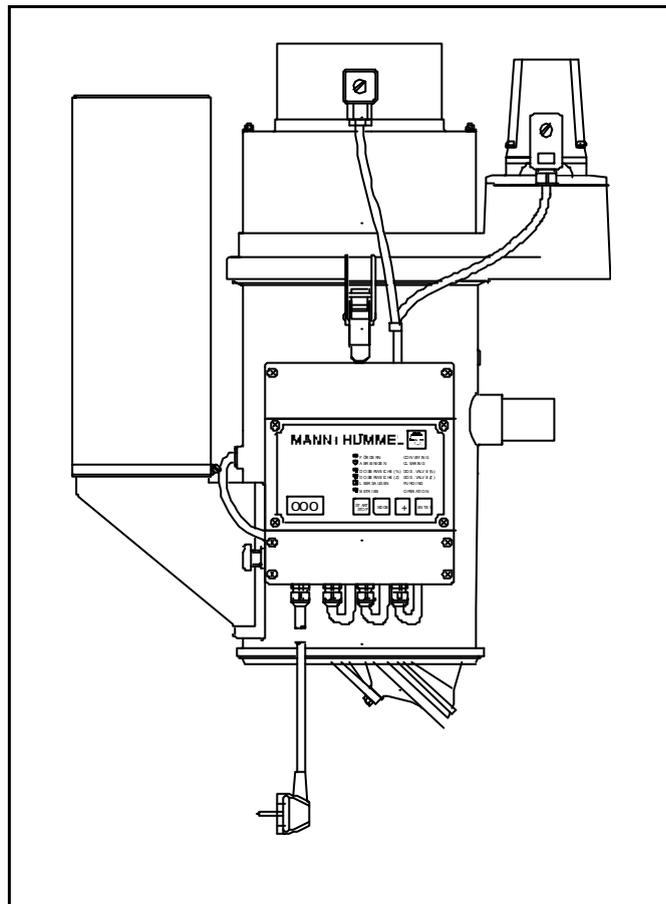


Operating Manual



Hopper Loaders KFG 205 and 206 with μ P-Control

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This operating manual refers to the Hopper Loader:

Typ: _____

Material Identification no.: _____

Year of manufacture: _____

M + H order no.: _____



To be completed by the customer:

Inventory no.: _____

Erection site: _____

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1. Safety instructions

The unit is designed according to state-of-the-art technology and is in line with applicable regulations. Particular attention has been paid to user safety.

The general risks of personal injury or damage to property connected with the use of such machinery cannot be completely eliminated. Therefore a careful study of the operating manual is to be made before attempting to use or service this unit, and particular attention is to be paid to the safety instructions.

The following regulations must be complied with:

- the relevant regulations for the prevention of accidents,
- generally recognized safety regulations,
- EC guidelines,
- national regulations.

Authorized use

This unit may only be used for conveying pulverized plastic materials particle size, see Chapter 3. "Technical data".

Other materials may be conveyed but only after consultation with the manufacturer.

Improper use

This unit must not be used

- for conveying inflammable and metallic materials,
- for conveying liquid materials,
- in areas where there is a danger of explosion,
- outdoors.

Who may operate the unit?

Only trained and authorized persons may operate the unit.

Installation, retrofitting and maintenance require specialist knowledge and may only be carried out by qualified personnel.

Safety instructions in the operating manual



This symbol indicates potential dangers to people. Comply with the instructions in order to avoid injury.



This symbol indicates potential dangers to the unit. Comply with the instructions in order to avoid damage to the unit.



This symbol indicates special information on

- how to use the unit to the best possible extent,
- how to facilitate operation of the unit.

For your own safety

Isolate the unit from the power supply before

- dismantling the rotor hood or if it is damaged.

The rotor hood prevents accidental contact with the blower rotor and injuries caused by the sharp edges of the rotating blades.

- maintenance work is carried out.

Complying with the instructions will avoid injuries caused by electricity and moving parts.

Let the blower cool down, before maintenance work is carried out.

Complying with the instructions will avoid injuries caused by the hot surface.

Stop the conveying cycle and put on safety glasses if the unit is opened.

This avoids dust emission and eye injuries.

Modifications and alterations to the unit

It is only permitted

- to retrofit this unit with optional equipment and accessories from MANN + HUMMEL VERFAHRENSTECHNIK
- to connect an external alarm (warning light or alarm horn) to the unit controller.
- to connect an external START/STOP-switch to the unit controller.

Please comply with Chapter 6. "Retrofitting with optional equipment and accessories".

For reasons of safety, it is not permitted to make any further alterations to the unit, including the control system and blower. Maintenance and repair work is to be carried out as described in chapter 7..

Original parts and accessories are specifically designed for this unit. Parts and equipment from other manufacturers have not been tested by us and are therefore not authorized. Mounting and installing non-original parts and accessories may impair the safety and proper functioning of the unit. MANN+HUMMEL ProTec is not liable for any damage caused by the use of non-original parts and equipment.

Information signs and adhesive labels

Please ensure that lettering, information signs and adhesive labels are always completely legible and are complied with.

Replace damaged or illegible information signs and adhesive labels.

Supplementary documents

If your unit has been fitted with accessoires from MANN + HUMMEL VERFAHRENSTECHNIK, the appropriate operating instructions must be kept with this manual and complied with in every respect.

2. Design and equipment

2.1. Design

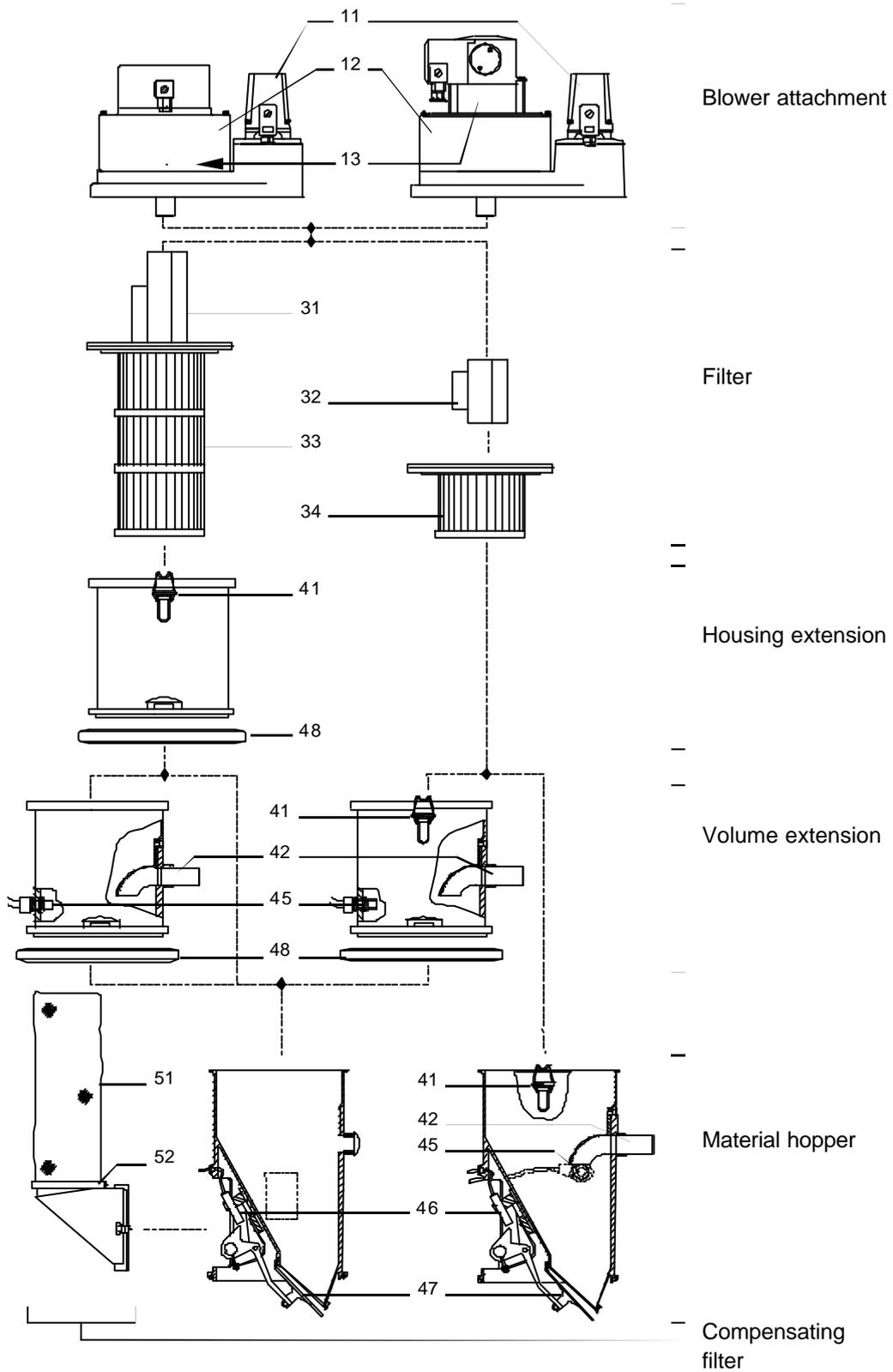


Fig. 2.1.-1

KFG 205

Blower attachment

KFG 205.1o

- 11 Conveying valve
- 12 Blower hood
- 13 Blower

KFG 205.2o

- 11 Conveying valve
- 12 Blower hood
- 13 Blower

Filter

- 32 Nozzle blade
- 34 Filter element

Units without volume extension:

Material hopper

- 41 Snaps
- 42 Inlet spigot
- 45 Level switch (optional)
- 46 Proximity switch
- 47 Outlet flap

Units with volume extension:

Volume extension

- 41 Snaps
- 42 Inlet spigot
- 45 Level switch (optional)
- 48 Lever clamp ring

Material hopper

- 46 Proximity switch
- 47 Outlet flap
- 50 Compensating filter

Ausgleichsfilter

- 51 Filter hose
- 52 Hose clamp

KFG 206

Blower attachment

KFG 206.1o

- 11 Conveying valve
- 12 Blower hood
- 13 Blower

KFG 206.2o

- 11 Conveying valve
- 12 Blower hood
- 13 Blower

Filter

- 31 Nozzle blade
- 33 Filter element

Housing extension

- 41 Snaps
- 48 Lever clamp ring

Units without volume extension:

Material hopper

- 41 Snaps
- 42 Inlet spigot
- 45 Level switch (optional)
- 46 Proximity switch
- 47 Outlet flap

Units with volume extension:

Volume extension

- 41 Snaps
- 42 Inlet spigot
- 45 Level switch (optional)
- 48 Lever clamp ring

Material hopper

- 46 Proximity switch
- 47 Outlet flap
- 50 Compensating filter

Compensating filter

- 51 Filter hose
- 52 Hose clamp

Controller

KFG 205.o2 and KFG 206.o2 (integrated controller, see fig. 2.1-2):

- 60 Controller
- 62 Operating panel
- 63 Mains cable

KFG 205.o3 und KFG 206.o3 (separate controller, see fig. 2.1-2):

- 60 Controller
- 62 Operating panel
- 63 Mains cable
- 65 Connecting cable

2.2. Further equipment

Further equipment: the conveying line (see fig. 2.1.-2):

- 81 Conveying hose
- 85 Hose clamp
- 88 Suction nozzle

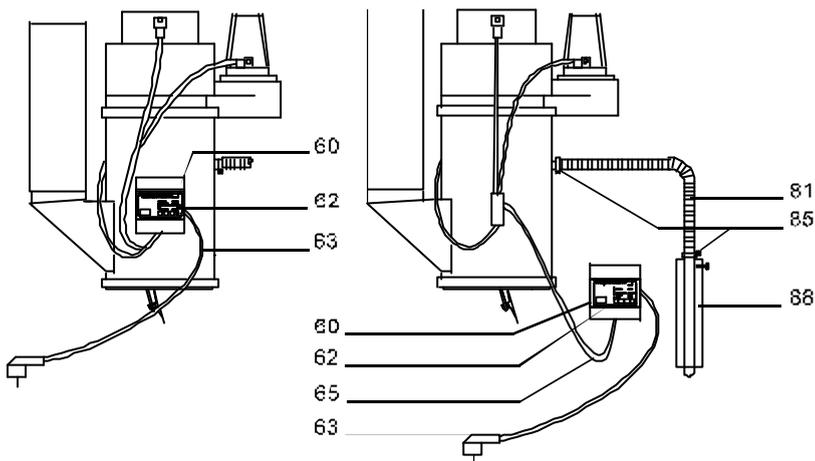


Fig. 2.1-2

3. Technical data

Blower size	1 (KFG 20o.1o)	2 (20o.2o)
General		
Maximum conveying capacity (kg/h) ¹⁾ :	100	130
Particle size of material:	> 50	
Electrical data	1/N//PE AC 50/60 Hz 220-240 V	
Power supply:	800	
Nominal power of the blower (W):	4,0	
Current consumption (A):	IP 00	
Protection:		
Ambient conditions		
Ambient temperature during operation (°C)	+5...+50	
Relative air humidity (%):	< 80	
Noise emissions		
Blower 20o.1o without silencer (dB (A)):	92	--
Blower with silencer (dB (A)):	85	
Materials	Polyester needled felt	
Conveying air filter:	PA	
Material hopper:	PA	
Volume extension:	PA	
Net volumes		
Material hopper (l):	3,5	
Material hopper+volume extension:	10	
Filtering surfaces:		
KFG 205 (m ²):	0,2	
KFG 206 (m ²):	2,0	
Weight		
KFG without options KFG 20o.o2/KFG 20o.o3 (kg):	13,5/12,8	15,1/14,4
separate control (kg):	0,7	
Volume extension (kg):	0,7	
Level switch (kg):	0,2	
External dimensions	Fig. 3-1a	Fig. 3-1b
h1 without/with volume extension (mm):	545/745	595/795
h2 without/with volume extension (mm):	210/410	210/410

Table 3-1 ¹⁾ at a horizontal conveying distance of 15 m, pellets with a bulk density of 0,55 kg/dm³

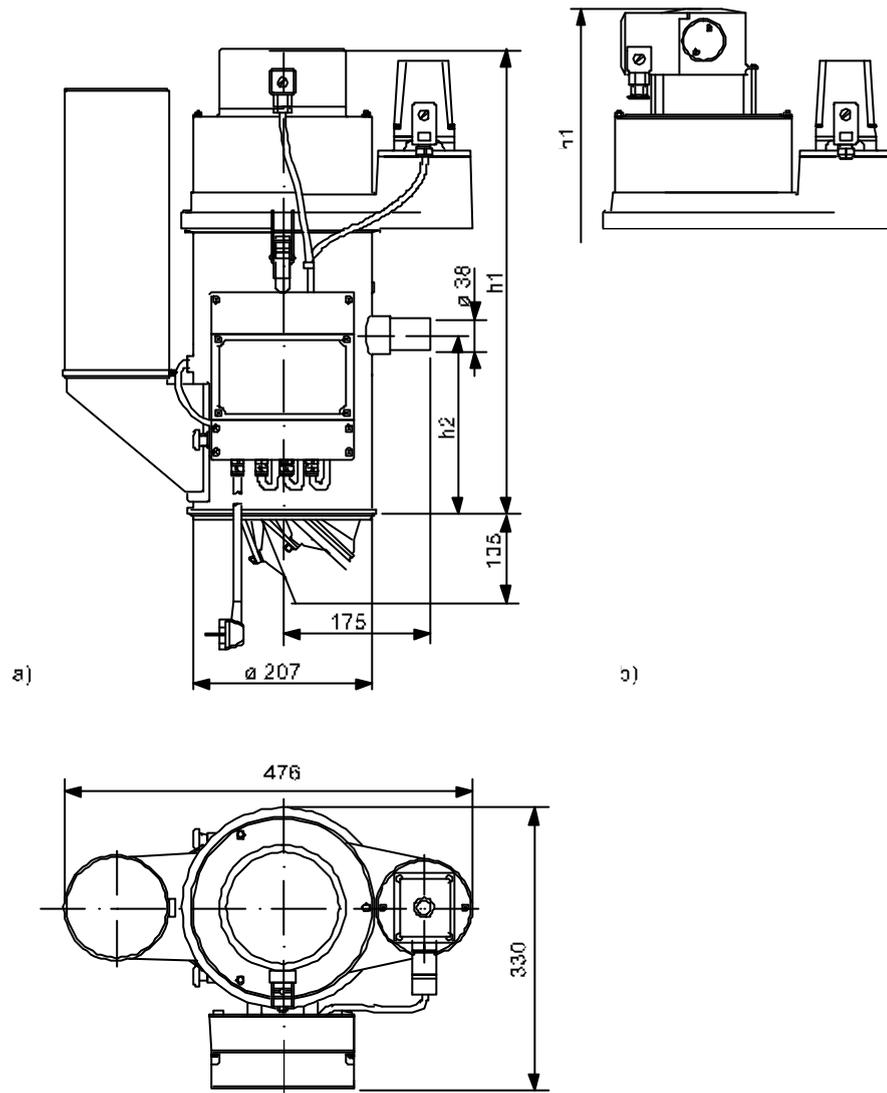


Fig. 3-1

4. Assambley and disassembly

4.1. Assambley



Do not place the KFG on the outlet flap!
This could damage it.

