KÄRCHER

makes a difference

- LIQUID AND SWARF VACUUMS
- INDUSTRIAL VACUUMS
- BUILD-IN VACUUMS
- DEDUSTING SYSTEMS
- STATIONARY VACUUM SYSTEMS
- PRE-SEPARATOR ACCESSORIES

INDUSTRIAL VACUUM SYSTEMS

PROGRAMME 2017

COMPETENCE CENTRE INDUSTRIAL VACUUMING

MADE AND MANUFACTURED IN GERMANY

VDMA

BLUEcoMPETENCE Alliance Member

AREAS OF APPLICATION FOR OUR VACUUM SYSTEMS

AUTOMOTIVE INDUSTRY

Our vacuum systems are ideally suited to improving product quality, for example in maintaining cleanliness in general production, and can be directly integrated into the production process.

PHARMACEUTICAL INDUSTRY

Our safety vacuum cleaners are designed for particularly sensitive areas of the pharmaceutical industry. Typical areas of application are production and industrial cleaning.

PLASTIC AND CHEMICAL INDUSTRY

Industrial vacuums are particularly well suited to cleaning granulate, plastic chips, chemical mixtures and dust from machines and workspaces.

FOOD INDUSTRY

Our explosion-proof vacuum cleaners counteract the risk of dust explosions in the food industry and can be used for a wide range of vacuuming tasks.

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METALWORKING INDUSTRY

Vacuuming of swarf, dust and liquids in all machining processes such as milling, drilling, turning, sawing, grinding, deburring and brushing.

WIND ENERGY

Our Industrial vacuums are well suited to assist inspection works windmills.

AIRCRAFT INDUSTRY

Our Industrial Vacuum solutions are well proven for continuous grinding works on planes.

TEXTILE INDUSTRY

Vacuuming lint, fibres and threads is no obstacle for our special “textile” variants. Consistently high suction power is guaranteed.

OUR VACUUM SYSTEMS HAVE PROVEN THEMSELVES IN MANY DIFFERENT INDUSTRIES AND APPLICATIONS. DAY AFTER DAY. YEAR AFTER YEAR.

The use of a vacuum system achieves significant improvements in work safety and working conditions, as well as product quality and production costs.

Of course, we also offer vacuum solutions for other industrial target groups. We will be happy to advise you.

01

HIGH-QUALITY COMPONENTS, EXTENSIVE EXPERTISE, HIGH REAL NET OUTPUT RATIO, AND PROFESSIONALLY TRAINED STAFF ENSURE THE SUPERIOR QUALITY AND TREMENDOUS LONGEVITY OF OUR TIME-TESTED PRODUCTS – GUARANTEED.

GÜNTER SCHWARZENBACH
Managing Director, Ringler Kärcher Group
Competence Centre Industrial Vacuuming

FROM WELDING…

Our high real net output ratio allows us to provide a flexible response to your requirements.

…TO PAINTING…

We would be happy to provide our vacuum systems in the colours you specify.

…. INSTALLATION…

Made in Germany – optimally structured workflows ensure the highest quality standards.

… 100% OUTPUT CONTROL…

We demand the highest quality of ourselves when it comes to output control.

…ALL THE WAY TO INITIAL START-UP WITH THE CUSTOMER!

The Competence Centre Industrial Vacuuming Ringler Kärcher Group offers complete solutions from a single source, from conceptual design and production to initial start-up with the customer, and as a reliable servicing partner, we go even further.

OUR VACUUM SYSTEMS AT A GLANCE


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OUR INDUSTRIAL VACUUM PRINCIPLE

OUR BRAND-CODE

ANTHRACITE
Chosen Industrial Vacuums of Ringler Kärcher Group with Kärcher branding.

BLUE
Specialized Industrial Vacuuming Solutions with Ringler Kärcher Group branding.

INDUSTRIAL-USE ACCESSORIES

Robust, universally anti-static accessories, ideal for industrial use.

360° WORKING RADIUS

Vacuuming via the drive head allows an optimum working radius whilst keeping the suction hose from getting tangled.

FILTER AND SIEVE SYSTEM

Intelligent filter engineering helps with long work intervals, even in multiple-shift operation.

SOUND-DAMPING

Superior sound-damping ensures that the noise level during operation is always comfortable.

ROBUST DESIGN

1.25-mm wall thickness, stainless steel option, oil-resistant cords and castors, and welded connection technology. Ringler Kärcher Group industrial vacuums are made for tough application conditions.

EASY TO SERVICE

All maintenance components are easily accessible and can be changed quickly when needed.

OUR PICTOGRAMS

2 – 3 h

AVERAGE APPLICATION TIME
Recommended maximum duration of use in hours/day.

EXPLOSION PROTECTION
Machine class is optionally available in the Zone 22 (B22) version.

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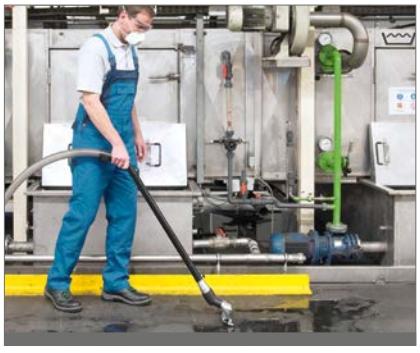
01

LIQUID AND SWARF VACUUMS

VACUUMING OF COARSE PARTICLES AND LIQUIDS

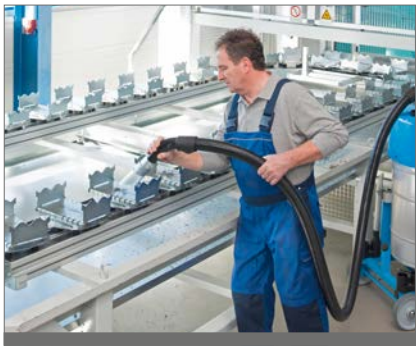
APPLICATION POSSIBILITIES

Liquid and swarf vacuums enable the vacuuming of swarf and emulsions at milling machines and modern machining centres. Anywhere in your plant. Ringler Kärcher Group industrial vacuums are characterised by their compact and robust construction. The extensive accessory line allows versatile application and ensures the best possible cleaning result.



Vacuuming of liquids, emulsions and oils for cleaning workshops

Exchange of cooling lubricants



Swarf and coolant vacuuming for machine and plant maintenance

IVR-L 40/12-1

- Integrated chassis on the waste container
- Compact, robust construction
- Vacuums wet and dry at the same time without filter replacement
- Liquids can be easily drained
- Sound-damped drive head in an AC version

2 – 3 h

FEATURES

- Emptying of filter basket with swarf and liquid separation
- Maintenance cleaning for processing machines
- Care of tools
- Vacuuming of coolants when changing

EASY-TO-HANDLE LIQUID AND SWARF VACUUM FOR CLEANING MACHINES AND PLANTS

Particularly suitable for cleaning machines and plants; simultaneous wet and dry vacuuming; ideally suited for vacuuming solids of all kinds (for example swarf), oil and emulsions, liquids (coolant, water), sludge, granulate and small quantities of dust and dirt.

TECHNICAL DATA

Type of vacuum	IVR-L 40/12-1
Power [kW]	1.3
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60
Vacuum max. [kPa]	23
Air flow rate, max. [Nm³/h]	215
Sound level dB(A)	71
Main filter dust class	L
Filter area [m²]	0.25
Suction nozzle on vacuum cleaner/recommendation [mm]	DN 50/DN 40
Dimensions [mm]	711 x 523 x 960
Waste container volume [l] (max.)	40
Weight [kg]	36
Item number	9.986-054.0

Unit models without accessories

IVR-L 65/12-1 Tc

- Vacuums wet and dry at the same time without filter replacement
- Suitable for general cleaning of plants and machines
- Small, robust vacuum cleaner with tipping container
- Filling level indicator and drainage hose

2 – 3 h

FEATURES

- Container with convenient tipping function for emptying
- Suction hose with 360° rotary elbow for comfortable working around the vacuum unit
- Vacuuming of liquids, emulsions and oils for cleaning workshops
- Trouble-free vacuuming of abrasive media such as metal shavings from cleaning machines

EASY-TO-HANDLE LIQUID AND SWARF VACUUM FOR CLEANING MACHINES AND PLANTS

Particularly suitable for workshops with limited machine storage or in tight spaces. Vacuums coolants, swarf, dirt, water and small amounts of dust.

TECHNICAL DATA

Type of vacuum	IVR-L 65/12-1 Tc	IVR-L 65/12-1 Tc *Jp
Power [kW]	1.2	1.2
Voltage [Ph / V / Hz]	1~/220-240/50-60	1~/200/50-60
Vacuum max. [kPa]	23	23
Air flow rate, max. [Nm³/h]	215	219
Sound level dB(A)	71	69
Main filter dust class	L	L
Filter area [m²]	0.25	0.25
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 40	DN 50/DN 40
Dimensions [mm]	742 x 550 x 1,100	742 x 550 x 1,100
Waste container volume [l] (max.)	65	65
Weight [kg]	44	44
Item number	9.986-055.0	9.987-942.0

Unit models without accessories

IVR-L 100/24-2

- Compact, robust construction with wheels and castors
- Vacuums wet and dry at the same time without filter replacement
- Suitable for general cleaning of plants and machines
- Made of stainless steel, suitable as a wet vacuum cleaner

2 – 3 h

FEATURES

- Residues can be easily removed from tapered areas using a groove nozzle
- A floor nozzle provides optimum support for applications in large areas
- A 40-litre filter basket for easy emptying
- Perfect assistant for daily maintenance cleaning – vacuuming liquids, emulsions and oils

SWARF AND COOLANT VACUUMS

Vacuums swarf of all kinds, including glowing metal shavings, oil and emulsions, liquids (coolants, water), sludge, granulate, deposits, dirt and small amounts of dust.

TECHNICAL DATA

Type of vacuum	IVR-L 100/24-2 Me	IVR-L 100/24-2
Power [kW]	2,4	2,4
Voltage [V]	230	230
Vacuum max. [kPa]	23	23
Air flow rate, max. [Nm³/h]	532	532
Sound level dB(A)	76	76
Main filter dust class	L	L
Filter area [m²]	0,45	0,45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN50/DN50	DN50/DN50
Dimensions [mm]	824 × 657 × 1.268	824 × 657 × 1.268
Waste container volume [l] (max.)	100	100
Weight [kg]	50	51
Item number	9.987-884.0	9.987-883.0

Unit models without accessories

IVR-L 100/24-2 Tc

- Compact, robust construction, with tipping container
- Vacuums wet and dry at the same time without filter replacement
- Suitable for cleaning machines and workshops
- Stainless steel option with external drum pump and overfill protection available

2 – 3 h

FEATURES

- Robust, welded chassis with release device for emptying using the tipping function
- Vacuuming of large quantities of swarf

- Maintenance cleaning for processing machines
- Vacuuming swarf during machine cleaning

SWARF AND COOLANT VACUUMS

Vacuums swarf of all kinds, including glowing metal shavings, oil and emulsions, liquids (coolants, water), sludge, granulate, deposits, dust and dirt.

TECHNICAL DATA

Type of vacuum	IVR-L 100/24-2 Tc Me Dp	IVR-L 100/24-2 Tc Me	IVR-L 100/24-2 Tc
Power [kW]	2.4	2.4	2.4
Voltage [V]	230	230	230
Vacuum max. [kPa]	23	23	23
Air flow rate, max. [Nm³/h]	532	532	532
Sound level dB(A)	76	76	76
Main filter dust class	L	L	L
Filter area [m²]	0.45	0.45	0.45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	838 × 661 × 1,385	838 × 661 × 1,385	838 × 661 × 1,385
Waste container volume [l] (max.)	100	100	100
Weight [kg]	59	55	58
Item number	9.987-887.0	9.987-886.0	9.987-885.0

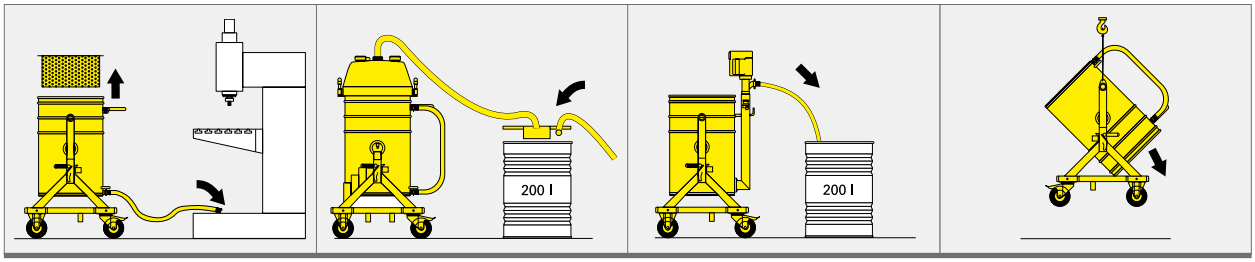
Unit models without accessories

IVR-L 120/24-2 Tc

- Suitable for vacuuming metal shavings, granulate, coolants, sludge and leakage oil from processing machinery
- For cleaning clamping sites and workpieces in the metalworking industry
- Stainless steel option with external drum pump and overfill protection available

FEATURES

- Perfect assistant for vacuuming oil and coolant residues
- Optional electronic overfill protection offers protection while coolant is being changed



- Coolant drainage
- Suction via pre-separator
- Optional: drum pump for pumping out vacuumed liquids
- Crane unloading option available

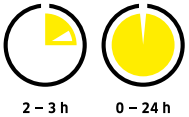
TECHNICAL DATA

Type of vacuum	IVR-L 120/24-2 Tc Me Dp	IVR-L 120/24-2 Tc Me	IVR-L 120/24-2 Tc
Power [kW]	2.4	2.4	2.4
Voltage [V]	230	230	230
Vacuum max. [kPa]	23	23	23
Air flow rate, max. [Nm³/h]	532	532	532
Sound level dB(A)	76	76	76
Main filter dust class	L	L	L
Filter area [m²]	0.45	0.45	0.45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	720 × 811 × 1,656	745 × 720 × 1,656	745 × 720 × 1,656
Waste container volume [l] (max.)	120	120	120
Weight [kg]	73	73	75
Item number	9.987-890.0	9.987-889.0	9.987-888.0

Unit models without accessories

IVR-L 100/30 and RI 321 W/D

- Drive unit remains on the chassis, while the container is released
- Three-phase current and AC drives
- Suitable for use as an industrial vacuum or as a stationary unit on cutting machines



FEATURES

- Waste container 100 l, removable
- Optional: crane transport using crane bracket
- Abrasive coarse particles, including swarf of any kind, are no obstacle
- Vacuuming of granular residues when cleaning workshops

TECHNICAL DATA

Type of vacuum	RI 321 W2 G	RI 321 W2 E	RI 321 D1.5 IE2	IVR-L 100/30	RI 321 D4 IE2
Power [kW]	2.0	2.6	1.5	3.0	4.0
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60	400	400	400
Vacuum max. [kPa]	22	23	20	26	14
Air flow rate, max. [Nm³/h]	360	430	210	315	495
Sound level dB(A)	71	72	60	65	70
Main filter dust class	L	L	L	L	L
Filter area [m²]	0.45	0.45	0.45	0.45	0.45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 70
Dimensions [mm]	850 × 760 × 1,450	850 × 760 × 1,450	850 × 760 × 1,800	850 × 760 × 1,800	850 × 760 × 1,800
Waste container volume [l] (max.)	100	100	100	100	100
Weight [kg]	88	89	124	136	155
Item number	9.987-532.0	9.986-834.0	9.987-548.0	9.986-064.0	9.986-602.0

Unit models without accessories

RI 400 W

- Suitable for vacuuming swarf with coolants, very hot swarf, sludge, granulate and small quantities of dust
- Easy tipping function for emptying by means of a roll-over mechanism and tipping bumper
- Large, lockable emptying flap and separate coolant drainage hose

2 – 3 h

FEATURES

- Drive head can be lifted by hand or by crane
- Tipping function for emptying with integrated tipping bumper
- Vacuuming of large quantities of swarf and coolants
- Vacuuming of large volumes of metal cuttings

HIGH-CAPACITY INDUSTRIAL VACUUM 400

Particularly suitable for vacuuming large quantities of swarf from high-volume machining, as well as coolants, very hot swarf, sludge, granulate and small quantities of dust. Tipping container can be emptied by forklift and transported by crane.

TECHNICAL DATA

Type of vacuum	RI 400 W2E	RI 400 W3G
Power [kW]	2.6	3.0
Voltage [Ph / V / Hz]	1~/220-240/50-60	1~/220-240/50-60
Vacuum max. [kPa]	23	22
Air flow rate, max. [Nm³/h]	430	540
Sound level dB(A)	72	76
Main filter dust class	L	L
Filter area [m²]	0.45	0.45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	1,538 × 802 × 1,201	1,538 × 802 × 1,201
Waste container volume [l] (max.)	200	200
Weight [kg]	225	232
Item number	9.986-603.0	9.986-606.0

Unit models without accessories

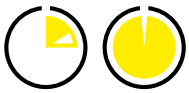
RI 502 W/D

- Used with an upstream filter basket: separates swarf from coolants and oil, optionally available with fine fleece
- The standard version can be fitted with a drum pump for recirculating the coolants back into the machine. Optional external drum pump available
- Maximum filling quantity approx. 200 litres, including mechanical overfill protection

FEATURES

- Robust chassis with fork-lift access
- Filling level indicator and drainage hose

- Integrable filter basket for separating swarf and coolant
- Mechanical overfill protection protects against overfilling



LIQUID VACUUM FOR VACUUMING COOLANTS, SWARF AND SLUDGE

Particularly suitable for vacuuming liquids combined with swarf and sludge from processing machinery.

TECHNICAL DATA

Type of vacuum	RI 502 W2 G	RI 502 W2 E	RI 502 D3 IE2	RI 502 D4 IE2
Power [kW]	2.0	2.6	3.0	4.0
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60	400	400
Vacuum max. [kPa]	22	23	26	14
Air flow rate, max. [Nm³/h]	360	430	315	495
Sound level dB(A)	71	72	65	70
Main filter dust class	L	L	L	L
Filter area [m²]	0.45	0.45	0.45	0.45
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 70
Dimensions [mm]	1,484 × 760 × 1,547	1,484 × 760 × 1,547	1,490 × 760 × 1,920	1,485 × 760 × 1,920
Waste container volume [l] (max.)	200	200	200	200
Weight [kg]	156	157	204	223
Item number	9.986-592.0	9.986-593.0	9.986-594.0	9.987-553.0

Unit models without accessories

Hoses

				Order No.
	**IVR connection hose, type EVA** ● For use with dust and fine, light waste ● DN 40 IVR connection hose only with DN 50/40 reduction ● Includes DN 70 to DN 50 connector	**DN 40**	3 m	9.988-088.0
			5 m	9.988-089.0
		DN 50	3 m	9.988-090.0
			5 m	9.988-091.0
	**IVR connection hose, type A / PVC** ● For use with dust and fine, light waste ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m	6.907-310.0
			5 m	6.907-311.0
		DN 50	3 m	6.907-312.0
			5 m	6.907-313.0
	● Includes DN 70 to DN 50 connector	**DN 50**	3 m	6.907-294.0
			5 m	6.907-295.0
	**IVR connection hose, type B** ● For use with steel shavings, granulate, liquids ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m	9.981-846.0
			5 m	9.981-847.0
	**IVR connection hose, type C** ● For use with steel shavings, granulate, liquids	**DN 50**	3 m	9.981-800.0
			5 m	9.981-801.0
	**IVR connection hose, type D/PU** ● For use with oil, solvents, tri, fine swarf, liquids ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m	6.907-314.0
			5 m	6.907-315.0
		DN 50	3 m	6.907-316.0
			5 m	6.907-317.0
	● Includes DN 70 to DN 50 connector	**DN 50**	3 m	6.907-300.0
			5 m	6.907-301.0
	**IVR connection hose, type G/ME-PU** ● For use with steel shavings, granulate, liquids ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m	6.907-318.0
			5 m	6.907-319.0
		DN 50	3 m	6.907-320.0
			5 m	6.907-321.0
	● Includes DN 70 to DN 50 connector	**DN 50**	3 m	6.907-306.0
			5 m	6.907-307.0
	**Reducer** ● For 115° connecting elbow and DN 40 connection hose	**DN 50/40**		6.902-179.0
	**Bend** ● Screw connection	**DN 40**		6.902-202.0
		DN 50		6.902-201.0

» Additional accessory options can be found in our separate accessories catalogue.

