

Vacuum supply, overview



Vacuum units



Modular vacuum units



Compact vacuum units



Vacuum workstations



Vacuum pumps



Liquid ring pumps

Vacuum Supply

Pumps

Units

Workstations

Application

We have vacuum pumps available of different types to meet each individual need.

Sizes and capacities vary from 5m³/h bis 250m³/h and more to guarantee optimal vacuum clamping whatever the circumstances

Advantages

- Reliable in continuous operation
- Easy to maintain
- Modular unit has integrated liquid separator
- Space saving assembly for easy access
- Integrated air filter, safety valve
- Witte repair service with spare parts in stock
- Pumps from 5m³/h to over 500m³/h, also on request dry running pumps
- Liquid ring pumps run on regular machining coolant, pump temperature is regulated by an integrated radiator

Handling

- Small light pumps available according to individual need
- Integrated vacuum storage tank
- Different voltages available
- Castors available for mobility in workshop area
- Easy access for emptying liquid separator



Choosing a vacuum unit or pump

Depending on your operation Witte offers different vacuum supply systems:

Handheld pumps / Pumps

are standard, almost all of which can be used together with our liquid separators if fluids are involved and sucked in during machining process
► page 68

Vacuum units

In addition to the pumps mentioned above the vacuum units also have an **additional vacuum tank** as well as various safety devices.
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Modular vacuum unit

In addition to the pump and tank the modular vacuum units also have an **integrated liquid separator** and various safety devices
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Liquid ring pumps

These pumps are highly recommended when **large amounts of cooling fluids** are sucked in during the machining process
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Selection of vacuum supply depending on dimension of clamping surface :

Area	Suction-capacity	Type	No.
<1200cm ²	5 m ³ /h	Vacuum pump	99170
<1500cm ²	10 m ³ /h	Vacuum pump	95969
	10 m ³ /h	Vacuum unit	81010
	10 m ³ /h	Vacuum unit	81011
	10 m ³ /h	Modular unit	80172
	10 m ³ /h	Modular unit	80173
<5000cm ²	16 m ³ /h	Vacuum pump	82116
	16 m ³ /h	Modular unit	82146
<1 m ²	21 m ³ /h	Vacuum pump	80078
	21 m ³ /h	Vacuum unit	80000
	21 m ³ /h	Modular unit	80175
	25 m ³ /h	Liquid ring pump	93801
<2 m ²	63 m ³ /h	Vacuum pump	80126
	63 m ³ /h	Modular unit, mobile	82150
	65 m ³ /h	Liquid ring pump	93803
<3 m ²	100 m ³ /h	Vacuum pump	84410
	100 m ³ /h	Liquid ring pump	93804
<4,5 m ²	160 m ³ /h	Vacuum pump	84412
	160 m ³ /h	Vacuum unit, mobile	84414
	232 m ³ /h	Liquid ring pump	93807
	250 m ³ /h	Vacuum pump	84413
	250 m ³ /h	Vacuum unit, mobile	84208

FLIP-POD™

Each m² of FLIP-POD™ surface requires 60-100 m³/h vacuum suction capacity

Witte VAC-MAT™

No. of Mats	Required suction capacity	
1	3 - 6 m ³ /h	
≥ 8	16 - 21 m ³ /h	
≥ 20	40 - 63 m ³ /h	
≥ 50	100 - 160 m ³ /h	

Choosing vacuum supply according to working conditions

Working conditions	Dry machining	Working with fluids
<p>Small clamping area,</p> <p>Small loss of vacuum</p> <p>Low machining forces</p> <p>▼</p>	 <p>Handheld pump</p>	 <p>Handheld pump with liquid separator</p>
<p>Larger clamping area,</p> <p>Higher loss of vacuum,</p> <p>Higher machining forces</p> <p>▼</p>	 <p>Vacuum Unit</p>	 <p>Vacuum unit with liquid separator</p>
<p>Large clamping area</p> <p>High loss of vacuum</p> <p>High machining forces</p> <p>▼</p>	 <p>Liquid ring pump</p>	 <p>Liquid ring pump</p>
<p>Very large clamping area</p> <p>Very high vacuum loss</p> <p>Very high machining forces</p>	 <p>Modular vacuum unit</p>	 <p>Vacuum workstation</p>
	 <p>Mobile modular vacuum unit</p>	 <p>Vacuum unit, mobile, with automatic liquid separator</p>

Vacuum pumps

Oil lubricated vacuum pumps offer the following advantages:

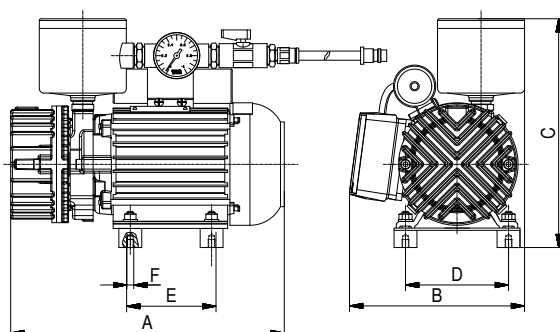
- Air-cooled, therefore do not require coolant
- Highly reliable
- Low operating costs
- Good resistance to condensation
- Integrated oil mist separator, oil filter, check valve on suction side with sieve



Vacuum pump


220-240V working voltage, dry lubricated

Nr.	m ³ /h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C	D	E	F	
99170	5m	220-240	50	150 mbar	7,5	3000 1/2min	63	-	272	153	200	90	71	M6	8



99170
Vacuum pump 5m³/h



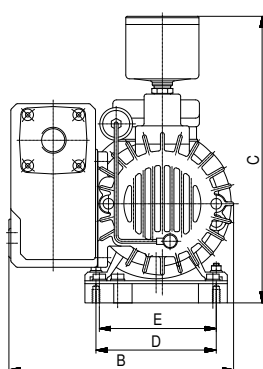
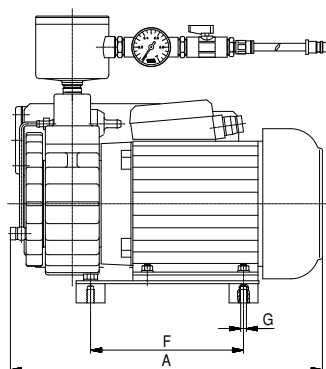
-  Supply includes
- 1 pce connection unit comprising:
 - 2m vacuum hose
 - 3/2 way aerated valve
 - 1 vacuummeter

 All vacuum pumps can be used with 60 Hz

Vacuum pump

230/400 V working voltage

Nr.	m³/h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C	D	E	F	G	
95969	10	230	50	20 mbar	0,37	3000 1/2 _{min}	59	0,3l	301	234	297	100	83	150	M8	24
281548	10	400	50	20 mbar	0,37	3000 1/2 _{min}	59	0,3l	301	234	297	100	83	150	M8	24
82115	16	230	50	20 mbar	0,55	3000 1/2 _{min}	60	0,3l	301	234	297	100	83	150	M8	10,3
82116	16	400	50	20 mbar	0,55	3000 1/2 _{min}	60	0,3l	301	234	297	100	83	150	M8	10,3
80156	21	230	50	20 mbar	0,75	3000 1/2 _{min}	62	0,5l	401	223	254	131	127	210	M8	22
80078	21	400	50	20 mbar	0,75	3000 1/2 _{min}	62	0,5l	401	223	254	131	127	210	M8	22

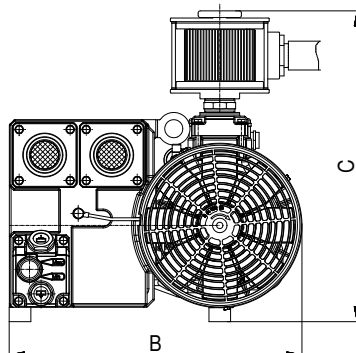
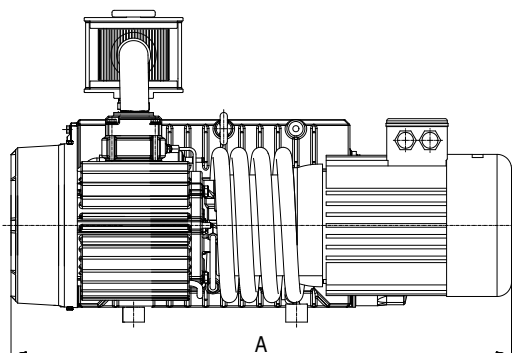


82115
Vacuum pump 16m³/h

Vacuum pump

400V working voltage

Nr.	m³/h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C	
80126	63	400	50	2 mbar	1,8	1500 1/2 _{min}	64	2l	640	406	435	62
84410	100	400	50	2 mbar	2,2	1500 1/2 _{min}	65	2l	699	406	435	80
84412	160	400	50	2 mbar	4	1500 1/2 _{min}	70	3l	920	536	555	150
84413	250	400	50	2 mbar	7,5	1500 1/2 _{min}	72	6,5l	1000	581	555	200



84413
Vacuum pump 250m³/h



- Supply includes
- 1 pce connection unit comprising:
 - 2m vacuum hose
 - 3/2 way aerated valve
 - 1 vacuummeter

All vacuum pumps can be used with 60 Hz

Vacuum units

Operating vacuum required can be produced in many ways.

