



ATLAS COPCO AIR MOTORS



A full range of compact, high performance air motors

Atlas Copco

AIR MOTOR FEATURES AND CHARACTERISTICS

- Air motors are compact and lightweight. An air motor weighs only a quarter as much and occupies only one sixth of the space of an electric motor of equivalent output power. Air motors develop far more power relative to size and weight than most other motor types.
- Air motors can be stalled indefinitely without overheating or sustaining any other damage. They can be started and stopped repeatedly to an unlimited extent.
- Torque, speed and direction of rotation can be changed easily using simple control methods.
- Output inherently adjusts to match the applied load.
- Controllable over a wide speed range.
- Virtually unaffected by hostile environment.
- Smooth start-up to minimize "shock" loading on transmission components.



Our air motors are explosion proof certified, in compliance with the European Union's ATEX directive 94/9/EC. For equipment used in potentially explosive environments.

ATLAS COPCO – AIR MOTORS

- Leading the industry in development and innovation.
- Offering a comprehensive range of standard air motors.
- A premier supplier of air motors engineered to meet customer requirements.
- Delivering orders, on time, to customer schedules.
- Offering a truly worldwide service.

Atlas Copco air motors – the natural choice for design engineers in the industries of today and tomorrow.



ADDITIONAL INFORMATION ABOUT AIR MOTORS FROM ATLAS COPCO



Selecting the right motor has never been easier!

Just enter the required working point for the application and the most suitable motor will automatically be selected. For the selection use the Atlas Copco selection tool.

Air motor selection program, available at www.atlascopco.com/airmotors

Log in to www.atlascopco.com/airmotors 24-hour access

Visit our website and browse through our on-line catalogue. You'll find comprehensive technical information as well as details of accessories, spare parts and dimensional drawings. You can also subscribe to our news.

Want to know more about air motors?

In this pocket guide you will find information about function, design, motor selection and installation. Use the Ordering No. 9833 9067 01.



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INTRODUCING THE AIR MOTOR

The air motor is one of the toughest and most versatile power units available to today's design engineer. It is easy to control over a wide speed range, and it produces maximum torque where it is often most needed – at start up.

The performance of an air motor is dependent on the inlet pressure. At a constant inlet pressure, ungoverned air motors exhibit the characteristic linear output torque/speed relationship. Figure 1.

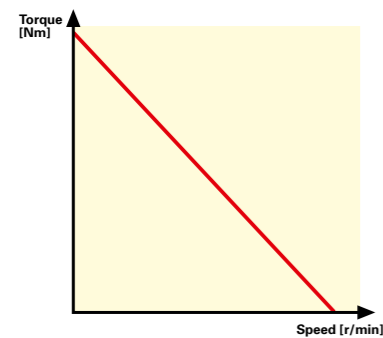


Figure 1

However, by simply regulating the air supply, using the techniques of throttling or pressure regulation, the output of an air motor can easily be modified.

The free speed and torque can be regulated down to 50% for an LZB air motor. The free speed for an LZL can be regulated down to 10% and the torque can be regulated down to 20%. The shaded areas in Figure 2 illustrate this.

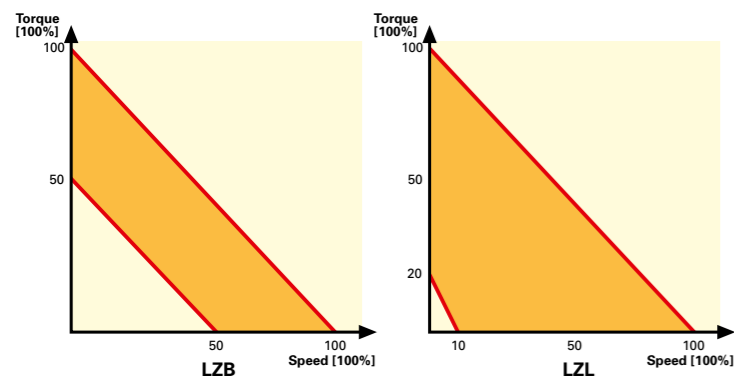


Figure 2

It should be noted that all vane air motors produce a variable starting torque, due to the position of the vanes in the motor when it is started. The variation differs between motor types and must be checked on an individual basis.

The power that an air motor produces is a function of torque and speed. All ungoverned air motors produce the same characteristic power curve, with maximum power occurring at around 50% of the free speed. The torque produced at this point is often referred to as "torque at maximum output."

The performance curves for an ungoverned air motor operating at a constant air pressure are illustrated in Figure 3.

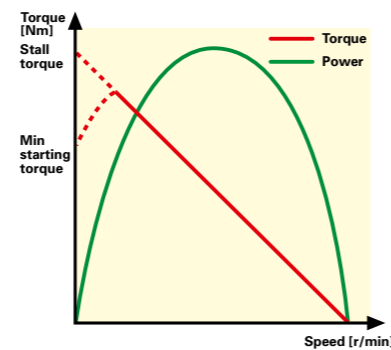


Figure 3

The use of gear units

Air motors operate at high speed and, although they can be controlled over a wide speed range, the output characteristics are not always suitable for the application. To achieve the required output an appropriate gear unit can be selected. The ability to change the output by use of a gear unit is illustrated in Figure 4.

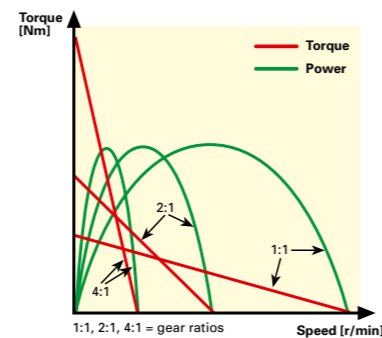


Figure 4

The planetary and helical gear units used by Atlas Copco have a high level of efficiency that can be assumed to be 100%. The power output remains virtually unchanged also when gears are used.

METHODS OF MODIFYING MOTOR OUTPUT

Throttling

A throttle is usually fitted into the motor's inlet, although it can also be complemented with some throttling at the exhaust. You should never create a back pressure above 1 bar at the exhaust.

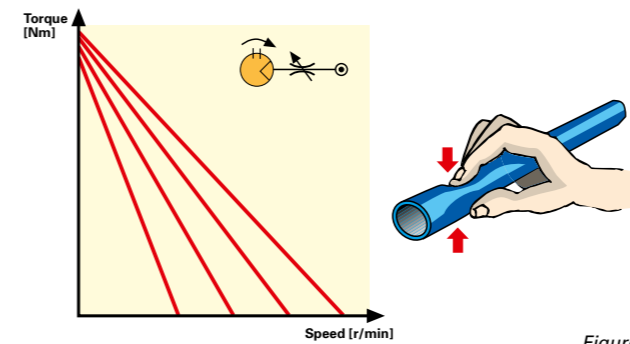


Figure 5

Pressure regulation

When using a pressure regulator it is mostly fitted into the motor's inlet hose. The use of pressure regulation is ideal when control of the stall torque is required and a high starting torque is not so important, Figure 6.

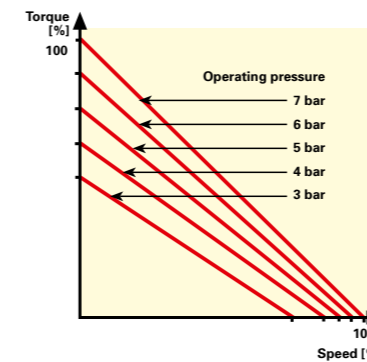


Figure 6

Using the catalogue

Motor data, specification and performance curves

For each Atlas Copco motor/gear unit combination the following information is presented in this catalogue.

1. Tabular data – summary of main performance parameters.
2. Dimensional drawings.
3. Performance curves.

Notes on performance data

The performance data stated in this catalogue is valid for an air supply pressure of 6.3 bar (91 psi), gauge. Air consumption values are for free air delivery – (i.e., the volume the consumed air would occupy if allowed to expand to atmospheric pressure).

The direction of rotation for a motor is always stated looking from the back of the motor. Figure 7 illustrates clockwise rotation.

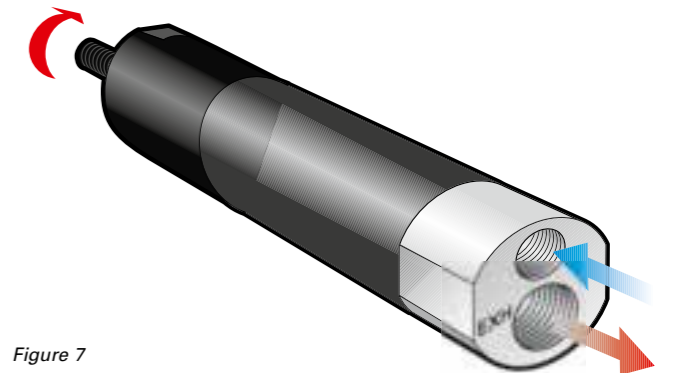
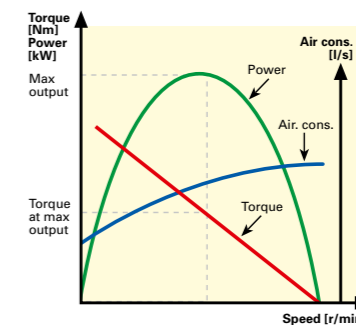


Figure 7

Understanding the performance curves

The output of an air motor is most clearly seen from its performance curves, Figure 8. For each motor/gear unit the power, torque and air consumption are shown as a function of speed.

The diagrams shown apply to an inlet pressure of 6.3 bar, to calculate performance at other pressures refer to page 8 in this catalogue.



Note: The starting torque produced by an air motor is variable and depends on vane position. These diagrams do not indicate the starting torque – this can be obtained from data tables, where the minimum value is shown.

Figure 8

Motor selection

Guidelines on motor selection are given on page 8 in this catalogue – Choosing Your Motor.

Installation

General installation recommendations are given on page 10. Details specific to a motor are shown in the section relevant to that motor type.

CHOOSING YOUR MOTOR

The working point

When selecting an air motor for a certain application, the first step is to establish what is called the “working point”. This is the point described by the desired operating speed for the motor and the torque required at that speed.

The wide operating range of the air motor makes it probable that a number of motors could run with the same working point. However as it is most efficient to run an air motor at the speed at maximum output, the motor that produces maximum power nearest to the working point should probably be selected. Other criteria that can influence the choice are minimum starting torque, stall torque and free speed.

The power required at the working point is calculated by:

$$\text{Power} = \pi \frac{x M x n}{30} \text{ [W]}$$

Where, M = Torque at working point (in Nm)
 n = Speed at working point (in r/min)

Example:

A Non-reversible motor is required to run at 300 r/min and produce a torque of 10 Nm. Selection of correct motor size is as follows:
 Power required (W) = $3.14 \times 10 \times 300/30 = 314$
 From Table 5 the correct size of Non-reversible motor for this application is the LZB 33.

Once the motor size has been identified, simply look at the performance curves for each motor variant and select the one with max. output nearest to the working point. For the above example this would be the LZB33-A007.

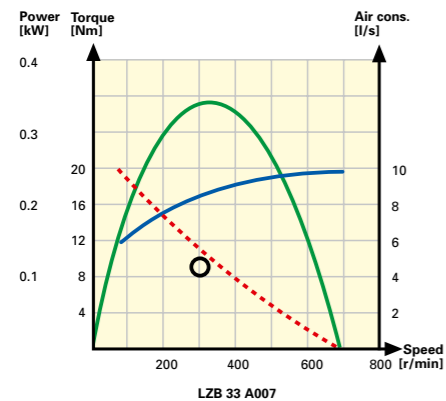


Figure 6

If necessary, one of the flow control methods can be used to modify the output of a motor to meet the working point exactly (Figure 7).

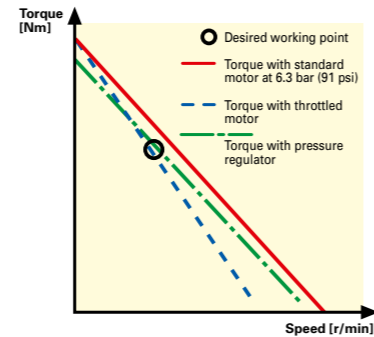


Figure 7

Pressure regulation

Sometimes the motor operates at other supply pressures than 6.3 bar. In these cases the performance of a motor must be re-calculated to ensure the working point can be achieved.

To calculate performance at supply pressures other than 6.3 bar, multiply the data at 6.3 bar by the correction factors shown in Table 6.

Correction factors					
Air Pressure		Output	Speed	Torque	Air Consumption
(bar)	(psi)				
7	101	1.13	1.01	1.09	1.11
6	87	0.94	0.99	0.95	0.96
5	73	0.71	0.93	0.79	0.77
4	58	0.51	0.85	0.63	0.61
3	44	0.33	0.73	0.48	0.44

Table 6

It is also easy to calculate the inlet pressure required to achieve a desired working point.

Example:

An LZB 22 A036 is required to run at 1155 r/min and produce 1.2 Nm; calculate the required inlet pressure to achieve this.
 For this motor at maximum output the torque is 1.5 Nm and the speed is 1650 r/min.

M_1 = desired torque
 n_1 = desired speed
 M_2 = torque at maximum output
 n_2 = speed at maximum output

Calculate the ratios M_1/M_2 and n_1/n_2
 Therefore $M_1/M_2 = 0.8$ and $n_1/n_2 = 0.7$

Apply these values to the diagram in Figure 8 and read off the pressure at the intersection point.
 The required inlet pressure is 4.2 bar (61 psi)

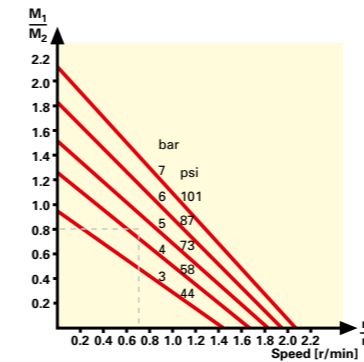


Figure 8

Starting torque and stall torque

Many applications demand that a motor produces a minimum torque at start-up. In these a minimum starting torque, for a given motor, can be looked up in the tabular data. If it is necessary to modify the motor’s output, but also maintain a high starting torque, the technique of throttling the air flow should be utilized.

