



**GLOBE** AIRMOTORS B.V.

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**We Make Movement From Air**

The GLOBE  
**COMPACT PISTON AIR MOTOR**





## Welcome at GLOBE,

Specialized in air motors and high pressure equipment since 1986. Within GLOBE we have two specializations. The focus of GLOBE Airmotors produces its own air motors, and with a worldwide sales network, their products are always available with a very short delivery time. GLOBE Test Equipment is a specialist in high pressure test systems, equipment and components. Because of their own engineering and production department, they supply custom build solutions for their customers.

As specialist we keep close contact with our customers. A positive business atmosphere with excellent service and quality, are very important for us. GLOBE has a high standard for the quality of our products. We are ISO 9001: 2015 certified to guarantee our work processes and quality. Pneumatic drives are often applied in explosive atmospheres. We can deliver our air motors, brakes and gearboxes with ATEX certificate II.

CE Ex II 2G Ex h IIC T5 Gb  
II 2D Ex h IIC T100°C Db  
Ta = -10° + 60°C



The GLOBE team



Rev. 1 - 2020  
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The GLOBE Compact Piston Air Motor

## Efficient, strong & compact

The GLOBE compact piston motors are top-class air motors. During the development of our motors we have focused on achieving a long service life and high efficiency. That is why the GLOBE compact piston motors are even more reliable than other air motors. They are energy efficient thanks to their low air consumption. This air motor is unique because of its low speed combined with high torque, without the use of a gearbox.

Typical applications are winding machines, dosing machines, conveyor belts, positioning machines, mixers, and manipulators.



### This is what makes the GLOBE compact piston air motors special:



#### Runs like a train

Thanks to a nickel-plated housing and metal rollers in the pistons, the GLOBE compact piston air motors run even smoother with less resistance.



#### Low noise level (76dBA)

The noise level does not exceed 76 dBA. This makes the air motor quieter compared to any other air motor.



#### Robust & High durability

Thanks to the unique design of the pistons and the housing, the GLOBE compact piston air motors have less wear. This results in a longer service life and requires less maintenance.



#### Low cost ownership

The GLOBE compact piston air motor reduces the air consumption, is low in maintenance and operates without lubrication.



#### Waterproof (IP64) and Inox

Our GLOBE compact piston air motors also ideal for the food, pharmaceutical and chemical industries.



#### Energy efficient

The GLOBE compact piston air motors are efficient up to 90% more than other air motors.



# We Make Movement From Air



## How the GLOBE Compact Piston Air Motor works

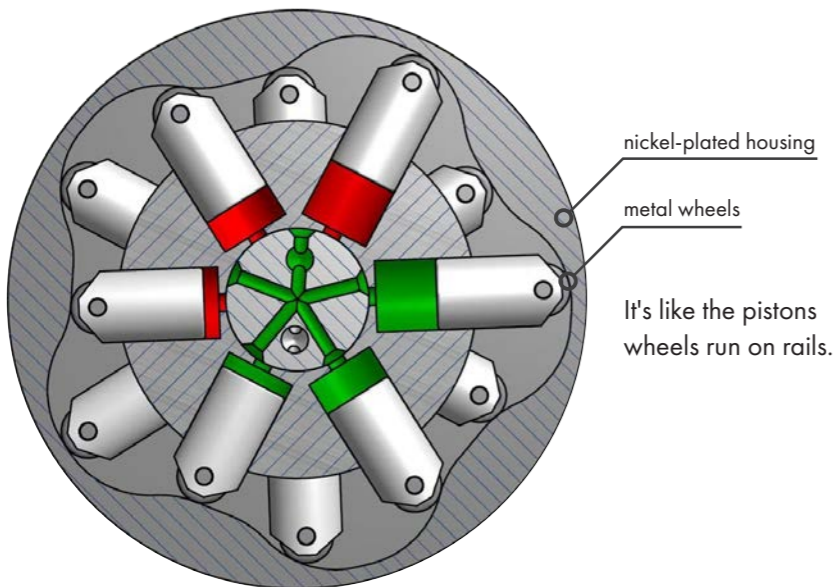
The compact radial piston air motor operates without rod or crank shaft. The radial arranged pistons travel along a curve and are controlled by the centre. The static control shaft supplies the driving pistons with the necessary air. Air supply

and release openings along the static shaft are periodically opened and closed by the rotation of the rotor to pressurise or release the pistons in an appropriate sequence. Six of the twelve driving pistons are actively contributing to the torque at any moment.

Once reaching the highest point on the curve, the air driving the piston is released by the control unit and the piston is forced into its lowermost position. This operating principle is equivalent with the one of a simple cylinder. The compact piston air motor's high torque is due to the power transmission of the pistons along the large external diameter of the curve. The friction connected with the travel along the curve is low due to the installation of rollers at the tip of the pistons. This results in high lifetime of the drive.

Noise emissions were determined according to the noise measuring standards ISO 11202 and within the frame of the ISO 11200 standards. We used a silencer\* for the test and the measured noise levels were below 76 dB for the RM012 and RM024. The pneumatic drive thus fulfils the noise regulations without requirement for ear protection devices. Shaft dimensions can be adapted according to the specific requirements of the client. Dimensions are shown in millimetres.

\*Muffler can be ordered is not included as standard



## Industries for the GLOBE compact piston air motor



### Chemicals & Laboratory

Working safely in the chemical or laboratory industry is important. There are rules and legislation that guarantees the safety of employees and users of the products. There is plenty to consider with. When working with chemical or flammable substances, it's important to work with ATEX certified products. In addition, the rooms must always be clean. The products must be sterilisable and resistant to cleaning agents (IP64). Our GLOBE compact piston motors are available in stainless steel and with ATEX certificate (zone II).



### Food & beverage

Food safety, legislation, sustainability and innovation. There is a lot involved in the food and beverage industry. The end product must be tasty and safe for consumption. In addition to the high hygiene requirements, the legal food standards must also be met. The GLOBE compact piston motors meet all the requirements for the food industry. During development, it has been taken into account that the materials and seals are food-safe. Our air motors are available in aluminium, stainless steel and plastic.



### Pharma & Healthcare

In addition to registrations, packaging, research and development, there are other aspects in the pharmaceutical and healthcare sector. Rooms must be sterile cleaned and when working with chemical or aggressive substances, the devices and machines must be ATEX certified. There may also be magnetically sensitive areas in health care. The GLOBE Compact piston motors are optional suitable in magnetically sensitive environments. They are available in aluminium, stainless steel or plastic. Do you want to know more about the possibilities or do you want advice that is appropriate for your environment? Our specialists are ready to help you.

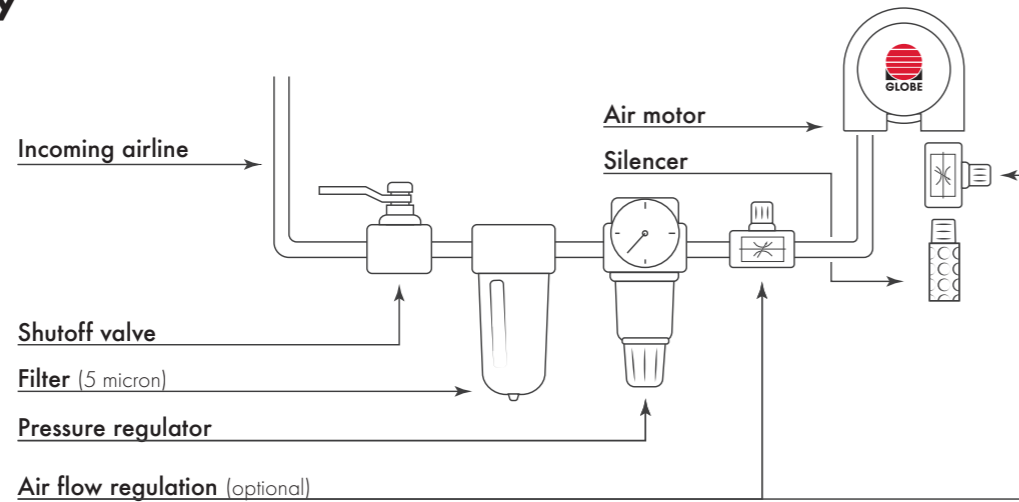


### Automation

There is a lot involved with automation. Think of speed, accuracy, efficiency, user-friendliness, industry 4.0, networks, sustainability and precision. All these high requirements apply to the components used in automation. Our compact piston air motors are suitable for high-quality drive technology. We have developed a compact piston motor with a rev. counter especially for automation. This means that you can be even more accurate in speed, precision and efficiency. GLOBE Airmotors offers the right solution for all these challenges and of course always with the professional advice of our specialists.

Contact GLOBE airmotors for advise of the right air motor

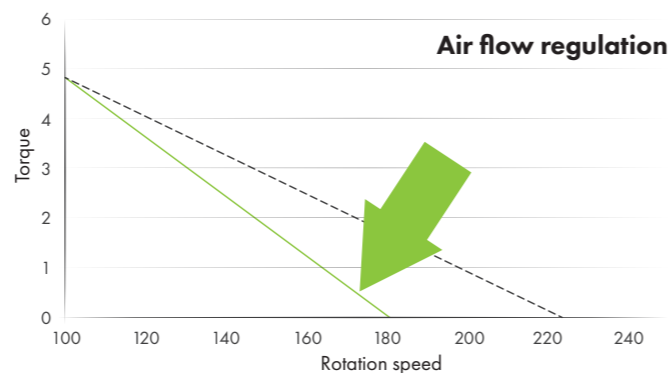
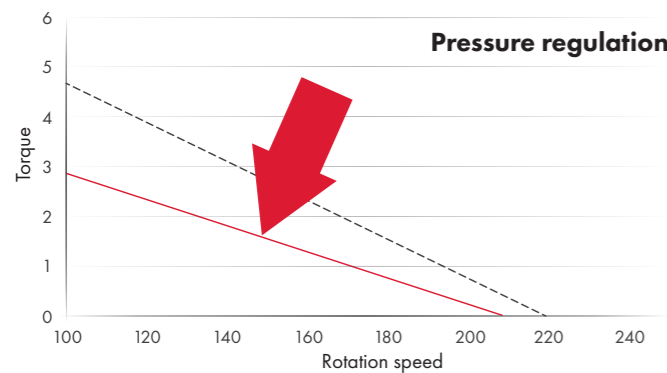
## Air supply



## Performance regulation

With the regulation of the inlet pressure and the flow rate, the performance can be adapted to the individual application. This is done by pressure or air flow regulation or a combination of both. The

compressibility of the air generates a dampening effect in all ranges. This allows that the motor also can be started, while it is loaded. With a load reduction, the motor reacts immediately with an increase in speed.

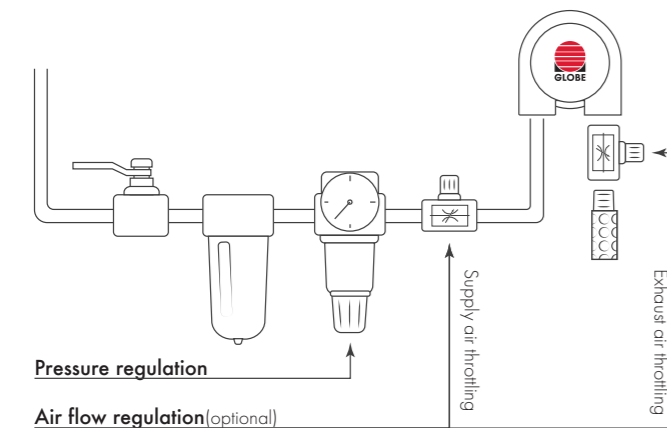


### 1. Pressure regulation

With pressure regulation the output power can be adjusted. When the supply pressure is decreased, the torque and power is reduced proportionally and the torque curve becomes flatter. The forces inside the motor are also reduced, which increases its durability.

### 2. Air flow regulation

Air flow regulation is the best way to reduce the output speed without the loss of torque. The air flow can be regulated with a throttling device. By throttling, the starting torque remains essentially the same but the torque curve is steeper. This means that under the same load fluctuation, the speed fluctuation is smaller in comparison with the pressure regulation. There is a distinction made between the following installation positions:



#### Exhaust air throttling

The exhaust air throttling is the less optimal way of throttling relating to the durability and the air consumption. The advantage of this method is that the rotational speed can be regulated constantly in the lower rotation range. In the border area of the rotation range, a combination of supply- and exhaust air throttling should be used. The exhaust throttling should be used for controlling low speed of rotation.

