

# Product manual

## Junior LM-2

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# **PLYMOVENT**<sup>®</sup>

Thank you for buying a PlymoVent product.  
Before you unpack and put it into operation please read  
this product manual, and follow the instructions.

**THIS MANUAL SHOULD BE HANDED OVER  
AND KEPT BY THE SERVICE DEPARTMENT  
AFTER THE INSTALLATION!**

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**Junior**  
LM-2

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# Junior LM-2

The PlymoVent Junior, LM-2, is an efficient and versatile fume extractor, especially designed for benchwork. Perfect for schools, small working booths and any area with a low ceiling height. The extraction arm is based on a telescopic tube, allowing it to be extended to give a 2 m, 6,6' working radius and compressed to 1 m, 3,3'. The spring-balancing together with the external counter-weight ensures that the hood stays exactly where you position it. The arm is fitted with a spring-balance which enables it to be moved from a vertical to a horizontal position in one easy movement.

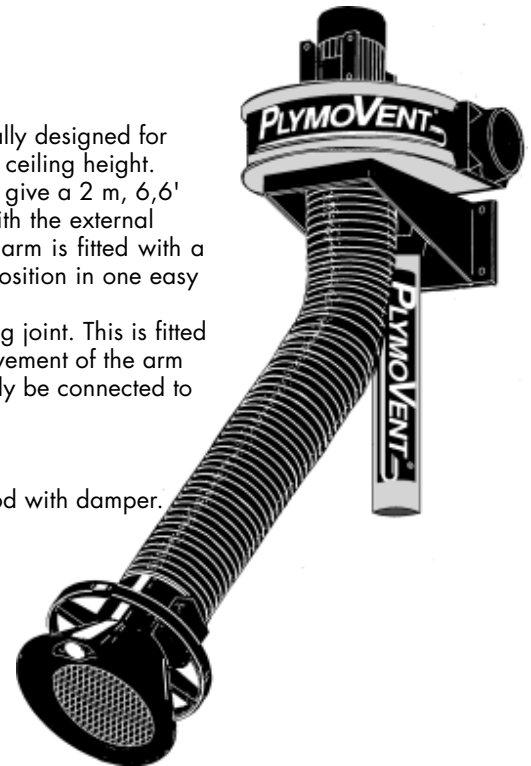
The arm can be turned through 300° due to PlymoVent's renowned ball-bearing joint. This is fitted together with an adjustable friction brake in the wall mounting bracket. All movement of the arm is controlled from the hood. Extension hoses (FSL-1, SLE-20 or SLE-30) can easily be connected to the arm after releasing the simple catch and removing the hood.

### Delivery

The LM-2 is delivered complete with wall mounting bracket, arm, hose and hood with damper.

### Advantages

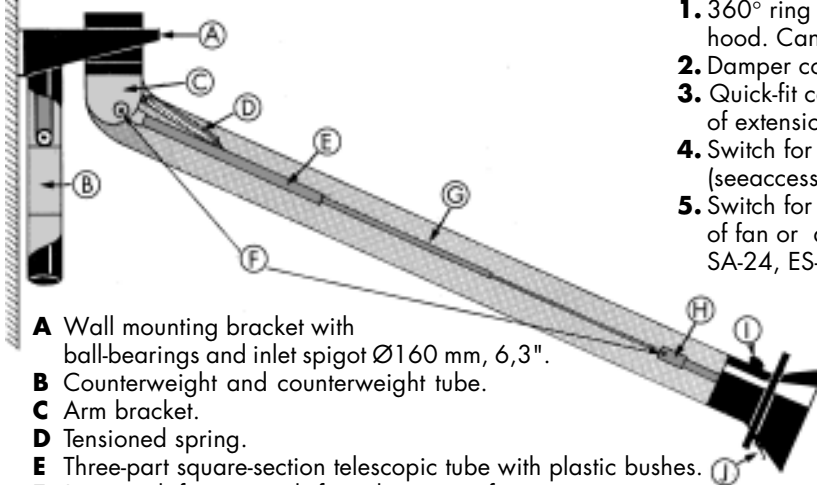
- Precise and easy positioning thanks to the counterweight system which balances the hood.
- Spring assisted vertical movement.
- Flexible working radius due to the "telescopic" operation.
- Small and compact. Ideal for confined working areas and low ceiling heights.
- The one and only benchwork extractor.
- Wide coverage – can easily be turned through 300°.



## Technical data

Prod. no:	Max Length	Min Length	Hose Diameter	Recommended Airflow at the Hood in m³/h/ cfm
LM-2	2,0 m, 6,6'	1,0 m, 3,3'	160 mm, 6,3"	800-1200 m³/h, 470-706 cfm

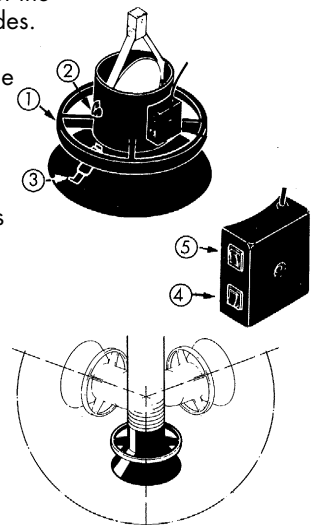
## Construction and function



- A** Wall mounting bracket with ball-bearings and inlet spigot Ø160 mm, 6,3".
- B** Counterweight and counterweight tube.
- C** Arm bracket.
- D** Tensioned spring.
- E** Three-part square-section telescopic tube with plastic bushes.
- F** Joints with friction pads for adjustment of tension.
- G** Flame-proof double skin flexible hose of PVC coated woven polyamide with internal steel spiral. (Resistant to 85°C when in continuous use).
- H** Universal joint.
- I** Hood collar with manual shut-off damper.
- J** Hood constructed from sheet steel, with safety mesh and quick-fit coupling. Hood opening Ø300 mm, 11,8". Large comfortable circular handle Ø300 mm, 11,8".