Other applications require a certain stall torque. A motor’s stall torque can be calculated by looking up the “torque at maximum output” and multiplying this value by two. Where it is desirable to control the stall torque, the technique of pressure regulation should be used.

Accelerating a load to speed

Certain applications require the acceleration of a load up to a given speed. In these cases, the choice of motor involves complex calculations. It is therefore recommended that you seek guidance from your nearest Atlas Copco representative before proceeding.

Shaft loading

Always ensure shaft loadings are within the stated allowable limits.

Silencing

The noise generated by an air motor is mainly caused by the exhaust air of the motor. The noise level increases with speed and is greatest at the free speed.

All Atlas Copco motors are supplied with a threaded exhaust port which, to reduce noise levels, can accept a screw in silencer. However, an exhaust hose can also be fitted, and when used with a silencer, it can reduce noise levels even further. The effects of employing the various silencing techniques are indicated in table on page 63.

Temperature

Atlas Copco air motors can operate reliably in ambient temperatures that range from -20°C (-4°F) to $+60^{\circ}\text{C}$ ($+140^{\circ}\text{F}$). However, below ambient temperatures of $+5^{\circ}\text{C}$ ($+41^{\circ}\text{F}$) the compressed air may need to be dried to avoid freezing problems.

Please note it is often possible to operate these motors at much higher temperatures but this should not be attempted without first checking with your local Atlas Copco representative.

Hostile environments

Atlas Copco air motors are found in use in many hostile environments, often with little or no modification. These environments are typified as being:

Acidic – Explosive – Radioactive – High temperature – Moist – Dusty – Intense electric fields – Underwater – High humidity.

It is also possible to power an air motor with many types of compressed gas, for example nitrogen or natural gas.

However, to ensure safe and reliable service, we recommend you always consult your local Atlas Copco representative before using an air motor in a hostile environment.

Atlas Copco Air motor Selection Program

The Atlas Copco Air Motor Selection Program makes it very easy for you to select the right motor. The Windows-based program stores data on all Atlas Copco air motors. Simply specify the required torque and speed of the motor and the program will select the most suitable motor for your application. Available at www.atlascopco.com/airmotors

INSTALLING YOUR AIR MOTOR

Air lines

The recommended dimensions of air lines are given in the introductory section to each motor type. Note that exhaust hose is larger than inlet hose.

The recommendations are valid for hose lengths of up to 3 meters. For distances between 3 and 15 meters select a hose diameter one size up, and for distances between 15 and 50 meters select a hose diameter two sizes up.

It is important to note that the output of the motor will be reduced if these guidelines are not followed.

Recommended hose connectors

Because of the compact dimensions of Atlas Copco vane motors, special hose connectors are available with small key width – facilitating easy installation. The hose connectors can be ordered through your local Atlas Copco representative. See table 2 on page 17.

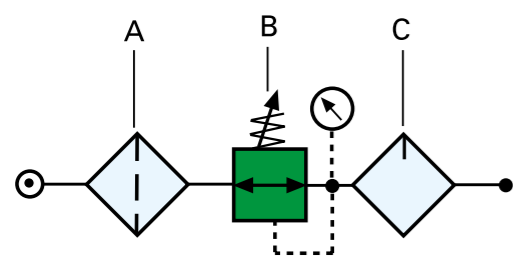
Air preparation

For optimum performance and maximum machine life we recommend the use of compressed air with a maximum dew point of +10°C. We also recommend the installation of an Atlas Copco refrigeration-type air dryer.

To ensure reliable service an air filter and lubricator should be fitted into the inlet air line – within 3 meters from the motor.

It is recommended that a pressure regulator is also incorporated into the air preparation package. This has the function of maintaining the desired working pressure, and can be used to modify the motor's output to meet the needs of the application.

When selecting an air preparation package, ensure all components have sufficient flow capacity to meet the requirements of the motor. The filter shall remove solid particles larger than 15 microns and also remove more than 90 % of liquid water. A typical arrangement of an air preparation installation is shown below, Figure 9.



A = Filter
B = Pressure regulator
C = Oil fog lubricator

Figure 9

Lubrication

Lubricated vane motors

To achieve optimum service life and performance the lubricated vane motors should be used. They should be supplied with 50 mm³ of oil for each cubic meter (1000 liters) of consumed air (one oil drop ≈ 15 mm³).

Insufficient lubrication will result in accelerated vane wear and performance reduction.

The following example shows how to calculate the lubrication required for a motor running at a known working point.

Example:

A Non-reversible LZB 42 motor running at maximum output consumes 13 liters/sec of air. In one minute it consumes 780 liters of air, therefore the lubrication required is:

$$\frac{780 \times 50}{1000} = 39 \text{ mm}^3/\text{min}$$

If an oil-fog lubricator is to be used it should be set to deliver 3 drops of oil a minute (1 drop = 15 mm³).

The selected lubrication oil, should have a viscosity between 32-46 mm²/s at the motor's working temperature.

In applications where there is a risk of insufficient or unreliable air lubrication, we recommend using a lubrication free vane motor.

Table 9 shows how reduced lubrication can affect service life and power for a lubricated vane motor.

Lubricant quantity (mm ³ oil m ³)	Service life (hours)	Output power (%)
50	1000-3000	100
10	500-1000	100
1	200-500	90
0.1	100-300	80
0	10-30	30

1 drop of oil is appr. 15 mm³

Table 9

Lubrication free vane motors

Atlas Copco's LZB vane motors up to LZB33 and LZB stainless steel are available with lubrication free vanes as standard, for the bigger LZB models lubrication free kits are available.

If running a motor with 100% dry air and no lubrication, performance can be reduced by 5-15% at max. output depending on model. Free speed will be more affected, reduced by 10-30%.

To optimize the service intervals for a lubrication free vane motor, use lubricated air if the application allows it.

Directional control valves

These valves are used to start or stop a motor, or to change its direction of rotation. It is most usual to use what is termed a 5/3 valve to control a reversible motor, and a 3/2 valve to control a Non-reversible motor.

The valve designations refer to the number of connection ports and the number of operating positions the valve provides, for a 5/3 valve this is 5-connection ports and 3 positions.

When selecting any control valve it is important to ensure that it has a sufficient flow capacity to supply the requirements of the motor.

Installation examples

Typical installation diagrams for type LZB and LZL air motors, together with their associated control valves, filters, regulators, lubricators and silencers.

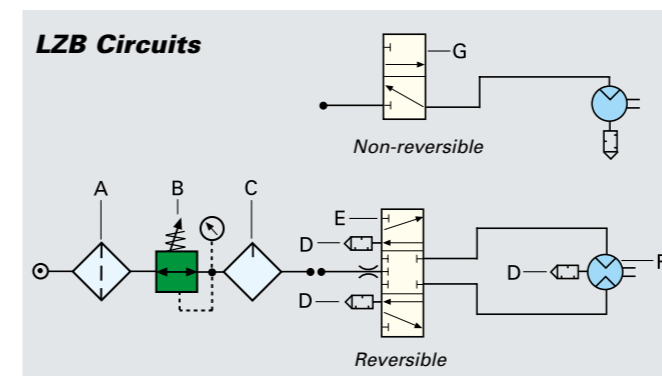


Figure 11

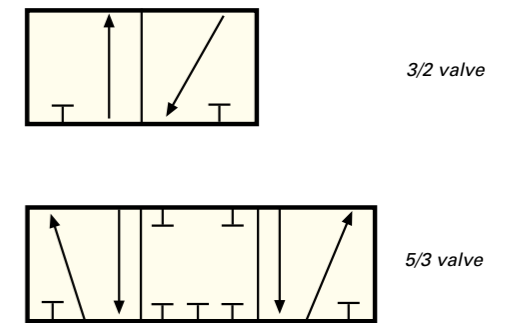


Figure 10

The symbols used to represent these valves in an installation diagram.

For LZL air motors it is important that an inlet restrictor is placed upstream from the inlet. It must be placed so it does not affect the exhaust at reversible running. This means that it has to be placed before the control valve.

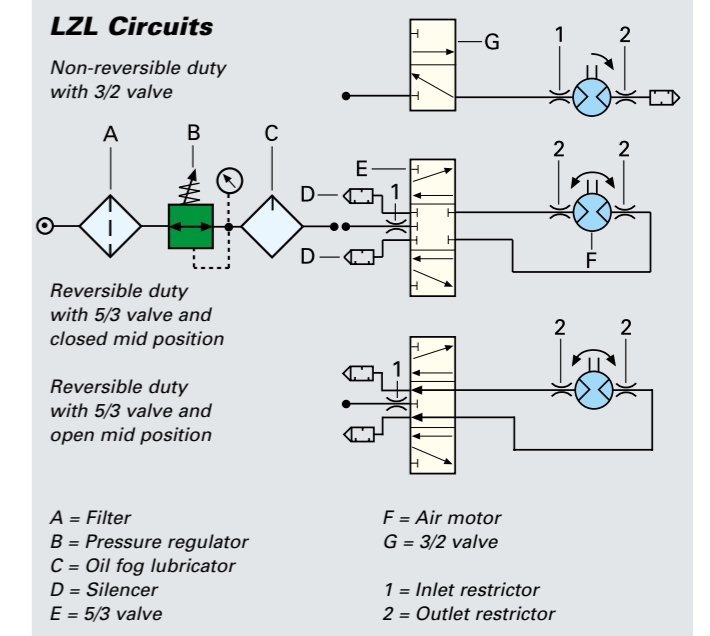


Figure 12

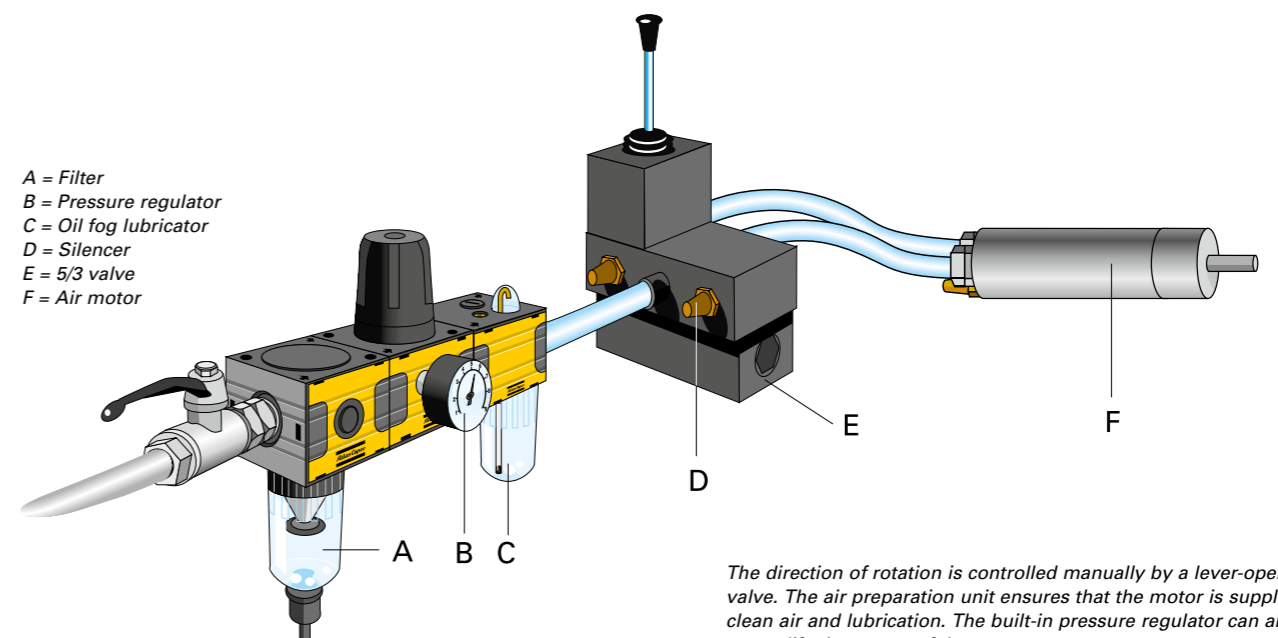


Figure 13

The direction of rotation is controlled manually by a lever-operated 5/3 valve. The air preparation unit ensures that the motor is supplied with clean air and lubrication. The built-in pressure regulator can also be used to modify the output of the motor.

INTRODUCTION TO ATLAS COPCO AIR MOTORS AND GEAR UNITS



LZB Vane motors – 0.1 kW to 2.8 kW

Type LZB Atlas Copco vane motors are compact in design, light in weight, and available with a host of different gear ratios to meet a variety of speed and torque requirements. They are particularly suitable for building into handheld machines, or indeed any industrial equipment.

Planetary gear units

Atlas Copco planetary gear units are particularly suitable for use with LZB vane motors. The gear and motor components can be accommodated within a single, extremely compact housing where they provide high torque capacity for their size and exceptional efficiency, Figure 9.

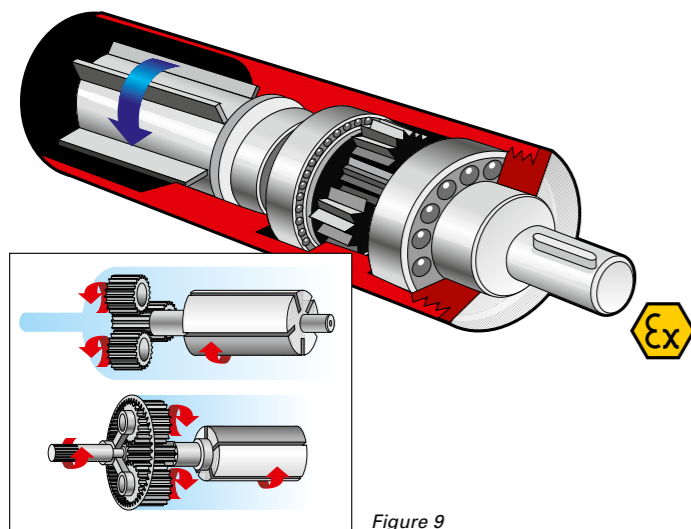


Figure 9



Stainless steel air motors

Atlas Copco's stainless steel motors enlarge the field of applications to areas where the environment is corrosive. This can be in the food processing industries where corrosive detergents are used or in the chemical industry where the atmosphere as such is corrosive.

