs**

In this case 450m³/h, see table 1, p 2.
Add about 10% and you will get **500 m³/h**.

3) **Select suitable trolley (hose dimension)**

In this case APS-2 (Ø 100 mm).

4) **Determine pressure drop in the trolley with hose and rail**

In this case 480 Pa, see diagram 1, p 3.

5) **Calculate pressure drop for rail**

In this case 8 m x 4 Pa/m = 32 Pa, see diagram 2, p 3.

6) **Calculate pressure drop for connection**

In this case 50 Pa, see diagram 3, p 3.

7) **Calculate pressure drop for duct**

We calculate the duct pressure at 100 Pa.

8) **Add up pressure drop**

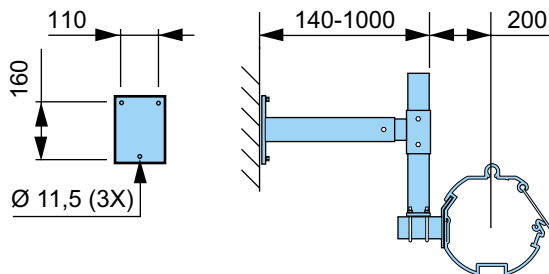
The pressure drop is 480+32+50 +100 Pa=**662 Pa**.

9) **Select a suitable fan**

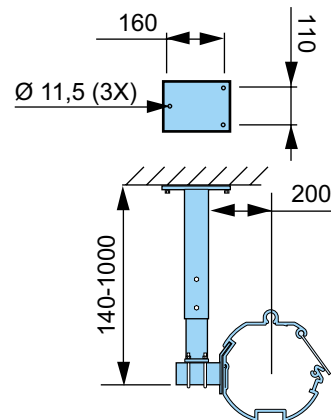
See fan diagrams in the product leaflet Fans F.
A suitable fan in this case is F 800-3.

BRACKETS

WALL BRACKET APS-31



WALL BRACKET APS-32



Hose

Heat-resistant rubberised fabric EPDM/polyester. Coil embedded in EPDM-coated polyester.
The hose will reshape after compression.
For other hose qualities, contact Fumex.

Rail

6 m aluminium (6063 – T6).

Delivery design

The rail may be delivered complete with mounting brackets and trolley with 5 m hose, suspended in balancing block for easy installation. Rubber seals mounted on site.

For automatics and nozzles, see separate leaflets.

Hose

Qualities Non-inflammable, suitable for exhaust fumes.

Temperature range -30°C to +170°C.

Rubber seal Max 170°C standard seal
alt. 300°C silicon seal.

Trolley

Qualities Wheels with roller bearings

Other information

Weight rail 6.4 kg/m.

Weight trolley without hose ... 8 kg.

FUMEX®

EXHAUST EXTRACTOR

RESCUE VEHICLE RAIL **ASU**

Exhaust extractor for rescue vehicles



Fumex rescue vehicle rails offer a complete range of extractor products for rescue vehicles.

ASU is an exhaust fume rail for rescue vehicles with exhaust pipes that bend upwards. The rail facilitates a completely automatic function at turnout and approach. The flexible suspension allows for side displacement of the exhaust pipe by 1.5 m. At approach, the exhaust pipe is caught by two trapping arms on the trolley and the rail is aligned to the location of the vehicle and the exhaust pipe.

At turnout, the trolley follows the exhaust pipe and will automatically disconnect at the end of the rail.

ASU-1 is for side-mounted exhaust pipes. The trolley is then equipped with a vertical exhaust hose that is manually connected to the exhaust pipe by means of the special rescue vehicle nozzle ABK, or the pressure air-regulated rubber sleeve APM. At turnout, the hose will automatically disconnect, the hose will be lifted and brought back to starting position by a brake balancing block.

