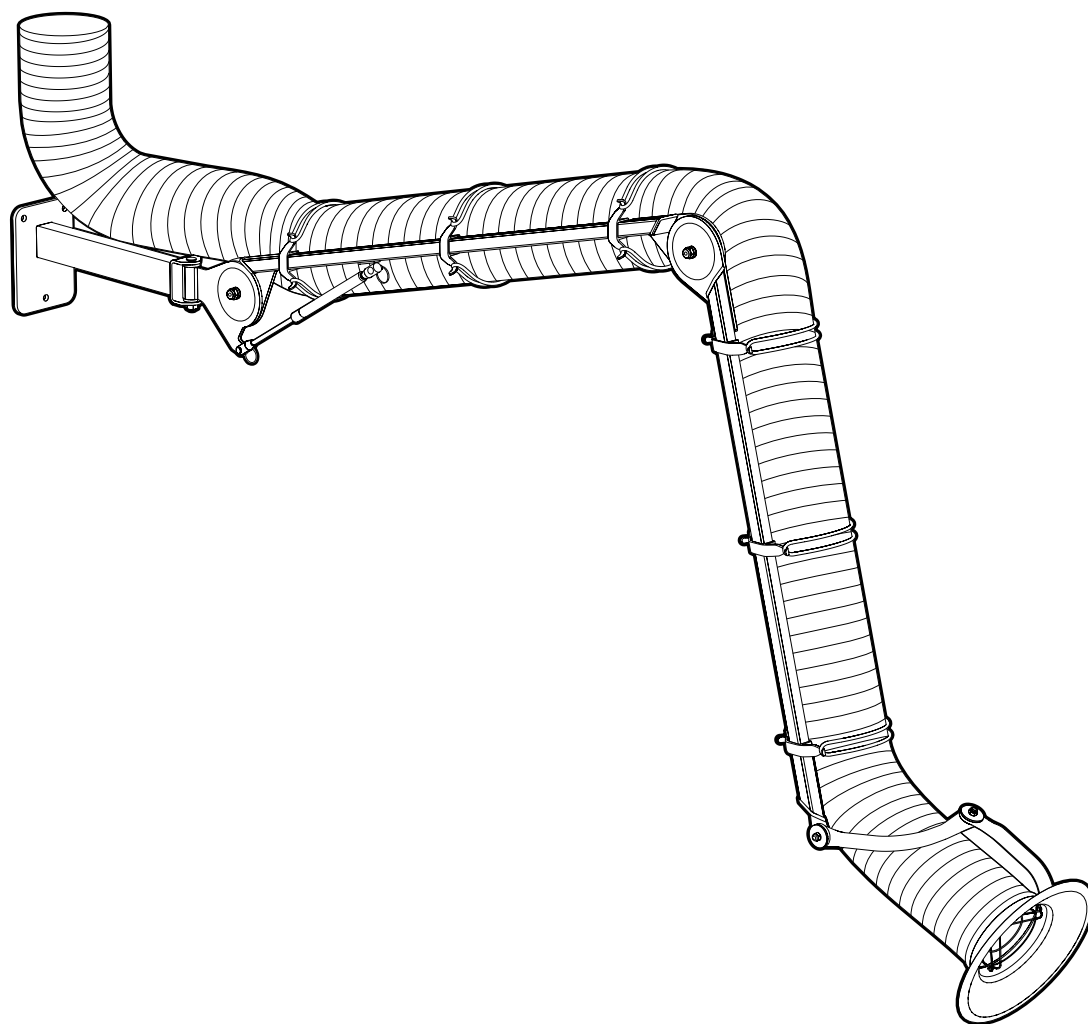




# PSR



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## Foreword

FUMEX operates in the environmental technology sector and specialises in extraction arms, fans, and filters for all work environments. The company strives to create work environments free from airborne contaminants.

Our products are manufactured using modern methods and undergo extensive quality inspections. The products comply with applicable safety- and environmental requirements.

If you have any questions about FUMEX or our products, please contact your dealer or the FUMEX sales department.

# 1 Introduction

## 1.1 The manual

To ensure your knowledge of the product, you must read this manual before use.

The information in this manual is intended to facilitate the installation, operation, maintenance, troubleshooting, and repair of the product. The manual also provides the user with a technical understanding and basic safety instructions to minimise risks when working with the product, as well as to increase the product's service life.

The manual should be considered a part of the product and should always be accessible and in close proximity to the product.

The following symbols are referred to in the manual:



Safety instructions (applicable to people or product) that must always be adhered to. Risk of death or risk of personal injury or damage to property.



Recommendations which convey important information for an optimally functioning product.

## 1.2 Warranty

To preserve the validity of the warranty, it is forbidden to modify or re-engineer the product during the warranty period without first obtaining prior approval from FUMEX. This is also applicable to any spare parts used which do not correspond to the manufacturer's specifications.

Damage caused by improper use of the product will result in:

- the warranty being voided
- the EC Declaration and CE certification being voided.

The warranty period is one year from the date of purchase and covers the product and its constituent parts. All manufacturing defects are covered by the warranty. FUMEX replaces defective parts in accordance with NL 17.

FUMEX is not liable for any consequential or incidental damage, or any loss of income as a result of or in connection with the warranty case.

The onus is on the buyer to select the appropriate product for the intended use. Any modifications to the FUMEX product or its intended use will void the warranty.

## 1.3 Manufacturer

FUMEX AB	Verkstadsvägen 2
Tel. no.: +46 910-361 80	SE-931 61 Skellefteå
Email: info@fumex.se	Sweden




## 2 Safety

### 2.1 General

This product is safe to use and designed to minimise any potential risks. Even so, if the product is not used correctly or as intended, it may be hazardous to the user or cause damage to the product. The user should therefore be informed and trained to handle the product's safety features.

### 2.2 Warning levels (on product)

Safety signs on Fumex products make use of colour codes and signal words in accordance with ISO 3864-2.

-  **Red (DANGER):** used to indicate an imminently dangerous situation which, if not avoided, will result in death or serious personal injury.
-  **Orange (WARNING):** used to indicate a potentially dangerous situation which, if not avoided, may result in death or serious personal injury.
-  **Yellow (CAUTION):** used to indicate a potentially dangerous situation which, if not avoided, may result in moderate or minor personal injury.

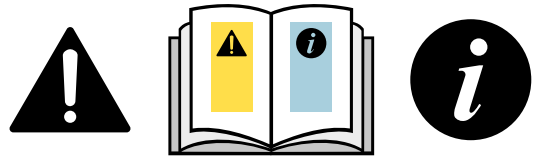
### 2.3 Safety signs

Refer to **3.2 Labels and safety signs**.

### 2.4 Protective equipment

As the extraction arm is earthed, electrostatic discharge can be experienced when touching the product.

People can become electrostatically charged either directly (friction from clothes or shoes) or by induction (proximity to highly charged objects). Electrostatic charges can be produced when a person walks across a floor with a high resistance. This can usually be prevented with the use of floor coverings with a resistance to earth of less than 100 MΩ and the use of electrostatic dissipative shoes.



### 2.5 General warnings and information



The product must not be modified.

The product may only be used in perfect technical condition and according to its intended use as described in Section **3.3 Area of use**. Faults that may compromise safety must be rectified immediately.

The product's moving parts always constitute a risk (e.g. cutting, clamping or gripping points).

The product is not intended for the extraction of non-conductive dust with an MIE (Minimum Ignition Energy) of less than 4 mJ.

The product must not be used in environments containing substances that can affect or react with the materials from which it is made. See **10.3 Technical data**.

The earth cable must be connected to the appropriate earthing point.

The earth cable resistance must not exceed 10 Ω.

For maintenance work where contact with dust occurs, personal protective equipment such as safety glasses, respiratory protection and safety gloves must be worn.



The product should only be used by personnel with good knowledge of the product and its area of use.

Please note that the facility owner is responsible for the classification and zoning of the workplace.

Waste disposal must be carried out in accordance with applicable national legislation.

## 3 Product Description

### 3.1 Serial number & product name

Refer to the product nameplate.