	IVR-L 40/12-1	IVR-L 65/12-1 Tc	IVR-L 100/24-2 + variants	IVR-L 100/24-2 Tc + variants	IVR-L 120/24-2 Tc + variants	IVR-L 100/30
	●	●	●	●	●	
	●	●	●	●	●	
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			●	●	●	

Hoses

				Order No.
	**Suction hose unit, type EVA** ● For use with dust and fine, light waste ● With 115° connection elbow and 45° handle ● Electrically conductive	**DN 40**	3 m	9.988-412.0
			5 m	9.988-413.0
		DN 50	3 m	9.988-414.0
			5 m	9.988-415.0
	**Suction hose unit, type A** Lightweight PVC hose with textile reinforcement and wire coil ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: 0°C to +85°C ● For use with dust and fine, light waste	**DN 40**	3 m	9.981-856.0
			5 m	9.981-857.0
		DN 50	3 m	9.981-815.0
			5 m	9.981-816.0
		DN 70	3 m	9.981-863.0
			5 m	9.981-864.0
	**Suction hose unit, type B** Flexible steel hose with PU sheathing ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 40**	3 m	9.981-860.0
			5 m	9.981-861.0
	**Suction hose unit, type C** Flexible steel hose with Perbunan-C sheathing ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 50**	3 m	9.981-796.0
			5 m	9.981-798.0
		DN 70	3 m	9.981-865.0
			5 m	9.981-866.0
	**Suction hose unit, type D** PU hose with concealed wire coil, smooth interior, extremely abrasion resistant, oil- and weather-resistant ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +80°C ● For use with oil, solvents, tri, fine swarf, liquids	**DN 40**	3 m	9.981-858.0
			5 m	9.981-859.0
		DN 50	3 m	9.981-817.0
			5 m	9.981-818.0
		DN 70	3 m	9.981-867.0
			5 m	9.981-868.0
	**Suction hose unit, type G** Flexible, PU-sheathed steel hose, microbe-resistant, hydrolysis-resistant ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 50**	3 m	9.981-820.0
			5 m	9.981-821.0
	**115° connecting elbow** ● Connecting elbow with external taper for extension hose (see p. 57)	**DN 50**		9.986-213.0
	**Reducer** DN 40 connector for 115° connecting elbow and extension hose	**DN 50/40**		6.902-179.0
	**90° connecting elbow** Connecting elbow with external taper for extension hose	**DN 70**		9.981-313.0

» Additional accessory options can be found in our separate accessories catalogue.

	RI 321 W2G	RI 321 W2E	RI 321 D 1.5 IE2	RI 321 D4 IE2	RI 400 W2E	RI 400 W3G	RI 502 W2G	RI 502 W2E	RI 502 D 3.0 IE2	RI 502 D4 IE2
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Nozzles

				Order No.
	**Crevice nozzle, PP** ● Slot width 47 mm		**DN 40**	9.988-116.0
			DN 50	9.988-117.0
	**Flexible nozzle**	PU	**DN 40**	6.902-197.0
		Silicone	**DN 50**	9.988-401.0
		PU	**DN 50**	6.902-196.0
		PU	**DN 70**	6.902-198.0
	**Groove nozzle, sheet metal**	Slot width 17 mm, zinc-coated	**DN 50**	9.981-442.0
		Slot width 25 mm, zinc-coated	**DN 50**	9.981-465.0
		Slot width 30 mm, zinc-coated	**DN 70**	9.981-444.0
	**Wide nozzle, cast aluminium** ● Nozzle width 150 mm		**DN 40**	6.902-188.0
			DN 50	6.902-187.0
	**Wilde nozzle silicone** ● Connection stainless steel, food-grade		**DN 40**	9.988-118.0
			DN 50	9.988-119.0
	**Long-shafted groove nozzle 315 mm** ● Rubber, black ● Suction diameter of 10-30 mm possible by cross-cutting		**DN 40**	6.902-200.0
			DN 50	6.902-199.0
	**Flexible nozzle** ● With rubber tip	Diameter nozzle 30 mm	**DN 40**	9.981-420.0
		Diameter nozzle 30 mm	**DN 50**	9.981-421.0
		Diameter nozzle 48 mm	**DN 70**	9.981-422.0
	**Flexible groove nozzle** ● zinc-coated	Slot width 13 mm	**DN 40**	9.981-423.0
		Slot width 13 mm	**DN 50**	9.981-424.0
		Slot width 20 mm	**DN 50**	9.981-425.0
	**Extension tube** ● Suitable for all nozzles and floor nozzles	750 mm, colored steel	**DN 40**	6.902-182.0
		850 mm, colored steel	**DN 50**	6.902-181.0
		750 mm, colored steel	**DN 70**	9.981-910.0
		750 mm, stainless steel	**DN 50**	9.981-910.0
	**Floor nozzle, 370 mm** ● With hinge and height-adjustable rollers	370 mm	**DN 40**	6.902-185.0
		370 mm	**DN 50**	6.902-184.0
		370 mm, stainless steel	**DN 50**	9.988-115.0
		500 mm	**DN 50**	6.902-186.0
	**Squeegee set, oil-resistant**	With profile strip for floor nozzle,370 mm		9.981-914.0
		With profile strip for floor nozzle,500 mm		9.981-915.0
	**Brush strip set, 120 mm**	With profile strip for floor nozzle,370 mm		6.902-215.0
		With profile strip for floor nozzle,500 mm		9.980-764.0
	**Filter basket made of 1.5-mm perforated sheet metal** ● 100% stainless steel	40-l capacity		9.980-849.0
		20-l capacity		9.980-852.0
	**Fine fleece** ● Filter bag with clamping ring, material: polyester	For 40-l filter basket		9.981-048.0
	**Float insert**	for RI 80, RI 100, RI 300, RI 502		9.982-117.0
		for RI 020, RI 030		9.982-118.0

» Additional accessory options can be found in our separate accessories catalogue.

RI 020 W1E-N	RI 030 W1E-N	RI 030 W2G-N	RI 80 W2G	RI 80 W2E	RI 100 W2G	RI 100 W2E	RI 300 W2G	RI 300 W2E	RI 321 W2G	RI 321 W2E	RI 321 D 1,5 IE2	RI 321 D 3,0 IE2	RI 321 D4 IE2	RI 400 W2E	RI 400 W3G	RI 502 W2G	RI 502 W2E	RI 502 D 3,0 IE2	RI 502 D4 IE2
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02

INDUSTRIAL VACUUMS

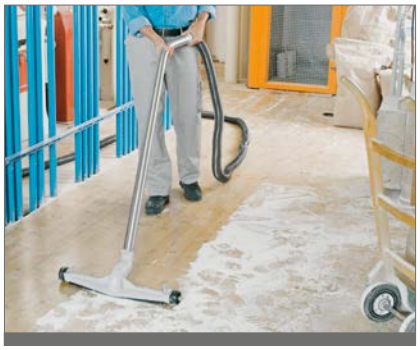
FOR VACUUMING
ALL TYPES OF DUST

APPLICATION POSSIBILITIES

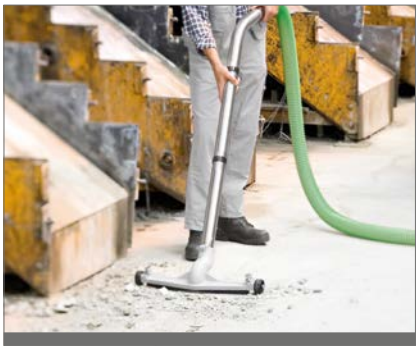
For general cleaning in workshops and industrial operations, suitable for vacuuming carcinogenic dusts. Our industrial vacuums offer high-quality filter engineering for a long service life and are available in filter categories L, M and H, with a degree of separation of up to 99.997%. The vacuums in this product group have removable waste containers.

Every vacuum cleaner offers an extensive accessory line to ensure the best possible cleaning power for every requirement.

Vacuuming coarse particles, dust and small amounts of fluid for general cleaning in workshops



Vacuuming food powders, such as flour, with H filter and zone 22 version



Vacuuming mineral residues, for example concrete

IVR 35/20-2 Pf Me

- Vacuum cleaner suitable for vacuuming fine dusts
- Use in production facilities and warehouses
- Easy, effective filter cleaning for a long filter service life
- Pocket filter with welded seams for efficient, uninterrupted vacuuming

2 – 3 h

FEATURES

- Convenient emptying with the removable waste container
- High-quality pocket filter allows vacuuming of fine dusts
- Shaker lever for effective filter cleaning
- Vacuuming food residues during maintenance cleaning, for example in industrial roasting plants

INDUSTRIAL VACUUMS WITH MORE EFFICIENT FILTER TECHNOLOGY

For general workshop and industrial cleaning. The industrial vacuum has impressively compact dimensions and high-quality filter engineering. Handling is as simple as ever; the waste container can be detached and removed.

TECHNICAL DATA

Type of vacuum	IVR 35/20-2 Pf Me
Power [kW]	2.0
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60
Vacuum max. [kPa]	22
Air flow rate, max. [Nm³/h]	360
Sound level dB(A)	70
Main filter dust class	M
Filter area [m²]	1.4
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50
Dimensions [mm]	616 × 740 × 1,105
Waste container volume [l] (max.)	36
Weight [kg]	58
Item number	9.986-065.0

Unit models without accessories

RI 131 W

- Vacuum cleaner suitable for vacuuming fine dusts
- Use in production facilities and warehouses
- Simple, effective filter cleaning
- Long filter service life, washable filters
- Pocket filter for efficient and uninterrupted vacuuming

FEATURES

- Shaker lever for effective filter cleaning

- Robust welded construction for heavy-duty use

- Optional: wide nozzle

- The RI 131 can cope with all workshop cleaning tasks

INDUSTRIAL VACUUMS WITH MORE EFFICIENT FILTER TECHNOLOGY

For general workshop and industrial cleaning. Pocket filter with manual filter cleaning, suitable for vacuuming hazardous dusts. Removable waste container.

TECHNICAL DATA

Type of vacuum	RI 131 W2 G	RI 131 W2 E	RI 131 W3 G
Power [kW]	2.0	2.6	3.0
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60
Vacuum max. [kPa]	22	23	22
Air flow rate, max. [Nm³/h]	360	430	540
Sound level dB(A)	71	72	76
Main filter dust class	M	M	M
Filter area [m²]	1.75	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/50	DN 50/50	DN 50/50
Dimensions [mm]	825 × 709 × 1,193	825 × 709 × 1,193	825 × 709 × 1,281
Waste container volume [l] (max.)	40	40	40
Weight [kg]	78	79	82
Item number	9.987-097.0	9.986-598.0	9.987-554.0

Unit models without accessories

RI 331 W

- Up to three filter stages (tangential intake, pocket filter and absolute filter)
- Sound-damped drive head in AC version
- Efficient filter and separation technology, also suitable for fine and problematic dusts

FEATURES

- High-quality pocket filter for optimum separation efficiency, very long-lasting
- Optional: H14 absolute filter for carcinogenic dusts with 99.995% degree of separation (see EN 60335-2-69)

- 50-l mobile waste container which can be lowered
- A PE bag with downholder and pressure compensation hose is used for low-dust emptying

INDUSTRIAL VACUUMS WITH MORE EFFICIENT FILTER TECHNOLOGY

For vacuuming general and carcinogenic dusts, particularly hazardous carcinogenic substances and various types of fine and problematic dust.

TECHNICAL DATA

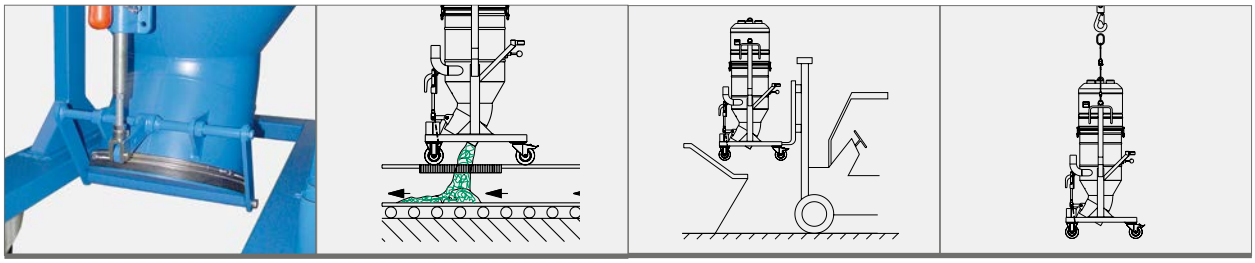
Type of vacuum	RI 331 W2 G	RI 331 W2 E	RI 331 W3 G
Power [kW]	2.0	2.6	3.0
Voltage [Ph / V / Hz]	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60
Vacuum max. [kPa]	22	23	22
Air flow rate, max. [Nm³/h]	360	430	540
Sound level dB(A)	71	72	76
Main filter dust class	M	M	M
Filter area [m²]	1.75	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/50	DN 50/50	DN 50/50
Dimensions [mm]	855 × 760 × 1,340	855 × 760 × 1,340	855 × 760 × 1,426
Waste container volume [l] (max.)	50	50	50
Weight [kg]	94	95	102
Item number	9.987-099.0	9.987-100.0	9.987-574.0

Unit models without accessories

RI 311 W

- Suitable for free-flowing and heavy process media, includes pocket filter for fine dust
- Transport with forklift or crane
- Empty heavy media into underfloor conveyor or container by opening the emptying flap without removing the drive head

FEATURES



- Waste container, 100-l capacity, with emptying flap and hand lever lock
- Emptying into underfloor conveyor
- Emptying with forklift
- Emptying with crane

VACUUMS FOR GREY CAST IRON, SAND AND BLASTING MEDIA

Extremely robust industrial vacuum designed for vacuuming heavy media such as sand, grey cast iron and blasting media, for example in foundries.

TECHNICAL DATA

Type of vacuum	RI 311 W2 G	RI 311 W2 E
Power [kW]	2.0	2.6
Voltage [Ph / V / Hz]	1~/220-240/50-60	1~/220-240/50-60
Vacuum max. [kPa]	22	23
Air flow rate, max. [Nm³/h]	360	430
Sound level dB(A)	71	72
Main filter dust class	M	M
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/50	DN 50/50
Dimensions [mm]	880 × 714 × 1,654	880 × 714 × 1,655
Waste container volume [l] (max.)	100	100
Weight [kg]	116	117
Item number	9.987-098.0	9.986-844.0

Unit models without accessories

RI 332 W

- Can be used for manual vacuuming or as a stationary vacuum cleaner
- Available in filter classes L and M
- 100-l waste container, removable, with quick release, dust collection bag, and pressure compensation hose

2 – 3 h

FEATURES

- 100-l mobile steel waste container which can be lowered
- Waste container, 100-l, removable
- High-quality pocket filter
- Suitable for dusts and swarf in metalworking and other industries

INDUSTRIAL VACUUMS FOR LARGE QUANTITIES OF DUST

For vacuuming general and hazardous dusts, as well as fine dust.

TECHNICAL DATA

Type of vacuum	RI 332 W2 G-M	RI 332 W2 E-M
Power [kW]	2.0	2.6
Voltage [Ph / V / Hz]	1~/220-240/50-60	1~/220-240/50-60
Vacuum max. [kPa]	22	23
Air flow rate, max. [Nm³/h]	360	430
Sound level dB(A)	71	72
Main filter dust class	M	M
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	915 × 760 × 1,646	915 × 760 × 1,646
Waste container volume [l] (max.)	100	100
Weight [kg]	100	101
Item number	9.987-555.0	9.987-556.0

Unit models without accessories

IVR 40/15 and IVR 40/30

- Suitable for vacuuming fine dusts and for use as a stationary unit
- Use in production facilities
- Direct-drive side channel blower, suitable for vacuuming in multiple-shift operation

0 – 24 h

FEATURES

- High-quality pocket filter
- Low-dust emptying, removable waste container with PE bag
- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

INDUSTRIAL VACUUM WITH MORE EFFICIENT FILTER ENGINEERING

For general workshop and industrial cleaning. Pocket filter with manual filter cleaning, suitable for vacuuming hazardous dusts. Removable waste container. Suitable for multiple-shift operation as well as for use in dust explosion zone 22 (B1).

TECHNICAL DATA

Type of vacuum	IVR 40/15	IVR 40/30
Power [kW]	1.5	3.0
Voltage [V]	400	400
Vacuum max. [kPa]	20	26
Air flow rate, max. [Nm³/h]	210	315
Sound level dB(A)	60	65
Main filter dust class	M	M
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	825 × 709 × 1,520	825 × 709 × 1,520
Waste container volume [l] (max.)	40	40
Weight [kg]	107	126
Item number	9.986-066.0	9.986-067.0

Unit models without accessories

IVR 50/40 and RI 331 D

- Sound-damped three-phase current drive unit with direct-drive side channel blower
- Wear-resistant, suitable for multiple-shift operation
- High-quality filter engineering in class M , available optionally up to H , for respirable airborne dust particles

FEATURES

- Optional: H14 absolute filter for carcinogenic dusts with 99.995% degree of separation (see EN 60335-2-69)
- Vacuuming hazardous dusts in the pharmaceutical industry

- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

INDUSTRIAL VACUUM (IS) B1, EX (OPTIONAL)

For vacuuming general and carcinogenic dusts, as well as particularly hazardous carcinogenic substances. Suitable for use in dust explosion zone 22 (B1), for toxic substances and dusts.

TECHNICAL DATA

Type of vacuum	RI 331 D1.5 IE2-IS-M	RI 331 D1.5 IE2-IS-H	RI 331 D3 IE2-IS-M	RI 331 D3 IE2-IS-H	IVR 50/40	RI 331 D4 IE2-IS-H
Power [kW]	1.5	1.5	3.0	3.0	4.0	4.0
Voltage [V]	400	400	400	400	400	400
Vacuum max. [kPa]	20	20	26	26	14	14
Air flow rate, max. [Nm³/h]	210	210	315	315	495	495
Sound level dB(A)	60	60	65	65	70	70
Main filter dust class	M	H	M	H	M	H
Filter area [m²]	1.75	1.75 (M)/3 (H)	1.75	1.75 (M)/3 (H)	1.75	1.75 (M)/3 (H)
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 70	DN 50/DN 70
Dimensions [mm]	855 × 760 × 1,700	855 × 760 × 1,985	855 × 760 × 1,700	855 × 760 × 1,985	855 × 760 × 1,790	855 × 760 × 2,085
Waste container volume [l] (max.)	50	50	50	50	50	50
Weight [kg]	130	149	142	161	161	180
Item number	9.986-841.0	9.987-557.0	9.986-842.0	9.987-558.0	9.986-068.0	9.987-559.0

Unit models without accessories

New

RI 40 MF | RI 50 MF

- Special models: Approriate to absorb of flammable dust
- Usage in non-potentially explosive atmosphere areas

- RI 40/26-2 M F

2 – 3 h

- RI 50/26-2 M F

2 – 3 h

- RI 50

0 – 24 h

- Approriate to absorb of flammable dust
- Continuously status control via differential pressure control
- Dust filter class “M”
- Control filter class “L”
- Antistatic version
- Internal encapsulation of explosible dust-air mix

TECHNICAL DATA

Type of vacuum	RI 40/26-2 M F	RI 50/26-2 M F	RI 50/15 M F	RI 50/30 M F	RI 50/40 M F
Power [kW]	2,6	2,6	1,5	3,0	4,0
Voltage [V]	230	230	400	400	400
Vacuum max. [kPa]	23	23	20	26	14
Air flow rate, max. [Nm³/h]	430	430	210	315	495
Sound level dB(A)	72	72	60	65	70
Main filter dust class	M	M	M	M	M
Filter area [m²]	1,75	1,75	1,75	1,75	1,75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN50/DN50	DN50/DN50	DN50/DN50	DN50/DN50	DN50/DN70
Dimensions [mm]	825 x 709 x 1.193	855 x 760 x 1.340	855 x 760 x 1.700	855 x 760 x 1.700	855 x 760 x 1.790
Waste container volume [l] (max.)	40	40	50	50	50
Weight [kg]	79	95	130	142	161
Item number	9.988-141.0	9.988-142.0	9.988-143.0	9.988-145.0	9.988-146.0

Unit models without accessories

Appropriate suction hose

Type F as suction hose as with connecting bend 115° and handle

- PU hose with concealed wire coil, electrically conductive
- smooth interior
- Temperature range: -10°C to 60°C

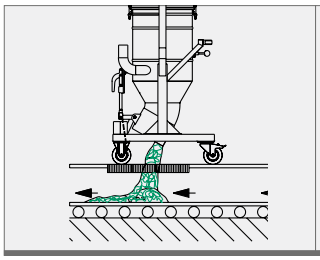
DN 50	3 m	9.981-842.0
DN 50	5 m	9.981-843.0

RI 311 D

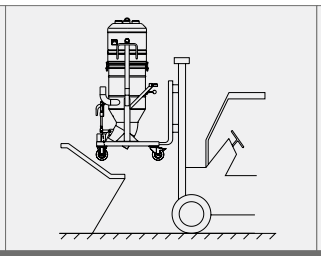
- Manually operated emptying flap for easy emptying of heavy media into underfloor conveyors or skips
- Chassis with forklift access or crane transport
- The drive does not need to be removed for emptying

0 – 24 h

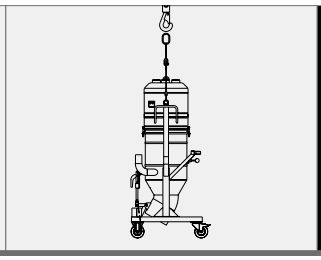
FEATURES



- Emptying into underfloor conveyor



- Emptying with forklift



- Emptying with crane

- Reduced running costs due to energy efficient IE2 turbine

VACUUMS FOR GREY CAST IRON, SAND AND BLASTING MEDIA

Extremely robust industrial vacuum designed for vacuuming heavy media such as sand, grey cast iron and blasting media, for example in foundries.

TECHNICAL DATA

Type of vacuum	RI 311 D3 IE2	RI 311 D4 IE2
Power [kW]	3.0	4.0
Voltage [V]	400	400
Vacuum max. [kPa]	26	14
Air flow rate, max. [Nm³/h]	315	495
Sound level dB(A)	65	70
Main filter dust class	M	M
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 70
Dimensions [mm]	880 x 714 x 1,980	880 x 714 x 2,100
Waste container volume [l] (max.)	100	100
Weight [kg]	164	183
Item number	9.986-845.0	9.986-846.0

Unit models without accessories

IVR 100/40 and RI 332 D

- Sound-damped three-phase current drive unit with direct-drive side channel blower
- Wear-resistant, suitable for multiple-shift operation
- High-quality class M filter engineering

FEATURES

- Suitable for vacuuming large quantities of dust-swarf conglomerations
- Graphite vacuuming on brake discs during customised painting

- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

INDUSTRIAL VACUUMS FOR LARGE QUANTITIES OF DUST

For vacuuming general and hazardous dusts. Suitable for use in dust explosion zone 22 (B1 optional).

