

**RASTGAR**  
AIR COMPRESSORS

*Tamturbo*  
JUST AIR



Touch-Free.  
Oil-Free. Care-Free.

## TAMTURBO® AIR COMPRESSOR

- 2-stage models at 80–400 hp / 60–300 kW
- 3-stage models at 125–470 hp / 90–350 kW

Touch-Free

## Oil-Free compressors that don't need touching



ALL TAMTURBO® TOUCH-FREETM COMPRES-cate, waste energy or maintain. Just as impor-SORS are Variable Speed-controlled, direct driv-tantly, you won't find one drop of oil anywhere en high-speed turbo compressors that produce inside our Touch-FreeTM compressors. The core completely oil-free compressed air for industrial of the Tamturbo® Touch-FreeTM Technology is customers. Impellers are integrated directly on Active Magnetic Bearing (AMB). Hence, rotating the motor shaft without any couplings. parts levitate and don't come in contact with anything.

Our Touch-FreeTM compressors are designed around a simple, yet unique principle: parts that Our direct-driven turbo compressors are fully don't touch, don't wear. And parts that don't free of machine maintenance to critical com- wear, don't fail. We've eliminated all metal-to-ponents, free of component failure and free of metal contact between rotating components. So, any oil contamination risk. That's what makes there are no moving parts to wear, replace, lubri-the Touch-FreeTM difference.

## Only 100% oil-free = 0% risk of contamination

At Tamturbo, 100% oil-free is all we do. To satisfy the quality requirements of our customers, we eliminate risks of contaminating air. So, we're the natural fit for industries with 0% tolerance for any risk of oil contamination, such as Food & Beverage, Electronics, Chemical, Automotive, Textile, Printing, Pulp and Paper etc.

Did you know that a typical "oil-free" rotary screw compressor actually contains up to 60 liters (15 gallons) of oil? That's hardly oil-free.

Did you realize that in every "oil-free" rotary screw, the only thing separating the air from the oil is just a simple oil seal? And the older the "oil-free" screws become, the risk of leaking oil further increases.

Fortunately, now there's a much better and 100% oil-free option.

Pharma



Food & Beverage



Electronics



Glass



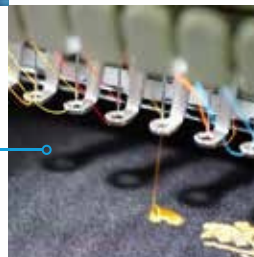
Manufacturing



Automotive



Textile



Pulp and Paper



# RASTGAR

AIR COMPRESSORS

Care-Free

## Tamturbo® Touch-Free™ Technology gives you Care-Free air

### PEACE OF MIND THROUGH TOP-QUALITY COMPONENTS

To secure the highest reliability, we use only best components. For example, our impellers are made from toughest titanium to make sure they exceed your expectations. Our ingenious design is simple, it has only high-speed motors with Active Magnetic Bearings (AMB's) and impellers without any gears, couplings, mechanical bearings or oil seals. The unit is completely maintenance-free with no complications or risk.

### SERVICE ONLY IF NEEDED

Whether it's planned or unplanned, downtime costs your business. Unlike typical hour-based maintenance, the Tamturbo® compressor is touched only when needed. Our ingeniously simple design eliminates virtually everything that can go wrong on an air compressor: the gears, bearings, seals, oil separators, oil pumps, filters and of course, oil.

### NO SURPRISES

We will keep an eye on your compressors so you don't have to. With our remote monitoring and diagnostic services, users can control the compressor optimization and receive alerts before preventive maintenance is required, such as anticipating intake air filter changes. Plus, since there are no moving parts to wear, no oil to change or components to replace, there is no need to stop the compressor and the overall life of your compressor is extended well beyond the life of "oil-free" screw.

**This is Care-Free.**



# RASTGAR

## AIR COMPRESSORS



PLC based controller has a touch screen user interface for local or remote monitoring and operating the unit.