Witte vacuum units feature the following:

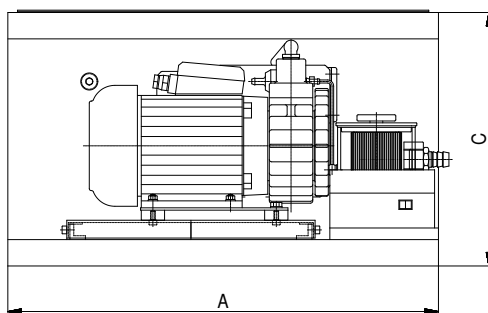
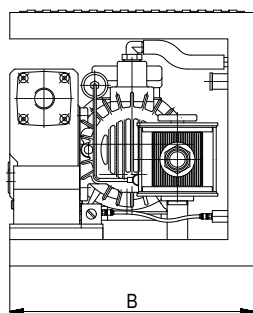
- Oil lubricated vacuum pumps with an end vacuum rate of 20mbar absolute at full suction capability of i.e. 10m³ upto 250m³ per hour
- Integrated pressure difference switch, which automatically switches the vacuum pump on or off thereby ensuring vacuum during machining but avoiding unnecessary idle running
- Protection switch which protects electric motor from overheating
- Air filter which protects pump from dirt (made of acrylic glass with exchangeable air filter cartridge)
- Careful assembly of compatible components guarantee trouble-free and almost maintenance-free operation of Witte vacuum units in many applications
- Drainage screw for coolants which have been sucked in
- 3m connecting cable with CEE or Schuko plug



Witte vacuum unit with U tank

230/400 V working voltage

Nr.	m ³ /h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C	
81010	10	230	50	20mbar	0,37	3000 1/2 _{min}	59	0,3l	555	315	327	19
81011	10	400	50	20mbar	0,37	3000 1/2 _{min}	59	0,3l	555	315	327	19
85323	16	230	50	20mbar	0,55	3000 1/2 _{min}	60	0,3l	555	315	327	15
85324	16	400	50	20mbar	0,55	3000 1/2 _{min}	64	0,3l	555	315	327	15
80165	21	230	50	20mbar	0,75	3000 1/2 _{min}	62	0,5l	555	315	327	38
80000	21	400	50	20mbar	0,75	3000 1/2 _{min}	62	0,5l	555	315	327	38
80001	63	400	50	20mbar	1,8	1500 1/2 _{min}	65	2l	800	500	500	105



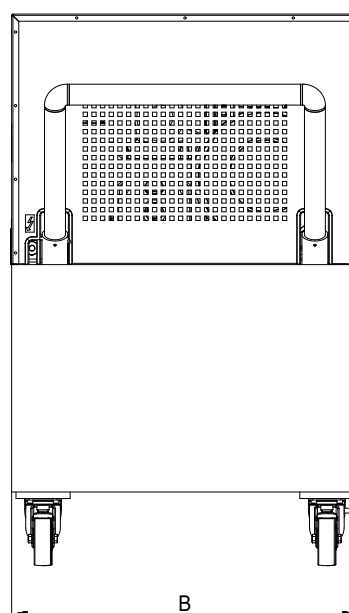
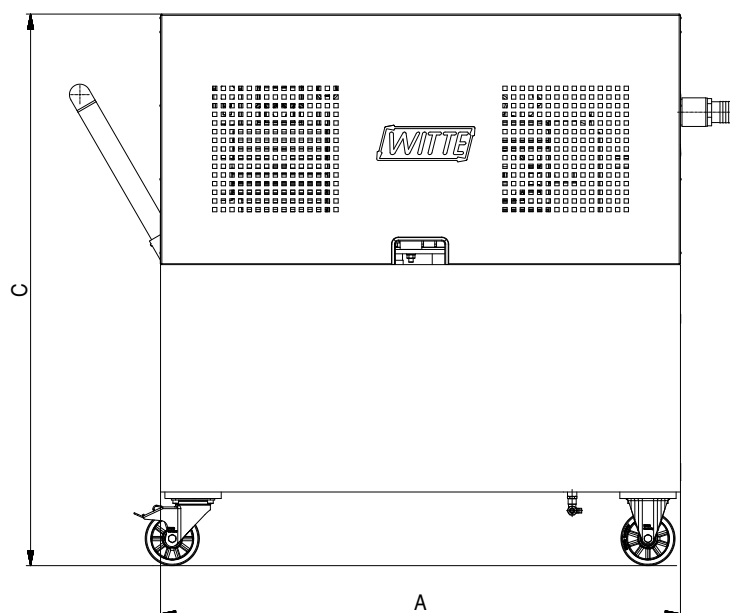
- i** Supply includes
- 1 pce connection unit comprising:
 - 2m vacuum hose
 - 3/2 way aerated valve
 - 1 vacuummeter