## Handling

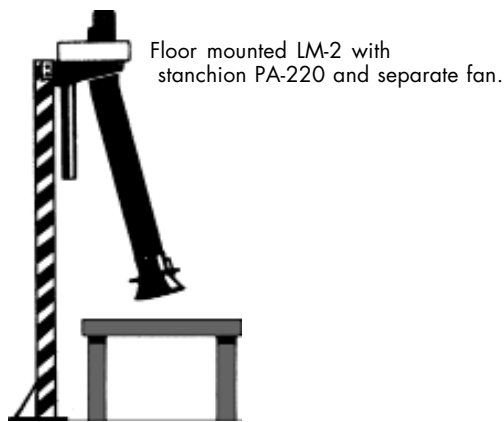
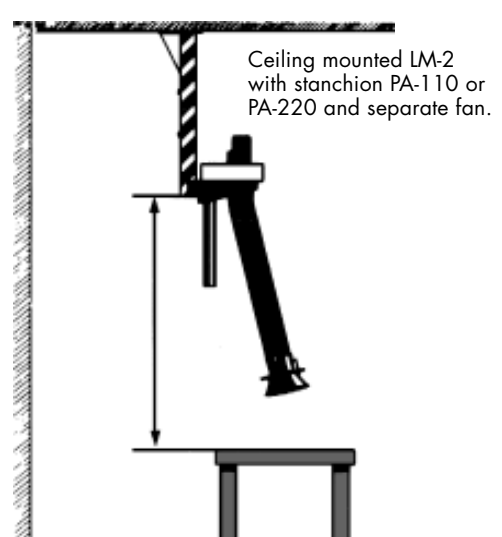
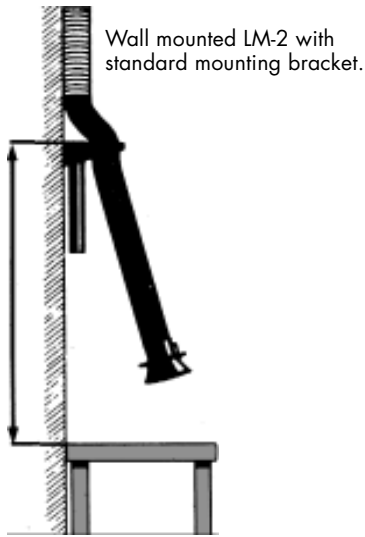
1. 360° ring handle for positioning of the hood. Can be reached from all sides.
2. Damper control knob.
3. Quick-fit catch for simple exchange of extension hose and hood.
4. Switch for light cartridge (see accessories HL-20/24).
5. Switch for manual start/stop of fan or damper (see accessories SA-24, ES-90 or ASE-12).



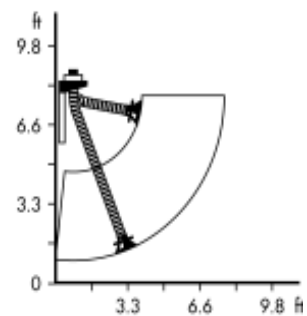
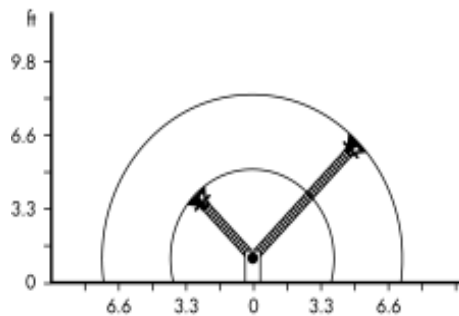
## Hood operation

The black enamelled ano-dised metal hood can be angled 110° forwards, backwards and to the sides. Large, 360°, ring handle, Ø300 mm, 11,8".

# Mounting Example



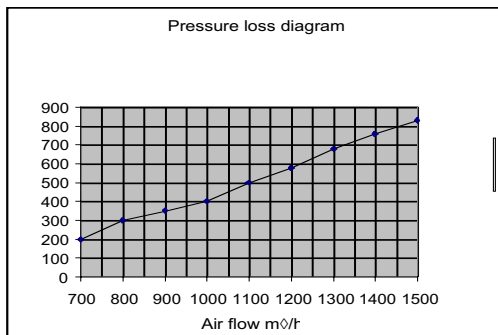
## LM-2 Working Area



## Pressure Loss

The pressure loss diagram below shows the average pressure loss through the LM-2.

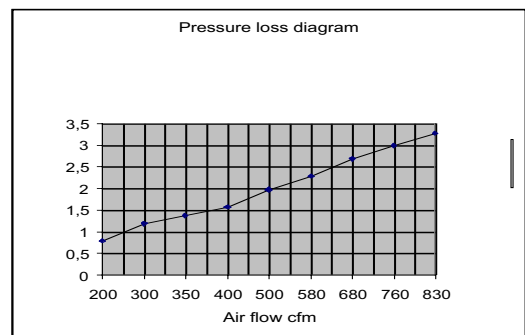
Welding: 800-1200 m<sup>2</sup>/hr.



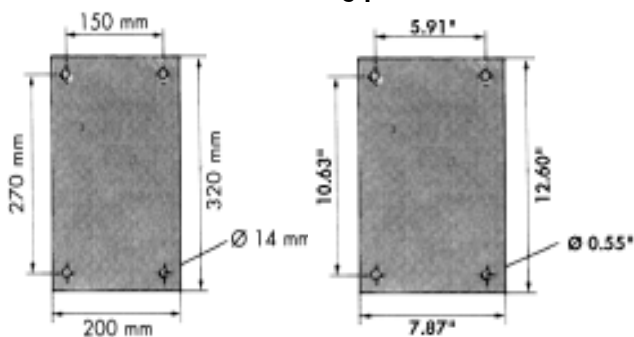
The following aspects affect the pressure loss in PlymoVent's LM-2.

1. The air volume.
2. The number of bends and the extent of these.

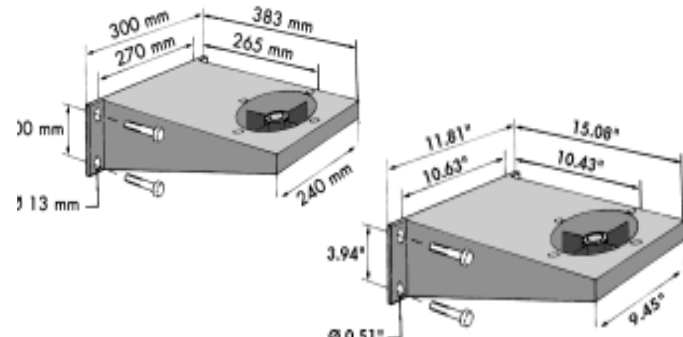
Welding: 470-706 cfm.