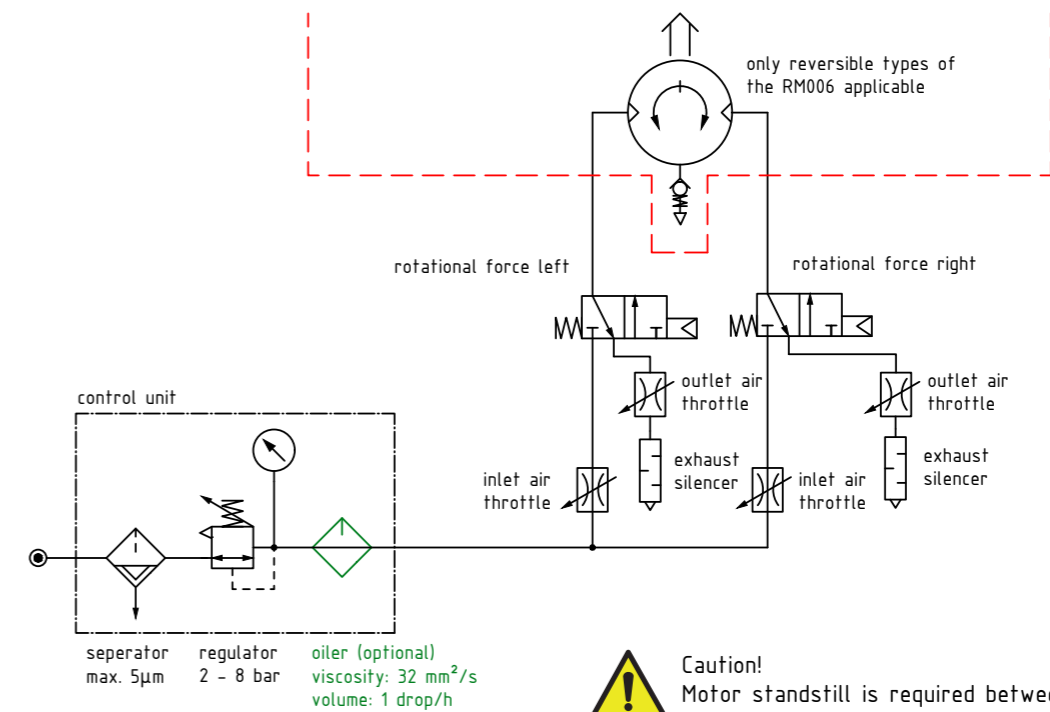
#### Supply air throttling

The supply air throttling generates better results in relation to the durability, the running smoothness and the air consumption.

**For optimal power and speed control we advise to use the combination of pressure and air flow regulation.**

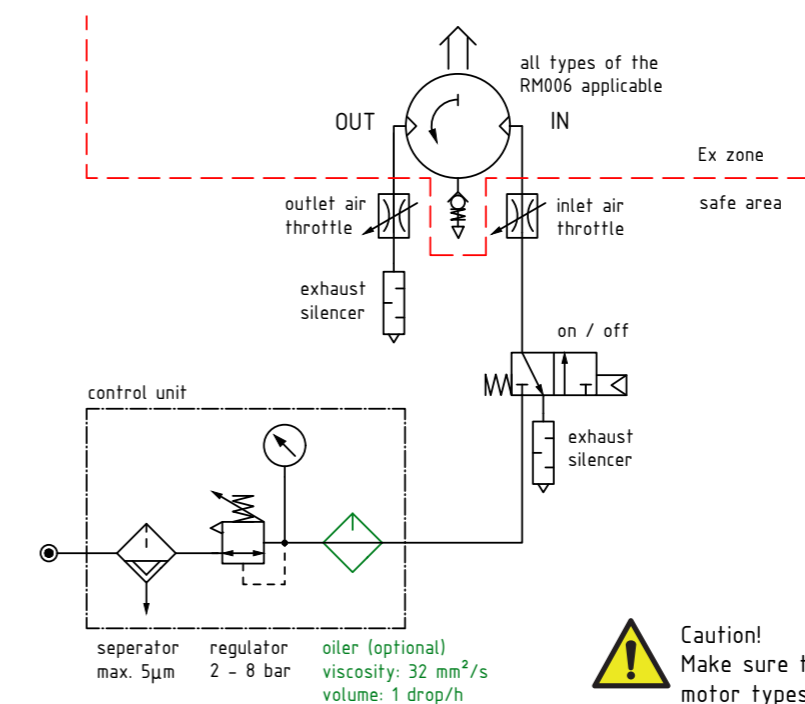
## PNEUMATIC CONTROL

### REVERSIBLE (standard version)



**Caution!** Motor standstill is required between change in direction. Use two separate direction control valves to provide this!

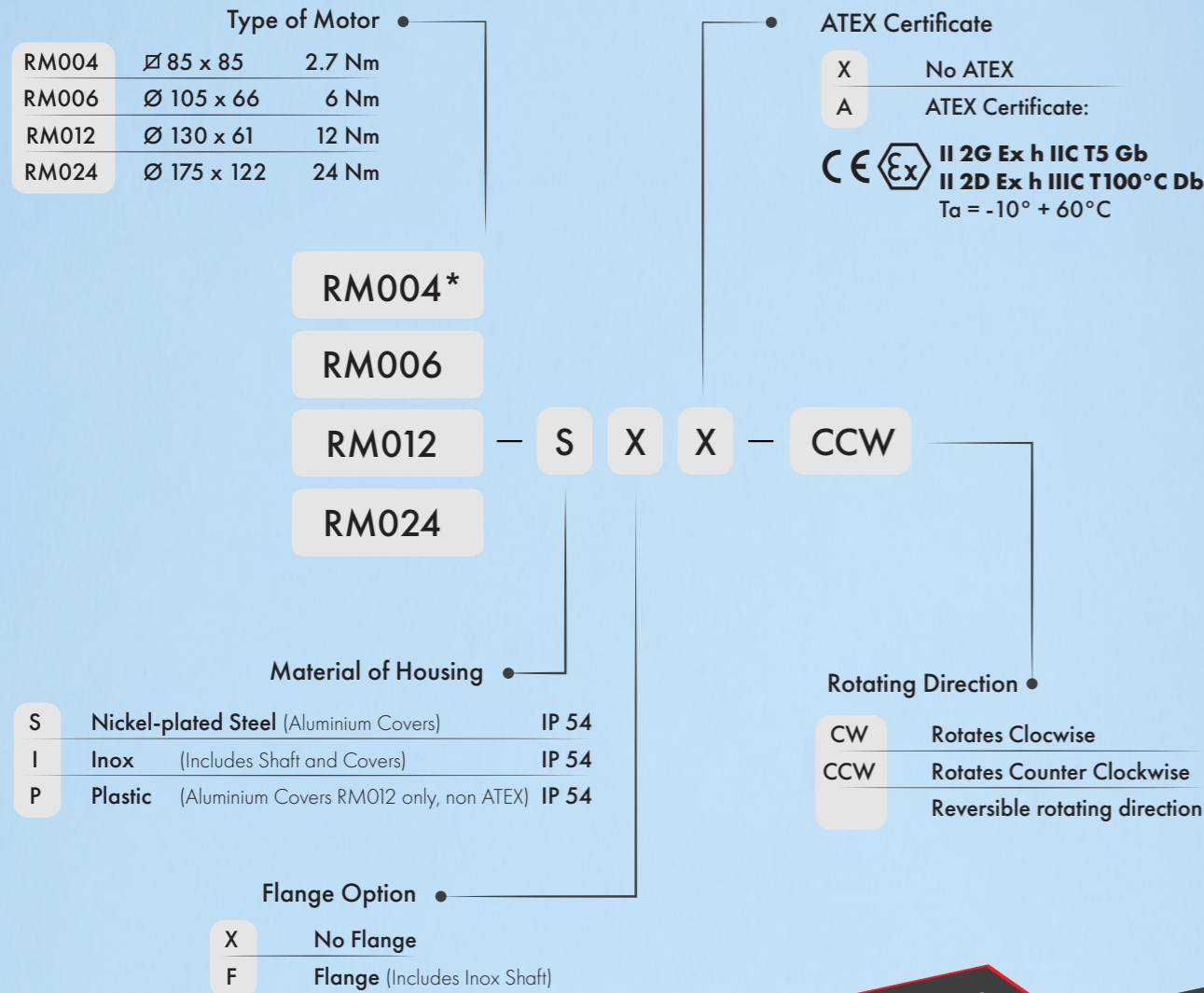
### NOT REVERSIBLE (CW / CCW)



**Caution!** Make sure that for the not reversible motor types (CW/CCW) the supply air is plugged in the "IN" marked port.

## Selection Code

Make your GLOBE compact piston air motor ordering code



\*Standard shaft diameter is  $\varnothing$ 9 mm, optional available in  $\varnothing$ 14 mm

Order your  
**COMPACT AIR MOTOR:**  
[info@globe-benelux.nl](mailto:info@globe-benelux.nl)



## Specifications

Type	Rotation speed (reversible)	Rotation speed (CW & CCW)	Torque	Weight (reversible)	Weight CW & CCW	IP	Page
	rpm	rpm	Nm	kg	kg	IP	nr
RM004-SXA	60 – 550	100 – 800	2.7	2.2	2.1	54	12 - 13
RM004-IXA	60 – 550	100 – 800	2.7	4.9	4.6	54	12 - 13
RM006-SXA	50 – 650	-	6	2.8	-	54	16
RM006-SXX	50 – 650	-	6	2.8	-	54	16
RM006-SFA	50 – 650	-	6	3.1	-	54	17
RM006-SFX	50 – 650	-	6	3.1	-	54	17
RM012-SXA	50 – 350	50 – 450	12	3.8	3.8	54	20
RM012-SXX	50 – 350	50 – 450	12	3.8	3.8	50	20
RM012-SFA	50 – 350	50 – 450	12	4.6	4.6	54	21
RM012-SFX	50 – 350	50 – 450	12	4.6	4.6	50	21
RM012-IXA	50 – 350	50 – 450	12	4.9	4.9	54	20
RM012-IXX	50 – 350	50 – 450	12	4.9	4.9	64	20
RM012-IFA	50 – 350	50 – 450	12	6.5	6.5	54	21
RM012-IFX	50 – 350	50 – 450	12	6.5	6.5	64	21
RM012-PXX	50 – 350	50 – 450	12	4.2	4.2	64	22
RM012-PFX	50 – 350	50 – 450	12	5.8	5.8	64	22
RM024-SXA	50 – 350	50 – 450	24	7.6	7.6	54	25
RM024-SXX	50 – 350	50 – 450	24	7.6	7.6	50	25
RM024-SFA	50 – 350	50 – 450	24	8.2	8.2	54	26
RM024-SFX	50 – 350	50 – 450	24	8.2	8.2	50	26
RM024-IXA	50 – 350	50 – 450	24	10.9	10.9	54	25
RM024-IXX	50 – 350	50 – 450	24	10.9	10.9	64	25
RM024-IFA	50 – 350	50 – 450	24	12	12	54	26
RM024-IFX	50 – 350	50 – 450	24	12	12	64	26

# RM004

Compact Piston Air Motors - 3.4Nm/2.5lbs ft.

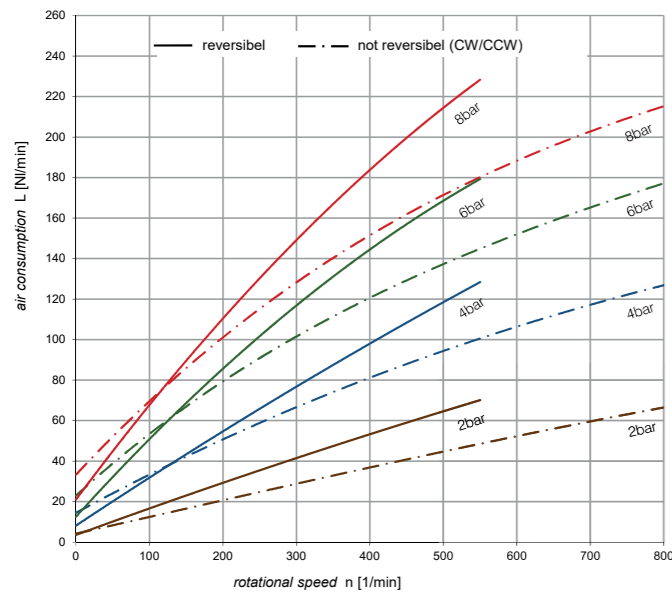
The GLOBE RM004 is the smallest in the series. Like all our compact piston air motors, the RM004 also has a low speed and high torque without the use of a gearbox. They are extremely efficient, give high performance and are up to 90% more efficient than other air motors. Unlike our other compact piston motors, the GLOBE RM004 has a hard anodized aluminum housing with plastic wheels on the 7 pistons. It has a double bearing on the output shaft and is therefore suitable for direct drive applications. This makes the air motor even lighter without losing its power and efficiency.

