Javac

screw compressors

PMG|VSD

affordable quality

Javac, a continuation of the family business from the last century 'Ruhrfeuer' active in the manufacture of welding equipment and the import of compressors from the former GDR. These years of experience guarantee a perfect service, innovative products, and with a continued focus on small and medium-sized enterprises (SMEs).

Choosing a **Javac** PMG / VSD screw compressor guarantees a great price/quality ratio.
Our coordination in Kalmthout (B) ensures a perfect follow-up to advice, sales, stock management, project and service planning, engineering and our 24-hour service department. In addition to the innovative PMG / VSD screw compressors, attention is also paid to: reciprocating compressors, or the whisper quiet scroll compressor, but also the conventional screws. And where necessary oil-free compressed air solutions.
But compressed air also means a suitable dryer, filters.
And a high-performance compressed air line. we would like to draw special attention to our **EQOfluids** alu compressed air pipe, an extremely easy to install click system, with a 20-year warranty on compressed air leaks.

EQOfluids

In summary, with our **Javac** team you can rely on professional support for your compressed air project. For garage companies, various workshops, manufacturing industry, metal sector, sandblasting companies, food industry and specialized applications, there is always a **Javac** compressed air solution that meets all your requirements.

Our compressed air consultant always starts by mapping out the project. Our interests are not central, but the solution for the customer is our goal. Each file has its own characteristics. An analysis is made of the required flow rate, sustainability, intensive use, working pressure, compressed air quality, impact on maintenance costs, energy losses, compressed air network, dryers and filters. Finally, the result: a clear offer without surprises.

We are often able to provide a factory warranty of 4 years, even on critical components. We try to fill in the themes that are important to our customers, namely reliability, completeness, sustainability and availability. Our organization is small-scale and responds quickly to individual wishes. Our experience and expertise in the field of energy saving is particularly valued, a factor that has an increasing weight in the scale.

What is a PMG/VSD screw compressor?

Our PMG / VSD - oil cooled screw compressors are the epitome of durability, energy saving, low noise operation and low maintenance intervals. This technology sets the beacons that indicate the direction that makes compressed air meaningful today. Because of this ultimate design criterion, our PMG / VSD screw compressors are used where a consistent airflow is a must, for example in industrial installations and operations. Our PMG / VSD compressors are also the most energy efficient on the market.

In addition to the continuous operation of our PMG / VSD - screw [1] compressor, they are reliable and durable, even in harsh conditions. The screw compressor is not called 'the heart of everything' for nothing. The keys are proper sizing, proper air system design, and intelligent compressor control. You can install the most efficient compressor in the world, but if the system and control scheme are poorly designed, the compressor will be less efficient or not at all. Compressed air is present in a variety of industrial activities. Screw compressors are therefore the workhorses behind a majority of manufacturing processes worldwide. There's a good reason for that. An industrial screw compressor has a duty cycle of 100%. It can run 24/7 without a break.

Why a PMG/VSD screw compressor?

In contrast to the conventional screw compressors, which prefer continuous operation (load/unload) and do not like to constantly start and stop. Do allow the PMG / VSD technology for intermittent operation. Also because the high peak powers are completely smoothed out during frequent startups. The condensation problem

is neutralized by the thermal valve. A monthly purge of the separator tank is sufficient to completely neutralize this problem. Our oil-injected PMG / VSD - screw compressors have a working pressure range between 6 and 16 bar. Most production processes suffice with 6.2 working pressure.
Tire centers

have the need for a compressor with an operating pressure of 12 bar. While, for example, laser cutting with ultra-pure compressed air requires a working pressure of 16 bar. At even higher operating pressures, only multi-stage reciprocating compressors are suitable. A complete range of screw compressors, proven to perform optimally in a variety of applications, even under the toughest conditions. The design leads to reliable and maintenance-friendly operation. Sustainability is in his genes. With its ultra-secure and cost-effective operation in a large number of applications, we are sure that you as a customer will convince yourself of this unique concept.

Oil-free or oil-lubricated?