## PA-110 and PA-220 mounting plate

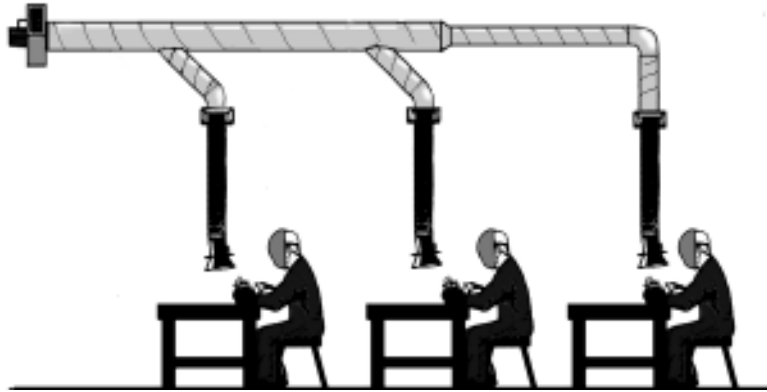


## LM-2 wall mounting bracket dimensions



# Alternative System Layouts

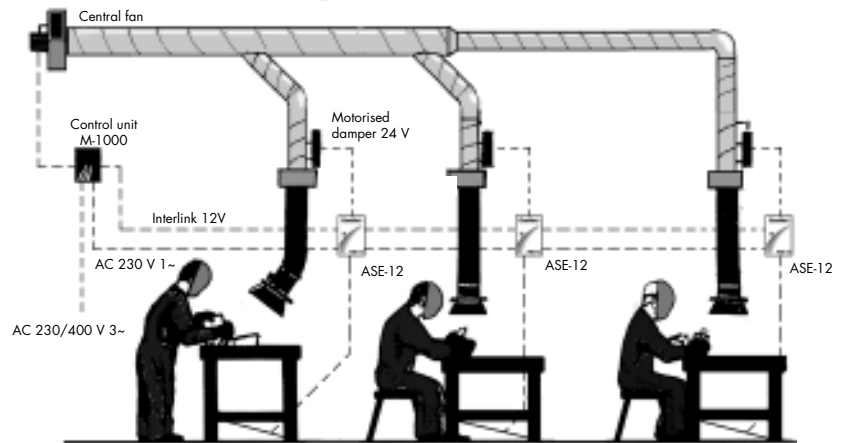
## Alt. 1



Central system: 3 X LM-2 with one central FS-4700 fan.  
 Recommended fan per no. of arms:  
 FS-3000: 2-3 arms.  
 FS-4700: 3-4 arms.  
 FA-6000: 4-5 arms.

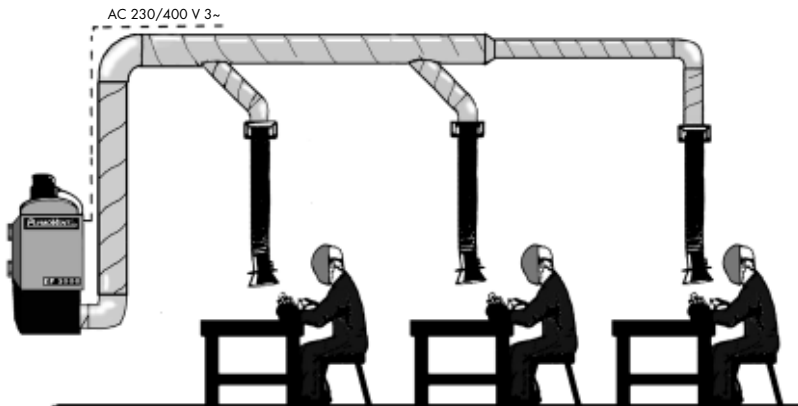
## Alt. 2

Central system: 3 X LM-2 fitted with ASE-12 automatic dampers, M-1000 control unit and one central fan.  
 Recommended fan per no. of arms:  
 FS-2100: 2-4 arms.  
 FS-3000: 3-6 arms.  
 FS-4700: 4-8 arms.  
 FA-6000: 4-8 arms.



As every working-place is unique, the above recommendations are only applicable for theoretically calculated examples.

## Alt. 3

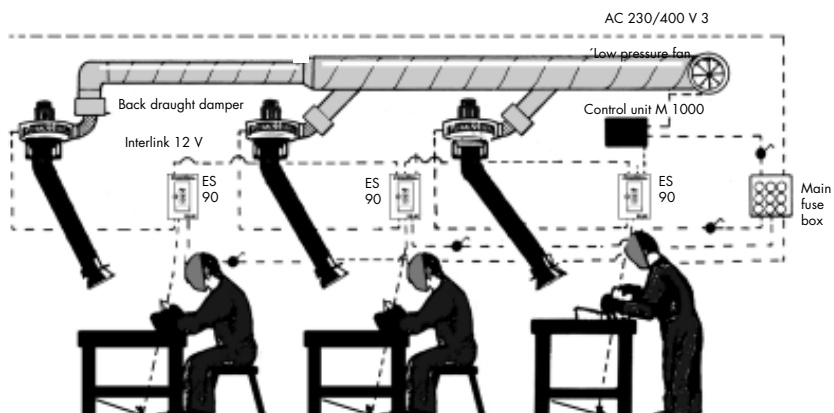


Central system: 3 X LM-2 connected to one electrostatic filter EF type.  
 Recommended filter per no. of arms:  
 EF-2000: 1-2 arms\*  
 EF-3000: 1-3 arms\*  
 EF-5000: 2-5 arms\*  
 When more stations are required the system can be fitted with ASE-12 automatic dampers.

\*For continuous use.