i All vacuum pumps can be used with 60 Hz

Witte vacuum unit

400 V working voltage, mobile

Nr.	m³/h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C
92302	100	400	50	2 mbar	2,2	1500	65	2l	1000	800	1274
84414	160	400	50	2 mbar	4	1500	70	5l	1000	800	1274
84208	250	400	50	2 mbar	7,5	1500	72	6,5l	1000	800	1274



- i** Supply includes
- 1 pce connection unit comprising:
 - 2m vacuum hose
 - 3/2 way aerated valve
 - 1 vacuummeter

i All vacuum pumps can be used with 60 Hz



Modular vacuum units

Advantages:

- Vacuum storage unit and liquid separator are integrated - an additional liquid separator is not required
- Space saving assembly of all components
- See-through unit for liquid separator and vacuum storage unit all in one means safety "at a glance"
- Different storage volumes possible simply by changing acrylic glass cylinder
- Integrated air filter, drain separator, overvoltage relay, pressure difference switch
- Available with different pump types from 6m³ to 63m³, on request also available with dry running pumps

Modular vacuum unit

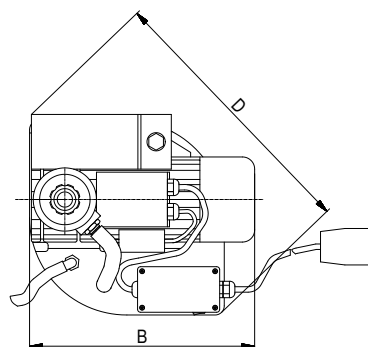
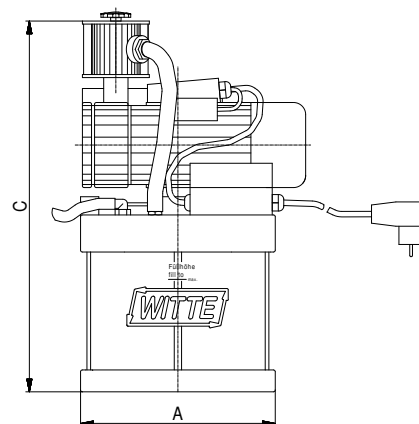
230/400 V working voltage

Nr.	m ³ /h	Volt	Hz	End press.	Kw	RPM	DB	Ölfüllung	A	B	C	D	
80172	10	230	50	20 mbar	0,37	3000 ½ _{min}	60	0,3l	ø320	360	650	460	32,5
80173	10	400	50	20 mbar	0,37	3000 ½ _{min}	60	0,3l	ø320	360	650	460	32,5
82147	16	230	50	20 mbar	0,55	3000 ½ _{min}	60	0,3l	ø320	360	620	460	29,1
82146	16	400	50	20 mbar	0,55	3000 ½ _{min}	60	0,3l	ø320	360	620	460	29,1
80174	21	230	50	20 mbar	0,75	3000 ½ _{min}	62	0,5l	ø320	420	620	460	32,2
80175	21	400	50	20 mbar	0,75	3000 ½ _{min}	62	0,5l	ø320	420	620	460	32,2



Supply includes

- 1 pce connection unit comprising:
- 2m vacuum hose
- 3/2 way aerated valve
- 1 vacuummeter



 All vacuum pumps can be used with 60 Hz

Modular vacuum unit

400V working voltage

Nr.	m ³ /h	Volt	Hz	End press.	Kw	RPM	DB	Oil	A	B	C	kg
82150	63	400	50	2mbar	1,8	1500 1/2min	64	2l	640	640	1055	118
83467	100	400	50	2mbar	2,2	1500 1/2min	65	2l	640	640	1055	132

