



Operating instructions

Designation of the machine

Single/Double-workplace extraction unit

D-LE 255 S/D - 18.07.14 / V

Machine type:

Machine no.:

.....

D-LE 255 S / D

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Keep for future reference!



Dear customer:

Thank you for the confidence you have placed in us by purchasing the extraction unit D-LE 255 S/D.

To ensure this device provides you with long years of perfect service, please take the time to carefully read these operating instructions, especially before first use.

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1 Safety

1.1 Correct use

The single/double-workplace extraction unit D-LE 255 S is used in dental laboratories for extracting dust (primarily gypsum dust, mineral dust, plastic dust, metal dust, oxide and other ceramic dusts) produced when working on dust-producing equipment. It should never be used for vacuuming liquids.

If released dust produces also poisonous gases such as methyl methacrylates, appropriate activated carbon filters must be placed downstream (e.g., D-AK10 from Harniscn & Rieth).

The extraction unit is fitted with a dust grade M filter (<0.1% maximum permeability) pursuant to DIN EN 60335.

Unauthorised modifications and changes are not permitted for safety reasons.

The operating and maintenance conditions specified in these operating instructions must be observed at all times.

Caution The unit is not designed as a **medical** device. Use on people is not permitted.

1.2 Possible dangers

- Potential sources of ignition or combustible gases, vapours and liquids should not be extracted with the unit.
- Switch off the unit and disconnect from mains power supply before carrying out maintenance and cleaning work (pull out the mains plug).
- Particular attention should be paid to ensuring that the filter bag and ultra-fine filter are always installed correctly and undamaged, as the dust collected poses a health hazard to a certain extent.
- The unit should be disconnected from the mains power supply before accessing built-in electrical components.

1.3 Approved operators

The operator of the unit should ensure that the operating instructions are accessible to the operating personnel and have been read and fully understood. Only then should the operator commission the unit.

1.4 Safety measures at site of operation

Air flowing out of the air outlet should not be hindered in any way.

The distance between the air outlet and the next obstacle (e.g. a wall or furniture) must be at least 10 cm.

The unit should only be operated in cabinets or confined spaces if adequate ventilation is provided. The permissible ambient temperature must neither fall below 0 ° C nor exceed 40°C at 50% relative humidity.

No foreign bodies should be inserted through the ventilation ducts on the unit.

Danger The unit is not suitable for use in rooms where special conditions exist (e.g., corrosive or explosive atmosphere).



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Marking of safety references contained in these instructions 1.5

Note

Refers to tips and other particularly useful information.

Caution Refers to particular methods of operation or handling, non-adherence to which can lead to malfunctioning, damage or other problems.

Danger Refers to dangerous situations which can lead to injuries

Starting up 2

2.1 **Technical data**



Illustra

Ilustration 1 Extraction unit dimensions	
Designation of the machine	: Single/double-workplace extraction unit
Machine type:	: D-LE 255 S/D
Unit dimensions	: Width 420 mm (with power cord strain relief)
	: Depth 390 mm (with extraction sockets)
	: Height 542 mm
Electrical connection	: 200-240 volt (50 Hz)
Over-voltage category:	: II
Power consumption	: Max. 1,100 watts (blower power)
Electrical fusing	: 2x 16 A/T (mains connection)
Airflow	: Max. 55 l/s
Sound pressure	: 52 dB (A) at min. air volume
	: 64 dB (A) at max. air volume
Ultra-fine filter quality	: Dust grade M, DIN EN 60335-2-69
Filter area	: 1.4 m ²
Specific panel filter load	: 143 m ³ /m ² x h
Extraction hose connection	: 50 mm diameter
Dust absorption	: Up to approx. 10 kg (dust type dependent)
Weight	: About 25 kg



2.2 Unpacking the single/double-workplace extraction unit

- 1. Place the carton on a flat surface.
- 2. Remove the top packaging material.
- 3. Push the packaging material away from the unit. Grasp hold of the unit by the lower edge.
- 4. The unit (weight = approx. 25 kg) should be lifted out of the carton by two persons.
- 5. Check the accessories:
 - Documentation
 - Main power cable Item no. 35028
 - Ø 50mm extraction hose, 2m long with two Ø 50 mm connectors, Ø 50 mm extraction hose, 2m long, Item no. 72050 Ø 50 mm connector, Item No. 72050
 - See the delivery note for further accessories

2.3 Short description of the unit and component identification

The single/double-workplace extraction unit D-LE 255 S/D has a powerful high-pressure fan which is fitted with noise suppression. The unit provides two ways to set the airflow rate indicated for the detection device (extraction mouth):

- Gradually, by means of a pushbutton.
- Continuously, by means of a potentiometer.

