

TWO STAGE SCREW COMPRESSORS

GA-T range · 45 – 355 kW · 4.5, 7.5 and 12.5 bar g

**GREEN AIR
COMPRESSOR**





COMPRESSION IN TWO STEPS

Squeezing air in one step to 8 bar heats it a long way, and heat is wasted work. Doing it in two steps, with cooling between them, gets to the same pressure using measurably less energy — typically eight to fifteen per cent less than a single stage machine of the same size.

The catch has always been floor space and price. Two airends, two sets of bearings, an intercooler. This range answers the first of those: the compact builds deliver two stage efficiency in close to a single stage footprint, which matters if your plant room was sized fifteen years ago.



Eight to fifteen per cent less energy

Lower compression ratio per stage and less internal leakage. Over three shifts that is the largest single saving available on this machine.



4.5 to 12.5 bar g

Seven working pressures are built on the same frames. Measured flow at three of them is published here; the rest are quoted against your own duty.



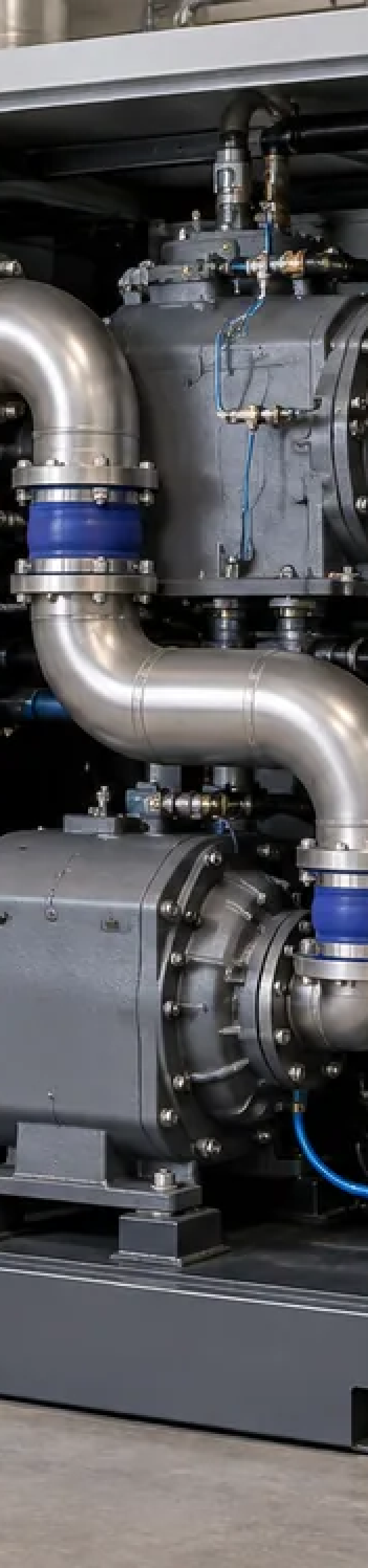
Cooler oil, longer life

Lower discharge temperature per stage means the fluid and the separator last longer and the bearings run cooler.



Air or water cooled

Every frame is built both ways. In a Gulf plant room the water cooled build is often the only one that will hold full output in August.



WHY TWO STAGES USE LESS ENERGY

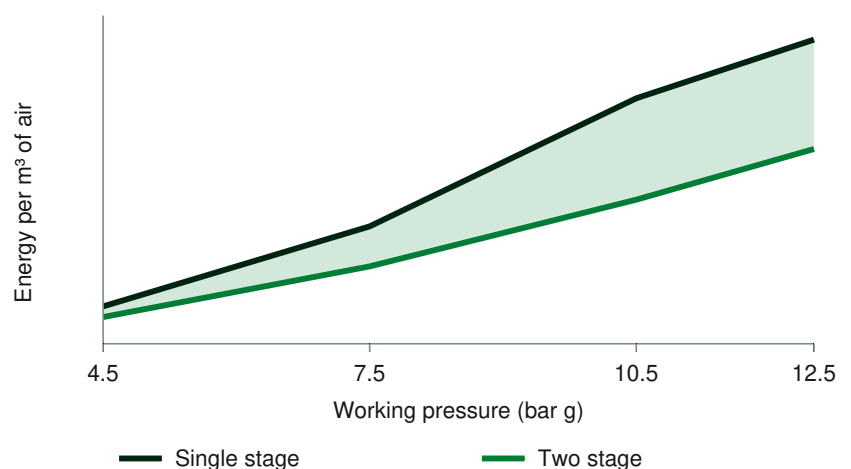
Compression heats air, and the hotter the air gets the more work each further bar costs. Split the job in two and cool the air between the stages, and the second stage is compressing cool air again rather than air already at 180 degrees.