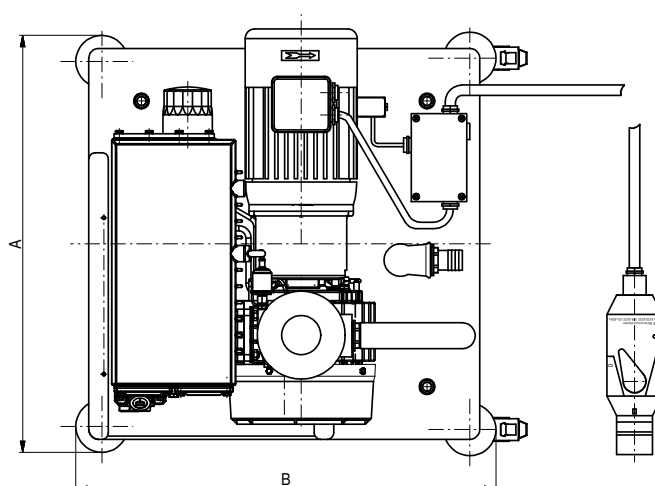
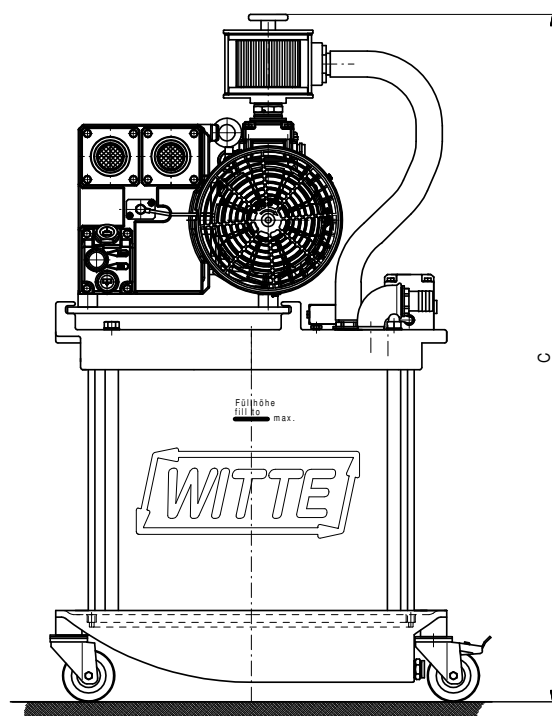


Supply includes

- 1 pce connection unit comprising:
- 2m vacuum hose
- 3/2 way aerated valve
- 1 vacuummeter

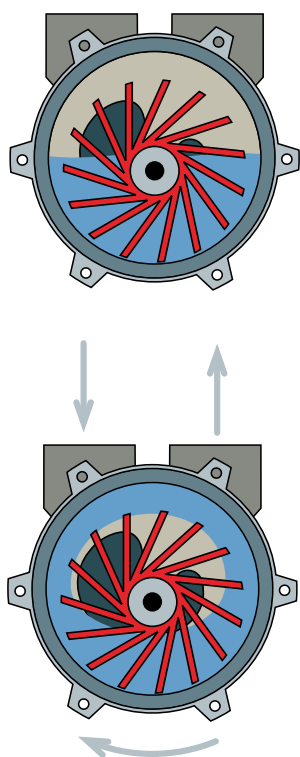


82150 Modular vacuum unit, 63m³/h



All pumps in modular units have oil lubrication. Dry running vacuum pumps for modular units are available on request

All vacuum pumps can be used with 60 Hz



- a Liquid ring vacuum pump
- b Suction filter
- c Condenser
- d Motor
- e Chiller
- f Fluid reservoir
- g Level indicator
- h Operation selection
- i Drain plug
- k Valve
- m Air release valve
- n Shockproof plug