### 3.2 Labels and safety signs

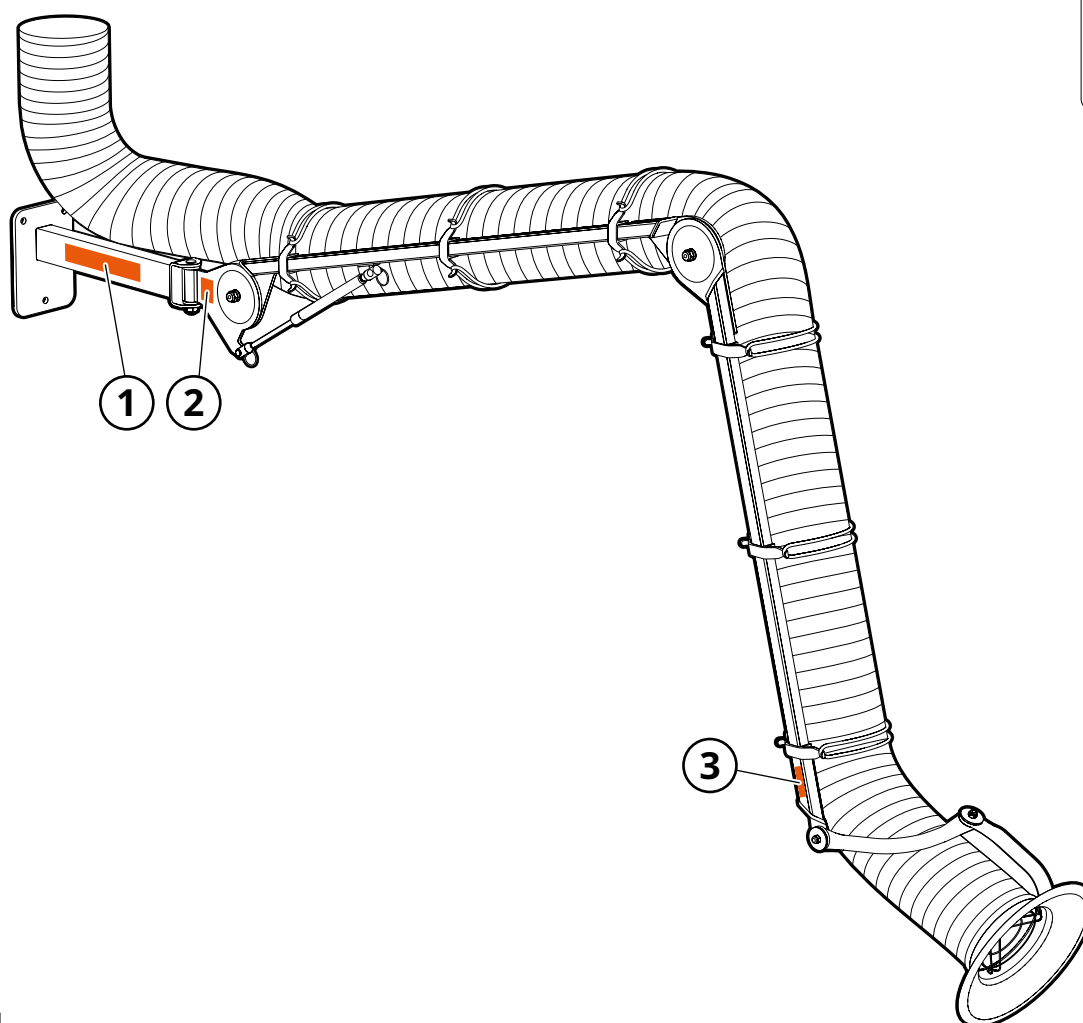
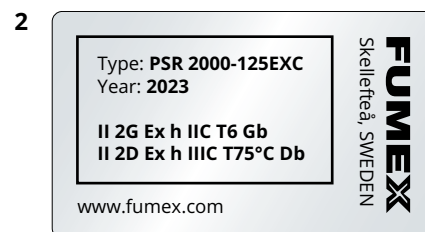


Safety signs that are missing or illegible must be replaced before the product is used.

According to **Fig. 1**.

1. Logotype
2. Nameplate
3. Safety sign

1 **FUMEX**



**Fig. 1**

### 3.3 Area of use



Since the product does not have an internal ignition source, it cannot be classified under the ATEX directive 2014/34/EU.

The PSR EXC/EXD extraction arm is designed for the safe extraction of gas and dust in explosive atmospheres.

The product complies with the requirements of the ATEX directive for category 2 equipment for gas and dust, and it is suitable for use in zones 1 and 21 as well as 2 and 22.

### 3.4 Design

See Fig. 2.

- |                      |   |
|----------------------|---|
| 1. Hood              | 8. Gas spring                           |
| 2. Hood joint        | 9. Upper joint                          |
| 3. Hose fixation     | 10. Wall bracket                        |
| 4. Hose              | 11. Horizontal support arm <sup>1</sup> |
| 5. Lower support arm | 12. Hose fixation EXD <sup>1</sup>      |
| 6. Lower joint       | 13. Hose fixation EXC <sup>1</sup>      |
| 7. Upper support arm |   |

<sup>1</sup> Applies to PSR 4000 only.

### 3.5 Function

The extraction arm is mounted on a wall bracket (10, Fig. 2) as standard and has externally attached support arms (5, 7). The upper joint (9) is fitted with a gas spring (8) to balance the weight of the arm. The extraction arm's friction is regulated at each joint (6, 9). The hood (1) is designed for maximum suction efficiency and is ideal for gas and dust extraction. The hood joint (2) can be bent 180°+180°. The hose (4) is mounted on the arm via a Fumex Q-Maid™ hose fixation (3).

The application areas for the PSR EXC and PSR EXD hoses differ somewhat. The PSR EXC hose is designed for gas extraction while the PSR EXD hose is designed for dust extraction. For a comprehensive material specification, see chapter 10 **Technical information**.

Other hoses for special requirements can be provided upon request. Contact Fumex for details.

Accessories include dampers as well as ceiling and floor brackets. See chapter 11 **Accessories**.

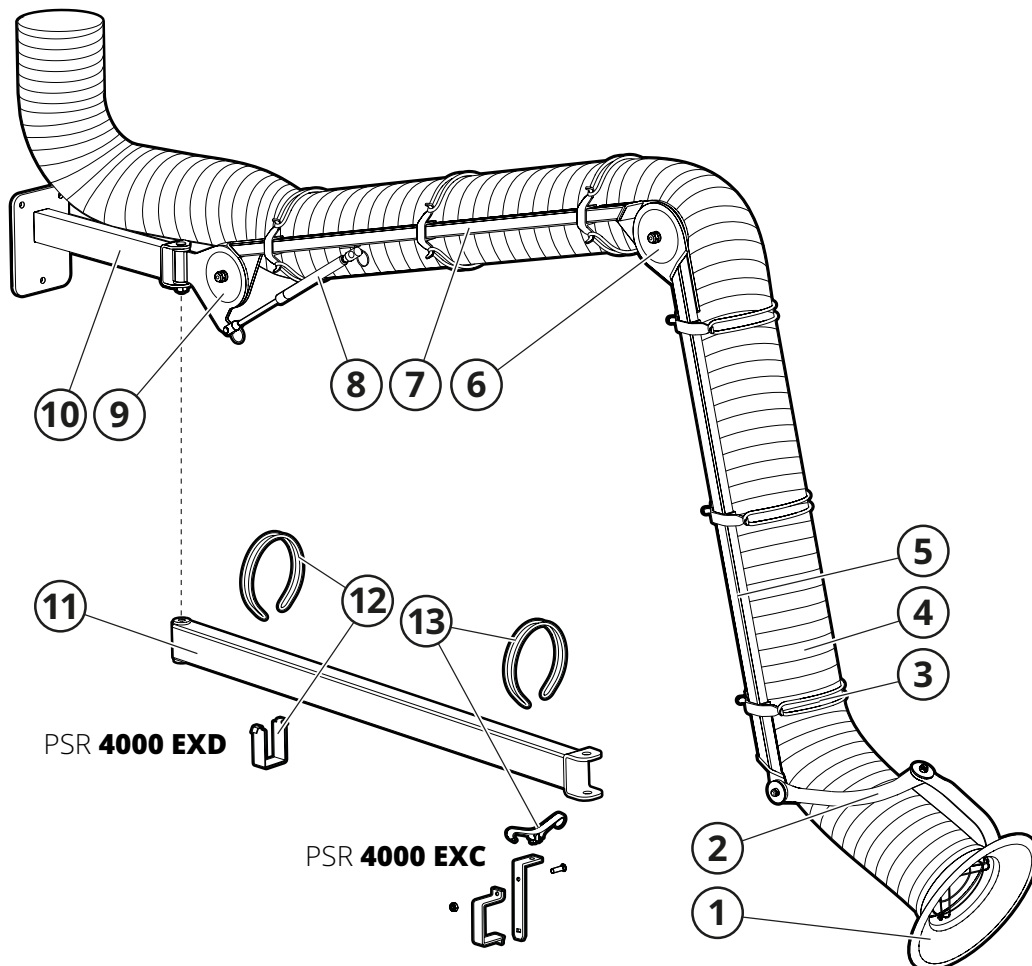


Fig. 2

## 4 Preparation for use

### 4.1 Transport and storage



Protect the product and its parts from rain, snow, aggressive atmospheres and other harmful effects.

### 4.2 Assembly and installation

National rules and regulations must always be adhered to during assembly work.

#### 4.2.1 Unpacking

1. Unpack the product.
2. Check for any damage and missing parts.  
Contact a local Fumex representative directly if there is damage or parts are missing.
3. Dispose of the packaging material in accordance with local recycling rules.

#### 4.2.2 Installation

The extraction arm is delivered partially assembled. Assemble and install the extraction arm as per the illustrated assembly instructions in **Fig. 3** to **Fig. 9**.