### FREE FROM RISING ELECTRIC BILLS

How does a 10–15% reduction in energy bills sound? How about consistent savings across changing air needs? Now you can have both. Plus, unlike “oil-free” screws, Tamturbo® compressor efficiency stays constant during the entire unit lifetime. And the efficiency extends throughout the wide capacity turndown range, as much as 63% from the maximum flow.



### FREE FROM MAINTENANCE

No costly maintenance to critical components is ever needed on a Tamturbo® Touch-Free™ compressor. Maintenance is virtually limited to air filter and O-ring changes. And if you choose our Touch-Free™ Air program, we will take care of that, too.



### FREE FROM ENERGY WASTING BLOW-OUT

Our industry-leading capacity turndown range is up to 63% which is higher than traditional centrifugal compressors. Tamturbo® compressors are optimized for a wide capacity range, without having to use the energy-wasting blow-out of compressed air.



### FREE FROM ENVIRONMENTAL LOADING

Since the compressor has no oil, there's no oil or oil filters to dispose of, recycle or that could impact the environment. Plus, reducing your energy usage improves sustainability.

## Total Cost of Ownership that can't be touched

With market-leading efficiency and virtually no maintenance, Tamturbo® compressors offer by far the lowest total cost of ownership.

When you select a compressor, you are selecting a partner for decades. This makes the life cycle costs even more important than the purchasing cost of the unit. Tamturbo® compressors are packed full of industry-leading and cost-saving features.

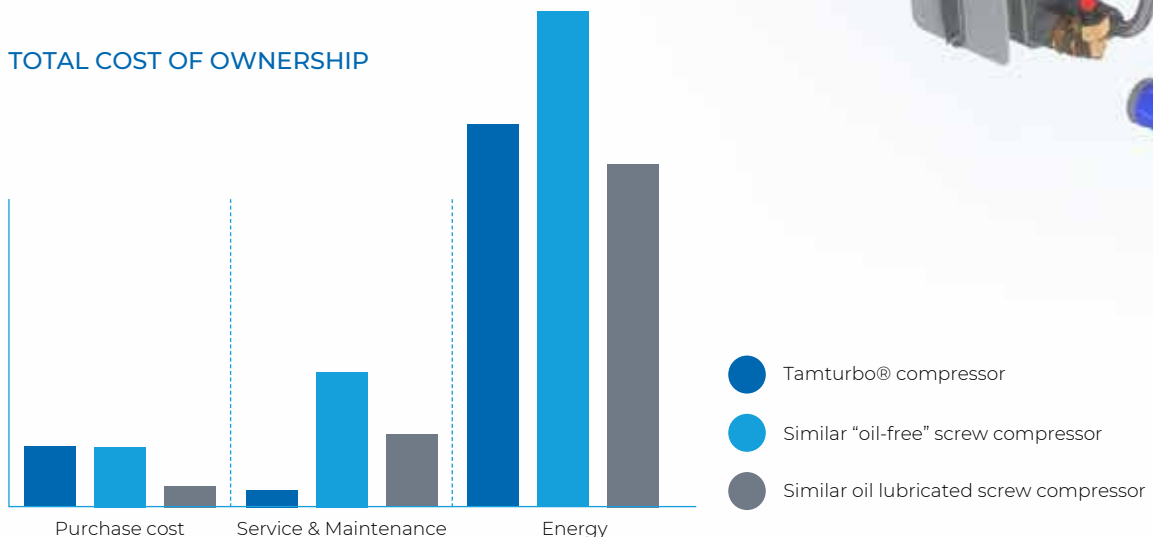
The total cost of ownership is a result of several factors, for example: purchase cost, periodic service & maintenance cost, repairs and overhauls and the cost of consumed energy. With Tamturbo® Touch-Free™ compressors you will get significant savings from all the biggest cost items: energy, service, maintenance, repairs and overhauls. Tamturbo® units have better and lasting energy efficiency compared to the "oil-free" screw compressor alternatives, so you will save significant amounts of money on electrical bills. With Tamturbo® Touch-Free™ technology, periodic maintenance and overhauls are virtually non-existent.