Screw compressors can be oil-free or 'oil-free'. Oil-free is in quotes because oil-free compressors do not provide oil-free air (there is oil in the air around us). The difference, however, is that with oil-free propellers, there is no oil in the compression chamber. In an oil-free screw compressor, a set of gears controls the timing between the male and female rotor. There is no oil to seal the chamber. Plus, there's no refrigeration oil, so they run hotter, which reduces efficiency. As a result, oil-free screw compressors are usually limited to special applications. If there is a need for truly oil-free air, we recommend our water-lubricated screw compressors made of stainless steel. The advantage is that the impurities such as fine dust and oil particles are washed in the water lubrication. More about this on our website under the heading oil-free compressors. On request, a PMG / VSD drive can also be provided here, which further increases efficiency.

operation of the

PMG/VSD screw compressor

In an oil-lubricated screw compressor, the male rotor is driven by the motor, and the female rotor is driven by the male rotor, or rather the thin film of oil between them. The oil also seals the compression chamber and also acts as a coolant. The compressor block not only compresses air, it compresses an air/oil mixture. That mixture then flows to a separator tank. The oil is separated from the air by centrifugal force - as the air in the tank centrifuges, the oil is filtered from the air. The oil particles that are heavier than the air particles are separated here. The bulkheads in the tank help with the operation of the separation.

Our tank is equipped with an external separator filter, which makes maintenance significantly shorter (read cheaper). Finally, a second external oil filter removes the remaining oil from the air to a purity level of 3 ppm (parts per million). From here, the oil and air take two separate directions. The air then passes through a condenser cooler or absorption dryer and through the compressed air line to the compressed air user. The oil returns through the oil cooler. The thermostatic valve regulates the temperature of the oil through a sensor, which is controlled from the controller. You don't want the compressor and also the PMG engine (floating in its magnetic field) to run too hot or too cold. Too hot, the oil bakes, reduces efficiency and ultimately results in a machine breakdown. If too cold

you get the well-known condensation problem so that the water vapor present in the air cannot boil off. This too much water in the oil will cause the propeller block to fail in a fairly short period of time.

These problems are avoided with the special operation of our PMG / VSD compressors equipped with the thermovalve. Our compressors self-lubricate even at cold start. An oil filter filters contaminants from the oil. Where necessary, the oil can be replaced with food grade (food industry). The air filter prevents dust from entering the intake air, which also makes our PMG compressors ideally suited for dusty environments due to the IP-65 protection class. When the maximum pressure is reached, the compressor briefly goes into 'unload'. This interval is adjustable in time to exclude energy wastage as much as possible.

Characteristics

The PMG / VSD / VSD guarantees high-performance compressed air for the most diverse compressed air users.

Drive & compressed air generation

In contrast to high-speed gear or V-belt driven screw compressors, Javac opts for motor/block combinations on the same shaft 1-to-1, characteristic here is the larger screw block, in itself remarkably more durable, creates less heat, and above all much less generates noise nuisance. Our PMG / VSD are equipped as standard with an oil-cooled motor + propeller combination, which guarantees an optimum operating temperature. Our PMG engines with IE-5 plus label are the most economical engines available.
Expensive peak starting powers are hereby eliminated.
These PM motors (permanent magnet) are characterized by the absence of bearings: thus motor bearings that have worn out are avoided. Finally, these possess PM motors

class IP-65 and therefore insensitive to dust. For example, we are thinking of 'woodworking, sandblasting, stone cutting, crushing installations, etc. These sectors are often confronted with expensive interventions on the compressor, due to the effect of dust on bearings and other rotating components.

Compressed air quality

By using over-dimensioned screw blocks, which by definition rotate more slowly and therefore generate less heat, resulting in considerably colder compressed air.
In turn responding favorably to the relative humidity of the generated compressed air. The result is that the dryer functions optimally and needs to be less powerful. As a result, the condensation point of 3 C° is more easily achieved. An integrated pre- and post-filter ensure the filtering of water vapor and impurities in the compressed air. This in accordance with ISO 8573.1/ class 1/4/2.