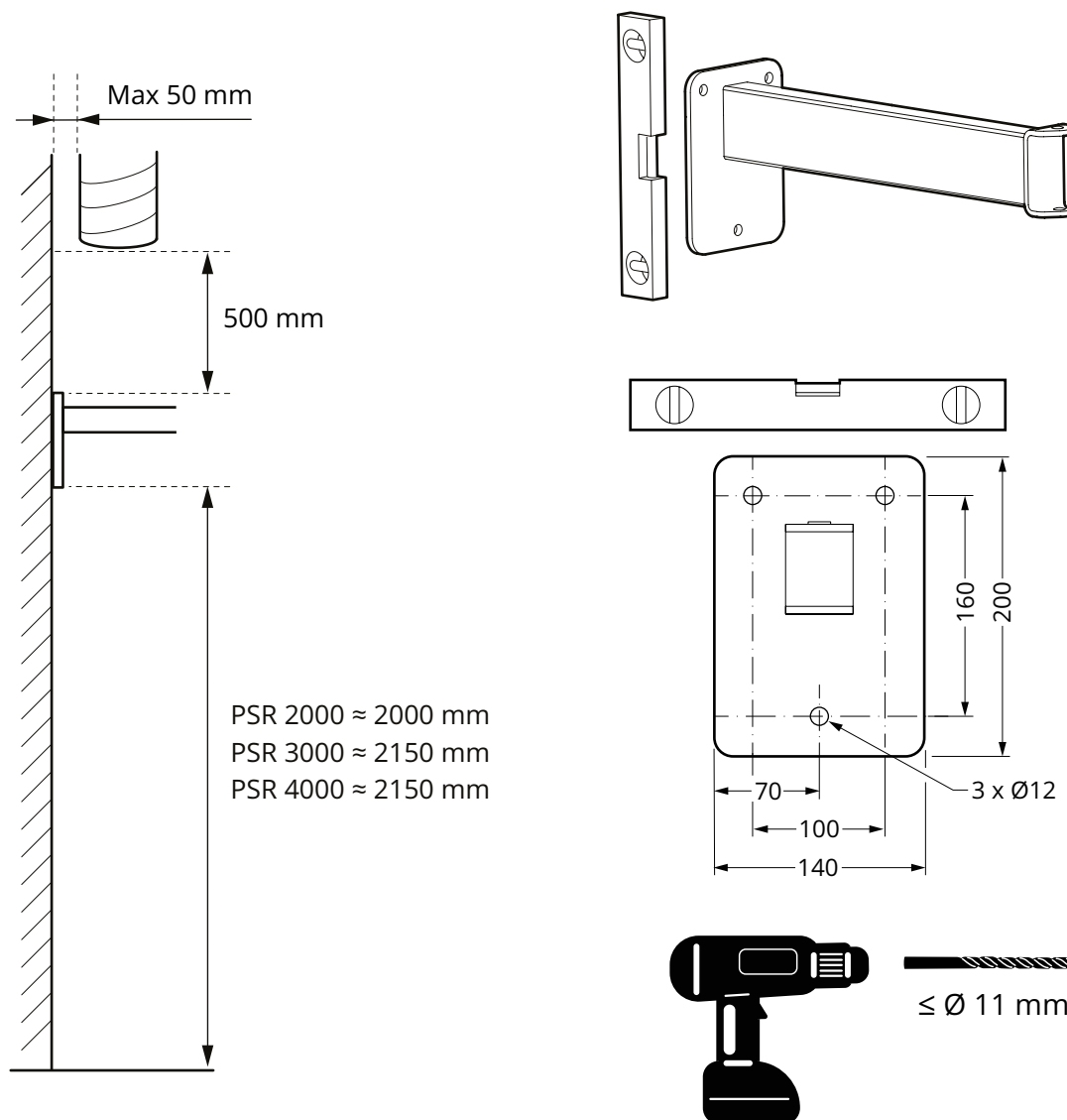
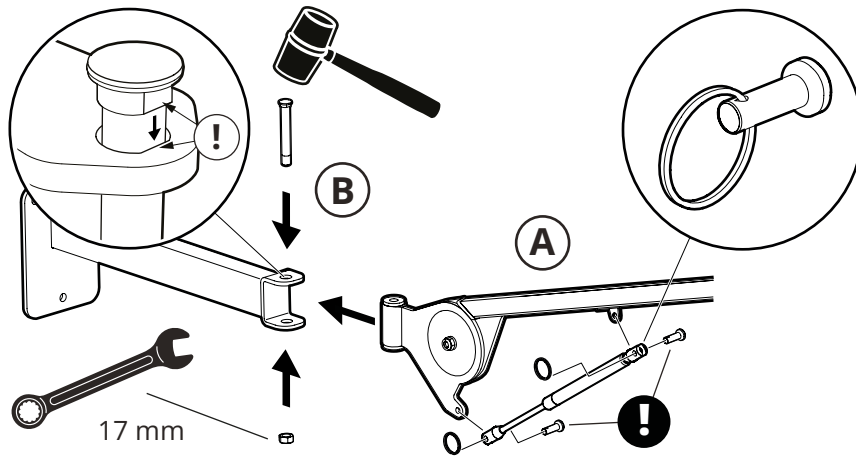