- » High starting torque
- » Starting torque 3,4 Nm / 30 inch lbs.
- » ATEX certified
- » Oil free (optional)
- » Silicone free
- » Easy to control
- » Very low air consumption
- » Easy to control

## RM004 - Specifications

Type	Rotation speed (reversible)	Rotation speed (CW & CCW)	Torque	Weight (reversible)	Weight CW & CCW	IP
	rpm	rpm	Nm	kg	kg	IP
RM004-SXA	60 – 550	100 – 800	2.7	2.2	2.1	54
RM004-IXA	60 – 550	100 – 800	2.7	4.9	4.6	54

## Air Consumption RM004

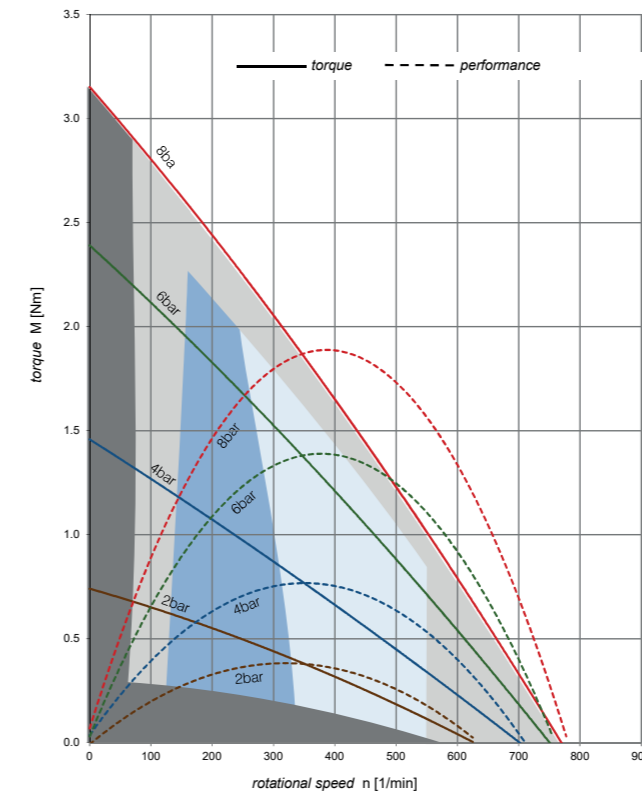


- » Max. power: 0,07 kW / 0.09 H.P.
- » Torque at max. power: 1,7 Nm / 15 inch lbs.
- » Starting torque: 3,4 Nm / 30 inch lbs.
- » Speed of rotation: 100 - 800 rpm. CCW or CW
- » Weight: 2.1 - 4.6 kg.
- » Air consumption: 170 NI/min.
- » Waterproof: 50 to 64 IP



## Performance RM004

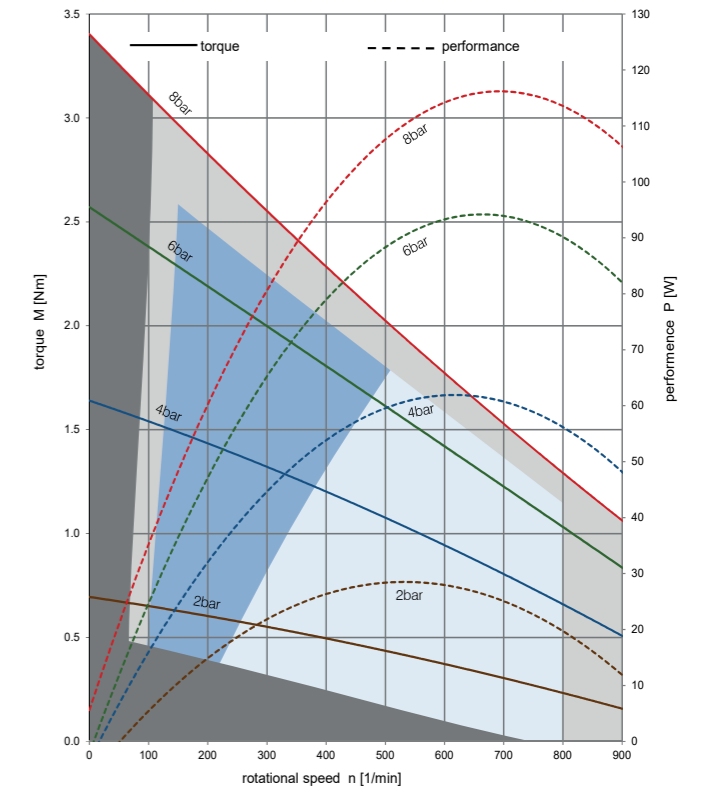
Reversible



- no continuous operation
- operation only after consulting supplier
- regulation with throttle
- regulation with pressure reduction

## Performance RM004

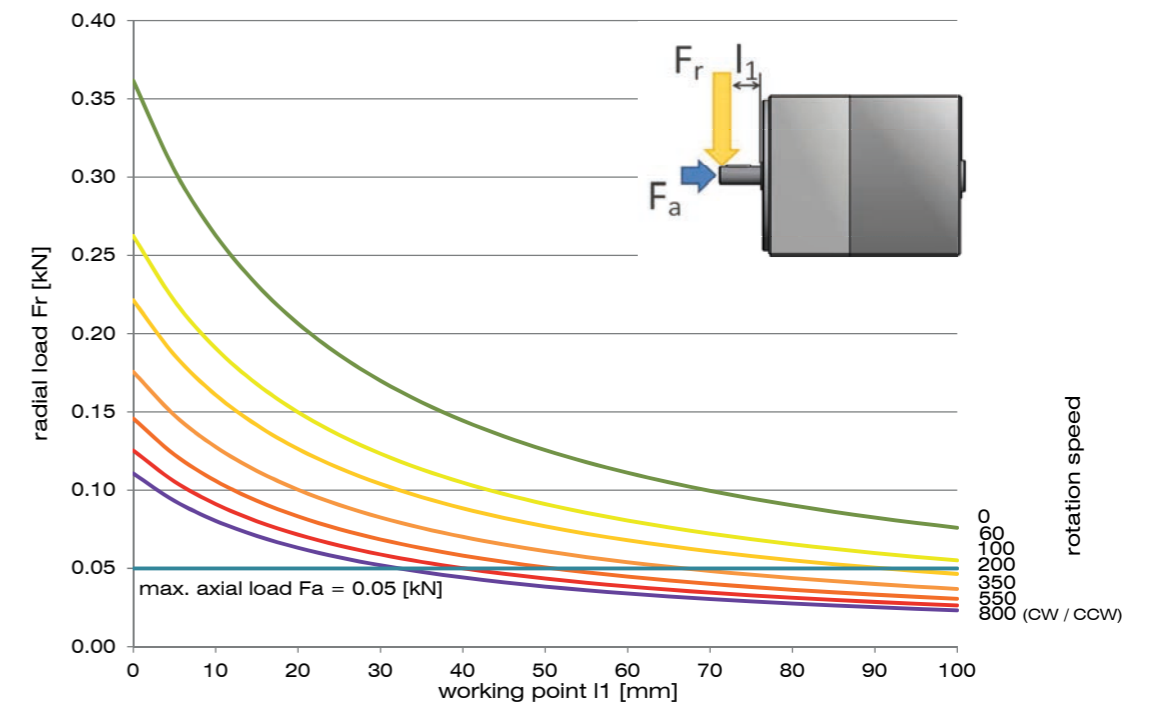
Clockwise (CW) & Counter clockwise (CCW)



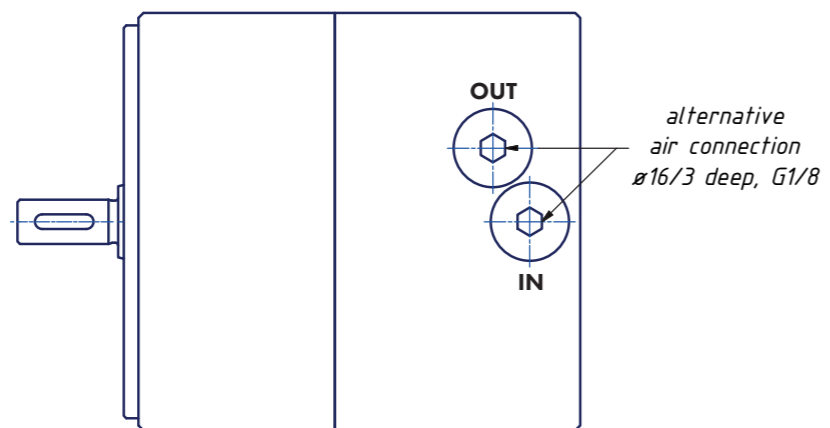
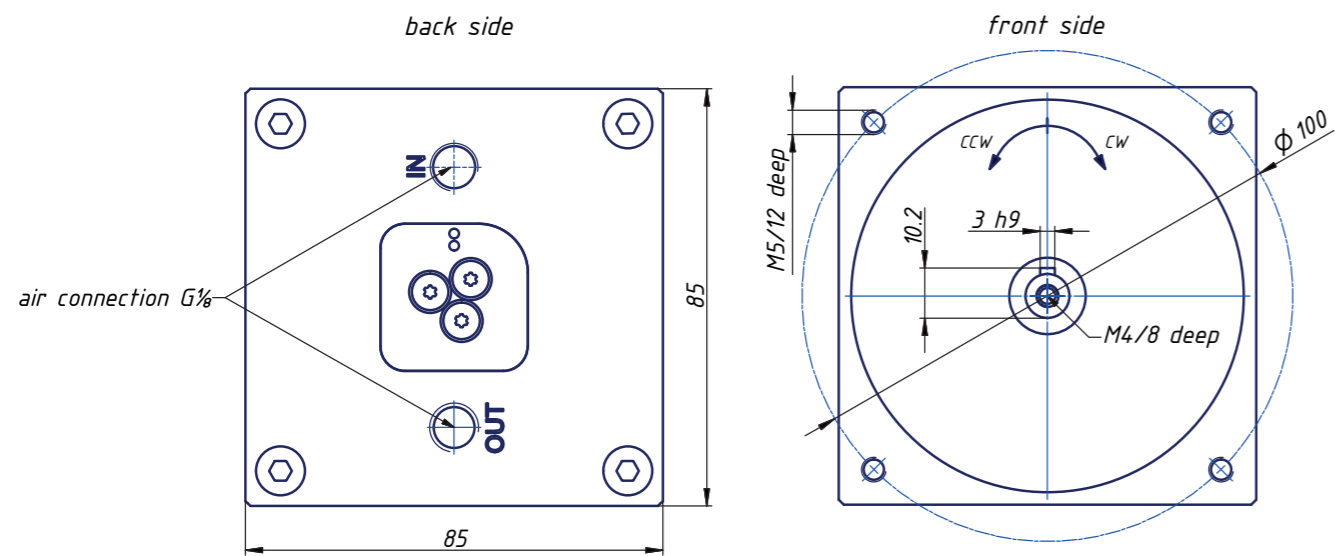
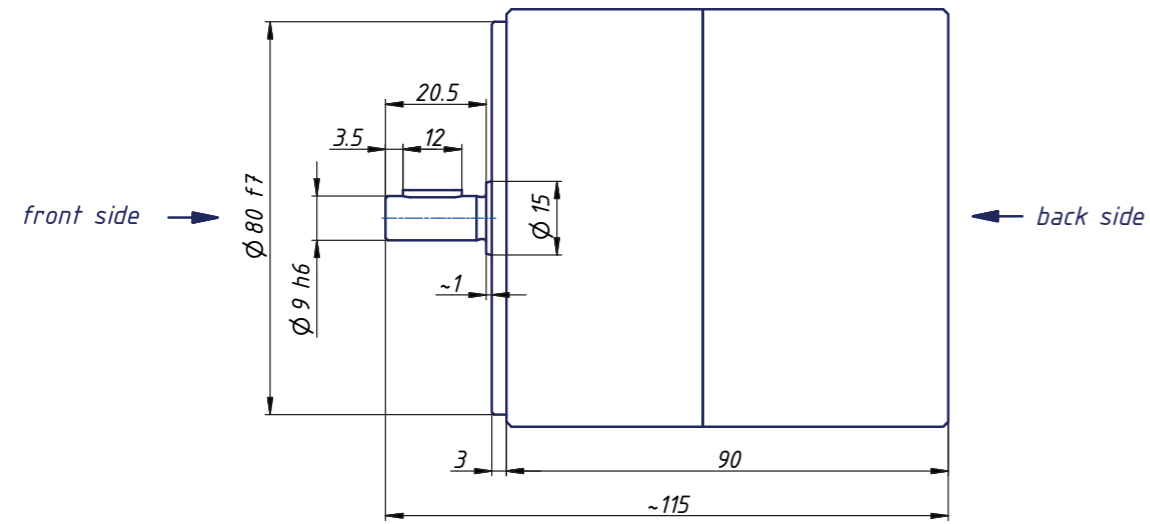
- no continuous operation
- operation only after consulting supplier
- regulation with throttle
- regulation with pressure reduction