Atlas Copco's stainless steel motors have a "clean" design. Their smooth surfaces are cylindrical with no pockets where dirt can collect. The motors are easy to clean.

The motors have double seals in Viton at the output shaft to prevent dirt and liquids from entering the motor gears. The seals also prevent the gear lubricant from leaking out. All external parts, including the output shaft, are made of stainless steel. The grease in the motor complies with NSF H1 and FDA 21CFR § 178.3570.

Explosion proof

All our air motors are explosion proof certified for fixtured applications, in compliance with the European Union's ATEX directive 94/9/EC. For equipment used in potentially explosive environments. The LZL motors with Helical gears are not ATEX certified.

EX-Certified air motors are ideal in hazardous environments where sparks or high outer temperatures might otherwise ignite explosive gases, vapour or dust.

See Explosion prevention guidelines on page 87 and the ATEX key: how to read the ATEX code on page 88.

Lubrication free air motors

Atlas Copco's lubrication free air motors are equipped with low-friction vanes, sealed bearings and vented cylinder plates. Since they release no lubricants into the air, they offer a viable drive solution for sensitive processes and hygienic environments where oil contamination would be at best a problem and, at worst, a catastrophe.

LZB33 high torque – low speed air motors

Achieving high torques generally calls for very large motors with correspondingly high air consumption. The LZB33 high torque/low speed air motors are based on the combination of LZB33, the workhorse in Atlas Copco's air motor program, and the gears used in the large LZB42-54 motors. This gives a compact motor/gear package. The gears are dimensioned to stand being loaded at full stall torque indefinitely. Competing low speed air motors often have to limit their output torques to prevent gear breakage.



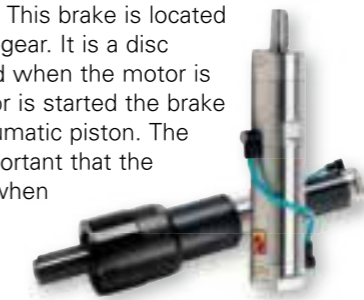
LZB22-LR, LZB33-LR and LZB34-RL-LB low speed air motors

When there is a need for low speed only, LR motors offer a complete and low price solution compared to the high torque LZB33 air motors.



Motors with brake

The most popular vane motors, LZB33, 34, 54, are available with parking brake. This brake is located between the motor and the gear. It is a disc brake that is spring activated when the motor is not running. When the motor is started the brake is released by a built-in pneumatic piston. The brake is used when it is important that the output shaft must not turn when the motor isn't running and a torque is applied on the shaft.



A:	Clockwise rotation
AR:	Reversible
AV:	Anti-clockwise rotation
L:	Lubrication free
LB:	With brake module
LR:	Low speed
R:	Stainless steel
RL:	Stainless steel, lubrication free
RLB:	Stainless steel, with brake module
RLR:	Stainless steel, low speed

Table 1 explains what features the letters in the motor designation stand for.

Table 1

LZL vane motors – 1.05 kW to 6.5 kW

Type LZL Atlas Copco vane motors have been designed to offer outstanding starting and low speed performance. These general purpose motors are powerful, rugged and hard wearing, Figure 10.



Figure 10

Helical gear units

Atlas Copco helical gear units are normally fitted to Type LZL vane motors. Standard units are highly efficient, providing speeds of 500 r/min down to 17 r/min and output torque up to 3200 Nm. The gear unit is connected to the motor with IEC flange, Figure 11.

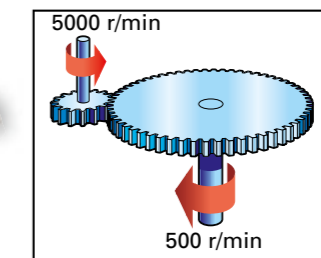
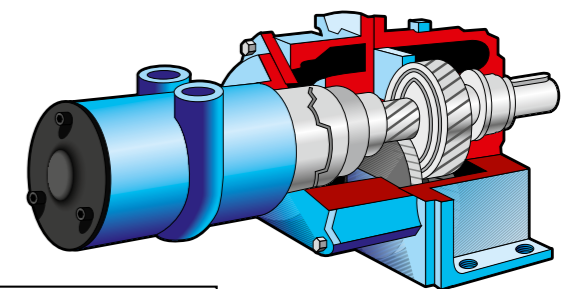
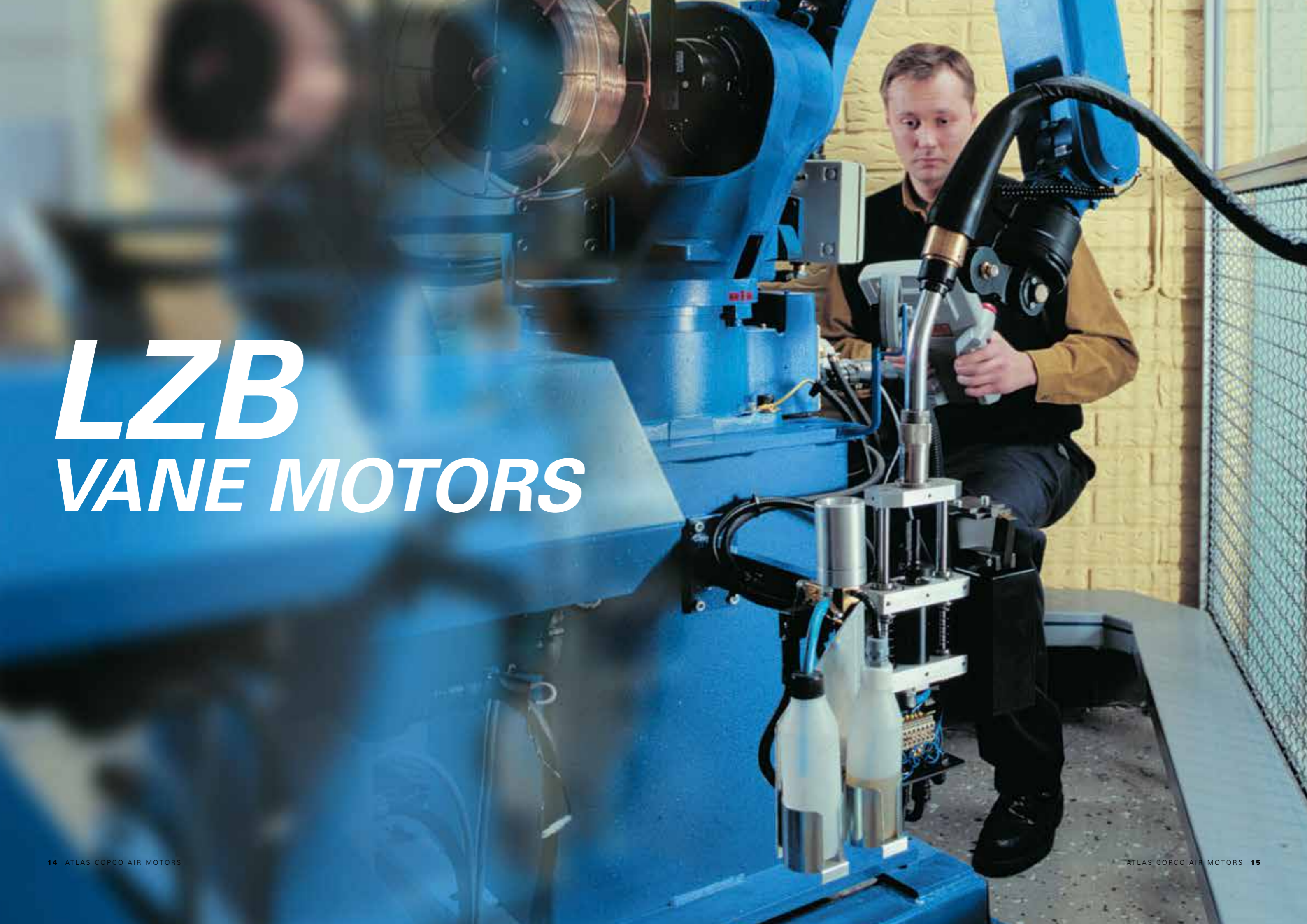


Figure 11



LZB

VANE MOTORS

LZB VANE MOTORS

Introduction

LZB vane motors are designed to provide high performance and high standards of reliability. They are characterized by high power output and small physical size, Figure 12.



Figure 12

The design of the motor is long and slim. This gives a number of advantages, such as high power-to-volume ratio, low air consumption and long vane life. All motors utilize five vanes, which are supplied with vane air, to ensure excellent starting and low speed performance. Multi-step planetary gears are used to meet the torque and speed requirements of the application, offering high efficiency with compact dimensions.

Shaft loading

The maximum allowable loads on a given motor's output shaft are illustrated in Figures 13, 14. The relevant load curve code for a motor is stated in the data tables for each specific motor designation, under the "Shaft load code" column. These values have been calculated for shaft and bearing working lives of 10 million turns. To achieve a working life of 100 million turns, the loading factor must be halved.

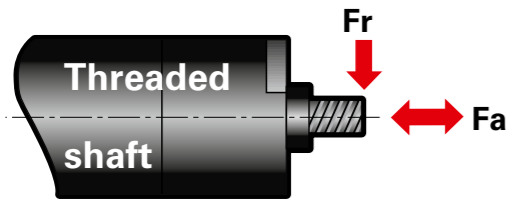


Figure 13

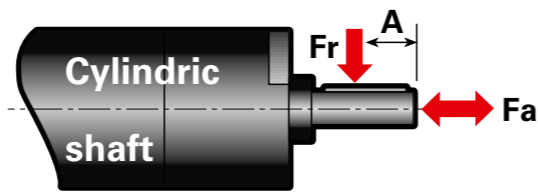
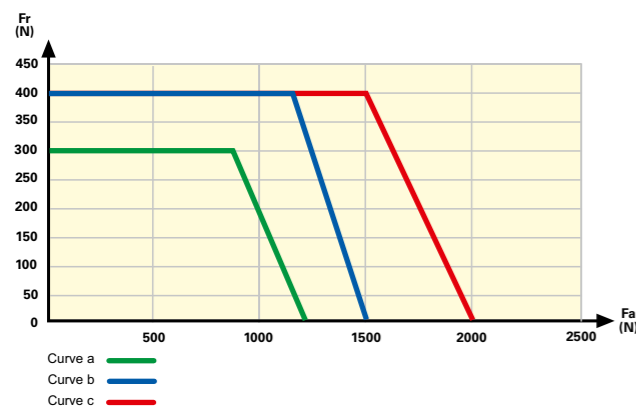
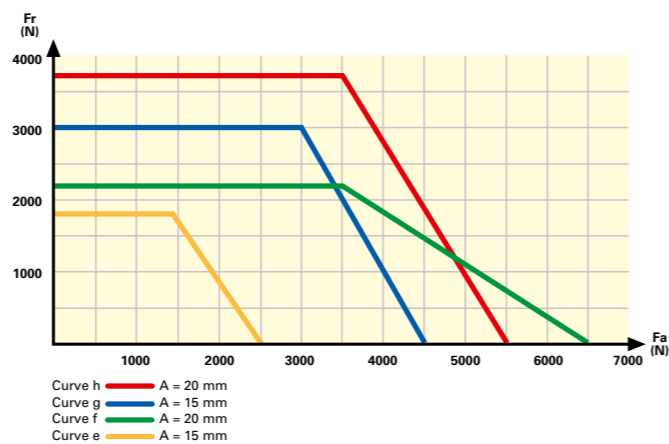
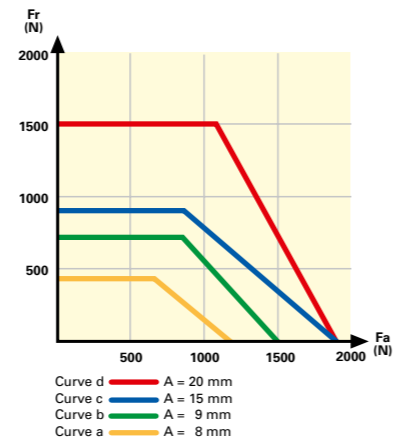
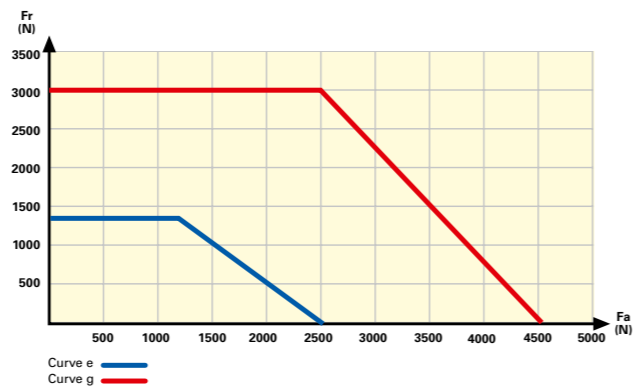


Figure 14



Mounting

Type LZB vane motors may be mounted in any position. To facilitate this, flange and foot mounting are available for each motor, Figure 15.



Figure 15

Connection

Non-reversible Motor

When the compressed air supply is connected to the inlet, the direction of rotation will be as shown in Figure 16. If the exhaust air is to be piped away, a hose should be connected to the exhaust outlet. (EXH).

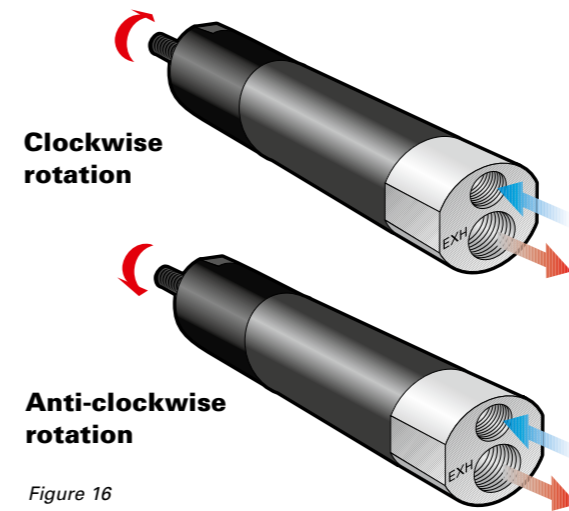


Figure 16

Reversible Motor

The compressed air supply should be connected to the inlet that gives the desired direction of rotation, Figure 17.