Fig. 3

PSR 2000/3000



PSR 4000

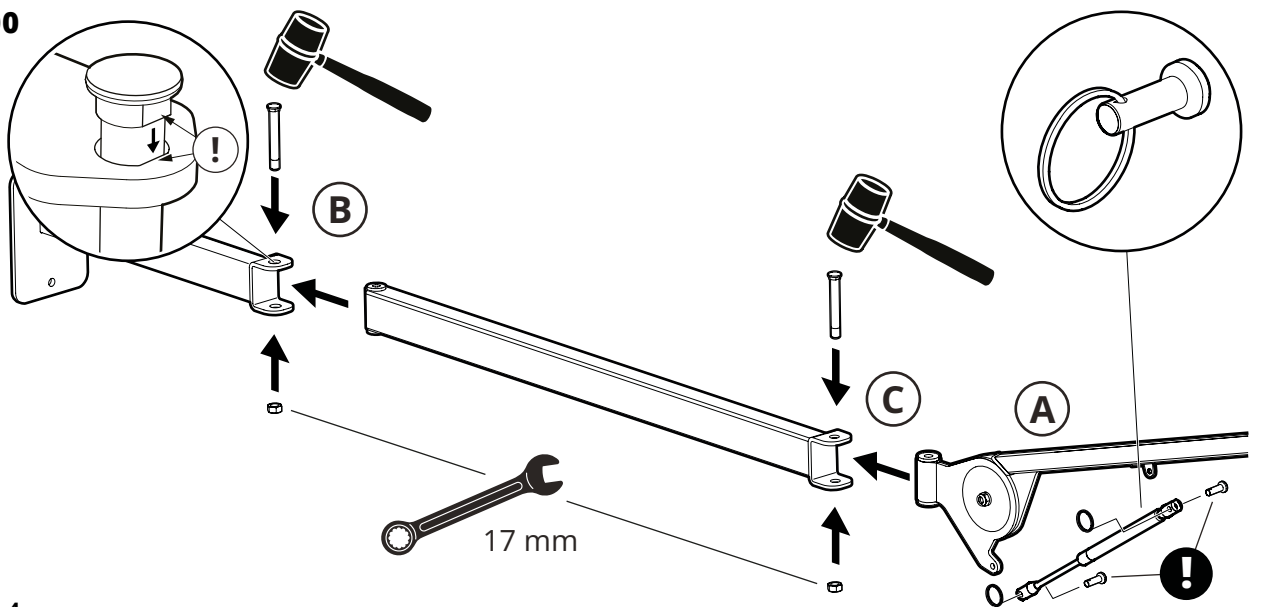


Fig. 4

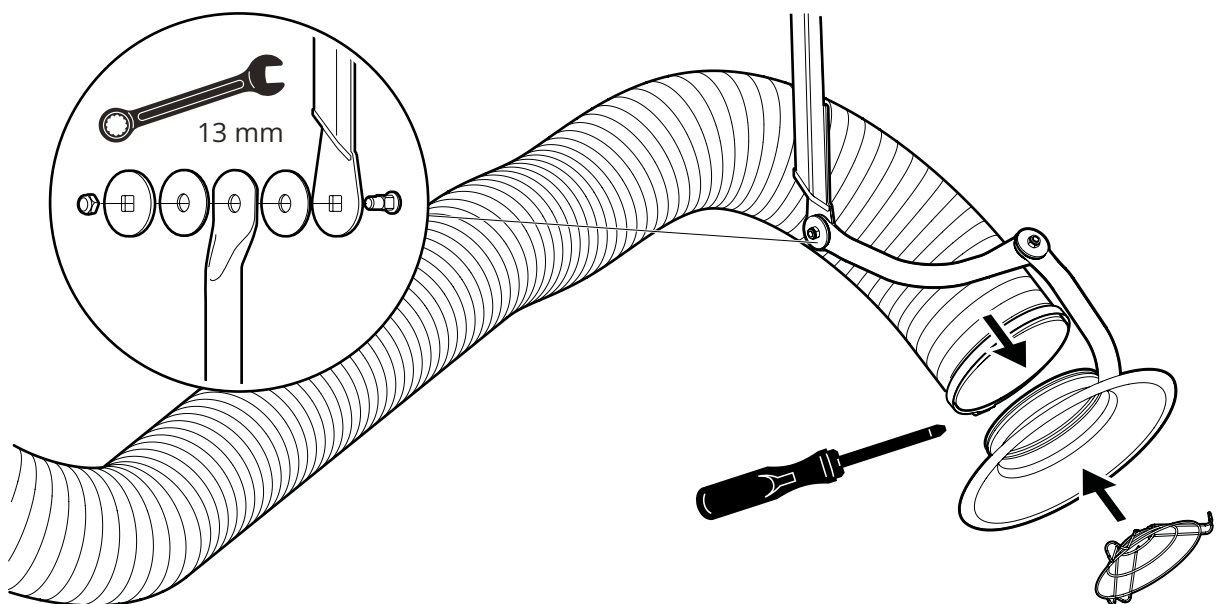
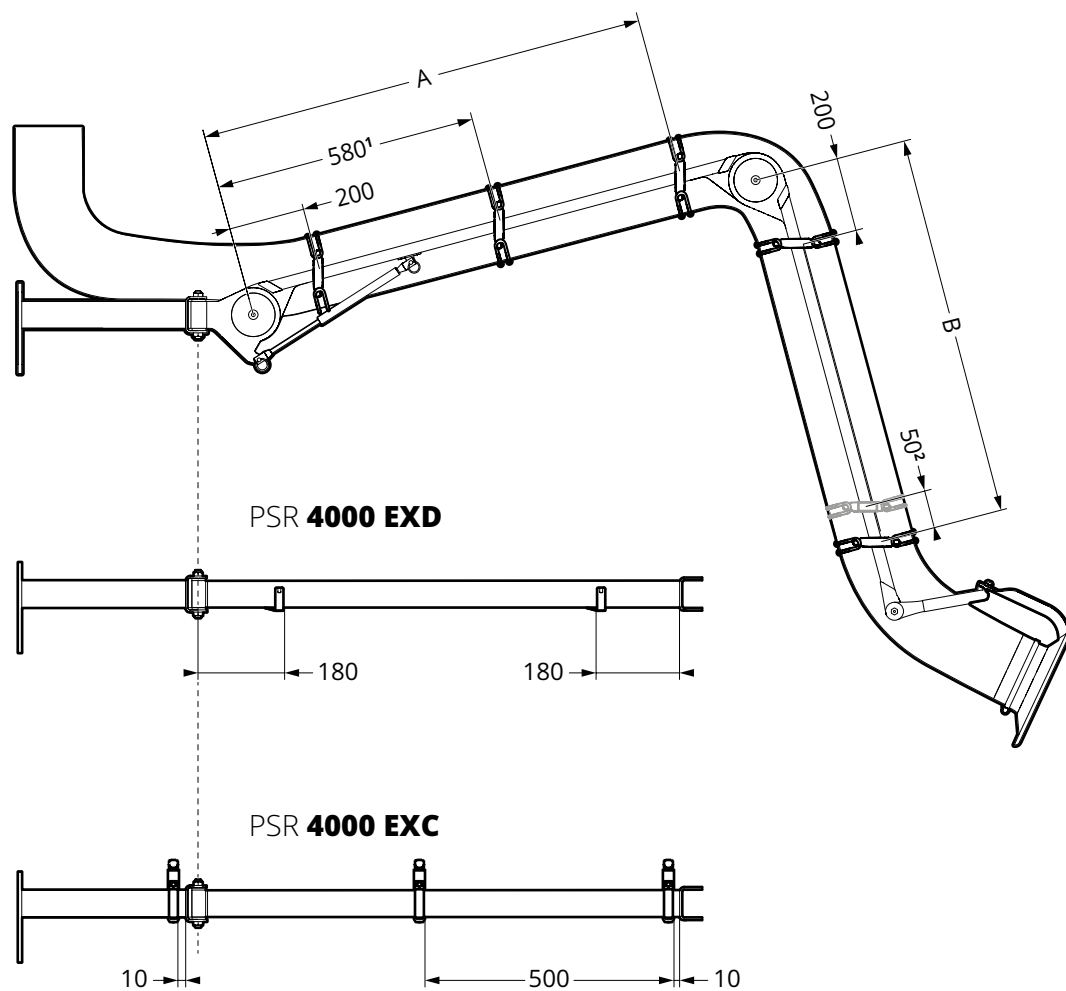


Fig. 5

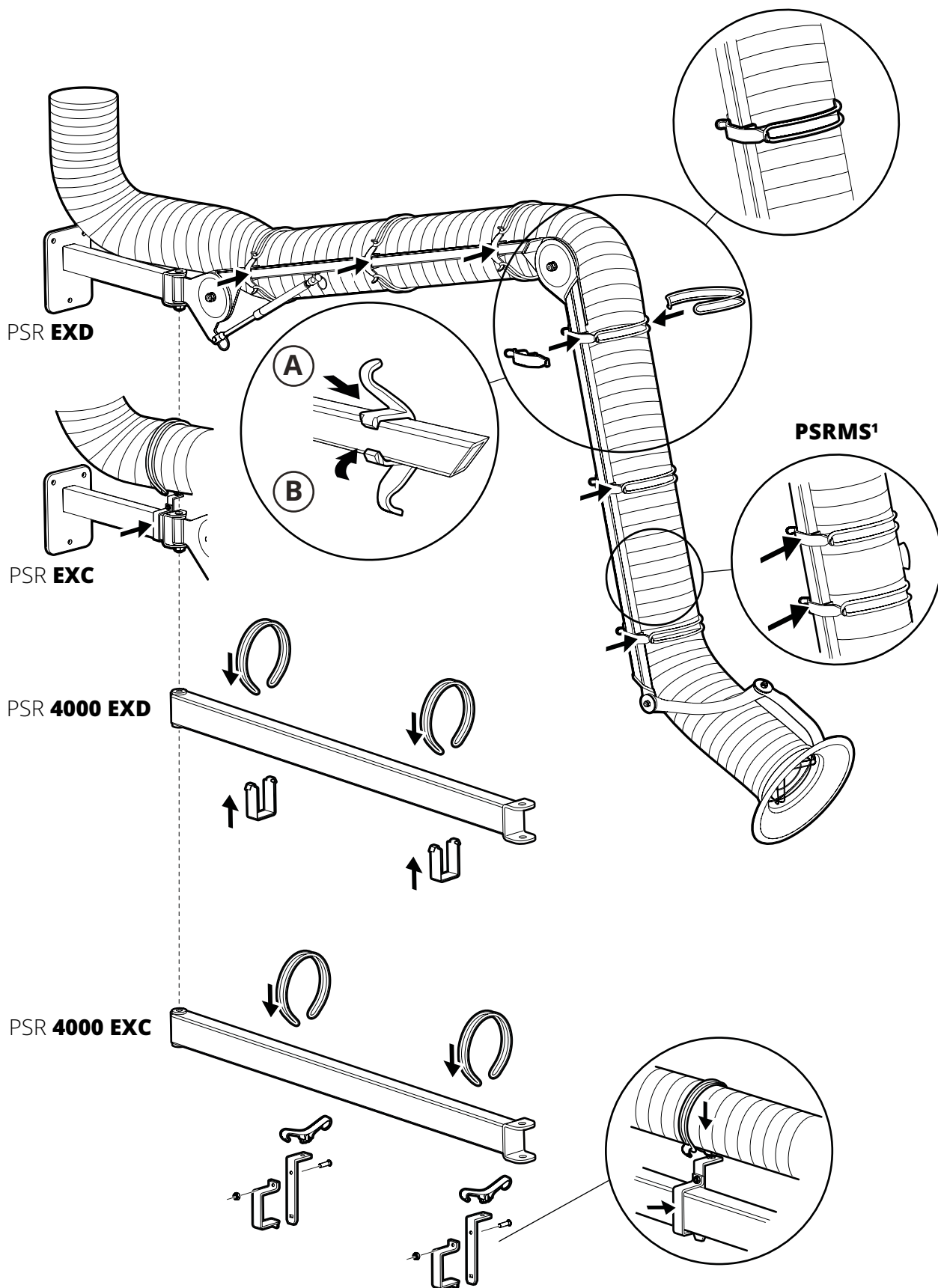


Model	Dimensions (mm)	
	A	B
PSR <b>2000</b>	460	580
PSR <b>3000</b>	960	860
PSR <b>4000</b>	960	860

<sup>1</sup> Applies to PSR 3000/4000

<sup>2</sup> Applies only when mounting a hose with Damper PSRMS (accessory).

**Fig. 6**



<sup>1</sup> When mounting a hose with Damper PSRMS (accessory).