In both cases, the airflow rate is automatically controlled. Thus, the airflow volume at the extraction funnel remains constant regardless of the contamination degree of the filter medium.

It is also equipped with an automatic electronic ignition, an automatic shut-off feature with filter change indicator, and automatic air volume control. Pneumatic stop valves (accessory) are connected and automatically actuated when the respective dust-generating device is activated, enabling free airflow at the specified vacuum duct.

The automatic ignition electronics detect a rotating hand-held piece in a fraction of a second and immediately actuate dust extraction. The connected stop valve (accessory) automatically enables the extraction line immediately. Any commercially-available hand-held pieces can be used for this purpose. The D-LE 255 S/D is also used as an extractor for sand blasting instruments, saws and other dust-generating devices, electronic detection functioning here in the same manner.

The existing flow control device not only monitors the airflow but also the contamination degree of the pre-filter and ultra-fine filter. Visual and acoustic indicators are provided to indicate the condition of filter components, as well as the decrease of the exhausted airflow volume at the extraction funnel below a specified minimum value. If the airflow volume falls below the minimum, all dust-generating devices connected to the extraction unit are shut down.

At specific time intervals but only after switch-on, the extraction unit performs a self-test and clears the lines.

The extraction unit is designed for mains voltages of $200 - 240 (\pm 10\%)$ V. That is, the air volume set by the potentiometer is held constant regardless of line voltage fluctuations.

The dust is collected in a double-ply disposable filter bag with a capacity of up to 10 kg, depending on the nature of the dust.

The ultra-fine filter has a large surface area and is serially connected to the disposable filter bag, has a maximum transmittance of <0.1%.





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10	Plastic connection for filter bag	24	Sealing surfaces, all-round
11	Filter bag	25	Seal, all-round
12	Mesh basket	26	Extraction channel
15	Ø 63 mm-nozzle (inside)	27	Extraction chamber
16	Ø 50 mm nozzle (outside)	28	2x M6 nuts
17	Closure cover for filter bag	29	Slotted retaining strips
20	Pre-filter	30	Electric cabinet
22	9x screws for floor space	31	Ultra-fine filter
23	Vacuum motor (fan)	32	Ultra-fine filter chamber
		33	Main control board

2.4 Starting up procedure

- Check the filter system (see Section "3.1 Checking the filter system").

2.4.1 Pneumatic structure of tube/hose installation

(See Fig. 4, page 7)

- 1. Establish a hose/tube connection to the dust-generating devices (select a hose length which is a short as possible, maximum length approx. 2 m for each device), see Fig. 4, page 7.
- 2. The hose/tube installation can be connected to 50 mm nozzles (16) (Fig. 3, page 5) of the exhaust air fitting.
- 3. Connect the automatic pneumatic stop valve to the compressed air supply (pneumatic connection (41), see Fig.5, Page 8).
- Note All devices and installation components can be connected to the unit with flexible hoses or rigid plastic tubes (see following examples).







Y-Stück: Ø 50 / Ø 50

Fig. 4 Laying tubing to devices over long distances

1a	90° angle piece Ø 50	7a	Y-piece connection fitting Ø 50
2a	Angle connection fitting Ø 50	9a	Reducer Ø 50 / Ø 45 / Ø 40
3a	PVC hose fitting Ø 50	10a	PVC hose fitting Ø 50 / Ø 45 / Ø 40
4a	Hose/Tube Ø 50	11a	Hose/Tube Ø 50 / Ø 45 / Ø 40
5a	Y-piece Ø 50	12a	PVC hose fitting Ø 50 / Ø 45 / Ø 40
6a	Y-piece connection fitting Ø 50	37	Automatic pneumatic stop valve
1	Dust-generating device no. 1	33	Main board, see Fig. 2
2	Dust-generating device no. 1		



2.4.2 Structure of the electrical installation

- 1. Connect the dust-generating device mains power cable to socket A1 and A2 (see Fig. 5, Page 8).
- Connect the stop valve connection cable to socket B1 and B2. Turn the outer sleeve (39) of the connector (38) to the right to lock the connector in socket B1 and B2 (bayonet lock).
- 3. Establish a connection to the mains power supply (230V/50Hz) with the mains cable provided (socket (13)).