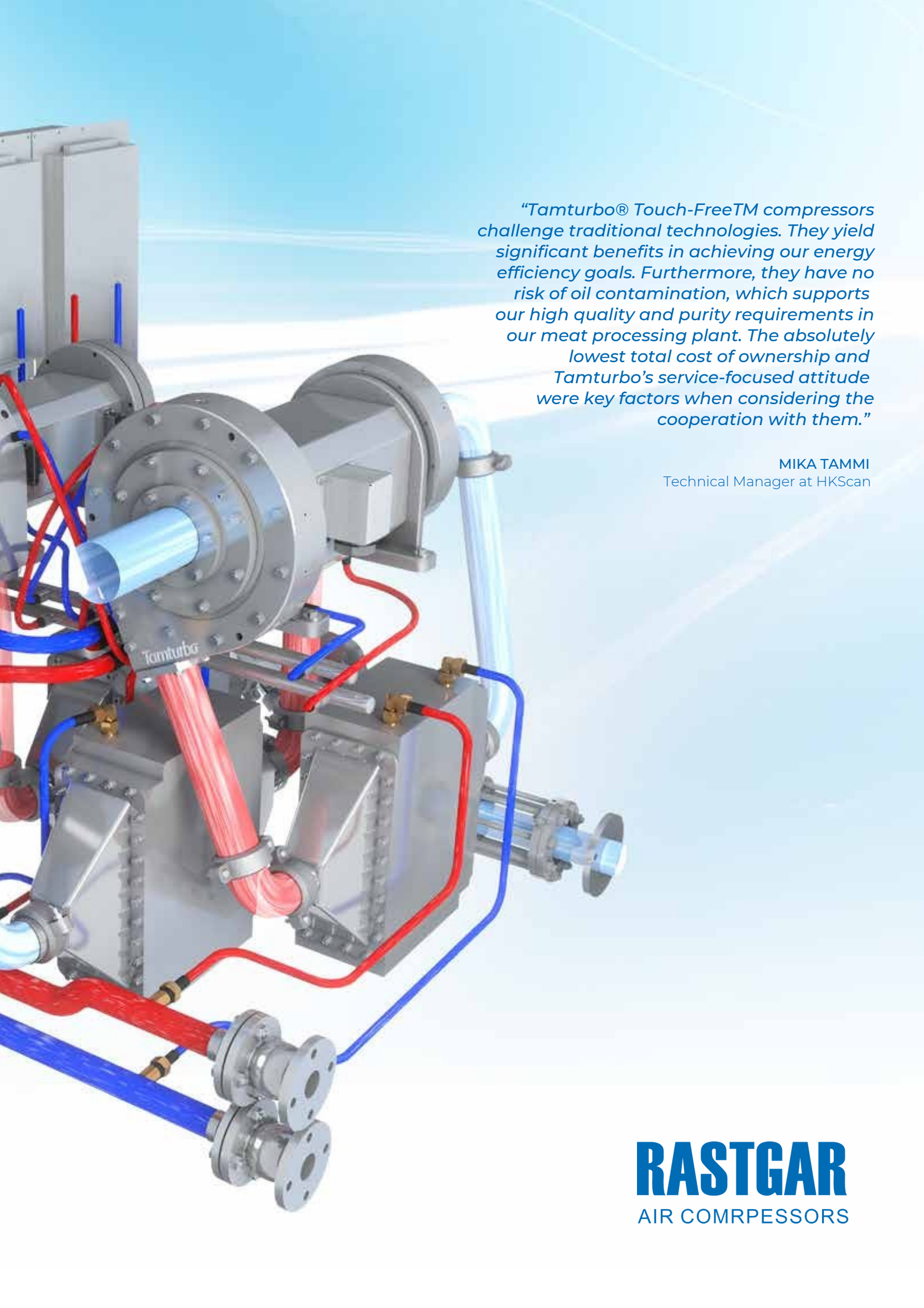
### USE THE HEAT

In addition to having the best variable speed compressor energy efficiency, with Tamturbo® compressors, you can efficiently take advantage of the heat that is produced during compression. Our standard liquid cooling system enables easy energy recovery; up to 93% of the compressor power consumption can be recaptured for your process, heating or other needs. Most compressors waste this energy by blowing it into the atmosphere.



