

Technical documentation



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Constant volume dampers KVR

Round design
Airflow regulation



Product manual

Constant volume dampers

KVR

Airflow regulation

Version 1.0.9
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KVR

For maintaining constant air volume in ventilation systems, without additional power supply. New valve design with high control accuracy +/- 10%.

- Made of galvanized steel sheet
- Dimensions range: d100 - d400 [mm]
- electric drive: continuous or two-position regulation
- Recommended airflow velocity from 3 to 8 m/s, at pressure difference $\Delta p > 50$ Pa
- Adjusting required constant amount is done by turning of working screw on the right side of the cover
- Working temperature -20...80 °C
- Relative humidity 5...80% rh
- Constant flow $\pm 10\%$ set value
- Casing airtightness Class C
- Casing insulation 32 mm, more information on the [link!](#)



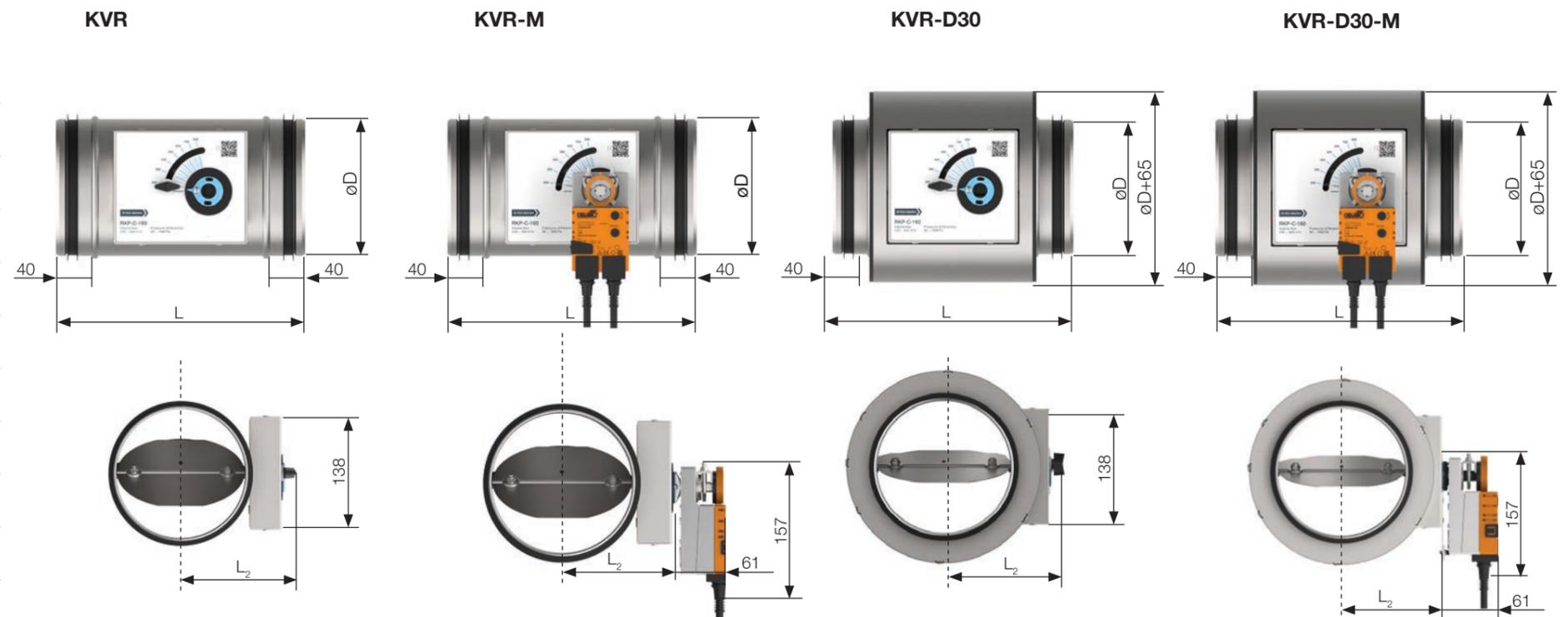
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PRODUCT OVERVIEW

DIMENSIONS

Dn [mm]	Vmin [m³/h]	Vmax [m³/h]	øD [mm]	L [mm]	L ₂ [mm]	m [kg]
80	50	180	78	300	94	1,5
100	100	400	98	300	98	1,7
125	160	550	123	300	110	1,9
160	250	830	158	300	128	2,3
200	330	1250	198	300	148	2,8
250	500	2000	248	400	173	3,2
315	850	3600	313	400	205	4,6
400	1300	4800	398	400	248	5,3