Fig. 7

PSR **EXD**

PSR **EXC**

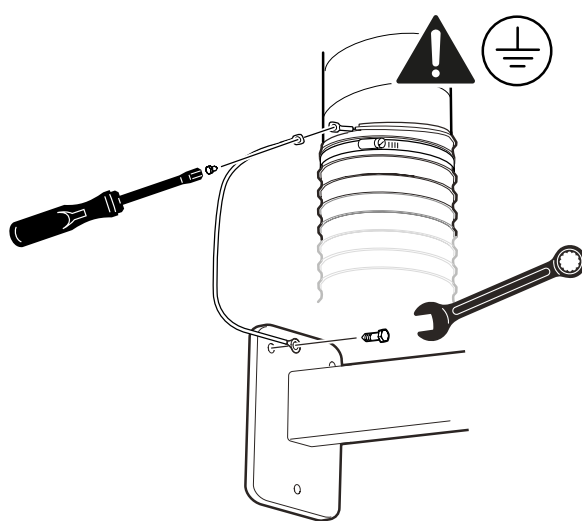
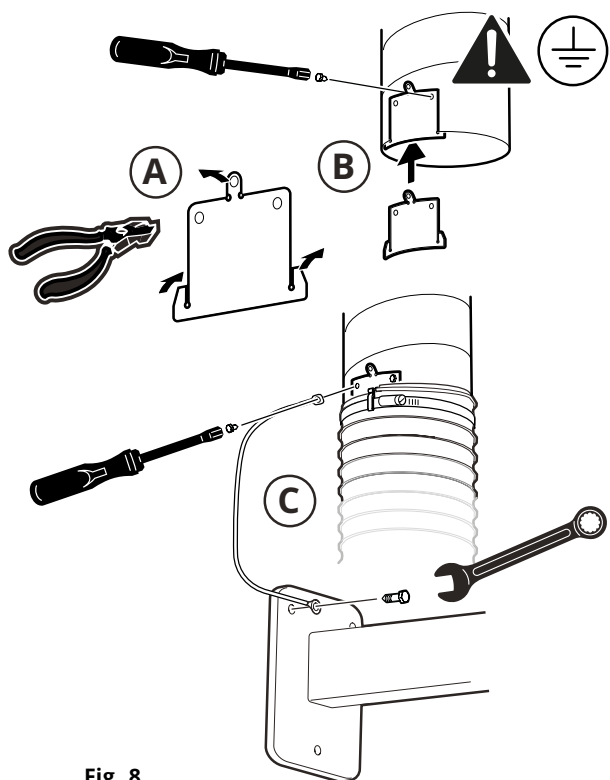


Fig. 8

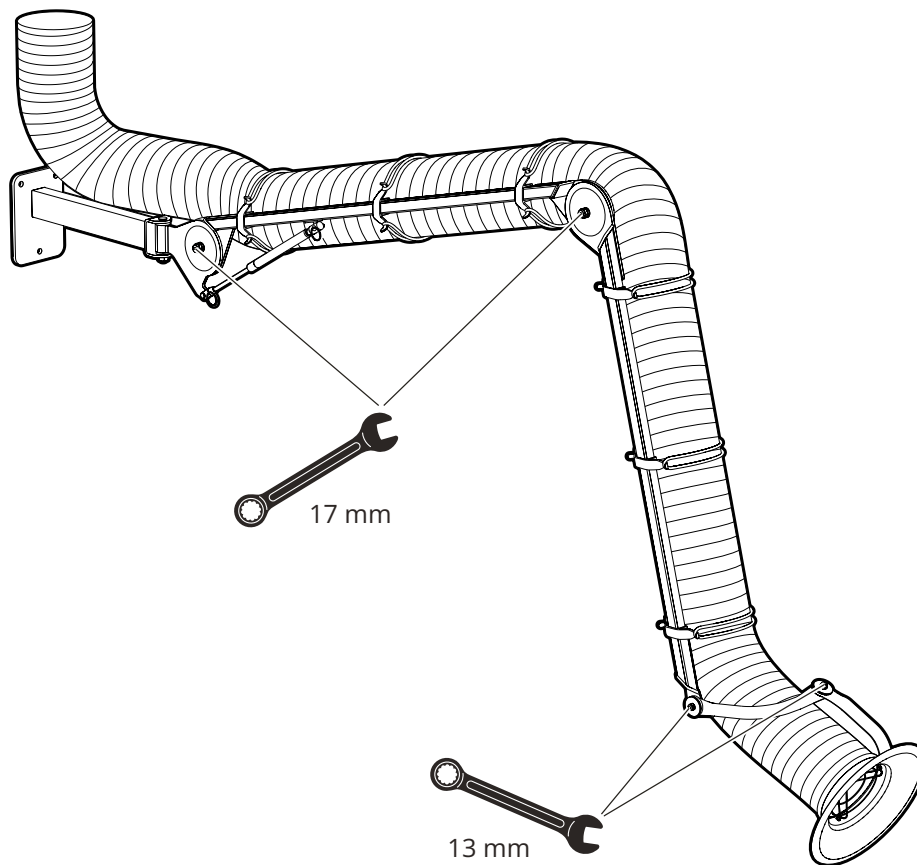


Fig. 9

## 5 Commissioning

### 5.1 Start-up

**i** Resistance is measured while the hose is disconnected from the suction nozzle.

1. Check that all joints are adjusted to the correct friction.
2. Check the suction tubes for foreign objects. Remove any such objects immediately.
3. Check the resistance of the hose with a calibrated ohmmeter. See 1, **Fig. 10**. The resistance between the measuring points (earth plane/hose end) must be less than 1 MΩ.
4. Check the resistance of the extraction arm with a calibrated ohmmeter. See 2, **Fig. 10**. The resistance between the measuring points (earth plane/hood) must be less than 1 MΩ.

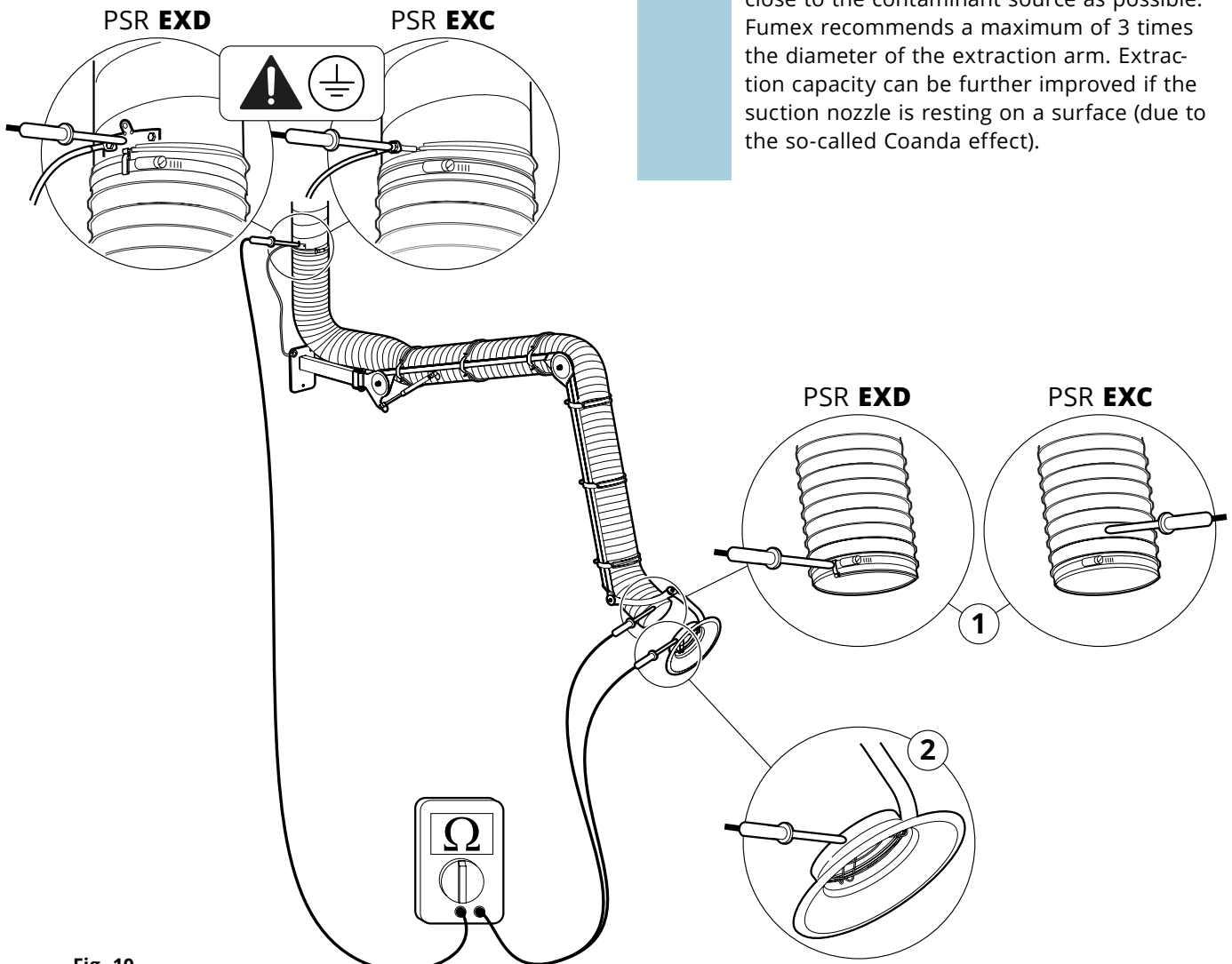


Fig. 10

## 6 Operation



Ensure that any objects or people that may be electrostatically charged cannot come into contact with the equipment.

When extracting different dust combinations, first ensure that the combination itself is not an ignition hazard, such as iron filings and aluminium dust.

Avoid causing an electrostatic charge on non-conductive dust.

Avoid hygroscopic dust and dust that risks sticking to the product.

Caution must be exercised with hybrid gas/dust mixtures as they may prove more flammable than the separate gas and dust safety data indicate.



The extraction arm is easily positioned within the work area by hand. For the best result, the suction nozzle should be positioned as close to the contaminant source as possible. Fumex recommends a maximum of 3 times the diameter of the extraction arm. Extraction capacity can be further improved if the suction nozzle is resting on a surface (due to the so-called Coanda effect).

