

TAKING THE AIR AWAY

Dry claw · dry screw · rotary vane · scroll · liquid ring ·
mechanical boosters · side channel — 3.6 to 5,400 m³/h,
down to 0.01 mbar

**GREEN AIR
COMPRESSOR**

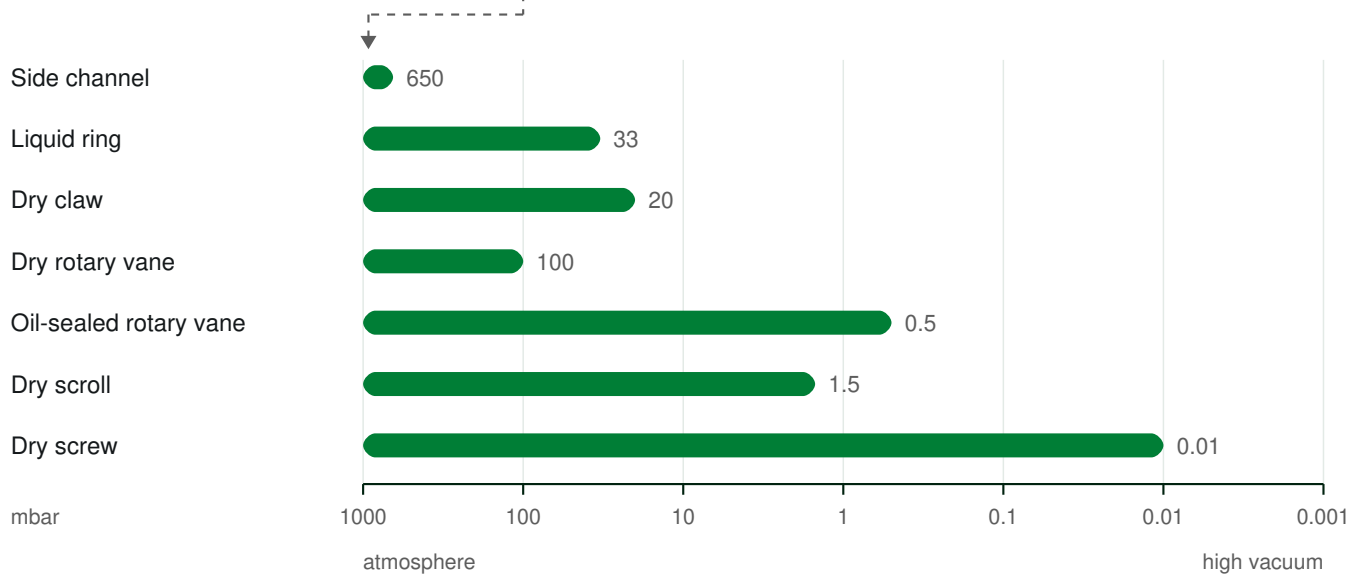


WHICH TECHNOLOGY

Vacuum pumps are not graded from worse to better. They are graded by how deep they go and what they will tolerate on the way. A pump that reaches 0.01 mbar will be ruined by the wet, dirty gas that a liquid ring pump shrugs off, and a liquid ring pump cannot reach a hundredth of that depth however long you run it. Choosing by price, or by what the last plant had, is how most vacuum systems end up wrong.

fitted in front of another pump, never on its own

Mechanical booster



Find your duty on the axis first. Everything to the left of it is a pump that cannot get there; everything far to the right of it is a pump you are paying for and not using.



Depth is not the only axis

How much gas you move at your working pressure matters more than the ultimate figure on the datasheet, which is measured with nothing attached.



Dry or sealed is a process decision

Oil seals the clearances and buys depth. It also has to be changed, filtered and disposed of, and it must not reach your product.



Wet gas changes everything

A liquid ring pump washes and cools the gas as it works. On a condensable load that tolerance is worth more than any efficiency figure.