TECHNICAL DATA

Type of vacuum	RI 332 D1.5 IE2-IS-M	RI 332 D3 IE2-IS-M	IVR 100/40
Power [kW]	1.5	3.0	4.0
Voltage [V]	400	400	400
Vacuum max. [kPa]	21	26	14
Air flow rate, max. [Nm³/h]	210	315	495
Sound level dB(A)	60	65	70
Main filter dust class	M	M	M
Filter area [m²]	1.75	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 70
Dimensions [mm]	915 × 760 × 2,000	915 × 760 × 2,000	915 × 760 × 2,270
Waste container volume [l] (max.)	100	100	100
Weight [kg]	136	148	167
Item number	9.986-847.0	9.986-848.0	9.986-069.0

Unit models without accessories

IVS 100

- Universal, powerful vacuum cleaner for manual as well as for stationary applications
- Innovative control concept with soft start (at 5,5 and 7,5 kW), IE 2 turbine and optional remote control
- Comfortable manual filter cleaning through effective horizontal power transmission
- 100 l waste container with ergonomic handle or versions with time-saving Longopac disposal system
- Comfortable handling with clipable accessory holder, big storage area, hose and cable clamps

FEATURES

- Optional remote control, can be upgraded anytime
- Ergonomic horizontal filter cleaning system
- Multiple accessory holders
- Time-saving Longopac disposal system

TECHNICAL DATA

Type of vacuum	IVS 100/40	IVS 100/55	IVS 100/75	IVS 100/40 Lp	IVS 100/55 Lp	IVS 100/75 Lp
Power [kW]	4,0	5,5	7,5	4,0	5,5	7,5
Voltage [V]	400	400	400	400	400	400
Vacuum max. [kPa]	15	25	36	15	25	36
Air flow rate, max. [Nm³/h]	500	500	536	500	500	536
Sound level dB(A)	72	72	72	72	72	75
Main filter dust class	M	M	M	M	M	M
Filter area [m²]	2,2	2,2	2,2	2,2	2,2	2,2
Suction nozzle on vacuum cleaner / recommendation [mm]	70	70	70	70	70	70
Dimensions [mm]	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509
Waste container volume [l] (max.)	100	100	100	Longopac	Longopac	Longopac
Weight [kg]	140	155	188	140	155	188
Item number	1.573-620.0	1.573-720.0	1.573-820.0	1.573-621.0	1.573-721.0	1.573-821.0

Unit models without accessories

IVS 100 Z22

- IVS 100 special versions certificated for dust class M and versions with explosion proof design for ATEX Z22
- Big, certificated star filter dust class M
- Comfortable, manual filter cleaning with effective horizontal power transmission

FEATURES

- Vacuum control and manometer on comfortable eye level
- Handy clipping system for the antistatic accessories
- Certified safety with dust filter class M
- Build for ATEX Z22

TECHNICAL DATA

Type of vacuum	IVS 100/40	IVS 100/55	IVS 100/75	IVS 100/40 M Z22	IVS 100/55 M Z22	IVS 100/75 M Z22
Power [kW]	4,0	5,5	7,5	4,0	5,5	7,5
Voltage [V]	400	400	400	400	400	400
Vacuum max. [kPa]	15	25	36	15	25	36
Air flow rate, max. [Nm³/h]	500	500	536	500	500	536
Sound level dB(A)	72	72	72	72	72	75
Main filter dust class	M	M	M	M	M	M
Filter area [m²]	2,2	2,2	2,2	2,2	2,2	2,2
Suction nozzle on vacuum cleaner / recommendation [mm]	70	70	70	70	70	70
Dimensions [mm]	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509	1,215 x 674 x 1,509
Waste container volume [l] (max.)	100	100	100	100	100	100
Weight [kg]	140	155	188	140	155	188
Item number	-	-	-	9.987-898.0	9.987-899.0	9.987-900.0

Unit models without accessories

RA 220 D

- Continuous suction power possible in 24-hour operation, low-noise, low-maintenance, suitable for stationary use
- Filter container with 1.75 m² pocket filter in category L and M
- Chassis in robust rectangular tube-welded construction
- A wide variety of filter qualities available

FEATURES

- 100-l waste container, can be removed by means of a simple release
- Semi-stationary use with pipeline and two suction points
- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

HIGH-PERFORMANCE INDUSTRIAL VACUUMS

For versatile applications, for example in the metalworking industry. Direct-drive side channel blower; filter classes L and M, depending on the application. Effective and long-lasting filter engineering. Suitable for vacuuming hazardous dusts, swarf, and granulate.

TECHNICAL DATA

Type of vacuum	RA 220 D5.5 IE2	RA 220 D2x3 IE2
Power [kW]	5.5	6.0
Voltage [V]	400	400
Vacuum max. [kPa]	24	26
Air flow rate, max. [Nm³/h]	550	630
Sound level dB(A)	69	65
Main filter dust class	L	L
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 70	DN 50/DN 70
Dimensions [mm]	1,690 × 760 × 1,507	1,690 × 760 × 1,507
Waste container volume [l] (max.)	100	100
Weight [kg]	243	235
Item number	9.987-114.0	9.986-850.0

Unit models without accessories

RA 230 D

- Primarily used in foundries and heavy industry
- High-performance industrial vacuum for heavy media such as sand, swarf and blasting media
- Manually operated emptying flap for easy emptying of heavy media into underfloor conveyors or skips
- Chassis with forklift access

0 – 24 h

FEATURES

- Emptying into underfloor conveyor
- Emptying with forklift
- Vacuuming heavy media such as coarse swarf, grey cast iron and blasting media
- Reduced running costs due to energy efficient IE2 turbine

HIGH-PERFORMANCE INDUSTRIAL VACUUMS

Extremely robust industrial vacuum designed for vacuuming heavy media such as sand, grey cast iron and blasting media, for example in foundries.

TECHNICAL DATA

Type of vacuum	RA 230 D5.5 IE2	RA 230 D2x3 IE2
Power [kW]	5.5	6.0
Voltage [V]	400	400
Vacuum max. [kPa]	24	26
Air flow rate, max. [Nm³/h]	550	630
Sound level dB(A)	69	65
Main filter dust class	L	L
Filter area [m²]	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 70	DN 50/DN 70
Dimensions [mm]	1,735 × 760 × 1,800	1,735 × 760 × 1,800
Waste container volume [l] (max.)	100	100
Weight [kg]	264	256
Item number	9.987-561.0	9.986-851.0

Unit models without accessories

RA 331 D

- Continuous suction power possible in 24-hour operation
- Designed for stationary and semi-stationary use
- Chassis in robust welded construction
- Detachable 125-l waste container with tipping function
- Suitable for large quantities of dust and swarf
- Also available with class M filter engineering

FEATURES

- Vacuuming of grinding dust during revision of windmills or wings

- Convenient locking mechanism for the mobile 125-l waste container

- Waste container can be ergonomically mounted and dismounted

- The decoupling of the waste container provides maximum flexibility for emptying

- Optional: also available as version for ATEX zone 22 (Model 22)

- Reduced running costs due to energy efficient IE2 turbine

HIGH-PERFORMANCE INDUSTRIAL VACUUMS

For vacuuming general and hazardous dusts, as well as swarf of all kinds.

TECHNICAL DATA

Type of vacuum	RA 331 D2x5,5 IE2	RA 331 D2x5,5kW IE2 B22
Power [kW]	11,0	11,0
Voltage [V]	400	400
Vacuum max. [kPa]	26	24
Air flow rate, max. [Nm³/h]	990	495
Sound level dB(A)	74	69
Main filter dust class	L	M
Filter area [m²]	3,2	3,2
Suction nozzle on vacuum cleaner / recommendation [mm]	DN50/DN70	DN50/DN70
Dimensions [mm]	1.666 x 828 x 2.138	2.270 x 830 x 2.123
Waste container volume [l] (max.)	125	125
Weight [kg]	451	451
Item number	9.986-852.0	9.987-513.0

Unit models without accessories

RA 031 D

- Ideal assistant for the pharmaceutical industry
- Low space requirement thanks to compact design
- H-filtration for vacuuming carcinogenic dusts
- Plastic waste container with integrated filter unit for dust-free (contamination-free) emptying, resulting in lower costs
- Sound-damped three-phase current drive unit with direct-drive side channel blower
- Durable stainless steel design with integrated thermal insulation

FEATURES

- Tried-and-tested rotary switch for starting the vacuum
- Optional direct machine control via Harting plug

- Fast and convenient mounting and dismounting of the waste container increases efficiency
- The filter unit inside the waste container offers the highest level of safety during dust-free emptying

- Reduced running costs due to energy efficient IE2 turbine

SPECIALLY DESIGNED FOR HAZARDOUS DUSTS

The RA 031 was designed specifically to meet the requirements of the pharmaceutical industry. The ingenious dust-free emptying system protects the operator whilst ensuring low operating costs.

TECHNICAL DATA

Type of vacuum	RA 031 D3 IE2
Power [kW]	3.0
Voltage [V]	400
Vacuum max. [kPa]	26
Air flow rate, max. [Nm³/h]	315
Sound level dB(A)	61
Main filter dust class	H
Filter area [m²]	5.3
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 30
Dimensions [mm]	1,065 × 582 × 1,081
Waste container volume [l] (max.)	30
Weight [kg]	187
Item number	9.987-042.0

Unit models including PU hose and ball valve closure

RI 331 V, RI 332 V and RI 334 V

- RI 331 V

- RI 332 V

- RI 334 V

- Conveys dusts or even pasty substances over long distances
- Efficient filter and separation engineering, even for fine and problematic dusts
- 50-l (RI 331/RI 334) or 100-l (RI 332) waste container with PE bag and pressure compensation hose, removable for low-dust emptying
- Pocket filter with a filter area of 1.75 m² or 3.2 m²

FEATURES

- Optional: also available as version for ATEX zone 22 (Model 22)

- Low-dust emptying, removable waste container with PE bag

TECHNICAL DATA

Type of vacuum	RI 332 V12	RI 332 V27	RI 334 V45
Power [kW]	4.0 (equivalent)	7.5 (equivalent)	>11.0 (equivalent)
Compressed-air supply [bar]	4.5 - 6.0	4.5 - 6.0	4.5 - 6.0
Vacuum max. [kPa]	50	50	50
Air flow rate, max. [Nm³/h]	341	732	1,219
Sound level dB(A)	55 - 80	55 - 80	55 - 80
Main filter dust class	M	M	M
Filter area [m²]	1.75	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	915 × 760 × 1,620	915 × 760 × 1,583	910 × 760 × 1,413
Waste container volume [l] (max.)	100	100	50
Weight [kg]	101	107	115
Item number	9.978-763.0	9.978-764.0	9.982-509.0

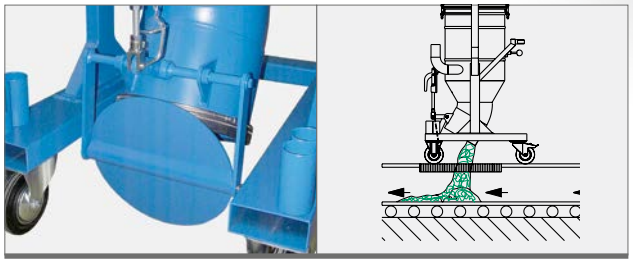
Machine versions include type E suction hose unit, DN 50 - 5 m and flexible nozzle, DN 50

RI 311 V

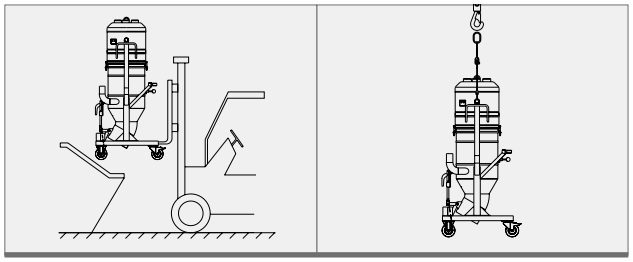
- Suitable for vacuuming heavy media over long suction distances, includes pocket filter for separating fine dusts
- AC, three-phase current or compressed air drives available
- Manually operated emptying flap for easy emptying
- Chassis with forklift access or crane transport

0 – 24 h

FEATURES



- Open emptying flap
- Emptying into underfloor conveyor



- Emptying with forklift
- Emptying with crane

COMPRESSED AIR VACUUMS

Extremely robust industrial vacuum designed for vacuuming heavy media such as sand, grey cast iron and blasting media, for example in foundries.

TECHNICAL DATA

Type of vacuum	RI 311 V27	RI 311 V36	RI 311 V45
Power [kW]	7,5	>7,5	>11,0
Compressed-air supply [bar]	4.5 - 6.0	4.5 - 6.0	4.5 - 6.0
Vacuum max. [kPa]	50	50	50
Air flow rate, max. [Nm³/h]	732	975	1,219
Sound level dB(A)	55 - 80	55 - 80	55 - 80
Main filter dust class	M	M	M
Filter area [m²]	1.75	1.75	1.75
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	714 × 972 × 1,629	714 × 972 × 1,629	714 × 972 × 1,629
Waste container volume [l] (max.)	100	100	100
Weight [kg]	123	128	134
Item number	9.978-765.0	9.982-501.0	9.982-537.0

Machine versions include type G suction hose unit, DN 50 - 5 m and flexible nozzle, DN 50

Hoses

					Order No.	IVR 35/20-2 Pf Me	IVR 40/15 Pf	IVR 40/30 Pf	IVR 50/40 Pf	IVR 100/40 Pf
	**IVR connection hose, type EVA** ● For use with dust and fine, light waste ● DN 50 IVR connection hose only with DN 70/50 reduction	**DN 40**	3 m		9.988-419.0	●				
			5 m		9.988-420.0	●				
		DN 50	3 m		9.988-421.0	●	●	●	●	●
			5 m		9.988-422.0	●	●	●	●	●
	**IVR connection hose, type A/PVC** ● For use with dust and fine, light waste ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m		6.907-310.0	●				
			5 m		6.907-311.0	●				
		DN 50	3 m		6.907-312.0	●				
			5 m		6.907-313.0	●				
	● Includes DN 70 to DN 50 connector	**DN 50**	3 m		6.907-294.0		●	●	●	●
			5 m		6.907-295.0		●	●	●	●
		DN 70	3 m		6.907-296.0			●	●	●
			5 m		6.907-297.0			●	●	●
	**IVR connection hose, type D/PU** ● For use with oil, solvents, tri, fine swarf, liquids ● DN 40 IVR connection hose only with DN 50/40 reduction	**DN 40**	3 m		6.907-314.0	●				
			5 m		6.907-315.0	●				
		DN 50	3 m		6.907-316.0	●				
			5 m		6.907-317.0	●				
	● Includes DN 70 to DN 50 connector	**DN 50**	3 m		6.907-300.0		●	●	●	●
			5 m		6.907-301.0		●	●	●	●
		DN 70	3 m		6.907-302.0			●	●	●
			5 m		6.907-303.0			●	●	●
	**Ringler Kärcher Group suction hose, type G/ME-PU** ● For use with steel shavings, granulate, liquids ● DN 40 IVR connection hose only with DN 50/40 reduction ● Includes DN 70 to DN 50 connector	**DN 50**	3 m		6.907-320.0	●				
			5 m		6.907-321.0	●				
		DN 50	3 m		6.907-306.0		●	●	●	●
			5 m		6.907-307.0		●	●	●	●
		DN 70	3 m		6.907-308.0			●	●	●
			5 m		6.907-309.0			●	●	●
	**Reducer** ● For 115° connecting elbow and IVR connection hose, DN 40 connection	**DN 50/40**			6.902-179.0	●				
	**Bend** ● Screw connection	**DN 40**			6.902-202.0	●				
		DN 50			6.902-201.0	●	●	●	●	●
		DN 70			6.902-203.0			●	●	●

» Additional accessory options can be found in our separate accessories catalogue.

Hoses

				Order No.	IVS
	**Suction hose, type EVA** Leight EVA hose, electrically conductive, can be overridden ● With DN 70 vacuum connection and reduction to stated hose diameter ● Temperature range -25°C to +65°C ● For the use with dust and light waste	**DN 40**	3 m	9.988-092.0	●
			5 m	9.988-093.0	●
		DN 50	3 m	9.988-094.0	●
			5 m	9.988-095.0	●
	**Suction hose, type A** Lightweight PVC hose with textile reinforcement and wire coil ● With DN 70 vacuum connection and reduction to stated hose diameter ● Electrically conductive ● Temperature range: 0°C to +85°C ● For use with dust and fine, light waste	**DN 40**	3 m	6.907-292.0	●
			5 m	6.907-293.0	●
		DN 50	3 m	6.907-294.0	●
			5 m	6.907-295.0	●
		DN 70	3 m	6.907-296.0	●
			5 m	6.907-297.0	●
	**Suction hose, type D** PU hose with concealed wire coil, smooth interior, extremely abrasion-resistant, oil- and weather-resistant ● With DN 70 vacuum connection and reduction to stated hose diameter ● Electrically conductive ● Temperature range: -20°C to +80°C ● For use with oil, solvents, tri, fine swarf, liquids	**DN 40**	3 m	6.907-298.0	●
			5 m	6.907-299.0	●
		DN 50	3 m	6.907-300.0	●
			5 m	6.907-301.0	●
		DN 70	3 m	6.907-302.0	●
			5 m	6.907-303.0	●
	**Suction hose, type B and type G** Flexible, PU-sheathed steel hose, microbe-resistant, hydrolysis-resistant ● With DN 70 vacuum connection and reduction to stated hose diameter ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 40**	3 m	6.907-304.0	●
			5 m	6.907-305.0	●
		DN 50	3 m	6.907-306.0	●
			5 m	6.907-307.0	●
		DN 70	3 m	6.907-308.0	●
			5 m	6.907-309.0	●

Hoses

				Item No.
	**Suction hose, type EVA** ● For use with dust and fine, light waste ● With 115° connection elbow and 45° handle ● Temperature range -25°C – +65°C ● Electrically conductive	**DN 40**	3 m	9.988-412.0
			5 m	9.988-413.0
		DN 50	3 m	9.988-414.0
			5 m	9.988-415.0
	**Suction hose unit, type A** Lightweight PVC hose with textile reinforcement and wire coil ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: 0°C to +85°C ● For use with dust and fine, light waste	**DN 40**	3 m	9.981-856.0
			5 m	9.981-857.0
		DN 50	3 m	9.981-815.0
			5 m	9.981-816.0
		DN 70	3 m	9.981-863.0
			5 m	9.981-864.0
	**Suction hose unit, type B** Flexible steel hose with PU sheathing ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 40**	3 m	9.981-860.0
			5 m	9.981-861.0
	**Suction hose unit, type C** Flexible steel hose with Perbunan-C sheathing ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 50**	3 m	9.981-796.0
			5 m	9.981-798.0
		DN 70	3 m	9.981-865.0
			5 m	9.981-866.0
	**Suction hose unit, type D** PU hose with concealed wire coil, smooth interior, extremely abrasion-resistant, oil- and weather-resistant ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +80°C ● For use with oil, solvents, tri, fine swarf, liquids	**DN 40**	3 m	9.981-858.0
			5 m	9.981-859.0
		DN 50	3 m	9.981-817.0
			5 m	9.981-818.0
		DN 70	3 m	9.981-867.0
			5 m	9.981-868.0
	**Suction hose unit, type G** Flexible, PU-sheathed steel hose, microbe-resistant, hydrolysis-resistant ● With 115° connecting elbow and 45° handle ● Electrically conductive ● Temperature range: -20°C to +110°C ● For use with steel shavings, granulate, liquids	**DN 50**	3 m	9.981-820.0
			5 m	9.981-821.0
	**115° connecting elbow** Connecting elbow with external taper for extension hose (see p. 57)	**DN 50**		9.986-213.0
	**Reducer** DN 40 connector for 115° connecting elbow and extension hose	**DN 50/40**		6.902-179.0
	**90° connecting elbow** Connecting elbow with external taper for extension hose	**DN 70**		9.981-313.0

» Additional accessory options can be found in our separate accessories catalogue.

