Product manual
Fixed exhaust extractor

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PLYMOVENT®

Thank you for buying this PlymoVent product. Before you take it out of its box and start to use it, please read this product manual and follow the instructions carefully.

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

CE

PLYMOVENT®	TECHNICAL DESCRIPTION	BSAB no: T0.3 Ser.no: FE,FEF,FEB/TB Date: Aug-98 Replace:
FE/FEF/FEB		

Fixed exhaust extractor

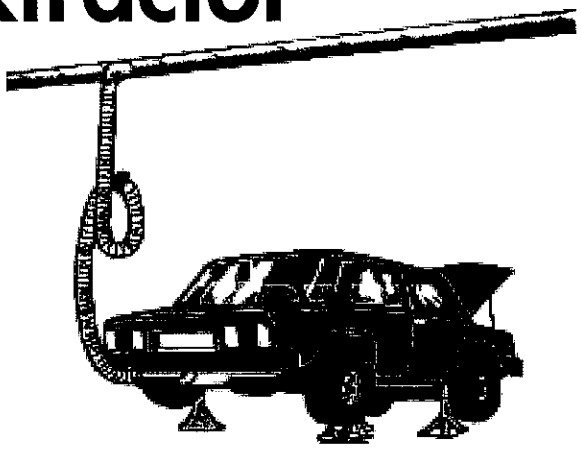
PlymoVents Fixed Exhaust Extractor is the most economical and simple solution for exhaust problems in smaller workshops. The system consists of a single hose, a balacer all connected to a fan. The extractor, intended for non-mobile extraction, may be upgraded according to the changing requirements of the workshop. An important component is the balancer with wire lock, which automatically keeps the hose lifted from the floor. Several hosed can be connected to a central ducting system. A wide range of accessories makes the fixed exhaust extractor a flexible extraction system with large variation possibilites.

PlymoVents swinging arm is a simple and space-saving methods to increase the coverage of the exhaust hoses for example in truck workshops and car service halls. The double articulated swinging arm fitted with an exhaust hose enables the connected vehicles to move within a radius of 26-30 ft from the attachment point of the swinging arm. A balancer keeps the hos away from the floor.

Delviery
Single and double extractors are delivered complete with hoses, balancers and with or without fan and with or without swinging arm.

Mounting
PlymoVent offers a complete installation service.

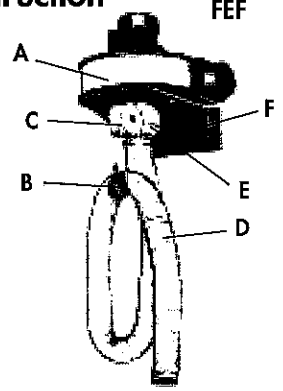
Service and maintenance
PlymoVent offers different levels of service and maintenance, as required.



Advantages
- Simple
- Economic
- Flexible
- Ideal for smaller workshops
- Applicable also for larger vehicles
- Require little space
- Superior range of operation
- Prevents exhaust hoses from trailing all over the floor
- Easy to handle

Construction

FEF



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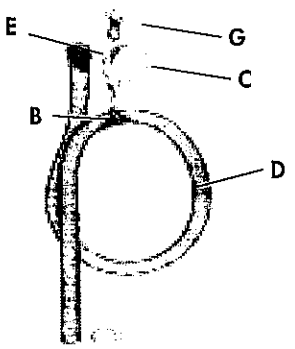
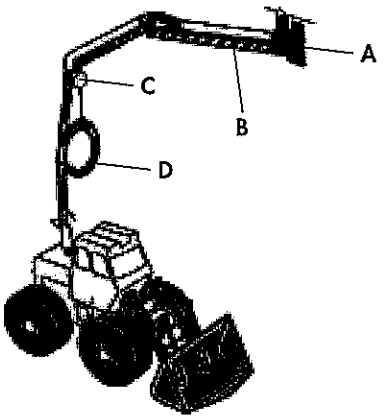


Fixed exhaust extractor:
- **A.** Fan FUA-1300, -2100 for direct connection to the fixed exhaust extractor.
- **B.** Suspension halter, keeping the hose lifted up.
- **C.** Balancer, which automatically lifts the hoses from the floor (BRL).
- **D.** Exhaust hose, standard lenght 16,4 ft. Ø from 3" to 6". +300°F.
- **E.** Socket.
- **F.** Wall mounting bracket
- (**G.** Special balancer suspension, for attachment in ceiling, to a beam or to a swinging arm).

FEB



Fixed exhaust extractor with swinging arm:
- **A.** Wall mounting bracket, prepared for mounting a fan.
- **B.** Double articulated swinging arm. Standard lengths 9.8, 14.8, 19.7 and 26.2 ft
- **C.** Balancer, which automatically lifts the hoses from the floor.
- **D.** Exhaust hose, standard lenght 16.4 ft. Ø from 3" to 6". +300°F

Technical data

FE – Fixed exhaust extractor without fan, for non-mobile workplaces:

Prod. no.	Connection Ø inches	Hose Ø inches	Hose length ft	Weight lbs	Recommended CFM
FE-5-75	3.1	3	16.4	16.3	159
FE-5-100	4	4	16.4	18.5	212
FE-5-125	5	5	16.4	20.2	318
FE-5-150	6.3	6	16.4	22.4	636

FEF – Fixed exhaust extractor with fan, for non-mobile workplaces:

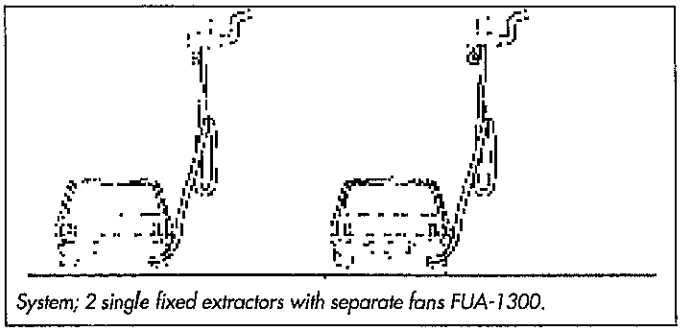
Prod. no.	Connection to ducting	Hose Ø inches Ø inches	Hose length ft	Ariflow per extractor	Weight lbs CFM	Fan
FEF-5-75	6.3	3	16.4	306	54.1	FUA-1300
FEF-5-100	6.3	4	16.4	605	56.3	FUA-1300
FEF-5-125	6.3	5	16.4	706	66.4	FUA-2100
FEF-5-150	6.3	6	16.4	824	68.6	FUA-2100

FEB – Fixed exhaust extractor with swinging arm:

(Complete with hose, balancer, suspension halter and swinging arm. Nozzle not included.)

Prod. no.	Hose Ø inches	Hose length ft	Rigid ducting Ø	Weight lbs	Arm length ft internal + external	Wire length (balancer) ft	Recommended CFM
FEB-3-75	3	16.4	6.3"	90.6	5.7 + 4.1	9.8	159
FEB-3-100	4	16.4	6.3"	92.8	5.7 + 4.1	9.8	212
FEB-3-125	5	16.4	6.3"	95.0	5.7 + 4.1	9.8	318
FEB-3-150	6	16.4	6.3"	97.2	5.7 + 4.1	9.8	636
FEB-4.5-75	3	16.4	6.3"	121.9	8.2 + 6.6	9.8	159
FEB-4.5-100	4	16.4	6.3"	124.1	8.2 + 6.6	9.8	212
FEB-4.5-125	5	16.4	6.3"	126.3	8.2 + 6.6	9.8	318
FEB-4.5-150	6	16.4	6.3"	128.5	8.2 + 6.6	9.8	636
FEB-6-75	3	16.4	6.3"	180.8	11.5 + 8.2	9.8	159
FEB-6-100	4	16.4	6.3"	183.0	11.5 + 8.2	9.8	212
FEB-6-125	5	16.4	6.3"	185.2	11.5 + 8.2	9.8	318
FEB-6-150	6	16.4	6.3"	187.4	11.5 + 8.2	9.8	636
FEB-8-75	3	16.4	6.3"	245.1	14.8 + 11.5	9.8	159
FEB-8-100	4	16.4	6.3"	247.3	14.8 + 11.5	9.8	212
FEB-8-125	5	16.4	6.3"	249.5	14.8 + 11.5	9.8	318
FEB-8-150	6	16.4	6.3"	251.7	14.8 + 11.5	9.8	636