Assambley diagram

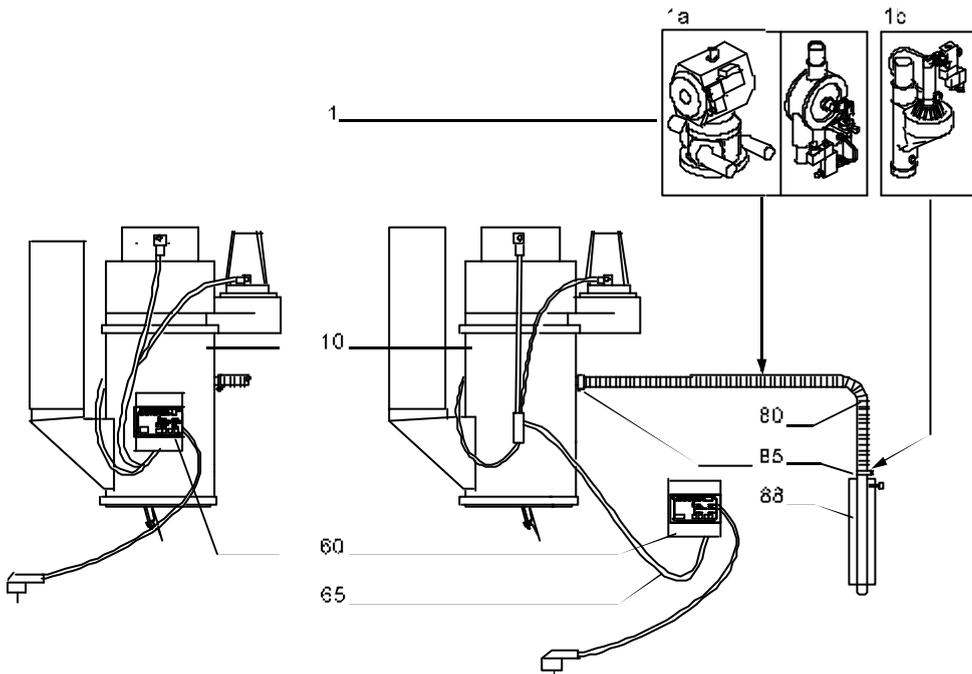


Fig. 6. Retrofitting with optional equipment and accessories

- 1 1 Accessories
- 10 KFG
- 60 Controller
- 65 Connecting cable
- 81 Conveying hose
- 85 Hose clamp
- 88 Suction nozzle

Fehler! Textmarke nicht definiert.

On units with separate control

- **Attach the control (see fig. 6. Retrofitting with optional equipment and accessories**

-3).

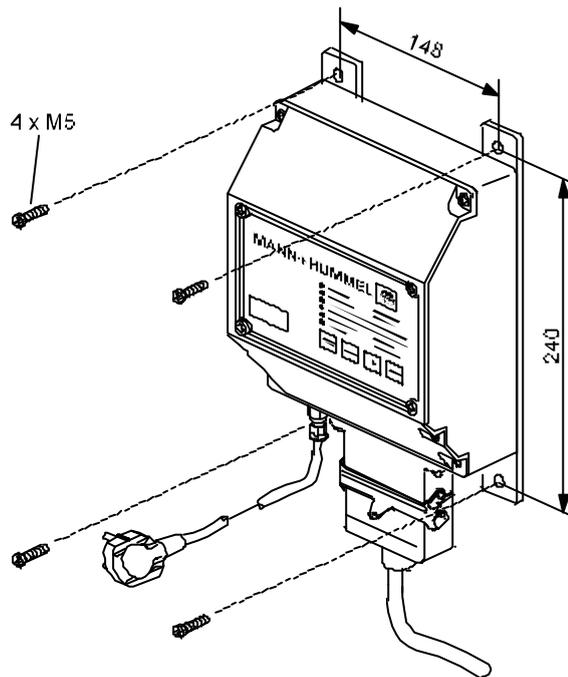


Fig. 6. Retrofitting with optional equipment and accessories

-3

- **Connect the control to the terminal box, using the connecting cable (see fig. 6. Retrofitting with optional equipment and accessories**

-1).

Fehler! Textmarke nicht definiert.

On units with accessories

Install the accessories in the conveying line.

The KFG can be operated in conjunction with the following accessories (1, see fig. 6. Retrofitting with optional equipment and accessories

-1):

- Proportioning valve or dosing valve (1a)
- or
- Purging valve (1b)

The installation of the accessories in the conveying line is described in the respective Operating Manual. If the electrical connection has not been carried out at the factory, please proceed as described in chapter 6.4..



Do NOT rest the conveying hose on the hopper loader. Therefore, support the weight of the conveying hose separately. Otherwise the unit may be damaged.

- Push the conveying hose onto the inlet spigot and secure with a hose clip.

Unit with dosing attachment:

Connect the main material to Spigot 1 and the auxiliary material to Spigot 2.

The numbers are situated above the spigots.

- Push the conveying hose onto the inner pipe of the suction nozzle and secure with a hose clip.

Commissioning

- Connect the mains plug of the unit to the power supply
- Place the suction nozzle into the material to be conveyed.

The unit has been supplied with a standard setting (configuration/conveying values).

- To check or change the setting, proceed according to Chapter 5. „Operation“.

- To start the conveying cycle, press the

START/STOP button.

- Adjust the suction nozzle (see chapter 5.6.).

4.2. Disassembly

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Only on units with separate control:
 - Remove the connecting cable.
 - If necessary: Disassemble the control.
- Only on units with automatic cleaning of the conveying air filter: Disconnect the unit from the compressed air mains.
- Take the suction nozzle out of the material container.
- Disassemble the conveying hose from the KFG and from the suction nozzle.
- Only for units with external level switch:
Take the level switch out of the material container.
- Disconnect the accessories form the control:
Pull out the connector plugs of the accessories
- Disassemble the KFG:
 - **If attached with clamps (see Chapter 6. Retrofitting with optional equipment and accessories**

, Section „Attaching the KFG“:

Remove the clamps and then the unit.

- If attached with clamp ring:

Open the clamp ring wide and remove the unit.



Do not place the KFG on the outlet flap!
This may damage it.

4.3. Storage and transport

In order to avoid damage when storing and trasnsporting the unit:



Do not place the unit on the outlet flap!
This may damage it.

- lay it on its side,
- secure it against slipping,
- protect it from damage!
E. g. place it in an adequately large case.

In particular, protect the unit from

- dirt,
 - water,
 - aggressive atmosphere.
- E.g. cover it with sheeting.

5. Operation

Fehler! Textmarke nicht definiert.

Fehler! Textmarke nicht definiert.

5.1. Operation of the Hopper Loader

Operating mode

The suction nozzle is inserted into the suction hopper and draws in the material which is to be conveyed. The conveying valve moves into the "conveying" position at the beginning of the conveying cycle. The blower generates a low pressure in the material hopper, causing material to be drawn in (fig. 5.1.-1a). At the same time the conveying air filter separates the material from the conveying air. When the preset conveying time has elapsed the conveying valve switches into the filter cleaning position. The filter is cleaned by the blower return air (fig. 5.1.-1b), the low pressure in the material drops. The material in the hopper presses against the outlet flap; when there is a sufficiently large volume of material, the valve opens and the material flows out. When the material hopper is empty, the outlet flap automatically closes and a new conveying cycle begins. The process is repeated until the hopper under the KFG has been filled and the outlet flap can no longer close. The conveying process is then interrupted. (fig. 5.1.-1c). A new conveying cycle starts when the material has dropped sufficiently to allow the outlet flap to close.

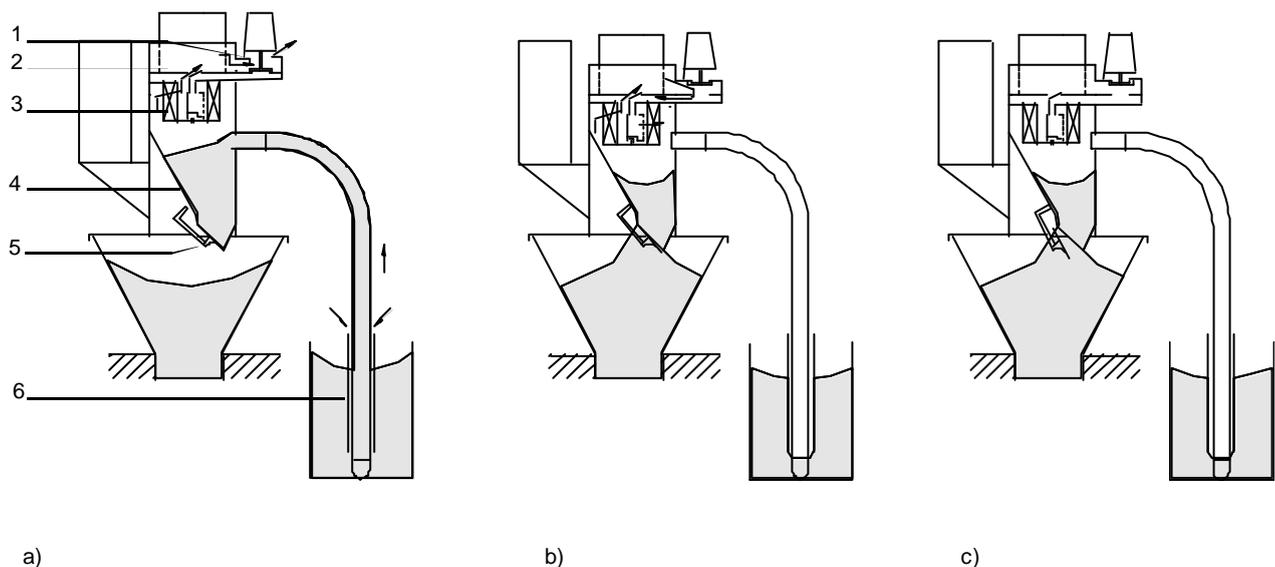


fig. 5.1.-1

1 conveying valve	4 Material hopper
2 Blower	5 Outlet flap
3 filter	6 Suction nozzle

Purging valve (accessorie)

A purging valve is used to prevent a blockage in the conveying line. The purging valve opens shortly before the end of the conveying time, causing air to flow into the conveying line which is then purged.