	RI 131 W2G	RI 131 W2E	RI 131 W3G	RI 331 W2G	RI 331 W2E	RI 331 W3G	RI 311 W2G	RI 311 W2E	RI 332 W2G-M	RI 332 W2E-M	RI 331 D1.5 IE2-IS-M	RI 331 D1.5 IE2-IS-H	RI 331 D3 IE2-IS-M	RI 331 D3 IE2-IS-H	RI 331 D4 IE2-IS-H	RI 311 D3 IE2	RI 311 D4 IE2	RI 332 D1.5 IE2-IS-M	RI 332 D3 IE2-IS-M	RA 220 D5.5 IE2	RA 220 D2x3 IE2	RA 230 D 5.5 IE2	RA 230 D2x3 IE2	RA 331 D2x5.5 IE2
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Nozzles

				Item No.
	**Crevic nozzle PP** ● Slot width 47 mm		**DN 40**	9.988-116.0
			DN 50	9.988-117.0
	**Flexible nozzle**	PU	**DN 40**	6.902-197.0
		PU	**DN 50**	6.902-196.0
		PU	**DN 70**	6.902-198.0
		Silicone	**DN 50**	9.988-401.0
	**Wilde nozzle silicone** ● Connection stainless steel, food-grade		**DN 40**	9.988-118.0
			DN 50	9.988-119.0
	**Long-shafted groove nozzle** ● Rubber, black, length 315 mm ● Intake cross section 10 – 30 mm possible by cutting to length		**DN 40**	6.902-200.0
			DN 50	6.902-199.0
	**Crevic nozzle plastic, flexible**		**DN 40**	6.902-210.0
			DN 50	6.902-211.0
	**Suction brush** ● 45° slanted connection ● Plastic brush, inclined slightly outwards, two rows		**DN 40**	6.902-193.0
			DN 50	6.902-192.0
	**Flat brush nozzle**		**DN 40**	9.981-431.0
			DN 50	9.981-432.0
	**Pipe suction brush**	For pipe diameters up to 100 mm	**DN 40**	9.981-433.0
		For pipe diameters up to 200 mm	**DN 40**	6.902-207.0
	**Extension tube** ● Suitable for all nozzles and floor nozzles	750 mm	**DN 40**	6.902-182.0
		850 mm	**DN 50**	6.902-181.0
		750 mm	**DN 70**	9.981-910.0
		750 mm, stainless steel	**DN 50**	6.902-186.0
	**Floor nozzle, 370 mm** ● With hinge and height-adjustable rollers	370 mm	**DN 40**	6.902-185.0
		370 mm	**DN 50**	6.902-184.0
		370 mm, stainless steel	**DN 50**	9.988-115.0
		500 mm	**DN 50**	6.902-186.0
	**Squeegee set, oil-resistant**	With profile strip for floor nozzle, 370 mm		9.981-914.0
		With profile strip for floor nozzle, 500 mm		9.981-915.0
	**Brush strip set, 120 mm**	With profile strip for floor nozzle, 370 mm		6.902-215.0
		With profile strip for floor nozzle, 500 mm		9.980-764.0
	**Vacuum brush** ● 45° inclined connection with horsehair bristles ● Suction width 300 mm		**DN 40**	9.981-911.0
			DN 50	9.981-912.0
	**Floor nozzle attachment kit, 800 mm suction width** ● With two DN 40 suction outlets ● DN 50 distributor with height-adjustable floor nozzle	For unit type RI 131		9.981-933.0
		For unit type RI 331		9.981-913.0
	Round-bottomed bag made of PE - 30 l ● For 30-l waste container, for 420-mm system diameter			9.980-838.0
		Downholder for 30-l, system diameter 420 mm		9.975-398.0
	Round-bottomed bag made of PE - 50 l ● For 50-l waste container			9.977-885.0
		Downholder for 50-l round-bottomed bag		9.980-140.0
	Round-bottomed bag made of PE - 100 l ● For 100-l waste container			9.979-512.0
		Downholder for 100-l round-bottomed bag		9.980-141.0

» Additional accessory options can be found in our separate accessories catalogue.

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		●	●			●		●						●	●	●		●		●				●		●		●		●		●		●		RI 331 D1,5 IE2-IS-M, RI 50/15 M F
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		●	●			●		●						●	●	●		●		●				●		●		●		●		●		●		RI 331 D3 IE2-IS-M, RI 50/30 M F
		●	●			●		●						●	●	●		●		●				●		●		●		●		●		●		RI 331 D3 IE2-IS-H
		●	●			●		●						●	●	●		●	●	●				●		●		●		●	●	●		●		RI 331 D4 IE2-IS-M, RI 50/40 M F
		●	●			●		●						●	●	●		●	●	●				●		●		●		●	●	●		●		RI 331 D4 IE2-IS-H
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●	●																	●													●					RA 220 D2x3 IE2
								●						●	●	●		●	●	●				●		●		●		●	●	●		●		RA 230 D5,5 IE2
																		●													●					RA 230 D2x3 IE2
								●						●	●	●		●	●	●				●		●		●		●	●	●		●		RA 331 D2x5,5 IE2

03

BUILD-IN VACUUMS

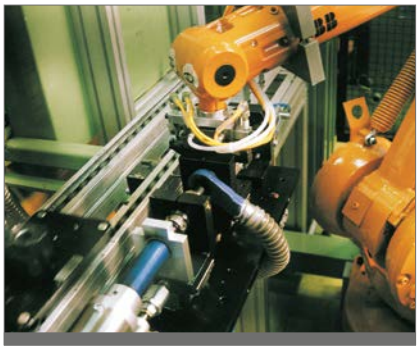
IN MACHINES OR AS BUILD-IN UNITS

APPLICATION POSSIBILITIES

Build-in vacuums are small, compact vacuum units which are suitable for selectively capturing small quantities of swarf, punching chips, granulate, plastic chips and small amouts of dusts.

Ringler Kärcher Group offers an extensive and diverse range of accessories for this product group.

IVR-B 30/15 Me integrated into robot cell



Ringler Kärcher Group suction nozzle for precise vacuuming of milling chips

RA 40 in sound-damping hood

RA 20 D

- Waste container volume: approx. 20 l, filling capacity approx. 10 l
- Stainless steel lid with handles, with swarf baffle plate to protect the filter
- High-performance side channel blower, direct drive, virtually wear-free

0 – 24 h

FEATURES

- Vacuum connection and exhaust diffuser on the motor
- Available in stationary and mobile versions
- Fitted vacuum saves space in a robot cell
- Reduced running costs due to energy efficient IE2 turbine

SMALL VACUUM UNIT

Add-on or fitted vacuum with side channel blower. Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation. Waste container volume approx. 20 l, mobile or stationary.

TECHNICAL DATA

Type of vacuum	RA 20 D0.55 IE2
Power [kW]	0.55
Voltage [V]	400
Vacuum max. [kPa]	9
Air flow rate, max. [Nm³/h]	140
Sound level dB(A)	57
Main filter dust class	M
Filter area [m²]	0.7
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 40
Dimensions [mm]	570 × 625 × 498
Waste container volume [l] (max.)	20
Weight [kg]	25
Item number	9.987-331.0

Unit models without accessories

RA 40 D and IVR-B 30/15 Me

- Waste container volume: approx. 30 l
- Stainless steel lid with closure clamps and handles, with swarf baffle plate for protecting the filter
- High-performance side channel blower, direct drive, virtually wear-free

0 – 24 h

FEATURES

- Stainless steel version of waste container with integrated cartridge filter

- On/off switch

- Total dirt removal for quality assurance

- Reduced running costs due to energy efficient IE2 turbine

SMALL VACUUM UNIT

Add-on or fitted vacuum with side channel blower. Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation. Waste container volume approx. 30 l, mobile or stationary.

TECHNICAL DATA

Type of vacuum	RA 40 D0.55 IE2	RA 40 D1.5 IE2/ IVR-B 30/15 Me
Power [kW]	0.55	1.5
Voltage [V]	400	400
Vacuum max. [kPa]	9	20
Air flow rate, max. [Nm³/h]	140	210
Sound level dB(A)	57	62
Main filter dust class	M	M
Filter area [m²]	0.7	0.7
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 40	DN 50/DN 50
Dimensions [mm]	740 × 430 × 740	740 × 430 × 740
Waste container volume [l] (max.)	30	30
Weight [kg]	32	52
Item number (with wheels)	9.986-204.0	9.986-447.0
Item number (without wheels)	9.986-205.0	9.986-072.0 (IVR-B)

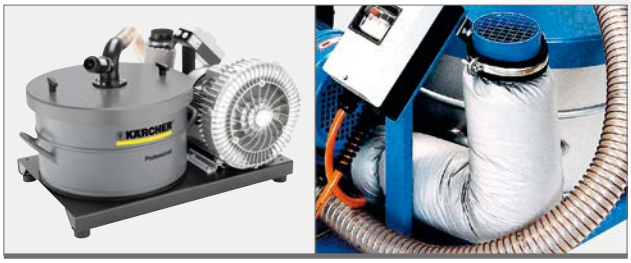
Unit models without accessories

IVR-B 50/30 and RA 50 D

- Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation
- Waste container volume approx. 50 litres, sheet metal, mobile or stationary with side channel blower

0 – 24 h

FEATURES



- IVR-B 50/30
- An exhaust silencer ensures a comfortable operating noise

- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

SMALL VACUUM UNIT

Add-on or fitted vacuum with side channel blower. Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation. Waste container volume approx. 50 l, mobile or stationary.

TECHNICAL DATA

Type of vacuum	RA 50 D0.55 IE2	RA 50 D1.5 IE2	IVR-B 50/30	RA 50 D4 IE2
Power [kW]	0.55	1.5	3.0	4.0
Voltage [V]	400	400	400	400
Vacuum max. [kPa]	9	20	26	14
Air flow rate, max. [Nm³/h]	140	210	315	495
Sound level dB(A)	57	62	70	76
Main filter dust class	M	M	M	M
Filter area [m²]	0.7	0.7	0.7	0.7
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 40	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	850 × 550 × 650	850 × 550 × 650	850 × 550 × 650	850 × 550 × 1,870
Waste container volume [l] (max.)	50	50	50	50
Weight [kg]	58	71	79	98
Item number (with wheels)	9.986-202.0	9.986-442.0	9.986-408.0	9.986-463.0
Item number (without wheels)	9.986-203.0	9.986-443.0	9.986-073.0 (IVR-B)	9.986-465.0

Unit models without accessories

RA 50 D / RA 80 D Textile

- Reliably vacuums small quantities of fibres, plastic and similar media in continuous operation
- Waste container volume approx. 50 l, mobile or stationary, with filter basket
- With filter bag for collecting fibres, easy to remove and empty
- Add-on or fitted vacuum with side channel blower
- Washable filter bag

0 – 24 h

FEATURES

- Reduced running costs due to energy efficient IE2 turbine
- Waste container with filter bag

- RA 80 with large 80-l waste container for large quantities of fibres and lint
- Ideal for vacuuming lint and fibres

FITTED VACUUM OR BUILD-IN UNIT FOR FIBRES

Add-on or fitted vacuum with side channel blower. Reliably vacuums fibres or plastic chips in continuous operation. Waste container volume approx. 50 l; mobile or stationary.

TECHNICAL DATA

Type of vacuum	RA 50 D1.5 IE2 Textile	RA 50 D3 IE2 Textile	RA 80 D1.5 IE2 Textile	RA 80 D3 IE2 Textile
Power [kW]	1.5	3.0	1.5	3.0
Voltage [V]	400	400	400	400
Vacuum max. [kPa]	20	26	20	26
Air flow rate, max. [Nm³/h]	210	315	215	315
Sound level dB(A)	60	65	62	65
Main filter dust class	L	L	L	L
Filter area [m²]	0.8	0.8	0.85	0.85
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	850 × 550 × 633	850 × 550 × 633	850 × 550 × 896	850 × 550 × 896
Waste container volume [l] (max.)	50	50	80	80
Weight [kg]	74	82	80	88
Item number	9.986-444.0	9.986-410.0	9.986-446.0	9.986-419.0

Unit models without accessories

RA 51 D

- Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation
- Waste container volume approx. 50 l, mobile or stationary
- Add-on or fitted vacuum with side channel blower
- Sound-damped side channel blower for noise-sensitive applications

0 – 24 h

FEATURES

- Sound-damped side channel blower 60 dB (A) for 3.0 kW variant
- Filter inlay and baffle plate
- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

SMALL VACUUM UNIT WITH SOUND-DAMPING

Add-on or fitted vacuum with side channel blower. Reliably vacuums small quantities of swarf, punching waste, granulate and coarse dust in continuous operation. Waste container volume approx. 50 l, mobile or stationary.

TECHNICAL DATA

Type of vacuum	RA 51 D3 IE2	RA 51 D4 IE2
Power [kW]	3.0	4.0
Voltage [V]	400	400
Vacuum max. [kPa]	26	14
Air flow rate, max. [Nm³/h]	315	495
Sound level dB(A)	62	70
Main filter dust class	M	M
Filter area [m²]	0.7	0.7
Suction nozzle on vacuum cleaner / recommendation [mm]	DN 50/DN 50	DN 50/DN 50
Dimensions [mm]	1,150 × 590 × 850	1,150 × 590 × 890
Waste container volume [l] (max.)	50	50
Weight [kg]	100	119
Item number	9.986-427.0	9.986-468.0

Unit models without accessories

Hoses and nozzles

				Item No.	RA 20 D0.55 IE2	RA 40 D0.55 IE2	IVR-B 30/15 Me	RA 50 D1.5 IE2	IVR-B 50/30	RA 50 D4 IE2	RA 50 D1.5 IE2 Textile	RA 50 D3 IE2 Textile	RA 51 D3 IE2	RA 51 D4 IE2	RA 80 D1.5 IE2 Textile	RA 80 D3 IE2 Textile
	**Type EVA extension hoses** ● For use with dust and fine, light waste ● With inner and outer connection taper ● For DN 40 hoses (all types A to G) reduction DN50/40 necessary	**DN 40**	3 m	9.988-419.0	●	●	●	●	●		●	●	●		●	●
			5 m	9.988-420.0	●	●	●	●	●		●	●	●		●	●
		DN 50	3 m	9.988-421.0	●	●	●	●	●	●	●	●	●	●	●	●
			5 m	9.988-422.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Type A extension hoses** ● For use with dust and fine, light waste ● With inner and outer connection taper ● For DN 40 hoses (all types A to G) reduction DN50/40 necessary	**DN 40**	3 m	6.907-310.0	●	●	●	●	●		●	●	●		●	●
			5 m	6.907-311.0	●	●	●	●	●		●	●	●		●	●
		DN 50	3 m	6.907-312.0	●	●	●	●	●	●	●	●	●	●	●	●
			5 m	6.907-313.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Type B extension hoses** ● For use with steel shavings, granulate, liquids ● With inner and outer connection taper	**DN 40**	3 m	9.981-846.0	●	●	●	●	●		●	●	●		●	●
			5 m	9.981-847.0	●	●	●	●	●		●	●	●		●	●
	**Type C extension hoses** ● For use with steel shavings, granulate, liquids ● With inner and outer connection taper	**DN 50**	3 m	9.981-800.0	●	●	●	●	●	●	●	●	●	●	●	●
			5 m	9.981-801.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Type D extension hoses** ● For use with oil, solvents, tri, fine swarf, liquids ● With inner and outer connection taper	**DN 40**	3 m	6.907-314.0	●	●	●	●	●		●	●	●		●	●
			5 m	6.907-315.0	●	●	●	●	●		●	●	●		●	●
		DN 50	3 m	9.981-826.0	●	●	●	●	●	●	●	●	●	●	●	●
			5 m	9.981-827.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Type G extension hoses** ● For use with steel shavings, granulate, liquids ● With inner and outer connection taper	**DN 50**	3 m	9.981-829.0	●	●	●	●	●	●	●	●	●	●	●	●
			5 m	9.981-830.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Reducer** Required for DN 40 extension hose	**DN 50/40**		6.902-179.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Flexible nozzle**	**DN 40**		6.902-197.0	●	●	●	●	●		●	●	●		●	●
		DN 50		6.902-196.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Wide nozzle, cast aluminium** ● Nozzle width 150 mm	**DN 40**		6.902-188.0	●	●	●	●	●		●	●	●		●	●
		DN 50		6.902-187.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Long-shafted groove nozzle** ● Rubber, black, length 315 mm ● Intake cross section 10-30 mm possible by cutting to length	**DN 40**		6.902-200.0	●	●	●	●	●		●	●	●		●	●
		DN 50		6.902-199.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Flexible nozzle** ● With rubber tip	**DN 40**		9.981-420.0	●	●	●	●	●		●	●	●		●	●
		DN 50		9.981-421.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Flexible groove nozzle, 13 mm** ● Slot width 13 mm, zinc-coated	**DN 40**		9.981-423.0	●	●	●	●	●		●	●	●		●	●
		DN 50		9.981-424.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Flexible groove nozzle, 20 mm** ● Slot width 20 mm, zinc-coated	**DN 50**		9.981-425.0	●	●	●	●	●	●	●	●	●	●	●	●
	**Roller attachment kit** ● Roller attachment kit for attaching to build-in units ● For using IVR-B for mobile applications			9.986-099.0			●		●							

» Additional accessory options can be found in our separate accessories catalogue.

04

DEDUSTING SYSTEMS

CONTINUOUS SUCTION OF DUSTS AND SWARF

APPLICATION POSSIBILITIES

Dust removers (ENT) can be used at machining stations to continuously and safely vacuum the dust and swarf generated there.

Automatic filter cleaning by means of a vibration motor ensures gentle treatment of the filter with extremely low residual dust content in the exhaust air.

Mobile dust removers ensure optimal work safety through compliance with the maximum allowable concentration (MAC).

With each vacuum you receive a wide range of optional suction nozzles, as well as many components of the robust and versatile Ringler Kärcher Group type RA pipe system.

Dust remover on saws

Integrated dust remover in production lines

Virtually 100% dust capture with customised suction nozzles – also available using 3D printing

New

RE 9/30 | RE 9/30 Es Z22

- Made for the continuous extraction of settled and airborne particles on machines or production lines
- Low operating costs with good energy management due to high-performance fan with energy efficiency class IE3
- Reliable in processes even in long working times and large dust quantities
- Superior sound-damping helps to reduce noise disturbance at work
- Clearly visible control elements for easy operation
- As RE 9/90 Es Z22 equipped with electric filter shaking and suitable for use in Zone 22

0 – 24 h

FEATURES

- Low dust disposal via PE-bag and set-down container

- Easy to reach control elements

- Reduced running costs due to energy efficient IE2 turbine

- Optional: also available as version for ATEX zone 22 (Model 22)

THE RE 9/30 IS MADE FOR THE CONTINUOUS EXTRACTION OF SETTLED AND AIRBORNE PARTICLES

The units even can be used in multi-ship operation. A highly efficient motor of energy efficiency class IE3 is keeping operating costs on a minimal level. The continuously high air-volume-rate (900 m³/h) and the large filter area (3,2 m²) ensure long working times, even for large dust quantities.

Options	
Filtration Dustclass H	on project enquiry
60 Hz	on project enquiry

TECHNICAL DATA

Dust remover type	RE 9/30	RE 9/30 Es Z22
Power [kW]	3.0	3.0
Voltage [V]	400	400
Vacuum max. [kPa]	4,8	4,8
Air flow rate, max. [Nm³/h]	900	900
Sound level dB(A)	64	64
Main filter dust class	M	M
Filter area [m²]	3,2	3,2
Recommended suction nozzle [mm]	120	120
Dimensions [mm]	1,402 x 1,649 x 760	1,402 x 1,649 x 760
Waste container volume [l] (max.)	100	100
Weight [kg]	270	314
Item number	9.987-840.0	9.987-920.0

Unit models without accessories

ENERGY EFFICIENT, SECURE AND POWERFUL

» High performance fan with energy efficiency class IE3
» RE 9/30 Es Z22 with ATEX fan and safety class IP 65

BLUEcoMPETENCE Alliance Member

0 – 24 h

LONG-LASTING

» Robust design for industrial purpose

SOUND-DAMPING

» Integrated sound-damping with diffusor

RELIABLE IN PROCESS

» High quality pocket filter for long durability
» Filter dust class "M" / Optional "H"
» Intuitive manual filter cleaning (RE 9/30)
» Automatic electrical filter cleaning (RE 0/30 Es Z22)
» Three-phase current control secures correct operation (Re 9/30 Es Z22)
» Optical warning signal in case of insufficient suction power (RE 9/30 Es Z22)

INTUITIVE HANDLING

» RE 9/30 with PKZM rotary switch- RE 9/30 Es Z22 with control box

SERVICE FRIENDLY

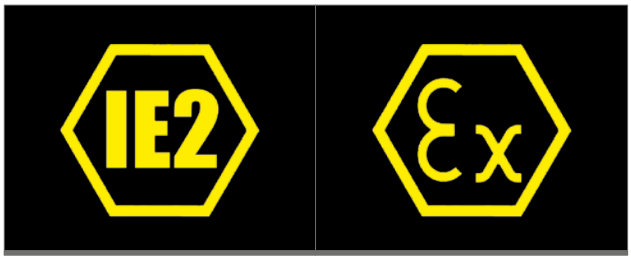
» Easy accessible service parts

RI 334 D -ENT

- Suitable for separating all types of problematic adhesives, dusts and swarf
- Dust remover with control cabinet and automatic filter cleaning mechanism
- Available up to filter class H for separating carcinogenic dusts with a 99.997% degree of separation
- Low-dust emptying via removable waste container with PE bag

FEATURES

- Virtually 100% dust capture through enclosure of the work area
- Pocket filter with electric filter cleaning



- Reduced running costs due to energy efficient IE2 turbine
- Optional: also available as version for ATEX zone 22 (Model 22)

0 – 24 h

DUST REMOVER FOR SAFE VACUUMING OF PROCESSING MACHINERY

Used directly in processing machinery, suitable for vacuuming combustible dusts in zone 22 (optional), hazardous dusts and carcinogenic substances, includes control, pocket filter, 50-l waste container, removable.