## Load diagram RM004 | ATEX | SXA & IXA

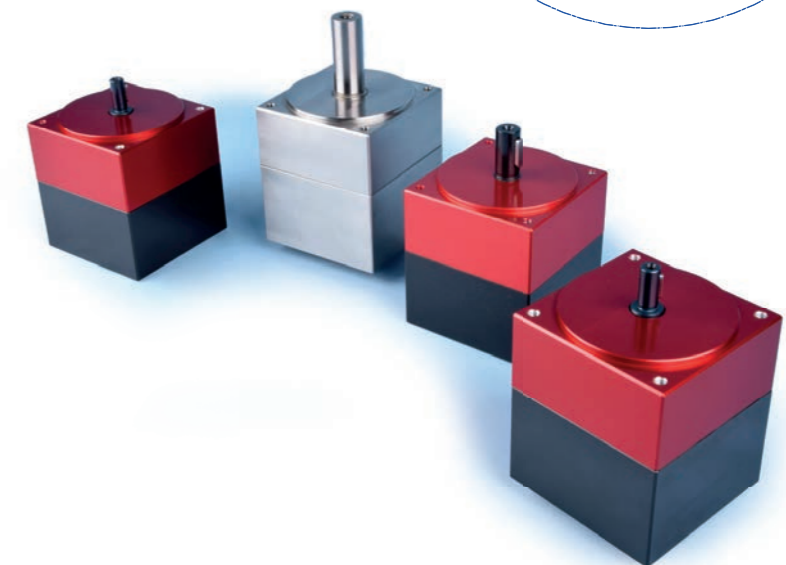
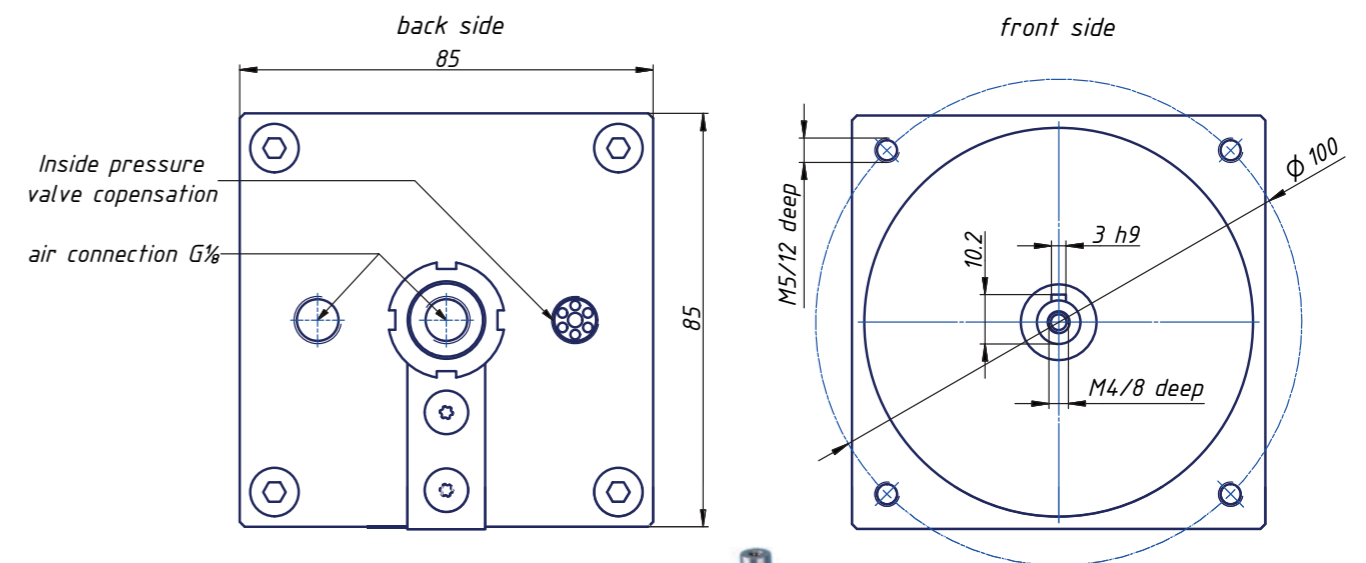
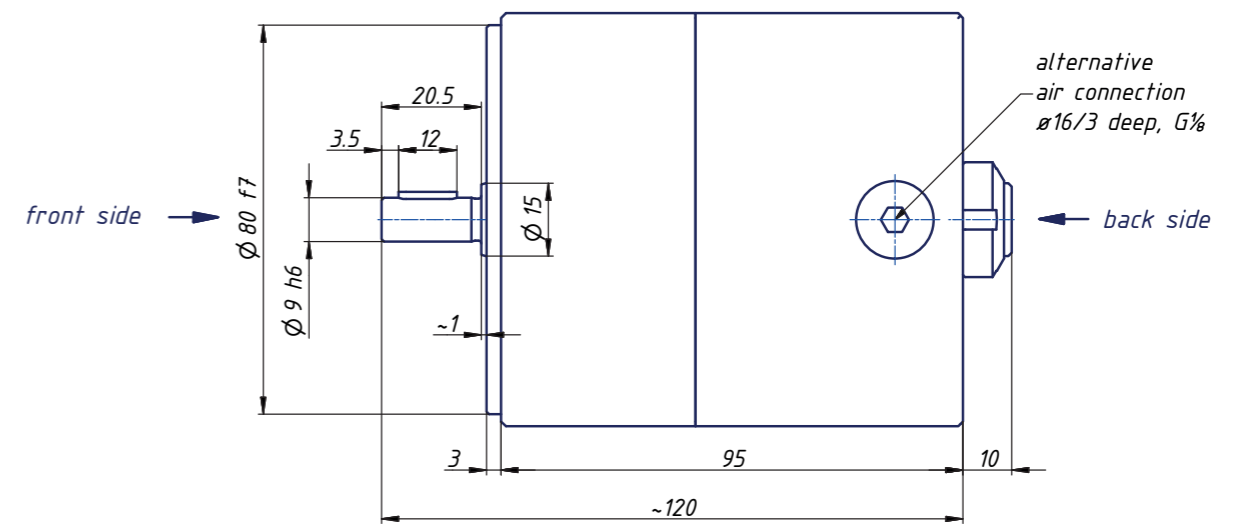
Nickelplated steel housing & Inox housing | no flange | ATEX



**Dimensions RM004 | CW & CCW | SXA & IXA**  
 Nickelplated steel housing & Inox housing | Clockwise & Counter clockwise



**Dimensions RM004 | Reversible | SXA & IXA**  
 Nickelplated steel housing & Inox housing | ATEX



# RM006

Compact Piston Air motor - 7 Nm - / 5.2 lbs ft.

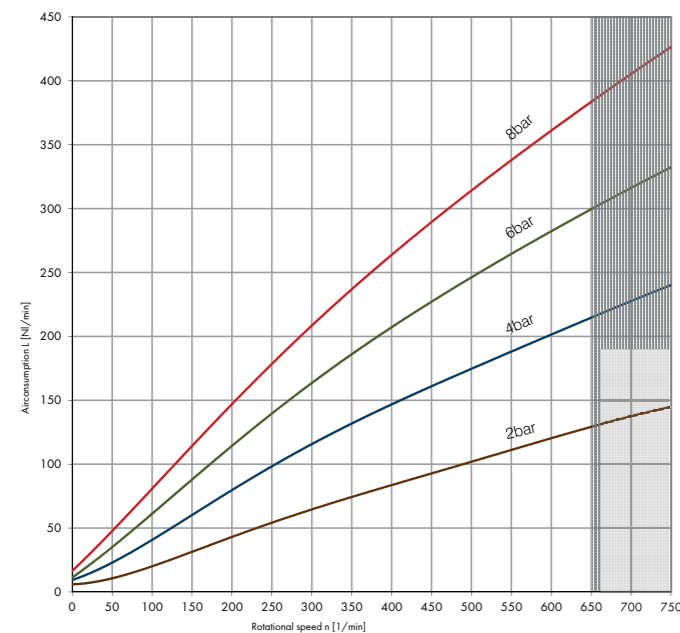
The GLOBE RM006 compact piston air motor is unique in all ways! During development, we have committed ourselves 100% on achieving a long service life and high efficiency. The new design of the RM006 features a nickel-plated housing and metal wheels in the pistons. This makes the RM006 even more reliable. It's like the wheels of the pistons run on rails, even smoother with less resistance. This not only makes the motor stronger, it has a longer service life because of less wear and therefore requires less maintenance. The GLOBE RM006 compact piston air motor is therefore successful in all areas. In addition, we tested it and compared it to comparable air motors on the market. Our GLOBE RM006 is at least 50% more efficient.

- » High starting torque
- » Starting torque 7 Nm / 5,2 lbs ft.
- » ATEX certified
- » Oil free (optional)
- » Silicone free
- » Easy to control
- » Very low air consumption
- » Reliable

## RM006 - Specifications

Type	Rotation speed	Torque	Weight	IP
RM006-SXA	50 - 650 rpm	6 Nm	2.8 kg	54
RM006-SXX	50 - 650 rpm	6 Nm	2.8 kg	54
RM006-SFA	50 - 650 rpm	6 Nm	3.1 kg	54
RM006-SFX	50 - 650 rpm	6 Nm	3.1 kg	54

## Air Consumption RM006

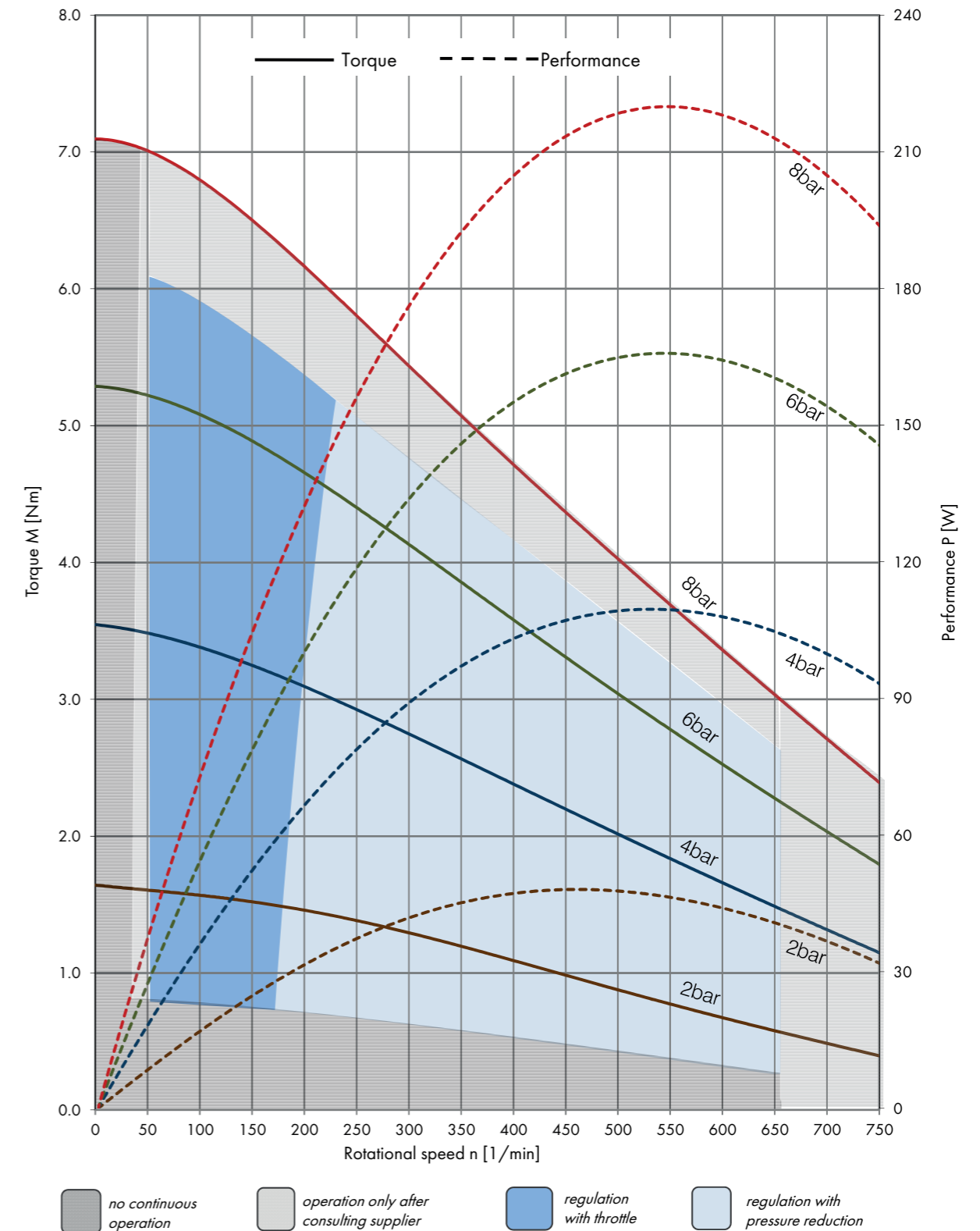


- » Max. power: 220 W / 0.21 H.P.
- » Torque at max. power: 3.6 Nm / 2.5 lbs ft.
- » Starting torque: 7 Nm / 5. lbs. ft
- » Speed of rotation: 50 - 650 rpm Reversible
- » Weight: 2.8 kg. no flange  
3.1 kg. with flange
- » Air consumption: 340 NI/min.
- » Waterproof: 54 IP