For the configuration, refer to chap. 5.2..

Conveying cycle

The conveying cycle comprises the following steps:

- 1) Delay after the conveying cycle has started,
display: .
- 2) CLEANING,
display: time to the next step (in seconds), the
"CLEANING" LED is illuminated.
- 3) Delay before conveying,
display: .
- 4) CONVEYING,
display: time to the next step (in seconds).

The following LEDS are illuminated during the conveying cycle:

- "DOSING VALVE [Z]", if
 - dosing valve/proportioning valve is in use and controlled by the FG,
 - and
 - auxiliary material is drawn in.
 - „PURGING“, if
 - a purging valve is controlled by the FG,
 - and
 - the conveying line is being purged.
- 5) Delay after conveying,
display: .
 - 6) Conveying interruption,
display: .

5.2. Configuring

When configuring the controller, proceed as follows:

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- At the control: Remove the terminal cover (see fig. 5.2.-1).
- Set the DIP switches, group 1 (1), according to table 5.2.-1. See example below.
- Set the DIP switches, group 2 (2), (see fig. 5.2.-1) according to table 5.2.-2.

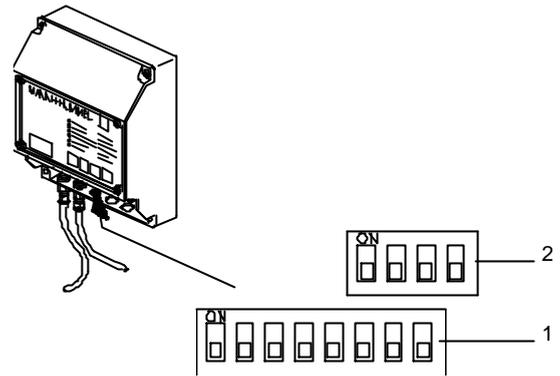


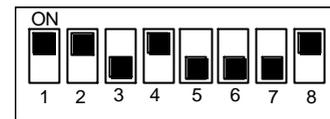
Fig. 5.2.-1: 1 DIP switches - Group 1
2 DIP switches - Group 2

➔ The DIP switches 3 and 4, group 2, must be set as indicated in table 5.2.-2 !
Otherwise malfunction will result.

- Re-attach the terminal cover.
- Connect the unit to the power supply.
- Start the conveying cycle.

Example of Table 5.2.-1

- Unit equipment: filter cleaning after the conveying.
- Accessories: Proportioning flap controlled by the KFG and active, level switch installed in the hopper for auxiliary material.
- Position of the DIP switches, group 1:



	Position of the DIP-switches - Group 2			
	1	2	3	4
Configuration	ON	ON	3	4

Table 5.2.-2: DIP switches - Group 2

Fonction	Options/accessories	Configuration	Position of the DIP switches - Group 1								
			1	2	3	4	5	6	7	8	
autom. cleaning of filter in KFG	No cleaning	Cleaning before conveying			ON	ON					
		Cleaning after conveying			3	ON					
		Cleaning before + after conveying			3	4					
		Level switch	Level switch inactive					ON	ON		
Level switch	Level switch in material hopper active	Dosing valve/proportioning flap controlled by KFG:					ON	6			
		Level switch in hopper for auxiliary material active					5	6			
		Dosing valve/proportioning flap inactive							ON	ON	
Dosing valve/proportioning flap	Dosing valve/proportioning flap active							7	ON		
		Purging valve inactive							ON	ON	
Purging valve	Purging valve active							ON	8		

Table 5.2.-1: DIP switches-Group 1

5.3. General operation

Switching on the unit

- Connect the unit to the power supply.
Display: .

Switching off the unit

- Isolate the unit from the power supply (pull out the mains plug).
The displayed indication goes out.

Starting the conveying cycle

When , ,  are displayed or after pressing the  - button:

- Press the  button, the “OPERATION” LED is illuminated;  is displayed.

Stopping the conveying cycle

Only when the “OPERATION” LED is illuminated:

- Press the  button; the “OPERATION” LED goes out;  is displayed.

5.4. Operation the Control

Operator control panel and functions assigned to the touch buttons

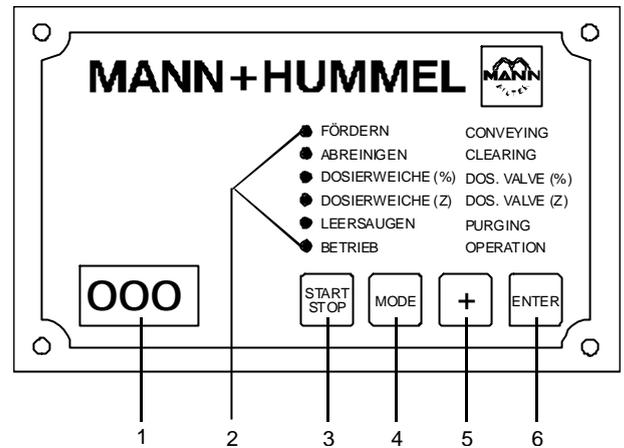


Fig. 5.4. 1 1 Display
2 Light emitting diodes (LEDs)
3  button
4  button
5  button
6  button

 button:

Starts and stops the conveying cycle.

 button:

Selects the functions.

 button:

Sets the values.

 button:

Stores the values.

Display reading

: Ready display. Unit is connected to the power supply.

: Conveying stopped by stop button.

: Hopper full, outlet flap opens. Conveying restarts as soon as the flap closes.

Other wise, see Chapter 5.7. “Malfunctions”.

,...: Time segment within the conveying cycle; see Chapter 5.1. for a description.

,...: Malfunctions; see Chapter 5.7. for a description.

Light emitting diodes (LEDs)

The "OPERATION" LED is illuminated when the unit is connected to the mains and a conveying cycle has been started.

All other LEDs

- are illuminated during the conveying cycle when the relevant function is implemented (see Chapter 5.1.).
- flash, when the appropriate values can be set (see Chapter 5.5.).

5.5. Setting the conveying values

Making adjustments

- Stop the conveying cycle.
- Press the **MODE** button until the LED flashes for the function which requires adjusting. The previously set value is displayed.
If accessories have not been connected to the controller and configured, the pertaining functions are skipped.
- Press the **+** button until the desired value is displayed.
The display increases step by step to the maximum value, jumps to the lowest value and then begins to increase again.



If the display flashes, the value cannot be stored. The function will not run properly at this value. Set another (higher) value.

- Press the **MODE** button to select more functions. Adjust the values with the button **+**.
- Press the **ENTER** button to store the adjusted value.



The **ENTER** button must always be pressed even if no values have been changed!

- Start the conveying cycle.

Setting the values

Values for the following functions can be set via the operator control panel:

- **CONVEYING**
Input the conveying time.
Values: 2...99 s.



Set the conveying time so that the material hopper is filled up to 50 mm below the inlet spigot.

For units with level switch, the conveying stops when the preset conveying time has elapsed or when the level switch signals "full".

- **CLEANING**
Select the cleaning time.
 - Values for cleaning before conveying and after conveying: 0,0/2,0/4,0/8,0/14,0 s.
 - Values for cleaning before + after conveying:
before conveying: 0,25 sec. (not adjustable)
after conveying: 0,0/2,0/4,0/8,0/14,0 s.
Value 0,0 = no cleaning!
- If a proportioning flap/dosing valve is in use and controlled by the KFG:
 - **DOSING VALVE [%]**
Input the percentage of conveying time for main material.
Values: 0...99 %
Value 99 = only main material is conveyed (no auxiliary material added)!
 - **DOSING VALVE [Z]**
Select the changeover frequency between main and auxiliary material during the conveying cycle.
Values: 1/2/4
- Only if a purging valve is in use and controlled by the KFG:
 - PURGING**
Input the purging time.
Values: 0...20 s.
Value 0,0 = no cleaning!



Conveying time is reduced by the purging time and must be at least 5 seconds longer than the purging time.

5.6. Adjusting the suction nozzle



The material conveying must be regular.
Otherwise a blocking of the conveying line can occur.