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Belimo motor drive

- motor drives - Belimo (open/close, continuous)
- power supply - AC 230V
- DC 24V
- IP54 degree of protection

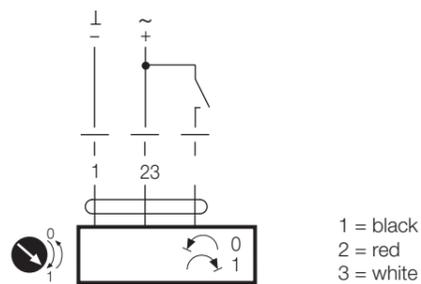
Voltage AC/DC	Type	Control	Torque	Energy consumption	Wire sizing	Weight [kg] approx.	Dimension (F x E)
DC24V	LM24A	3-point	5 Nm	1 W	1.5 VA	0.46	160 x 90
	LM24A-SR	continuous	5 Nm	1 W	2VA	0.40	160 x 90
AC 230V	LM230A	3-point	5 Nm	1,5 W	3,5 VA	0.46	160 x 90
	LM230A-SR	continuous	5 Nm	2 W	4 VA	0.50	180 x 90



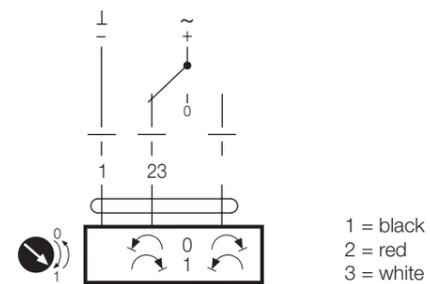
Wiring diagram

OZ -open/close

AC/DC 24 V, open/close

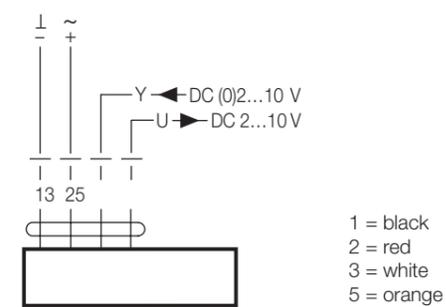


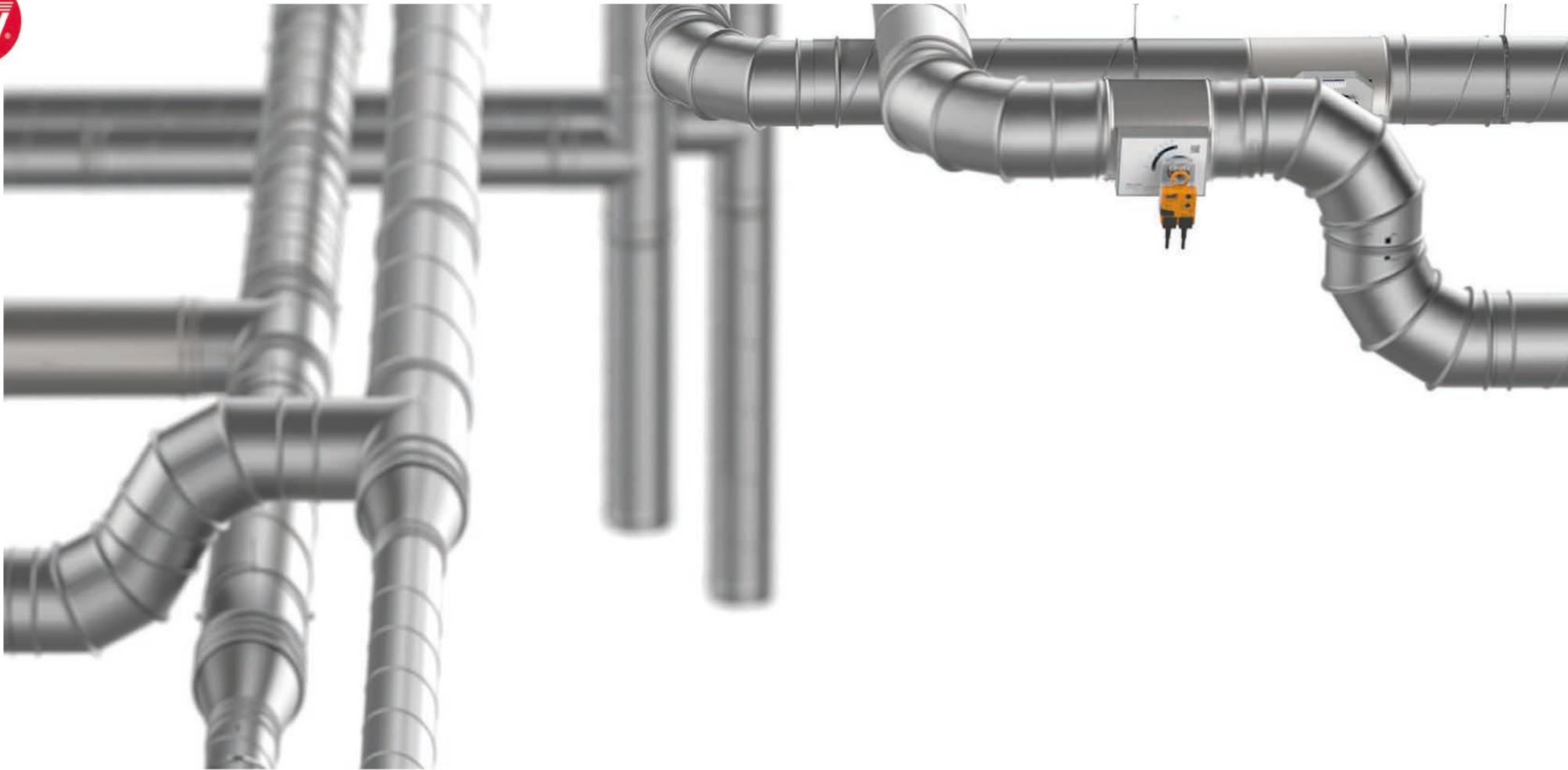
AC/DC 24 V, 3-point



K -continuous

AC/DC 24 V, modulating





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ORDERING KEY

ORDERING KEY

(1) Constant volume damper (2) Dimensions (3) Actuator (4) Insulation

KVR - Ød - R - D30

- (1) **KVR**
- (2) **Ød** - dimensions
- (3) **R** - manual drive
M24-K - motor drive - continuous regulation
M24-OZ - motor drive - two-position regulation
M230-K - motor drive - continuous regulation
M230-OZ - motor drive - two-position regulation
- (4) **D30** - insulation 32 mm