TECHNICAL DATA

Dust remover type	RI 334 D3 IE2-ENT-M	RI 334 D3 IE2-ENT-H	RI 334 D4 IE2-ENT-M
Power [kW]	3.0	3.0	4.0
Voltage [V]	400	400	400
Vacuum max. [kPa]	26	26	14
Air flow rate, max. [Nm³/h]	315	315	495
Sound level dB(A)	65	65	70
Main filter dust class	M	M / H	M
Filter area [m²]	3.2	3.2 / 3.0	3.2
Recommended suction nozzle [mm]	DN 50	DN 50	DN 70
Dimensions [mm]	910 × 760 × 1,850	910 × 760 × 2,135	910 × 760 × 1,970
Waste container volume [l] (max.)	50	50	50
Weight [kg]	174	193	193
Item number	9.986-412.0	9.986-413.0	9.986-460.0

Machine versions include suction hose unit type A, DN 50 - 5 m

RE 120 D

- For use in all types of processing machinery
- Large volume flow
- Detachable 170-l container, mobile
- With 170-l dust collection bag

0 – 24 h

FEATURES

- Handle for filter cleaning
- Removable waste container
- Easy removal of the collection bag
- Suction pipe DN 140 and inspection window in the waste container

DUST REMOVER WITH LARGE AIR VOLUME FLOW

For vacuuming metal, wood, plastic, paper, leather and acrylic glass in the form of dust, swarf, granulate and fibres, suitable for vacuuming sawdust.

TECHNICAL DATA

Dust remover type	RE 120 D2.2
Power [kW]	2.2
Voltage [V]	400
Vacuum max. [kPa]	3.3
Air flow rate, max. [Nm³/h]	1,329
Sound level dB(A)	75
Main filter dust class	M
Filter area [m²]	9.0
Recommended suction nozzle [mm]	140
Dimensions [mm]	1,170 × 790 × 1,580
Waste container volume [l] (max.)	170
Weight [kg]	139
Item number	9.982-506.0

Unit models without accessories

RE 201 D

- Low operating costs with good energy management due to high-performance fan with energy efficiency class IE
- Efficient filter and separation technology, also suitable for fine and problematic dusts, low-dust emptying
- Sound-damped drive unit
- Automatic filter cleaning system

0 – 24 h

FEATURES

- Control cabinet with customised programming
- Brush nozzles of type A nozzle unit
- Use of energy-saving IE3 blowers
- Optional: also available as version for ATEX zone 22 (Model 22)

MEDIUM-PRESSURE DUST REMOVAL SYSTEM

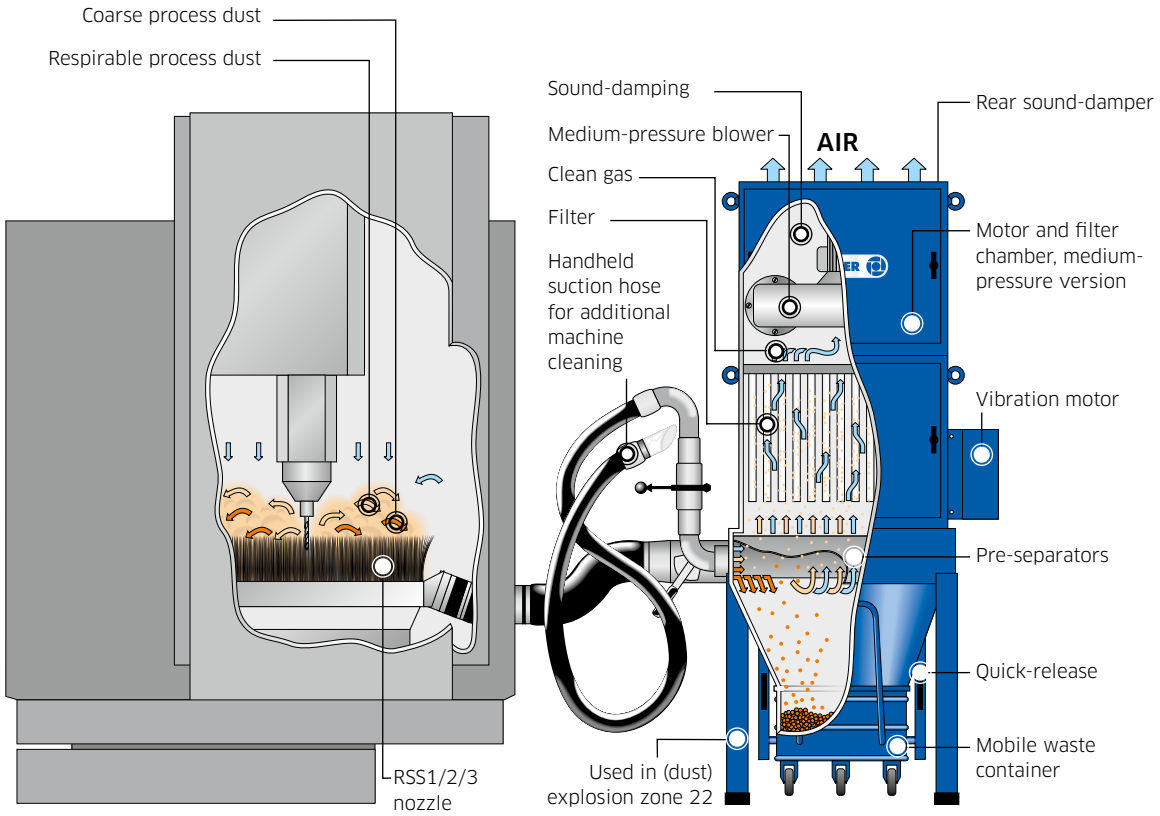
Particularly suitable for vacuuming graphite dust, metal dust, mineral dust, hard fibre dust, combustible dusts and hazardous substances, as well as for effectively capturing processing dusts.

TECHNICAL DATA

Dust remover type	RE 201 D3 IE3	RE 201 D5.5 IE3
Power [kW]	3.0	5.5
Voltage [V]	400	400
Vacuum max. [kPa]	4.9	4.7
Air flow rate, max. [Nm³/h]	1,192	2,655
Sound level dB(A)	65	68
Main filter dust class	M	M
Filter area [m²]	14	14
Recommended suction nozzle [mm]	140	175
Dimensions [mm]	1,363 x 922 x 2,667	1,363 x 922 x 2,667
Waste container volume [l] (max.)	50	50
Weight [kg]	430	430
Item number	9.987-495.0	9.987-208.0

Unit models without accessories

OPERATING PRINCIPLE OF A RINGLER KÄRCHER GROUP SYSTEM AT ANY MACHINING CENTRE



- Vacuum solution for capturing plastic chips: Ringler Kärcher Group RE 201 dust remover with FZ 12 Chiron machining centre, automatic wet/dry switch, handheld suction hose and filling level monitoring

RE 301 D

- Suitable for vacuuming dusts, swarf and liquids, as well as swarf over long distances; various filter grades available
- Optional: different discharge systems such as rotary feeder, dual-chamber discharge, Big Bag, etc.
- Automatic filter cleaning system

0 – 24 h

FEATURES

- Patented RSS1 table vacuum system
- RE 301 with spindle suction nozzle on a portal milling machine
- Best energy balance due to use of energy-saving IE3 blowers
- Optional: also available as version for ATEX zone 22 (Model 22)

MEDIUM-PRESSURE DUST REMOVAL SYSTEM

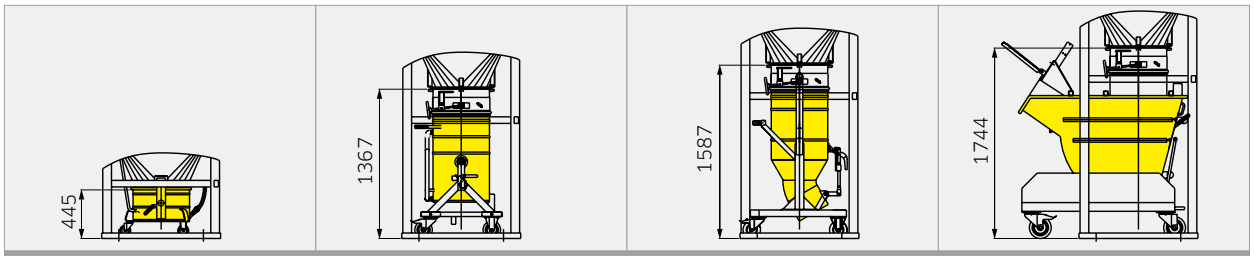
Particularly suitable for vacuuming graphite dust, metal dust, mineral dust, hard fibre dust, combustible dusts and hazardous substances, as well as for effectively capturing processing dusts.

TECHNICAL DATA

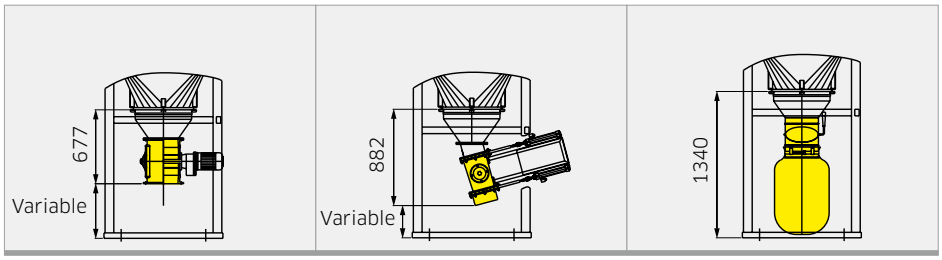
Dust remover type	RE 301 D11
Power [kW]	11.0
Voltage [V]	400
Vacuum max. [kPa]	7.1
Air flow rate, max. [Nm³/h]	3,500
Sound level dB(A)	75
Main filter dust class	M
Filter area [m²]	24
Recommended suction nozzle [mm]	200
Dimensions [mm]	1,279 × 1,390 × 3,101
Waste container volume [l] (max.)	100
Weight [kg]	630
Item number	9.982-456.0

Unit models without accessories

OPTIONAL DISCHARGE SYSTEMS:



- 50-l waste container
- 160-l tipping waste container
- 160-l waste container with flap
- 400-l tipping waste container



- Rotary feeder
- Dual-shutter discharge system
- Bag filling with shutter flap, Big Bag

FEATURES

- Automatic dust capture on portal milling machine via an annular channel nozzle on the milling head. Dust is separated by a cyclone pre-separator and category M pocket filter. Discharge takes place continuously via a rotary feeder. The X-Y-Z axis movements are made possible by a “zipper channel” on the portal.

RE 402 D / RE 501 D

- Suitable for vacuuming dusts, swarf and liquids, as well as swarf over long distances; various filter grades available
- Optional: various discharge systems such as rotary feeder, dual-chamber discharge, Big Bag, etc. » **more information on page 69**

0 – 24 h

FEATURES

- Disposal with dual-chamber discharge
- Suitable for vacuuming coarse particles and fine dusts
- Control cabinet with customised programming
- RE 501 with pipeline on a vertical saw for aluminium blocks

MEDIUM-PRESSURE DUST REMOVAL SYSTEM

Particularly suitable for vacuuming very large quantities of graphite dust, metal dust, mineral dust, hard fibre dust, combustible dusts and hazardous substances, as well as for effectively capturing process dusts, for example on large saws.

TECHNICAL DATA

Dust remover type	RE 402 D2x11	RE 501 D15
Power [kW]	22.0	15.0
Voltage [V]	400	400
Vacuum max. [kPa]	7.0	5.1
Air flow rate, max. [Nm³/h]	7,000	5,069
Sound level dB(A)	75	77
Main filter dust class	M	M
Filter area [m²]	2 x 14	Designed to the customer's specifications
Recommended suction nozzle [mm]	300	
Dimensions [mm]	1,900 × 1,000 × 5,000	
Waste container volume [l] (max.)	50	
Weight [kg]	417	
Item number	To be processed via project enquiry	

Unit models without accessories

- RE 402 vacuum system with RE pipeline system vacuums aluminium swarf, wood shavings and dust on several machines simultaneously

FEATURES

- Integrated RE 201 for continuous vacuuming of fine and coarse metal shavings in multiple-shift operation

RE 22/22 | RE 30/30 | RE 40/40 | RE 65/75

- Vacuuming fine and coarse dusts, welding fumes and mixtures of dust and fumes
- Flameless pressure relief and zone-22-compliant construction type
- Automatically controlled countercurrent compressed air filter cleaning ensures consistently high suction power and protects against downtime for filter cleaning

DUST REMOVAL SYSTEMS

Vacuuming fine and coarse dusts, lint and fibres, for example grey cast iron dust, GRP/CFP dusts, food powders, vitamin powders, textile fibres, wood dusts, etc.

FEATURES

- Flameless pressure relief and zone-22 construction type
- Very low noise level with optional sound-damping
- Automatically controlled countercurrent compressed air filter cleaning
- Horizontally arranged filter cartridges for contamination-free filter replacement

Dust remover type	RE 22/22	RE 30/30	RE 40/40	RE 65/75
Power [kW]	2.2	3.0	4.0	7.5
Voltage [V]	400	400	400	400
Vacuum max. [kPa]	2.2	2.2	2.3	2.2
Air flow rate, max. [Nm³/h]	2,200	3,000	4,000	6,500
Sound level dB(A)	78/71	78/71	81/75	87/79
Main filter dust class	M	M	M	M
Filter area [m²]	37	48	72	108
Recommended suction nozzle [mm]	Designed to the customer's specifications			
Dimensions [mm]	930 × 1,200 × 2,043	930 × 1,200 × 2,043	1,200 × 1,200 × 2,358	1,300 × 1,293 × 2,532
Waste container volume [l] (max.)	80 (coarse) + 86 (fine)	80 (coarse) + 86 (fine)	90 (coarse) + 115 (fine)	102 (coarse) + 137 (fine)
Weight [kg]	380	385	470	620
Item number	9.987-423.0	9.987-424.0	9.987-425.0	9.987-426.0

Dust remover type	RE 22/22 Q	RE 30/30 Q	RE 40/40 Q	RE 65/75 Q
Explosion prevention	Q-Box	Q-Box	Q-Box	Q-Box
Item number	9.9.988-358.0	9.988-359.0	9.988-360.0	9.988-361.0

Sound-damping hood	Sound-damping hood for RE 22/22, RE 30/30	9.987-339.0
	Sound-damping hood for RE 40/40	9.987-428.0
	Sound-damping hood for RE 65/75	9.987-430.0
Absolute filter (H 13)	Sound-damping hood and absolute filter (H13) for RE 22/22, RE 30/30	9.987-429.0
	Sound-damping hood and absolute filter (H13) for RE 40/40	9.987-366.0
	Sound-damping hood and absolute filter (H13) for RE 65/75	9.987-431.0
Explosion prevention	Q-Box, Q-Pipe, Q-Flap	On project enquiry
RAL tone	RAL tone varying from 5015 for RE 20/20 to RE 65/75	On project enquiry

EASY MONITORING

» Differential pressure between clean air side and surrounding

SAFE

» Optionally flameless pressure relief

HIGH-PERFORMANCE

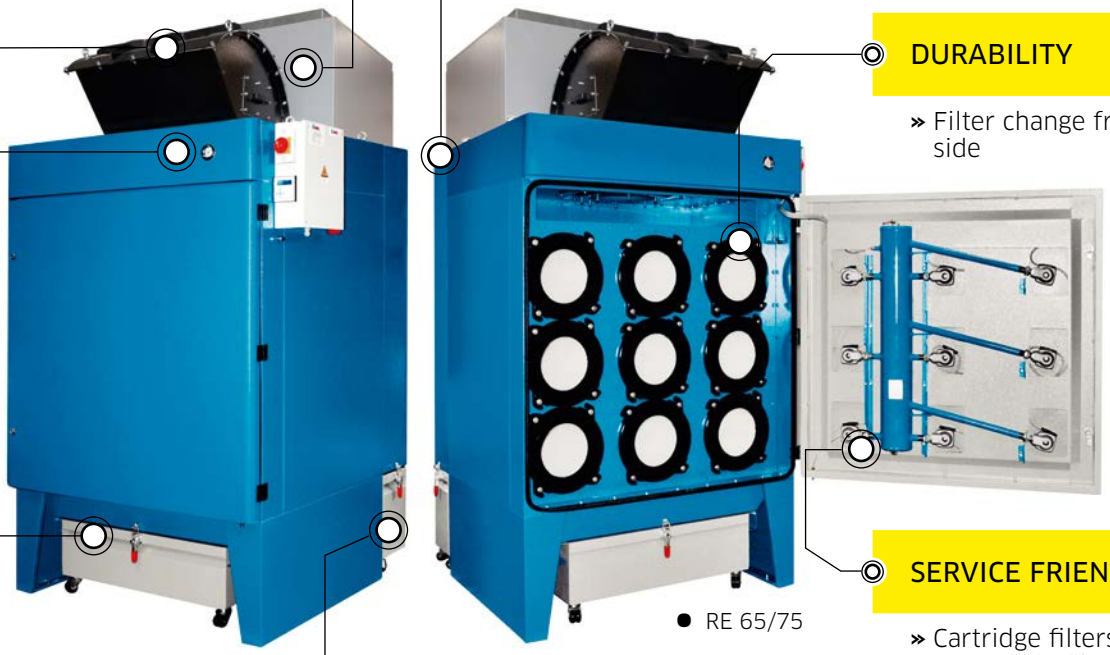
» Optionally covered with sound-damping hood

FLEXIBLE

» Suction nozzles left/right options

DURABILITY

» Filter change from clean gas side



● RE 65/75

SERVICE FRIENDLY

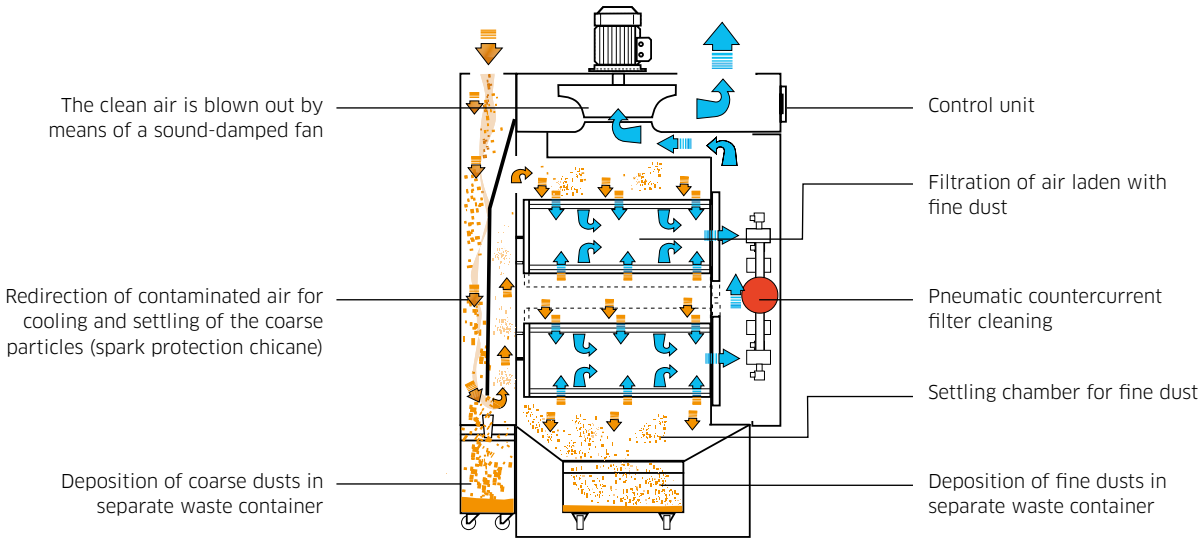
» Cartridge filters with pneumatic filter cleaning

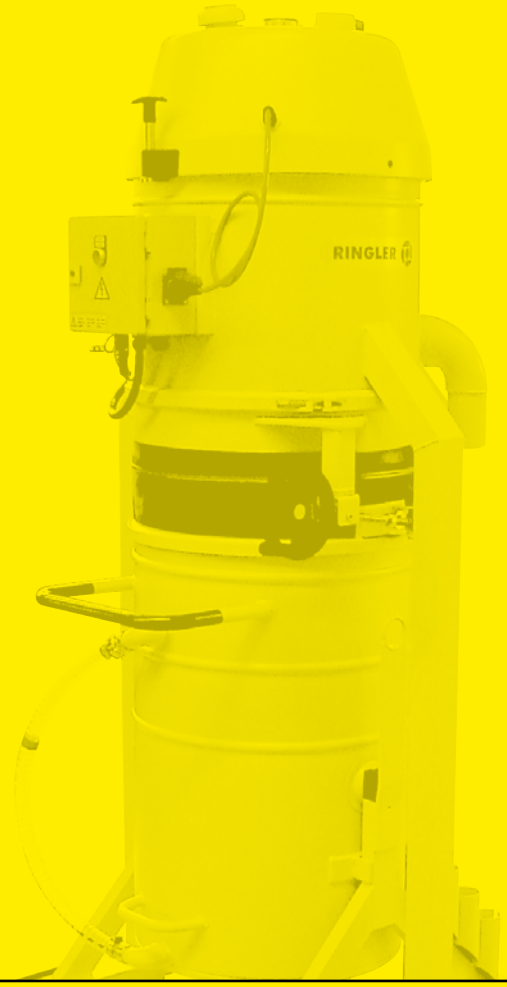
EASY WASTEDISPOSAL

» Seperate collection of coarse and fine dust

COMPACT

OPERATING PRINCIPLE





05

STATIONARY VACUUM SOLUTIONS

FOR COARSE PARTICLES AND LIQUIDS

APPLICATION POSSIBILITIES

Stationary industrial vacuums, as single or multi-user systems, are used for manual vacuuming of coarse particles and coolants and can be used as stand-alone units or attached to the top of machines.

All systems also optionally available for ATEX zone 22 (Model 22).

The Competence Centre Ringler Kärcher Group offers complete solutions from a single source – from suction nozzles, to pipelines, to proper disposal.