There is a second effect that matters as much. Each stage only has to raise the pressure by a factor of about three rather than nine, and a lower ratio across a rotor pair means less air leaking back past the rotors. That leakage is pure loss, and it is why the volumetric efficiency of a two stage airod is roughly fifteen per cent better.

The difference grows with pressure. At 4.5 bar there is little in it. At 10.5 and 12.5 bar the two stage machine is comfortably ahead, which is why the table is worth reading at your own working pressure rather than at the headline one.

- Intercooling between the stages
- Advantage grows as pressure rises
- Compression ratio of about 3 per stage
- Lower discharge temperature, longer fluid life
- Roughly 15 per cent better volumetric efficiency
- Same footprint as single stage on the compact builds

The gap widens with pressure



Illustrative. The measured difference on your own duty is what the quotation states.

AIR OR WATER COOLED

Every frame in this range is built both ways, and the choice is a plant room decision rather than a compressor decision. A 160 kW machine turns almost all of that into heat, and that heat has to go somewhere.

Air cooled is simpler: no water circuit, no cooling tower, nothing else to maintain. It puts the heat into the plant room, which means the room needs enough ventilation to carry it away, and in a hot climate that is a larger requirement than people expect.

Water cooled puts the heat into a circuit that leaves the building. It costs more to install and it brings a water system with it, but in a Gulf plant room in August it is often the only build that will hold full output.

46 °C

the ambient the standard build is rated to — above that, water cooling or the high ambient package



Sized for your plant room, not for a catalogue

We ask for the room temperature, the ventilation and the hours before we quote a cooling arrangement. A machine that derates in August is not a saving.

INSIDE THE MACHINE

Twelve parts, and the two that matter most are the two airends — with a cooler between them doing the work that makes this machine worth its price.

1 Inlet filter

Takes the dust out before it reaches the first stage. The first thing to check when delivery falls off.

2 Inlet valve

Opens as the machine loads and closes when it stops, so neither stage ever starts against pressure.

3 First stage airend

Raises the pressure by a factor of about three. Everything downstream of it is working on air that has already been halfway compressed.

4 Intercooler

Takes the heat of the first stage out before the second stage sees it. This is the part that makes two stages worth having.

5 Second stage airend

Takes the cooled air the rest of the way. A lower ratio again, so less leaks back past the rotors.

6 Drive motor

Drives both stages. No belts, so no tension to set and no drive losses to pay for.

12 Controller

Pressure, temperature, hours and service intervals, with the fault history kept so a breakdown can be diagnosed rather than guessed.

11 Aftercooler

Cools the air on its way out, which drops most of the water out of it before it reaches your pipework.

10 Oil cooler

Takes the heat of compression out of the oil before it returns to the airends.

9 Oil filter

Spin-on, changed with the oil, reachable without moving anything else.

8 Separator element

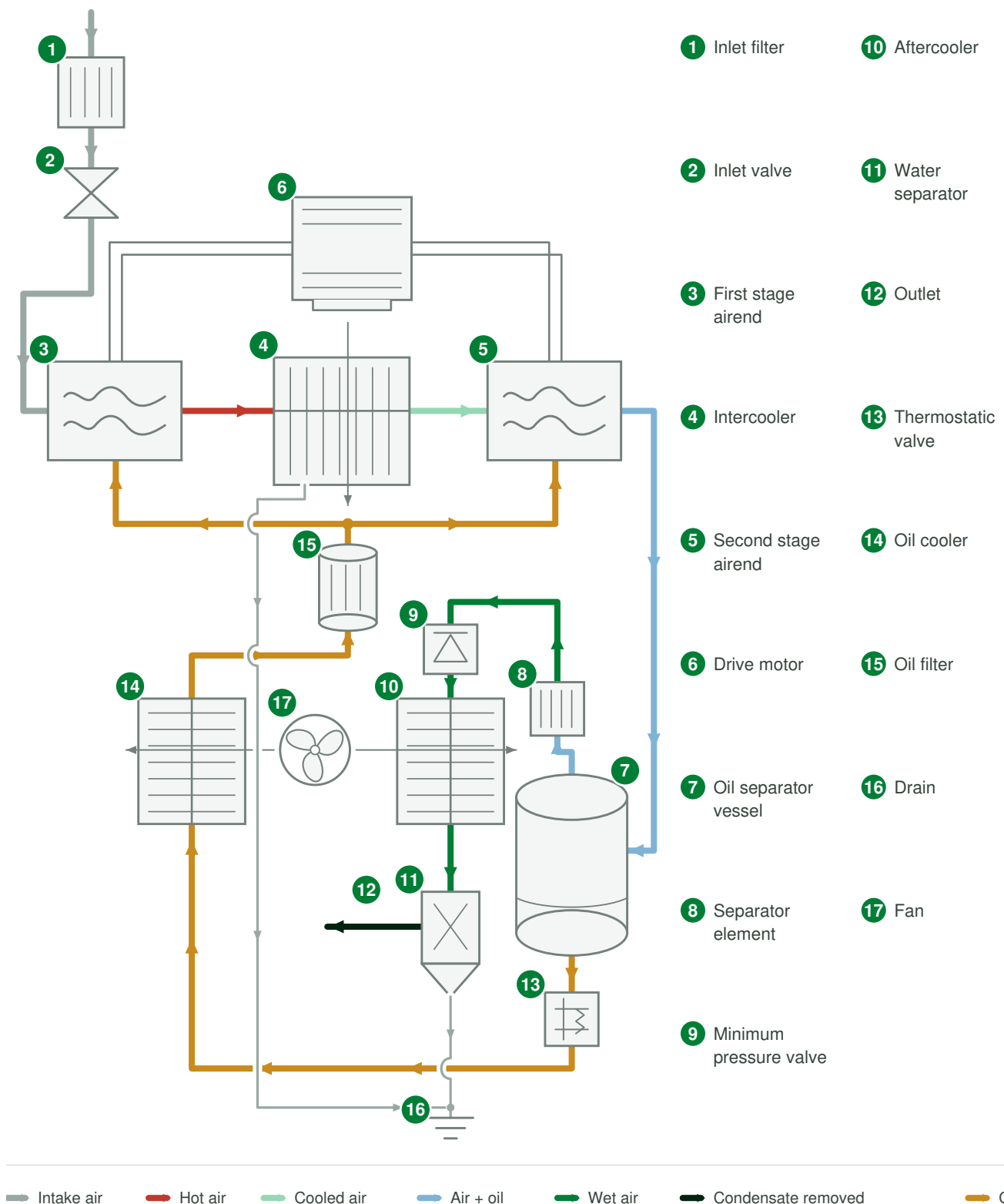
The last of the oil, down to a few parts per million. One of the two service items that matter.