## Alt. 4

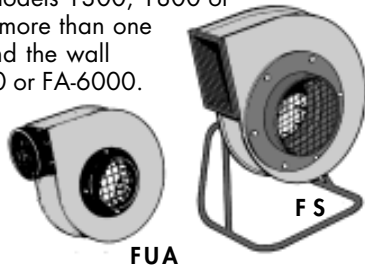
Central system: 3 X LM-2 fitted with separate fans and ES-90 energy savers, interlinked to a control unit M-1000 for switching the centralised low pressure fan.  
**See technical data sheet on energy saver ES-90 for further information.**



# Complementary Products and Accessories

## Fans FUA

FUA fans are attached directly to the LM-2 mounting bracket. Available in three sizes with freeblowing air volumes of 825, 1060 and 1300 CFM. A unique anti-spark impeller made from aluminium gives maximum security. For wall- or ceiling mounted, choose "FS"-fan stand models 1300, 1800 or 2100. In a system with more than one extractor, we recommend the wall mounted FS-3000, 4700 or FA-6000.

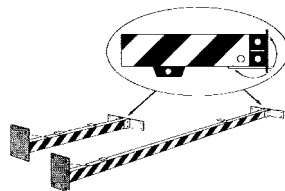


**NOTE: ALL FANS MUST BE FITTED WITH RELEVANT MOTOR OVERLOAD (NOT INCLUDED).**

Fan Prod no.	Airflow CFM Freeblowing	Airflow CFM at the hood of the LM-2	Motor HP/Phase
FUA-1300	825	1 LM = 590	1/2 HP, 3 phase
FUA-1301	825	1 LM = 590	1/2 HP, 1 phase
FUA-1800	1060	1 LM = 740	3/4 HP, 3 phase
FUA-2100	1300	1 LM = 825 2 LM = 380 ea	1 HP, 3 phase
FUA-2101	1300	1 LM = 825 2 LM = 380 ea	1 HP, 1 phase
FS-3000	2000	2 LM = 765 ea 3 LM = 500 ea	1.5 HP, 3 phase
FS-4700	2840	3 LM = 765 ea 4 LM = 560 ea	3 HP, 3 phase
FA-6000	3540	4 LM = 765 ea 5 LM = 620 ea	7.5 HP, 3 phase

## Stanchion

Accessory for ceiling, floor or wall mounting of LM-2.  
Length: 3.6 ft. **Prod No: PA-110.**  
Length: 7.2 ft. **Prod No: PA-220.**



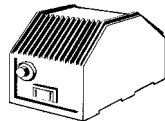
## Halogen Lamp Cartridge

To be fitted in the hood. Consists of 20W/24V halogen lamp, switch assembly and 32.8 ft cable. Must be complemented with transformer TR-24 or starter SA-24.  
**Prod No. SK-20/24**



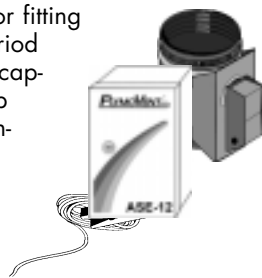
## Transformer

115 VAC-24V/sec. Transformer for halogen lamp cartridge HL-20/24.  
**Prod No. TR-24**  
\* Other voltages are available



## Automatic Damper

Fully automatic motor driven damper for fitting to Ø 6.30" duct. Adjustable overrun period between 7 seconds and 6 minutes, to capture after-fume. Inductive sensor clamp with 16.4 ft of cable is included as standard. Line supply: 115 thru 460 VAC. Also includes switch assembly (S-100) for manual control from the hood.  
**Prod No. ASE-12**



\* Other voltages are available

## Energy Saver

For autom. start/stop of fan. Adjustable overrun period of between 7 sec. - 6 min. Incl. inductive sensor clamp with 16.4 ft of cable. Built-in contactor for up to 5 HP fan must be fitted with relevant fan-motor overload (not included). Line supply: 115 thru 460 VAC.  
**Prod No. ES-90-005** Incl. 75 VA/24V transformer. For one arm with light and one fan.



\* Other voltages are available

## Spiral Cable

Extendable up to 3 m. To be used when installing switch assembly for PlymoVent LM-2 and Extractor Cranes "Plymoth".  
**Prod. no: SK-300**



## Control Unit

For automatic start or stop of a central fan up to 5 HP in a system with several extractors. To be used in conjunction with the Energy Saver or Automatic Damper. Line supply: 115 thru 460 VAC.



**Prod No. M-1000**

\* Other voltages are available

## Starter

For manual start/stop of the fan up to 5 HP via a switch in the hood. Complete with switch assembly and 32.8 ft cable. Built-in contactor must be fitted with relevant fan-motor overload (not included). Line supply: 115 thru 460 VAC.  
**Prod No. SA-24/75** includes 75 VA/24V transformer for halogen lamp on one workstation.

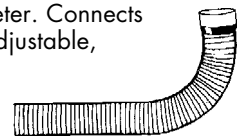


\* Other voltages are available

## Semi-rigid Extension Hose

For all extraction arms 6.30" in diameter. Connects with quick-fit coupling. Flexible and adjustable, 4.92 diameter. Length 3.3 ft.

**Prod No. FSL-1**



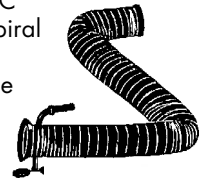
## Extension Hose

Ø 6.30" extension hose with quick-fit coupling for connection to the fume extraction arm. PVC coated woven glassfibre with inner steel spiral support.

Hood with double magnetic foot and handle for easy positioning.

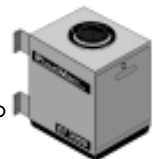
**Prod No. SLE-20**, 6.6 ft in length

**Prod No. SLE-30**, 9.8 ft in length



## Electrostatic Filters

Clean the air so efficiently (up to 99.9%) that you may recirculate the already heated air into the workshop. Huge energy savings. Also excellent for filtering oilmist. Are available in sizes up to 2950 CFM.