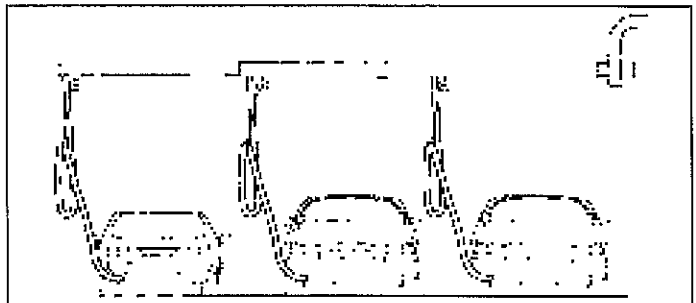
System solutions



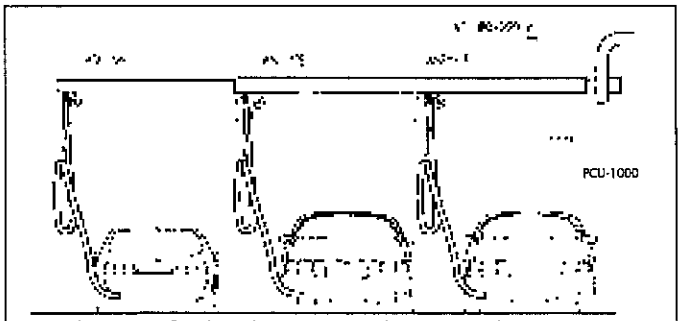
System; 2 single fixed extractors with separate fans FUA-1300.

1. In a small workshop with limited space single extractors can be connected to separate fans. The system permits high flexibility for future demands and it can easily be adapted to the demands and the economy of the workshop. The fan is manually switched on and exhaust exhaust duct can go through the wall or roof of the building.

2. In bigger workshops the extractors can be connected to a central ducting fitted with a stronger fan. This solution is suitable when the extracted air volume can be regarded as part of the ordinary air change.

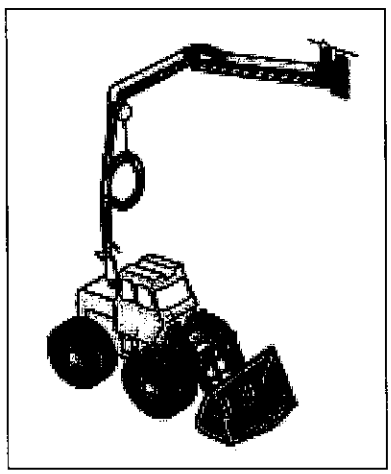


Central system; 3 single fixed extractors connected to a common fan.

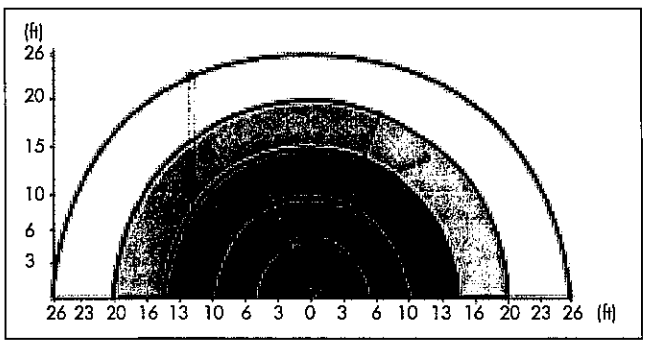


Central system; 3 fixed single extractors with automatic dampers ASE-12, control unit PCU-1000 and a common fan.

3. If you are aiming at great energy savings or do not want to increase the air change more than necessary then you ought to fit the system with automatic dampers (ASE-12-E), pressure sensor and a control unit (PCU-1000). The system will be running only when extraction is needed.



Fixed extractor mounted on swinging arm/Mounting
In order to have the hose available when needed but simultaneously lifted up to keep the hose clear of the floor the under edge of the mounting bracket is to be mounted 9.8-11.5 ft over the floor. The mounting bracket is prepared for mounting a fan.



Double articulated swinging arm connected to central ducting. The inner arm 5.7 ft, 8.2 ft, 11.5 ft or 14.8 ft, the outer arm 4.1 ft, 6.6 ft, 8.2 ft or 11.5 ft. The balancer lifts the exhaust hose providing a free working area.

System
Of course many swinging arms may be installed into a system (see illustration Pressure Loss Calculation). Using many extractors it quickly turns out to be of economic interest to use automatic dampers, control unit and starter.

Mounting height
A fixed exhaust extractor with swinging arm hould be mounted with the lower edge of the mounting bracket approx. 11.5 ft over the floor.

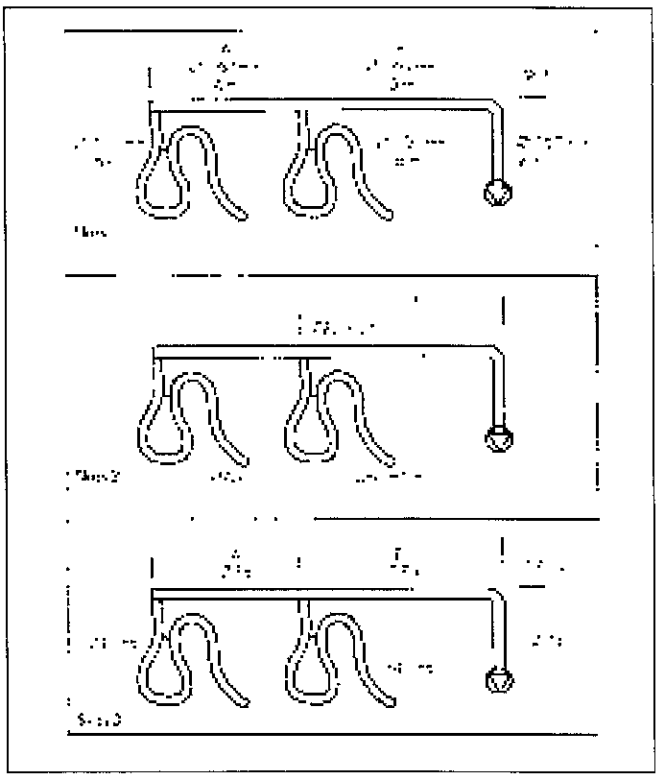
Pressure loss calculation

The fall of pressure in a air duct system or in a hose is mainly detemined by the air velocity in that system. This higher the velocity is, the higher pressure loss will be. And the higher the pressure loss is, the less air the fan will extract. The diagram 2; Pressure loss chart for fans is poining out a suitable fan regarding the relationship between airflow (m^3/h) and pressure loss (Pa). In a ventilation system with many extraction devices and long suction ducts the pressure loss can be kept down by increasing the size of the ducting and you will achieve an even velocity in the whole system.
See diagram 2 and 3.

Recommended values Air flow:
Cars 360 m^3/h = 1000 l/s
Lorries 1080 m^3/h = 300 l/s
Recommended air velocity in ducting: 10-15 m/s.

Practical example – Fixed extractor

1. **Make a simple sketch of the postion of the extractors and the fan.** See sketch 1.
2. **Decide on the air volume:**
   The air flow is detemined be the recommended values. Se text above. In our example we use 360 m^3/h.
3. **Decide on the pressuse loss in the extractor.**
   See diagram 1. With Ø 100mm and air flow 360 m^3/h for 6 m hose we will get an pressure loss of 341 Pa.
4. **Calculate the pressure loss of each on of the sections.**
   See sketch 2 and 3.
   Section A: 360 m^3/h. See diagram 2. Supposing Ø160 mm and airflow 360 m^3/h the pressure loss will be 1,7 Pa/m. 1,7 Pa/m x 4 m = 7 Pa.
   Section B: 360 m^3/h + 360 m^3/h = 720 m^3/h. See diagram 2. Supposing Ø160 mm and airflow 720 m^3/h the pressure loss will be 6 Pa/m. 6 Pa/m x 7 m = 42 Pa.
5. **No look at the 90° band in the system.**
   Bends will of course have the same diameter as the the ducting adjoining them; here that is 160 mm. 720 m^3/h is to pass through the bend. See diagram 3. The pressure loss will be 19 Pa.
6. **Add all of the noted Pa-values.**
   (Extractor) 341 Pa + (Section A) 7 Pa + (Section B) 42Pa + (Bend) 19 Pa = 409 Pa.
7. **Select your fan.**
   See diagram 4; Pressure loss chart for fans and select a fan that meets your requirements of 720 m^3/h and 409 Pa. The curve to the right of the intersection indicates the suitable fan; in this case FS-1300.