7 Oil separator vessel

Air and oil arrive together; the oil drops out here and goes back round, the air carries on.



HOW IT WORKS



The intercooler is the whole argument. Everything downstream of it is compressing cool air, which is why the same pressure costs less to reach.

TECHNICAL SPECIFICATIONS

Each model is listed once per working pressure, because free air delivery falls as pressure rises and a single averaged figure hides that. Frames marked (W) are available water cooled.

Model	Motor power		Working pressure		Free air delivery		Weight		Dimensions L × W × H
	kW	hp	bar g	psig	m³/min	cfm	kg	lb	mm
GA-T-60T	45	60	4.5	65	13.0	459	2,100	4,630	2250 × 1370 × 1700
GA-T-60T	45	60	7.5	109	10.0	353	2,000	4,409	1850 × 1180 × 1430
GA-T-60T	45	60	12.5	181	6.6	233	1,700	3,748	1700 × 1130 × 1460
GA-T-75T(W)	55	75	4.5	65	15.0	530	2,200	4,850	2250 × 1370 × 1700
GA-T-75T(W)	55	75	7.5	109	12.3	434	2,200	4,850	2250 × 1370 × 1700
GA-T-75T(W)	55	75	12.5	181	9.8	346	2,000	4,409	1850 × 1180 × 1430
GA-T-100T(W)	75	100	4.5	65	19.0	671	2,600	5,732	2450 × 1670 × 1740
GA-T-100T(W)	75	100	7.5	109	15.3	540	2,500	5,512	2300 × 1670 × 1690
GA-T-100T(W)	75	100	12.5	181	12.0	424	2,300	5,071	2250 × 1370 × 1700
GA-T-120T(W)	90	120	4.5	65	23.5	830	3,500	7,716	2750 × 1780 × 1950
GA-T-120T(W)	90	120	7.5	109	19.0	671	3,500	7,716	2750 × 1780 × 1950
GA-T-120T(W)	90	120	12.5	181	15.0	530	2,600	5,732	2300 × 1670 × 1690
GA-T-150T(W)	110	150	4.5	65	30.0	1,059	4,100	9,039	2900 × 1940 × 1950
GA-T-150T(W)	110	150	7.5	109	23.7	837	3,800	8,378	2750 × 1780 × 1950
GA-T-150T(W)	110	150	12.5	181	18.5	653	3,800	8,378	2750 × 1780 × 1950
GA-T-175T(W)	132	175	4.5	65	36.0	1,271	5,000	11,023	2930 × 1900 × 2060
GA-T-175T(W)	132	175	7.5	109	30.1	1,063	4,500	9,921	2900 × 1940 × 1950
GA-T-175T(W)	132	175	12.5	181	21.3	752	4,500	9,921	2900 × 1940 × 1950
GA-T-200T(W)	150	200	4.5	65	40.0	1,413	5,700	12,566	3250 × 1950 × 2150
GA-T-200T(W)	150	200	7.5	109	33.0	1,165	5,700	12,566	3250 × 1950 × 2150
GA-T-200T(W)	150	200	12.5	181	24.3	858	4,600	10,141	2900 × 1940 × 1950
GA-T-215T(W)	160	215	4.5	65	44.0	1,554	5,800	12,787	3250 × 1950 × 2150
GA-T-215T(W)	160	215	7.5	109	33.6	1,187	5,800	12,787	3250 × 1950 × 2150
GA-T-215T(W)	160	215	12.5	181	27.4	968	4,700	10,362	2900 × 1940 × 1950
GA-T-250T(W)	185	250	4.5	65	20.0~50.0	706~1,766	6,700	14,771	3500 × 2250 × 2300
GA-T-250T(W)	185	250	7.5	109	14.8~37.0	523~1,307	6,700	14,771	3500 × 2250 × 2300
GA-T-250T(W)	185	250	12.5	181	12.9~32.4	456~1,144	6,700	14,771	3500 × 2250 × 2300
GA-T-270T(W)	200	270	4.5	65	21.9~55.0	773~1,942	8,100	17,857	3800 × 2300 × 2400
GA-T-270T(W)	200	270	7.5	109	16.8~42.0	593~1,483	8,100	17,857	3800 × 2300 × 2400