ORDERING KEY MANUAL TO ELECTRIC DRIVE

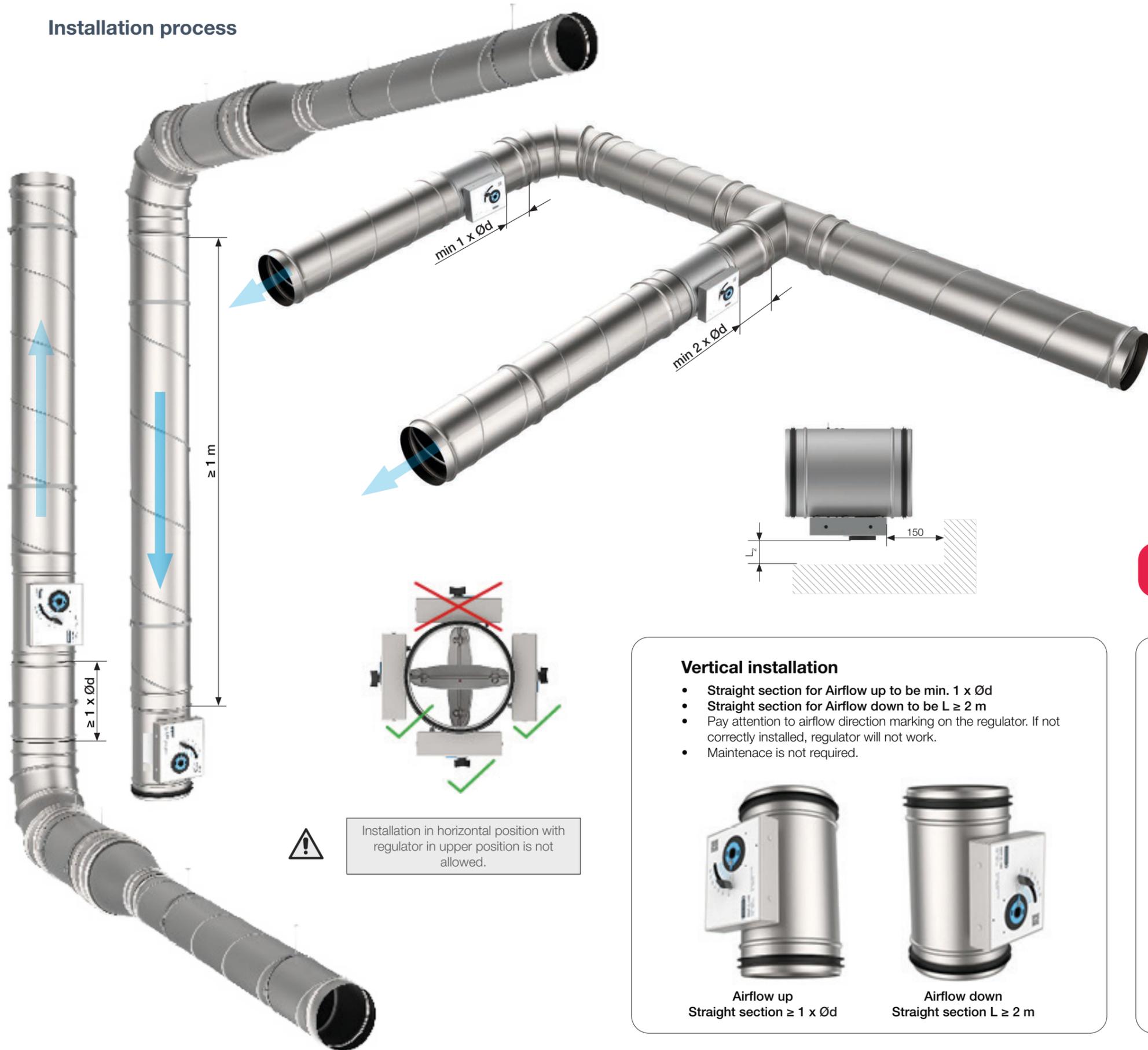
(1) Upgrade Kit

KVR-A-M-KIT

- (1) **KVR-A-M-KIT**
Kit upgrade from manual to electric drive



Installation process



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INSTALLATION

Vertical installation

- Straight section for Airflow up to be min. 1 x Ød
- Straight section for Airflow down to be $L \geq 2 m$
- Pay attention to airflow direction marking on the regulator. If not correctly installed, regulator will not work.
- Maintenance is not required.



Airflow up
Straight section $\geq 1 \times \text{Ød}$



Airflow down
Straight section $L \geq 2 m$

Horizontal installation

- Required length of straight section before regulator is min $L \geq 1 \text{ Ød}$
- Pay attention to airflow direction marking on the regulator. If not correctly installed, regulator will not work.
- Maintenance is not required.





Upgrade from manual to electric drive



1. Install KVR on the duct



2. Unscrew the handle and set the indicator on the black horizontal mark



3. Pierce the product sticker on the X marks and install motor mount with three self-tapping screws; 3,9x13 DIN 7981.



4. Install the motor shaft with two self-tapping screws 3,9x13 DIN 7981. (1,5 Nm)



5. Lock lower part of the actuator on the motor mount and upper part on the motor shaft. The lateral side of actuator should be parallel with the lateral side of mechanism cover



6. Press and hold the black button on the actuator



7. While holding the button, rotate the jaw counter clockwise to the limiter



8. Check that the indicator is in horizontal position, release the button and tighten the screws simultaneously



9. Unscrew the handle, press and hold the black button and set the indicator on the wanted minimal air flow value. In this case we will set it to the 1200 m³/h. Release the button and tighten the handle again



10. Unscrew the screw on the left limiter; push and tighten it under the jaw



11. Unscrew the handle, press and hold the black button and set the indicator on the wanted maximum air flow value. In this case we will set it to the 2600 m³/h. Release the button and tighten the handle again



12. Unscrew the screw on the right limiter; push and tighten it under the jaw



13. Unscrew the handle, press and hold the button, rotate the jaw together with shaft to the previously minimum set value and remove the handle at the end