### TOTAL COST OF OWNERSHIP





*"Tamturbo® Touch-Free™ compressors challenge traditional technologies. They yield significant benefits in achieving our energy efficiency goals. Furthermore, they have no risk of oil contamination, which supports our high quality and purity requirements in our meat processing plant. The absolutely lowest total cost of ownership and Tamturbo's service-focused attitude were key factors when considering the cooperation with them."*

**MIKA TAMMI**  
Technical Manager at HKScan

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AIR COMPRESSORS

# RASTGAR

AIR COMPRESSORS

## Reliability that can't be touched

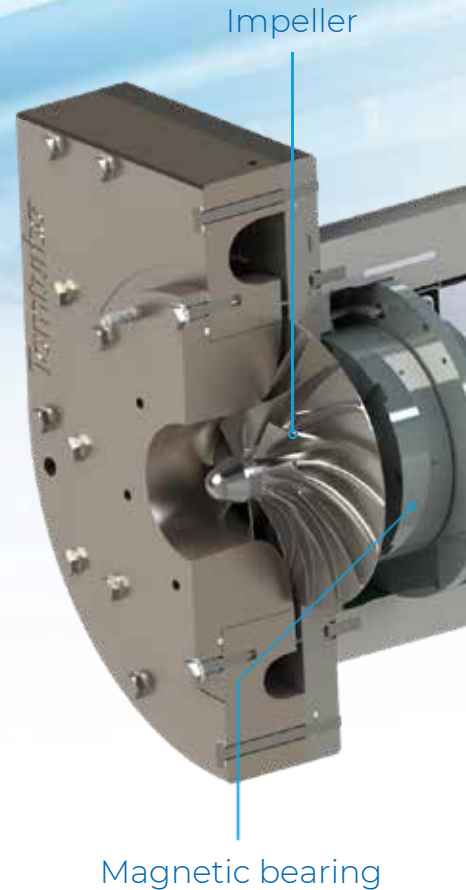
### WHERE SCIENCE MEETS ENGINEERING

Tamturbo® compressor direct-drive turbo technology is centred around a few unique principles. At the heart of every Tamturbo® oil-free compressor is our patented capacity control and operating system, operating the 3-stage compressor core with the help of industry-leading Variable Speed Drives.

Tamturbo® proprietary Active Magnetic Bearings (AMB) are the key to the Touch-Free™ technology. By providing friction-free rotation with zero drag or metal-to-metal contact, our components won't ever wear or break down. Active Magnetic Bearings react instantly, eliminating vibration completely.

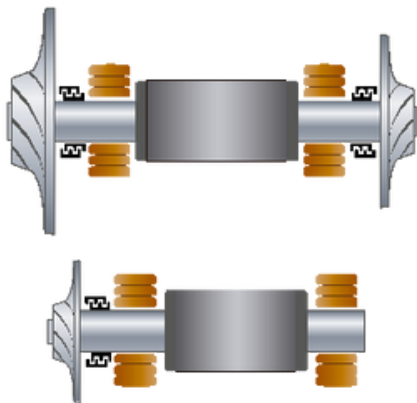
Self-protecting levitation also prevents damage in the event of a power failure inside your facility, as power stored in the rotation and in capacitors keeps the bearings energized until the motor slows down and stops.

Over hundred thousand AMB units in HVAC, oil and gas fields, deep-sea gas pumps and other tough uses have proven our product's technology, maturity and superiority in demanding applications.