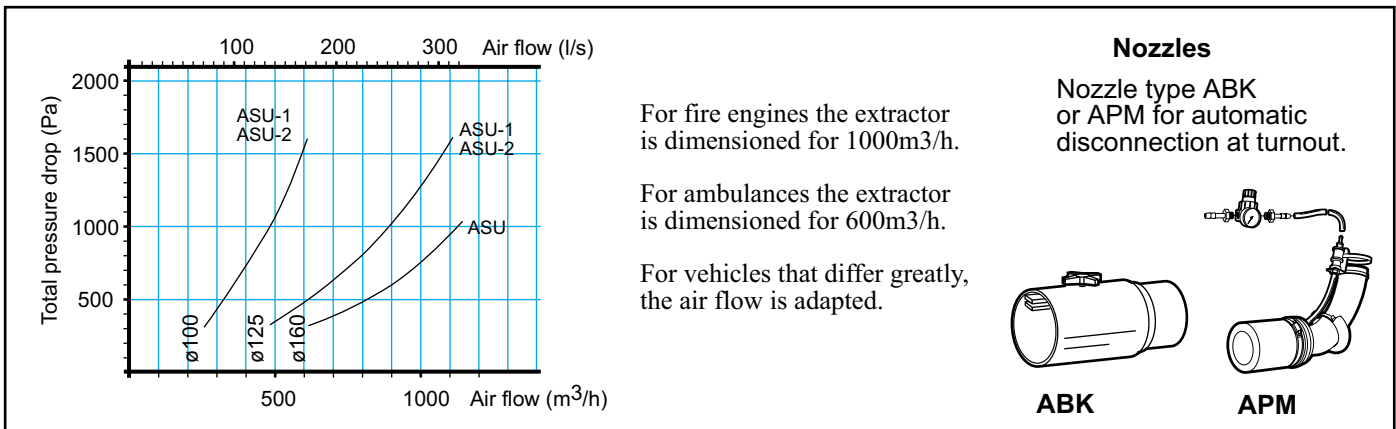
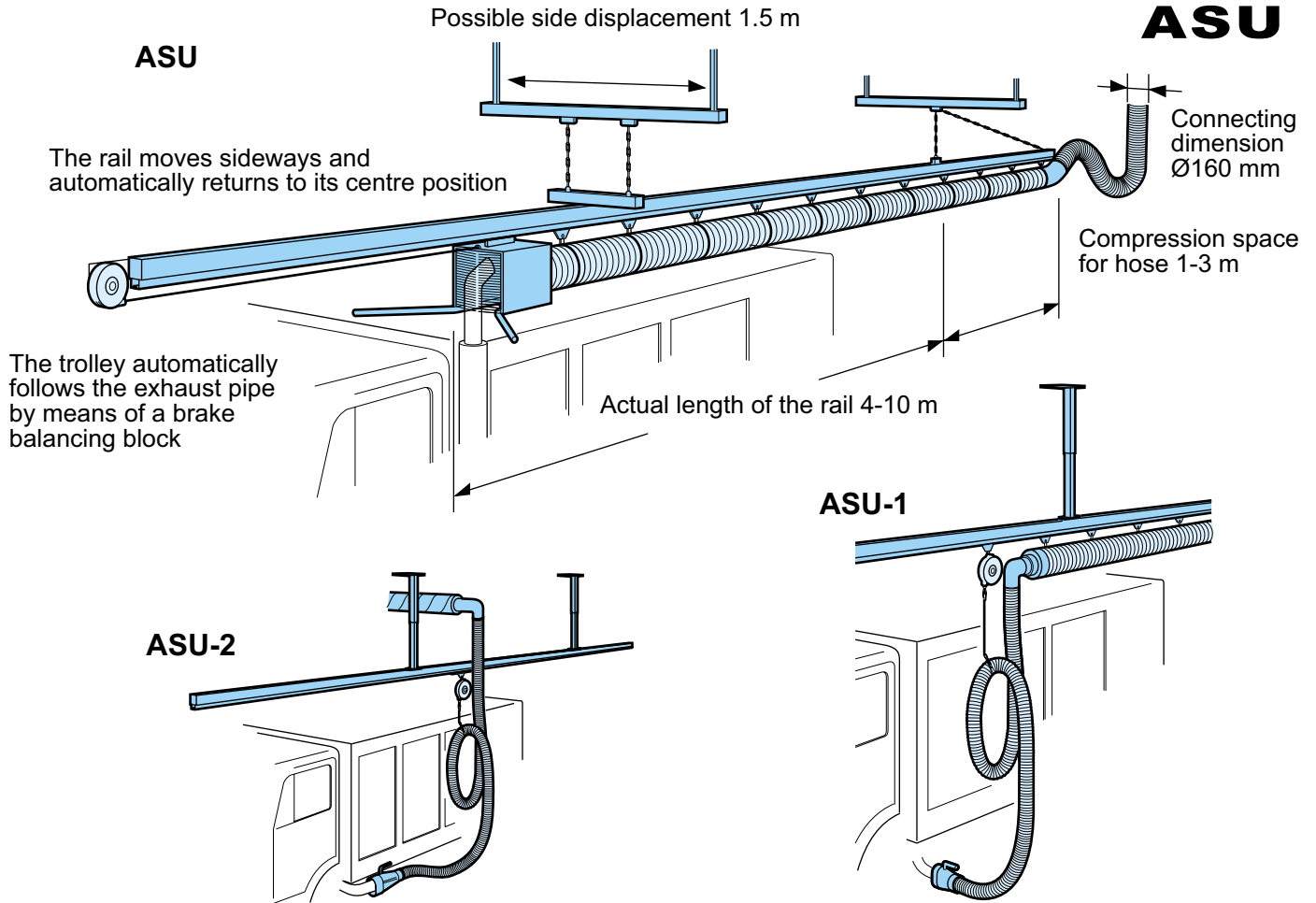
ASU-2 is a stationary extractor with rail and balancing block for side-mounted exhaust pipes that combines functionality and low cost. The extractor is mounted with a fixed bracket on the wall or ceiling. At entrance, the special rescue vehicle nozzle ABK or the pressure air regulated rubber sleeve APM, is connected. At turnout, the nozzle will automatically disconnect, the hose will be lifted and brought back to starting position by a brake balancing block.