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INSTALLATION



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Installation process

Air flow/ Voltage



D80		D100		D125		D160		D200		D250		D315		D400	
Air flow [m³/h]	Voltage [V]														
50	0,00	100	0,07	160	0,77	250	2,84	330	2,82	500	2,82	850	2,01	1300	2,77
60	2,50	115	2,81	180	2,96	300	3,49	400	3,42	600	3,44	900	2,61	1500	3,38
70	2,93	150	3,47	200	3,38	350	4,11	500	4,24	800	4,5	1200	3,41	2000	4,61
80	3,26	200	4,43	250	4,25	400	4,6	600	4,99	1000	5,44	1250	4,02	2500	5,5
90	3,53	250	5,34	300	5,02	450	5,12	700	5,72	1200	6,35	1600	4,59	3000	6,31
100	3,74	300	6,32	350	5,82	500	5,61	800	6,36	1400	7,1	1650	5,04	3500	7,03
110	3,99	350	7,37	400	6,44	550	6,1	900	6,94	1600	7,8	2000	5,49	4000	7,7
120	4,24	400	8,41	450	7,16	600	6,56	1000	7,42	1800	8,38	2050	5,97	4500	8,34
130	4,43			500	7,85	650	7,05	1100	7,83	2000	8,9	2400	6,37	4800	8,77
140	4,61			550	8,63	700	7,49	1200	8,31			2450	6,77		
150	4,94					750	7,92					2800	7,1		
160	5,20					800	8,38					2850	7,42		
170	5,51					830	8,66					3200	7,69		
180	5,87											3250	8,02		
												3600	8,36		