## Performance RM006

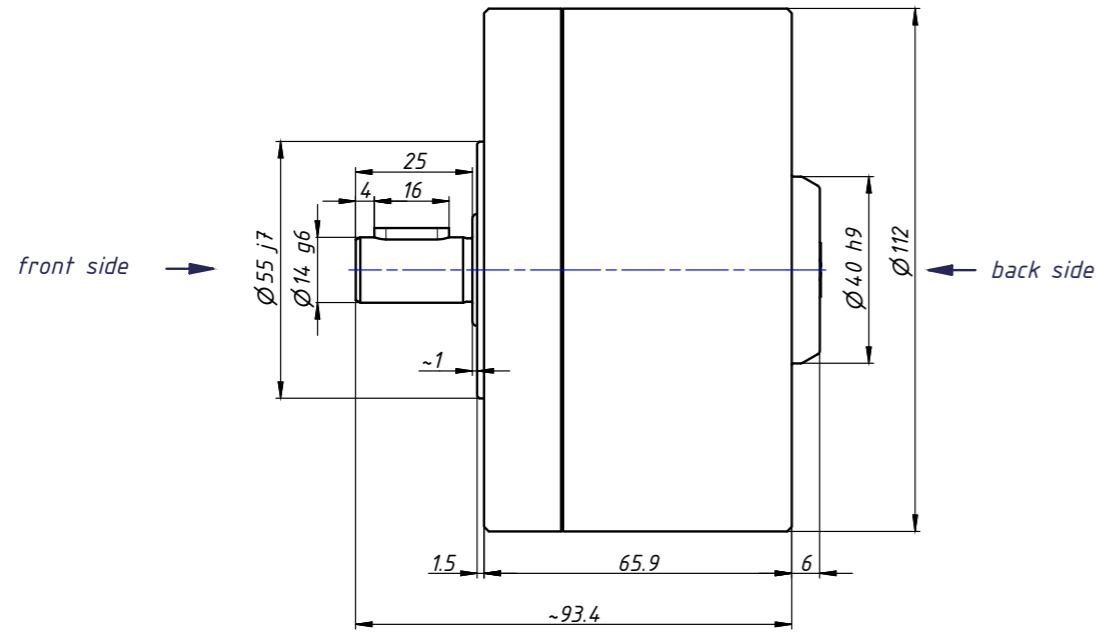
Reversible





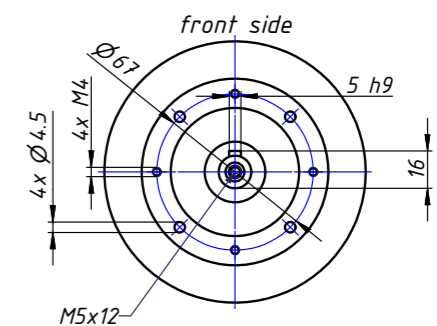
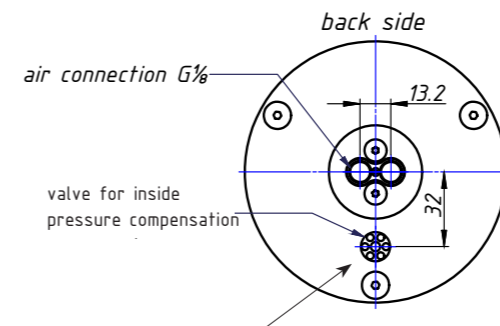
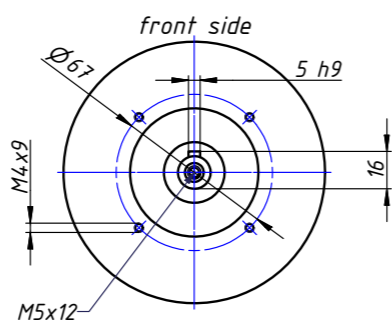
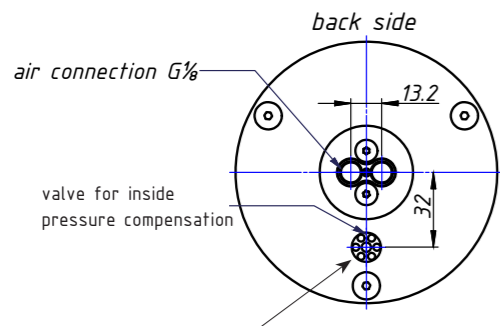
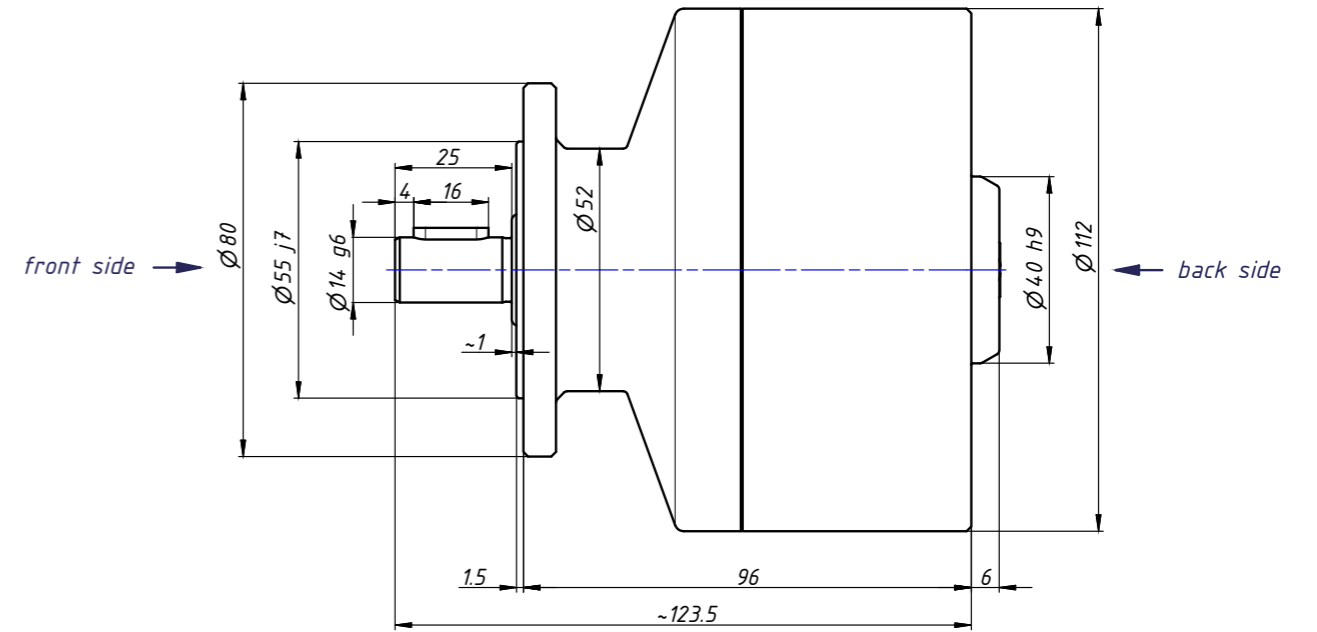
### Dimensions RM006 SXA & SXX

Nickelplated steel housing | No flange



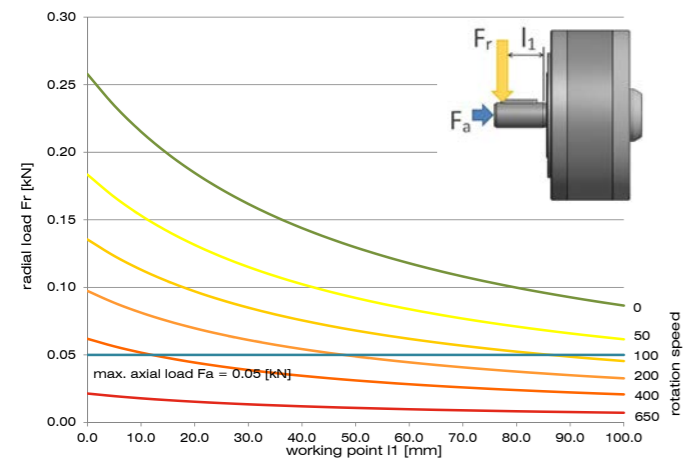
### Dimensions RM006 SFA & SFX

Nickelplated steel housing | flange



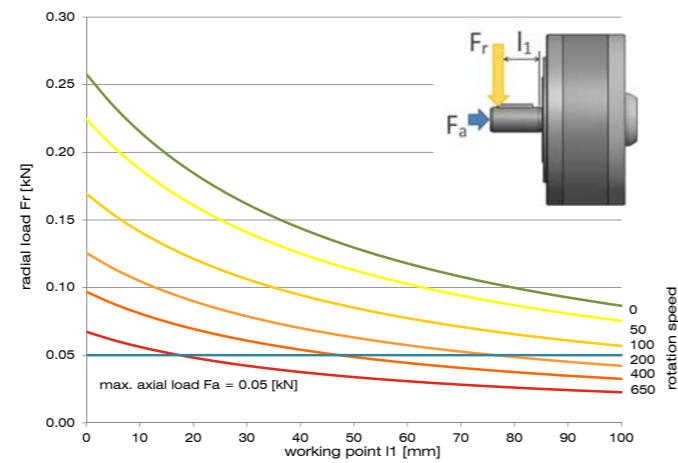
### Load diagram RM006 SXA

Nickelplated steel housing | no flange | ATEX



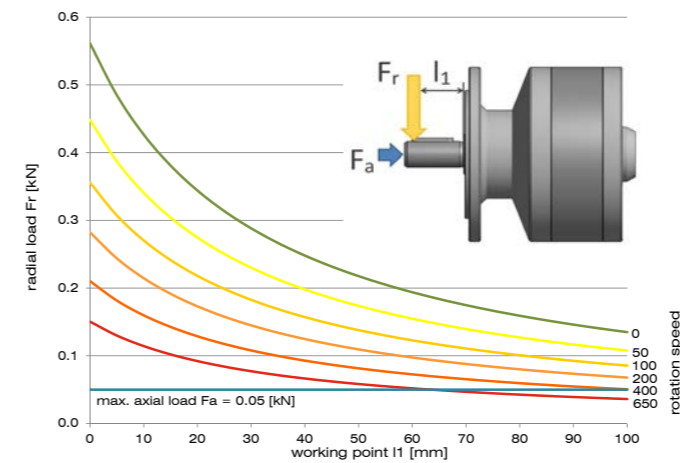
### Load diagram RM006 SXX

Nickelplated steel housing | no flange



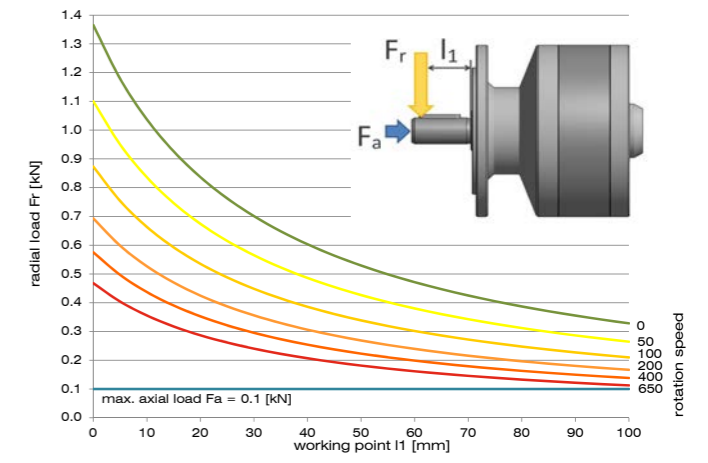
### Load diagram RM006 SFA

Nickelplated steel housing | flange | ATEX



### Load diagram RM006 SFX

Nickelplated steel housing | flange



# RM012

Compact Piston Air motor - 14 Nm - / 10.3 lbs ft.

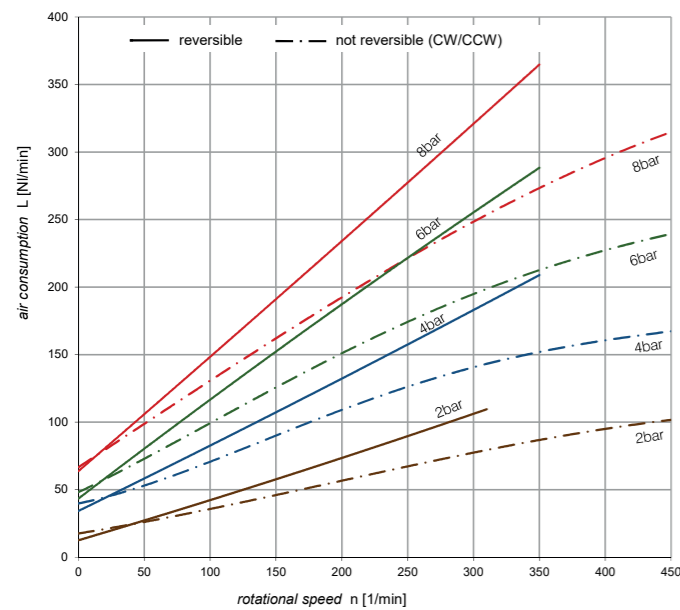
The GLOBE compact piston air motors are motors with a number of unique characteristics compared to other air motors. Unique to this motor is the low speed combined with high torque without the use of a gearbox. These motors are used in situations where air motors are not normally used.

- » High starting torque
- » Starting torque 14 Nm / 10.3 lbs ft.
- » ATEX certified
- » Oil free (optional)
- » Silicone free
- » Easy to control
- » Very low air consumption
- » Reliable

## RM012 - Specifications

Type	Rotation speed (reversible)	Rotation speed (CW & CCW)	Torque	Weight (reversible)	IP
	rpm	rpm			
RM012-SXA	50 – 350	50 – 450	12	3.8	54
RM012-SXX	50 – 350	50 – 450	12	3.8	50
RM012-SFA	50 – 350	50 – 450	12	4.6	54
RM012-SFX	50 – 350	50 – 450	12	4.6	50
RM012-IXA	50 – 350	50 – 450	12	4.9	54
RM012-IXX	50 – 350	50 – 450	12	4.9	64
RM012-IFA	50 – 350	50 – 450	12	6.5	54
RM012-IFX	50 – 350	50 – 450	12	6.5	64
RM012-PXX	50 – 350	50 – 450	12	4.2	64
RM012-PFX	50 – 350	50 – 450	12	5.8	64

## Airconsumption RM012

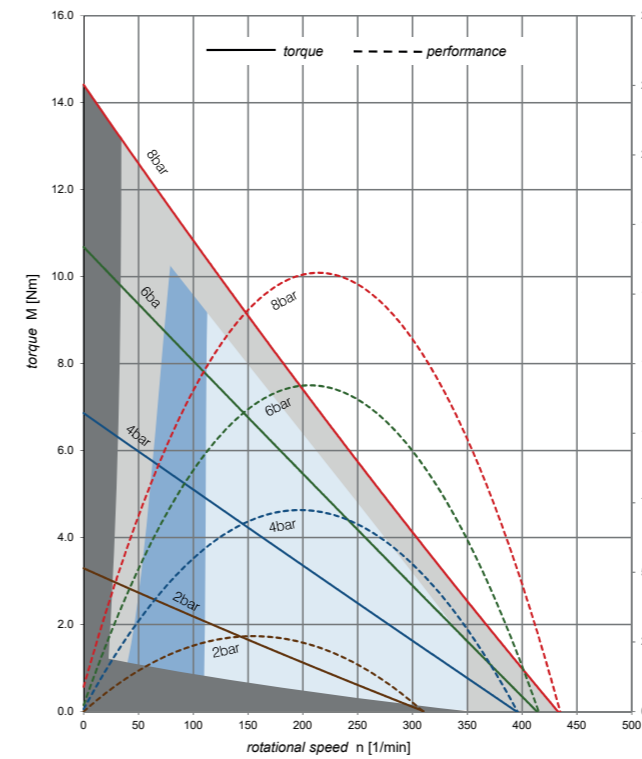


- » Max. power: 0.16 kW / 0.21 H.P.
- » Torque at max. power: 7 Nm / 5.1 lbs ft.
- » Starting torque: 14.5 Nm / 10.7 lbs ft.
- » Speed of rotation: 50 - 450 rpm. CCW or CW  
50 - 350 rpm. Reversible
- » Weight: 3.8 kg. no flange  
4.6 kg. with flange
- » Air consumption: 255 NI/min.
- » Waterproof: 54 to 64 IP