The rescue vehicle rail and other accessories can be found in the Fumex - Belima product range.

FUMEX[®]
EXHAUST EXTRACTORS

Pure advantage

RESCUE VEHICLE RAIL ASU



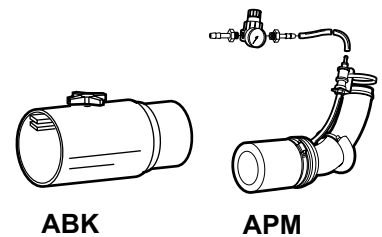
Nozzles

Nozzle type ABK or APM for automatic disconnection at turnout.

For fire engines the extractor is dimensioned for 1000m³/h.

For ambulances the extractor is dimensioned for 600m³/h.

For vehicles that differ greatly, the air flow is adapted.



Hose

Made of spring steel coil completely embedded in TPE-coated mesh reinforcement, backed with PA-wiring.

Vertical hose

EPDM/polyester heat-resistant rubberised fabric. Spring steel coil completely embedded in EPDM-coated reinforcement. The hose will reshape after compression.

Rail

6 m KKR-pipe 60x40 mm with guiding rail 28x30 mm.

Delivery design

For nozzles and control units, see leaflets *Nozzles* and *Control Units*.

Hose

Qualities Non-inflammable, suitable for exhaust fumes.
 Temperature range -40°C to +150°C
 Max +170°C for temporary exposure

Balancing block

Qualities Wire length 4,2 m. Can handle weights between 5-10 kg

Other information

Surface treatment of metal Powder coating
 Weight 4,5 kg/m