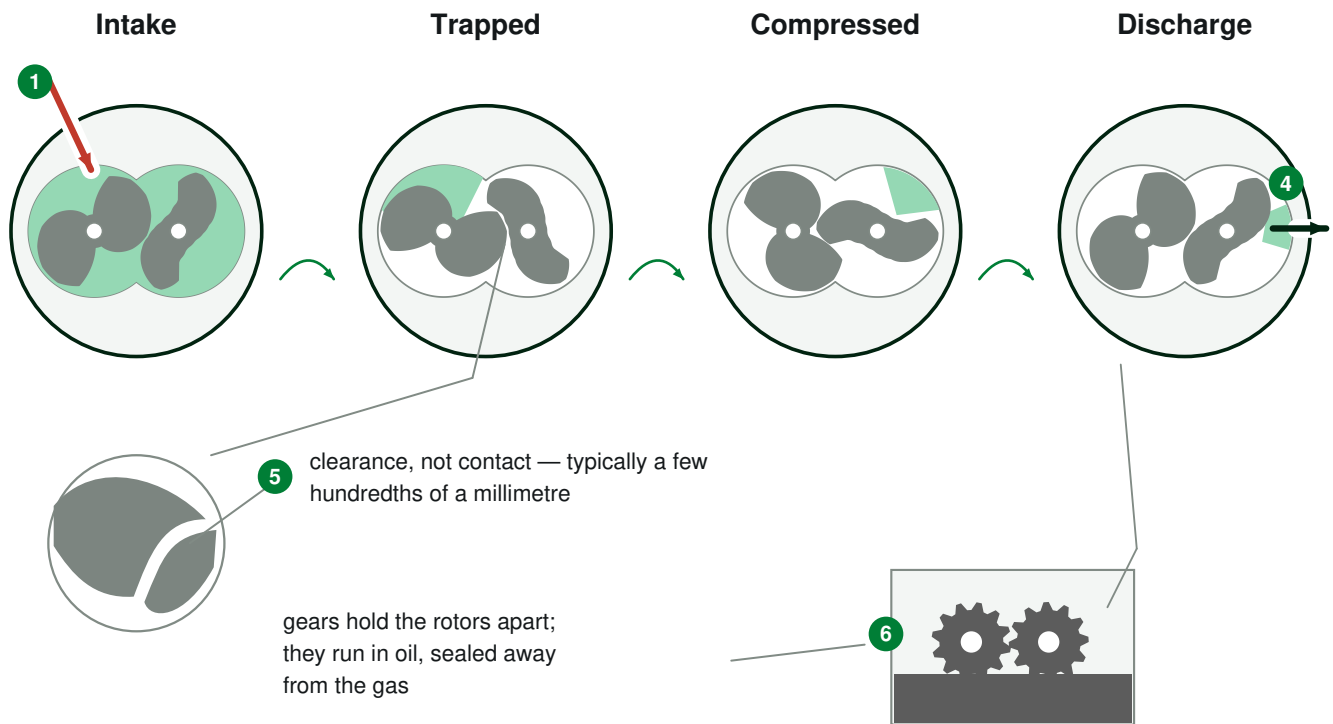


Boosters multiply, they do not replace

A booster cannot exhaust to atmosphere. It sits in front of a backing pump and multiplies its speed in the range where the backing pump is slowing down.

NOTHING TOUCHES ANYTHING

The claw pump is the one to understand first, because once you have seen why it needs no oil in the chamber, every other dry pump in this document makes sense.



There is no oil in the chamber because there is nothing rubbing in it. That is why the exhaust is clean, why there is no oil to change and no waste oil to dispose of, and why the only thing that will destroy it is something solid getting in through the inlet.

Filter the inlet

Tight clearances are what make a dry pump work and what make debris fatal to it. An inlet filter is the cheapest life extension available on any pump in this document.



DRY PUMPS

Claw handles the working end of industrial vacuum — packaging, handling, drying, conveying — from atmosphere down to about 20 mbar, with nothing in the chamber to wear.

Rotary vane, dry runs on self-lubricating carbon vanes. It is the small, quiet workhorse for holding and handling duties, and the vanes are a planned replacement rather than a failure.

Screw and scroll are where dry technology reaches real depth. A dry screw goes to 0.01 mbar and tolerates vapour that would ruin an oil-sealed pump; a scroll is quieter and cleaner still, and is chosen for laboratories where any oil at all is unacceptable.