## Performance RM012

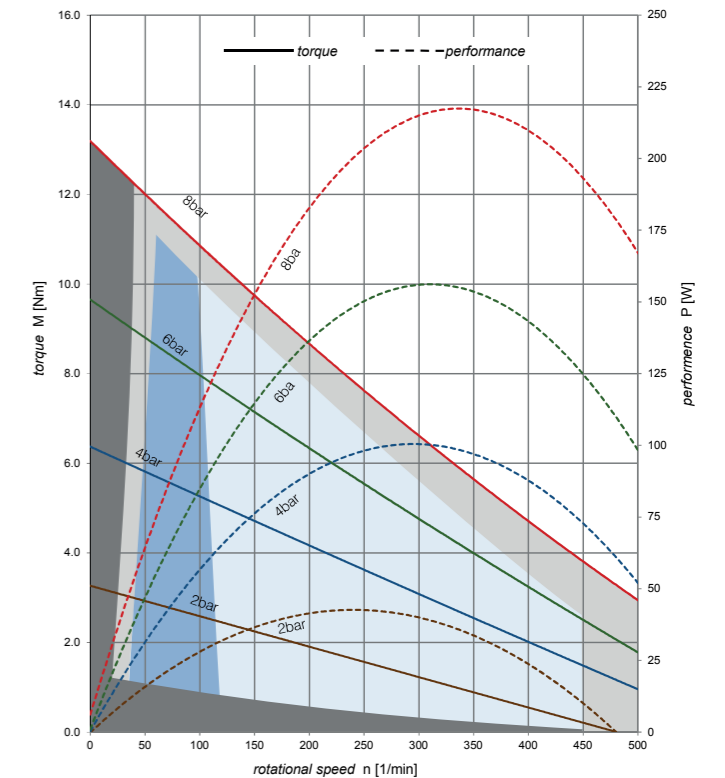
Reversible



- no continuous operation
- operation only after consulting supplier
- regulation with throttle
- regulation with pressure reduction

## Performance RM012

Clockwise (CW) & Counter clockwise (CCW)

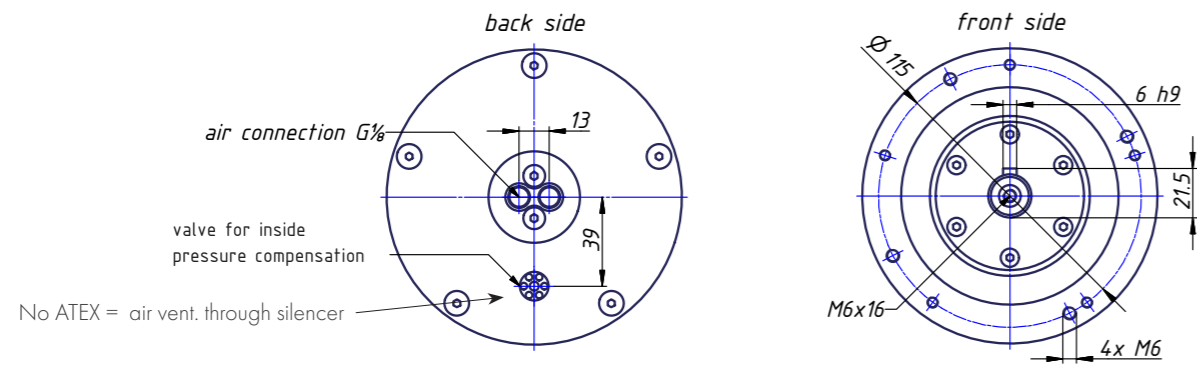
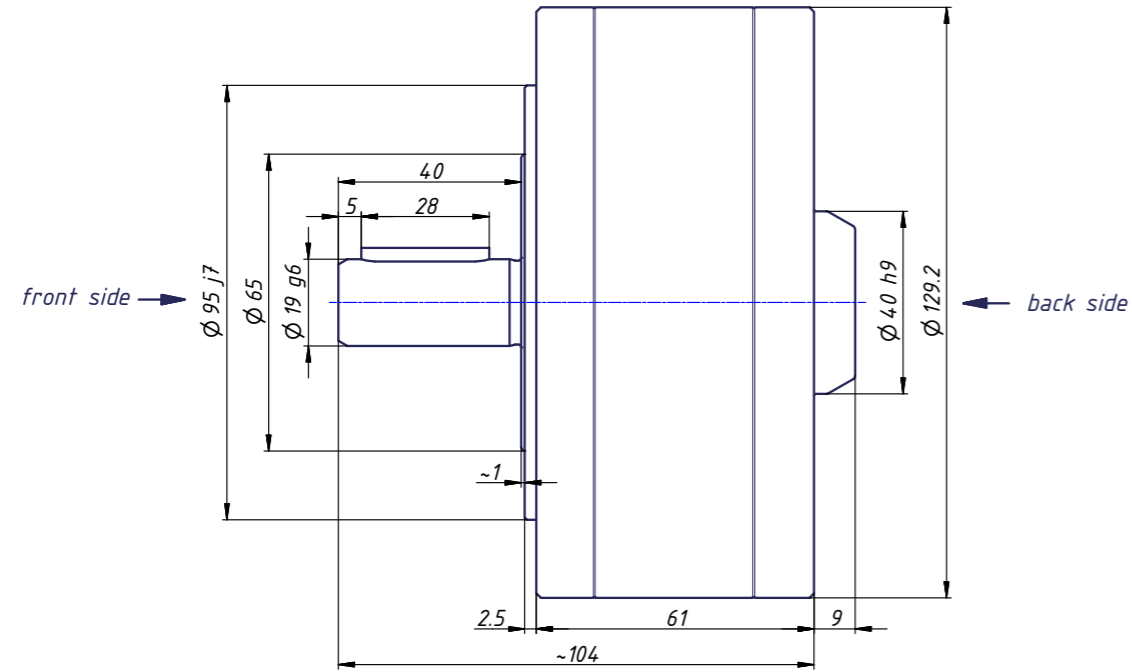


- no continuous operation
- operation only after consulting supplier
- regulation with throttle
- regulation with pressure reduction



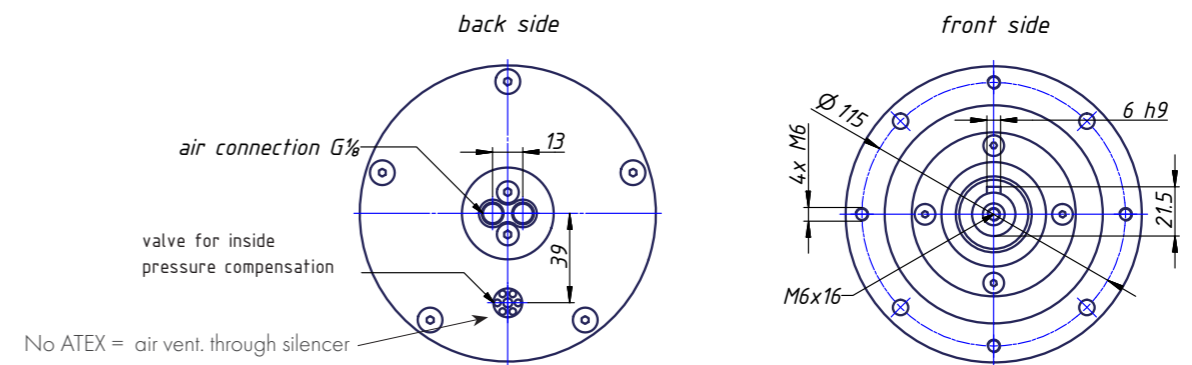
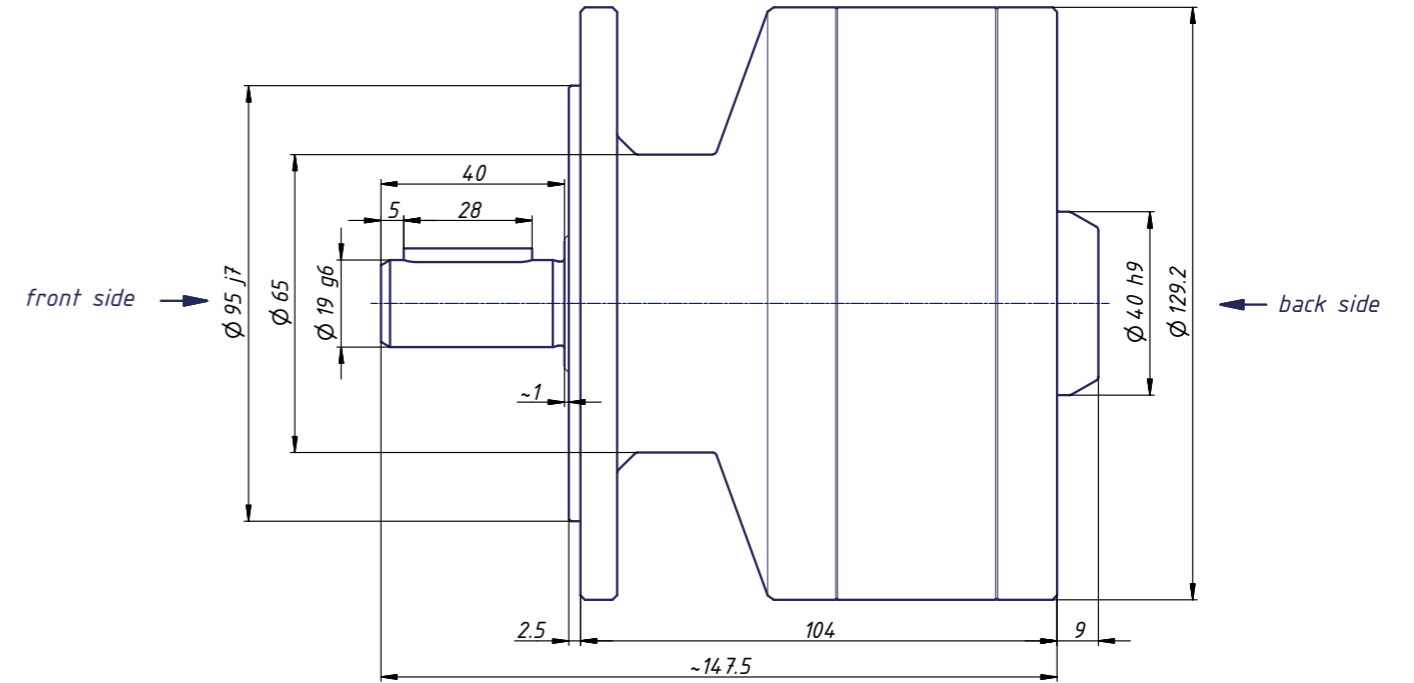
### Dimensions RM012 SXA & IXA | SXX & IXX

Nickelplated steel housing & Inox housing | no flange | ATEX



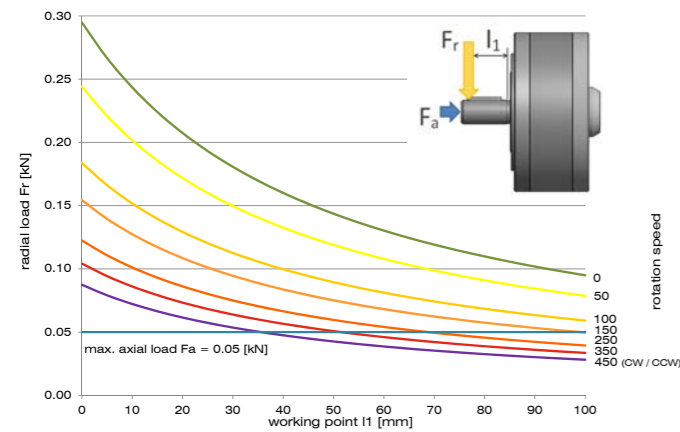
### Dimensions RM012 SFA & IFA | SFX & IFX