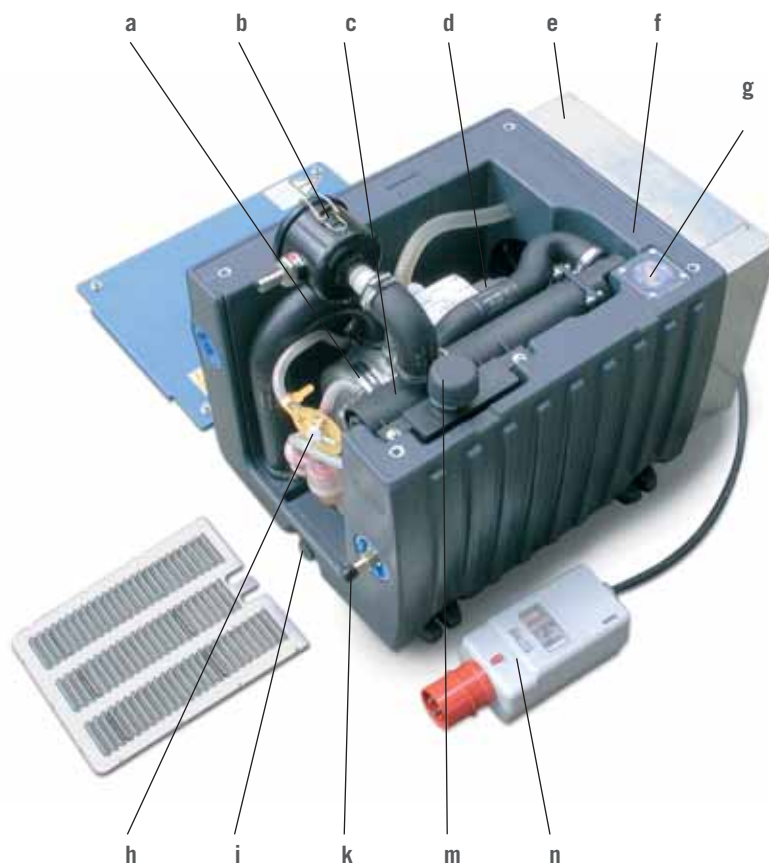
Liquid ring vacuum pumps

Only one unit for vacuum supply and liquid separation

These robust pumps, are low on wear-and-tear and maintenance, work at up to 50 mbar vacuum and do not need an additional liquid separator.

A fast turning impeller causes water in the pump to rotate (see picture on left) simultaneously sealing itself off the impeller. A washable filter and a patented condenser clean the air being sucked in before it enters the pump. Cooling lubricant is integrated into pump's operating cycle and a valve allows removal of excess fluid which can be returned to tool machine whilst in operation.

An air chiller protects the unit from overheating.



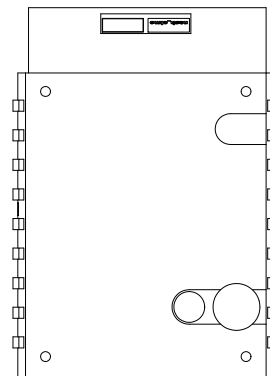
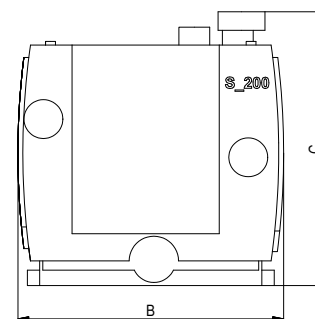
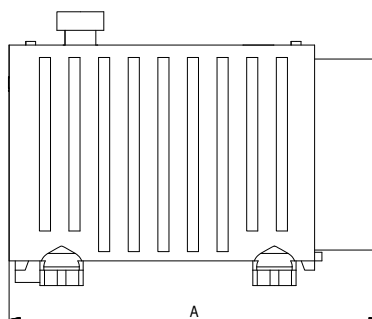
Liquid ring vacuum pump

Nr.	m³/h	Volt	End press.	Kw	DB	Hz	A	B	C	
93801	22	400	150-50 mbar	0,83	66	50	463	432	602	45,5
93802	48	400	150-50 mbar	1,2	70	50	515	572	743	57
93803	65	400	150-50 mbar	2,4	74	50	515	572	743	72
93804	100	400	150-50 mbar	3,85	77	50	525	620	920	110
93805	150	400	150-50 mbar	4	74	50	710	845	1100	200
93806	198	400	150-50 mbar	5,5	76	50	710	845	1100	220
93807	232	400	150-50 mbar	7,5	73	50	710	845	1100	240



Supply includes

- 1 pce connection unit comprising:
- 2m vacuum hose
- 3/2 way aerated valve
- 1 vacuummeter



Liquid ring vacuum pump – Accessories

Nr.	Description	for pump	Version	
13468	Air filter element 3µm, polyester	Type 22	Washable	79
13469	Air filter element 3µm, polyester	Type 45-100	Washable	330
13470	Air filter element 3µm, polyester	Type 150-198	Washable	368
13471	Air filter element 3µm, polyester	Type 232	Washable	480
13534	Water filter (exchange in pairs)	all	Washable	40