The inlet not in use functions as an additional outlet: it must not be plugged.

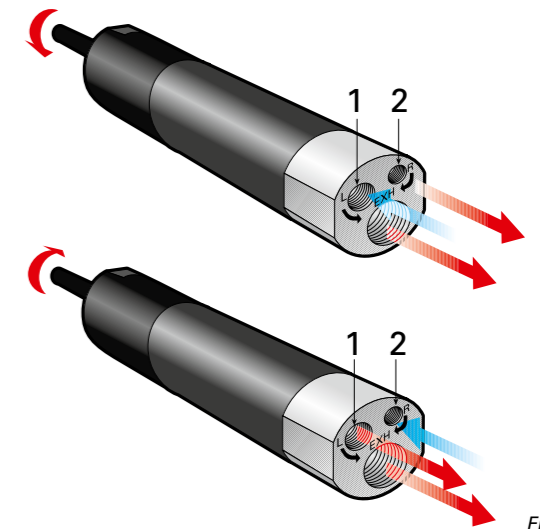


Figure 17

Hose dimensions

Information on hose dimensions recommended for use with type LZB air motors is detailed in Table 2. These dimensions are valid for hose lengths up to 3 m. If lengths above that are used, choose a one size larger hose.

Hose size up to 3m length

Motor size	Rotation	Inlet connection thread (BSP)	Inlet connection thread (NPTF)	Inlet hose* [both inlets reversible] (mm)	Inlet recommended nipple connection (ordering number)	Inlet nipple* diameter (mm)	Outlet connection thread (BSP)	Outlet hose* (mm)	Outlet recommended nipple connection (order number)	Outlet nipple* diameter (mm)
LZB14	A, AV, AR	1/8"	-	8	9900 0240 00	5.0	1/8"	8	9900 0240 00	5.0
LZB22	A, AV	1/8"	-	8	9900 0240 00	5.0	1/4"	10	9900 0247 00	8.0
LZB22	AR, LR	1/8"	-	8	9900 0240 00	5.0	1/8"	8	9900 0240 00	5.0
LZB33, LZB34	A, AV, AR, LR	1/4"	-	10	9900 0247 00	8.0	1/4"	10	9900 0247 00	8.0
LZB42	A, AR	1/4"	-	10	9900 0247 00	8.0	1/2"	16	9900 0244 00	13.4
LZB46	A, AV, AR	1/4"	-	10	9900 0247 00	8.0	1/2"	16	9900 0244 00	13.4
LZB54	A, AV, AR	3/8"	-	13	9900 0248 00	9.3	1/2"	16	9900 0244 00	13.4
LZB66	A, AR	3/8"	-	13	9900 0248 00	10.3	3/4"	20	9900 0245 00	17
LZB77	A, AR	1/2" **	1/2"-14	16	9900 0244 00	13.4	-	-	-	-

* recommended minimum inner diameter

** alternative connection thread BSP 1/2" delivered with the product

Table 2

VANE MOTORS LZB14-L

Lubrication free

0.11 – 0.16 kW
0.15 – 0.21 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).
For optional vanes and accessories see pages 66-67.

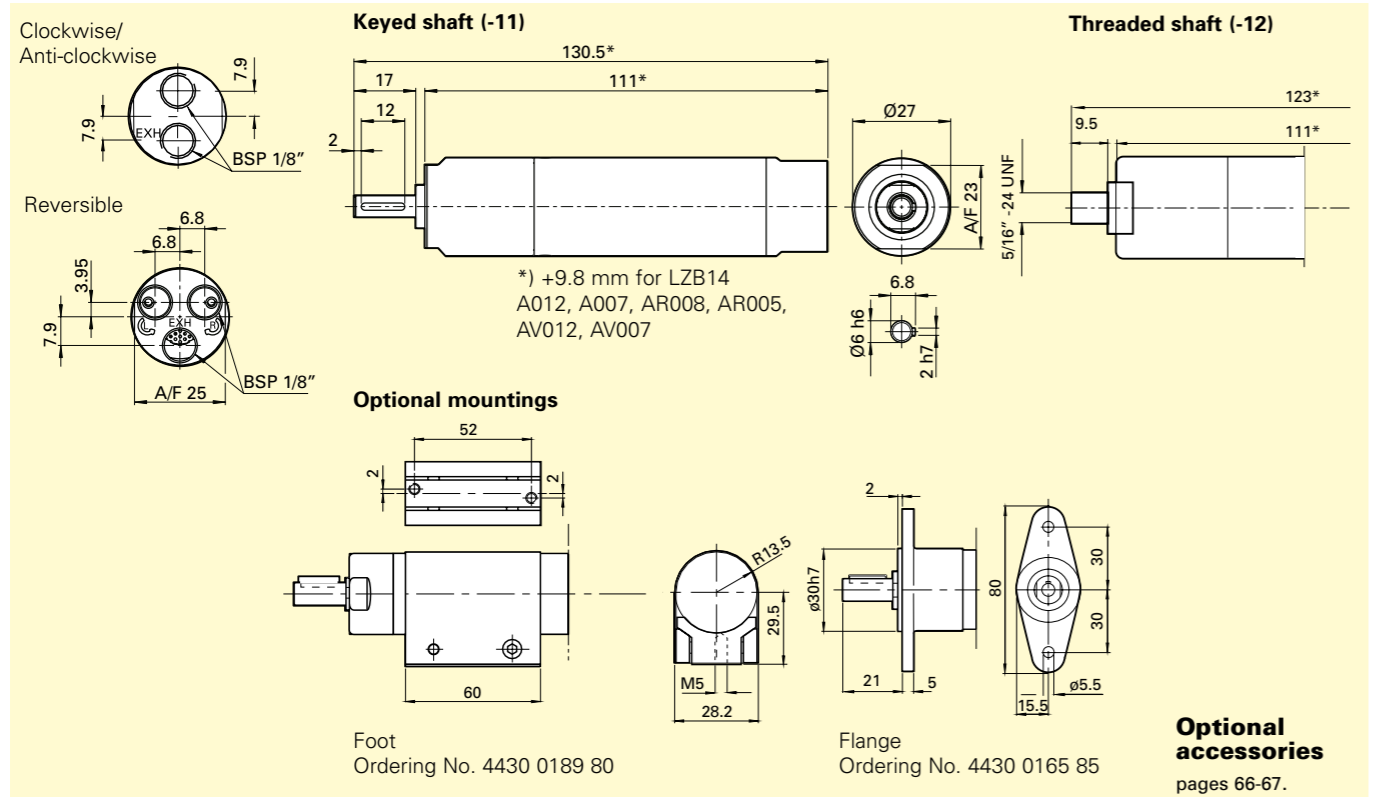


Data at air pressure 6.3 bar (91 psi)

Model	Max output		Speed at max output [r/min]	Torque at max output		Min starting torque [Nm]	Min starting torque [lb-ft]	Stall torque [Nm]	Stall torque [lb-ft]	Free speed [r/min]	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	[kW]	[hp]		[Nm]	[lb-ft]						[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB14-L-A190-11	0.16	0.21	9100	0.17	0.13	0.29	0.21	0.34	0.25	19500	4.0	8.5	0.30	0.66	a	Ex II 2GD c T4 IIC T110°C	8411 0113 00
LZB14-L-A048-11	0.16	0.21	2200	0.7	0.52	1.23	0.91	1.4	1.03	4800	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0113 18
LZB14-L-A029-11	0.16	0.21	1330	1.15	0.85	2	1.48	2.3	1.7	2900	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0113 26
LZB14-L-A012-11	0.16	0.21	530	2.9	2.1	5.1	3.8	5.8	4.28	1140	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0113 34
LZB14-L-A007-11	0.16	0.21	320	4.8	3.5	8.5	6.27	9.6	7.1	700	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0113 42
Clockwise rotation (Threaded shaft)																	
LZB14-L-AV190-12	0.16	0.21	9100	0.17	0.13	0.29	0.21	0.34	0.25	19500	4.0	8.5	0.30	0.66	a	Ex II 2GD c T4 IIC T110°C	8411 0114 09
LZB14-L-A048-12	0.16	0.21	2200	0.7	0.52	1.23	0.91	1.4	1.03	4800	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0114 17
LZB14-L-A029-12	0.16	0.21	1330	1.15	0.85	2.0	1.48	2.3	1.7	2900	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0114 25
LZB14-L-A012-12	0.16	0.21	530	2.9	2.1	5.1	3.8	5.8	4.28	1140	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0114 33
LZB14-L-A007-12	0.16	0.21	320	4.8	3.5	8.5	6.27	9.6	7.1	700	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0114 41
Anti-clockwise rotation (Keyed shaft)																	
LZB14-L-AV190-11	0.16	0.21	9100	0.17	0.13	0.23	0.17	0.34	0.25	19500	4.0	8.5	0.30	0.66	a	Ex II 2GD c T4 IIC T110°C	8411 0117 06
LZB14-L-AV048-11	0.16	0.21	2200	0.7	0.52	0.99	0.73	1.4	1.03	4800	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0117 14
LZB14-L-AV029-11	0.16	0.21	1330	1.15	0.85	1.63	1.2	2.3	1.7	2900	4.0	8.5	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0117 22
LZB14-L-AV012-11	0.16	0.21	530	2.9	2.1	4.1	3.0	5.8	4.3	1140	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0117 30
LZB14-L-AV007-11	0.16	0.21	320	4.8	3.5	6.8	5.0	9.6	7.1	700	4.0	8.5	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0117 48
Reversible (Keyed shaft)																	
LZB14-L-AR140-11	0.11	0.15	7000	0.15	0.11	0.24	0.18	0.3	0.22	13000	3.6	7.6	0.30	0.66	a	Ex II 2GD c T4 IIC T110°C	8411 0115 08
LZB14-L-AR034-11	0.11	0.15	1690	0.62	0.46	1.01	0.74	1.24	0.91	3400	3.6	7.6	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0115 16
LZB14-L-AR020-11	0.11	0.15	1020	1.03	0.76	1.67	1.23	2.1	1.5	2000	3.6	7.6	0.30	0.66	a	Ex II 2GD c T6 IIC T85°C	8411 0115 24
LZB14-L-AR008-11	0.11	0.15	410	2.6	1.92	4.2	3.1	5.2	3.8	800	3.6	7.6	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0115 32
LZB14-L-AR005-11	0.11	0.15	250	4.3	3.2	6.9	5.1	8.6	6.3	490	3.6	7.6	0.33	0.73	a	Ex II 2GD c T6 IIC T85°C	8411 0115 40

¹⁾ For Shaft loading curves, see page 16.
NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Dimensions (mm)



VANE MOTORS LZB14-RL

Stainless steel and lubrication free

0.11 – 0.16 kW
0.15 – 0.21 hp

Material in parts:

- back head and front part stainless steel:
ISO 683/XIII Type 17, SS 14 2346, DIN 17440 X12CrNiS188
- outgoing shaft and casing/gear rim stainless steel:
ISO 683/XIII Type 9b, SS 14 2321, DIN 17440 X22CrNi17



EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

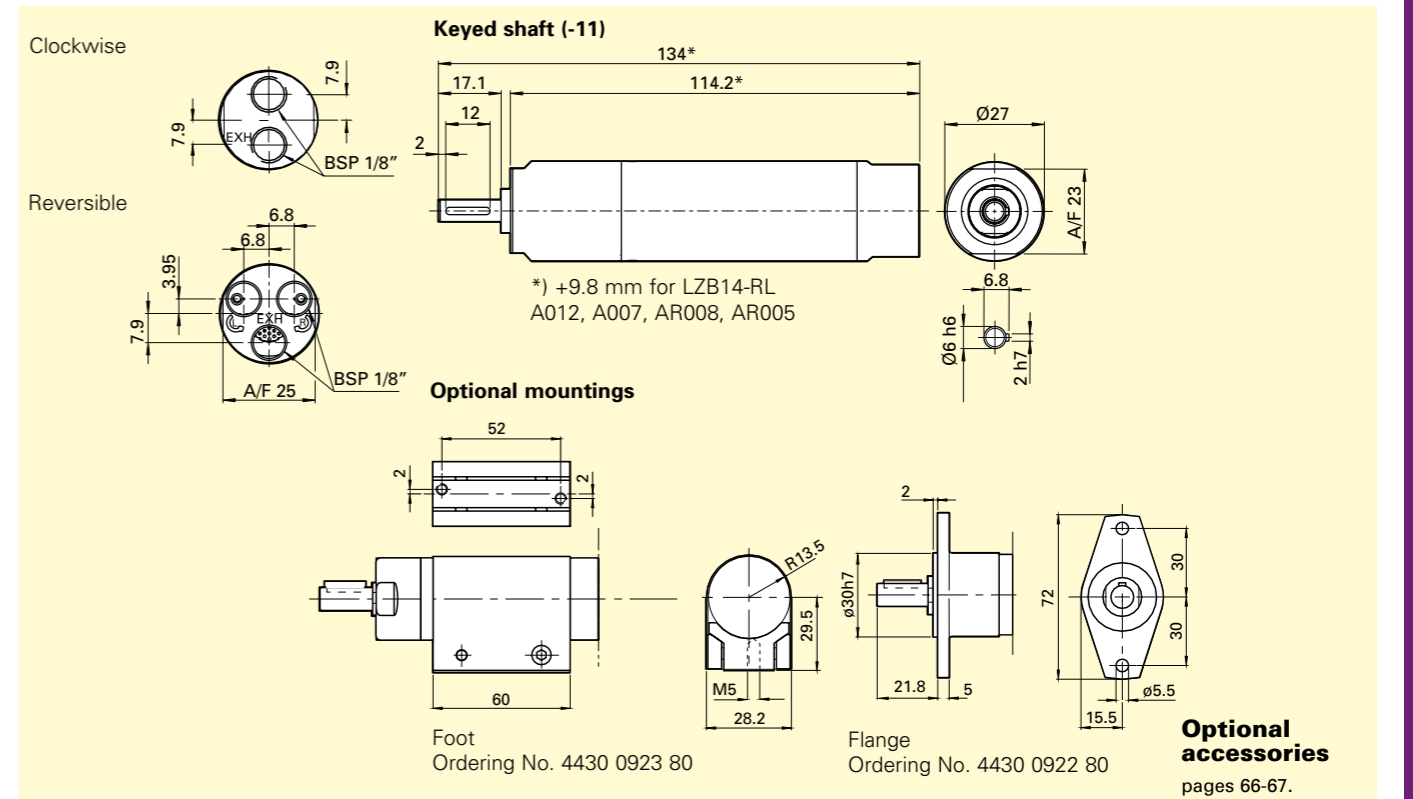
For optional vanes and accessories see pages 66-67.