The compressed air quality is optimal with a condenser or absorption dryer in function of the compressed air application. Extra filters in line can even provide almost breathing air, suitable for the pharmaceutical or food industry, or for laser cutting. We hereby refer you to our website where extensive information can be found in this regard.

Cooling and operating temperature

The heat dissipation is controlled by the controller in real time followed. The combined engine/propeller in its own oil bath guarantees ideal operating temperatures during operation. In combination with the over-dimensioned radiator, the duty cycle is optimal, which effortlessly guarantees continuous operation. But also give these compressors a very durable character.

Supply air

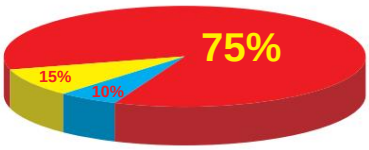
A fine-mesh pre-filter (2 microns) is mounted where the air enters the compressor, which retains most impurities without noticeable pressure drops to penetrate into the compressor compartment (in case of heavy dust development, clean or replace this filter mat in good time).

Heat exchanger

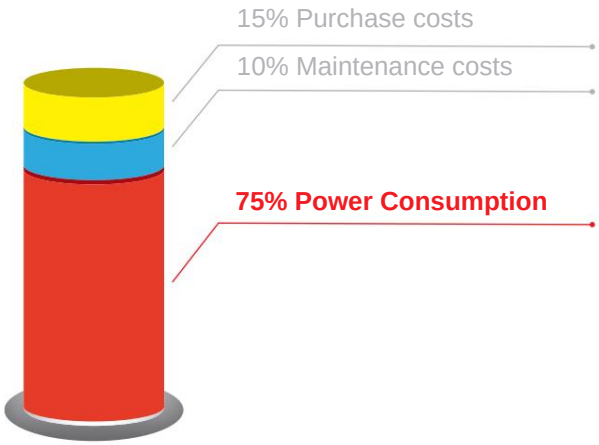
By using an optional heat exchanger, you can recover up to about 80% of the generated power in energy. The heat exchanger is mounted in the oil cooling channel and transfers this heat to a user to be used. This function is controlled by sensors, the heat goes through a thermovalve primarily to the propeller block, so that it reaches its ideal temperature ultra quickly. The residual heat is released through the heat exchanger itself. Applications can include: • heating up steam boilers • process water • central heating • or other industrial applications

The heat exchanger is made of highly conductive copper as standard. As an additional advantage, the absence of moving parts in the system means it is maintenance-free, works autonomously and consumes no energy, making this option extremely reliable. The amount of energy required for production and services becomes the norm. A reduction in energy consumption not only saves, but leads to a sustainable solution to reduce greenhouse gas emissions

Energy saving



The energy cost can become very high in the long term and is the most important operational cost. Assuming that a screw compressor has a fairly longer depreciation period, the cost can increase exponentially. Therefore, not enough attention can be paid to this aspect of the compressed air cost, especially with an energy carrier that is by definition already by far the most expensive. By investing in our PMG / VSD screw compressor you can reduce this cash flow destroyer by a factor of 50%. Taking this fact into account, the cost price of the investment in a compressor is of minor importance. The ROI (Return On Investment) is particularly favorable and pays for itself very quickly. Also important about our technology is that you can reduce the delta against the working pressure by 2 bar. Many compressors have a much too high delta, which leads to nothing but a higher compressed air cost. Practically all compressed air driven machines need a working pressure of 6.2 bar. By setting the compressed air pressure to 7 bar, which works perfectly with our PMG compressors, you also save considerably in energy costs here.