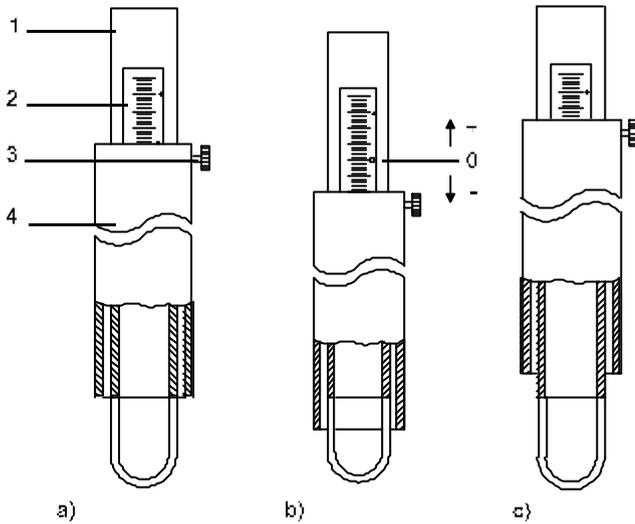


Fig. 5.6.-1

- "0" - position (see fig. 5.6.-1a)
- Conveying less material (more air):
 - Loosen the knurled screw (3) (see fig. 5.6.-1).
 - Move the outer pipe in the "+" direction.
 - Retighten the knurled screw.
- Conveying more material (less air):
 - Loosen the knurled screw (3) (see fig. 5.6.-1).
 - Move the outer pipe in the "+" direction.
 - Retighten the knurled screw.

5.7. Malfunctions

This Chapter provides information on locating and eliminating the causes of malfunction.

Display	Reaction of the unit	Cause	Remedy
 flashes	Conveying cycle is stopped.	a) Blower is defective. b) The proximity switch is defective. c) Cable disconnected.	a) Replace the blower. b) Replace the proximity switch. c) Check all cables, plugs and terminal connections: <ul style="list-style-type: none"> • on the proximity switch, • on the accessories (level switch etc.), • on the controller, • on the blower. Restart the conveying cycle: <ul style="list-style-type: none"> • Disconnect the voltage (pull out the mains plug), • Press the (START/STOP) button.
 flashes	Conveying cycle has not started, <ul style="list-style-type: none"> • although the material hopper is empty and • the outlet flap is closed. 	No material or insufficient material was conveyed during two successive conveying cycles.	a) <ul style="list-style-type: none"> • Increase the conveying time. • Check the level of material in the suction hopper and refill if necessary. • Check the suction nozzle setting and, if necessary readjust for a more appropriate loading (see Chapter 5.6., <ul style="list-style-type: none"> - improve the flow of material. • Conveying line <ul style="list-style-type: none"> - check for leaks, - eliminate blockages in the suction hose. • Check the outlet flap and, if necessary, replace the sealing ring. • Check the filter cartridge, if necessary, clean or replace. b) For units with automatic filter cleaning: <ul style="list-style-type: none"> • Select a longer cleaning time (see Chapter 5.5.). • Check the filter cartridge (rotation of the nozzle blade), if necessary clean or replace. c) If a central filter is controlled by the KFG: <ul style="list-style-type: none"> • Increase the cleaning time (see Chapter 5.5.). • Increase the cleaning frequency (see Chapter 5.5.). • Check the filter cartridge(rotation of the nozzle blade), if necessary clean or replace. Restart the conveying cycle: <ul style="list-style-type: none"> • Press twice the (START/STOP) button.

F.F.F. is displayed

The conveying cycle was stopped.

Cause: The control system was incorrectly configured.

To eliminate the malfunction:

- Set to correct configuration.
At DIP switch 2, make sure that switches 3 and 4 are at the correct position (see 5.2.).

F.F.F. is displayed

The conveying cycle continues running, the LED "OPERATION" lights up.

Possible causes:

- The auxiliary material hopper is empty. (For a description of the function, see Chap. 5.1. "Operation of the Hopper Loader", Section "Level indicator".)
- The level indicator in the auxiliary material hopper is incorrectly set or faulty.
- The cable connection from the control to the level indicator is interrupted.

To eliminate the malfunction:

- If an external fault detector is connected:
Press **ENTER** button. The external fault detector is switched off.
- Top up the auxiliary material hopper. The display disappears.
- Check the level indicator, adjust or replace as required.

If the hopper has not been topped up within 6 hours, there will be a new alarm signal.

F.F. is displayed

The conveying cycle does not start although

- the material hopper is empty
- and
- the outlet flap is closed.

Possible causes:

- The proximity switch has lost its setting or is faulty.
- The cable connection from the control to the proximity switch is interrupted.

To eliminate the malfunction:

- Screw the plug onto the proximity switch completely.
- Change the carbon brushes or the blower.
- Check the proximity switch, adjust or replace as required.

When adjusting values: **F.F.F.**, **F.F.F.**, ...

It is not possible to leave entry mode.

Cause: Operation is not possible with the displayed value (number after the "F").

Continue to make the setting:

Set to another (higher) value (display must not flash).

6. Retrofitting with optional equipment and accessories

6.1. Level switch

Carry out the installation as follows:

- Stop the conveying cycle.
- Connect the unit to the power supply.
- Undo the locks and lift off the blower attachment.

If necessary:

- Loosen all plug connections,
- Remove the compressed air coupling.
- Take out the filter.
- On units without volume extension:
In material hopper: Drill a hole, diameter 32,5 mm, into the reinforcement, on the right below the inlet spigot, according to fig. 6.1.-1.

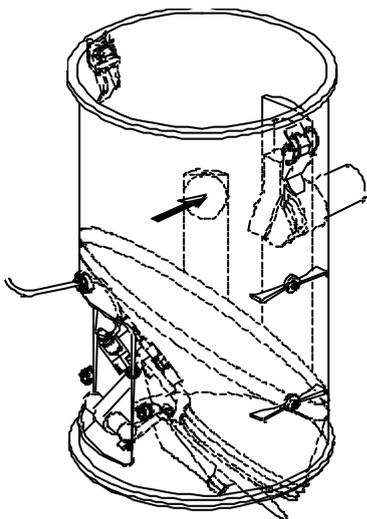


Fig. 6.1.-1

- On units with volume extension:
In volume extension: Drill a hole, diameter 32,5 mm, according to fig. 6.1.-2.

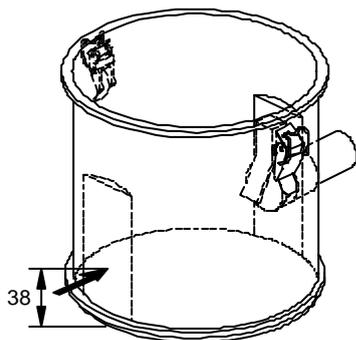


Fig. 6.1.-2

- Insert the level switch (see fig. 6.1.-3).

- Connect the cable plug to the level switch and screw tight.

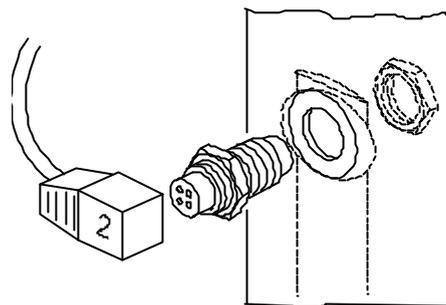


Fig. 6.1.-3

- Place the filter onto the material hopper/volume extension.
- Attache the valve attachment to the material hopper/volume extension, using the two locks.
If necessary:
 - Reconnect the plug connections.
 - Screw tight the compressed air coupling.
- Connect the cable of level switch to the controller (see chapter 6.4. „Connecting the cable“).

6.2. Proportioning valve/Dosing valve/Purging valve

Install a proportioning valve or a dosing valve or a purging valve in the conveying line as described in the supplied operating manual.

Connect the control cables to the hopper-loader controller as described in Chapter 6.4. "Connecting the cable"

6.3. Other connection options

External fault detector

Hopper-loader malfunctions can be signalled to the operating personnel not only by the malfunction display, but also by an external fault detector. Connect the external fault detector as described in Chapter 6.4. "Connecting the cable".

External START/STOP switch

The unit can be started or stopped not only with the **START/STOP** button, but also by an external START/STOP switch (remote control). Connect the START/STOP switch as described in Chapter 6.4. "Connecting the cable".

- Connect the unit to the power supply.
- Start the conveying cycle.

- b) All connection holes are assigned:
- Unscrew the terminal cover.
 - Dismantle cable gland Pg 9 with reduction and replace with cable gland Pg 16.
 - Attach both cables to the controller housing.
 - Connect the cables to the power circuit board. See Chapter 8.1. "Connecting diagram".
 - Configure the control. See Chapter 5.2. "Configuring".
 - Re-attach the terminal cover.
 - Connect the unit to the power supply.
 - Start the conveying cycle.

6.4. Connecting the cable

There are 2 options depending on the equipment used in the hopper loader. Please select the option which is relevant to your equipment.

- Isolate the unit from power supply (pull out the mains plug).

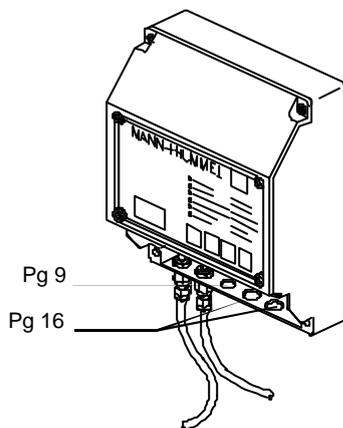


Fig. 6.4.-1

- a) One connection hose is unassigned (see fig. 6.4.-1):
- Unscrew the terminal cover.
 - Pierce the hole.
 - Attach the cable to the controller housing, using cable gland Pg16 or Pg 9 with reduction.
 - Connect the cable to the power circuit board. See Chapter 8.1. "Connecting diagram".
 - Configure the controller. See Chapter 5.2. "Configuring".
 - Re-attach the terminal cover.