Data at air pressure 6.3 bar (91 psi)

Model	Max output		Speed at max output [r/min]	Torque at max output		Min starting torque [Nm]	Min starting torque [lb-ft]	Stall torque [Nm]	Stall torque [lb-ft]	Free speed [r/min]	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	[kW]	[hp]		[Nm]	[lb-ft]						[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB14-RL-A190-11	0.16	0.21	9100	0.17	0.13	0.29	0.21	0.34	0.25	19500	4.0	8.5	0.37	0.82	a	Ex II 2GD c T4 IIC T110°C	8411 0122 09
LZB14-RL-A048-11	0.16	0.21	2200	0.70	0.52	1.23	0.91	1.4	1.03	4800	4.0	8.5	0.37	0.82	a	Ex II 2GD c T6 IIC T85°C	8411 0122 17
LZB14-RL-A029-11	0.16	0.21	1330	1.15	0.85	2.0	1.48	2.3	1.7	2900	4.0	8.5	0.37	0.82	a	Ex II 2GD c T6 IIC T85°C	8411 0122 25
LZB14-RL-A012-11	0.16	0.21	530	2.9	2.1	5.1	3.8	5.8	4.3	1140	4.0	8.5	0.40	0.88	a	Ex II 2GD c T6 IIC T85°C	8411 0122 33
LZB14-RL-A007-11	0.16	0.21	320	4.8	3.5	8.5	6.3	9.6	7.1	700	4.0	8.5	0.40	0.88	a	Ex II 2GD c T6 IIC T85°C	8411 0122 41
Reversible (Keyed shaft)																	
LZB14-RL-AR140-11	0.11	0.15	7000	0.15	0.11	0.24	0.18	0.3	0.22	13000	3.6	7.6	0.37	0.82	a	Ex II 2GD c T4 IIC T110°C	8411 0122 58
LZB14-RL-AR034-11	0.11	0.15	1690	0.62	0.46	1.01	0.74	1.24	0.91	3400	3.6	7.6	0.37	0.82	a	Ex II 2GD c T6 IIC T85°C	8411 0122 66
LZB14-RL-AR020-11	0.11	0.15	1020	1.03	0.76	1.67	1.23	2.1	1.5	2000	3.6	7.6	0.37	0.82	a	Ex II 2GD c T6 IIC T85°C	8411 0122 74
LZB14-RL-AR008-11	0.11	0.15	410	2.6	1.92	4.2	3.1	5.2	3.8	800	3.6	7.6	0.40	0.88	a	Ex II 2GD c T6 IIC T85°C	8411 0122 82
LZB14-RL-AR005-11	0.11	0.15	250	4.3	3.2	6.9	5.1	8.6	6.3	490	3.6	7.6	0.40	0.88	a	Ex II 2GD c T6 IIC T85°C	8411 0122 90

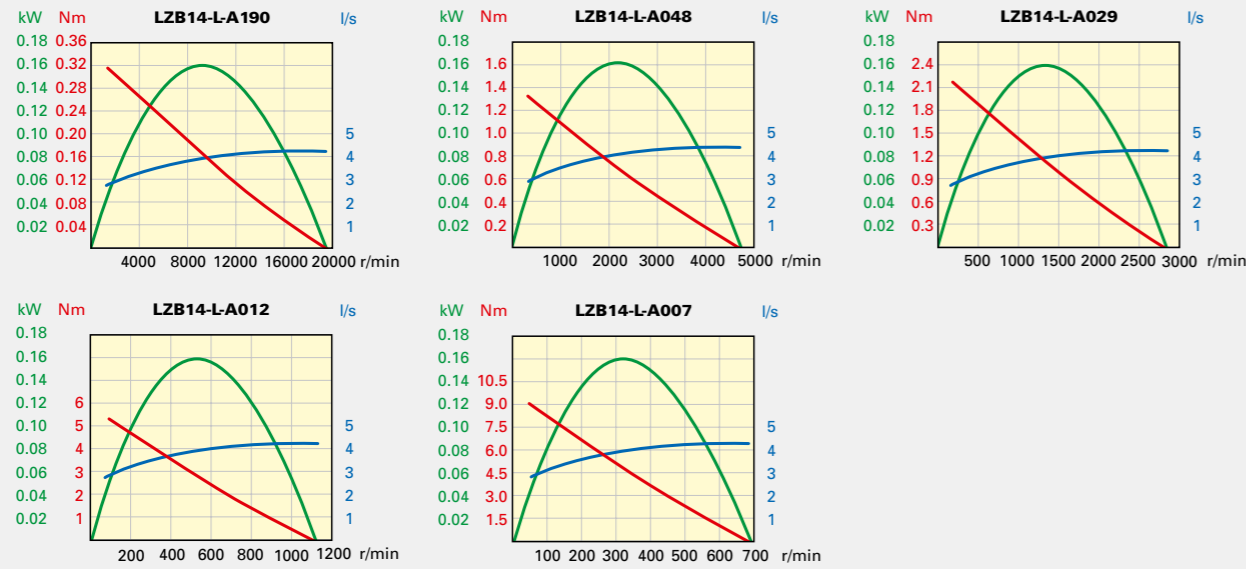
¹⁾ For Shaft loading curves, see page 16.
NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Dimensions (mm)

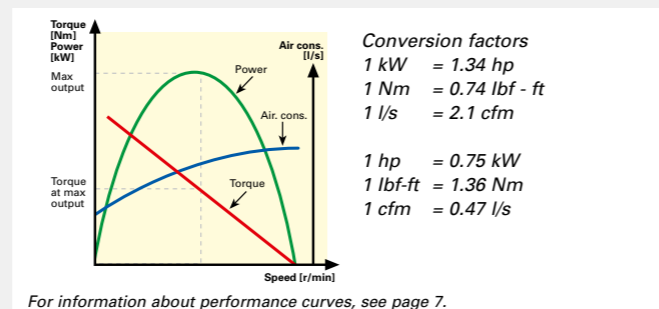
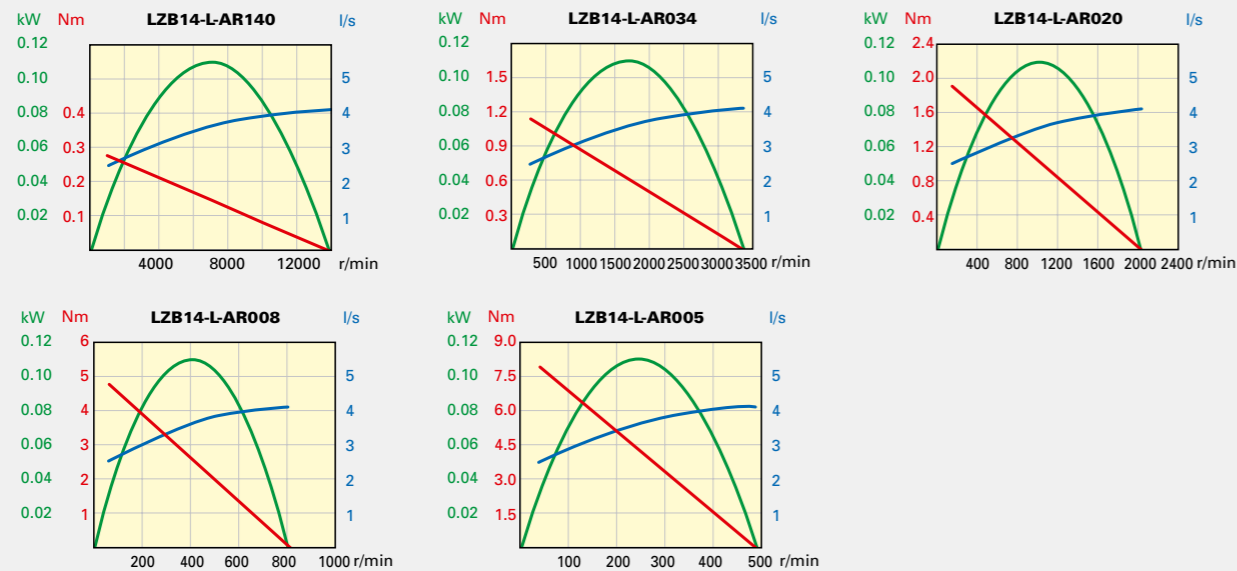


LZB14-L: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A and AV)



Reversible (AR)



VANE MOTORS LZB22-L Lubrication free

0.16 – 0.27 kW
0.21 – 0.36 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.

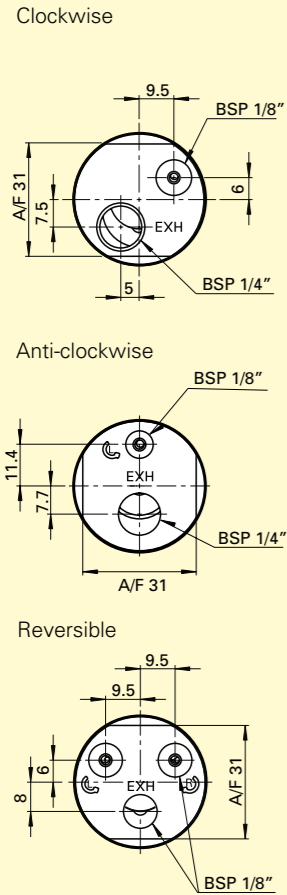


Data at air pressure 6.3 bar (91 psi)

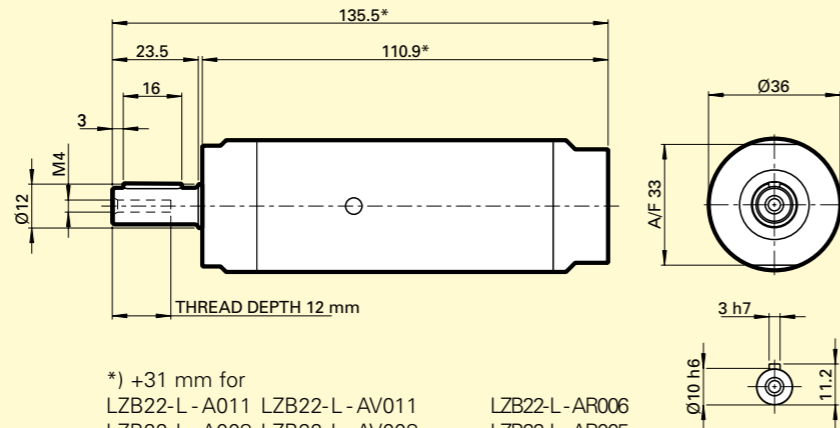
Model	Lubrication free	Max output		Speed at max output [r/min]	Torque at max output [Nm]	Torque at max output [lb-ft]	Min starting torque [Nm]	Min starting torque [lb-ft]	Stall torque [Nm]	Stall torque [lb-ft]	Air consumption at max output		Weight [kg]	Weight [lb]	Shaft loading code ¹⁾	ATEX code	Ordering No.	
		[kW]	[hp]								[l/s]	[cfm]						
Clockwise rotation (Keyed shaft)																		
LZB22-L-A220-11		0.27	0.36	9600	0.27	0.20	0.51	0.38	0.54	0.4	21500	5.3	11.2	0.55	1.21	b	Ex II 2GD c T4 IIC T110°C	8411 0214 08
LZB22-L-A049-11		0.27	0.36	2100	1.2	0.89	2.3	1.7	2.4	1.8	4700	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0214 16
LZB22-L-A036-11		0.27	0.36	1590	1.6	1.2	3.1	2.3	3.2	2.4	3550	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0214 24
LZB22-L-A022-11		0.27	0.36	960	2.7	2.0	5.1	3.8	5.4	4.0	2100	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0214 32
LZB22-L-A011-11		0.26	0.35	480	5.3	3.9	10	7.4	10.6	7.8	1040	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0214 40
LZB22-L-A008-11		0.26	0.35	360	7.1	5.2	13.5	10	14.2	10.5	770	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0214 57
LZB22-L-A005-11		0.26	0.35	210	11.8	8.7	22	16.2	23.6	17.4	480	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0214 65
Clockwise rotation (Threaded shaft)																		
LZB22-L-A220-12		0.27	0.36	9600	0.27	0.20	0.51	0.38	0.54	0.4	21500	5.3	11.2	0.55	1.21	b	Ex II 2GD c T4 IIC T110°C	8411 0214 73
LZB22-L-A049-12		0.27	0.36	2100	1.2	0.89	2.3	1.7	2.4	1.8	4700	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0214 81
LZB22-L-A036-12		0.27	0.36	1590	1.6	1.2	3.1	2.3	3.2	2.4	3550	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0214 99
LZB22-L-A022-12		0.27	0.36	960	2.7	2.0	5.1	3.8	5.4	4.0	2100	5.3	11.2	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0215 07
LZB22-L-A011-12		0.26	0.35	480	5.3	3.9	10	7.4	10.6	7.8	1040	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0215 15
LZB22-L-A008-12		0.26	0.35	360	7.1	5.2	13.5	10	14.2	10.5	770	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0215 23
LZB22-L-A005-12		0.26	0.35	210	11.8	8.7	22	16.2	23.6	17.4	480	5.3	11.2	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0215 31
Anti-clockwise rotation (Keyed shaft)																		
LZB22-L-AV220-11		0.27	0.36	9600	0.27	0.20	0.32	0.24	0.54	0.4	21500	6.5	13.8	0.55	1.21	b	Ex II 2GD c T4 IIC T110°C	8411 0226 14
LZB22-L-AV049-11		0.27	0.36	2100	1.2	0.89	1.4	1.0	2.4	1.8	4700	6.5	13.8	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0209 62
LZB22-L-AV036-11		0.27	0.36	1590	1.6	1.2	1.9	1.4	3.2	2.4	3550	6.5	13.8	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0207 15
LZB22-L-AV022-11		0.27	0.36	960	2.7	2.0	3.2	2.3	5.4	4.0	2100	6.5	13.8	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0216 30
LZB22-L-AV011-11		0.26	0.35	480	5.3	3.9	6.0	4.4	10.6	7.8	1040	6.5	13.8	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0226 22
LZB22-L-AV008-11		0.26	0.35	360	7.1	5.2	8.5	6.2	14.2	10.5	770	6.5	13.8	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0226 30
LZB22-L-AV005-11		0.26	0.35	210	11.8	8.7	14	10.3	23.6	17.4	480	6.5	13.8	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0226 48
Reversible (Keyed shaft)																		
LZB22-L-AR126-11		0.16	0.21	7000	0.24	0.18	0.32	0.24	0.48	0.35	13100	5.0	10.6	0.55	1.21	b	Ex II 2GD c T4 IIC T110°C	8411 0215 49
LZB22-L-AR028-11		0.16	0.21	1570	1.1	0.81	1.4	1.0	2.2	1.6	2850	5.0	10.6	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0215 56
LZB22-L-AR021-11		0.16	0.21	1170	1.4	1.0	1.9	1.4	2.8	2.1	2100	5.0	10.6	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0215 64
LZB22-L-AR013-11		0.16	0.21	700	2.4	1.8	3.2	2.4	4.8	3.5	1300	5.0	10.6	0.55	1.21	b	Ex II 2GD c T6 IIC T85°C	8411 0215 72
LZB22-L-AR006-11		0.16	0.21	350	4.7	3.5	6.3	4.6	9.4	6.9	640	5.0	10.6	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0215 80
LZB22-L-AR005-11		0.16	0.21	260	6.3	4.6	8.5	6.3	12.6	9.3	480	5.0	10.6	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0215 98
LZB22-L-AR003-11		0.16	0.21	160	10.5	7.7	14	10.3	21	15.5	290	5.0	10.6	0.75	1.65	b	Ex II 2GD c T6 IIC T85°C	8411 0216 06