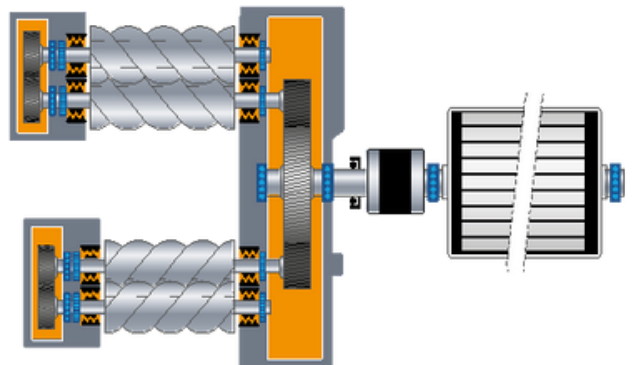


## The Look of Reliability: When Less is More

### TAMTURBO



### "OIL-FREE" SCREW COMPRESSOR





## Tamturbo® active magnetic bearings

### RELIABILITY

Rotating parts levitate and only touch the air.

### PRECISION

Active measuring and control ensures rotating parts are always held exactly in place.

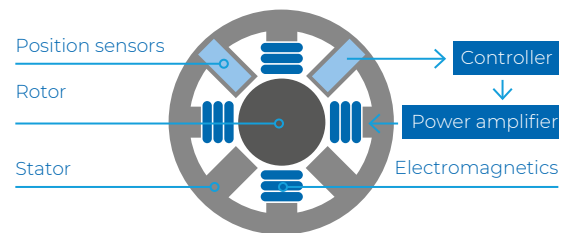
### CLEARANCE

Easy-to-maintain designed clearances.

### DURABILITY

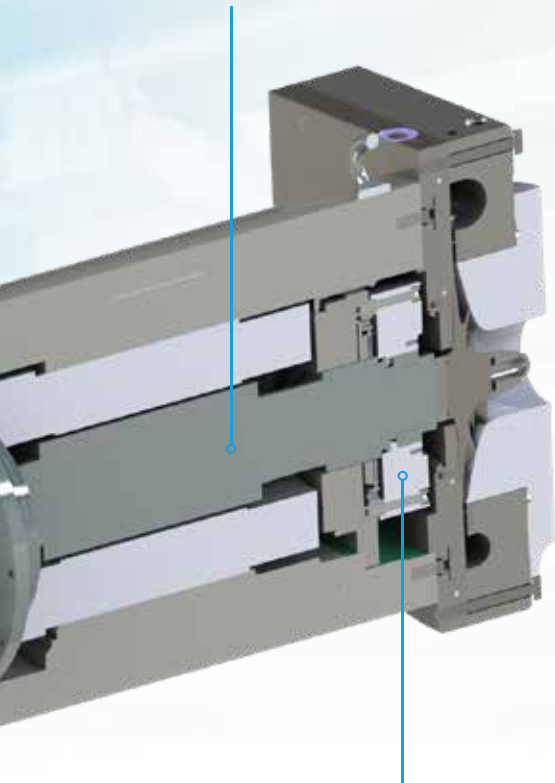
Unlimited starts and stops. No damage risk in power failure.

### MAGNETIC BEARING FEATURES



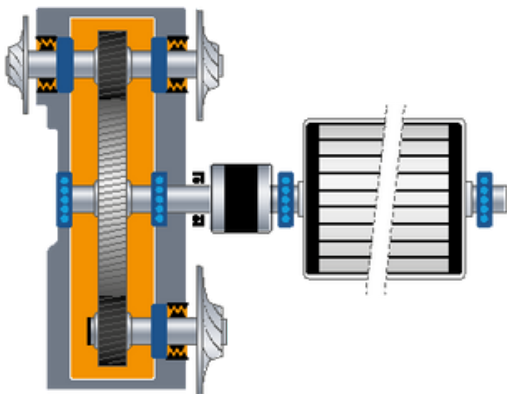
Active magnetic bearings – Five axis active bearings utilize two coils each for precision placement that maintains rotor position with micrometer accuracy.