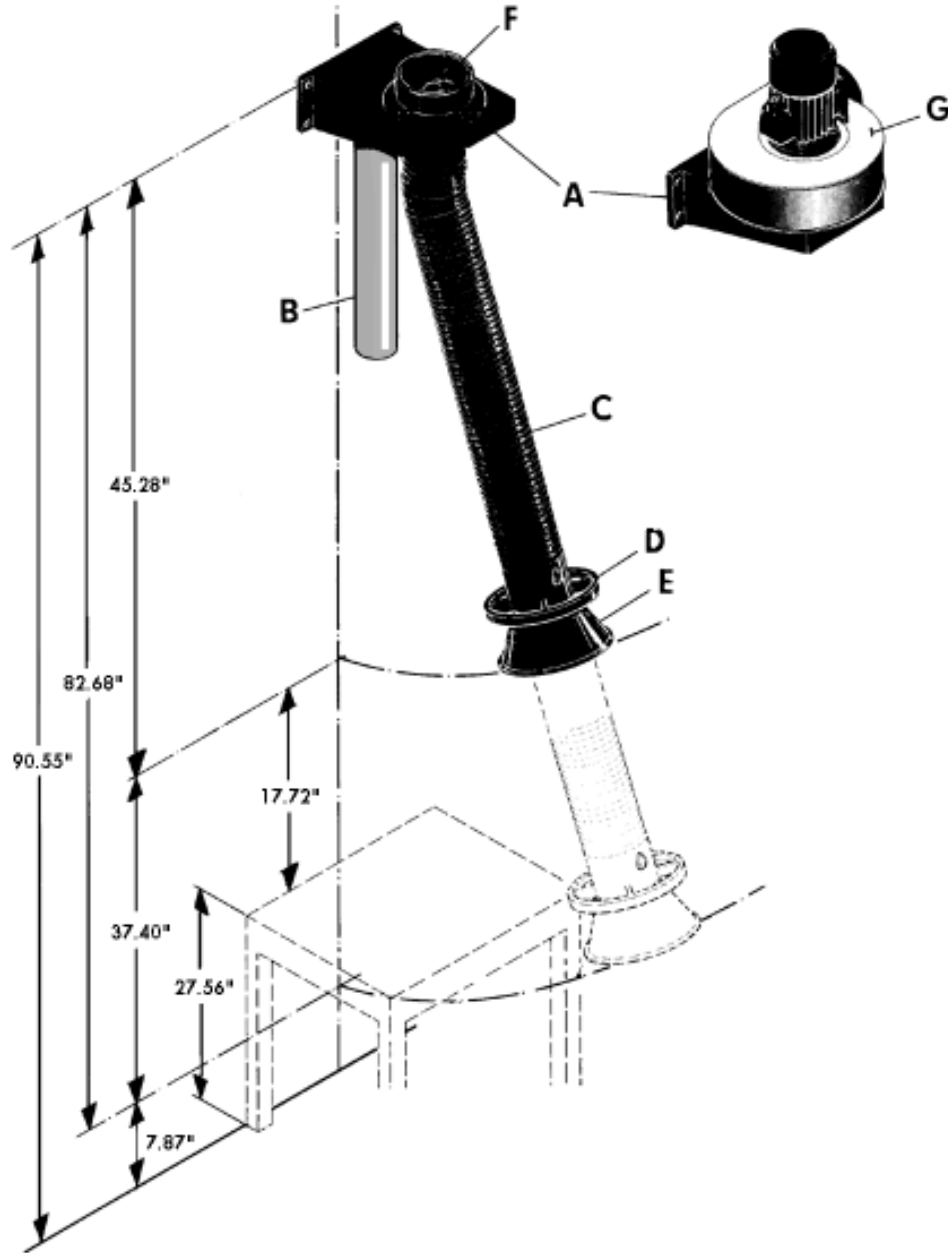


**For more information, see technical data for oilmist and Electrostatic Filters (EF/EFO).**

\* Other voltages are available

**JUNIOR**  
 LM-2

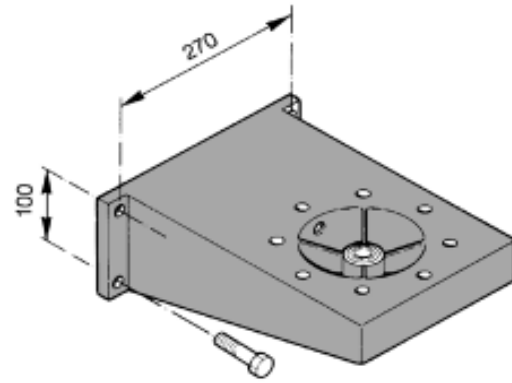
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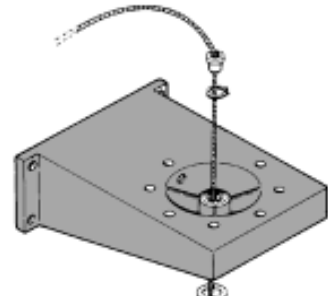
Pos no	DESCRIPTION
A	Wall mounting bracket
B	Counterweight
C	LM-2
D	Hood collar
E	Hood
F	Spigot
G	Fan

# Mounting instructions

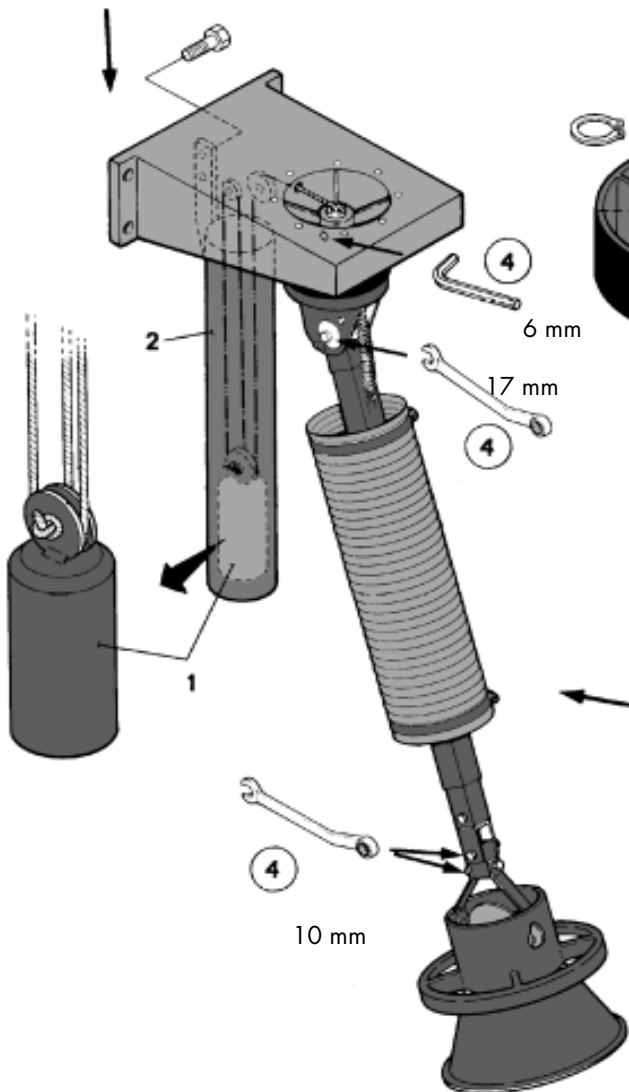
1. Bolt mounting bracket to wall.