## 7 Troubleshooting

### 7.1 Troubleshooting guide

The troubleshooting guide contains information for identifying faults which are simple to rectify. Always perform the troubleshooting procedures before contacting FUMEX.

TROUBLESHOOTING GUIDE		
Symptom	Possible cause	Recommended action
1. Difficulty moving the extraction arm into the desired position.	Friction joints incorrectly adjusted.	Adjust the tension.
	Friction joints worn.	Contact your dealer to replace the friction rings.
	Gas spring damaged or worn.	Contact your dealer to replace the gas spring.

## 8 Maintenance



Please remember that only original spare parts may be used.

Make sure that all moving parts are secured to prevent unintentional movement.

### 8.1 Cleaning



Consider the risk of electrostatic discharge from your person or cleaning tool when removing dust deposits.

Cleaning must be performed when the atmosphere is not potentially explosive. When dust with an MIE of less than 30 mJ is being extracted, personnel should wear electrostatic dissipative shoes and clothing.

To avoid damage, the product should be cleaned with a clean cloth dampened with a neutral detergent.

#### 8.1.1 Dry cleaning

Vacuum and dry the product inside and outside.

#### 8.1.2 Wet cleaning



Check that the detergent is neutral and will not affect any of the materials from which the product is made. See the material specification in Section **10.3 Technical data**.

Allow the equipment to dry before use.

### 8.2 Maintenance schedule



Depending on the changing operating conditions between the different systems, the intervals for recommended maintenance may differ. Users should therefore determine their own maintenance intervals.

The checklist for maintenance is designed for normal use of the product. The recommended intervals are approximate and refer to the time after the first start-up.

FUMEX recommends the following maintenance schedule:

MAINTENANCE SCHEDULE				
Interval	Item	Inspection module	Maintenance instructions	Date
As necessary	1.1	Extraction arm	Clean externally. Refer to Section <b>8.1 Cleaning</b> .	
	1.2		Adjust the friction joints to achieve the desired tension.	
Every three months	2.1	Earthing	Visually inspect the earth cable for damage. Replace as necessary.	
Every six months	3.1	Earthing	Check the earth resistance with an ohmmeter as per step 4 of Section <b>5.1 Start-up</b> . Replace as necessary.	
	3.2	Extraction arm	Check that the extraction arm fittings and connection are as they should be. Rectify if necessary.	

### 8.3 Adjusting friction joints

Adjust the friction joints as shown in Fig. 9.

### 8.4 Disassembly

Disassemble the extraction arm as per the illustrated instructions in Fig. 11 to Fig. 14.

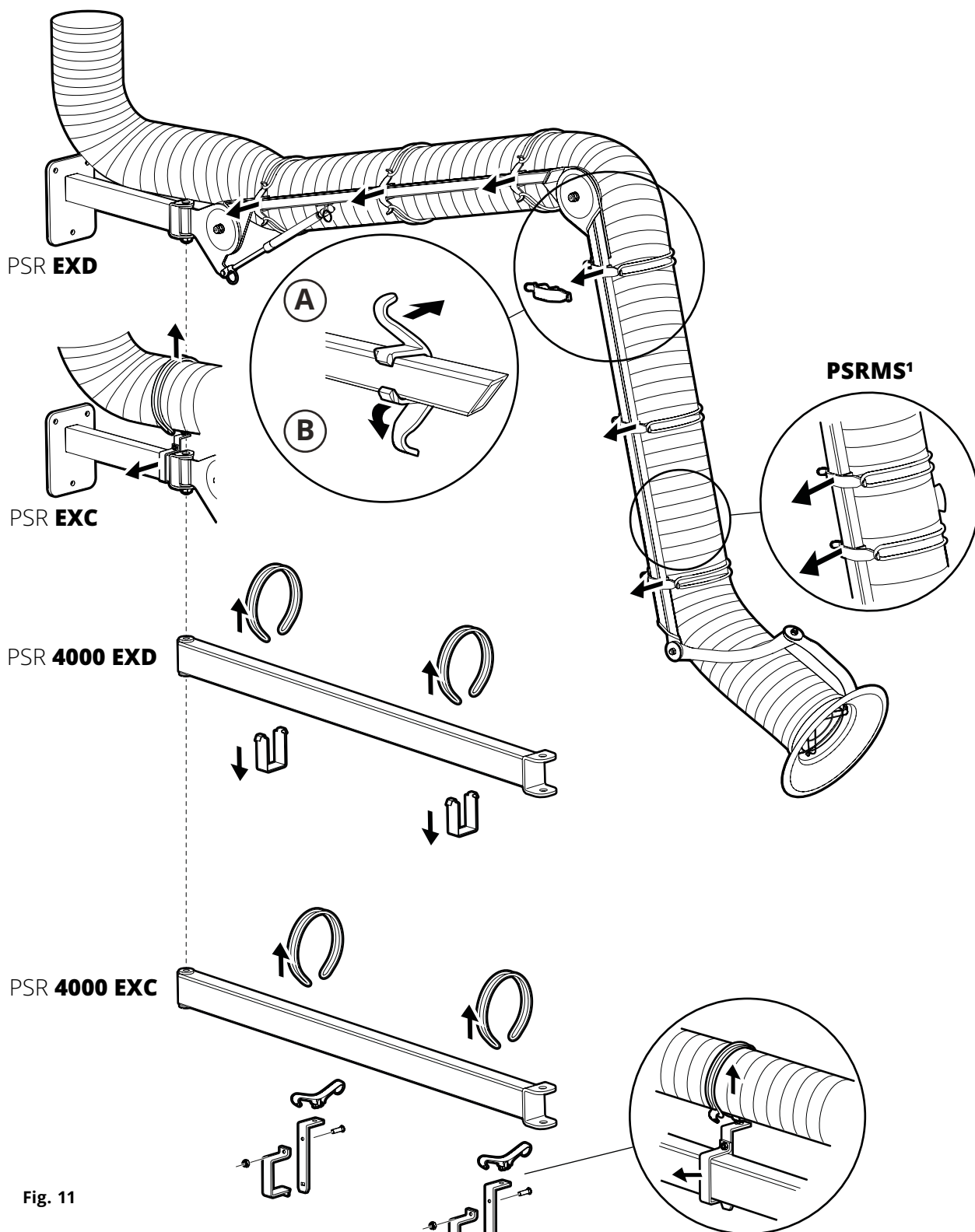


Fig. 11

<sup>1</sup> When mounting a hose with Damper PSRMS (accessory).

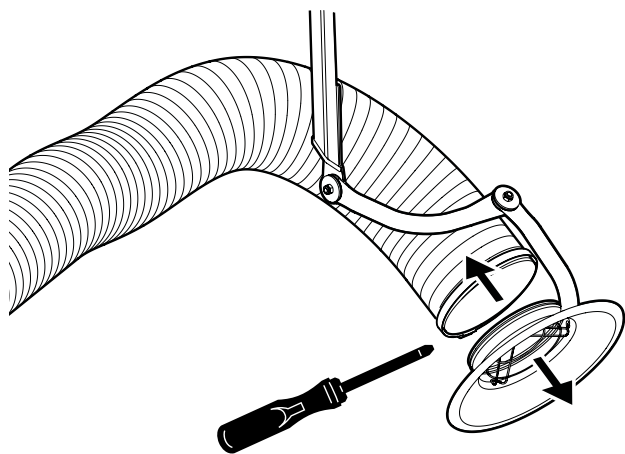


Fig. 12

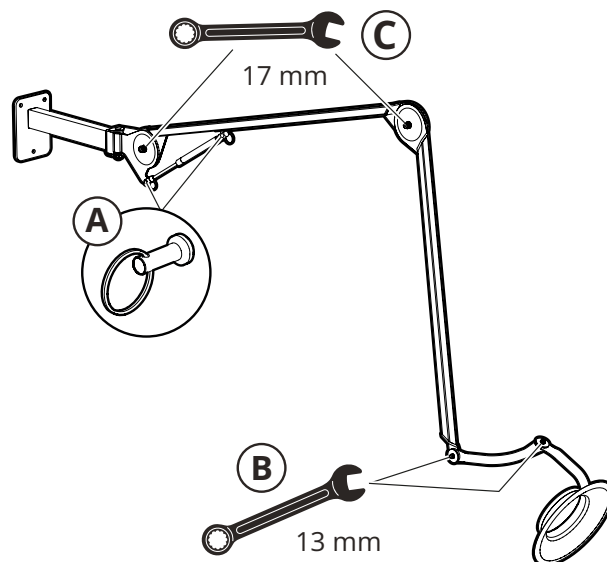


Fig. 13

PSR **2000/3000**

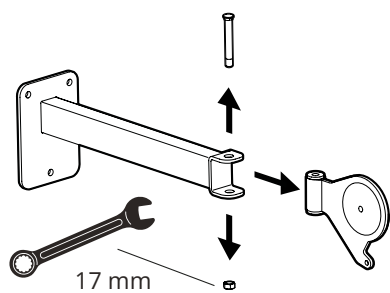
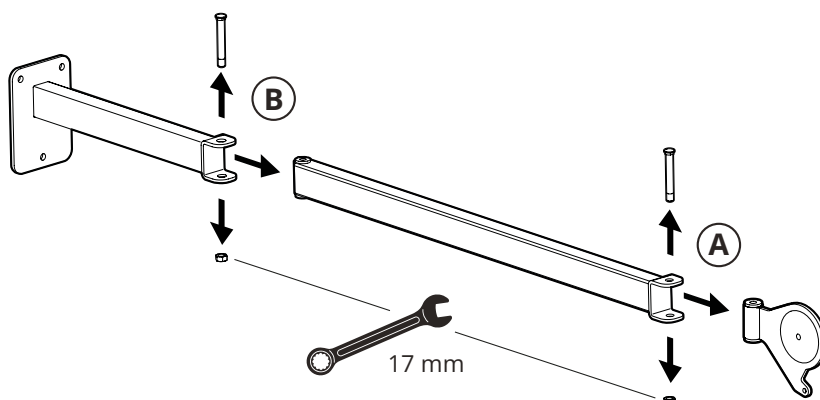