High-speed motor



Magnetic bearing

### TRADITIONAL TURBO



### LIST OF SEALS AND BEARINGS

	"Oil-Free" Screw Compressor	Traditional Turbo Compressor	Tamturbo® Touch-Free™ Compressor
Oil systems	1	1	0
Gears	7	3	0
Oil seals	9	4	0
Bearings (Mechanical/Journal)	20	7	0

## Efficiency that no other oil-free variable speed compressor can touch

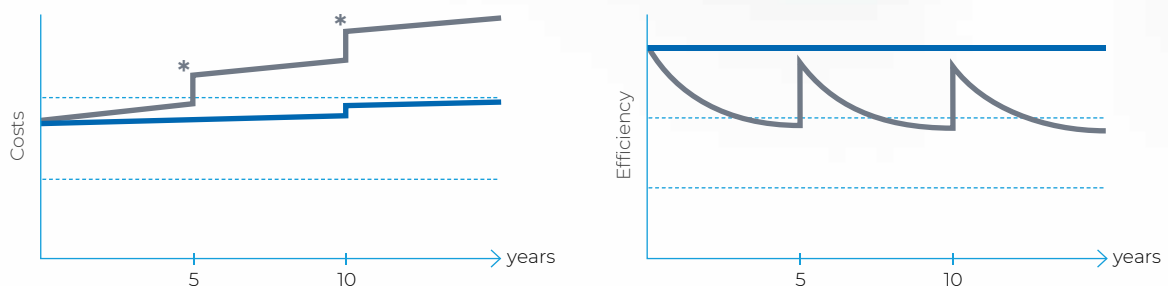
When moving parts come into contact, friction results in a loss of energy. Also, pressure is lost through filtration. “Oil-free” screws and traditional centrifugal compressors must rely on multiple energy-robbing gears and bearings with mechanical contact, oil seals and oil filters.

Due to their complex structure, the efficiency of an “oil-free” screw deteriorates rapidly, resulting from wear of the screw’s Teflon-coating and other components from day one, as soon as they are started. This directly increases the energy consumption by 10–15% or more and results in costly overhauls every few years.

Tamturbo Variable Speed Drives control the motor speed – based on actual air demand – to maintain constant pressure with high efficiency. Featuring permanent magnets, these motors rotate at speeds up to 35,000 RPMs for the best efficiency on the market. Our VSD and optional diffuser control enable our industry-leading capacity turndown range of up to 63% – with a far better idling efficiency. This ensures your compressor matches the air need with the highest efficiency.

Tamturbo® gearless drive units are unique. Our titanium turbo impellers never wear or create friction. With the ability to adapt to the demand fluctuation of air required within your facility, your efficiency remains constant over time. So, there are no costly spikes in energy consumption, which are typical with “oil-free” screw compressors.

### COMPARING WITH ALTERNATIVE TECHNOLOGY



● Tamturbo® High Speed Compressor ● “Oil-free” Screw \* Periodic overhaul with screw element changes



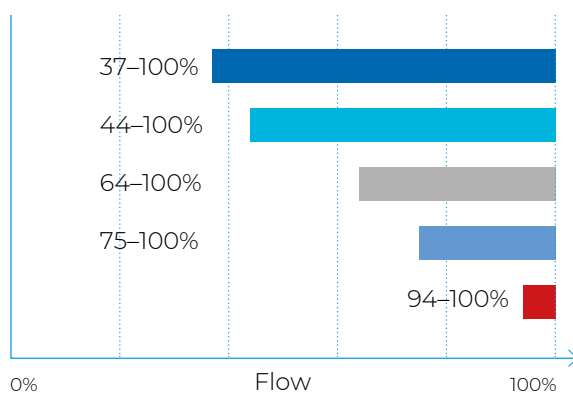
Touch-Free™ design, beauty in simplicity

## Adapts to ever-changing air demands

Traditional centrifugal compressors are optimized for max (or full) flow. In reality, air demand is almost never constant. This is why Tamturbo® compressors are optimized for a wide capacity range, without the energy-wasting blow-out of compressed air.