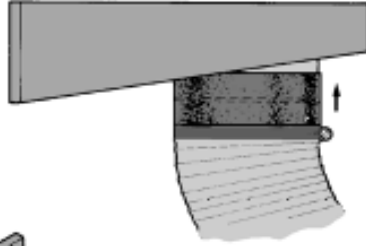
2. Attach arm to mounting bracket.



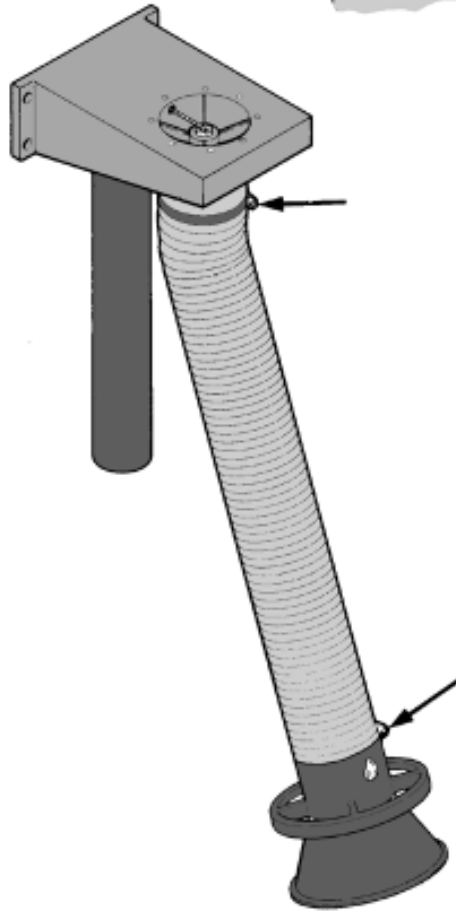
3. Mount counter-weight (1) and tube over counter-weight (2).



4. Adjust to the desired friction.

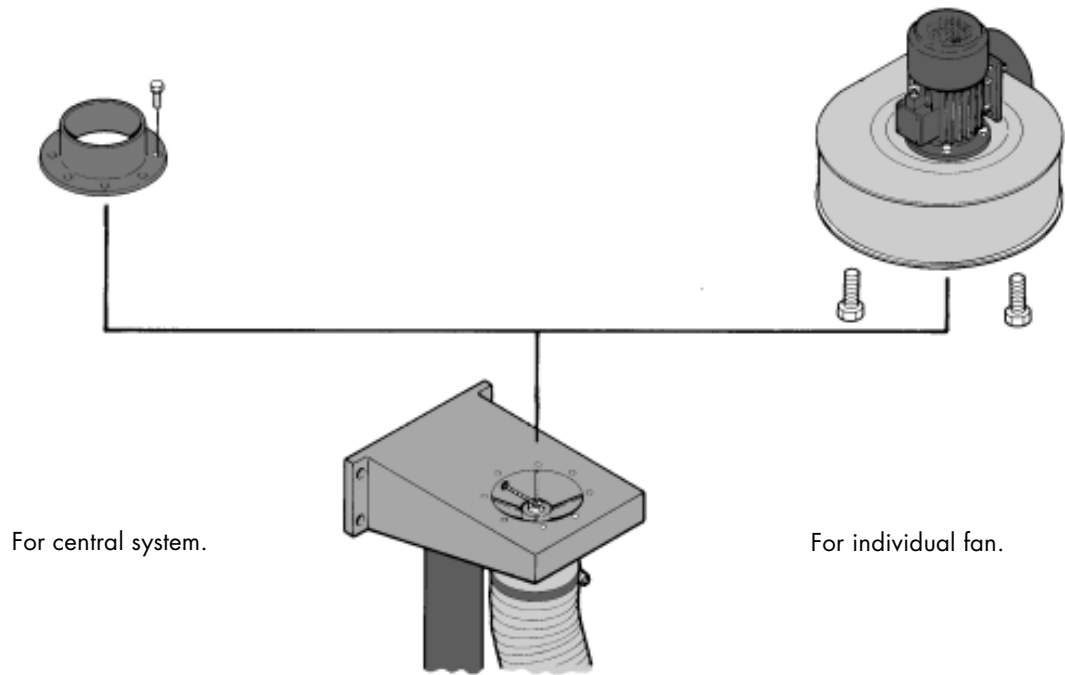


**5.** Pull over the rubber seal.



**6.** Fix flexible hose in place, using jubilee clips as supplied.

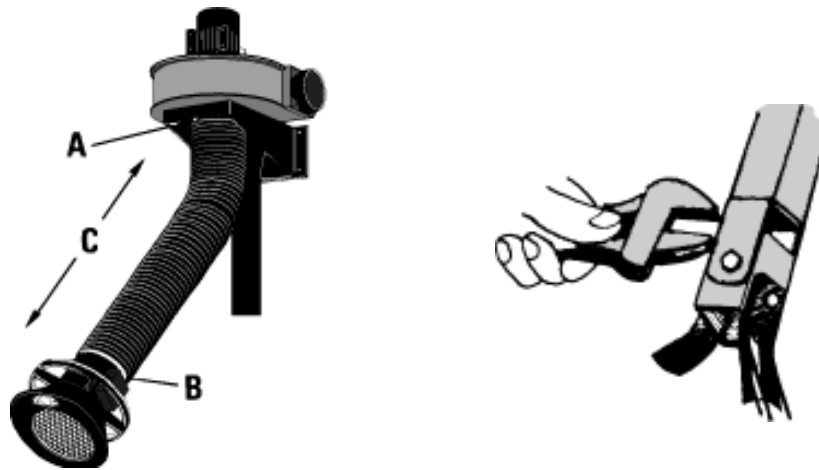




For central system.