Fig.5 Unit and electrical connections

9	Socket to activate extraction unit via external voltage 9-30V DC	39	Outer connector sleeve with bayonet lock
13	Mains socket 230V/50Hz	40	Solenoid valve
19	Main fuses (2x 16 A / T)	41	Pneumatic connection
16	Connection fittings Ø 50 mm (Fig. 3, Page 5)	47	Pressure reducing valve
37	Automatic pneumatic stop valve	A1	1x socket for dust-generating devices 230 V
38	Connector with cable and solenoid valve socket	A2	1x socket for dust-generating devices 230 V
B1	Stop valve socket no. 1, 230 V, AC	B2	Stop valve socket No. 2, 230 V, AC
C1	1x socket for special control cable to	C2	1x socket for special control cable to activate
	activate the exhaust air fitting.		the exhaust air fitting.
1	Stop valve No. 1	2	Stop valve No. 2
D	Special connection (e.g., milling unit)		

- 4. Activate the main switch (34) (control lamp (35) illuminates green).
- 5. The "Auto" (22) or "Manual" button (23) illuminates green (the last operated button illuminates).
- 6. After pressing the "Manual" button (23) (illuminates green), the extraction unit enters continuous operation mode.





Fig. 6 Panel with control elements

34	Main switch	37	"Ready" control lamp
35	Main switch control lamp (green)	38	"Service" control lamp
36	Air volume controller (potentiometer)	39	"Filter change" control lamp for ultra-fine filter
		40	"Filter change" control lamp for pre-filter

3 Operation

3.1 Checking the filter system

(See Fig. 2 and 3, Page 5)

Caution The single/double-workplace extraction unit D-LE 255 S/D must only be operated with a correctly fitted, undamaged ultra-fine filter (31) and filter bag (11).

- 1. Open the 2x quick-action closures (3) and remove cover (2).
- 2. Ensure that the ultra-fine filter (31) is not damaged and is pressed tightly against the retaining strips (29) on the seal surfaces (24).
- 3. The two M6 nuts (28) should be tightened firmly and evenly.
- 4. The assembly cover (5) must be screwed tight with two knurled-head screws (6).
- 5. The filter bag (11) should be undamaged when inserted in the wire basket (16), see Fig.17, Page 19.
- 6. The plastic connector (10) must sit tightly on the connection fitting (15).
- 7. Clamp the cover (2) firmly with the aid of the two quick-action closures (3)

3.2 Variants of the dust-generating device automatic detection.

(See Figure 5 and 6, Page 8 and 9)

- 1. Extraction unit activation via sockets A1 and A2.
 - a) Connect the dust-generating device(s) to socket A1 and/or A2.



- b) Press and hold the "m" button (45) for 5 sec. Ensure that any connected dust-generating devices are in standby mode.
- c) Measurements are performed every 10 seconds (shown on display). After completing the measurements, the extraction unit is ready for operation.

2. Activation of the extraction unit via special control cable (potential-free contacts).

a) Connect the dust-generation device to socket C1 and/or C2 of the extraction unit by means of a special control cable. The cable (option) can be provided by H+R.

3. Activation of the extraction unit via socket 9.

a) The extraction unit will be activated by applying a 9-30V DC voltage to socket 9.

3.3 Automatic On-Off / Connection of dust-generating devices

The extraction unit is equipped with an electronic On-Off actuator, which reacts to most hand-held pieces and other dust-generating laboratory devices.

Caution The power input (power consumption) of devices to be connected should not exceed **900 Watt per socket A** (A1, A2). The overall power input value of all connected devices should, in total, not exceed**1800 W**.

- 1. Connect the dust-generating devices to sockets A1 and A2 (230 V, AC).
- 2. Connect the automatic stop valves accordingly to sockets B1 and B2 (230 V, AC).
- The "Auto" button illuminates green after the unit is switched on (main switch (34) ON) (see Fig. 6, Page 9).
- Note Please contact our H+R Customer Service Dept. (tel.: +7181/9678-0) if devices other than those we have intended are to be connected.

The extraction unit starts automatically as soon as a connected dust-generating device is activated. The unit stops after a delay of approx. 8 seconds if all connected devices are deactivated.

It is possible to adapt the unit individually if it does not react to a particular dustgenerating device. Please contact the H+R Customer Service Dept. to that end.

3.4 Automatic air volume control

The air volume is increased or decreased to suit the number of dust-generating devices in operation and is independent of the filter contamination degree. The set air volume is then maintained at a constant level by electronic control until the automatic shut-off feature is triggered. The air volume can be altered by pressing button (43) (to reduce the volume) or button (42) (to increase the volume), see Fig.6, Page 9.