Central vacuum system as a multi-user system in the metalworking industry

Rolled out vacuuming point for large-scale machining areas

3D-printed nozzle for special vacuum functions

RI 333 W/D

- Suitable as a single or multi-user system for vacuuming metal shavings (also very hot shavings), shavings with emulsion or oil and granulate
- Tipping container can be removed with simple Ringler Kärcher Group decoupling mechanism; forklift and crane transport possible

FEATURES

- Tipping function with frame
- Reduced running costs due to energy efficient IE2 turbine

- Optional: 100-l waste container with discharge flap
- Vacuuming swarf and coolant residues

STATIONARY SINGLE OR MULTI-USER VACUUM SYSTEM FOR VACUUMING SWARF AND LIQUIDS

Can be used for vacuuming at one or more locations or as a stationary, continuous vacuum. Extensive accessory line including controls, limit switches, pipeline systems, swivel arms, automatic shutters, filling level monitoring, etc.

TECHNICAL DATA

Type of vacuum	RI 333 W2 E	RI 333 D3 IE2	RI 333 D4 IE2
Power [kW]	2.6	3.0	4.0
Voltage [Ph / V / Hz] ... [V]	1~ / 220-240 / 50-60	400	400
Vacuum max. [kPa]	23	26	14
Air flow rate, max. [Nm³/h]	430	315	495
Sound level dB(A)	72	65	70
Main filter dust class	L	L	L
Filter area [m²]	0.45	0.45	0.45
Recommended suction nozzle [mm]		Designed to the customer's specifications	
Dimensions [mm]	900 × 905 × 2,041	900 × 900 × 2,400	900 × 900 × 2,491
Waste container volume [l] (max.)	120	120	120
Weight [kg]	108	197	220
Item number	9.982-480.0	9.986-397.0	9.986-457.0

Unit models without accessories

RI 750 W

- Vacuum cleaner with pneumatic emptying flap or pendulum flap
- Suction hose with limit switch and pipeline system
- Machine switches on when the suction hose is picked up
- The swarf and coolants collected in the container are discharged via the flap after the vacuuming session

FEATURES

- 60-l waste container with emptying flap
- Installation in swarf conveyor including mini control system

- Swarf vacuuming with discharge into customer container
- Swarf vacuuming with discharge onto the swarf conveyor

2 – 3 h

STATIONARY SINGLE OR DOUBLE-USER VACUUM SYSTEM FOR PROCESSING MACHINERY

For vacuuming swarf and coolants on processing machinery. Machine usually installed above the swarf conveyor or skips. Manual operation: remove suction hose, machine switches on, after completion: automatic discharge of swarf into swarf conveyor or container (optional).

TECHNICAL DATA

Type of vacuum	RI 750 W2 E Electric/pneumatic emptying flap	RI 750 W2 E Pendulum emptying flap	RI 750 W3 E Electric/pneumatic emptying flap	RI 750 W3 E Manually activated emptying flap
Power [kW]	2.6	2.6	3.9	3.9
Voltage [Ph / V / Hz] ... [V]	1~ / 220-240 / 50-60	1~ / 220-240 / 50-60	400	400
Vacuum max. [kPa]	23	23	23	23
Air flow rate, max. [Nm³/h]	430	430	645	645
Sound level dB(A)	72	72	73	73
Main filter dust class	L	L	L	L
Filter area [m²]	0.45	0.45	0.45	0.45
Recommended suction nozzle [mm]	Designed to the customer's specifications			
Dimensions [mm]	Designed to the customer's specifications			
Waste container volume [l] (max.)	60	60	60	60
Weight [kg]	Designed to the customer's specifications			
Item number	9.982-503.0	9.982-502.0	9.982-513.0	9.982-520.0

Unit models without accessories

RI 751 D

- Suitable as a single or multi-user system for vacuuming metal shavings (also very hot shavings), shavings with emulsion or oil and granulate
- Tipping container, can be removed with simple Ringler Kärcher Group decoupling mechanism; forklift and crane transport possible

IE2

0 – 24 h

FEATURES

Type 1 On/off switch (motor circuit breaker), manually activated shutter flap, pendulum flap alternative, designed for one suction point

Type 2 On/off switch (motor circuit breaker), pneumatically triggered shutter flap, emptying once suction hose has been hung up, designed for one suction point

Type 3 Control cabinet, remote-controlled turbine start-up, pneumatically triggered shutter flap, emptied once the suction hose has been hung up, after-running time of the motor, designed for one suction point

Type 4 Control cabinet, remote-controlled turbine start-up, pneumatically triggered shutter flap, emptied once the suction hose has been hung up, locking of the suction points via pneumatic shutters, after-running time of the motor, designed for two suction points

TECHNICAL DATA

Type of vacuum	RI 751 D3 IE2 Type 1	RI 751 D3 IE2 Type 2	RI 751 D3 IE2 Type 3	RI 751 D3 IE2 Type 4	RI 751 D4 IE2 Type 1	RI 751 D4 IE2 Type 2	RI 751 D4 IE2 Type 3
Power [kW]	3.0	3.0	3.0	3.0	4.0	4.0	4.0
Voltage [V]	400	400	400	400	400	400	400
Vacuum max. [kPa]	26	26	26	26	14	14	14
Air flow rate, max. [Nm³/h]	315	315	315	315	495	495	495
Sound level dB(A)	65	65	65	65	70	70	70
Main filter dust class	L	L	L	L	L	L	L
Filter area [m²]	1.75	1.75	1.75	1.75	1.75	1.75	1.75
Recommended suction nozzle [mm]	Designed to the customer's specifications						
Dimensions [mm]	Designed to the customer's specifications						
Waste container volume [l] (max.)	60	60	60	60	60	60	60
Weight [kg]	Designed to the customer's specifications						
Item number	To be processed via project enquiry						

Unit models without accessories

RA 240 D

- Suitable for manual or automatic vacuuming of small to medium-sized quantities of swarf, coolants or dust
- 60-litre waste container, emptying into swarf conveyor or skips
- Optional bypass solution for alternating between emptying and vacuuming operation without switching the motor off

FEATURES

- Large-area pocket filter with automatic filter vibration

- Rolled out suction point with hose suspension and limit switch

- Suction point with two different suction nozzles and activation using shutters

- Optional: also available as version for ATEX zone 22 (Model 22)

STATIONARY VACUUM SYSTEM WITH PNEUMATICALLY ACTIVATED EMPTYING FLAP

Emptying after vacuuming operation by switching the motors off. Installation of the drive unit variable. Manual operation or automatic emptying possible. Upon request: version with ladder, platform, specially produced frame and automatic filter vibration.

TECHNICAL DATA

Type of vacuum	RA 240 D3 IE2	RA 240 D5.5 IE2	RA 240 D2x3 IE2	RA 240 D 7,5 kW
Power [kW]	3.0	5.5	6.0	7.5
Voltage [V]	400	400	400	400
Vacuum max. [kPa]	26	24	26	17.5
Air flow rate, max. [Nm³/h]	315	495	630	915
Sound level dB(A)	65	69	65	76
Main filter dust class	L	L	L	L
Filter area [m²]	1.75	1.75	1.75	3.2
Recommended suction nozzle [mm]	Designed to the customer's specifications			
Dimensions [mm]	Designed to the customer's specifications			
Waste container volume [l] (max.)	60	60	60	60
Weight [kg]	Approx. 210	Approx. 250	Approx. 240	Approx. 253
Item number	9.986-414.0	9.982-468.0	9.986-402.0	9.988-132.0

Unit models without accessories

RA 300 D

- Continuous suction power in 24-hour operation, low-maintenance
- Application-specific designs for pipelines and suction nozzles
- High-quality, long-lasting components in the modular system
- Low operation and follow-up costs

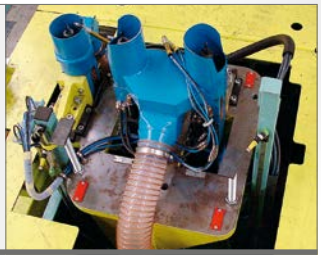
IE2

0 – 24 h

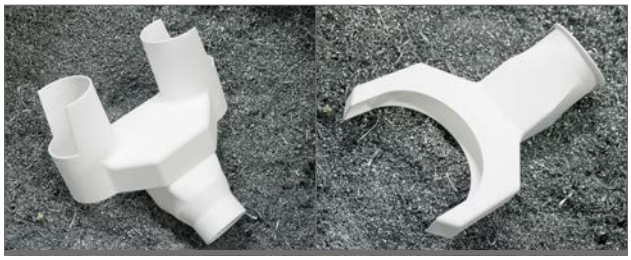
FEATURE

- Removable 120-l waste container with simple Ringler Kärcher Group decoupling mechanism

RINGLER KÄRCHER GROUP DEVELOPMENT



- Three suction points integrated into a bodywork production line



- 3D-printed nozzles for special application cases – available for all vacuum systems

STATIONARY VACUUM SYSTEM

Stationary vacuum system with 120-litre mobile waste container. Tipping container can be removed with simple Ringler Kärcher Group decoupling mechanism. Container can be transported by forklift or crane. Installation of the drive unit variable.

TECHNICAL DATA

Type of vacuum	RA 300 D3 IE2	RA 300 D5.5 IE2	RA 300 D2x3 IE2
Power [kW]	3.0	5.5	6.0
Voltage [V]	400	400	400
Vacuum max. [kPa]	26	24	26
Air flow rate, max. [Nm³/h]	315	495	630
Sound level dB(A)	65	69	65
Main filter dust class	L	L	L
Filter area [m²]	1.75	1.75	1.75
Recommended suction nozzle [mm]	Customer-specific version		
Dimensions [mm]	1,530 × 720 × 1,880	1,628 × 720 × 1,856	1,530 × 720 × 1,910
Waste container volume [l] (max.)	120	120	120
Weight [kg]	253	296	288
Item number	9.986-415.0	9.982-436.0	9.986-401.0

Unit models without accessories

RA 250 D

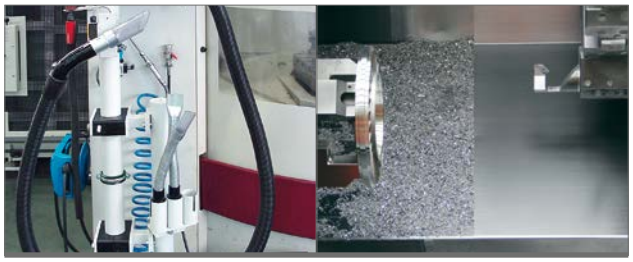
- For use as a single-user or multi-user vacuum system
- Comprehensive filter engineering for vacuuming swarf and coolant
- Continuous suction power in 24-hour operation, low-noise and low-maintenance
- Optional: optional incorporation of a swarf crusher

IE2

0 – 24 h

FEATURES

- TE multi-user system for four XT metal cutting machines
- Single-user solution with manual swarf vacuuming



- Suction point with various suction nozzles
- Central vacuum solutions are characterised by optimal vacuuming results

STATIONARY VACUUM SYSTEM FOR MACHINING CENTRES WITH CONTINUOUS SWARF DISCHARGE FOR 24-HOUR OPERATION

For connection to processing machinery. Suitable for large quantities of swarf with coolant; continuous discharge via dual-chamber rotary feeder, control. Automatic filter cleaning, drive unit with variable settings.

TECHNICAL DATA

Type of vacuum	RA 250 D3 IE2	RA 250 D5.5 IE2	RA 250 D2x3 IE2
Power [kW]	3.0	5.5	6.0
Voltage [V]	400	400	400
Vacuum max. [kPa]	26	24	26
Air flow rate, max. [Nm³/h]	315	495	630
Sound level dB(A)	65	69	65
Main filter dust class	L	L	L
Filter area [m²]	1.75	1.75	1.75
Recommended suction nozzle [mm]	Customer-specific version		
Dimensions [mm]			
Waste container volume [l] (max.)			
Weight [kg]	Approx. 330	Approx. 370	Approx. 360
Item number	9.986-421.0	9.982-470.0	9.986-407.0

Unit models without accessories

RA 701 D

- Suitable for manual or automatic vacuuming of large quantities of swarf, coolants or dust
- 60-litre waste container, automatic emptying into swarf conveyor or skips

FEATURES

- RA 701 D4x5.5 with controlled emptying flap in customised container
- Vacuuming machining residues

- Central vacuuming of machining residues with pipeline system
- Optional: also available as version for ATEX zone 22 (Model 22)

IE2

0 – 24 h

VACUUM SYSTEM FOR VACUUMING AT MULTIPLE SUCTION POINTS SIMULTANEOUSLY

For connection to several processing machines. Suitable for vacuuming large quantities of swarf and coolant; discontinuous discharge via flap mechanism. Drive unit with variable settings.

TECHNICAL DATA

Type of vacuum	RA 701 D 2x5.5 IE2	RA 701 D 3x5.5 IE2	RA 701 D 7,5 kW
Power [kW]	11.0	16.5	7.5
Voltage [V]	400	400	400
Vacuum max. [kPa]	24	24	17.5
Air flow rate, max. [Nm³/h]	990	1,485	915
Sound level dB(A)	74	74	76
Main filter dust class	L	M	L
Filter area [m²]	3.2	5.2	3.2
Recommended suction nozzle [mm]	Customer-specific version		
Dimensions [mm]			
Waste container volume [l] (max.)			
Weight [kg]	Approx. 450	Approx. 586	Approx. 330
Item number	9.982-467.0	9.982-499.0	9.988-129.0

Unit models without accessories

RA 702 D

- For use as a single-user or multi-user vacuum system
- Comprehensive filter engineering for vacuuming swarf and coolant
- Continuous suction power in 24-hour operation, low-noise and low-maintenance

FEATURES

- Disposal with dual-chamber discharge

- Large-area pocket filter with automatic filter vibration

- Reduced running costs due to energy efficient IE2 turbine

- Optional: also available as version for ATEX zone 22 (Model 22)

INDUSTRIAL VACUUMS FOR VACUUMING SWARF AND DUST

Compact machine, robust construction for industrial use. Particularly suitable for cleaning machines, vacuuming fine dust, swarf (including very hot swarf), granulate and grey cast iron. A dual-chamber system enables continuous discharge.

TECHNICAL DATA

Type of vacuum	RA 702 D2x5.5 IE2	RA 702 D3x5.5 IE2	RA 702 D4x5.5 IE2	RA 702 D 7,5 kW
Power [kW]	11.0	16.5	22.0	7.5
Voltage [V]	400	400	400	400
Vacuum max. [kPa]	24	24	24	17.5
Air flow rate, max. [Nm³/h]	990	1,485	1,980	915
Sound level dB(A)	74	74	74	76
Main filter dust class	L	M	M	L
Filter area [m²]	3.2	5.2	5.2	3.2
Recommended suction nozzle [mm]	Designed to the customer's specifications			
Dimensions [mm]				
Waste container volume [l] (max.)				
Weight [kg]	520	656	782	Approx. 400
Item number	9.982-469.0	9.982-492.0	9.978-753.0	9.988-131.0

Unit models without accessories

RA 711 D

- Continuous suction power in 24-hour operation, low-maintenance
- Application-specific designs for pipelines and suction nozzles
- High-quality, long-lasting components in the modular system

0 – 24 h

FEATURES

- Removable 120-l waste container with simple Ringler Kärcher Group decoupling mechanism

- Emptying by tipping into skip

- Reduced running costs due to energy efficient IE2 turbine

- Optional: also available as version for ATEX zone 22 (Model 22)

INDUSTRIAL VACUUMS FOR VACUUMING SWARF

Robust construction type with encapsulated drive unit for industrial use. Particularly suitable for cleaning machines, vacuuming swarf (including very hot swarf), granulate and grey cast iron. Equipped with convenient 120-l waste container with tipping function for emptying.

TECHNICAL DATA

Type of vacuum	RA 711 D2x5.5 IE2
Power [kW]	11.0
Voltage [V]	400
Vacuum max. [kPa]	24
Air flow rate, max. [Nm³/h]	990
Sound level dB(A)	74
Main filter dust class	M
Filter area [m²]	5.2
Dimensions [mm]	1,668 × 1,080 × 3,375
Waste container volume [l] (max.)	120
Weight [kg]	Approx. 450
Item number	9.982-437.0

Unit models without accessories

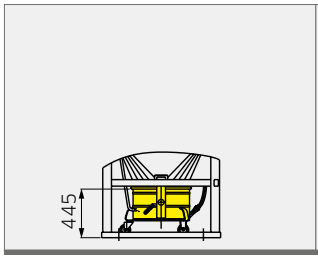
RA 850 D

- Special design
- Three filter towers with two-way cleaning
- Continuous swarf vacuuming via dual-shutter system
- Suitable for large quantities of wet or dry swarf

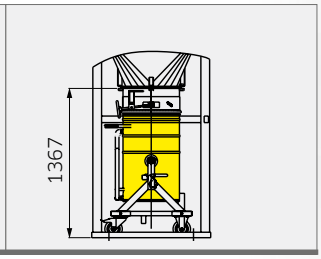
IE2

0 – 24 h

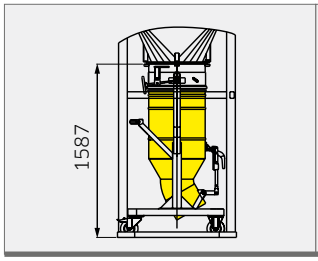
OPTIONAL DISCHARGE SYSTEMS:



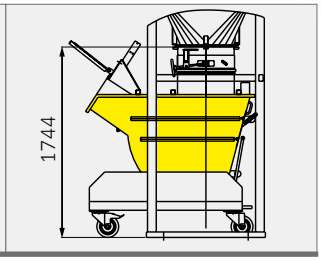
- 50-l waste container



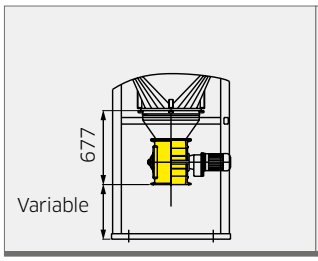
- 160-l tipping waste container



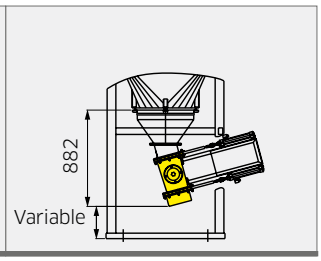
- 160-l waste container with flap



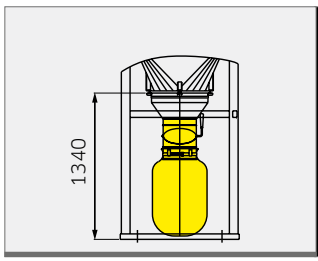
- 400-l tipping waste container



- Rotary feeder



- Dual-shutter discharge system



- Bag filling with shutter flap, Big Bag

- Optional: also available as version for ATEX zone 22 (Model 22)

TECHNICAL DATA

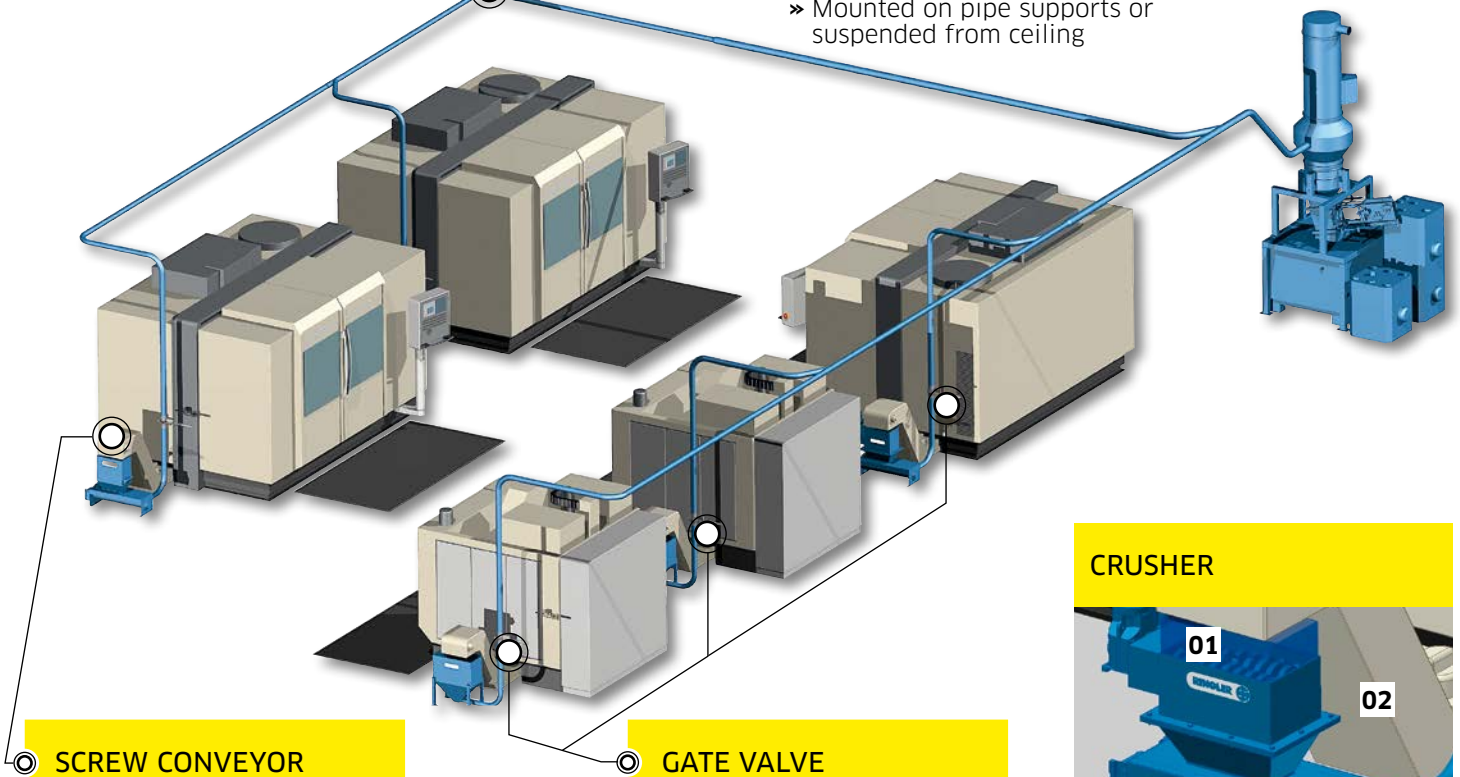
Type of vacuum	RA 850 D4x5.5 IE2
Power [kW]	22.0
Voltage [V]	400
Vacuum max. [kPa]	24
Air flow rate, max. [Nm³/h]	1,980
Sound level dB(A)	77
Main filter dust class	M
Filter area [m²]	3 × 5.2
Dimensions [mm]	
Waste container volume [l] (max.)	Customer-specific version
Weight [kg]	
Item number	On project enquiry