Tamturbo® VSD and an optional diffuser control offer the widest operating range at a superior efficiency. Even up to a 63% turn-down range, the Tamturbo® compressors match the air need without energy-wasting blow-outs. Unlike "oil-free" screws, which have notoriously low efficiency at low speeds, the Tamturbo unit efficiency stays high, even at partial loads and over a wide capacity range.

### FLOW CONTROL RANGE



- Tamturbo® RPM + Diffuser
- Control Tamturbo® RPM Control
- Brand A high-speed turbo
- Brand B high-speed turbo
- Brand C high-speed turbo





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## JUST AIR<sup>TM</sup>

### TOUCH-FREE AIR

Now there's a better way to purchase compressed air. With Touch-Free<sup>TM</sup> Air, you won't have to touch a thing. Not your compressor. Not your production schedule. Not even your working capital. Because at Tamturbo, it's no longer about the air compressor, it's all about the air.

Touch-Free<sup>TM</sup> Air literally means you only pay for the air you use. Not the air compressor, the maintenance or the worries that go with it. We'll set up the right system for your facility, and you won't have to touch it. You only get what you want: an uninterrupted supply of 100% oil-free air, at the lowest cost per unit

Contract alternatives:

€/m<sup>3</sup> or €/month

\$/cfm or \$/month

## Products

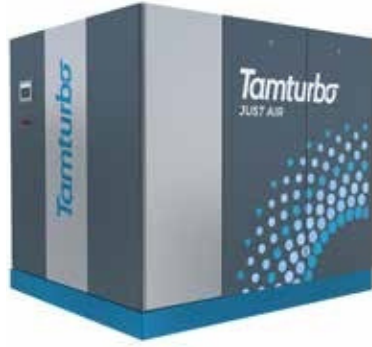
LOW PRESSURE



**TT115**

**Pressure**  
2-5 bar  
30-75 psi

**Flow**  
6.6-28.4 m<sup>3</sup>/min  
240-1010 cfm



**TT135**

**Pressure**  
2-4.5 bar  
30-65 psi

**Flow**  
12.2-33.0 m<sup>3</sup>/min  
440-1170 cfm



**TT155**

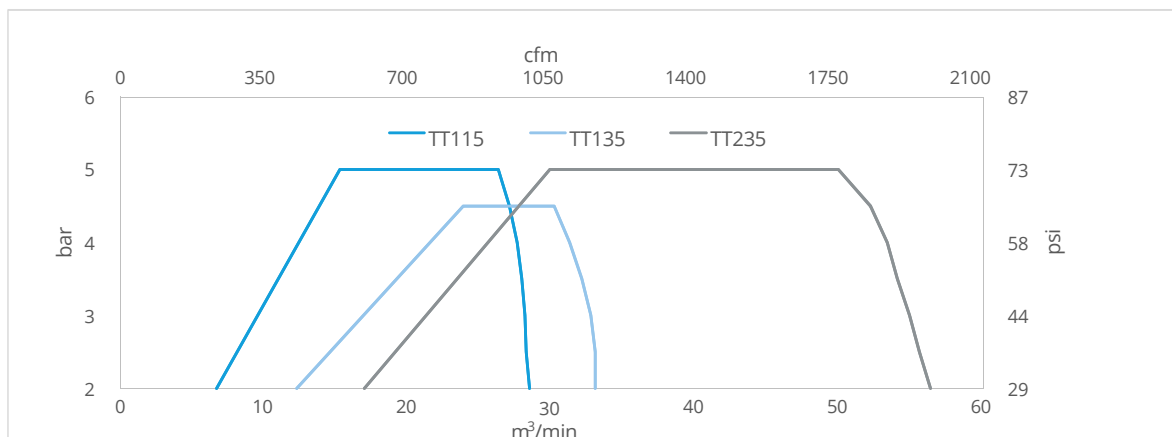


**TT235**

**Pressure**  
2-5 bar  
30-75 psi

**Flow**  
16.9-56.6 m<sup>3</sup>/min  
600-2000 cfm

### LOW PRESSURE PRODUCT RANGE



# RASTGAR

## AIR COMPRESSORS

### MEDIUM PRESSURE



#### TT145

**Pressure**  
5–9 bar  
70–130 psi

**Flow**  
8.0–28.4  