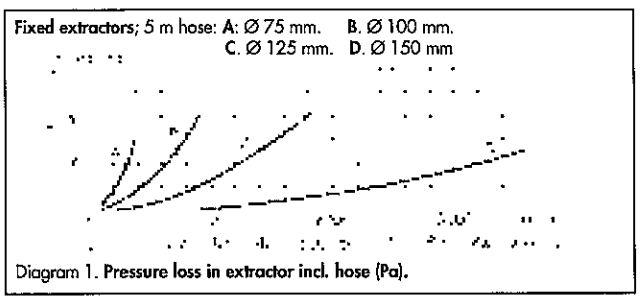


Diagram 1. **Pressure loss in extractor incl. hose (Pa).**

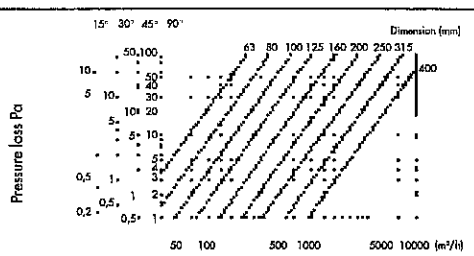


Diagram 3. **Resistance in air ducts bends** Diagram from Lindab.

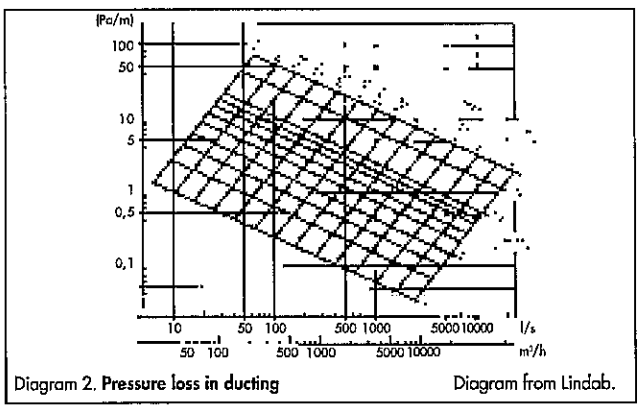


Diagram 2. **Pressure loss in ducting** Diagram from Lindab.

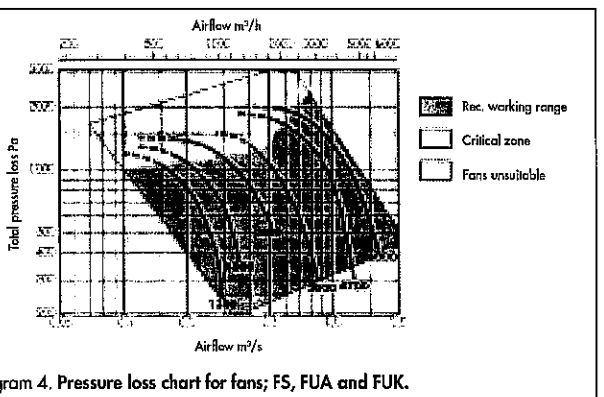
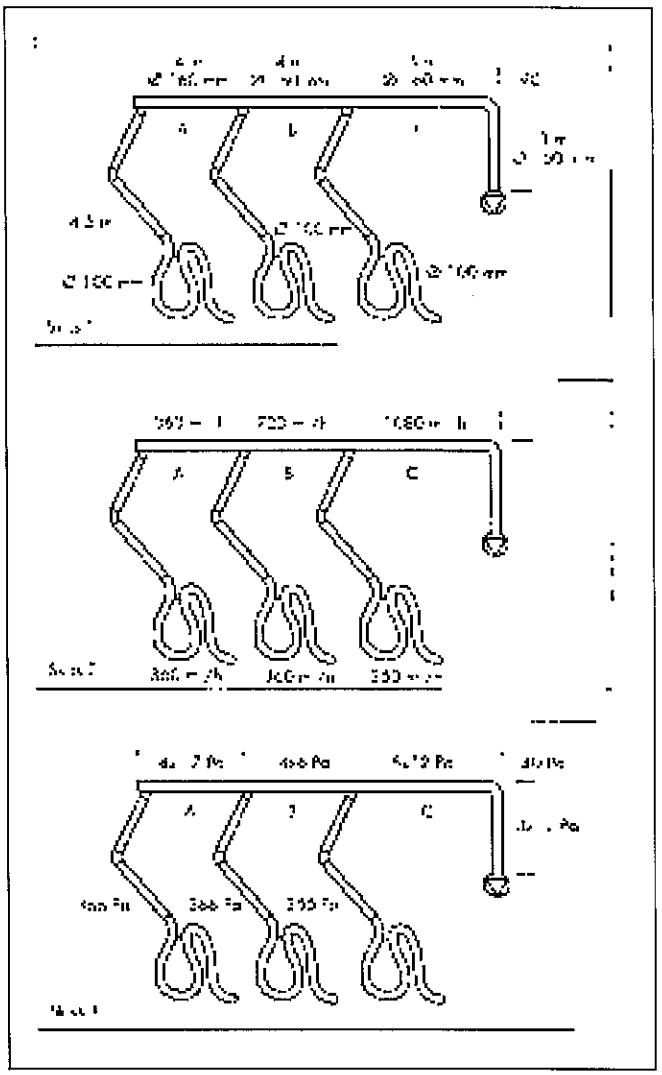


Diagram 4. **Pressure loss chart for fans; FS, FUA and FUK.**

Practical example – Fixed extractor with swinging arm

1. **Make a simple sketch of the postion of the swinging arm.** See sketch 1.
2. **Decide on the air volume:**
   The air flow is detemined be the recommended values. Se text on previous page. In our example we use 360 m³/h.
3. **Decide on the pressuse loss in the swinging arm.** See diagram 1. With Ø 100mm and air flow 360 m³/h for 4,5 m swinging arm we will get an pressure loss of 366 Pa.
4. **Calculate the pressure loss of each on of the sections.**
   See sketch 2 and 3.
   Section A: 360 m³/h. See diagram 2. Supposing Ø160 mm and airflow 360 m³/h the pressure loss will be 1,7 Pa/m. 1,7 Pa/m x 4 m = 7 Pa.
   Section B: 360 m³/h + 360 m³/h = 720 m³/h. See diagram 2. Supposing Ø160 mm and airflow 720 m³/h the pressure loss will be 6 Pa/m. 6 Pa/m x 4 m = 24 Pa.
   Section C: 720 m³/h + 360 m³/h = 1080 m³/h. See diagram 2. Supposing Ø160 mm and airflow 1080 m³/h the pressure loss will be 12 Pa/m. 12 Pa/m x (5 + 3) m = 96 Pa.
5. **No look at the 90° band in the system.**
   Bends will of course have the same diameter as the the ducting adjoining them; here that is 160 mm. 1080 m³/h is to pass through the bend. See diagram 3. The pressure loss will be 40 Pa.
6. **Add all of the noted Pa-values.**
   (Swinging arm) 366 Pa + (Section A) 7 Pa + (Section B) 24 Pa + (Section C) 96 Pa + (Bend) 40 Pa = 533 Pa.
7. **Select your fan.**
   See diagram 4; Pressure loss chart for fans and select a fan that meets your requirements of 1080 m³/h and 533 Pa. The curve to the right of the intersection indicates the suitable fan; in this case FS-1800.



Fixed extractor with swinging arm; 4 or 6 m hose:
A: Ø 100 mm. **B.** Ø 125 mm. **C.** Ø 150 mm.

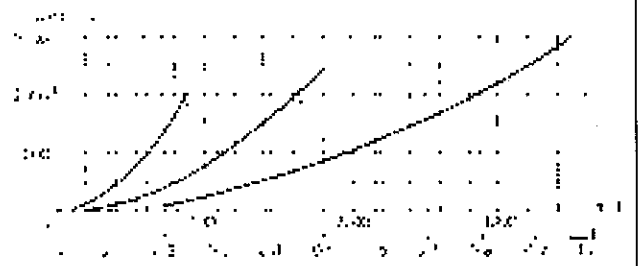


Diagram 1. **pressure loss in extractor incl. hose (Pa).**

Complementary products and accessories

Yellow/black exhaust hose (temp.resistance +300°F)
With steel coil

Prod. no:	Hose-diameter	Length
EH-75-5	3"	16.4 ft
EH-100-5	4"	16.4 ft
EH-125-5	5"	16.4 ft
EH-150-5	6"	16.4 ft
EH-75-7.5	3"	25 ft
EH-100-7.5	4"	25 ft
EH-125-7.5	5"	25 ft
EH-150-7.5	6"	25 ft
EH-75-10	3"	33 ft
EH-100-10	4"	33 ft
EH-125-10	5"	33 ft
EH-150-10	6"	33 ft