Fig. 14

PSR **4000**



## 9 Decommissioning

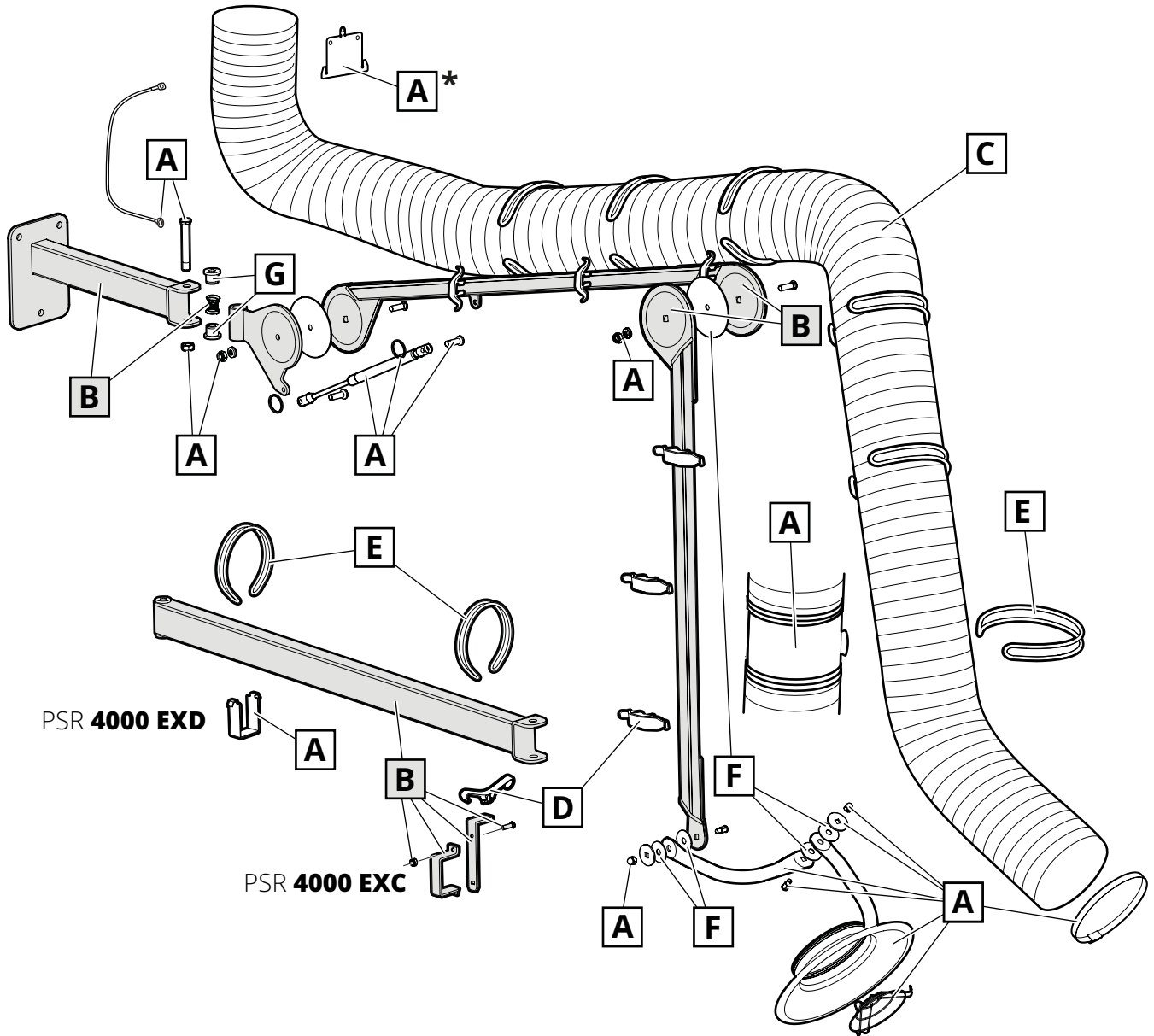
### 9.1 Final decommissioning/ disassembly/disposal

Final decommissioning and dismantling of the product may only be done by authorised personnel wearing protective gear. The management and correct removal of the various types of materials must be in accordance with the applicable legal requirements.

Please contact FUMEX if you have any questions about the various types of waste.

# 10 Technical information

## 10.1 Material specification



**A** High-gloss polished  $Ra \leq 0,6$  acid-resistant stainless steel, grade EN 1.4401/AISE 316 (A4 for fasteners).

**B** Electropolished stainless steel, grade EN 1.4301/AISE 304 (A2 for fasteners).

**C PSR EXC**  
Conductive PE hose with steel coil  $R < 10^4 \Omega$

**PSR EXD**

Permanent antistatic PU hose with stainless steel coil,  $R < 10^9 \Omega$ . Resistant to hydrolysis and microbes, non-toxic, and food-grade certified in accordance with EC Regulation No. 1935/2004 and No. 10/2011, FDA standards 21 CFR 177.2600 and 178.2010.

**D** PP (FDA)

**E** EPDM (FDA)

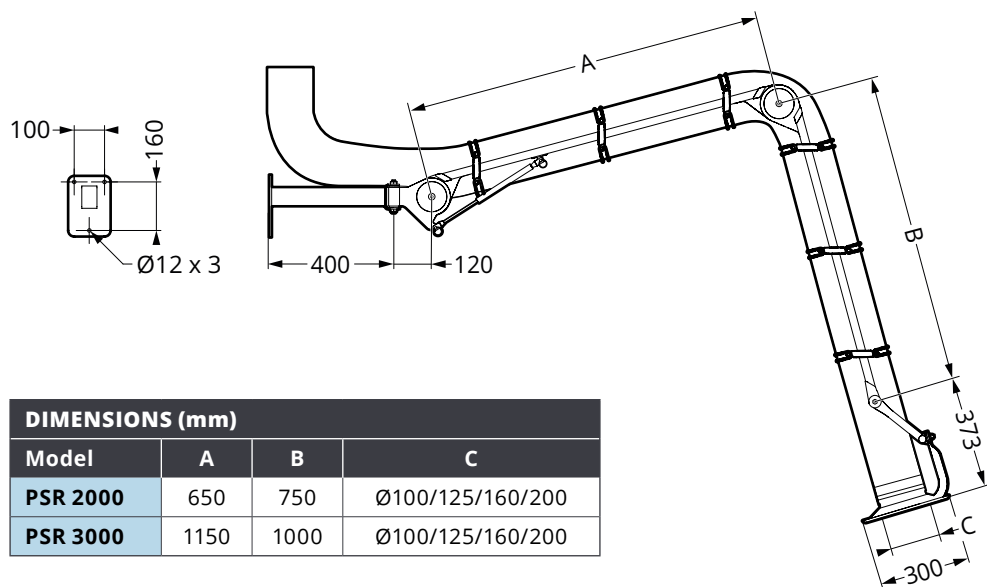
**F** PA6 (FDA)