Dry claw — GAC-DZ

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m ³ /h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-DZ 0018 A	0.5	0.7	18	11	450	338	73	6.5	14	329.5 x 120 x 199
GAC-DZ 2124	2.2	3	60	35	20	15	—	135	298	940 x 415 x 370
GAC-DZ 1104	1.5	2	75	44	60	45	—	180	397	970 x 430 x 410
GAC-DZ 0104 A	2.2	3	95	56	60	45	—	155	342	977 x 416 x 410
GAC-DZ 1102	3	4	135	79	60	45	—	180	397	1010 x 430 x 410
GAC-DZ 0182 A	3.7	5	175	103	40	30	—	160	353	997 x 416 x 410
GAC-DZ 1324	3.7	5	190	112	60	45	—	270	595	1100 x 515 x 450
GAC-DZ 1252	6.8	9.1	290	171	100	75	—	290	639	1065 x 515 x 450
GAC-DZ 0312 B	6.7	9	345	203	150	113	—	300	661	940 x 500 x 650
GAC-DZ 1502	11	15	600	353	200	150	—	325	716	1310 x 515 x 545
GAC-DZ 1200	25	34	1150	677	200	150	—	950	2094	1620 x 715 x 1210

Dry rotary vane — GAC-DV

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m ³ /h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-DV 1003 D	0.1	0.2	3.6	2.1	150	113	63	5.2	11	239 x 144 x 142
GAC-DV 1005 D	0.1	0.2	6	3.5	150	113	72	6	13	272 x 147 x 143
GAC-DV 1008 C	0.3	0.4	8.8	5.2	150	113	66	8.5	19	245 x 164 x 125
GAC-DV 1010 C	0.4	0.5	12	7.1	150	113	62	21	46	413 x 239 x 224
GAC-DV 1080 B	3	4	77	45	100	75	77	90	198	798 x 428 x 342

DRY PUMPS (CONTINUED)

Dry screw — GAC-DSC

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-DSC 0070 C	4.4	5.9	85	50	0.03	0.023	62	250	551	809 x 483 x 416
GAC-DSC 0100 B	3.7	5	130	77	0.01	0.008	74	300	661	1127 x 520 x 595
GAC-DSC 0200 B	7.5	10	265	156	0.01	0.008	76	350	772	1264 x 520 x 607
GAC-DSC 0300 B	11	15	385	227	0.01	0.008	77	400	882	1334 x 520 x 607
GAC-DSC 0400 B	11	15	420	247	0.01	0.008	69	500	1102	1367 x 480 x 700
GAC-DSC 0450	9.5	13	420	247	0.1	0.075	70	600	1323	1358 x 494 x 746
GAC-DSC 0600 C	15	20	600	353	0.01	0.008	76	600	1323	1502 x 602 x 640
GAC-DSC 0650	15	20	650	383	0.1	0.075	75	800	1764	1538 x 538 x 771
GAC-DSC 2500 C	63	85	2500	1472	1	0.75	84	2500	5512	2243 x 1053 x 1437

Capacities are nominal at the stated ultimate pressure. Imperial and torr figures are converted from the metric values and rounded. Scroll pumps are supplied as a bare pump; weights and dimensions depend on the frame and are given with the quotation.