7. Maintenance and repair

Maintenance and repairs require specialist knowledge and may only be carried out by qualified personnel.

7.1. Maintenance

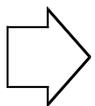
Cleaning

We recommend that the unit is cleaned periodically or as required (e.g. at material changes):

- Blow out with compressed air (wear protective glasses!).
- With tepid water mixed with detergent,
- with cold cleaner for the plastics parts:
 - for light dirt: Kaltron 113,
 - For thick dirt: Frigen 113.

Proceed as follows:

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Undo the locks and lift off the blower attachment.
If necessary:
Loosen plug connections,
- Take the nozzle blade out of the filter element and clean it.
- Take out and clean the filter element or replace it.
If necessary: Remove the volume extension.
Open the clamp ring and lift off the volume extension.
- Clean
 - the volume extension,
 - the material hopper,
 - the outlet flap,
 - the seal on the outlet,
 - and if provided, the compensating filter.
- if necessary: attach the volume extension.
Place it on top and secure it with the clamp ring.
- Place the filter element on the material hopper or the volume extension.
- Place on top the valve attachment and secure with the two locks.
if necessary: reconnect the plug connections,



The nozzle blade must rotate regularly!
Otherwise the filter element will not be cleaned and may clog.

- Connect the unit to the power supply.
- Start the conveying cycle.

Filter

The filter does not require continuous maintenance since it is cleaned regularly. Nevertheless, if you wish to clean or replace it, proceed as follows

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Undo the locks and lift off the blower attachment.
If necessary:
 - Loosen the plug connections,
- Take the nozzle blade out of the filter element and clean it.
- Remove and clean the filter element:
 - by tapping
 - or blasting with compressed air (or protective glasses!).
- or
- Replace the filter element.
- Place the filter on the material hopper or the volume extension.
- Insert the nozzle blade into the filter element
- Place the blower attachment on top and secure with two snaps.
if necessary: reconnect the plug connections,



The nozzle blade must rotate regularly!
otherwise the filter element will not be cleaned and may clog.

- Connect the unit to the power supply.
- Start the conveying cycle.

Compensating filter

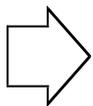
The compensating filter does not require continuous maintenance either. When cleaning, it is usually adequate to blast the filter from the exterior (wear protective glasses!).

If you wish to replace the compensating filter, proceed as follows:

- Stop the conveying cycle.
- Loosen the hose clamp.
- Pull off the filter bag.
- Turn un and clean the filter hose.

or

- Replace the filter bag.
- Push the filter bag onto the filter support and secure with the hose clamp.



The filter bag must be mounted dusttight on the filter support!
Otherwise dust will escape during cleaning.

- Start the conveying cycle.

7.2. Repair

7.2.1. Blower

The blower of the KFG is fitted with a collector motor. The carbon brushes in this motor are subject to natural wear and must therefore be changed occasionally. Cutout carbon brushes can be used in place of the usual carbon brushes. They automatically switch off the blower when they are worn, protecting it from damage.

The service life of the carbon brushes is of approximately 12 months if the unit is operated 24 hours a day at the maximum conveying capacity stated in Chapter 3. The brushes have a longer service life when the blower duty is reduced. The blower must be replaced when it fails again after the carbon brush exchange. A second repair is not cost-effective.

KFG 205/206.1o: Replacing the carbon brushes

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Remove the cable plug from the blower hood.
- Undo the locks and lift off the blower attachment.
- Loosen and throw away the safety nuts (2, see fig. 7.2.1.-1).
- Remove the blower (13) together with the blower hood (12).
- Remove the rotor hood (13c).
- Unscrew the retaining clip of the carbon brushes.
- Isolate the carbon brushes from the power supply (see fig. 7.2.1.-2).

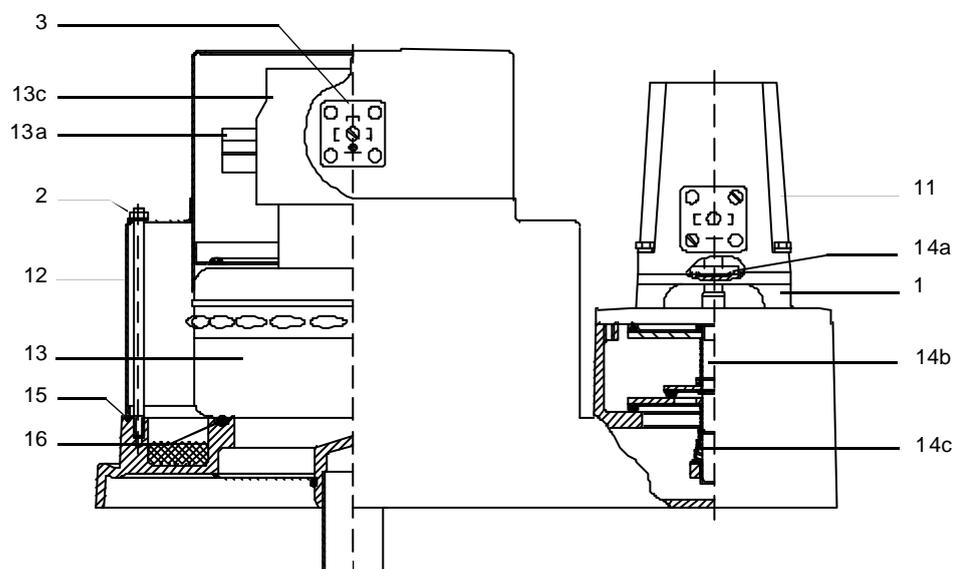


Fig. 7.2.1.-1

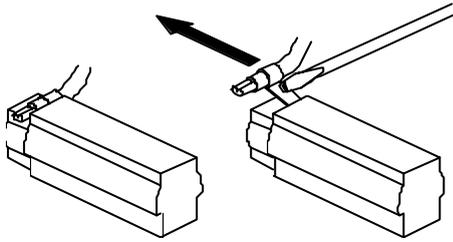


Fig. 7.2.1.-2

- Connect the new carbon brushes to the power supply.
- Insert the carbon brushes and screw tight with the retaining clip.
- Put on the rotor hood (13c) and lock in place.
- Check the sealing (15) on cover and replace if necessary.
- Place the blower on the cover.
- Attach the blower hood on top and screw tight, using new safety nuts (2).
- Fix the blower attachment on the material hopper/volume extension, using the two locks.
- Insert on the cable plug and screw tight.
- Connect the unit to the power supply.
- Start the conveying cycle.

KFG 205/206.1o: Replacing the blower

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Remove the cable plug from the blower hood.
- Undo the locks and lift off the blower attachment.
- Loosen and throw away the safety nuts (2, see fig. 7.2.1.-1).
- Remove the blower (13) together with the blower hood (12).
- Unscrew the plug (3) from the blower hood.
- Disconnect the cable from the plug.
- Connect the cable of the new blower to the plug.
- Screw the plug to the blower hood. Use Loctite to lock the screws and prevent them from loosening.
- Check the sealings (15 and 16) on the cover and replace them if necessary.
- Place the blower on the cover.
- Place on top the blower hood and screw tight, using new safety nuts (2).
- Fix the blower attachment on the material hopper/volume extension, using both locks.
- Insert the cable plug and screw tight.
- Connect the unit to the power supply.
- Start the conveying cycle.

KFG 205/206.2o: Replacing the carbon brushes

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Unscrew the cover (5, see fig. 7.2.1.-3).

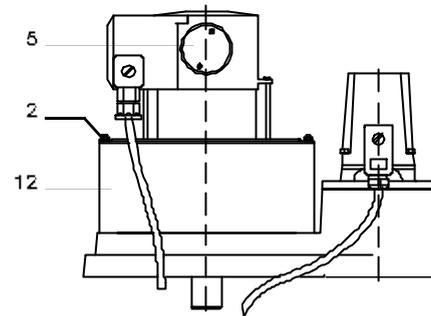


Fig. 7.2.1. 3

- Remove the clamps and then the carbon brushes.
- Insert new carbon brushes and attach the clamps.
- Screw the cover tight
- Connect the unit to the power supply.
- Start the conveying cycle.

KFG 205/206.2o: Replacing the blower

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Remove the cable plug from the blower.
- Unscrew the cover (5 see fig. 7.2.1.-4) (Do not disconnect the cable).
- Loosen and throw away the safety nuts.
- Remove the blower hood (12).