3.5 Automatic shut-off and filter change control lamp

(See Fig.6, Page 9)

Note An underpressure sensor triggers the automatic shut-off feature and the "filter change" control lamp (39 or 40) illuminates as soon as the max. permissible filter bag (11) (see Fig.3, Page 5) filling level is reached. The extraction unit and the connected dust-generating devices are switched off.

- 1. The filter bag (11) must be replaced (see Section "6.1 Replacing the filter bag").
- Note The extraction unit can be switched on and off again or the filter bag (11) lightly beaten if the automatic shut-off feature deactivates the unit. The unit can then operate for some time without



changing the filter bag.

- 2. Open the clamp closure (3) and remove the closure cover (2) to lightly beat the filter bag (11).
- The ultra-fine filter should be replaced if the filter change lamp (39) illuminates after the automatic shut-off feature is triggered. See Section "6.3 Cleaning (replacement) of the ultra-fine filter".
 - The pre-filter should be replaced if the filter change lamp (40) illuminates after the automatic shut-off feature is triggered. See Section "6.1 Replacing the filter bag".

3.6 Self test / initialization

(See Fig.6, Page 9)

A self-test is automatically executed (without user intervention) to avoid the clogging of pipes/connecting hoses and ensure that the prescribed air volume is available at all extraction ducts.

Every time the device is switched on, the software automatically verifies whether the selected initialisation interval has been exceeded. If so (factory setting: 5 hours), the self-test is started immediately (but only after the unit is re-started).

Note The self-test can also be performed on demand by holding down the **"Manual"** button; the unit is switched on via the main switch.

During the initialisation phase, all extraction ducts are individually open and vacuumed at full extraction power for 10 seconds. In that period, we total vacuum in the ultra-fine filter chamber is measured and displayed.

If the total vacuum in the ultra-fine filter chambers exceeds the allowable value set in the service menu, the extraction unit is switched off with a fault display.

Note If, after initialisation, allowable parameter values are not held, this is indicated by a flashing of all LEDs (2x red, yellow, green), accompanied by a periodic beep.

Initialisierung	
1 02998	
2	
-	

A) Test of channel no. 1. The pressure drop is displayed continuously



B) Test of channel no.2Pressure loss in channelno. 1 does not exceed the allowablevalue thus the display shows "OK".Channel No. 1 remains open.



"Error" is displayed.

C) End of the self-test *Extraction unit is turned off as a result of an error.*Pressure loss in channel
no. 2 exceeds the allowable value thus

Fig. 7 Self-test procedure

3.7 Notes to monitoring the airflow volume

A warning is issued 10 seconds after the airflow volume falls below the setpoint by 5%.

In this case, the yellow service LED (38) and both red filter change LEDs (39 and 40) flash and the buzzer sounds intermittently.

Caution If the air flow volume falls **below the setpoint for over 60 seconds**, the extraction unit is switched off (see Error No. 4 in the "Error messages" table on page 13)



Note Every time you switch on the extraction unit, the airflow volume control remains off for approximately 30 seconds

3.8 Setting the extraction unit parameters

The extraction unit can be operated under two sets of rules:

- Control variant "Air volume"(L/s)
- Control variant "Air speed" (m/s)

Users can toggle between modes by pressing and holding the "Air "(41) button for five seconds.

Furthermore, the extraction unit can operate in two modes:

- Automatic mode "Auto"
- Manual mode "Manual"

3.8.1 Manual mode (Manual)

In **manual mode**, the extraction unit can only be operated under the "air volume" (L/s) control variant. In this mode, all available extraction channels are open.

Note

Any unnecessary channels can be disabled via the user menu.



Fig.8 Panel in manual mode

After pressing the "Manual" button, the LED (23a) illuminates green. Thus, the extraction unit is put into operation immediately. In manual mode, the "Air" (41a) button LED illuminates as the extraction unit necessarily adopts the **"air volume" (I/s)** control variant.

Set the desired air volume with the controller (36). The set air volume is shown on the display. Air volume is automatically regulated and remains constant regardless of the filter contamination degree.

Note The controller (36) can be used to set the air volume of the fan from 10 l/s up to its maximum value.

3.8.2 Automatic mode (Auto)

In automatic mode, the extraction unit can be operated under two control variants: "Air volume" (I/s) and "Air speed" (m/s)



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Fig. 9 Panel in automatic mode

The LED (22a) illuminates green after pressing the "Auto" button (22). In this mode, the extraction unit is only switched on as the connected external dust-generating device is activated. In automatic mode, the "Air" (41a) button LED will only illuminate if the "Air volume" (I/s) control variant is selected. The "Air" (41a) button LED dims if the control variant "Air speed" (m/s) is selected.