Nickelplated steel housing & Inox housing | flange | ATEX



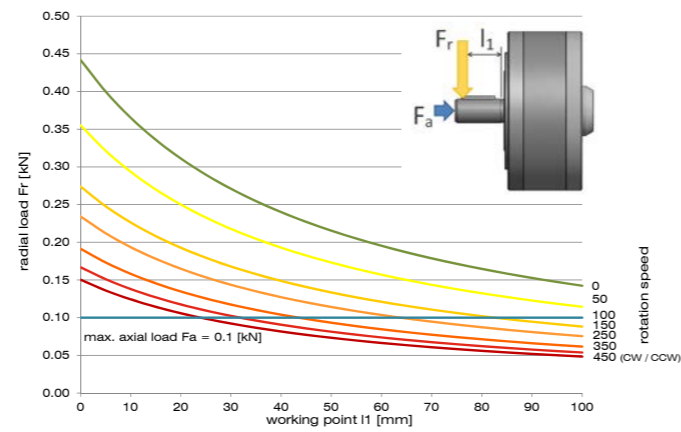
### Load diagram RM012 SXA & IXA

Nickelplated steel housing & Inox housing | no flange | ATEX



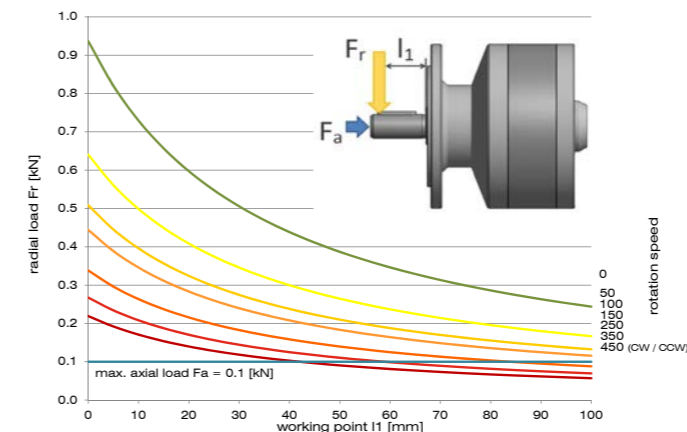
### Load diagram RM012 SXX, IXX & PXX

Nickelplated steel housing, Inox housing & Plastic | no flange



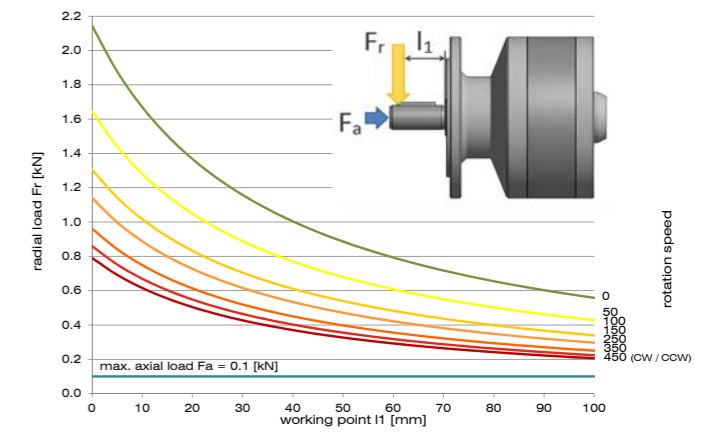
### Load diagram RM012 SFA & IFA

Nickelplated steel housing & Inox housing | flange | ATEX



### Load diagram RM012 SFX, IFX\* & PFX\*

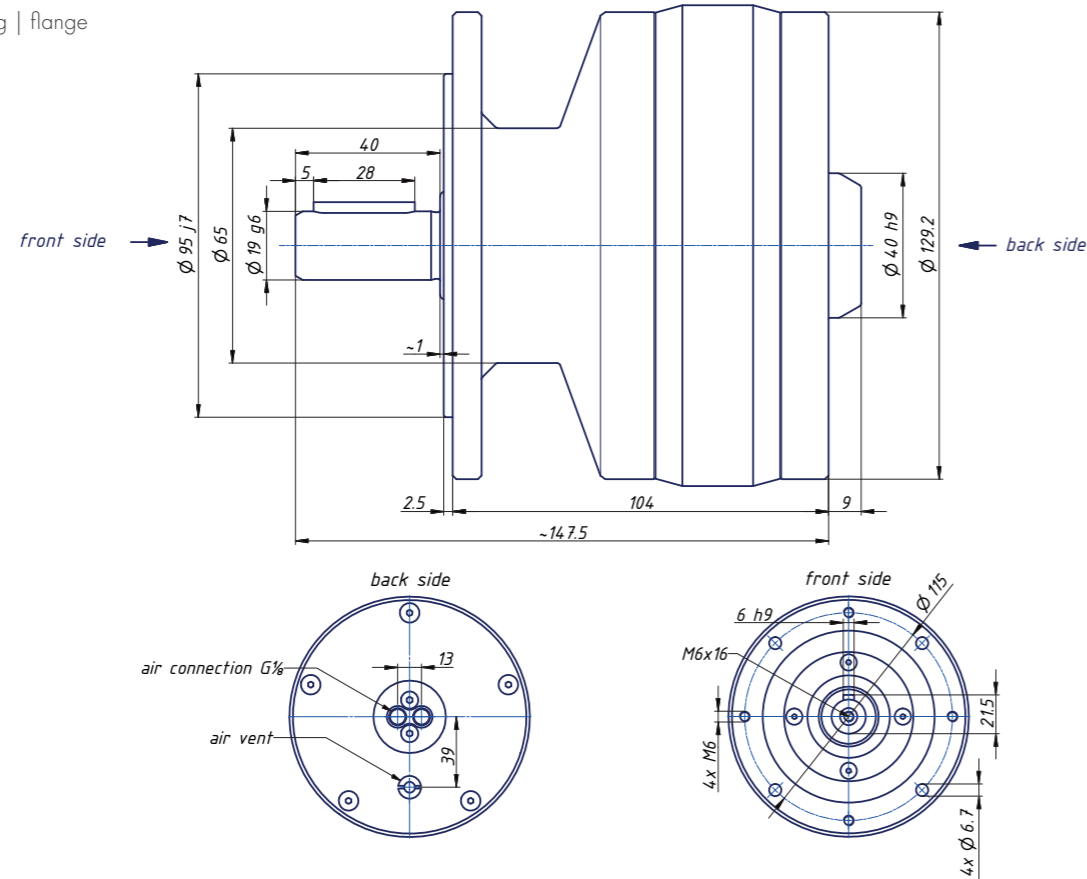
Nickelplated steel housing | flange



\*For IFX & PFX the radial load is 20% less.

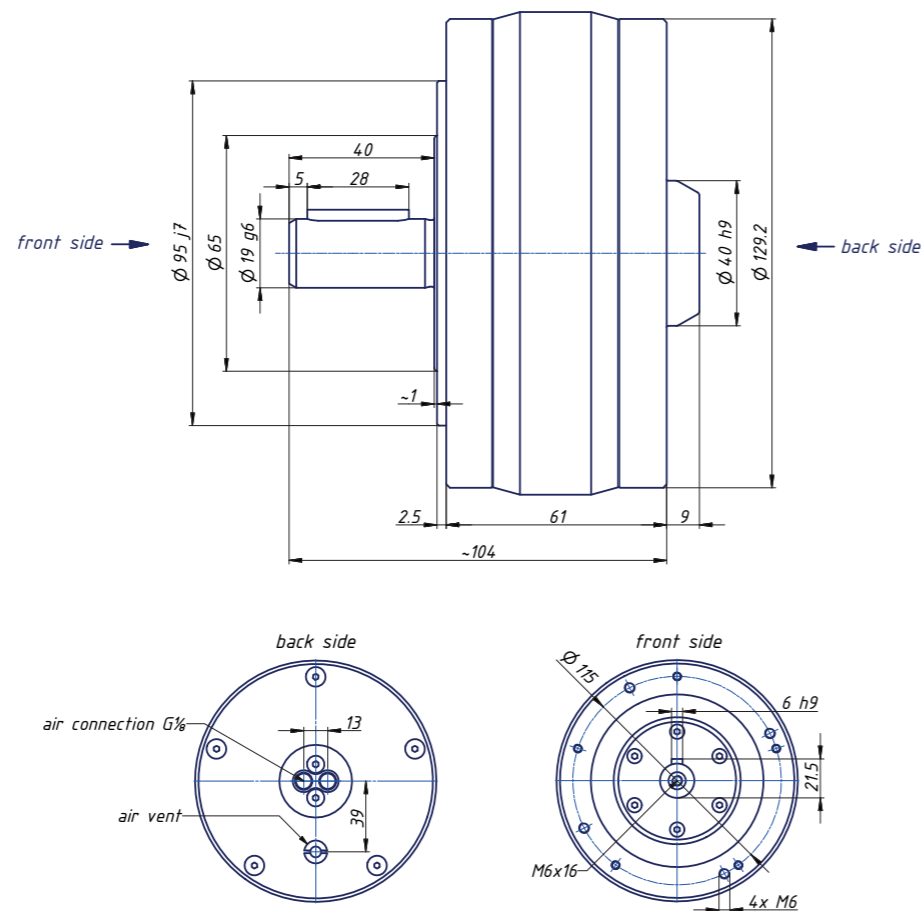
### Dimensions RM012 PFX

Plastic housing & Inox housing | flange



### Dimensions RM012 PXX

Plastic housing & Inox housing | no flange



## RM024

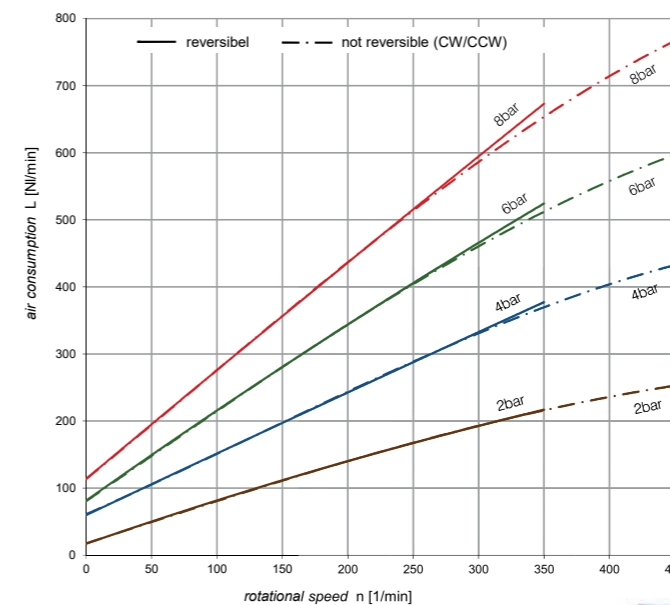
Compact Piston Air motor - 32 Nm - / 23.6 lbs ft.

The GLOBE compact piston air motors RM024 is the largest and most powerful in the series. These motors have a number of unique features. With their low air consumption, they are up to 90% more efficient than other air motors. They have high torque at low speed without the use of a gearbox. In addition, they have a low noise level.

- » High starting torque
- » Starting torque 32 Nm / 23.6 lbs ft.
- » ATEX certified
- » Oil free (optional)
- » Silicone free
- » Easy to control
- » Very low air consumption
- » Reliable

Type	Rotation speed (reversible)	Rotation speed (CW & CCW)	Torque	Weight (reversible)	IP
	rpm	rpm	Nm	kg	IP
RM024-SXA	50 – 350	50 – 450	24	7.6	54
RM024-SXX	50 – 350	50 – 450	24	7.6	50
RM024-SFA	50 – 350	50 – 450	24	8.2	54
RM024-SFX	50 – 350	50 – 450	24	8.2	50
RM024-IXA	50 – 350	50 – 450	24	10.9	54
RM024-IXX	50 – 350	50 – 450	24	10.9	64
RM024-IFA	50 – 350	50 – 450	24	12	54
RM024-IFX	50 – 350	50 – 450	24	12	64

### Airconsumption RM024

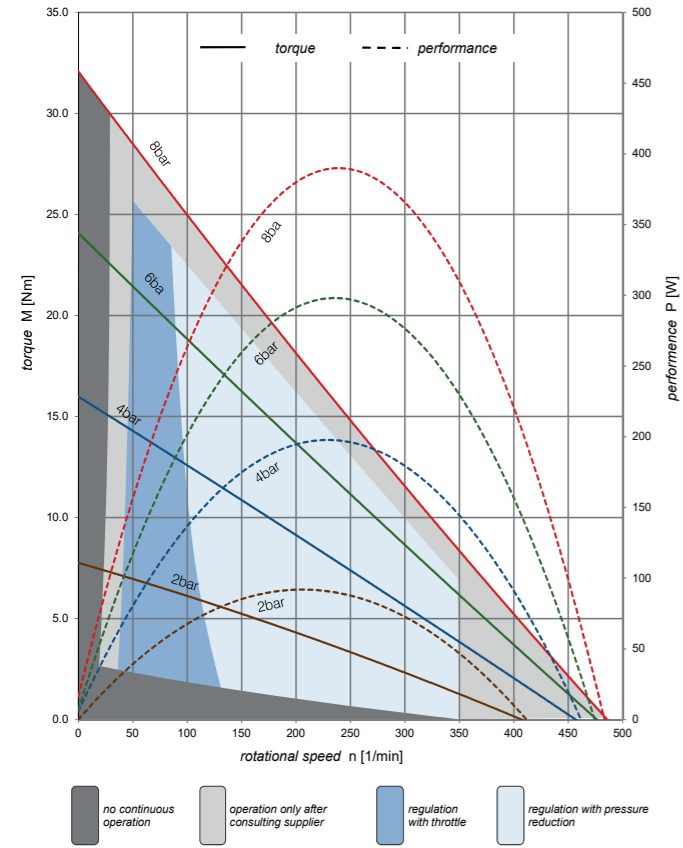


- » Max. power: 0.38 kW / 0.51 H.P.
- » Torque at max. power: 15 Nm / 11 lbs ft.
- » Starting torque: 32 Nm / 23.6 lbs ft.
- » Speed of rotation: 50 - 450 rpm. CCW or CW  
50 - 350 rpm. Reversible
- » Weight: 3.8 kg. no flange  
4.6 kg. with flange
- » Air consumption: 255 NI/min.
- » Waterproof: 50 to 64 IP