Yellow/black exhaust hose (temp.resistance +400°F)
With steel coil

Prod. no:	Hose-diameter	Length
EG-75-5	3"	16.4 ft
EG-100-5	4"	16.4 ft
EG-125-5	5"	16.4 ft
EG-150-5	6"	16.4 ft
EG-75-7.5	3"	25 ft
EG-100-7.5	4"	25 ft
EG-125-7.5	5"	25 ft
EG-150-7.5	6"	25 ft
EG-75-10	3"	33 ft
EG-100-10	4"	33 ft
EG-125-10	5"	33 ft
EG-150-10	6"	33 ft

Yellow/black exhaust hose (temp.resistance +600°F)
With steel coil

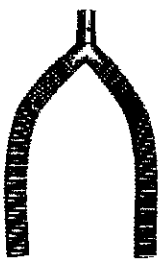
Prod. no:	Hose-diameter	Length
EF-75-5	3"	16.4 ft
EF-100-5	4"	16.4 ft
EF-125-5	5"	16.4 ft
EF-150-5	6"	16.4 ft
EF-75-7.5	3"	25 ft
EF-100-7.5	4"	25 ft
EF-125-7.5	5"	25 ft
EF-150-7.5	6"	25 ft
EF-75-10	3"	33 ft
EF-100-10	4"	33 ft
EF-125-10	5"	33 ft
EF-150-10	6"	33 ft

Silvergrey exhaust hose (temp.resistance +1200°F)
With steel coil

Prod. no:	Hose-diameter	Length
ET-75-5	3"	16.4 ft
ET-100-5	4"	16.4 ft
ET-125-5	5"	16.4 ft
ET-150-5	6"	16.4 ft
ET-75-7.5	3"	25 ft
ET-100-7.5	4"	25 ft
ET-125-7.5	5"	25 ft
ET-150-7.5	6"	25 ft
ET-75-10	3"	33 ft
ET-100-10	4"	33 ft
ET-125-10	5"	33 ft
ET-150-10	6"	33 ft

Crush-proof hsoe ends with nylon coil.
Straight- and Y-shaped adapters.

Prod. no:	Hose-diameter	Length
RS-75	3"	8.2 ft
RS-100	4"	8.2 ft
RS-125	5"	8.2 ft
RS-150	6"	8.2 ft
YS-75	3"	2x8.2 ft
YS-100	4"	2x8.2 ft
YS-125	5"	2x8.2 ft
YS-150	6"	2x8.2 ft

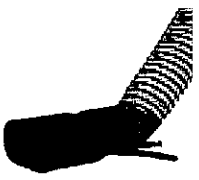


Rubber nozzle
Rubber nozzle with probe-opening.

Prod. no:	Hose-diameter	Nozzle-diameter
REN-75-115	3"	4.5"
REN-100-115	4"	4,5"
REN-100-160	4"	6.3"
REN-125-160	5"	6.3"
REN-150-160	6"	6.3"

Rubber nozzle
Rubber nozzle with probe-opening and vise grip.

Prod. no:	Hose-diameter	Nozzle-diameter
REG-75-115	3"	4.5"
REG-100-115	4"	4.5"
REG-100-160	4"	6.3"
REG-125-160	5"	6.3"
REG-150-160	6"	6.3"



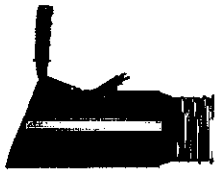
Rubber nozzle
Rubber nozzle with probe-opening and spring clip.

Prod. no:	Hose-diameter	Nozzle-diameter
REC-75-115	3"	4.5"
REC-100-115	4"	4.5"
REC-100-160	4"	6.3"
REC-125-160	5"	6.3"
REC-150-160	6"	6.3"

Complementary products and accessories

Metal nozzle
Metal nozzle with rubber lid and probe-opening.

Prod. no:	Hose-diameter	Nozzle-diameter
MEN-75-100	3"	4"
MEN-100-100	4"	4"
MEN-125-125	5"	5"
MEN-125-150	5"	6"
MEN-150-150	6"	6"
MEN-150-200	6"	8"



Nozzle, Grabber
A pneumatic exhaust pipe connector for quick connection of the exhaust hose. Manual hand valve is included. Pneumatic controlled by air rom the local net. The compressed air pressure is reduced with PlymoVent regulator RM-15.

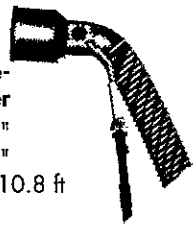
Prod. no:	Diameter hose con.	Diameter rubber bladder
GN-75-100	3"	4"
GN-100-100	4"	4"
GN-100-120	4"	4.7"
GN-100-160	4"	6.3"
GN-125-160	5"	6.3"
GM-125-200	5"	8"
GN-150-160	6"	6.3"
GN-150-200	6"	8"

Regulator, Grabber
Reduces air pressure from the local net to the working pressure of the Grabber.

Prod. no: RM-15

Stacker
Nozzle for upward turned exhaust pipe.

Prod. no:	Hose-diameter	Nozzle-diameter
STACK-125-200	5"	8"
STACK-150-250	6"	9.8"
TH-90	Teleskopic handle 5.6-10.8 ft	
SC-90	Spring clip for Stacker	



Fan mounting kit
To be used when mounting a fan to exhaust reel. Consists of bracket, rubber ring and fan socket.

Prod. no: FMA-80

Fans
For mounting spring and power operated exhaust reels. Used with fan mounting kit FMA above.
FUA-1300 for exhaust reels Ø 3", 4",
FUA-2100 for exhaust reels Ø 5", 6".

Prod. no: FUA-1300
FUA-2100

Starter SA-24
Starter for fan. Complete with built-in contactor and transformer. It must be fitted with relevant motor overload (not included).

Prod. no: SA-24/75

Automatic damper
Fully automatic, motorised damper, Ø 6.3", with built-in energy saver. Adjustable delay 7 sec.-6 min. Can be complemented with a switch assembly (S-100) for manual control.

Prod. nr: ASE-12-E

Control unit M-1000
For a central fan with several extractors. To be used with PlymoVents Automatic damper. Starts/stops the central fan automatically when any of the extractors are used. Delay 15 sec. The motor overload (not included) is to be sized according to the central fan used.

Prod. no: M-1000

Control box PCU-1000
Fully automatic control box for operation of fan. The fan can be controlled manually or by using the pressure sensor PC-500. This product can also be combined with PlymoVent's automatic damper ASE-12-E. Adjustable overrun period of 7sec.-6 min. Built-in contactor should be equipped with suitable overload (not included).

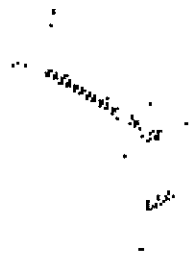
Prod. no: PCU-1000

pressure sensor PC-500
This sensor, which is used for starting the fan, recognises any pressure change in ducts when a vehicle starts up. This device is intended for use together with **PCU-1000.**

Prod. no: PC-500

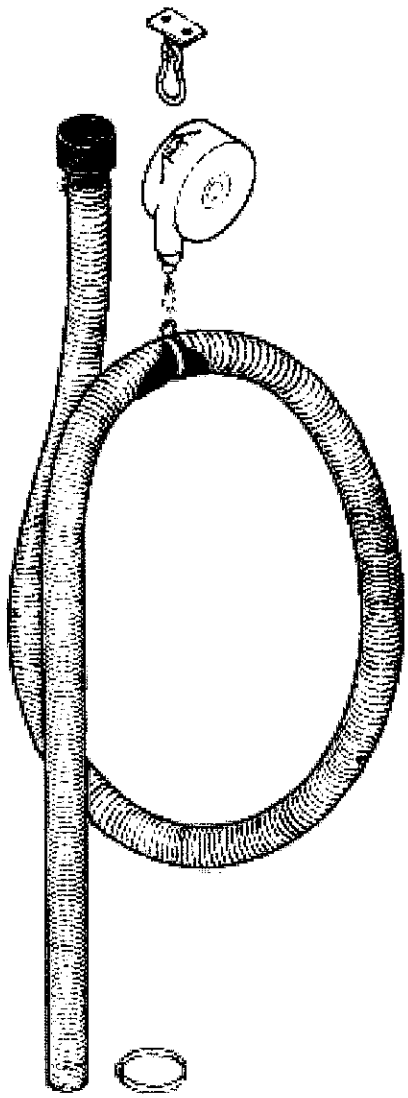
Swinging arm
Swinging suspension arm and spring operated exhaust reel will cover a large area. The exhaust reel can either be connected to a central ducting or to a separate fan. The wall mounting bracket is prepared for the mounting of a fan.