Note Users can toggle between control variants, i.e. "Air volume" (I / s) or "Air speed" (M / s), at will by pressing and holding the "Air" (41) button for 5 seconds.

The total airflow volume (setpoint) in all detection points (extraction funnels) is calculated as the product of the set airflow volume (I/s control variant) and air speed (m/s control variant) by the number of open extraction channels.

Extraction channels are automatically opened or closed via the operating dust-generating device by means of downstream stop valves.

Note

Use the buttons "+" and "-" or the "User menu" to regulate the I/s air basis from 10 I/s to 55 I/s.

Error number	Error type	LED (37) Opera- tion	LED (38) Service	LED (40) Pre-filter	LED (39) Ultra- fine filter	Buzzer
1.	Replace pre-filter	0	0	(((((0	•
2.	Replace ultra-fine filter	0	0	0	••••	•
3.	Excessive total vacuum (In the ultra-fine filter cham- ber)	0	0	•	•	•
4.	Minimum airflow volume is below (by> 5%)	0	••••			A warning signal is issued after 10 sec. The extraction unit is switched off after one minute.
5.	Offset pressure sensors NIO	0	•	0	0	0
6.	Value of the airflow sensor NIO	0	•	0	0	0

4 Error messages



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7.	Interruption in electrical cir- cuit of the motor Fault on the phase-angle control (overcur- rent or no zero crossings)	0	•	0	0	0
8.	Error communicating with phase-angle control	0	•	0	0	0
9.	Error in EEPROM memory	0	•	0	0	0
10.	Error during initialisation		(((((((((((((The extraction unit is switched off. After correcting the error, switch on and reset the extraction unit.
11.	The desired level air- flow volume exceeds max. air volume value of the blower, for example, by con- necting an additional chan- nel.	O 1 m/s 1 m/s Example: A (1st workpl the 2nd ext volume der ceeds the f extraction c and showr seconds.	O 3 0 L / s a ar volume for ace) is set to araction chan mands stand an power by channel 2 is on in black or	O 3 5 L / s r extraction c o 35 l/s. After nel (2nd wor s at 70 l/s. T 15 l/s In this disabled imm the display	O channel activating kplace), air his ex- case, the nediately after 10	● Beep sounds and display shows this message: In- sufficient air vol- ume for additional channel. The addi- tional extraction channel is shown black on the display after 10 seconds. The extraction channel and socket A1 and A2 are im- mediately blocked or de-energized.

O - No signal,● - Continuous signal,◀◀◀◀◀ - Periodic Signal

(with LEDs and buzzer)

5 User menu

(See Fig.6 Page 9)

The user menu allows adjusting the operating parameters and areas of the extraction unit.

Note The user menu is activated by pressing and holding the "MF" (46) button for 5 seconds. The user menu is exited by pressing the "MF" (46) button.

User menu settings						
	Parameter name	Delivery value				
1.	Air basis (I/s)	10 to 60 L/s in 5l increments	20 l/s			
2.	Current threshold 1	0 to 255	215			
3.	Current threshold 2	0 to 255	215			
4.	Extraction channel 1 / Enable or	✓ or X	\checkmark			
	disable					
5.	Extraction channel 2 / Enable or	✓ or X	\checkmark			
	disable					



6.	Hose/tube diameter 1	40, 45, 50, 60 mm	40 mm
7.	Hose/tube diameter 2	40, 45, 50, 60 mm	40 mm
8.	Air basis (m / s)	15 to 50 m/s	20 m/s
9.	Language	De, En, Fr, Es	De
10.	Sensitivity	255	100

Anwend	ermenü	
Luftbasis	(L/s):	20L/s
Freigabe 1:		Ý
Rohr 1:		4 0 mm
Luftbasis	(m/s):	20m/s
Empf. 1:	(153).	100
Abstand links	1:	040
Sprache		De

•

The user menu of the singleworkplace extraction unit consists of only one page.

A) User menu

Anwender	menü	1/2
Luftbasis	(L/s):	20L/s
Freigabe 1:		V.
Freigabe 2:		Ý
Rohr 1:		4 0 mm
Rohr 2:		4 5 mm
Luftbasis	(m/s):	20m/s
Empf. 1:	(153)	100

Anwendermenű 2/2 Abstand links 1: 040 Empl. 2: (044) 200 Abstand links 2: 040 Sprache De

The user menu of the doubleworkspace extraction unit consists of two pages.