Unit models without accessories

Machining process chain

PIPELINE SYSTEM

- Pipe bends in version with reduced wear and tear
- Mounted on pipe supports or suspended from ceiling



CRUSHER

- Collection chute
- Integrated crusher with two contra-rotating shafts (see position 01)
- Feed screw (see position 02)

SCREW CONVEYOR

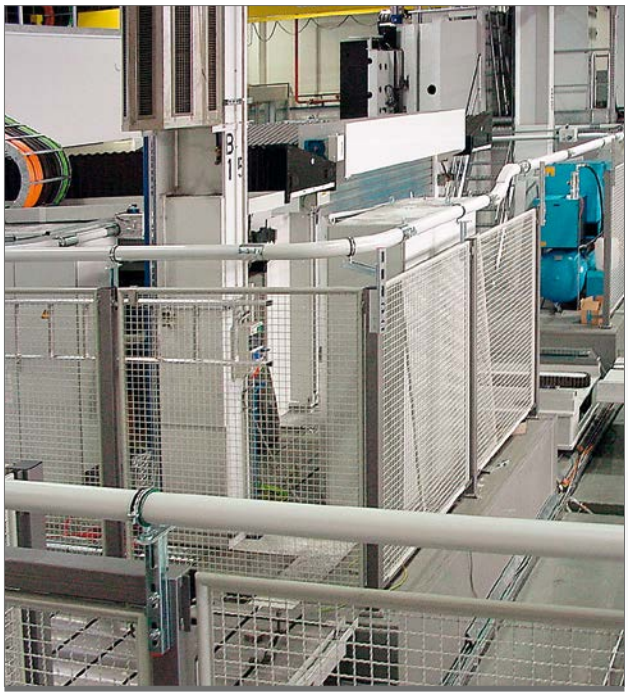
- Collection chute with branch for pipe connection (for small amounts of swarf)
- Collection chute with integrated feed screw (larger swarf volumes)

GATE VALVE

- Electropneumatically activated
- Open and close cyclically or according to the swarf volume at the suction point in question

APPLICATION POSSIBILITIES

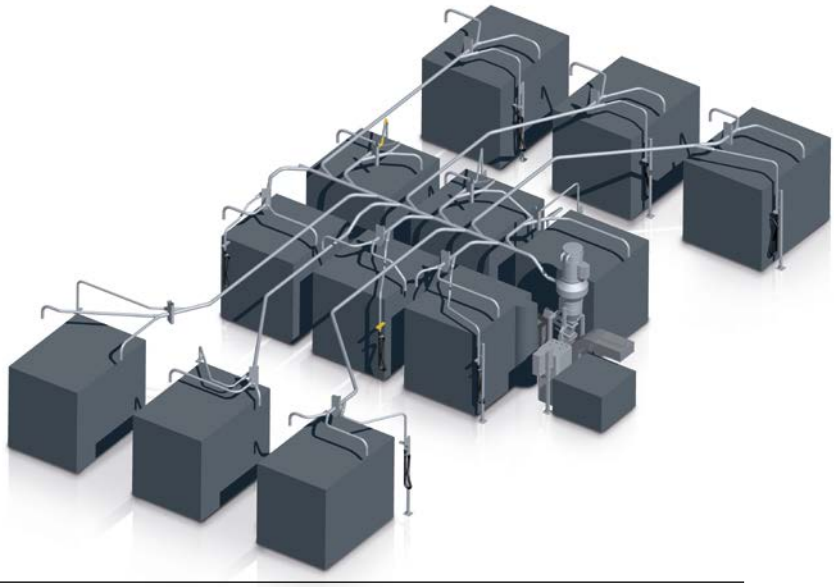
Central swarf conveyor systems ensure continuous vacuuming during processing, as well as simultaneous conveyance of swarf into a swarf container or swarf conveyor provided by the customer. There are options to activate individual suction points on the machines either on request or on a cyclical run.



- Pipeline

- Suction point with swivel arm and pipeline

- Pipeline system with electropneumatic shutter and electric control units



3D concept of a Ringler Kärcher Group vacuum system with 36 suction points

06

STATIONARY VACUUM SOLUTIONS

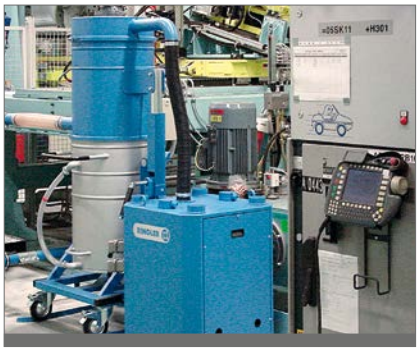
FOR DUSTS

APPLICATION POSSIBILITIES

Stationary industrial vacuums are used for vacuuming carcinogenic dusts. High-quality filter engineering guarantees long service lives with a degree of separation of up to 99.997%. The systems are available as single or multi-user systems.

The Competence Centre Ringler Kärcher Group offers complete solutions from a single source – from suction nozzles to pipelines to proper disposal.

Vacuuming fine dusts, for example in the food industry



Vacuuming fine dusts as a single or multi-user system

RA 200 D

- Equipped with maintenance-free side channel blower, therefore can be used in continuous operation
- Efficient filter engineering and separation technology
- Compact, particularly maintenance-friendly construction
- Variable installation possible

IE2

0 – 24 h

FEATURES

- Pressure gauge for monitoring the condition of the filter
- Optional: filling level monitoring

- Optional: absolute filter element for fine dusts (filter class H)
- Optional: also available as version for ATEX zone 22 (Model 22)

STATIONARY VACUUM UNIT FOR DUSTS

For connection to processing machinery, for vacuuming dusts in multiple-shift operation. Direct-drive side channel blower; filter classes L, M or H depending on the application. Effective and long-lasting filter engineering. Suitable for vacuuming carcinogenic dusts, swarf and granulate.

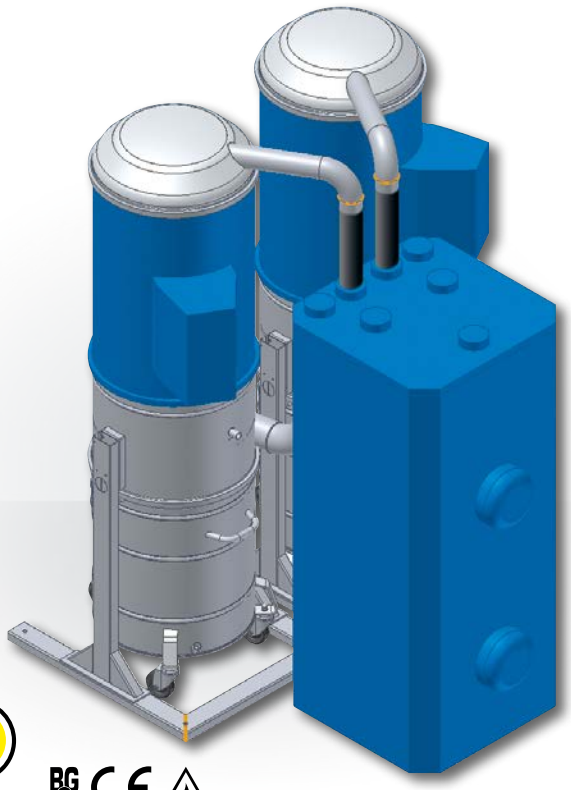
TECHNICAL DATA

Type of vacuum	RA 200 D3 IE2	RA 200 D5.5 IE2	RA 200 D2x3 IE2
Power [kW]	3.0	5.5	6.0
Voltage [V]	400	400	400
Vacuum max. [kPa]	26	24	26
Air flow rate, max. [Nm³/h]	315	550	630
Sound level dB(A)	65	69	65
Main filter dust class	M	M	M
Filter area [m²]	3.2	3.2	3.2
Recommended suction nozzle [mm]	DN 50	DN 70	DN 70
Dimensions [mm]	1,500 × 690 × 1,650	1,596 × 808 × 1,629	1,500 × 690 × 1,640
Waste container volume [l] (max.)	100	100	100
Weight [kg]	176	219	211
Item number	9.986-428.0	9.982-434.0	9.986-405.0

Unit models without accessories

RA 602 D

- Vacuum system suitable for continuous operation thanks to efficient filter cleaning
- Filter units can be decoupled; this allows shaking during the vacuuming operation
- Two 100-l waste containers, removable
- Maintenance-free side channel blower, suitable for multiple-shift operation

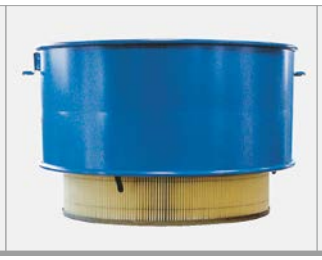


IE2

0 – 24 h

FEATURES

- Pocket filter with electric shaker



- Absolute filter element for fine dusts (filter class H), optional

- Ultrasonic distance sensor for filling level monitoring, optional

- Optional: also available as version for ATEX zone 22 (Model 22)

CENTRAL VACUUM SYSTEM WITH TWO-WAY FILTER CLEANING FOR VACUUMING IN MULTIPLE-SHIFT OPERATION

For vacuuming many types of process dusts, linkage with Ringler Kärcher Group pipeline systems and processing machines.

TECHNICAL DATA

Type of vacuum	RA 602 D5.5 IE2	RA 602 D2x5.5 IE2
Power [kW]	5.5	11.0
Voltage [V]	400	400
Vacuum max. [kPa]	24	24
Air flow rate, max. [Nm³/h]	495	990
Sound level dB(A)	70	74
Main filter dust class	M	M
Filter area [m²]	5.2	2 x 3.2
Dimensions [mm]	1,590 × 814 × 2,455	1,440 × 1,554 × 2,025
Waste container volume [l] (max.)	100	200
Weight [kg]	385	498
Item number	9.982-454.0	9.982-455.0

Unit models without accessories

07

PRE-SEPARATORS

SEPARATE LIQUIDS FROM DRY MEDIA

Pre-separators

- Pre-separator lid, 200-l drum for dry media

- Pre-separator lid, 200-l drum for liquid media

- Suitable for separation of flying sparks as well as sticky, very light and problematic process media
- Protection of the filter by minimising dust impact in advance

VERSIONS

120-LITRE PRE-SEPARATOR
With lid, with or without float as overflow protection, filling level indicator, drainage hose, mobile and tippable, transport by forklift, for fluids and swarf.

110-L PRE-SEPARATOR
With lid, crane eyelets, mobile, forklift transport, emptying via flap, for bulk materials, sand, grey cast iron, etc.

- Dust container in various sizes with or without filter

- Plastic container box with lid and lifting mechanism

- Cyclone separator with 1,000-l waste container

- Mobile pre-separator with swarf bag for dry, fibrous media

- 120-l pre-separator with tipping frame

- Pre-separator with filter unit and removable 100-l waste container

08

TURNKEY SOLUTIONS

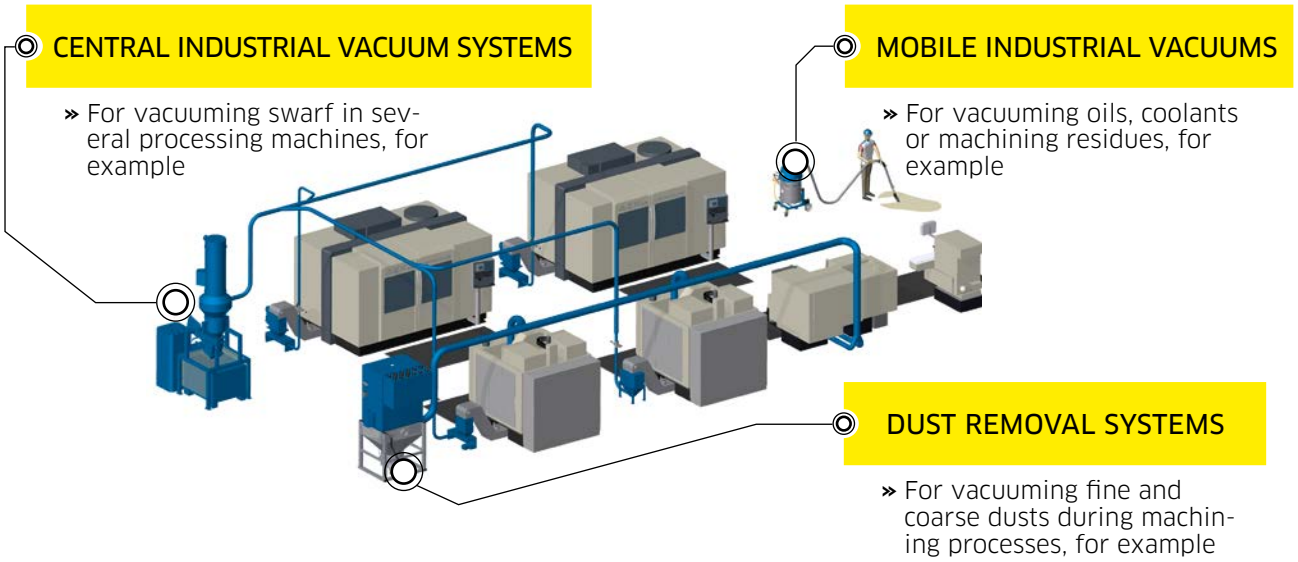
TURNKEY SOLUTION EXPERTISE FROM A SINGLE SOURCE

Turnkey solutions

TURNKEY SOLUTION EXPERTISE FROM A SINGLE SOURCE

The Competence Centre Ringler Kärcher Group is the ideal partner for all vacuum engineering matters. Services range from simple mobile solutions to complex, fixed pipeline vacuum solutions adapted to customer-specific circumstances. More than 40 years of experience with industrial vacuum systems stand behind the unmistakable quality of our consultation and allows us to provide turnkey solutions at the highest level.

EXAMPLE: METAL PROCESSING INDUSTRY



3D-printed nozzles

PERFECT DIRT COLLECTION

Optimal cleaning performance depends as much on the right accessories as it does on the vacuum unit. Often, however, nozzle geometries are required which are economically and/or technically unfeasible using the established manufacturing process.
The solution is 3D printing. This procedure allows complex geometries to be produced as individual pieces.

Pipeline construction

PREFABRICATED PIPELINE USING THE MODULAR PRINCIPLE

- Hardend pipe bend with 2D radii, without segmentation
- Pipes with 1 to 3 mm wall thickness
- Painted version
- Electrostatically conductive versions

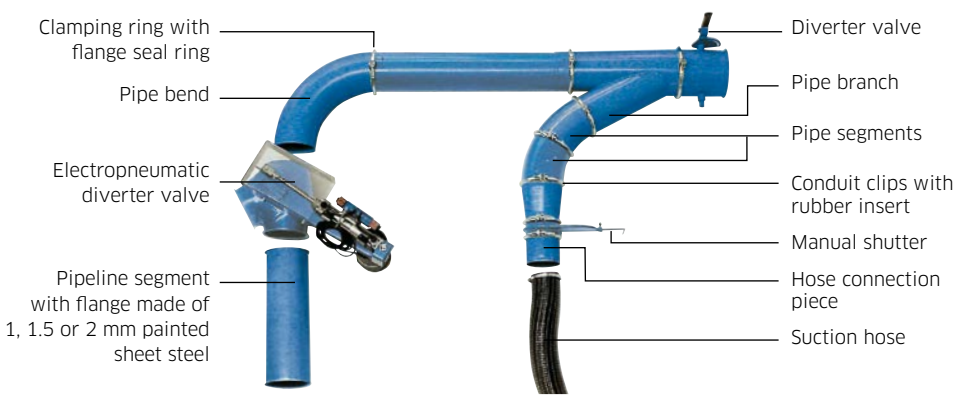
Pipelines are generally used for conveying gases, liquids and solids and are typically used in the pressure, gravity or vacuum areas.
Depending on the application and requirements, as well as the type of product to be conveyed, the planning and calculation of the pipeline must take into account material thickness, material type, flow rates, frictional resistances and the associated dimensioning, as well as electrical conductivity, etc.
Our technicians and engineers calculate and plan pipeline systems for pneumatic conveyor technology and are available to offer you expert advice (for all ventilation issues as well).

RI/RA COUPLING SYSTEM

- Pipeline system completely prefabricated for rapid assembly of complex pipelines, DN 40 to DN 120
- Connection with pipe connectors
- Large radius bends
- Pipes with min. 2 mm wall thickness
- Segments can be exchanged at any time
- Extensive range of accessories
- Pipe bends also with scrubber protection
- Painted version
- Electrostatically conductive

RE COUPLING SYSTEM

- Prefabricated pipeline DN 80 to DN 250 on a modular basis
- With mountable and removable clamping ring system
- Pipe bends with 2D
- Radii without segmentation
- Available versions: painted, zinc-coated or entirely in stainless steel
- Pipes 1 to 3 mm wall thickness
- Electrostatically conductive versions

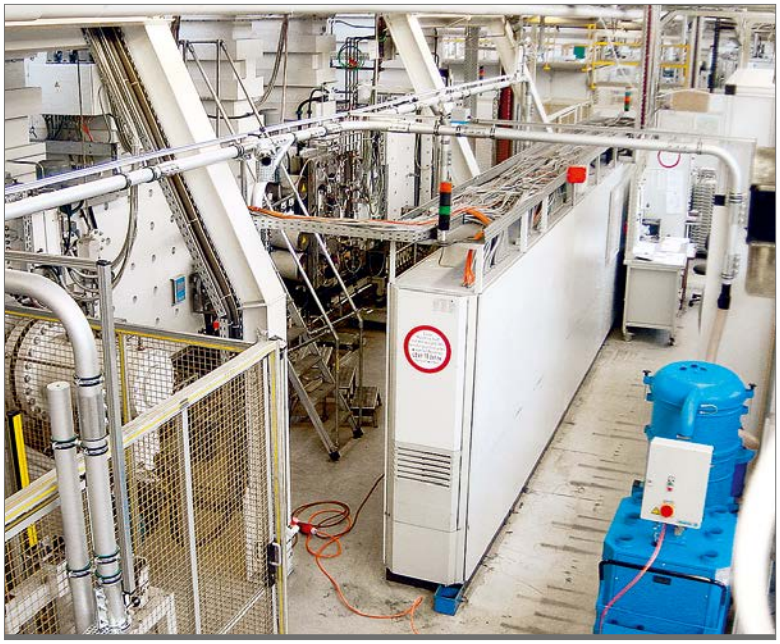


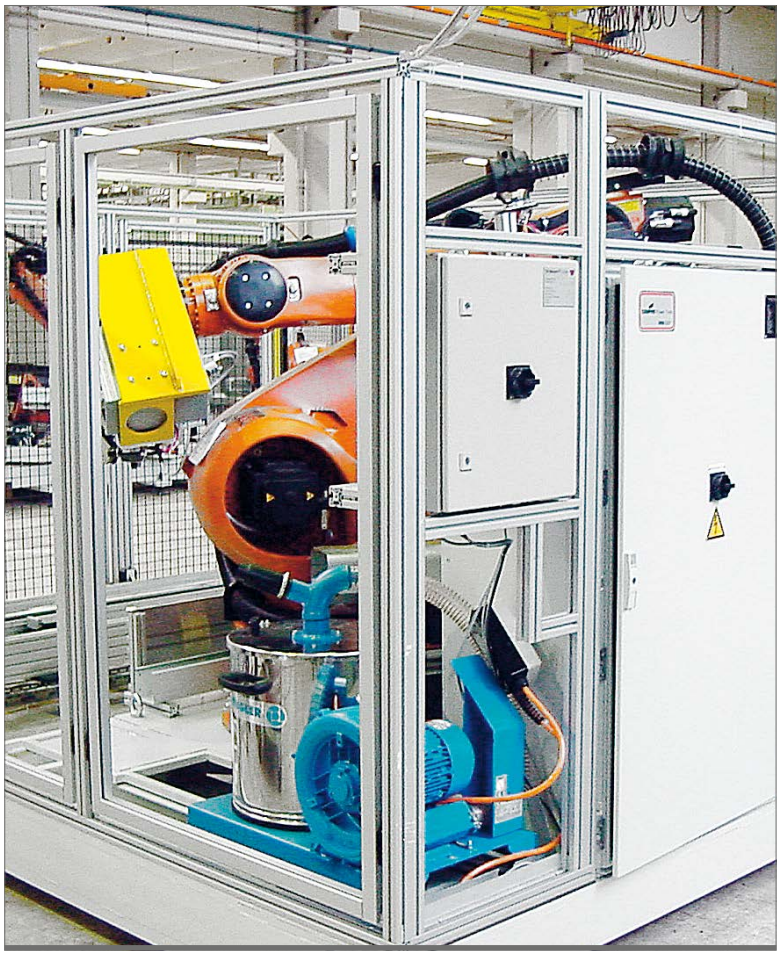
Possibilities of installation

FLEXIBILITY AS ADDED CUSTOMER VALUE

Ringler dedusting systems are adaptable to all customer requirements. Therefore we can offer the benefit as its best.