Prod. no:	Length
EB-2,5	8.2 ft
EB-3,5	11.5 ft
EB-4,5	15 ft

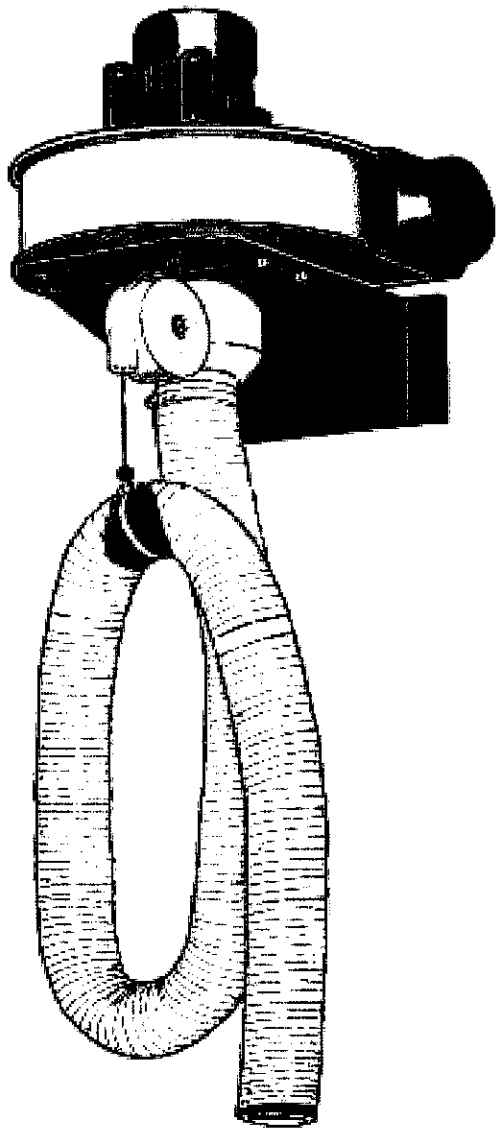


PLYMOVENT®	MOUNTING INSTRUCTION	BSAB no: T0.3 Ser.no: FE,FEF/MA Date: Aug-98 Replace:
Fixed exhaust extractor with fan		

FE – Fixed exhaust extractor

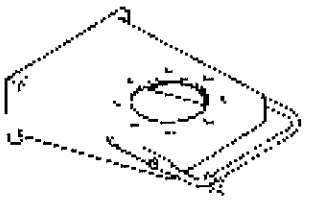


FEF – Fixed exhaust extractor with fan

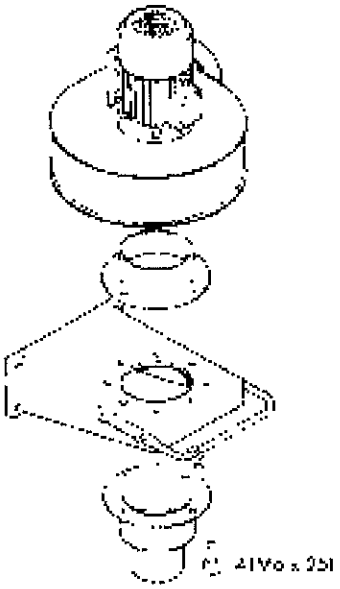


Mounting instruction

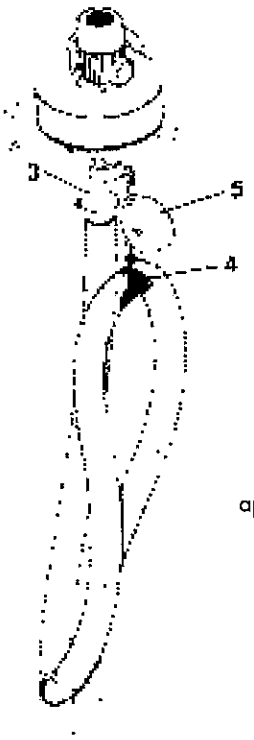
1. Bolt wall mounting bracket to the wall.
Recommended height from the fllor: 8.2 - 11.5 ft.



2. Attach fan and socket to the mounting bracket.



3. Attach the hose to the socket with a jubilee clip.



4. Mount the suspension halter approx. 6.6 ft from the hose ending.

approx 6.6 ft

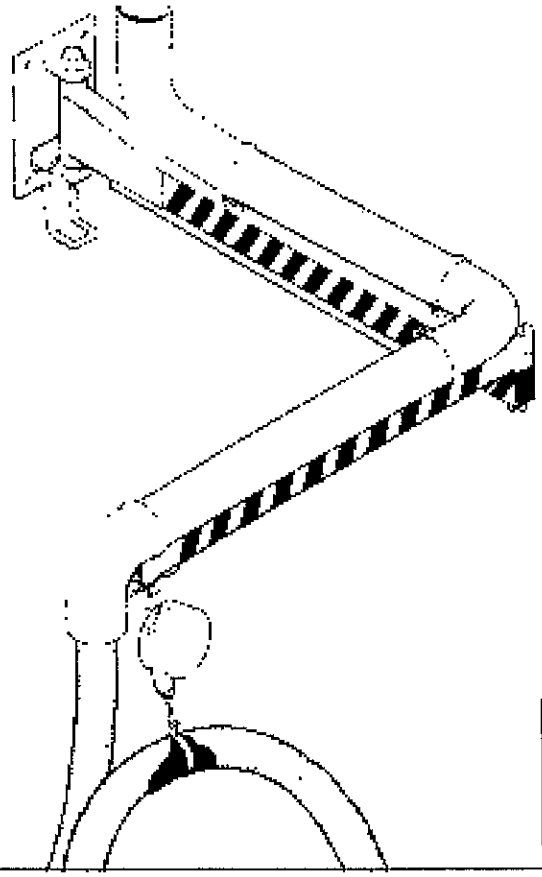
5. Attach the balancer with the spring hook to the balancer suspension and then rhe suspension halter to the wire.
(See sep. product manual for balancer, BRL.)

PLYMOVENT®

MOUNTING INSTRUCTION

BSAB no: T0.3
Ser.no: FEB/MA
Date: Aug-98
Replace:

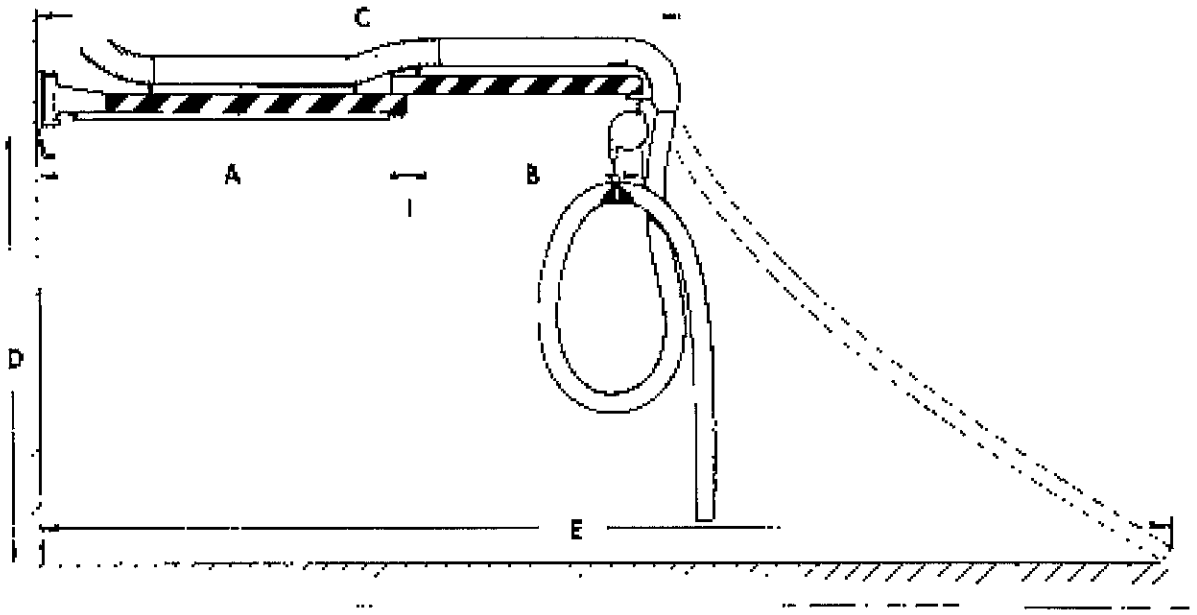
Fixed exhaust extractor on swinging arm



PlymoVent's exhaust extractors on swinging arms will enable the vehicles to move within a radius of 26.2 - 29.5 ft from the mounting bracket.