A) User menu Page 1

B) User menu Page 2

Fig. 10 User menu - original illustration

5.1 Changing the user menu settings



Fig. 11 User menu operation keys

- Use the keys "m"(45) and "1" (44) to position the cursor on the setting you wish to change.
- Use the keys "+" (42) or "" (43) to change the value as required.
- Air basis (I/s): Desired airflow volume in an extraction channel.
- Enable 1 (2): Enable extraction channel 1, 2, or both. Symbols: "✓"Means Enable, "X" means disable.
- **Tube 1 (2)**: The diameter of the connected hoses (tubes) will be provided to the dust-generating device.
- Air basis (m / s): Desired airflow speed in a tube.
- Recommended 1 (2): Response threshold for extraction unit. The response threshold should be set above the value displayed in parentheses before. All connected dust-generating devices must be in standby mode to define the response threshold correctly.

The point displayed between the value in parentheses and the respond threshold indicates that the start-up signal was issued to the extraction unit.

- Distance to the left: The parameter is possibly redefined after consultation with H+R.
- Language: It is possible to display messages in German, English, French and Spanish.



5.2 Display - Messages and meanings

5.2.1 Display messages for "air volume" (I/s) control variant



A) Two air channels are open (i.e., two stop valves are open)



B) Only one channel is open (i.e., only one stop valve is open the second stop valve is closed)



C) A channel is open (i.e., a stop valve is open and the second is disabled in the user menu)

Fig. 12Display messages in "air volume" (I/s) control variant



Fig. 13 Display message components in "air volume" (I/s) control variant

D 1.	Reference air speed in tube ID Ø48mm	
	(Extraction unit ID of the extraction fitting)	
D 2.	Air channel No. 1 is enabled	The arrow indicates that the connected dust-generating
		device is detected and the extraction unit is opera-
		tional. Simultaneously, the stop valve enables the air-
		flow.
D 3.	Airflow volume in all tubes or hoses (to-	Displays the total airflow volume currently being pro-
	tal) I/s	duced by the blower. If two extraction funnels are ac-
		tive, the air volume will increase to 40 l/s (for 20 L/s air
		basis, see message D5).
D 4.	Air channel No. 2 is disabled	Disabling an air channel is possible only from the user
		menu.
D 5.	Air basis (l/s)	The air volume required for an extraction funnel is set
		in the user menu, e.g. to 20 l/s If two extraction funnels
		are simultaneously active, the air volume will increase
		to 40 l/s, see message D3.
D 6.	Ultra-fine filter contamination degree	Allows a visual assessment of the ultra-fine filter con-
		tamination.
D 7.	Pre-filter contamination degree	Allows a visual assessment of the pre-filter contamina-
		tion.
D 8.	Symbol for pre-filter	
D 9.	Symbol for ultra-fine filter	
D 10.	Channel number	It is possible to connect two workplaces and, thus, two



air channels, channel 1 and channel 2.

5.2.2 Display messages for "air velocity" (m/s) control variant



A) Two Ø40 air channels are open (two stop valves are open). If Ø50 is selected in the second channel, the airflow is increased as if both channels had a Ø50 diameter to maintain 20 m/s in each channel. The display shows Ø50.



B) Only one Ø40 channel is open (only one stop valve is open the second stop valve is closed)



C) A channel is open (only one stop valve is open, the second is disabled in the user menu)

Fig. 14 Display messages for "air velocity" (m/s) control variant



Fig. 15 Display message components for "air velocity" (m/s) control variant

D 2	Air channel No. 1 is active (i.e. there is airflow in the extraction tube).	The arrow indicates that the connected dust-generating device is detected and the extraction unit is opera- tional. Simultaneously, the stop valve has enabled the airflow.
D 6	Ultra-fine filter contamination degree.	Allows a visual assessment of the ultra-fine filter con- tamination.
D 7	Pre-filter contamination degree (filter bags).	Allows a visual assessment of the pre-filter contamina- tion.
D 8	Symbol for pre-filter (filter bags).	
D 9	Symbol for ultra-fine filter.	
D 1(Channel number	It is possible to connect two workplaces. Thus, two air channels, channel 1 and channel 2.
D 11	Diameter of the connected extraction tube (connecting tube ID Ø40mm)	The tube diameter is defined in the user menu.
D 12	2 Measured air speed in a single tube.	Indicates the actual air speed per tube. It corresponds to the air basis (m/s) as per configuration.
D 13	B Extraction tube without airflow	In this case, the stop valve is closed (the dust- generating equipment has not been activated).
D 14	Air basis (m/s)	The desired air velocity in the extraction tube (m/s) is



set in the user menu.	
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6 Cleaning / Maintenance

6.1 Replacing the filter bag

(See Figure 2 and 3 on Page 4 and Page 5)

- 1. Open the 2x quick-action closures (3) and remove cover (2).
- 2. Push away the plastic connector (10) from the nozzle (15) with both hands,
- 3. Close the filter bag (11) with attached plastic cover (17).
- 4. Take the filter bag (11) in the wire basket (12) to the disposal point.