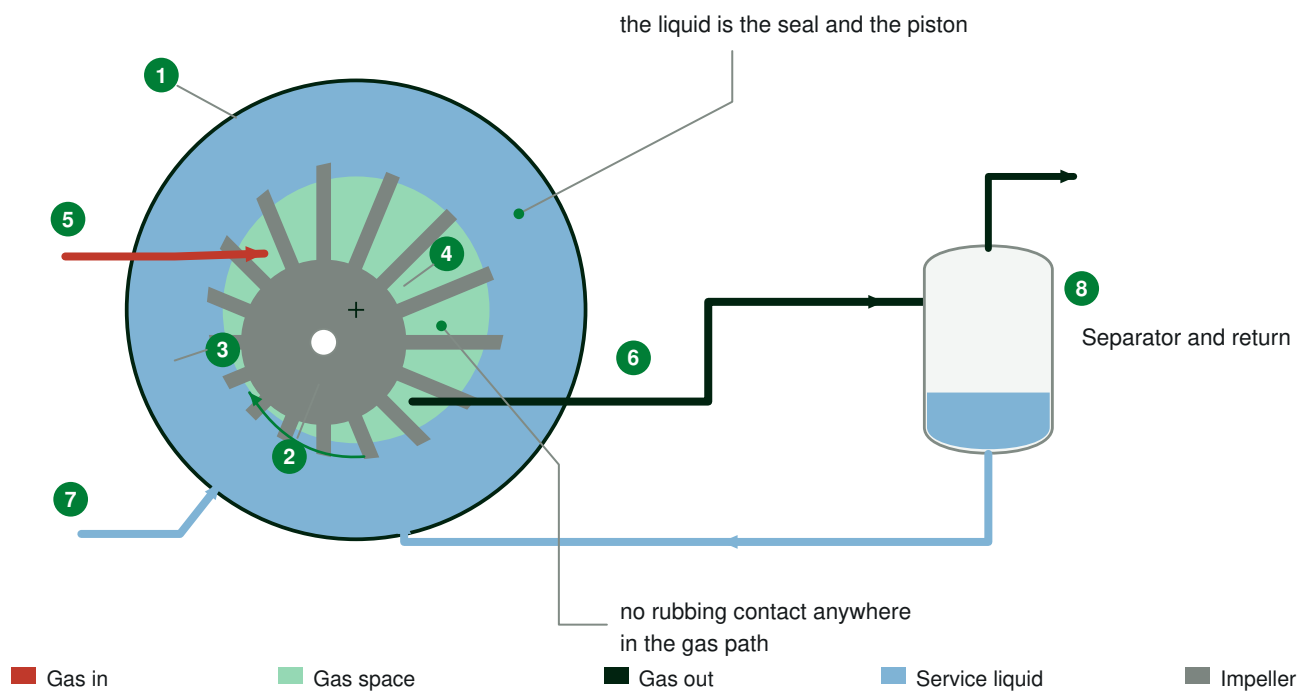
Dry scroll — GAC-DS

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-DS 065	1.5	2	72	42	1.5	1.1	—	—	—	—
GAC-DS 080	2.2	3	86	51	1.5	1.1	—	—	—	—
GAC-DS 100	2.2	3	100	59	1.5	1.1	—	—	—	—



WHEN THE GAS IS WET

Every dry pump in this document assumes the gas is reasonably clean and reasonably dry. On a condensable, dirty or corrosive load, the pump that wins is the one that was never dry to begin with.



The gas is cooled and washed by the liquid as it is compressed. That is the whole argument: it will swallow slugs of liquid, dust and vapour that would wreck a dry pump, and it pays for that tolerance in efficiency.

Watch the water temperature

The depth a liquid ring pump reaches is limited by the vapour pressure of its service liquid. With water at 20 °C that is about 33 mbar. Let the water warm up and you will watch the vacuum get worse with no fault anywhere in the pump.



LIQUID RING AND BOOSTERS

Fixed speed liquid ring pumps are the standard for paper, sugar, food, chemical processing and condenser evacuation — anywhere the gas is genuinely wet.

Variable speed matches the pump to the demand instead of running it flat out against a bleed valve. It saves electricity and service water together, and on these duties the water saving is often worth more than the power.



Liquid ring, fixed speed — GAC-LR

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-LR 0030 B	1.5	2	31	18	33	25	—	37	82	369 x 200 x 250
GAC-LR 0063 A	4	5.4	65	38	33	25	—	77	170	664 x 250 x 320
GAC-LR 0140 C	4	5.4	120	71	33	25	—	92	203	568 x 330 x 347
GAC-LR 0180 C	5.5	7.4	144	85	33	25	—	112	247	564 x 330 x 374
GAC-LR 0260 C	7.5	10	239	141	33	25	—	145	320	635 x 365 x 402
GAC-LR 0355 A	15	20	400	235	33	25	—	183	403	958 x 300 x 472
GAC-LR 0435 A	19	25	500	294	150	113	—	159	351	857 x 300 x 520
GAC-LR 1207 A	56	75	1380	812	33	25	—	600	1323	1432 x 610 x 750
GAC-LR 1757 A	93	125	2000	1177	33	25	—	770	1698	1682 x 610 x 750

Liquid ring, variable speed — GAC-LRV

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-LRV 0100 A	3.7	5	97	57	130	98	—	110	243	811 x 330 x 329
GAC-LRV 0180 A	5.6	7.5	180	106	130	98	—	122	269	879 x 330 x 351
GAC-LRV 0270 A	7.5	10	267	157	130	98	—	157	346	988 x 330 x 380
GAC-LRV 0530 A	15	20	551	324	130	98	—	317	699	1297 x 396 x 478
GAC-LRV 0800 A	22	30	867	510	130	98	—	340	750	1457 x 425 x 506

Mechanical boosters — GAC-MB

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-MB 0250 C	1.5	2	300	177	85	64	—	146	322	904 x 352 x 422
GAC-MB 0500 C	3	4	600	353	85	64	—	146	322	917 x 352 x 422
GAC-MB 1200 A	3.7	5	1260	742	53	40	—	290	639	1094 x 470 x 353
GAC-MB 1800 A	5.6	7.5	1920	1130	53	40	—	300	661	1114 x 470 x 398
GAC-MB 2400 A	7.5	10	2540	1495	53	40	—	520	1146	1286 x 568 x 503
GAC-MB 4500 B	11	15	5400	3178	25	19	—	690	1521	1443 x 690 x 510

A mechanical booster cannot exhaust to atmosphere and is always fitted in front of a backing pump. The ultimate pressure shown is the figure for the booster stage; the pressure the combination reaches depends on the pump behind it. Imperial and torr figures are converted and rounded.