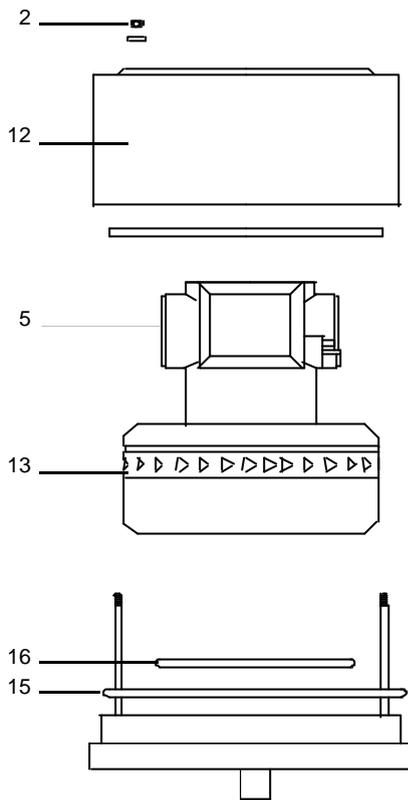


Fig. 7.2.1. 4

- Remove the blower (13).
- Check the sealings (15 und 16) and replace if necessary.
- Unscrew the cover from the new blower (5). Do not disconnect or damage the cable!
- Place the blower on the lower part of the blower attachment.
- Attach the blower hood and screw tight, using new safety nuts (2).
- Screw the cover tight (5).
- Connect the unit to the power supply.
- Start the conveying cycle.

Fehler! Textmarke nicht definiert.

7.2.2. Proximity switch

Proceed as follows when replacing the proximity switch (46) (see fig. 7.2.2.-1):

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Unscrew the compensating filter.
- Unscrew the cable plug out of the proximity switch (46).
- Loosen the screws of the clamping lug (1) (see fig. 7.2.2.-1).

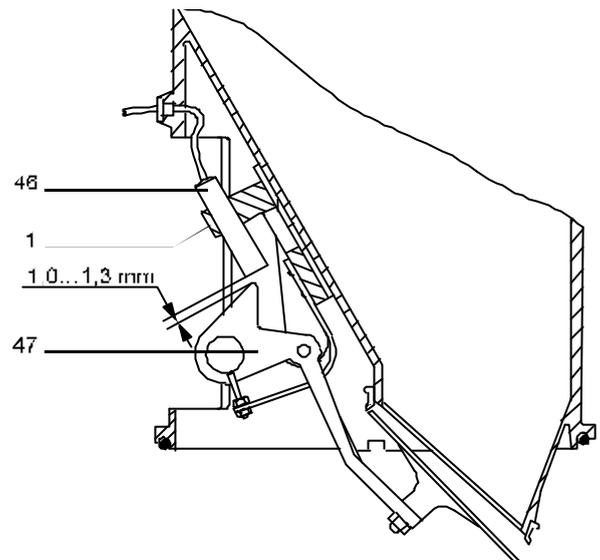


Fig. 7.2.2.-1

- Take out the switch (46).
- Insert the new proximity switch in the clamping lug until there is a gap of approx. 1.0 ... 1.3 mm between the proximity switch and the outlet flap lever (47).
- Insert the cable plug and screw tight.
- Screw tight the compensating filter.
- Connect the unit to the power supply.
- Start the conveying cycle.

As a rule the controller does not require any maintenance. If troubleshooting according to Chapter 5.7. is unsuccessful and a malfunction is suspected in the controller, proceed as follows:

- Stop the conveying cycle.
- Isolate the unit from the power supply (pull out the mains plug).
- Unscrew the controller and terminal covers.
- Carefully open the control circuit board (23b) (see Fig. **Fehler! Verweisquelle konnte nicht gefunden werden.**-1).

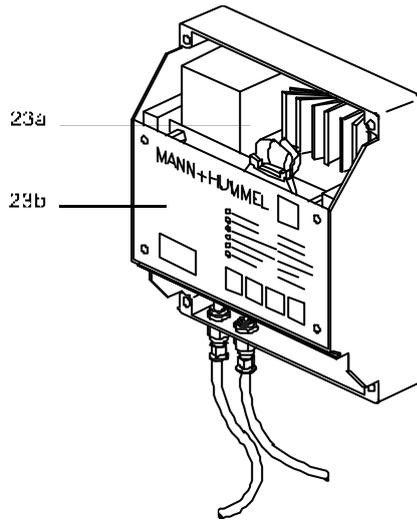


Fig. **Fehler! Verweisquelle konnte nicht gefunden werden.**-1

- Check the fuses on the power circuit board (23a).
- If a circuit board has a suspected defect:
Replace the defective circuit board.
When replacing a circuit board, pay particular attention to the wiring (see Chapter 8.1. and configuration (Chapter 5.2.)!
- Screw back the controller and terminal covers.
- Connect the unit to the power supply.
- Start the conveying cycle.

Fehler! Textmarke nicht definiert.

power circuit board

Power Electrical connection

- X1 Blower
- X2 External alarm (optional)
- X4 Purging valve (accessorie)
- X5 Proportioning valve/dosing valve (accessorie)
- X6 Cleaning valve (optional)
- X7 External START/STOP switch (optional)
- X8 Level switch (optional)
- X9 Proximity switch at the outlet flap