Fig. 16 Removing the filter bag

- CautionThe disposable filter bag should never be emptied and reused as, apart from health considerations, this will lead to malfunctions.CautionCompressed air should not be used to remove any dust present in the filter chamber (20).No foreign objects should reach the extraction channel (26) as otherwise the extraction motor can be damaged.
 - 5. Insert a new filter bag and check the filter system, see section 4.2.

6.2 Inserting the filter bag

(See Fig. 2 and 3, Page 5)

Noto	Disposable - Paper filter bag Item No. 42 015
NOLE	Disposable - Fleece filter bag Item No. 42 303

1. Fold the new filter bag (11) and place it in the wire basket (12) as shown in Figure 17.





Fig. 17 Inserting the filter bag

- 2. Push the new filter bag (11) together with the wire basket (12) into the extraction unit. The filter bag (10) is fitted tightly to the connection fitting (15) in the filter chamber (20) during this procedure.
- 3. Push the plastic fitting (10) firmly against the housing fitting (15).
- 4. Remove the cover (2) from the housing (1) and tighten quick-action closures (3).

6.3 Cleaning (replacement) of ultra-fine filter

(See Fig. 2 and 3, Page 5)

Note	Ultra-fine filter new Item No. 42 250		
	Replacement ultra-fine filter Item No. 42 201		
Note	The ultra-fine filter (31) should be removed and dry-cleaned or replaced after approx. ten filte bag (11) changes.		
	We will gladly clean the ultra-fine filter (31) as part of an replacement, using only filters of dust grade M tested in accordance with DIN EN 335-2-69.		
1.	Open the 2x quick-action closures (3) and remove cover (2).		
2.	Unscrew knurled-head screws (6) and remove cover plate (5).		
3.	Loosen the 2x nuts (28) and lift out the ultra-fine filter retaining strips (29) with slots.		
4.	Remove the ultra-fine filter (31).		
Caution	The sealing surfaces (24) in the ultra-fine filter chamber (32) should be free of dust, as dust can damage the vacuum motor (23).		
	The ultra-fine filter chamber (32) and sealing surfaces (24) should be cleaned by vacuuming. Compressed air should never be used!!		
5.	Insert the cleaned or new ultra-fine filter (31).		
6.	Mount the ultra-fine filter retaining strips (29) on the set screws from above.		
7.	Tighten the 2x M6 nuts (28) firmly and evenly.		

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8. Fit the ultra-fine filter cover (5) and tighten firmly with knurled-head screws (6).



9. Check the filter system, see section "3.1".

Fig. 18 Replacing the fine filter

The vacuum motor (23) should be replaced if the "Service" control lamp (38) illuminates.

The replacement or inspection of the vacuum motor should only be performed by a qualified electrician.

Please observe the "Troubleshooting Checklist" for the extraction system D-LE 255 S/D on any maintenance and service work.

7 Electrical fusing

Note

The entire unit is protected by two fine fuses (main fuse) 16 A/T. Both fuses are held in the fuse compartment (19) of the connector plug housing (13).





Fig. 19 Electrical fusing

8 Settings (short summary) and factory setting values

No.	Function description	Method	Factory setting value
1.	Automatic mode.	Press the "Auto" button (22), LED (22a) illuminates green.	
2.	Manual mode.	Press "Manual" key (23), LED (23a) illumi- nates green.	
3.	Start recognition program.	Press and hold the "m" (45) button for five seconds.	
4.	Switching between "air volume" and "air speed" control variants.	Press and hold the "Air" (41) button for five seconds.	
5.	Start self-test/initialisation manually.	Press and hold the "Manual" (23) button and switch on the extraction unit via the main switch (34).	
6.	Show additional parameter values on the display.	Press the "1" (44) button	
7.	Hide additional parameter values on the display	Switch on/off extraction unit via main switch (34).	
8.	Access user menu.	Press and hold the "MF" (46) button for five seconds.	
9.	Exit user menu.	Press the "MF" (46) button briefly.	
10.	Reposition the cursor in the user menu	Press "m" (45) or "1" (44) button.	
11.	Change parameter value in the user menu	Press "+" (42) or "-" (43) button.	
12.			
13.	Air basis (l/s)	Dto	20 l/s User
14.	Current threshold 1	Dto	215 User
15.	Current threshold 2	Dto	215 User
16.	Channel 1 enabled	Dto	✓ User
17.	Channel 2 enabled	Dto	√ User
18.	Hose/tube diameter 1	Dto	40 mm User
19.	Hose/tube diameter 2	Dto	40 mm User
20.	Air basis (m/s)	Dto	20 mm User
21.	Language	Dto	De User
22.	Sensitivity	Dto	User
23.			
24.			
25.			