Controller

- Clear icons indicate the operation or status of your compressor
- Operation of the compressor is visually displayed
- Control of the controller with touch screen
- Display of all functions
- Automatic start/stop functions
- Complete software setting of the compressor operation
- Service alarm function with sound signal
- Possible to connect to a LAN connection
- Internet option with remote control (GPRS)
- Various LED lights indicate the correct operation of the compressor
- Memory stores all malfunctions, effective and clear for the service engineer

Service & maintenance contract

Many malfunctions can be solved remotely, provided a GPRS internet connection is linked to a maintenance contract.
This allows us to be notified in real time of a possible internal or external malfunction via our control panel. After analyzing the malfunction, we may correct the settings via the controller, or we can automatically schedule a service intervention. And if your service contract provides for this, to install a replacement compressor within 24 hours in the event of a serious breakage or calamity. Faults are proactively followed up, resulting in higher compressor availability. Faults are solved more quickly and the maintenance intervals are based on the effective use of the compressor.

Complete delivery package

- Available from 4 to 75 kW
- Universal working pressure from 6 to 16 bar
- Solitaire or combi version incl. dryer + tank • Durable version • IE-5 plus PMG- Oil-cooled motor • Over-dimensioned and slow-running screw block • Optimal operating heat provided oil-cooled motor/ screw block • Very low-noise operation 59 dBa at 7 meters • **50% energy savings** • PMG/VSD avoids high starting peaks in the current • Accessibility and progressive design • Rubber silent blocks limit resonance • All filters are placed externally, = faster maintenance • Controller that interactively checks operation • Provided with optional heat exchanger heat recovery • **IP-65 dustproof** and water-resistant • Pre- and post-filter in line with the dryer • Option: compressor can be monitored centrally via the internet

What is the durability of a PMG screw compressor?

A screw compressor is a precision device with running tolerances in thousandths, assume a lifespan of at least 25,000 operating hours to 50,000 operating hours, you must take the environment (temperature, dust formation, solvents, and above all a correct maintenance schedule) into account, have your compressor set to a regular maintenance schedule. Replace oil, oil filter and air filter regularly. Once a year is not enough. The compressor continuously absorbs contaminants into the air. The only way to get rid of harmful contaminants is to change the oil. Our PMG compressors are designed to run at a maximum of 50°C above ambient temperature.
That makes the average temperature between 76 and 86 C°. Anything above 90 °C significantly shortens the life of the compressor. If you find that the compressor is too hot and you cannot lower the temperature, the ambient temperature must be adjusted, beware of too small compressor space.

What is the guarantee of the pmg screw compressor 4 years after first commissioning, or a maximum of 4000 operating hours on compressors, 1 year on dryers, accessories and all other parts recognized by Javac **as** defective for any form, construction or assembly defect .
This warranty covers the replacement of parts recognized as defective, working hours within normal
working hours and travel costs and insofar as located in the Benelux.

Does it make sense to provide a back-up compressed air system?

Each company must decide for itself, important elements to invest in a back-up system are the cost price of a lost production day, missed delivery times, etc. What business cycle do you use, 24/24/7, keep note that a service contract is not automatic
provides a replacement device, and also take into account the ongoing logistical problems (2021). Machine breakdowns are not related to the durability of a product, but can have many causes. Most production companies have a back-up compressor, if only to avoid interrupting production during service intervals. A back-up compressor should be viewed with the same approach as the need for an emergency power supply

What can cause my compressor to fail?

There are many causes, contaminated oil, high operating temperatures and one important cause is ball bearings running out (a pmg already has 1 bearing less because the motor floats in its magnetic field). We recommend replacing the screw block bearings every 4 years under heavy use, a little preventative maintenance can save you important repair costs in the long run.

What kind of oil and filters should I use?

If you schedule the maintenance yourself, only use the filters and compressor oil prescribed by **Javac ,** especially Mobil M Rarus SHC 1025, non-foaming oil, this synthetic oil is the only one that can withstand the heat. We can do filter and oil change cannot recommend singen enough. Proper maintenance ensures reliability, energy savings and peace of mind.