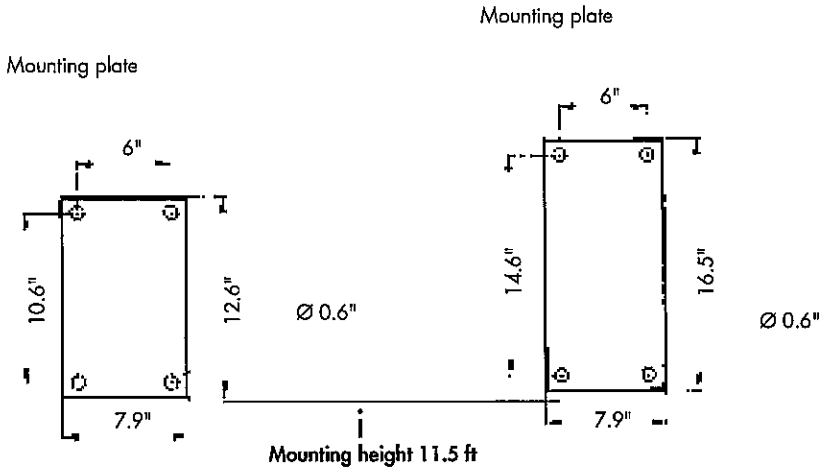
Prod. no.	Hose Ø inches	Weight lbs	Rigid ducting Ø inches	Hose length ft	Arm length ft
FEB-3-75	3	90.6	6.3	16.4	9.8
FEB-3-100	4	92.8	6.3	16.4	9.8
FEB-3-125	5	95.0	6.3	16.4	9.8
FEB-3-150	6	97.2	6.3	16.4	9.8
FEB-4.5-75	3	121.9	6.3	16.4	14.8
FEB-4.5-100	4	124.1	6.3	16.4	14.8
FEB-4.5-125	5	126.3	6.3	16.4	14.8
FEB-4.5-150	6	128.5	6.3	16.4	14.8
FEB-6-75	3	180.8	6.3	16.4	19.7
FEB-6-100	4	183.0	6.3	16.4	19.7
FEB-6-125	5	185.2	6.3	16.4	19.7
FEB-6-150	6	187.4	6.3	16.4	19.7
FEB-8-75	3	245.1	6.3	16.4	26.2
FEB-8-100	4	247.3	6.3	16.4	26.2
FEB-8-125	5	249.5	6.3	16.4	26.2
FEB-8-150	6	251.7	6.3	16.4	26.2

Measurements



Prod. no.	A inches	B inches	C inches	D inches	E inches
FEB-3-75, -100, -125, -150	69	49	118		
FEB-4.5-75, -100, -125, -150	98	79	177	138	356
FEB-6-75, -100, -125, -150	138	98	236	138	421
FEB-8-75, -100, -125, -150	177	138	315		

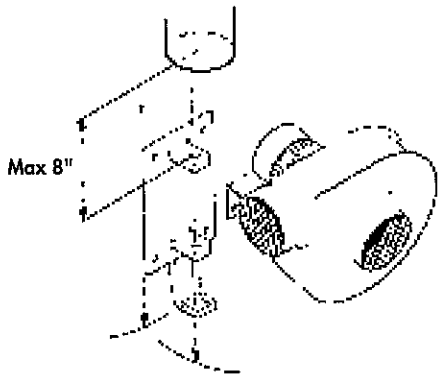
Mounting plates and attachment



Prod. no.	Max load force/bolt	Security demands/bolt
FEB-3-75, -100, -125, -150	kp	kp
FEB-4.5-75, -100, -125, -150	kp	kp
FEB-6-75, -100, -125, -150	kp	kp
FEB-8-75, -100, -125, -150	kp	kp

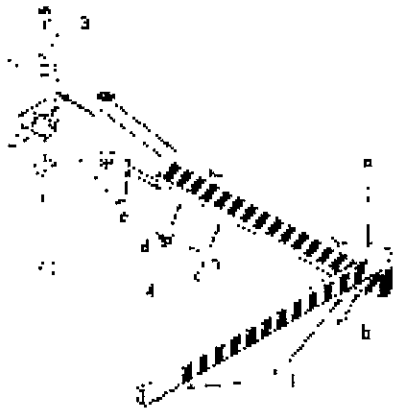
Montageanvisning

1. Bolt mounting bracket to wall.



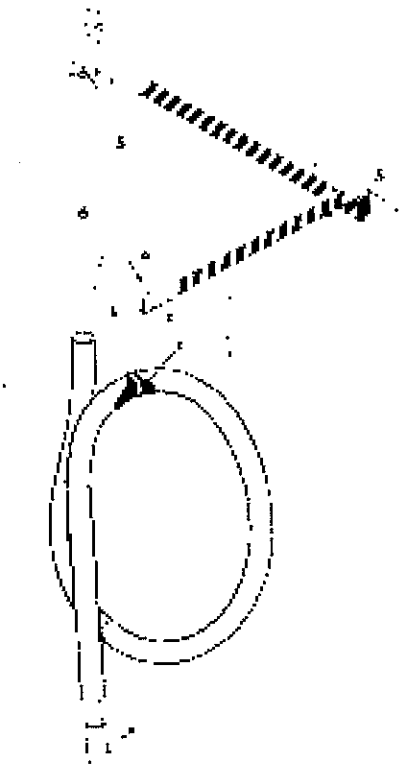
2. Mount the fan (if included).

3. Mount the extractor arm.



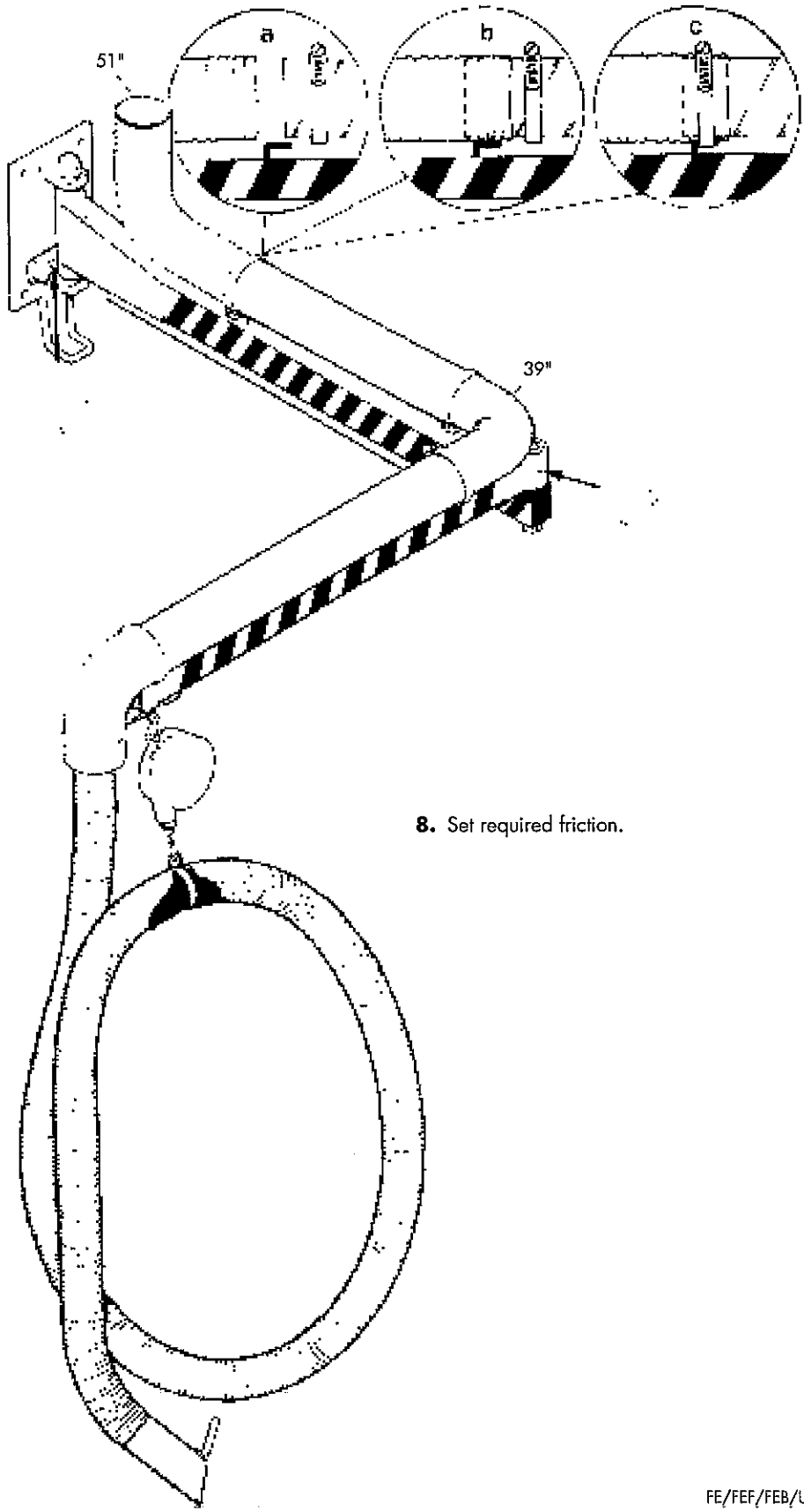
4. Mount the details in order a-b-c-d-e-f.