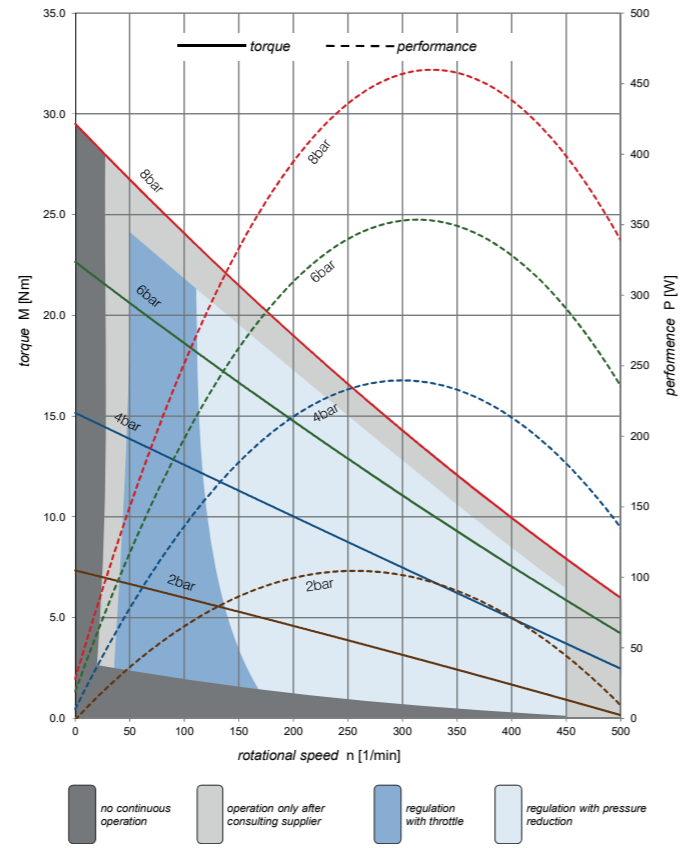
### Performance RM024

Reversible



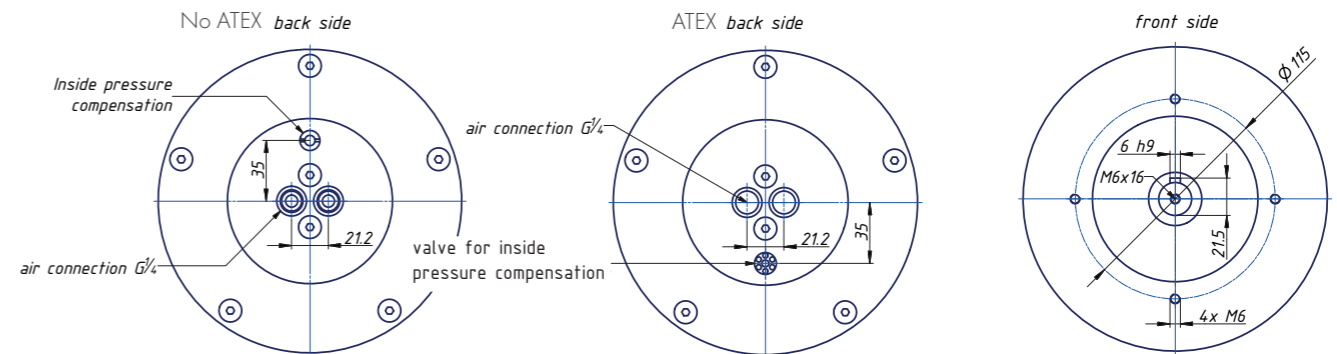
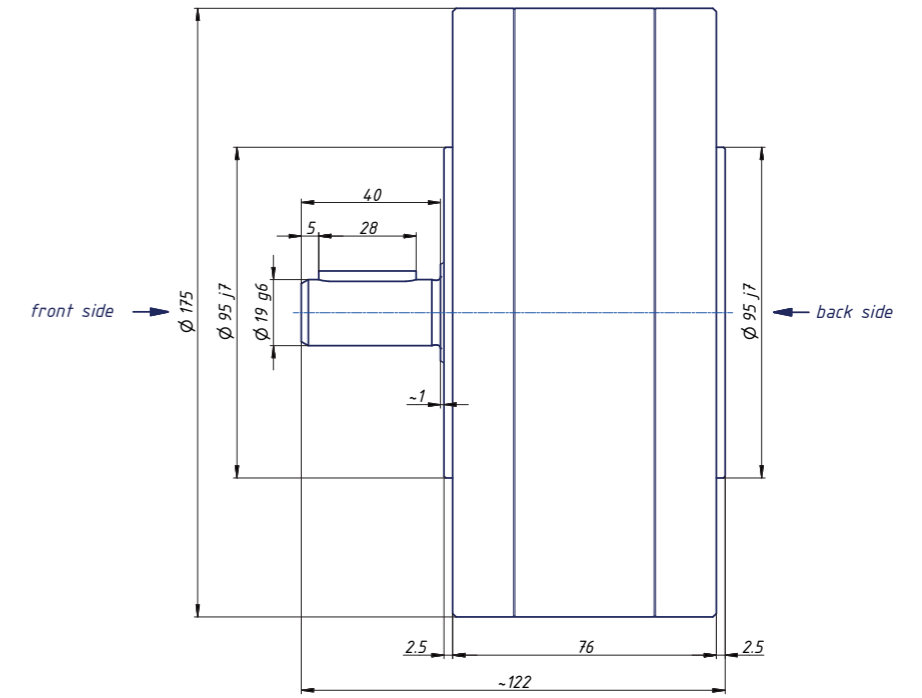
### Performance RM024

Clockwise (CW) & Counter clockwise (CCW)



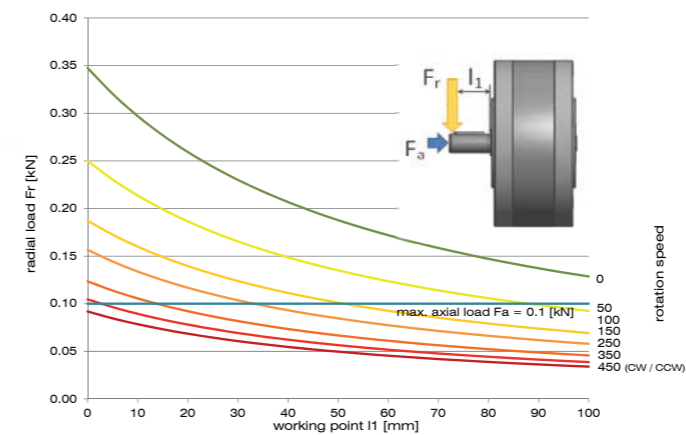
### Dimensions RM024 SXA & IXA | SXX & IXX

Nickelplated steel housing & Inox housing | no flange | ATEX & No ATEX



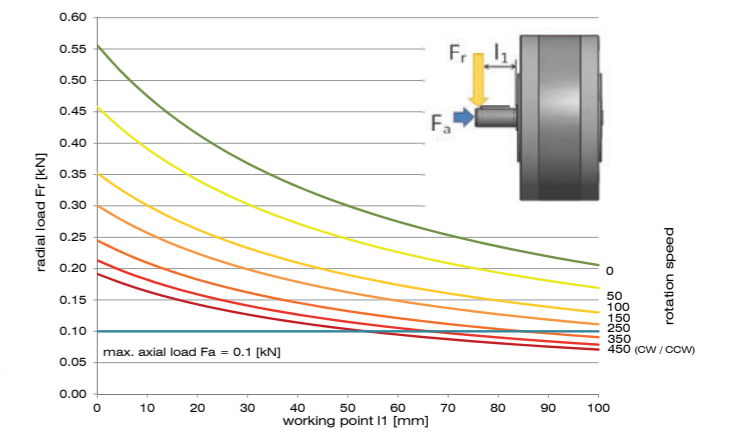
### Load diagram RM024 SXA & IXA

Nickelplated steel housing & Inox housing | no flange | ATEX



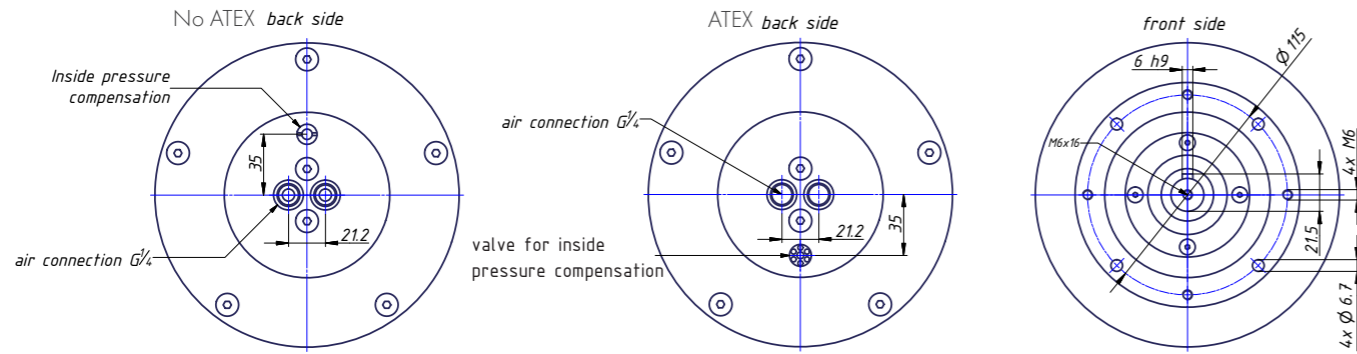
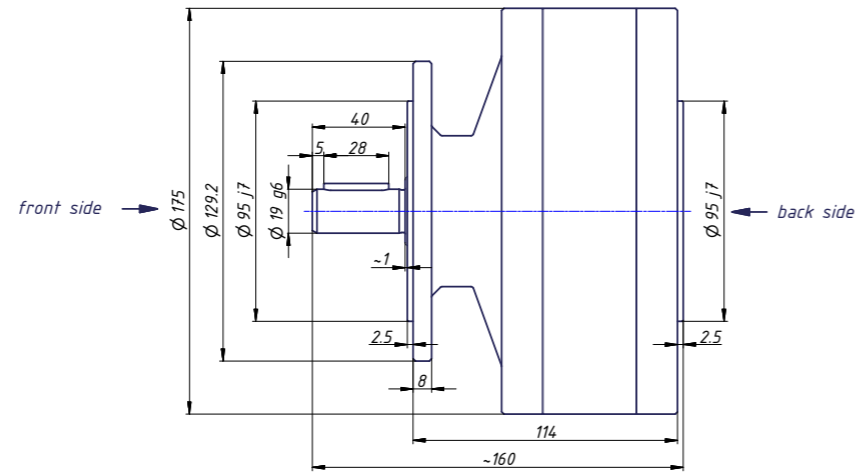
### Load diagram RM024 SXX & IXX

Nickelplated steel housing & Inox housing | no flange



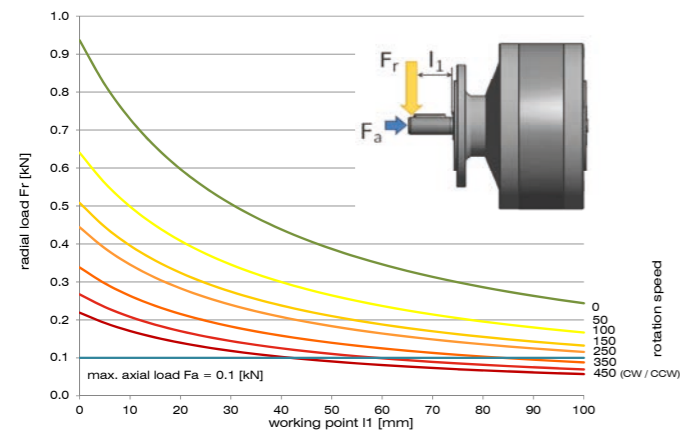
**Dimensions RM024 SFA & IFA | SFX & IFX**

Nickelplated steel housing & Inox housing | flange | ATEX & No ATEX



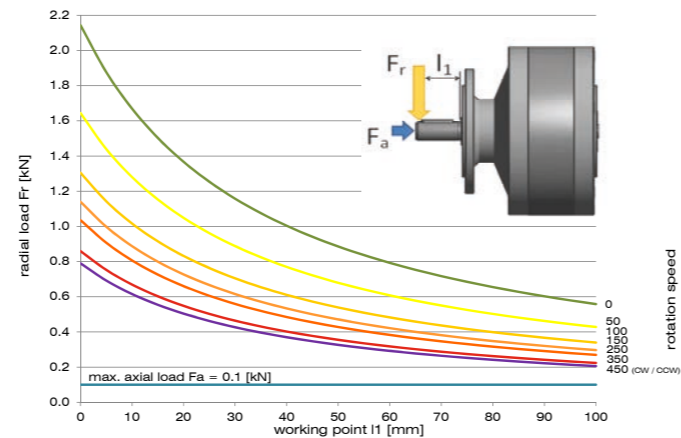
**Load diagram RM024 SFA & IFA**

Nickelplated steel housing & Inox housing | flange | ATEX



**Load diagram RM024 SFX & IFX\***

Nickelplated steel housing | flange



\* For IFX the radial load is 30% less.



**GLOBE** AIRMOTORS B.V.

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**Vane Air Motors**



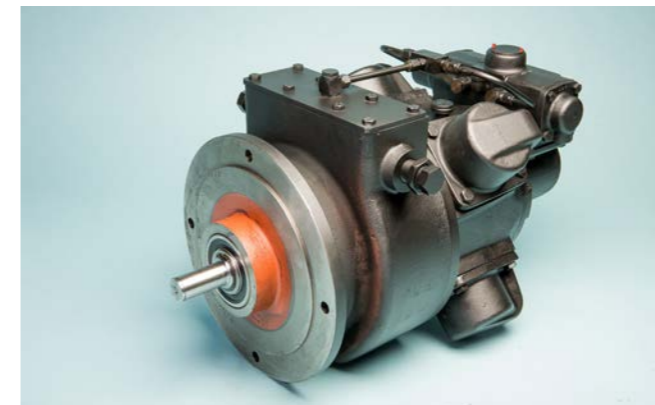
**Pneumatic Brakes**



**Compact Vane Air Motors**



**Planetary Geared Vane Air Motor**



**Radial Piston Air Motors**



**Specials: Custom Build**

This document, as well as the CAD data of the compact piston air motors is available for download on globe-benelux.nl.