COMBINATION PMG screw compressors

	PMC 7.5	PMC 11	PMC 15
Assets	7.5kW	11kW	15kW
Fuse	16 Amp	22.8 amps	30 Amp
Effective workload	Varia ball between 3.5 bar and 10 bar		
Effective flow rate delivered at 8 bar	1,150 l/m	1,800 l/m	2,200 l/m
Oil tank content	13.5 L		26 l
Cooling air flow Lit./min	10,000 m³	12,500 m³	
Boiler	360 l	500 l	
Voltage	3 x 400 volts 50 Hz (other voltage on request) 1 bar		
Absolute inlet pressure			
Relative humidity Air inlet	0%		
temperature Min. ambient	20 °C above ambient temp. max. 45 °C ambient air		
temperature Temperature control	0°C		
thermostat	70°C		
Technology	1 stage compressor		
Efficiency at full load	94.51 % to 95.20 %		
Typical oil content compressed air	3mg/m³		
Sound emission at 1 meter	Approximately 62 – 65		
Rpm	dBa 2600 rpm variable according to power requirement		
Prescribed oil Cooling	Mobil M RARUS SHC 1025 non-foaming oil		
	Forced air cooling, heat exchanger on oil radiator		
Dimensions L x D x	900x700x1130mm		1150x800x135mm
H Volume incl. packaging	1.2 m²		1.57 m³
Net weight	260kg	280Kg	480Kg
Stock number	**69442301**	**69442303**	**69442304**

Solitaire PMG / VSD Version

	PM 7.5	PM 11	PM 15	PM 22	PM 37
Assets	7.5kW	11kW	15kW	22kW	37kW
Fuse	16 Amp	22.8 amps	32 Amp	50 Amp	62 Amp
Effective workload	Variable 3.5 and 12 Bar				
Effective flow rate 8 bar	1,150 l/m	1,800 l/m	2,600 l/m	3,600 l/m	5,000 l/m
Oil tank content	13.5 L	26 l	40.6 L		
Cooling air Lit./min	10,000 m³	12,500 m³	15,000 m³	20,000 m³	
Voltage	3 x 400 volts 50 Hz (other voltage on request) 1 bar				
Absolute inlet pressure					
Riot. Humidity Air inlet	0%				
temp.	20 °C above ambient temp. max. 45 °C ambient air				
Min. ambient temperature	0°C				
Thermovalve	70°C				
Technology	1 stage compressor				
Efficiency at full load	94.51 % to 95.20 %				
Oil content compressed air	3mg/m³				
Noise load 1 meter	Approximately 64 – 68				
Rpm	dB 2600 rpm but variable according to power requirement				
Prescribed oil	Mobil M RARUS SHC 1025 non-foaming oil				
Cooling	Forced air cooling, heat exchanger on oil radiator				
Dimensions L x D x H	900 x 700 x 1,130mm		1,150 x 800 x 1,200mm		
Net weight	260 kg	280Kg	480kg	500Kg	580Kg
Stock number	**69442310**	**69442311**	**69442312**	**69442313**	**69442314**

Oil-cooled VSD/ PMG available up to 37 KW power

16 Bar PMG screw compressors

	LB-10/16	LB-15/16	LB-20/16	LB-30/16
Flow rate at 16 bar	700 l/m	1000 l/m	1,300 l/m	2,300 l/m
Engine horsepower	10 hp	15 hp	20 hp	30 hp
Engine kW	7.5 kW	11 kW	15 kW	22 kW
Engine cooling mode	Oil cooling closed circuit coupled to compressor unit			
Oil cooling	Forced cooling in radiator with temperature monitoring			
Voltage	400 volt power current			
operation	PLC control, with LED touch screen			
Technology	VSD PM technology saves up to 50% on energy costs			
Drive	Direct drive shaft to shaft			
Bearing	Motor floating in its magnetic field			
Compression build	Single stage compressor			
Noise load	66 ± 3 dBa at 1 meter			
Lubricating oil content	6 L	10 L		14 l
Refrigeration compressor	Forced air cooling -5 to +40			
Ambient temperature	°C			
Output temperature	+ 15 °C			
Rpm	2,900 rpm			
Exit	¾'		1'	
Weight	195 kg	280 kg	480 kg	500 kg
Dimensions mm	800x700x930		1,150x800x1,200	
Stock number	**69442355**	**69442357**	**69442359**	**69442361**

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