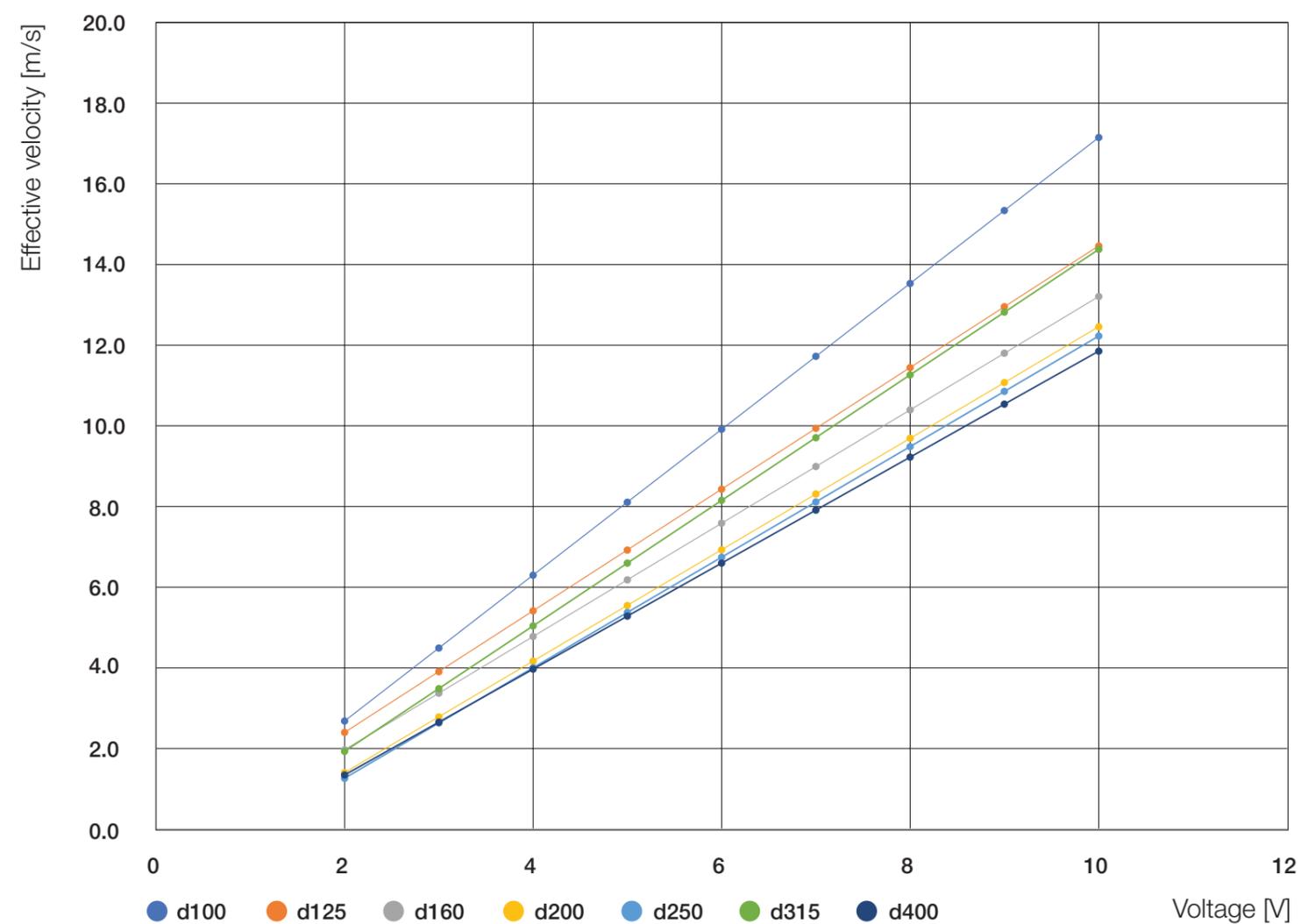


Installation process

Effective air velocity/ Voltage

Voltage [V]	d100	d125	d160	d200	d250	d315	d400
	[m/s]						
2	2,7	2,4	2,0	1,40	1,3	1,9	1,3
3	4,5	3,9	3,4	2,79	2,6	3,5	2,7
4	6,3	5,4	4,8	4,17	4,0	5,0	4,0
5	8,1	6,9	6,2	5,55	5,4	6,6	5,3
6	9,9	8,4	7,6	6,93	6,7	8,2	6,6
7	11,7	9,9	9,0	8,31	8,1	9,7	7,9
8	13,5	11,4	10,4	9,69	9,5	11,3	9,2
9	15,3	13,0	11,8	11,08	10,9	12,8	10,5