For individual fan.

**7.** Mount spigot  $\varnothing$  160 mm, 6,3".



**A. If the arm will not stay in the required position:**

1. Loosen the hose at A.
2. Pull the extractor out to its full length and angle it horizontally. Loosen the friction brake until the arm drops towards the floor. Tighten until it no longer drops.
3. If the arm is difficult to move sideways or moves on its own sideways, then adjustments must be made to the friction collar. This is done by either loosening or tightening the screw. Use an allen key.

**B. If the hood will not stay in the required position:**

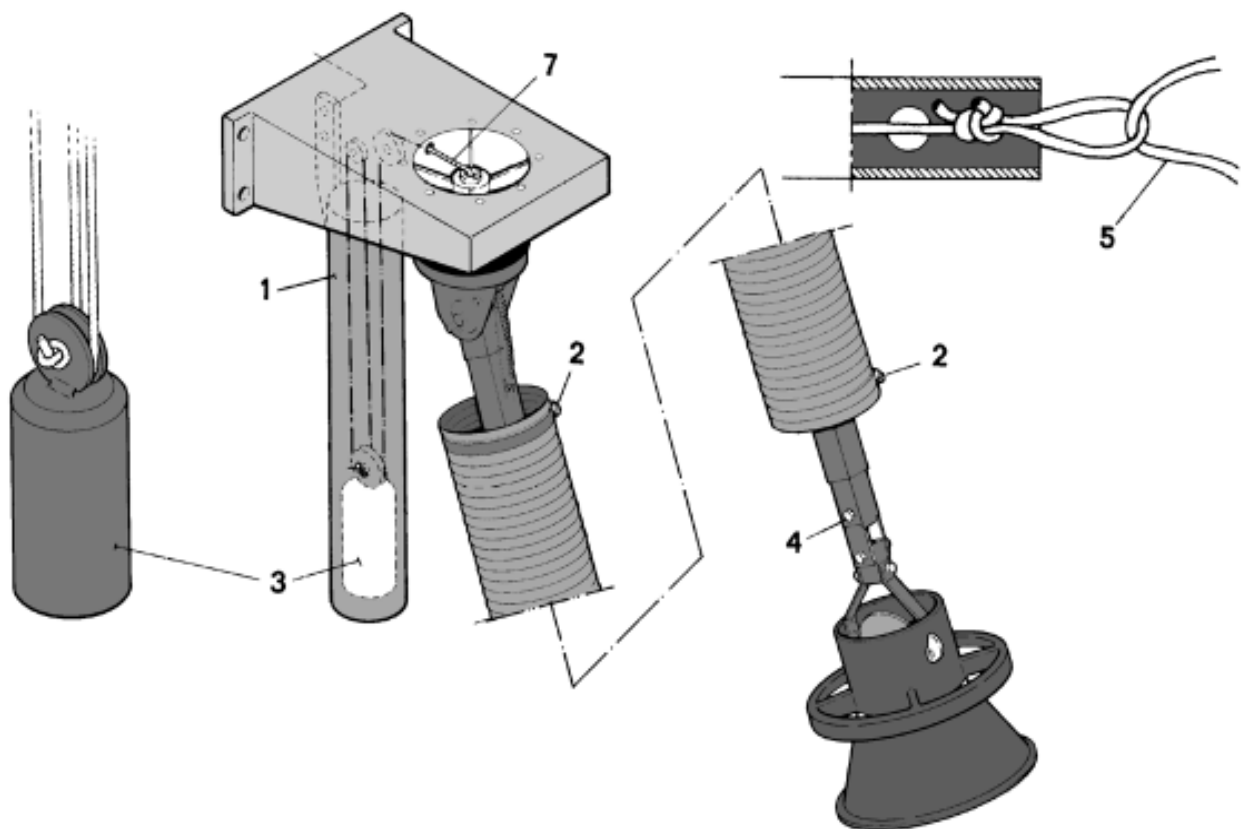
1. Loosen the hose at B.
2. Adjust the friction (see picture) until the hood will stay in the exact position.

**C. If it is difficult to extend and contract the arm:**

1. Check that the telescopic tube is not damaged or dirty. If it is damaged, replace it. If it is dirty, brush it down with a wire brush or abrasive cloth and then wipe it clean with a cloth.
2. Check the counterweight wire. If it is damaged replace it, as per the following instructions and diagrams overleaf.