All vacuum pumps can be used with 60 Hz



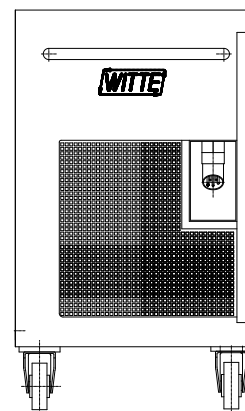
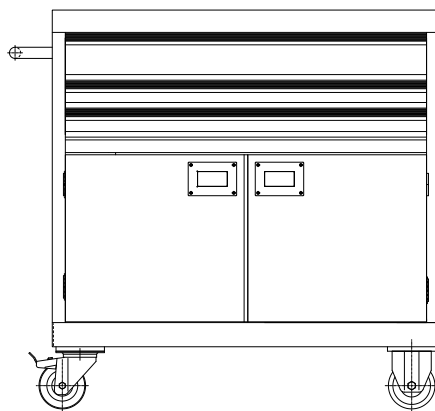
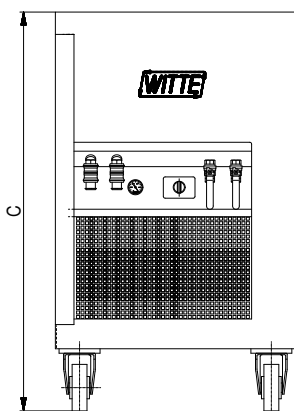
Vacuum workstations

Vacuum workstation for mobile use in the workshop, with integrated vacuum pump, liquid separator, 3-fold vacuum distributor, connectors and gauges

- Vacuum storage tank, pressure difference switch and safety appliance guarantee a triple safety factor
- Solid steel design on castors, with drawers for vacuum chucks and accessories
- Vacuum workstations have oil lubricated vacuum pumps

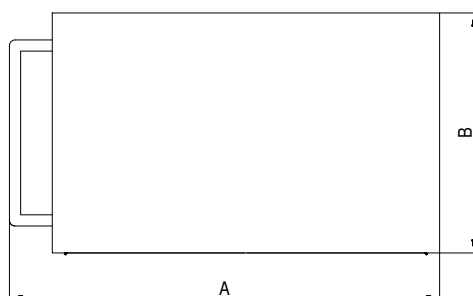
Vacuum workstation

Nr.	m ³ /h	Volt	Hz	End press.	Kw	RPM	dB	Ölfüllung	A	B	C	
81045	21	400	50	20 mbar	0,75	3600 1/2 _{min}	62	0,5l	1155	645	1072	205
81046	63	400	50	20 mbar	1,8	1500 1/2 _{min}	62	2l	1155	645	1072	215



Supply includes

- 1 maintenance kit
- 5l liquid separator
- 10m wire spiral hose
- 1 safety switch
- 5m electric cable with CE plug 10 A



Supply includes

- 1 pce connection unit comprising:
- 2m vacuum hose
- 3/2 way aerated valve
- 1 vacuummeter

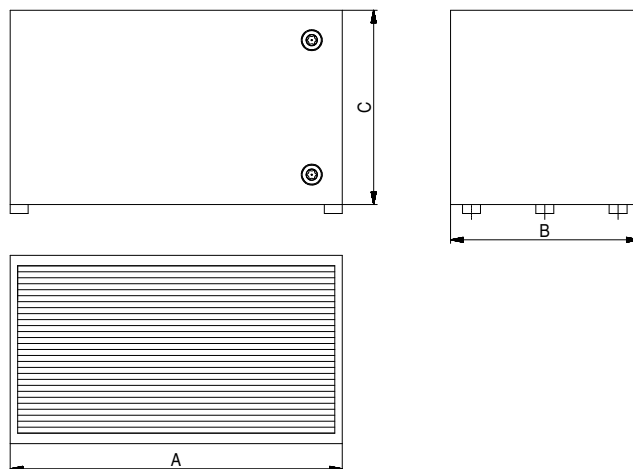
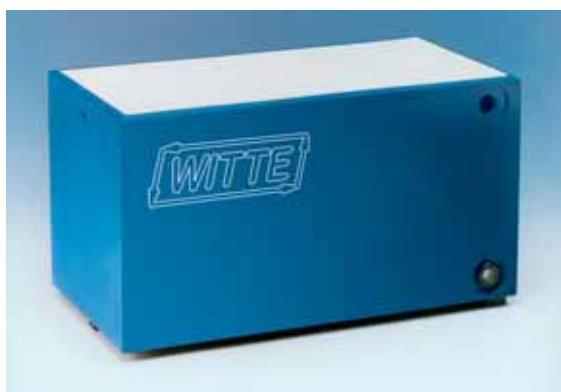


All vacuum pumps can be used with 60 Hz

Additional vacuum tank

Nr.	A	B	C	Connection	V	
80410	555	315	325	Inner thread G ¾"	54l	25,6
80379	800	500	530	Inner thread G ¾"	210l	65

- for increasing vacuum storage volume of units
- acts as additional filter and separator for dirt or fluid
- reduces actual running time of vacuum pump



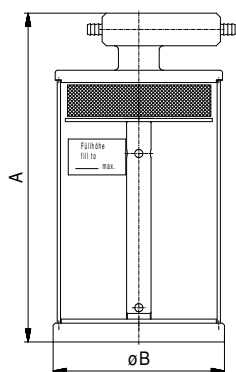
The tank is equipped with two viewing glasses.
Dirt and fluid can be seen and drained immediately.