10	17,1	14,5	13,2	12,46	12,2	14,4	11,9

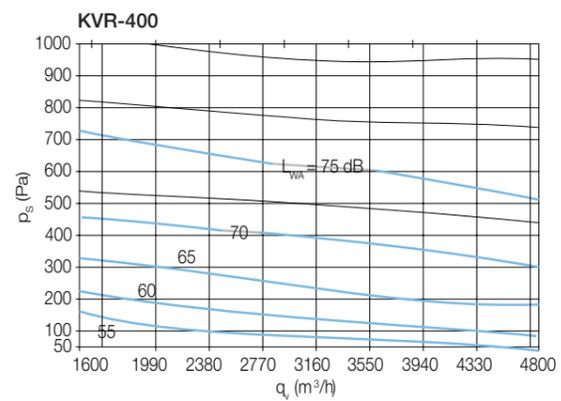
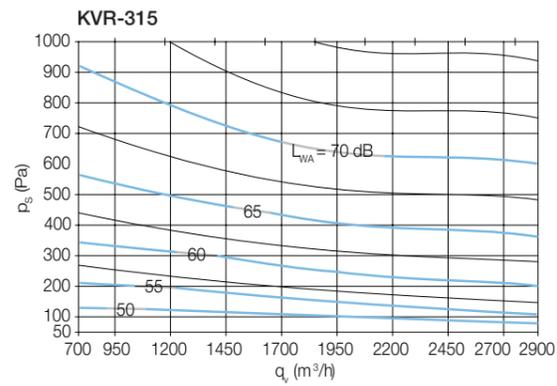
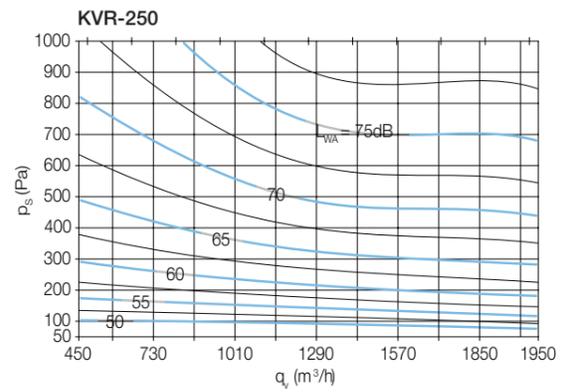
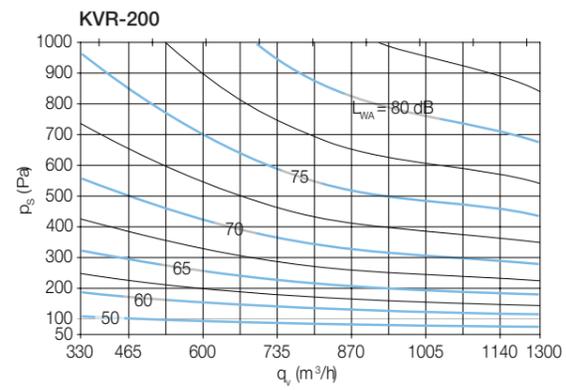
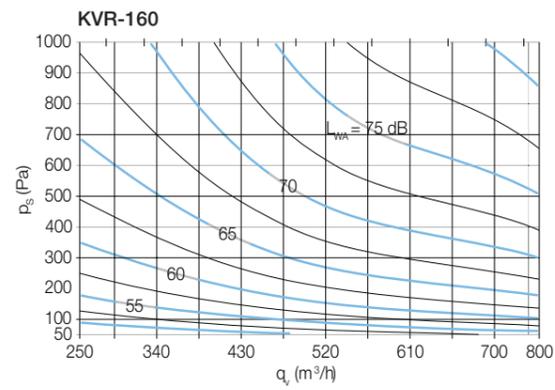
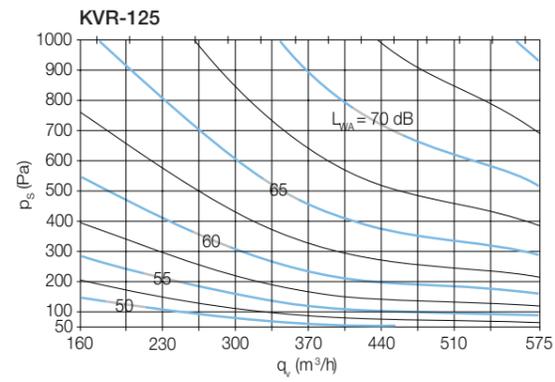
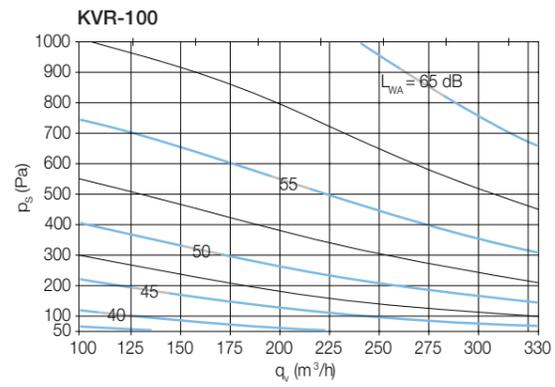
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INSTALLATION