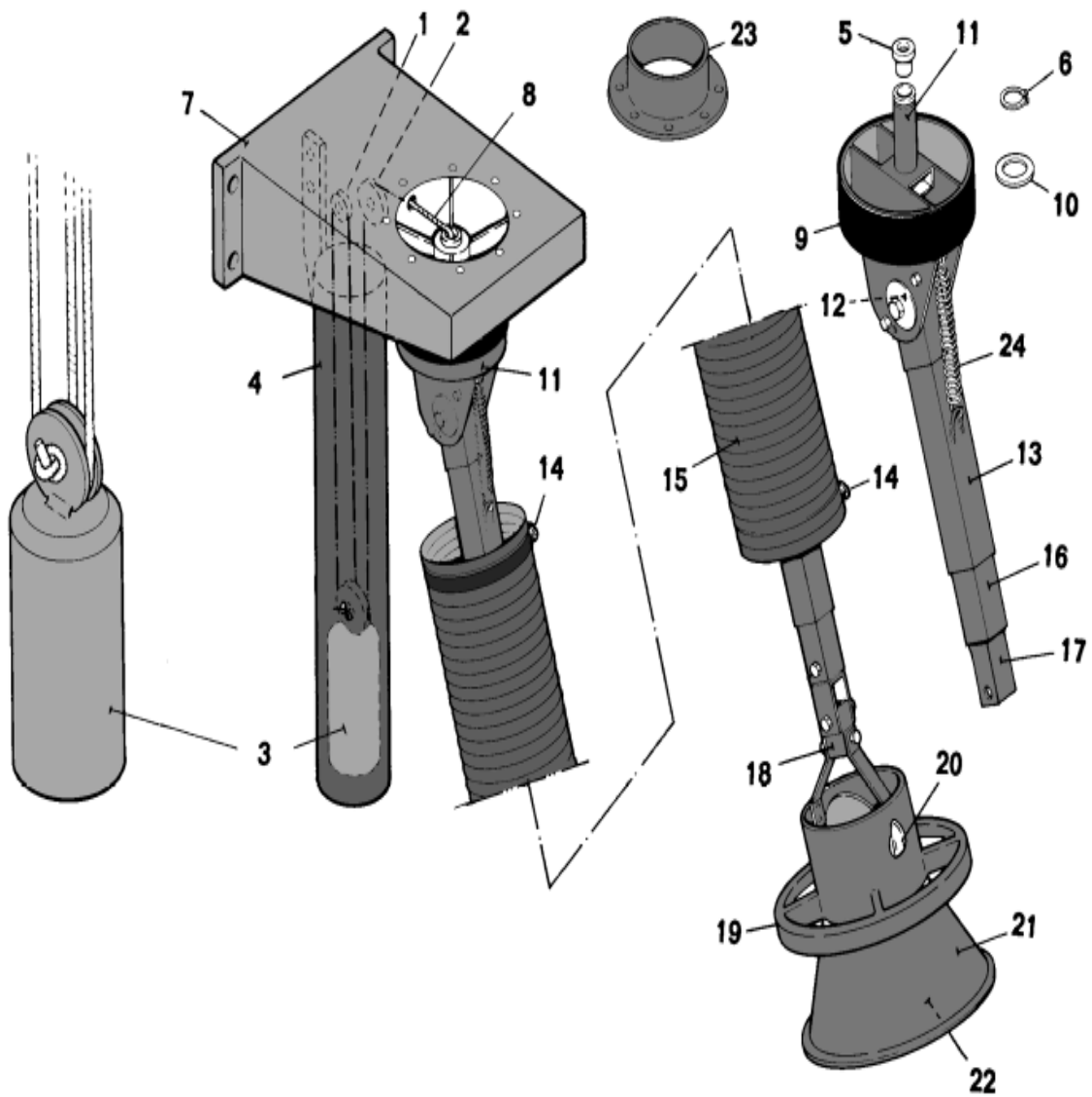
## To change wire


1. Unbolt the counterweight tube.
2. Loosen both jubilee clips and push the hose together in the middle of the telescopic tube.
3. Detach the counterweight.
4. Unscrew the bolt holding the hood attachment to the telescopic tube, and remove the hood attachment carefully. Push the telescopic section together until the old wire comes through at the lower end.
5. Put the upper end of the new wire through the eye of the old wire. Pull at the upper end of the old wire until the new wire at the top of the tube. Pull the new wire at the top until the eye at the lower end is in line with the hole for the bolt. Push the hood attachment onto the telescopic tube very carefully and fasten the bolt.
6. Tie the new wire to the counterweight as before.
7. Mount the new wire as shown on picture.
8. Re-position the counterweight tube and the hose.



**JUNIOR**  
LM-2

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	<b>SPARE PARTS LIST</b>	BSAB No: T3.1 Ser. No: LM / RR Date: Jan-01 Replace:
<b>LM</b>	© Copyright: All right reserved. All information within this printed matter may not be reproduced, handed over, copied, xeroxed or translated into another language, in any form or any means withc written permission from PlymoVent AB. PlymoVent AB reserves the right to make design change:	

Produkt No:		Description
A	All models	All models of LM
B		
C		
D		
E		
F		
G		

**Abbreviations**

X = Order as required, state required length.

Pos	Art. No:	A	B	C	D	E	F	G	Description	Note
1	507 947	1							LM-2/CORD WHEEL 30*6.2MM /PART	
2	963900-Z	1							COUNTERWEIGHT WHEEL	
3	509695-LEGO	1							COUNTER WEIGHT FOR LM-2	
4	509 661	1							LM-2/COUNTERWEIGHT TUBE /PART	
5	507 202	1							LM-2/ CORD GUIDE AXLE CEN/PART	
6	961 920	1							LOCK WASHER	
7	509653-LEGO	1							LM-2/ WALL MOUNTING BRKT./PART	
8	964 213	1							COUNTERWEIGHT CORD LM-2	
9	972 398	1							RUBBER COLLAR KUA, LM-2	
10	951 939	1							WASHER 21x36x3 FZB	
11	509 703	1							LM-2/ MAIN BRACKET /PART	
12	968 941	2							FRICITION PAD 83*10*3MM	
13	509 737	1							LM-2/TELESCOPIC TUBE 32MM	
14	961 466	2							HOSE CLAMP SMS-168 BLACK	
15	998 484	1							FLEXIBLE HOSE Ø 161MM, L=2,15M	
16	509 752	1							LM-2/TELESCOPIC TUBE 25MM	
17	509 760	1							LM-2/TELESCOPIC TUBE 19MM	
18	506824-Z	1							UNIVERSAL JOINT	
19	506535-Lego	1							PLASTIC HOOD COLLAR,COMPL/PART	
20	505545-Z	1							ARMS/ DAMPER COMPLETE /PART	
21	506 818	1							ARMS/ HOOD WITH SCREEN /PART	
22	506 808	1							ARMS/ MESH FOR HOOD 300MM/PART	
23	505 826	1							KUA/FAN, INLET 157MM /PART	
24	968 057	1							TENSIONED SPRING LM-2	

When ordering spare parts please quote:  
 •Product No. (see label) • Batch No • Description • Part No • Quantity  
 For example:  
 LM, 00040, Hood collar and ring handle, 506535-Lego , 1 pc