THE REST OF THE RANGE

Side channel machines are the simplest thing here: one impeller, no contact, nothing to lubricate, and almost nothing to maintain. They work continuously at shallow vacuum or low pressure and are chosen for packaging suction, small conveying, aeration and laboratory service.

Oil-sealed rotary vane remains the cheapest route to real depth. Oil fills the clearances and buys a pressure a dry machine of the same size cannot reach. The oil is the whole cost of ownership argument: it must be changed, filtered, kept out of your exhaust and kept out of your product.

Side channel — GAC-SB

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-SB 0045 E	0.2	0.3	48	28	-120	-90	60	7	15	216 x 198 x 209
GAC-SB 0080 B	0.4	0.58	96	57	-150	-113	60	11	24	256 x 247 x 247
GAC-SB 0090 E	0.5	0.7	96	57	-155	-116	61	10	22	271 x 246 x 252
GAC-SB 0140 D	1.1	1.5	175	103	-130	-98	64	14	31	269 x 285 x 355
GAC-SB 0150 E	1.7	2.3	162	95	-255	-191	68	25	55	543 x 302 x 316
GAC-SB 0200 B	2	2.7	250	147	-210	-158	72	32	71	352 x 334 x 388
GAC-SB 0310 A	4	5.4	370	218	-210	-158	73	52	115	510 x 638 x 434
GAC-SB 0320 A	4.6	6.2	395	232	-295	-221	81	60	132	703 x 395 x 415
GAC-SB 0530 D	9.9	13	620	365	-360	-270	78	160	353	632 x 622 x 541
GAC-SB 1100 B	20	27	1340	789	-360	-270	76	307	677	873 x 1100 x 665
GAC-SB 1150 E	25	34	1440	848	-345	-259	80	240	529	1352 x 615 x 631
GAC-SB 2200 E	25	34	2640	1554	-180	-135	84	166	366	739 x 600 x 610

Side channel figures are given at vacuum duty; the same machines run as pressure blowers with the connection reversed, and the duty point must be one or the other. Imperial and torr figures are converted and rounded.

Oil-sealed rotary vane — GAC-RV

Model	Motor		Capacity		Ultimate		Noise	Weight		Dimensions
	kW	hp	m³/h	cfm	mbar	torr	dB(A)	kg	lb	L × W × H mm
GAC-RV 0429 F	7.5	10	190	112	0.5	0.375	72	385	849	1320 x 740 x 1160
GAC-RV 0433 F	11	15	300	177	0.5	0.375	73	440	970	1320 x 740 x 1160
GAC-RV 0437 F	15	20	480	283	0.5	0.375	73	930	2050	1640 x 950 x 1240
GAC-RV 0441 F	19	25	760	447	0.5	0.375	74	1000	2205	1640 x 950 x 1240

What it actually costs to run

- Electricity at your working pressure, not the ultimate figure
- Service water, on any liquid ring duty
- Oil, filters and disposal, on any oil-sealed duty
- Vanes or tip seals, as a planned replacement
- Inlet filtration, on every dry pump without exception
- Downtime, which is the largest of these and the least often counted



GREEN AIR COMPRESSOR

TELL US THE PROCESS, NOT THE PUMP SIZE

A vacuum pump is sized against what the process actually does — the volume to be evacuated, the pressure it has to reach and hold, how much gas leaks in, and above all what is in that gas. Wet, dusty, corrosive or condensable changes the answer completely, and it is the thing enquiries leave out most often. Tell us the chamber volume, the working pressure, the pump-down time you need and what the gas carries, and you get a written recommendation back that names the technology, says why the others were ruled out, gives the figures, and sets out delivery and installation. It costs nothing and carries no obligation.

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Specifications are subject to change without notice. Figures are nominal and apply at the reference conditions stated. © Green Air Compressor.