Maintenance and service kits

Maintenance and service kits for regular care of vacuum units and pumps

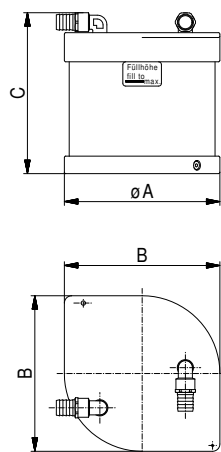
For pump/unit with suction capacity	Wear parts kit	Service kit	Gasket kit
10m³/h - 16m³/h	280711	82151	280721
21m³/h	280712	80416	280722
63m³/h - 100m³/h	280713	80417	280723
160m³/h	280714	280698	15202
250m³/h	280715	280699	15205
Comprising of:	Wear parts, Gaskets	Filter elements, gaskets, oil	Gaskets

Maintenance and service can be carried out on site with these kits.



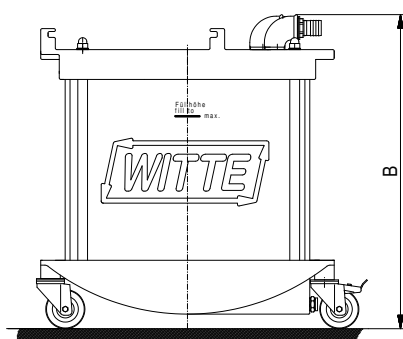
Liquid separator, small

Nr.	A	B	Vol./Capacity	Connection	
80200	403	210	9/5l	ø 12	4,5



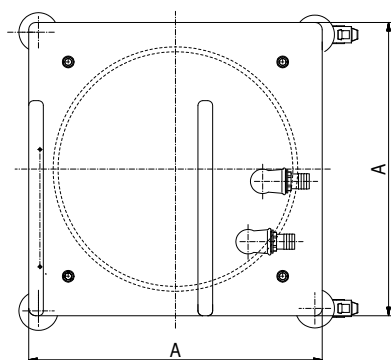
Liquid separator, medium

Nr.	A	B	C	Vol./Capacity	Connection	
82392	320	320	340	13/9l	ø 32	8,9



Liquid separator, large

Nr.	A	B	Vol./Capacity	Connection	kg
94953	600	645	72/50l	LW32	40



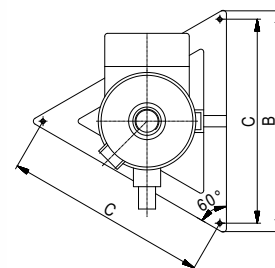
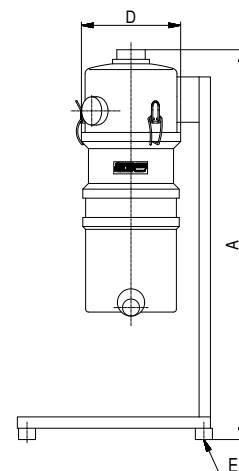
Automatic liquid separator

Nr.	V(l)	l/h	m³/h	LW in	LW out	A	B	C	D	E	
80155	3,5	100	bis 100	G 1¼"	G 1¼"	685	400	360	175	M8	8,5
82782	9,5	100	160-250	G 2"	G 2"	950	410	340	290	M8	15

Fully automatic operation is guaranteed with an integrated magnetic valve and 2-chamber system. The separator is set up between vacuum chuck and pump, thereby protecting vacuum pump from the large amounts of fluid, which are absorbed and Fluids, which are sucked in, are transported back to the machine by means of a hose system.

Clamping of the workpiece is not interrupted at any time. Electricity supply of 230V is necessary for operation. Also available in 110V/60 Hz version.

We advise using the reducer connections (page 93) and hose nozzles (page 94) suitable for your vacuum hose diameter. Two are required for each part, one in and one out of the automatic liquid separator. These parts are not included and need to be ordered separately!



Stand filter

Nr.	V(l)	l/h	m³/h	LW in	LW out	A	B	C	D	E	
15039	25	100	bis 100	59,6	G 1½"	685	400	360	175	M8	8,5
15285	25	100	160-250	59,6	G 2"	950	410	340	290	M8	15

15039 Filter STF 0250 with fleece insert
For separation of fluids and solids out of suction medium incl. quick clean flap and fluid drainage tap

15285 Stand filter STA 250 with automatic fluid separation
24 Volt DC