5. Adjust friction until arm remains in one position.



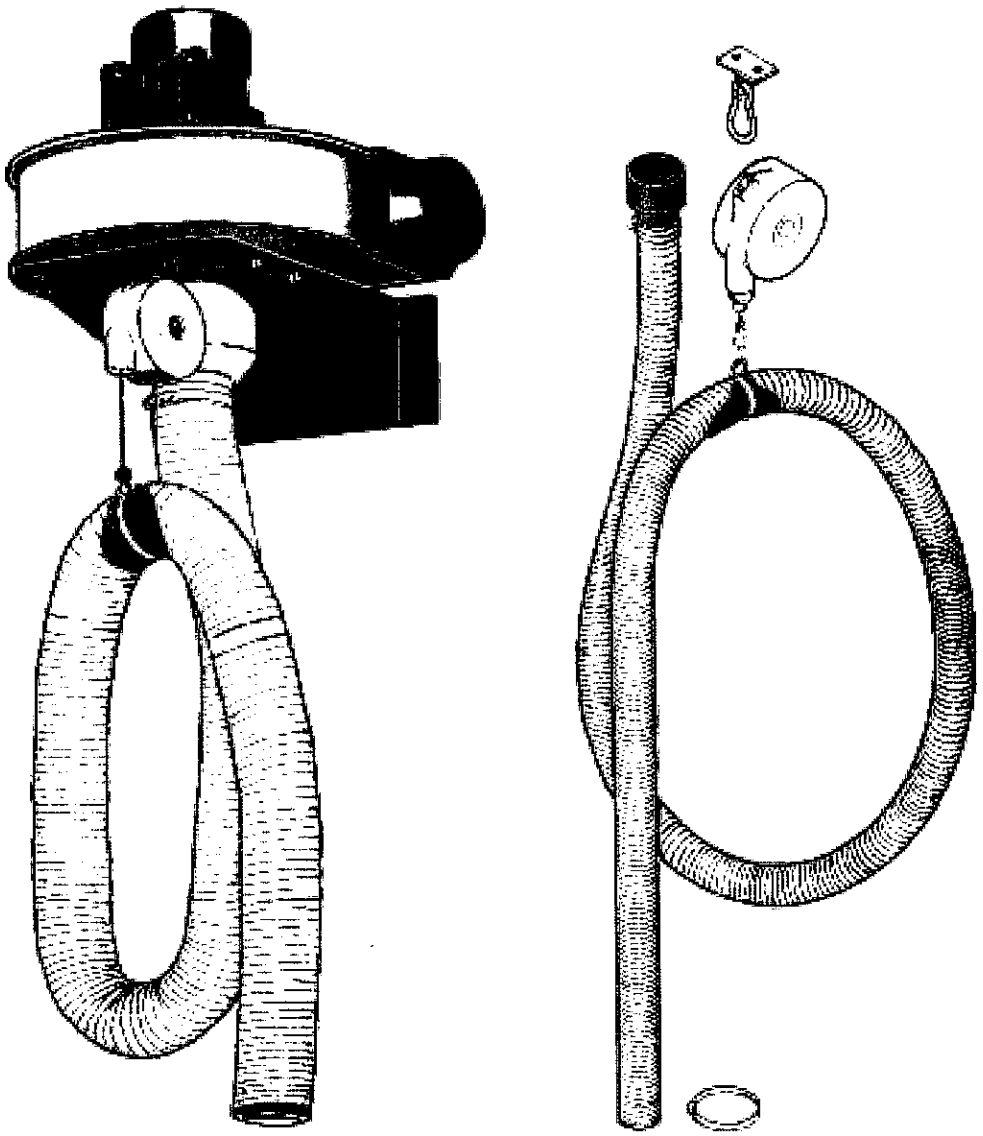
6 **a.** Mount ducting bend to the outer arm.
b. Mount the hose to the ducting bend.
c. Attach the balancer to the lug.
d. Mount to suspension halter.
e. Mount the exhaust nozzle.

7. Mount spiro-tubing and hose to the extractor arm.



8. Set required friction.

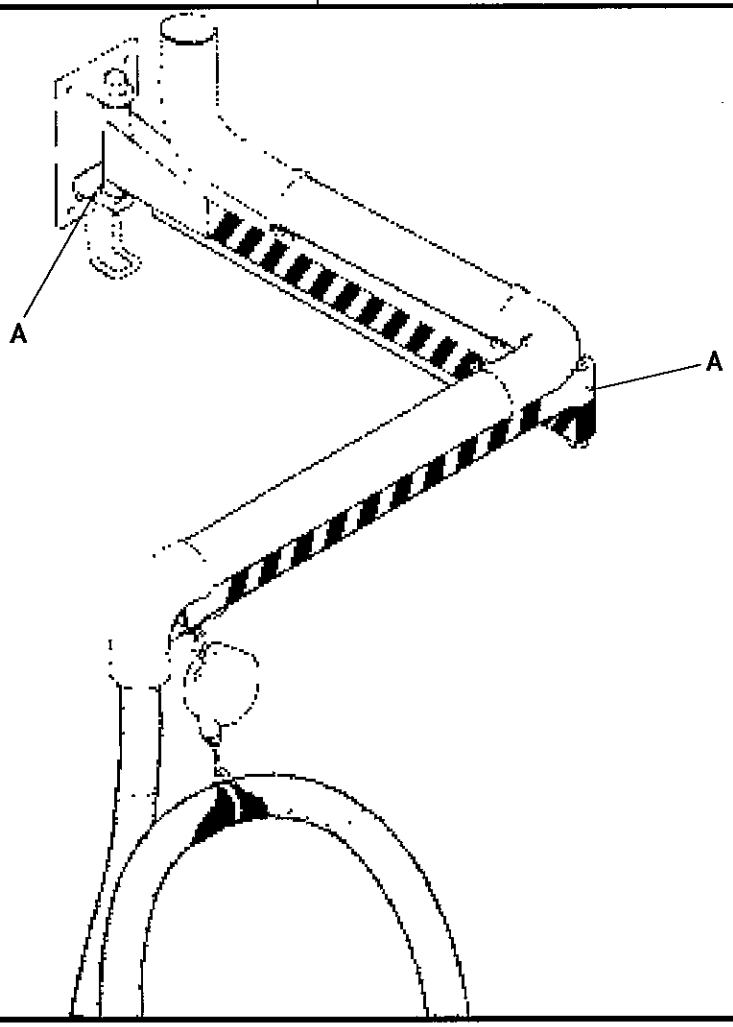
PLYMOVENT®	MAINTENANCE INSTRUCTION	BSAB no: T0.3 Ser.no: FE,FEF/DS Date: Aug-98 Replace:
Fixed exhaust extractor with fan		



Replacing the exhaust hose

1. Unhook the balancer's hook from the suspension halter.
2. Unscrew the hose clamp attaching the hose to the suction spigot.
3. Move the suspension halter from the old hose to the new one.
4. Mount the new hose by first attaching the hose clamp to the suction spigot.
5. Allow the hose to have a natural loop and after that attach the hook of the balancer to the suspension halter.
6. Mount nozzle, if any.