m<sup>3</sup>/min 290–  
1010 cfm



#### TT185

**Pressure**  
5–9 bar  
70–130 psi

**Flow**  
14.2–33.0  
m<sup>3</sup>/min 510–  
1170 cfm



#### TT225

**Pressure**  
5–9 bar  
70–130 psi

**Flow**  
20.5–37.6  
m<sup>3</sup>/min 730–  
1330 cfm

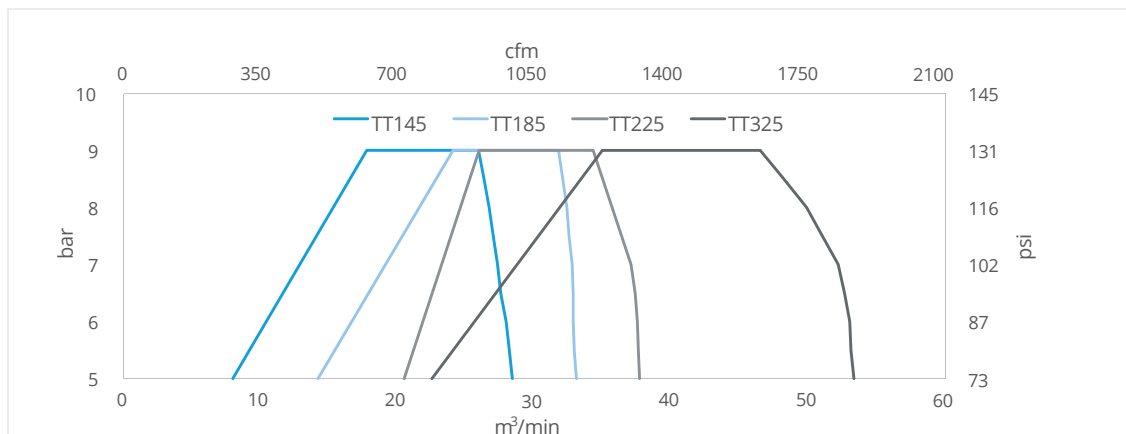


#### TT325

**Pressure**  
5–9 bar  
70–130 psi

**Flow**  
22.5–53.3  
m<sup>3</sup>/min 800–  
1890 cfm

### MEDIUM PRESSURE PRODUCT RANGE



## Touch-Free. Oil-Free. Care-Free.

Tamturbo was started in 2010 around the founding idea that the world needs a more environmentally friendly alternative to producing compressed air – we cannot continue wasting our most valuable resources, energy and harming the environment. Our unique technological advances combined with ingenious engineering work have brought to life a range of compressors that far surpasses the legacy technologies both in performance and in significantly lower life cycle cost. Our Touch-Free™ technology enables reliable and fully Oil-Free design and eliminates risks of compressed air contamination. In the end, we provide exactly what is needed – Just Air.

Developed in one of the compressor capitals of the world, Tampere Finland, Tamturbo is expanding its footprint globally through distributors and partners. The compressor product family is complemented by a range of value-adding products and services for efficient management of compressed air production. From our mobile container-based compressor rooms, to our multi-compressor control systems all with 24/7 remote monitoring and service, we want our partners and customers to feel Care-Free, knowing that we have their compressed air production secured!

TAMTURBO – JUST AIR.

## Authorized Distributor in Pakistan

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io@rastgar-co.com

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[www.tamturbo.com](http://www.tamturbo.com)

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