Sound power levels L_{WA} [dB(A)]

Air regenerated noise



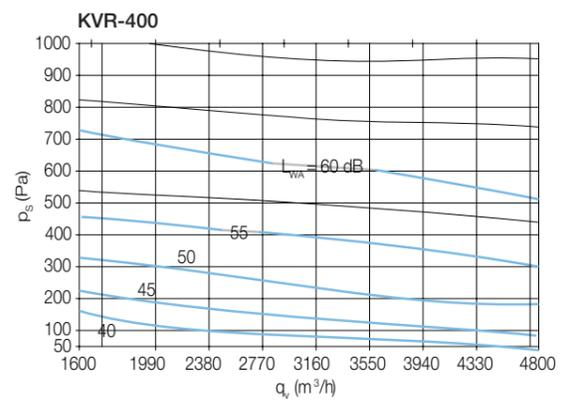
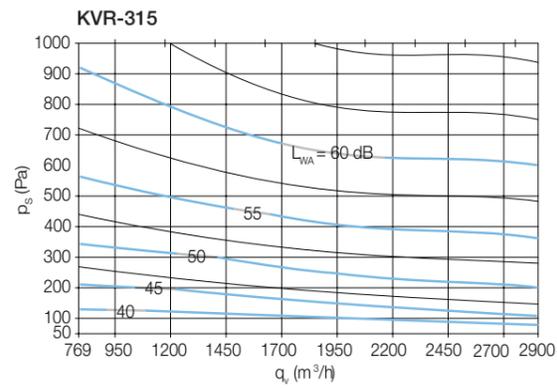
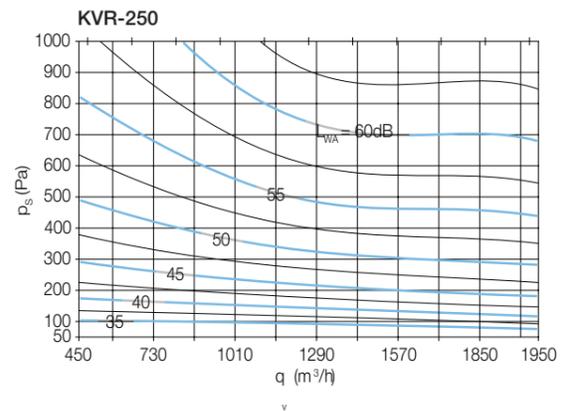
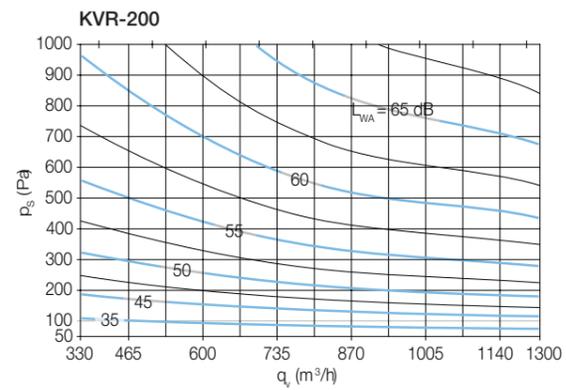
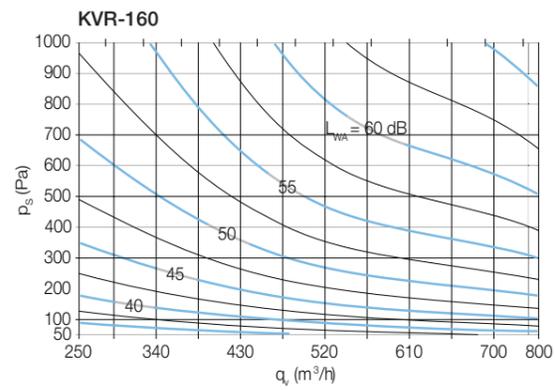
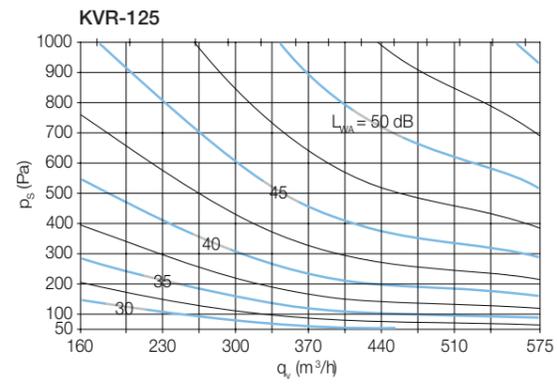
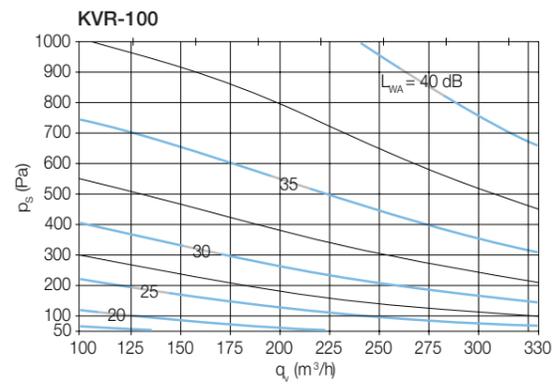
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DIAGRAMS



Sound power levels L_{WA} [dB(A)] Case radiated noise



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MAINTENANCE

TRANSPORT

After arrival, check the damper for transport damage and shortcomings. In case of any damage or shortcomings, immediately contact your supplier.

STORAGE

If the damper is not installed immediately:

- Remove any wrapping.
- Protect damper from dust and contamination.
- Do not expose the CAV damper to the effects of weather - store the damper in a dry place.
- Do not store the unit below -20 °C or above 50 °C.

Please properly dispose of packaging material!

MAINTENANCE AND OPERATION

Constant volume dampers are designed with fully enclosed drive mechanism outside of the duct and as such do not require cleaning and regular maintenance.

However, activation mechanism should be inspected for proper operation on regular basis.

- Provide at least one annual check of the damper
- After each intervention, provide a systematic cleaning of dust
- Cleaning instruction: clean with a sponge, with water or a mild detergent
- Disinfection instruction: spray disinfectant (disinfectant may contain alcohol which is flammable, take precaution to avoid ignition)

It is not permitted to alter the products in any way nor perform any changes to their structure (except for the service procedures described in this manual) without the manufacturer's consent.
Provide at least one annual check of the damper.

The functional test must be carried out in compliance with the basic maintenance principles of the European norms.

COMMISSIONING

- Carefully unpack damper - be careful of sharp edges and do not use excessive force for unpacking
- Inspect the product - check the volume flow damper for damage
- Before commissioning: check the product functions



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AIRFLOW REGULATION

Von Profis für Profis