**G** TPU (FDA)

*\* Only applies to PSR EXD.*

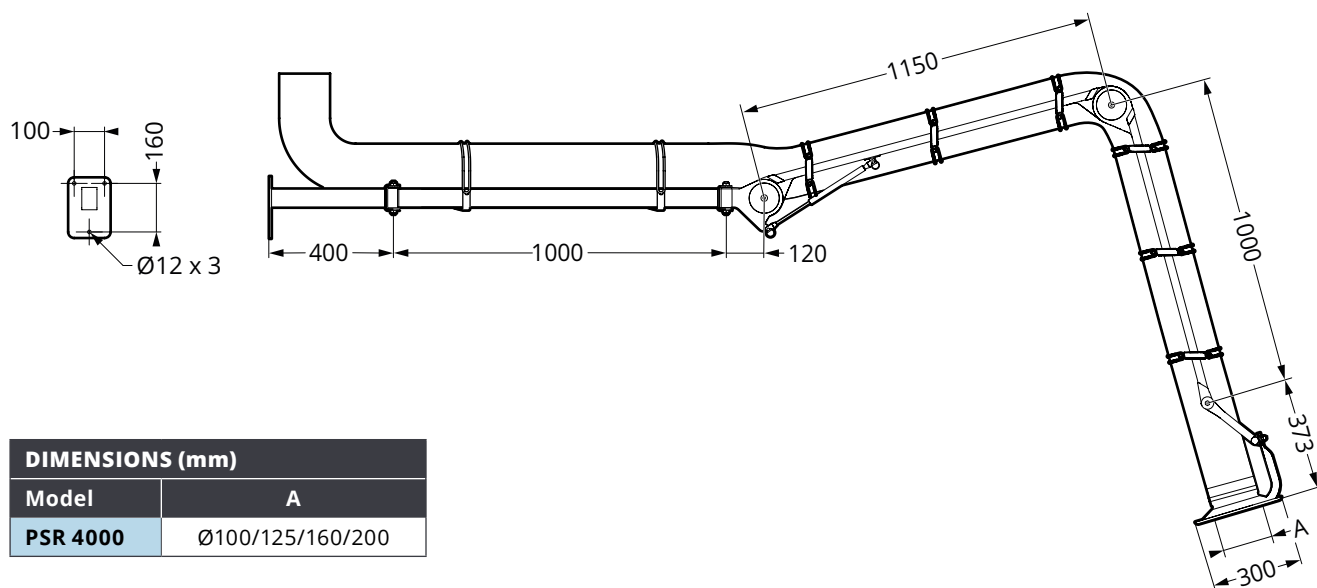
## 10.2 Dimensional drawing

### PSR 2000/3000



DIMENSIONS (mm)			
Model	A	B	C
PSR 2000	650	750	Ø100/125/160/200
PSR 3000	1150	1000	Ø100/125/160/200

### PSR 4000



DIMENSIONS (mm)	
Model	A
PSR 4000	Ø100/125/160/200

## 10.3 Technical data

### 10.3.1 General

Materials:.....See Section **10.1 Material specification**

Dimensions: .....See Section **10.2 Dimensional drawing**

#### Temperature limits

Operating temperature:.....5 °C to 60 °C

Ambient temperature: .....10 °C to 40 °C

Transport and storage temperature: .....-25 °C to 60 °C

#### Versions

<b>PSR EXC/EXD</b> .....	<b>2000</b>	<b>3000</b>	<b>4000</b>
--------------------------	-------------	-------------	-------------

Length (mm):.....	2293	3043	4043
-------------------	------	------	------

Weight * (kg): .....	11,4	12,5	18,4
----------------------	------	------	------

---

\* *Excluding hose.*

### 10.3.2 Hose

#### PSR EXC

Properties:.....See **10.1 Material specification**

Temperature range: ..... -40 °C to +60 °C

#### PSR EXD

Properties:.....See **10.1 Material specification**

Temperature range: ..... -40 °C to +100 °C

### 10.3.3 EX labelling

<b>Labelling:</b> .....	<b>Gas</b>	<b>Dust</b>
-------------------------	------------	-------------

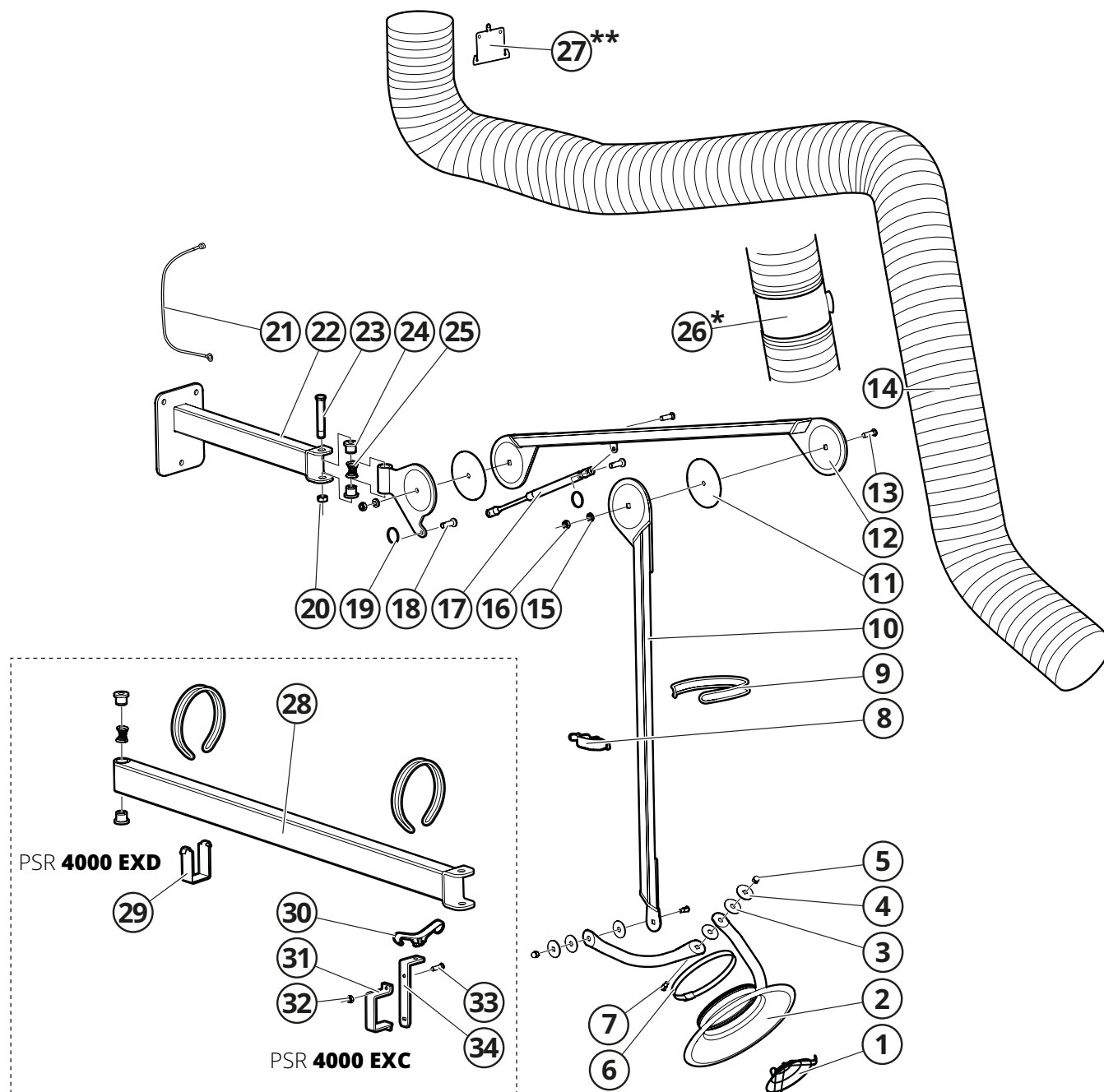
Type of protection: .....	Ex h	Ex h
---------------------------	------	------

Group: .....	IIC	IIIC
--------------	-----	------

Temperature class:.....	T6	T75 °C
-------------------------	----	--------

Protection level: .....	Gb	Db
-------------------------	----	----

### 10.4 Exploded-view drawing



\* Accessory Damper PSRMS.

\*\* Only applies to PSR EXD.

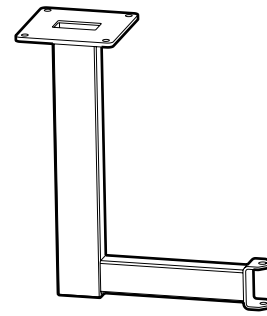
# 11 Accessories

## CEILING BRACKET **PTA2**

Ceiling bracket in stainless steel.

Lengths: .....500/1000/1500 mm

Material:.....Electropolished stainless steel,  
.....grade EN 1.4301/AISE 304

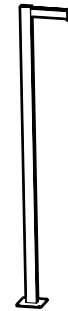


## FLOOR BRACKET **PGA2**

Floor bracket in stainless steel.

Length: .....2200 mm

Material:.....Electropolished stainless steel,  
.....grade EN 1.4301/AISE 304

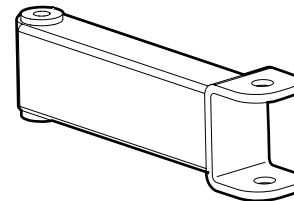


## ROTATION LINK **PLA2\***

Extension link in stainless steel for 180° of additional rotation.

Length: .....220 mm

Material:.....Electropolished stainless steel,  
.....grade EN 1.4301/AISE 304



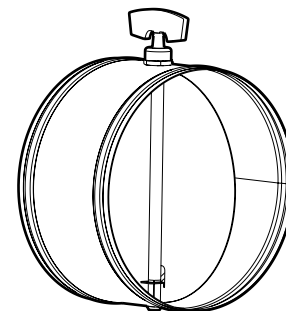
\* Only applies to PSR EXD

## DAMPER **PSMS\*\***

Manual damper in acid-resistant stainless steel.  
Easy to fit/remove for quick and easy cleaning.

Dimensions: ....Ø100/125/160/200 mm

Material:.....High-gloss polished Ra 0.6±0.2 acid-resistant  
.....stainless steel, grade EN 1.4401/AISE 316



\*\* The damper must be factory installed to guarantee the function of the earthing. Can only be ordered together with a new PSR extraction arm, alternatively assembled together with a hose.

EXTRACTION ARMS • VEHICLE EXHAUST EXTRACTION • FANS • FILTERS • CURTAINS • CONTROLS

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