PLYMOVENT®	MAINTENANCE INSTRUCTION	BSAB no: T0.3 Ser.no: FEB/DS Date: Aug-98 Replace:
Fixed exhaust extractor with swinging arm		



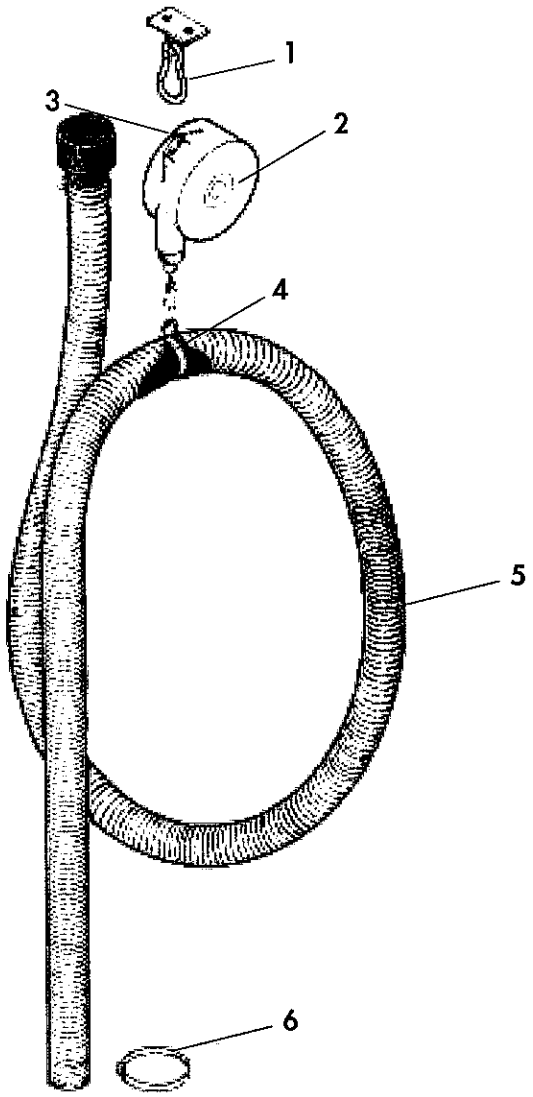
A. Adjusting the joint

1.Tighten the socket head cap screw (A).

B. Replaceing the exhaust hose

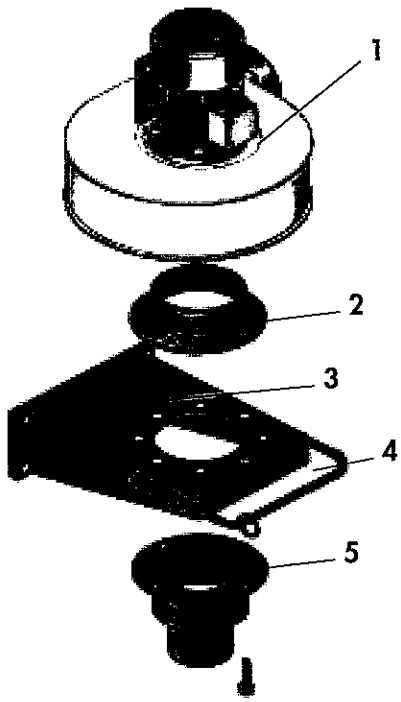
1. Unhook the balancer's hook from the suspension halter.
2. Unscrew the hose clamp attaching the hose to the suction spigot.
3. Move the suspension halter from the old hose to the new one.
4. Mount the new hose by first attaching the hose clamp to the suction spigot.
5. Allow the hose to have a natural loop and after that attach the hook of the balancer to the suspension halter.
6. Mount nozzle, if any.

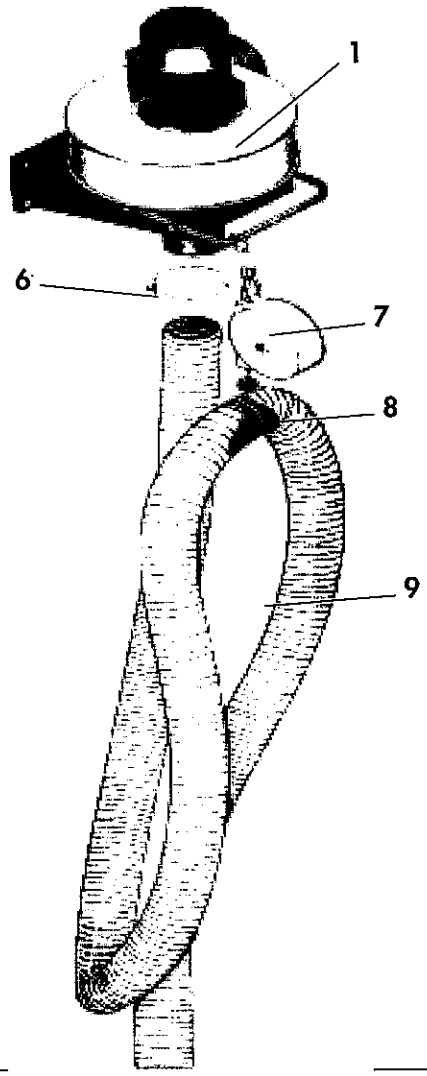
PLYMOVENT®	SPARE PART DRAWING	BSAB no: T0.3 Ser.no: FE/RR Date: Aug-98 Replace:
Fixed exhaust extractor		



Pos.no	DESCRIPTION
1	Bracket for balancer
2	Balancer
3	Transition piece
4	Suspension halter
5	Exhaust hose
6	Hose clip

PLYMOVENT®	SPARE PART DRAWING	BSAB no: T0.3 Ser.no: FEF/RR Date: Aug-98 Replace:
Fixed exhaust extractor with fan		





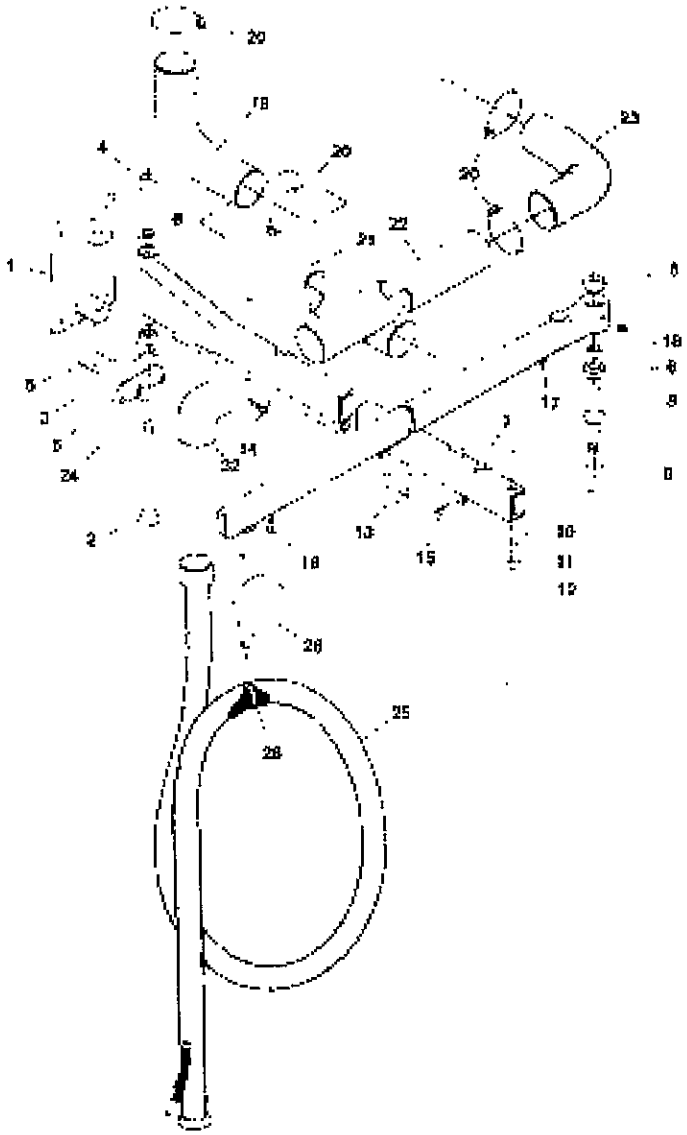
Pos.no	DESCRIPTION
1	Fan
2	Inlet
3	Wall mounting bracket
4	Bracket for balancer
5	Connection socket
6	Hose clip
7	Balancer
8	Suspension halter
9	Exhaust hose

PLYMOVENT®

SPARE PART DRAWING

BSAB no: T0.3
Ser.no: FEB/RR
Date: Aug-98
Replace:

Fixed exhaust extractor with swinging arm



Pos. no.	Description	Pos. no.	Description	Pos. no.	Description	Pos. no.	Description
1	Mounting plate	9	Space washer	17	Suspension hook	25	Exhaust hose
2	Swivel pin	10	Washer	18	Friction pads	26	Balancer
3	Space Washer	11	Lock washer	19	Flexible hose	28	Suspension halter
4	Lock nut	12	Lock nut	20	Hose clip	32	Ducting
5	Complete friction brake	13	Runner	21	Inner length rigid ducting		
6	Ball bearings	14	Sliding hanger	22	Outer length rigid ducting		
7	Stop nut	15	Split pin	23	Outer flexible hose		
8	Swivel pin between 2 arms	16	Wire loop	24	Allen key		