¹⁾ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

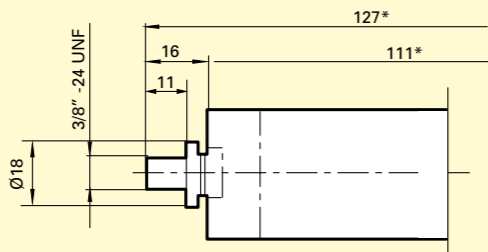


Keyed shaft (-11)

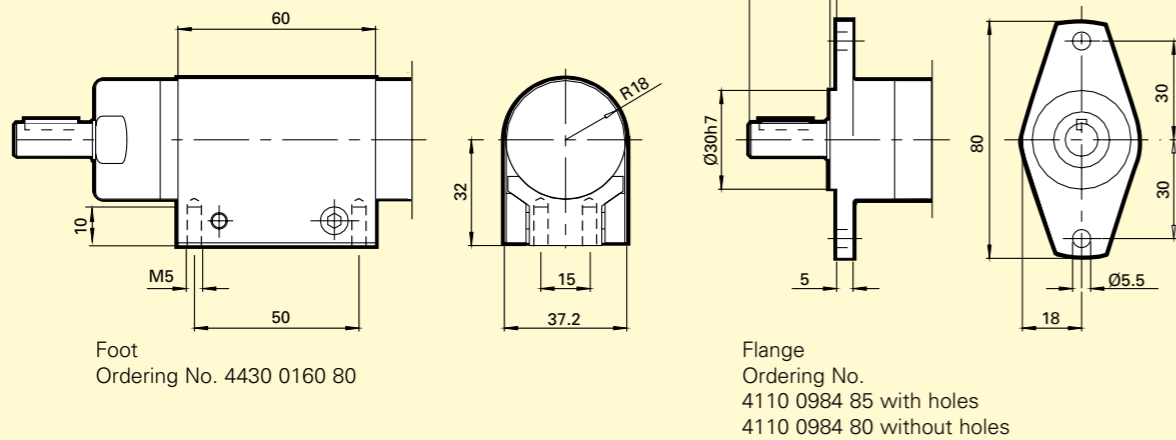


*) +31 mm for
 LZB22-L-A011 LZB22-L-AV011 LZB22-L-AR006
 LZB22-L-A008 LZB22-L-AV008 LZB22-L-AR005
 LZB22-L-A005 LZB22-L-AV005 LZB22-L-AR003

Threaded shaft (-12)



Optional mountings



Foot
 Ordering No. 4430 0160 80

Flange
 Ordering No.
 4110 0984 85 with holes
 4110 0984 80 without holes

Optional accessories
 pages 66-67.

VANE MOTORS LZB22-RL

Stainless steel and lubrication free

0.16 – 0.27 kW
0.21 – 0.36 hp

- Material in parts:
- back head, casing and front part stainless steel:
 ISO 683/XIII Type 17, SS 14 2346, DIN 17440 X12CrNiS188
 - outgoing shaft and gear rim stainless steel: ISO 683/XIII
 Type 9b, SS 14 2321, DIN 17440 X22CrNi17

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

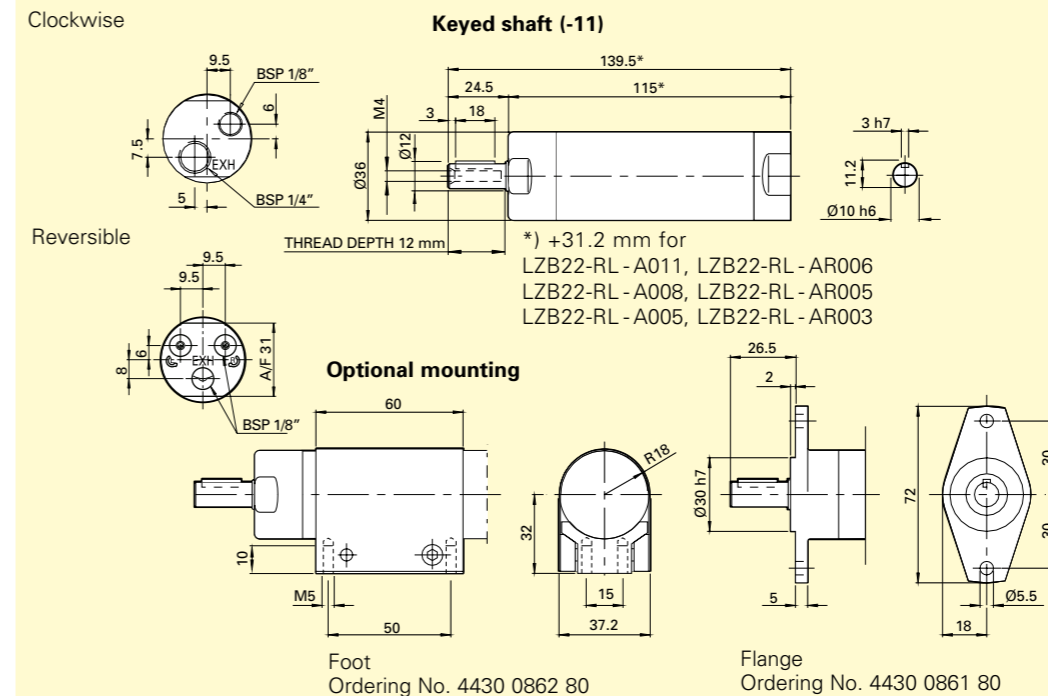
For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption	Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.
Lubrication free	[kW] [hp]	[r/min]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[r/min]	[l/s] [cfm]	[kg] [lb]			
Clockwise rotation (Keyed shaft)														
LZB22-RL-A220-11	0.27 0.36	9600	0.27 0.20	0.20 0.51	0.51 0.38	0.54 0.4	0.4 1.9500	5.3 11.2	11.2 0.63	1.39 b	Ex II 2GD c T4 IIC T110°C	8411 0219 11		
LZB22-RL-A049-11	0.27 0.36	2100	1.2 0.89	2.3 1.7	2.4 1.8	2.4 4700	5.3 11.2	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0219 29			
LZB22-RL-A036-11	0.27 0.36	1590	1.6 1.2	3.1 2.3	3.2 2.4	3550	5.3 11.2	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0219 37			
LZB22-RL-A022-11	0.27 0.36	960	2.7 2.0	5.1 3.8	5.4 4.0	2100	5.3 11.2	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0219 45			
LZB22-RL-A011-11	0.26 0.35	480	5.3 3.9	10 7.4	10.6 7.8	1040	5.3 11.2	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0219 52			
LZB22-RL-A008-11	0.26 0.35	360	7.1 5.2	13.5 10	14.2 10.5	770	5.3 11.2	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0219 60			
LZB22-RL-A005-11	0.26 0.35	210	11.8 8.7	22 16.2	23.6 17.4	480	5.3 11.2	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0219 78			
Reversible (Keyed shaft)														
LZB22-RL-AR126-11	0.16 0.21	7000	0.24 0.18	0.32 0.24	0.48 0.35	13100	5.0 10.6	0.63 1.39	b	Ex II 2GD c T4 IIC T110°C	8411 0220 83			
LZB22-RL-AR028-11	0.16 0.21	1570	1.1 0.81	1.4 1.0	2.2 1.6	2850	5.0 10.6	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0220 75			
LZB22-RL-AR021-11	0.16 0.21	1170	1.4 1.0	1.9 1.4	2.8 2.1	2100	5.0 10.6	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0222 16			
LZB22-RL-AR013-11	0.16 0.21	700	2.4 1.8	3.2 2.4	4.8 3.5	1300	5.0 10.6	0.63 1.39	b	Ex II 2GD c T6 IIC T85°C	8411 0220 67			
LZB22-RL-AR006-11	0.16 0.21	350	4.7 3.5	6.3 4.6	9.4 6.9	640	5.0 10.6	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0220 59			
LZB22-RL-AR005-11	0.16 0.21	260	6.3 4.6	8.5 6.3	12.6 9.3	480	5.0 10.6	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0222 08			
LZB22-RL-AR003-11	0.16 0.21	160	10.5 7.7	14 10.3	21 15.5	290	5.0 10.6	0.83 1.83	b	Ex II 2GD c T6 IIC T85°C	8411 0220 91			

¹⁾ For Shaft loading curves, see page 16.
 NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
 - To optimize life time for a lubrication free motor, use lubricated air if the application allows it.



*) +31.2 mm for
 LZB22-RL-A011, LZB22-RL-AR006
 LZB22-RL-A008, LZB22-RL-AR005
 LZB22-RL-A005, LZB22-RL-AR003

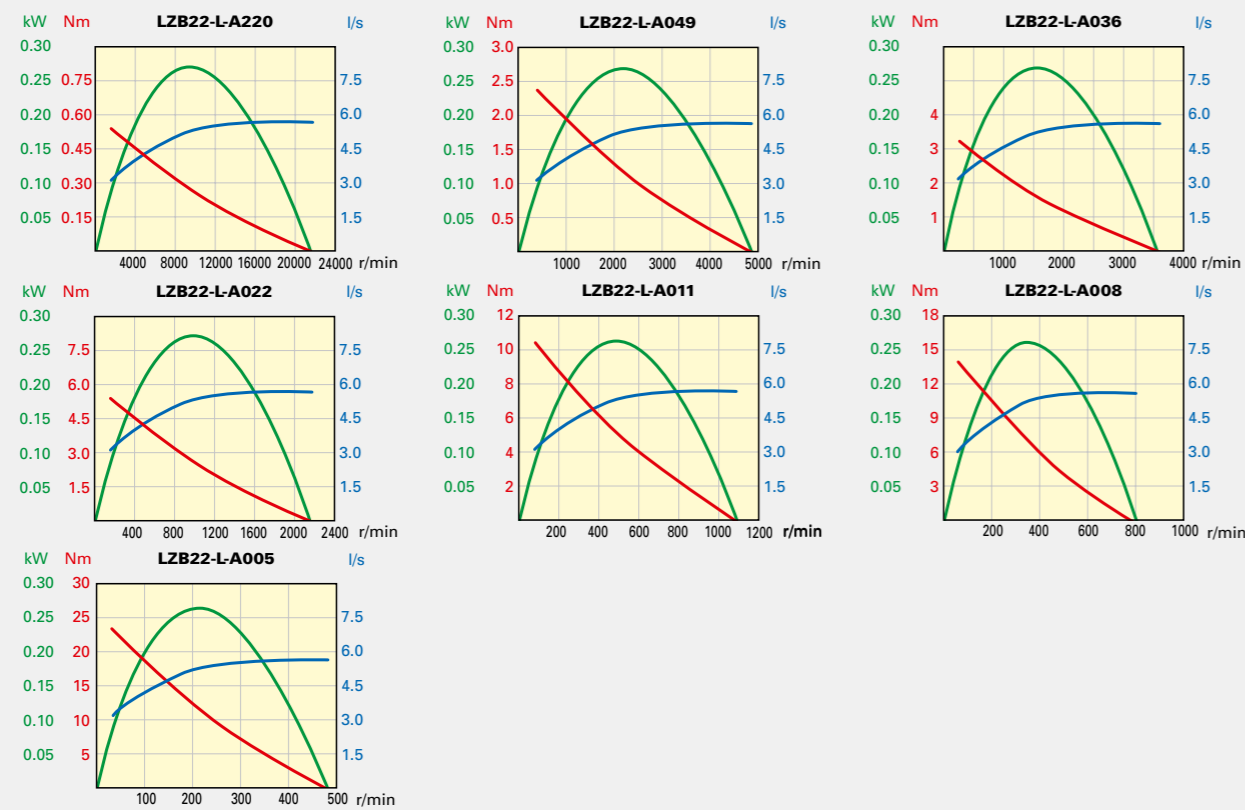
Foot
 Ordering No. 4430 0862 80

Flange
 Ordering No. 4430 0861 80

Optional accessories
 pages 66-67.