- 13b Fuse M 10 G
- 13c Fuse M 0,315

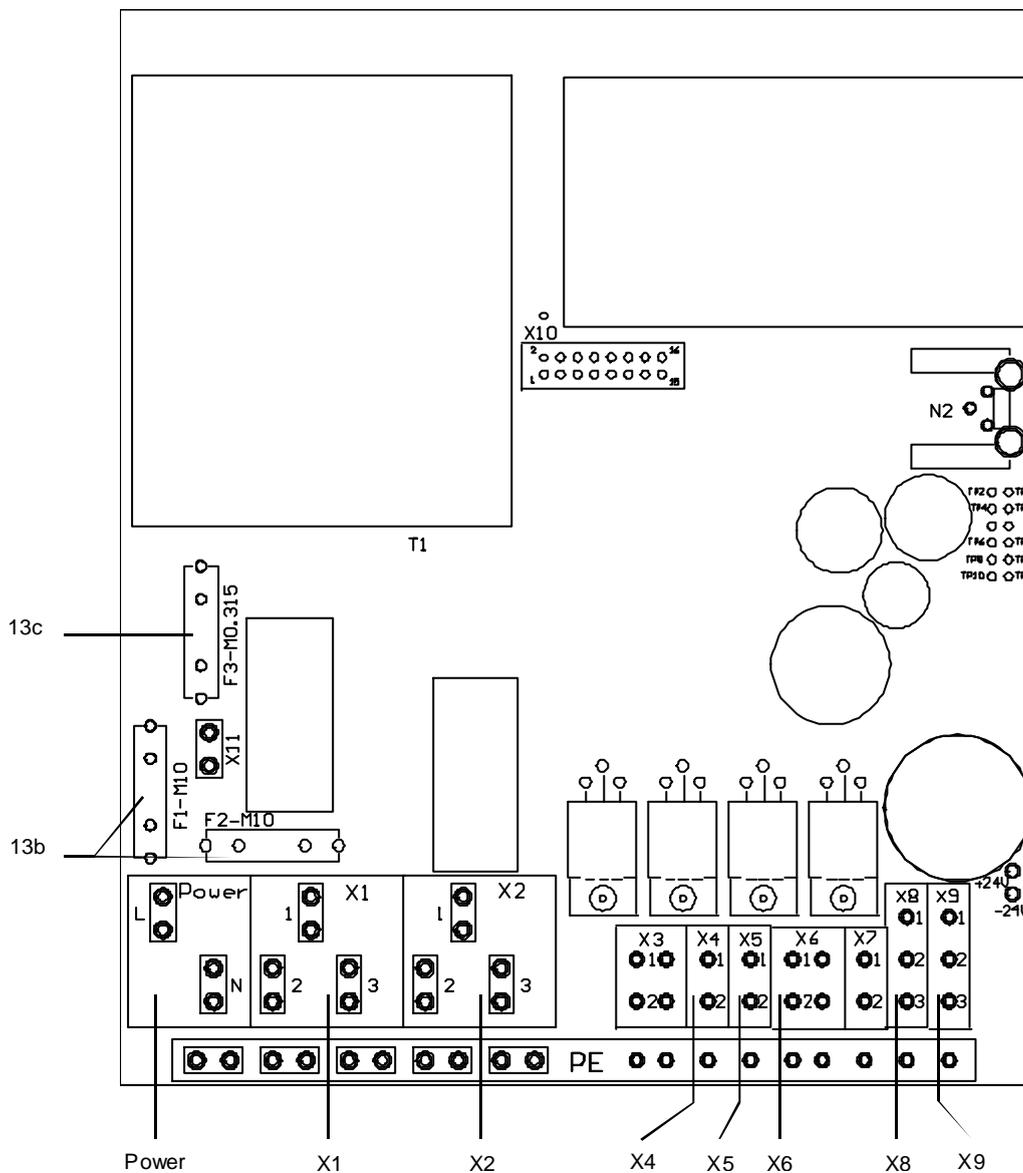


Fig. 8.1.-2: power circuit board

8.2. Spare parts

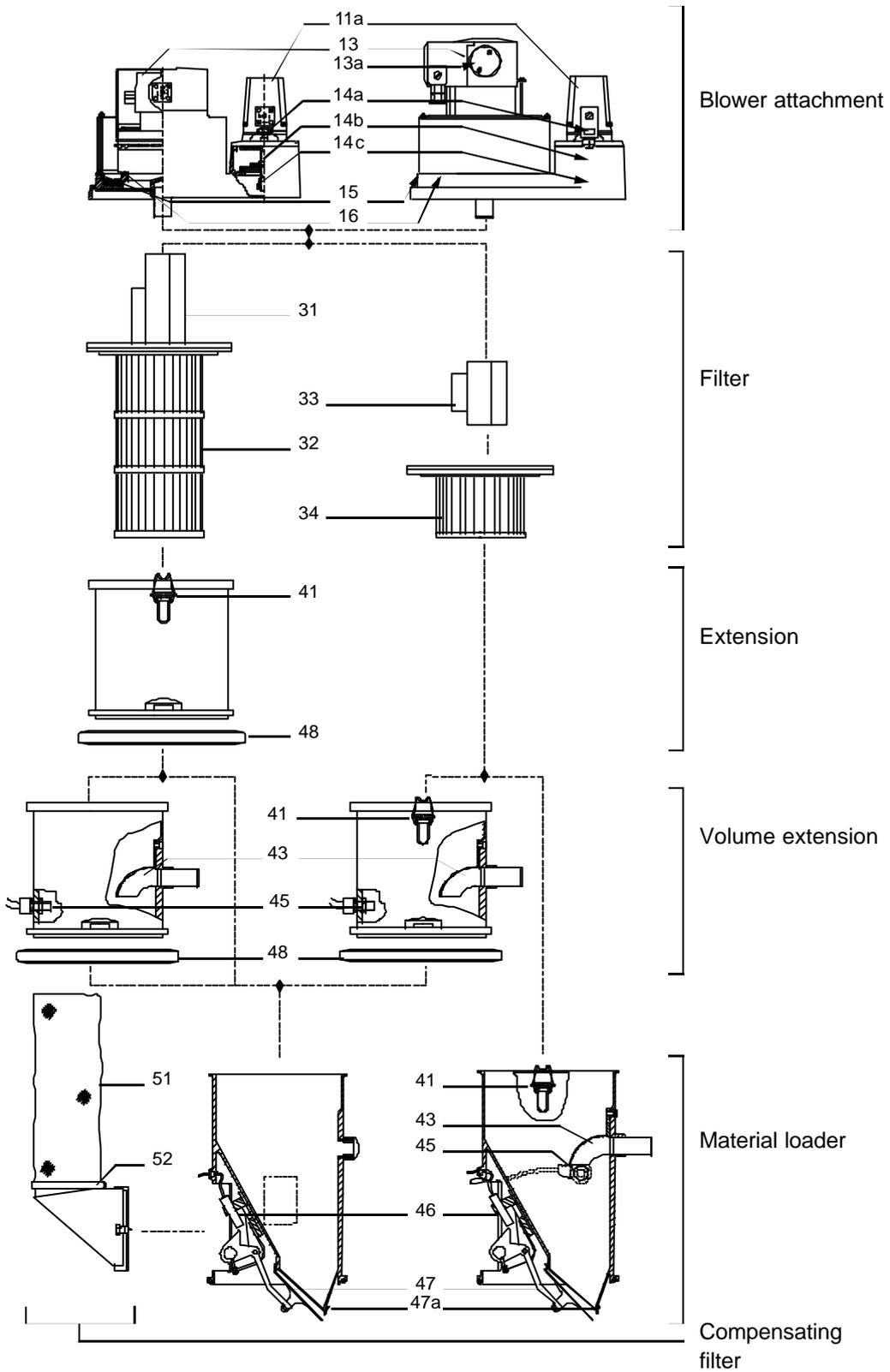


Bild 8.2.-1

Blower attachment for KFG 20o.1o (see fig. 8.2-1)

Blower attachment compl.....	79 81 004 175
11a Actuating magnet.....	79 82 002 704
13 Blower EKO 85.....	79 81 000 016
13a Carbon brushes	79 81 000 035
Cutout carbon brushes	79 81 000 036
14a Stripper.....	79 82 000 870
14b Valve disc set compl. (incl. compression spring).....	79 81 004 362
14c Compression spring	79 82 005 782
15 Sealing ring.....	79 82 000 882
16 Sealing ring.....	79 82 005 922

Blower attachment for KFG 20o.2o (see fig. 8.2-1)

Blower attachment compl.....	79 81 004 175
11a Actuating magnet.....	79 82 002 704
13 Blower EKO 94.....	79 82 002 230
13b Carbon brush.....	79 82 002 679
14a Stripper.....	79 82 000 870
14b Valve disk set compl. (incl. compression ring)	79 81 004 362
14c Compression ring.....	79 82 005 782
15 Sealing ring.....	79 82 000 882
16 Sealing ring.....	79 82 005 922

Filter (see fig. 8.2-1)

31 Nozzle blade 2,0 (KFG 226).....	79 81 004 313
32 Filter element 2,0 (KFG 226).....	79 80 000 026
33 Nozzle blade 0,6 (KFG 225).....	79 81 004 310
34 Filter element 0,6 (KFG 225).....	79 80 000 017

Extension (see fig. 8.2-1)

Extension compl.	79 81 004 336
41 Snaps.....	79 81 000 129
48 Lever clamp ring.....	79 81 013 833

For units with filter element 0,6 without volume extension (see fig. 8.2-1)

Material hopper compl. (without level switch).....	79 81 016 492
41 Snaps.....	79 82 004 184
43 Pipe bend.....	79 81 004 217
45 Level switch (optional)	79 82 005 804
46 Proximity switch.....	79 82 005 802
47 Outlet flap	79 81 017 279
47a Sealing ring	79 82 002 912

For units with filter element 0,6 and volume extension (see fig. 8.2 1)

Volume extension compl. (without level switch)	79 81 004 337
41 Snaps.....	79 81 000 129
43 Pipe bend.....	79 81 004 217
45 Level switch (optional)	79 82 006 124
48 Lever clamp ring.....	79 81 013 833

Material hopper compl.....	79 81 004 634
----------------------------	---------------

46 Proximity switch	79 82 005 802
47 Outlet flap.....	79 81 017 279
47a Sealing ring	79 82 002 912

For units with filter element 2,0 without volume extension (see fig. 8.2-1)

Material loader compl.....	79 81 004 634
46 Proximity switch	79 82 005 802
47 Outlet flap	79 81 017 279
47a Sealing ring	79 82 002 912

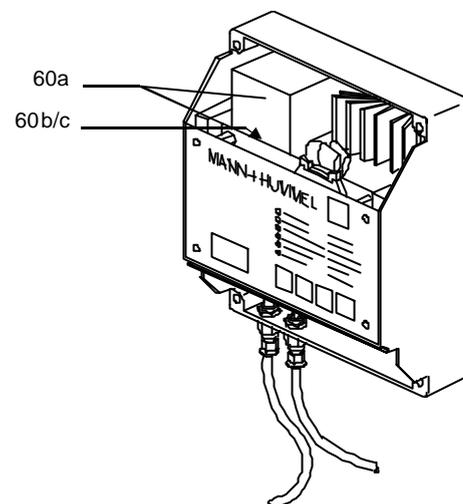
For units with filter element 2,0 and volume extension (see fig. 8.2 1)

Volume extension compl. (without level switch).....	79 81 004 337
41 Snaps	79 81 000 129
43 Pipe bend.....	79 81 004 217
45 Level switch (optional).....	79 82 006 124
48 Lever clamp ring.....	79 81 013 833

Material hopper compl.....	79 81 004 634
46 Proximity switch	79 82 005 802
47 Outlet flap.....	79 81 017 279
47a Sealing ring	79 82 002 912

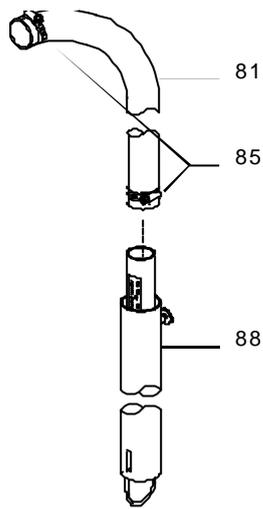
Compensating filter (see fig. 8.2-1)

Compensating filter compl.	79 82 004 719
51 Filter hose.....	79 82 006 149
52 Hose clamp	79 82 001 916

µP-controller

60a Platinen (Satz).....	79 81 016 523
60b Sicherheit M 10 G.....	02 141 02 273
60c Sicherheit M 0,315.....	02 141 02 427

Conveying line



81a	Conveying hose 4 m.....	79 82 005 790
81b	Conveying hose 8 m.....	79 82 005 791
85	Hose clamp.....	79 82 001 908
88	Suction nozzle.....	79 81 013 589

8.3. Assembly accessories

Adaptor plate	79 81 004 501
Counterflange AL.....	79 82 006 418
Counterflange V2A.....	79 82 006 429
Lever clamp ring.....	79 81 013 833

8.4. Accessories

Proportioning valve/dosing valve

Proportioning valve DK 38.....	79 81 004 400
Dosing valve DW 38.....	79 81 001 147
Dosing valve PGW 35	79 80 004 737
Connecting cable 4 m.....	79 82 005 839

Purging valve

Purging valve LV 38	79 81 002 820
Connecting cable 4 m.....	79 82 005 839