(See Figure 9, Page 13)

9 Warranty conditions

This device conforms to current safety regulations and was subjected to extensive testing before leaving the works.

We grant a 12 months guarantee in which we are obliged to carry out all repairs necessary as a result of material or production faults free of charge.

Warranty limitations:

- 1. The guarantee is considered void if repairs are not carried out by specialized dealers or by us.
- 2. Spare parts deliveries made for reasons covered by the guarantee do not lead to an extension of the original guaranty period.
- 3. Incorrect installation (e.g. failure to heed VDE* regulations or written installation instructions).
- 4. Incorrect operation or stress.
- 5. External influences (e.g. transportation damage, damage caused by impacting or blows, damage caused by the effects of weather or other natural phenomena).
- 6. Repairs and alterations not carried out by authorized third parties.
- 7. Unit breakdown resulting from adjustment, alteration or any other attempt to adapt the unit is not considered a material or production fault. This guarantee neither encompasses the costa of such adjustment, alteration or any other attempt to adapt the unit, nor remedying of the resulting damage.
- 8. Normal wear and tear (e.g. spray nozzles, hoses, and including hand-held pieces, union nuts, glass panes, carbon brushes, illumination agents) or damage resulting from incorrect operation is not covered by the terms of guarantee.

In order to provide you with a comprehensive service we would like you to fill out the guarantee return form (enclosed at the beginning of these instructions) and send it to us by fax or letter (window envelope).

Fax no.: 0 71 81/ 73 13 9

🖂			 🖂	Fold here for window envelope
			Designation the machine:	Single/double-workplace dust extraction unit
	Duplicate		Machine type:	D-LE 255 S / D
	Guarantee re	antee return form	Machine no.:	
			Purchase Date:	
			Dealer / Store:	
	Harnisch+Rieth	GmbH bau		
	Postfach 1260	ibuu	Sender:	
	73644 Winterbac	h		
			Date / signature	

10 EC Declaration of Conformity

as stipulated by the EC directive for machines 2006/42/EG

We hereby declare that the design of the machine specified below conforms to basic safety and health requirements of the listed EC directives.

This certificate is no longer valid in the event of modifications being made to the machine which are not approved by us.

NAME OF THE MANUFACTURER.	:	Harnisch+Rieth
Address of the manufacturer	:	Kiiferstralle 14-16, 73650 Winterbach
Designation of the machine	:	Single/double-workplace extraction unit
Machine type:	:	D-LE 255 S/D

The following pertinent EC directives were applied:

EC Machinery Directive (98/37/EC) EC Low Voltage Directive 2006/95/EC

EC EMC Directive 2004/108/EC

The following harmonized standards were applied:

DIN EN ISO 12100	:	Safety of machinery-Part 1, general Gestalltungsleitsetze
DIN EN ISO 14121	:	Safety of machinery-Leitsetze for risk assessment
DIN EN 61 010-1	:	Safety regulations for electrical. Measurement, control, and laboratory use
DIN EN 60204-1	:	Safety of machinery - Electrical equipment of machines (06.2007)
DIN with EN 61 326-1	:	Electric measuring, control, regulation and laboratory use-EMC requirements-Part 1 $$
EN 61000-6-3:	:	Radio interference suppression of electrical equipment and systems radio interference voltage / RFI power (from 09.2007)
DIN EN 55014-2	:	Electromagnetic compatibility Interference immunity, ESD / burst / surge (from 10.1997).
DIN EN 61000-3-2 / 3-3 / A14	:	System feedback / harmonic / flicker (from 03.96).

The following national technical specifications were applied:

DIN EN 60335-2-69 Means for separating health-endangering dusts with recirculation of clean air in working spaces (from 01/2003).

Technical documentation is available.

The operation instructions relating to the machine are also available.

Head of Quality Control

Winterbach, June 7th, 2013