Possibilities of installation



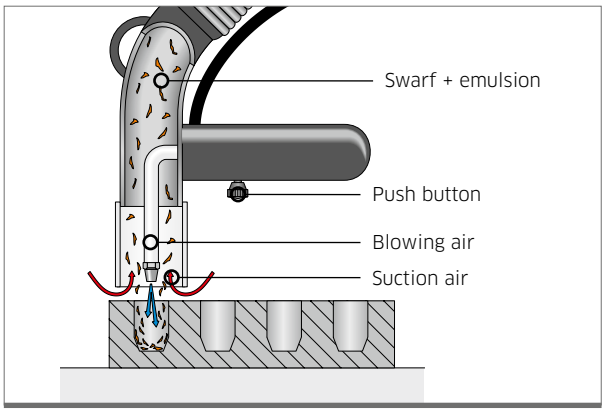


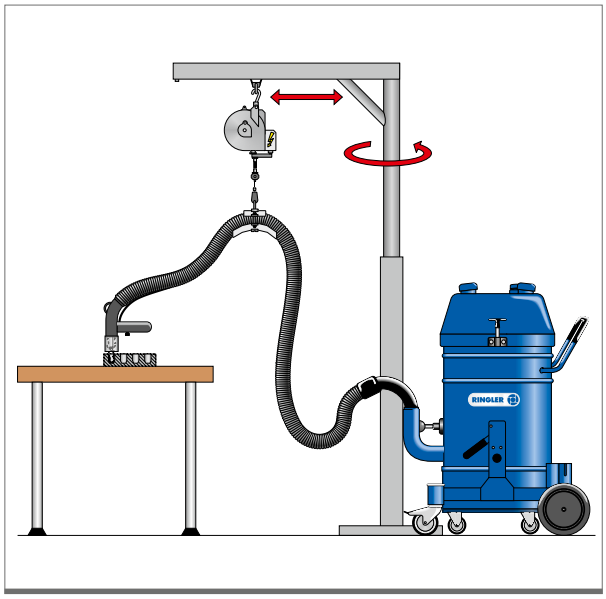
Patented suction and air nozzle

- Suitable for blowing out blind holes and work pieces with simultaneous vacuuming of swarf and oil, including potentially harmful substances
- Protection of the operator against stirred up swarf and harmful substances. The MAC values are complied with

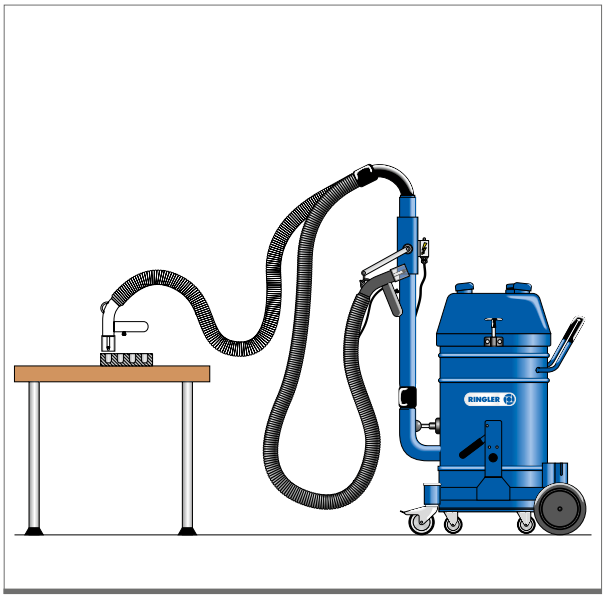
OPERATING PRINCIPLE

The air nozzle, which is integrated into the vacuum handle, is activated by a push button. The stirred-up particles are captured by the suction flow and fed into the vacuum.
The vacuum cleaner can be turned on by hand, automatically via the balancer or via a limit switch.





- Vacuum cleaner switched on and off via balancer



- Vacuum cleaner switched on and off by hose suspension

Patented hose connection

- Use as a single-user or multi-user vacuum system
- Comprehensive filter engineering for vacuuming swarf and coolant
- Continuous suction power in 24-hour operation, low-noise and low-maintenance

INDUSTRIAL VACUUMS FOR VACUUMING SWARF AND DUST

Suction hoses are usually subject to a high degree of wear and tear. Defective hoses must therefore be able to be replaced quickly and easily. For this reason, we have now replaced the previously used shrinking hose connection with a detachable collar connection.

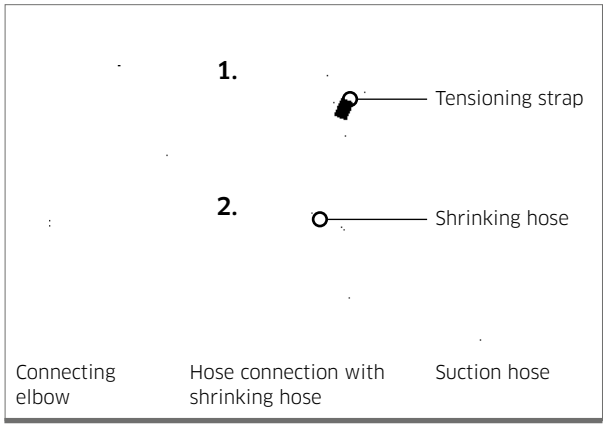
If you would like the new hose connection for the replacement hose, you will need the following items:

- Handle
- Bend
- Mounting kit

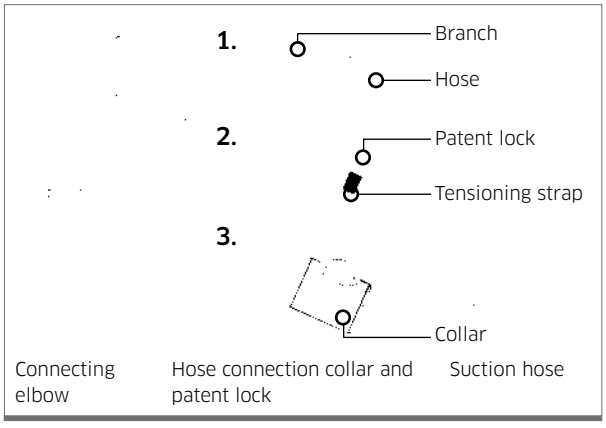
INSTALLATION NOTES

- 1. Pull hose over branch; lay patent lock over hose.
- 2. Attach hose with tensioning strap; secure with patent lock.
- 3. Mount collar. Attention: tensioning strap lock must sit in collar cavity!

New hose connection fits only in combination with the new connecting elbow and handle!



- Previous connections



- New, detachable hose connection

09

EXPERT KNOWLEDGE

Dust filter categories

Dust class		Max. permeation degree	Suitable for	Application
L		≤ 1.0%	● Dusts with MAC** values > 1 mg/m³	● Lime dusts ● Gypsum dusts
M		< 0.1%	● Dusts with MAC** values ≥ 0.1 mg/m³ ● Wood dusts to a max. of 1,200 W/50 l	● Wood dusts (beech, oak) ● Paint dust particles ● Ceramic dusts ● Plastic dusts
H		< 0.005%	● Dusts with MAC** values < 0.1 mg/m³ ● Carcinogenic dusts (section 35 GeStoffV [German Hazardous Substances Ordinance]) ● Pathogenic dusts	● Carcinogenic dusts (lead, coal, cobalt, nickel, tar, copper, cadmium, etc.) ● Mould, bacteria ● Germs ● Formaldehyde
Explosive dusts (ATEX zone 22)		Such as dust class L, M or H with special requirements	● Dusts from the dust explosion classes in zone 22	● Paper dusts ● Flour dusts ● Metal dusts (e. g. aluminium)

* Binding for Germany according to TRGS 519. ** MAC = maximum allowable concentration

Nomenclature

RI = **R**ingler Industrial Vacuums

RI	**50**	/	**26-2**		**M F**	
Model / Vacuum type	**Container**	/	**Connection load**	**Motor**	**Version**	
Industrial Vacuum	Volume in litres		Driving powerkW/10	**-3** = 1 phase 3 motors **-2** = 1 phase 2 motors **-1** = 1 phase 1 motor	Standard M, H Z22 F	→ Manual Filter cleaning → Correspondent filter class → B22-version → suitable for flammable dust

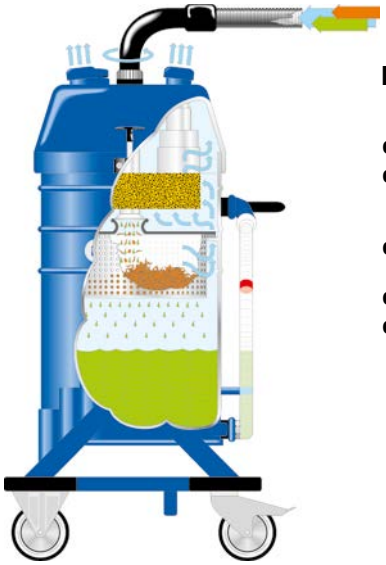
RE = **R**ingler **E**ntstaubungsanlage

RE	**9**	/	**30**	**Es Z22**	
Model / Vacuum type	**Air volume**	/	**Connection load**	**Version**	
Dedusting system	Air flow x 100 m³/h		Driving power kW/10	Standard Es Z22	→ Manual Filter cleaning → Electric Filtershaking → B22-version

RA = Stationary vacuum solution

IVR-L	**65**	/	**12**	**-1**		**TC ME DP**
Model/Vacuum type	**Container**	/	**Connection load**	**Motor**	**Version**	**Equipment**
IV(R)-L = Industrial Vacuum (**R**obust) **L**iquids **IVR** = **R**obust Industrial Vacuum **IVR-B** = Industrial Vacuum Robust **B**uilt-in unit **IVS** = Industrial Vacuum **S**uperclass	Volume in litres		In kW/10 (without decimal point) e.g. 30 = 3.0	**-3** = 1 phase 3 motors **-2** = 1 phase 2 motors **-1** = 1 phase 1 motor	**Pf:** Pocket filter	**Tc:** Tilting chassis **Me:** Stainless steel (container) **Dp:** Drum pump **Lp:** Longopac **Z22:** B22-version **M:** Filter class M

Operating principle



LIQUID AND SWARF VACUUMS

- Suction media is being absorbed via the head
- Big particles e.g. Metal chips keep retained in the optional screen basket (1.5 mm perforated plate)
- An integrated deflector avoids damages on the filters caused by the deflection of big particles
- Seperation of big particles an liquids
- In case of Liquids: filling level control and emptying via transparent hose. Optional emptying via drainage hose
- In case of solids: Emptying via tilting chassis possible or by taking out peforated basket
- Air filtration is based on surface filter (Filter class "L")

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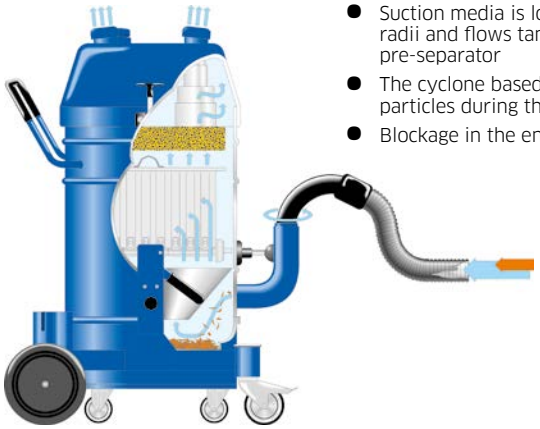
POSSIBLE ADD-ONS

- Electrical overfill protection
- Stainless steel versions
- Crane eyes at the container respectively at the chassis
- External drump pump
- Customer specific painting

INDUSTRIAL VACUUMS



- Suction media is looped around twice via large radii and flows tangentially into cyclone based pre-separator
- The cyclone based pre-separator removes big particles during the first filtration step
- Blockage in the entrance area thefore avoided
- Fine dust particle are retained in the pocket filter
- Filter cleaning can be conducted manually after the suction process or automatically vis electrical filter shaking
- Emptying is carried out via a waste container with corresponding PE bag.

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POSSIBLE ADD-ONS

- Filter Class L,M
- Filter area: 1,75 / 3,2 m²
- Electrical filter cleaning system
- Filter material: Micro-fleece, PTFE, etc.
- Stainless steel: waiste container and / or filter container
- Dust-free function for emptying
- B22 version for Zone 22
- control box for connecting with a machine
- Sensor control: filling level, differential pressure
- Customer specific painting

Notes and information

Area subject to explosion hazards

POTENTIALLY EXPLOSIVE ATMOSPHERE
Explosion protection is an important part of work protection and is governed by the European Commission's standard directives across the European Union. Directive 94/9/EC (in force since 2003), better known as ATEX 100a, regulates the placement of machines, components and protection systems on the market which are intended for use in areas that are potentially explosive due to flammable gases, vapours, mists and dusts. The law makes a basic distinction between functional and design requirements.
Directive 94/9/EC specifies the design requirements which are intended to ensure the freedom of the internal market. In Germany, functional requirements are governed by national regulations ElexV (new) and VbF (new) in accordance with Directive ATEX 118a. See annex *Explosionsschutzrichtlinien ATEX 100a und ATEX 118a* [„ATEX 100a and ATEX 118a Explosion Protection Directives"] by Dr Helmut Krämer PTB, Braunschweig.

DESIGN REQUIREMENTS
Since the requirements differ depending on the machine, Directive ATEX 100a classifies machines into two groups:
Group 1: includes machines for underground use in mines.
Group 2: all other machines for non-mining sectors.
These groups are further divided according to this Directive in order to more precisely define the use of the machines.
Group 1 is subdivided into Category M1 (machines which continue to function in explosive atmospheres) and Category M2 (machines which are turned off before reaching the lower explosion limit). Three categories are differentiated within Group 2.
Category 1 describes the use of machines that operate for long periods or continuously in an explosive atmosphere, while Category 2 machines work under these conditions only occasionally.
In Category 3, an explosive atmosphere exists only rarely and for a short time.
The zone criteria, by which the usage category is determined for the respective machines, correspond with the definitions of the various zones of explosive atmospheres according to Directive ATEX 118a or DIN EN 1127-1.
Consequently, Category 1 corresponds to use in zone 0 or 20, Category 2 to use in zone 1 or 21 and Category 3 to use in zone 2 or 22. The marketer/manufacturer and the notified bodies determine the regulatory compliance of the machines.

FUNCTIONAL REQUIREMENTS
Before initial start-up in an area with an explosion hazard, the area must be classified and tested by accredited testing and certification bodies/notified bodies in accordance with ATEX 118a.
The expertise for this is contained in the BImSchG (German Federal Emission Control Act) section 29a paragraph 1, Elektro-Berg VO (German Mining Electrics Ordinance) and fire protection. Irrespective of this, the determination of the explosive characteristics of combustible materials should be implemented.
The safety analysis produced includes hazard and risk analyses and the structural fire protection of the facility. In open areas (for example work areas for personnel) steps are taken to prevent risks and foreseeable malfunctions and the characteristics of the facility are determined. This applies particularly to the condition of the floor covering, for example, which must have a certain quality, depending on the classification of the facility during normal operation.
The determination of earth leakage resistance in order to avoid electrostatic discharge from system parts to humans or machines is applicable in accordance with DIN EN 61340-4-1.
During normal operation, therefore, the condition of the floor covering must never be compromised or invalidated.
In an internal work management system, it is established that the operator is responsible for maintenance and functional performance.
The conductivity of the floor covering is compromised even by light soiling. This is one of the most frequent causes of breakdowns during normal operation.
In a corresponding flooring manufacturer's care manual, the necessity of cleanliness must be explicitly pointed out; otherwise, there is no longer any liability. (Example: "Only clean shoes may be worn to walk on the clean floor.").
After the risk assessment, it is strongly recommended that measures be taken for regular maintenance cleaning in order to ensure continuous safety.

ATEX

NEC 500	Class I, Division 1, Group A, B, C, D, T6			
NEC 505	Class I, Zone 1, AEx	ed	IIC	T6
IEC	Ex	ed	IIC	T6
CENELEC	EEx	ed	IIC	T6

New designation according to ATEX: II 2 G

CLASSIFICATION OF EXPLOSIVE AREAS

		Continuous or occasional risk	Infrequent and short-term risk
USA	NEC 500 Class I (gas) Class II (dust) Class III (fibres)	Division 1	Division 2

ZONE CATEGORISATION

		Continuous, long-term or frequent risk	Occasional risk	Infrequent and short-term risk
CENELEC / IEC		Zone 0 (Zone 20 – dust)	Zone 1 (Zone 21 – Dust)	Zone 2 (Zone 22 – Dust)
USA	NEC 505 Class I (gas)	Zone 0	Zone 1*	Zone 2

* A machine that is approved for Class I, Zone 1 can automatically be used in a Class I, Division 2 environment.

CLASSES AND GROUPS ACCORDING TO NEC 500

Typical gases / dusts / lint / fibres	Group	
Acetylene	Class I	Group A
Hydrogen	Class I	Group B
Ethylene	Class I	Group C
Propane	Class I	Group D
Methane	Mining	
Metal dust	Class II	Group E
Coal dust	Class II	Group F
Dust from grains	Class II	Group G
Fibres/lint	Class III	

TEMPERATURE CLASSES

Maximum permissible surface temperature	USA (NEC 500)
450 °C	T1
300 °C	T2
280 °C	T2A
260 °C	T2B
230 °C	T2C
215 °C	T2D
200 °C	T3
180 °C	T3A
165 °C	T3B
160 °C	T3C
135 °C	T4
120 °C	T4A
100 °C	T5
85 °C	T6

UNIT GROUP I
(Mining)

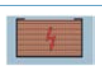
	Category M1 Very high level of safety	Category M2 High level of safety
Adequate safety	With two protective measures / two faults	Must be switched off when an explosive atmosphere arises

UNIT GROUP II
(Other potentially explosive atmospheres)

	Category 1* Very high level of safety		Category 2* High level of safety		Category 3* Normal level of safety	
Adequate safety	With two protective measures / two faults		With frequent machine malfunctions / with one fault		During uncompromised operation	
For use in	Zone 0	Zone 20	Zone 1	Zone 21	Zone 2	Zone 22
Atmosphere G=Gas, D=Dust	G	D	G	D	G	D

* II (1) G = associated electrical consumables - installation in the safe area

TYPES OF IGNITION PROTECTION

Ignition protection		Schematic representation	Primary application	Standard
Increased safety	e		Terminals and connection boxes, control boxes for installing explosion-protected components (which are protected by a different type of ignition protection), squirrel cage motors, lights	EN 50 019 IEC 60 079- 7 FM 3600 UL 2279
Pressure-resistant encapsulation	d		Switching devices and switch gears, control devices and display devices, controls, motors, transformers, heating devices, lights	EN 50 018 IEC 60 079- 1 FM 3600 UL 2279
Pressurised encapsulation	p		Switching and control cabinets, analytical instruments, large motors	EN 50 016 IEC 60 079- 2 FM 3620 NFPA 496
Intrinsic safety	i*		Measurement and control technology, communication technology, sensors, actuators	EN 50 020 IEC 60 079- 11 FM 3610 UL 2279
Oil immersion	o		Transformers, starting resistors	EN 50 015 IEC 60 079- 6
Powder filling	q		Transformers, capacitors, heat conductor connection box	EN 50 017 IEC 60 079- 5 FM 3600 UL 2279
Encapsulation	m		Switchgears for low power, control and signalling units, display devices, sensors	EN 50 028 IEC 60 079- 18 FM 3600 UL 2279
Ignition protection	n	Zone 2 Several ignition protection methods are grouped together under this type of ignition protection	All electrical consumables for Zone 2, less suitable for switchgears and control units	EN 50 021 IEC 60 079- 15

EXPLOSION GROUPS
ACCORDING TO CENELEC, IEC, NEC 505

Explosion group	Typical gas
I	Methane
II A	Propane
II B	Ethylene
II C	Hydrogen

TEMPERATURE CLASSES

Maximum permissible surface temperature	CENELEC IEC USA (NEC 505)
450°C	T1
300°C	T2
200°C	T3
135°C	T4
100°C	T5
85°C	T6

Classification of gases and steam in EXPLOSION GROUPS and TEMPERATURE CLASSES

	T1	T2	T3	T4	T5	T6
I	Methane					
II A	Acetone Ethane Ethyl acetate Ammonia Benzene (pure) Acetic acid Carbon monoxide Methane Methanol Propane Toluene	Ethyl alcohol i-amyl acetate n-butane n-butyl alcohol	Petrol Diesel Jet fuel Heating oil n-Hexane	Acetaldehyde Ethyl ether		
II B	Town gas (coal gas)	Ethylene				
II C	Hydrogen	Acetylene				Carbon disulphide

Courtesy of the company Stahl

NOTICES

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