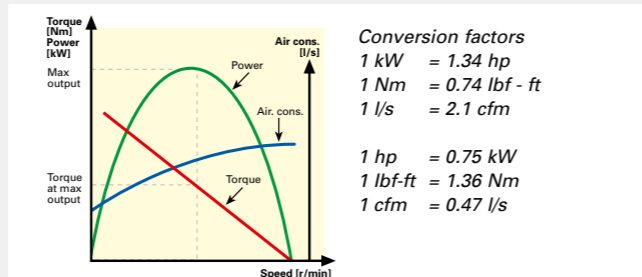
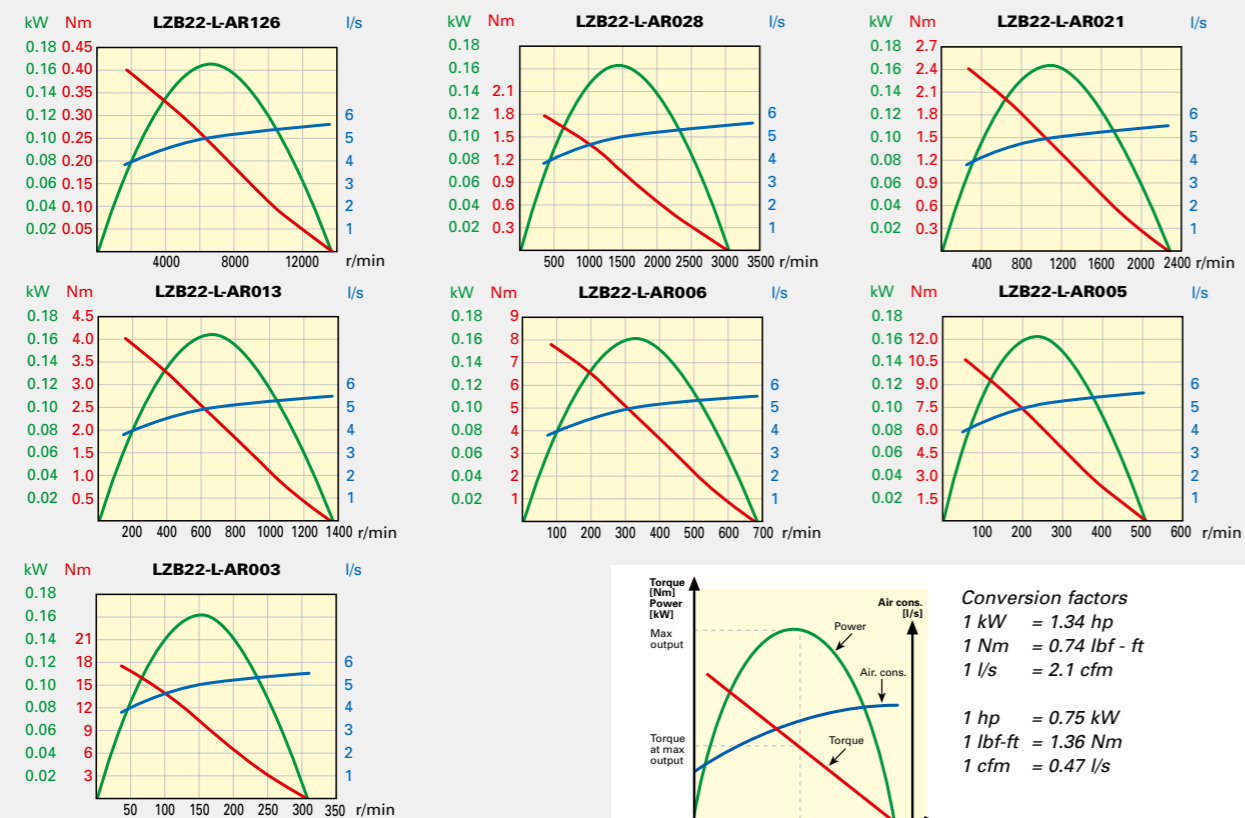
LZB22-L, LZB22-RL: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A and AV)



LZB22-L, LZB22-RL: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



For information about performance curves, see page 7.

VANE MOTORS LZB22-LR

Low speed, lubrication free and reversible
LZB22-RL-LR

Stainless steel, low speed, lubrication free and reversible

Maximum permitted torque 9 Nm (6.6 lb_f-ft)

Within their working range these motors have a very steep torque curve. Speed and air consumption are relatively constant regardless of the load.

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.

Data at air pressure 6.3 bar (91 psi)

Model	Free speed [r/min]	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
		[l/s]	[cfm]	[kg]	[lb]			
Lubrication free								
LZB22-L-LR100-11	110	5.8	12.3	0.95	2.09	b	Ex II 2GD c T6 IIC T85°C	8411 0216 22
LZB22-L-LR5-11	5	5.8	12.3	1.35	3.0	b	Ex II 2GD c T6 IIC T85°C	8411 0216 14
Stainless steel								
Lubrication free								
LZB22-RL-LR100-11	110	5.8	12.3	1.03	2.27	b	Ex II 2GD c T6 IIC T85°C	8411 0222 40
LZB22-RL-LR5-11	5	5.8	12.3	1.43	3.15	b	Ex II 2GD c T6 IIC T85°C	8411 0222 57

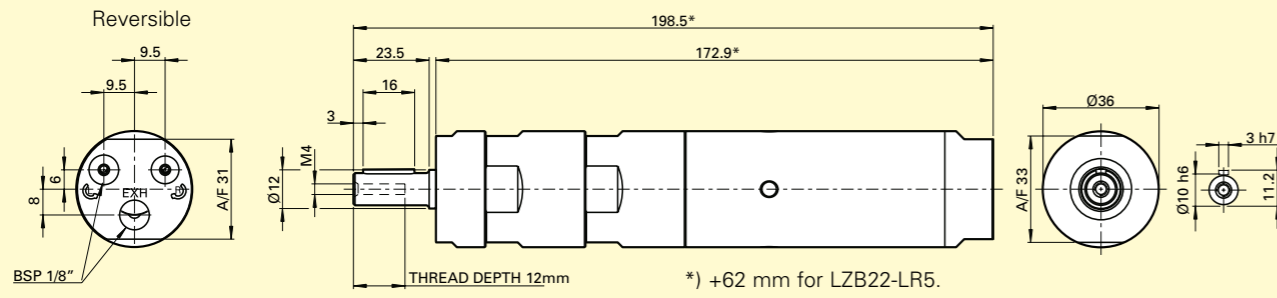
¹⁾ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 10-20% at free speed.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

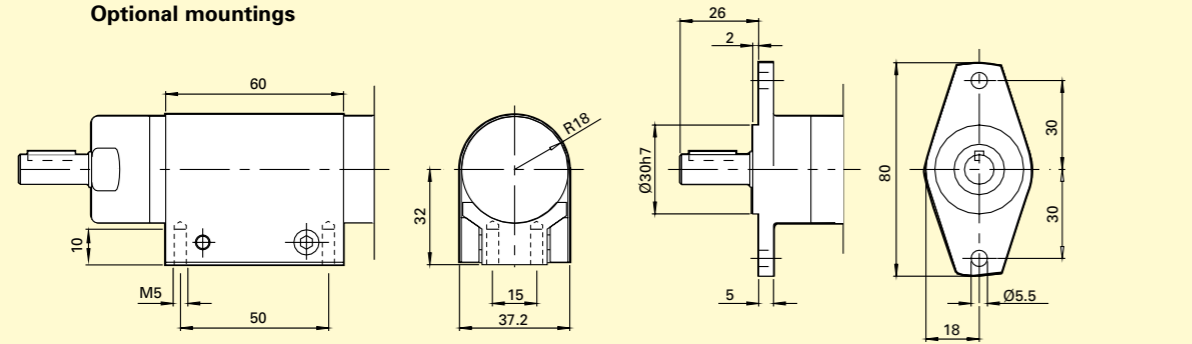


Dimensions LZB22-LR, LZB22-L-LR (mm)

Conversion factor 1 mm = 0.04 inch



Optional mountings

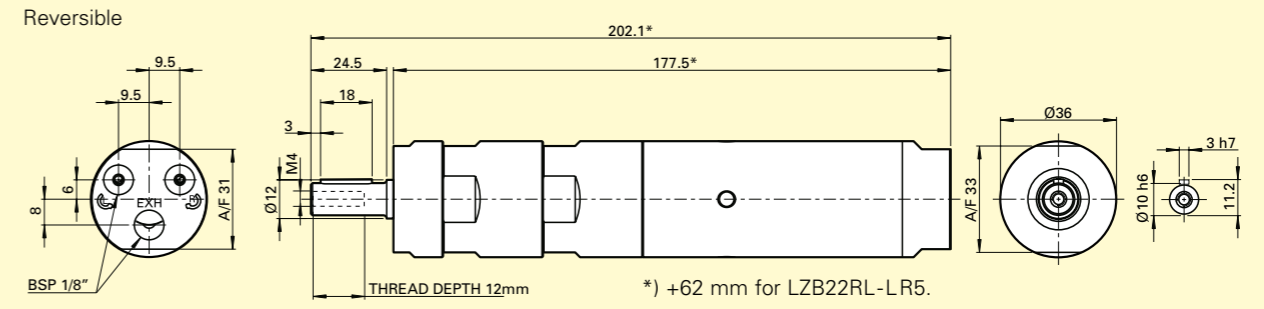


Foot
Ordering No. 4430 0160 80

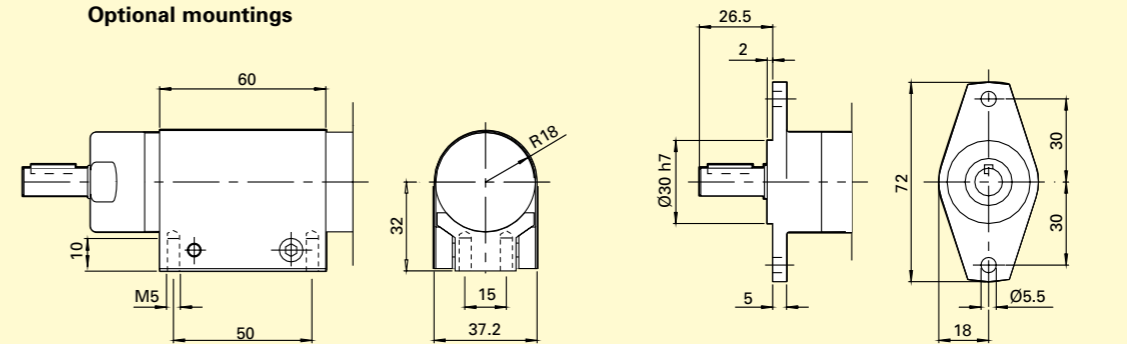
Flange
Ordering No. 4110 0984 85 with holes
4110 0984 80 without holes

Dimensions LZB22-RL-LR (mm)

Conversion factor 1 mm = 0.04 inch



Optional mountings



Foot
Ordering No. 4430 0862 80

Flange
Ordering No. 4430 0861 80

Optional accessories
pages 66-67.

VANE MOTORS LZB33-L

Lubrication free

0.24 – 0.39 kW
0.32 – 0.52 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

Model	Lubrication free	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Weight	Weight	Shaft loading code ¹	ATEX code	Ordering No.
		[kW] [hp]	[r/min]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[r/min]	[l/s] [cfm]	[kg] [lb]	[kg] [lb]			
Clockwise rotation (Keyed shaft)																
LZB33-L-A210-11		0.39 0.52	9400	0.4 0.3	0.76 0.56	0.8 0.59	0.8 0.59	19000	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T4 IIC T110°C	8411 0306 07			
LZB33-L-A060-11		0.39 0.52	2600	1.4 1.0	2.7 2.0	2.8 2.1	5350	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0306 15				
LZB33-L-A033-11		0.39 0.52	1450	2.6 1.9	4.9 3.6	5.2 3.8	3000	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0306 23				
LZB33-L-A026-11		0.39 0.52	1170	3.2 2.4	6.1 4.5	6.4 4.7	2400	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0306 31				
LZB33-L-A013-11		0.38 0.51	580	6.4 4.7	12 8.9	12.8 9.4	1180	8.1 17.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0306 49				
LZB33-L-A007-11		0.38 0.51	320	11.5 8.5	21 15.5	23 17	650	8.1 17.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0306 56				
LZB33-L-A005-11		0.38 0.51	260	14.2 10.5	26 19.2	28 21	520	8.1 17.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0306 64				
LZB33-L-A0030-11		0.37 0.50	160	22.3 16.4	40 30	45 33	340	8.1 17.2	1.5 3.31	3.31 d	Ex II 2GD c T6 IIC T85°C	8411 0306 72				
Clockwise rotation (Threaded shaft)																
LZB33-L-A210-12		0.39 0.52	9400	0.4 0.3	0.76 0.56	0.8 0.59	19000	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T4 IIC T110°C	8411 0306 80				
LZB33-L-A060-12		0.39 0.52	2600	1.4 1.0	2.7 2.0	2.8 2.1	5350	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0306 98				
LZB33-L-A033-12		0.39 0.52	1450	2.6 1.9	4.9 3.6	5.2 3.8	3000	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0307 06				
LZB33-L-A026-12		0.39 0.52	1170	3.2 2.4	6.1 4.5	6.4 4.7	2400	8.1 17.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0307 14				
LZB33-L-A013-12		0.38 0.51	580	6.4 4.7	12 8.9	12.8 9.4	1180	8.1 17.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0307 22				
LZB33-L-A007-12		0.38 0.51	320	11.5 8.5	21 15.5	23 17	650	8.1 17.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0307 30				
LZB33-L-A005-12		0.38 0.51	260	14.2 10.5	26 19.2	28 21	520	8.1 17.2	1.02 2.25	2.25 d	Ex II 2GD c T6 IIC T85°C	8411 0307 48				
Anti-clockwise rotation (Keyed shaft)																
LZB33-L-AV210-11		0.39 0.52	9400	0.4 0.3	0.69 0.51	0.8 0.59	19000	9.5 20.2	0.75 1.65	1.65 c	Ex II 2GD c T4 IIC T110°C	8411 0352 42				
LZB33-L-AV060-11		0.39 0.52	2600	1.4 1.0	2.4 1.8	2.8 2.1	5350	9.5 20.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0352 59				
LZB33-L-AV033-11		0.39 0.52	1450	2.6 1.9	4.4 3.2	5.2 3.8	3000	9.5 20.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0352 00				
LZB33-L-AV026-11		0.39 0.52	1170	3.2 2.4	5.5 4.1	6.4 4.7	2400	9.5 20.2	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0345 91				
LZB33-L-AV013-11		0.38 0.51	580	6.4 4.7	11 8.1	12.8 9.4	1180	9.5 20.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0336 27				
LZB33-L-AV007-11		0.38 0.51	320	11.5 8.5	19.5 14.4	23 17	650	9.5 20.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0352 67				
LZB33-L-AV005-11		0.38 0.51	260	14.2 10.5	24 17.7	28 21	520	9.5 20.2	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0336 19				
LZB33-L-AV0030-11		0.37 0.50	160	22 16.2	38 28	44 32	340	9.5 20.2	1.5 3.31	3.31 d	Ex II 2GD c T6 IIC T85°C	8411 0345 59				
Reversible (Keyed shaft)																
LZB33-L-AR150-11		0.25 0.34	7000	0.34 0.25	0.46 0.34	0.68 0.5	13300	7.9 16.8	0.75 1.65	1.65 c	Ex II 2GD c T4 IIC T110°C	8411 0307 63				
LZB33-L-AR043-11		0.25 0.34	1960	1.2 0.89	1.6 1.2	2.4 1.8	3800	7.9 16.8	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0307 71				
LZB33-L-AR024-11		0.25 0.34	1090	2.2 1.6	3.0 2.2	4.4 3.2	2000	7.9 16.8	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0307 89				
LZB33-L-AR019-11		0.25 0.34	880	2.7 2.0	3.7 2.7	5.4 4.0	1700	7.9 16.8	0.75 1.65	1.65 c	Ex II 2GD c T6 IIC T85°C	8411 0307 97				
LZB33-L-AR009-11		0.25 0.34	430	5.4 4.0	7.0 5.2	10.8 8.0	800	7.9 16.8	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0308 05				
LZB33-L-AR005-11		0.25 0.34	240	9.8 7.2	12.6 9.3	19.6 14.5	450	7.9 16.8	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0308 13				
LZB33-L-AR004-11		0.25 0.34	190	12.1 8.9	15.6 11.5	24 17.8	360	7.9 16.8	1.02 2.25	2.25 c	Ex II 2GD c T6 IIC T85°C	8411 0308 21				
LZB33-L-AR0026-11		0.24 0.32	120	19 14	20 14.8	38 28	230	7.9 16.8	1.5 3.31	3.31 d	Ex II 2GD c T6 IIC T85°C	8411 0308 70				