GA-T-270T(W)	200	270	12.5	181	13.0~33.0	459~1,165	8,100	17,857	3800 × 2300 × 2400
GA-T-300T(W)	220	300	4.5	65	24.0~61.0	848~2,154	8,400	18,519	3800 × 2300 × 2400
GA-T-300T(W)	220	300	7.5	109	18.5~49.6	653~1,752	8,400	18,519	3800 × 2300 × 2400
GA-T-300T(W)	220	300	12.5	181	14.4~36.0	509~1,271	8,400	18,519	3800 × 2300 × 2400
GA-T-340T(W)	250	340	4.5	65	26.0~65.0	918~2,295	8,600	18,960	3800 × 2300 × 2400
GA-T-340T(W)	250	340	7.5	109	19.5~55.3	689~1,953	8,600	18,960	3800 × 2300 × 2400
GA-T-340T(W)	250	340	12.5	181	16.0~41.2	565~1,455	8,600	18,960	3800 × 2300 × 2400
GA-T-375T(W)	280	375	4.5	65	76.9	2,716	9,500	20,944	4300 × 2400 × 2600
GA-T-375T(W)	280	375	7.5	109	60.5	2,137	9,500	20,944	4300 × 2400 × 2600
GA-T-375T(W)	280	375	12.5	181	46	1,624	9,500	20,944	4300 × 2400 × 2600
GA-T-400T(W)	300	400	4.5	65	82.5	2,913	9,700	21,385	4300 × 2400 × 2600
GA-T-400T(W)	300	400	7.5	109	65	2,295	9,700	21,385	4300 × 2400 × 2600
GA-T-400T(W)	300	400	12.5	181	51.5	1,819	9,700	21,385	4300 × 2400 × 2600
GA-T-440T(W)	330	440	4.5	65	83.5	2,949	10,000	22,046	4300 × 2400 × 2600
GA-T-440T(W)	330	440	7.5	109	70.7	2,497	10,000	22,046	4300 × 2400 × 2600
GA-T-440T(W)	330	440	12.5	181	56.5	1,995	10,000	22,046	4300 × 2400 × 2600
GA-T-475T(W)	355	475	4.5	65	101.3	3,577	12,500	27,558	4600 × 2400 × 2650

Free air delivery measured to ISO 1217, annex C, at the stated working pressure. Reference conditions: inlet 1 bar absolute, 20 °C. Imperial figures are converted from the metric values and rounded. Weights and dimensions are for the build shown at that pressure; the cooling arrangement changes both. Seven working pressures are built on these frames — 4.5, 5.5, 6.5, 7.5, 8.5, 10.5 and 12.5 bar g. Measured flow at three of them is published here; the rest are quoted against your own duty. Noise levels available on request.

Options

Water cooled build	Air receiver, sized to the machine
High ambient package	Zero-loss condensate drain
Integrated refrigeration dryer	Oil and water separator
Desiccant dryer, heatless or blower	Heat recovery
Cyclone water separator	Heavy duty inlet filter
Precision filters	Remote monitoring

READ THE TABLE AT YOUR OWN PRESSURE

A compressor quoted at one flow with no pressure against it tells you nothing. Tell us the air you use, the pressure you actually run at and the hours you run, and you get a written recommendation back that names the machine, gives its figures at your working pressure, states the cooling arrangement your plant room needs, and sets out delivery, installation and what the warranty covers. 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.

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