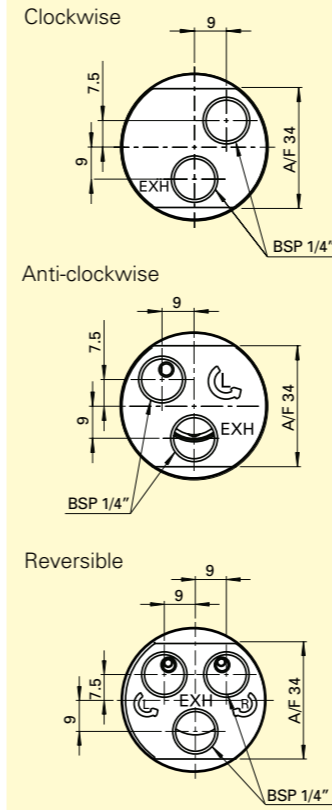
¹ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.

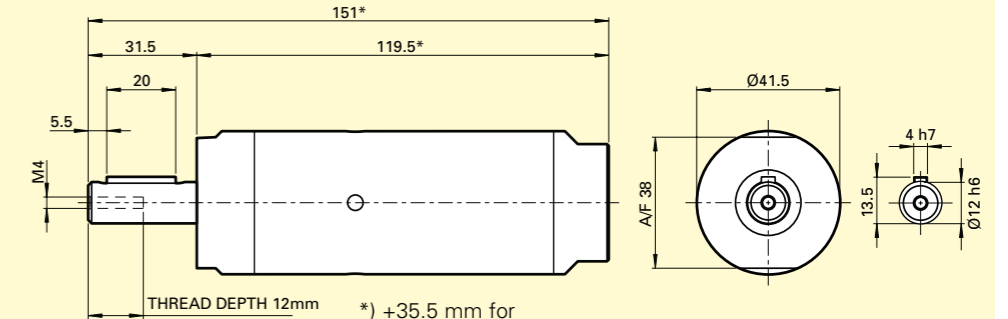
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Dimensions (mm)

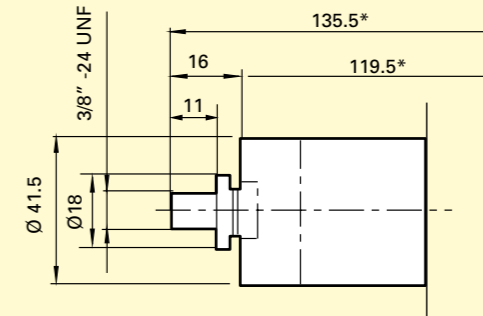
All versions



Keyed shaft (-11)

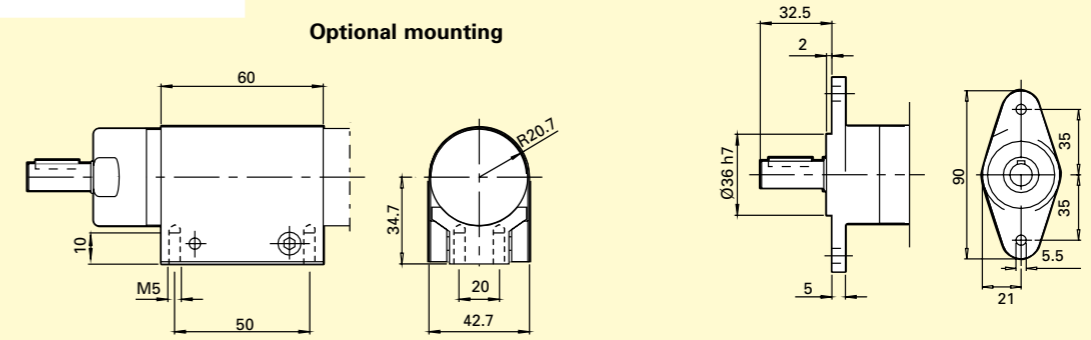


Threaded shaft (-12)



*) +35.5 mm for
LZB33-L - A013 LZB33-L - AV013 LZB33-L - AR009
LZB33-L - A007 LZB33-L - AV007 LZB33-L - AR005
LZB33-L - A005 LZB33-L - AV005 LZB33-L - AR004

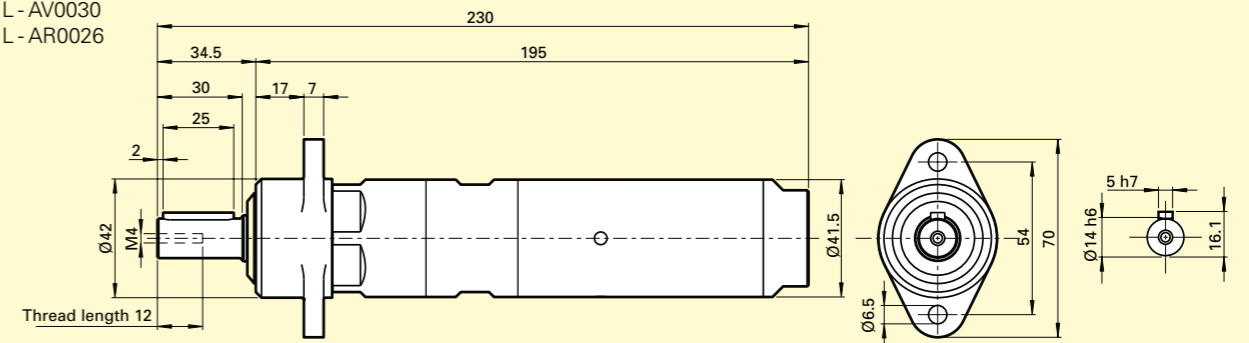
Optional mounting



Foot
Ordering No. 4430 0162 80

Flange
Ordering No.
4110 0878 85 with holes
4110 0878 80 without holes

LZB33-L - A0030
LZB33-L - AV0030
LZB33-L - AR0026



Optional accessories

pages 66-67.

VANE MOTORS LZB34-RL

Stainless steel and lubrication free

0.25 – 0.39 kW
0.34 – 0.52 hp

Material in parts:

- back head, casing and front part stainless steel:
ISO 683/XIII Type 17, SS 14 2346, DIN 17440 X12CrNiS188
- outgoing shaft and gear rim stainless steel:
ISO 683/XIII Type 9b, SS 14 2321, DIN 17440 X22CrNi17

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

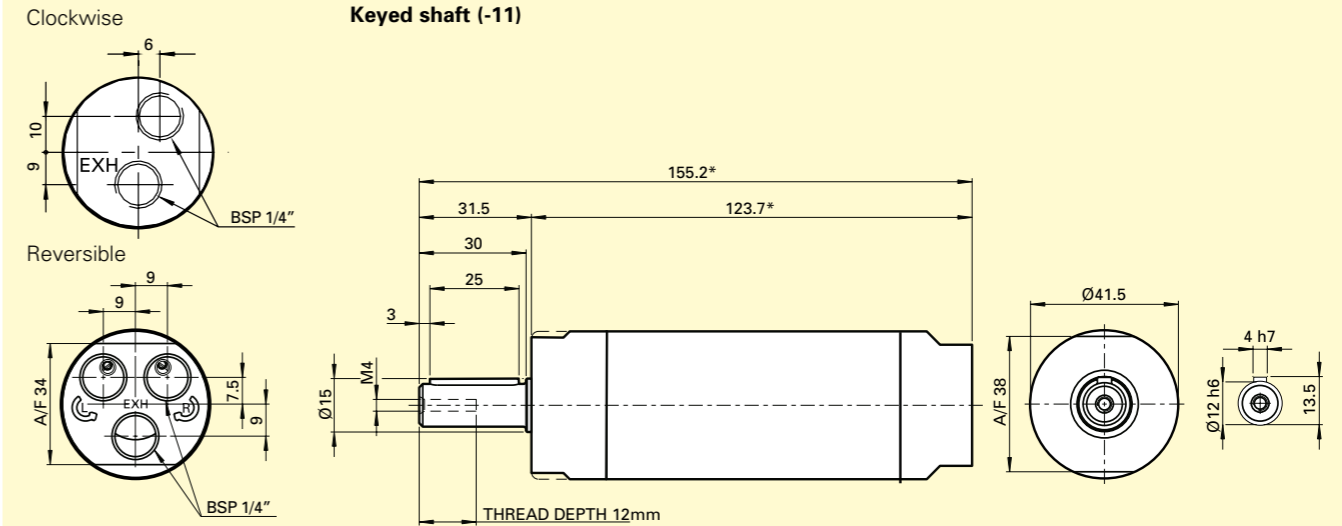
Model	Max output		Speed at max output [r/min]	Torque at max output [Nm]	Torque at max output [lb-ft]	Min starting torque [Nm]	Min starting torque [lb-ft]	Stall torque [Nm]	Stall torque [lb-ft]	Free speed [r/min]	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	[kW]	[hp]									[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB34-RL-A210-11	0.39	0.52	9400	0.4	0.3	0.76	0.56	0.8	0.59	19000	8.1	17.2	0.95	2.09	c	Ex II 2GD c T4 IIC T110°C	8411 0338 41
LZB34-RL-A060-11	0.39	0.52	2600	1.4	1.0	2.7	2.0	2.8	2.1	5350	8.1	17.2	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0338 58
LZB34-RL-A033-11	0.39	0.52	1450	2.6	1.9	4.9	3.6	5.2	3.8	3000	8.1	17.2	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0338 66
LZB34-RL-A026-11	0.39	0.52	1170	3.2	2.4	6.1	4.5	6.4	4.7	2400	8.1	17.2	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0338 74
LZB34-RL-A013-11	0.38	0.51	580	6.4	4.7	12	8.9	12.8	9.4	1180	8.1	17.2	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0338 82
LZB34-RL-A007-11	0.38	0.51	320	11.5	8.5	21	15.5	23	17	650	8.1	17.2	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0338 90
LZB34-RL-A005-11	0.38	0.51	260	14.2	10.5	26	19.2	28	21	520	8.1	17.2	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0339 08
Reversible (Keyed shaft)																	
LZB34-RL-AR150-11	0.25	0.34	7000	0.34	0.25	0.46	0.34	0.68	0.5	13300	7.9	16.8	0.95	2.09	c	Ex II 2GD c T4 IIC T110°C	8411 0339 16
LZB34-RL-AR043-11	0.25	0.34	1960	1.2	0.89	1.6	1.2	2.4	1.8	3800	7.9	16.8	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0339 24
LZB34-RL-AR024-11	0.25	0.34	1090	2.2	1.6	3.0	2.2	4.4	3.2	2000	7.9	16.8	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0339 32
LZB34-RL-AR019-11	0.25	0.34	880	2.7	2.0	3.7	2.7	5.4	4.0	1700	7.9	16.8	0.95	2.09	c	Ex II 2GD c T6 IIC T85°C	8411 0339 40
LZB34-RL-AR009-11	0.25	0.34	430	5.4	4.0	7.0	5.2	10.8	8.0	800	7.9	16.8	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0339 57
LZB34-RL-AR005-11	0.25	0.34	240	9.8	7.2	12.6	9.3	19.6	14.5	450	7.9	16.8	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0339 65
LZB34-RL-AR004-11	0.25	0.34	190	12.1	8.9	15.6	11.5	24	17.7	360	7.9	16.8	1.2	2.65	c	Ex II 2GD c T6 IIC T85°C	8411 0339 73

¹⁾ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

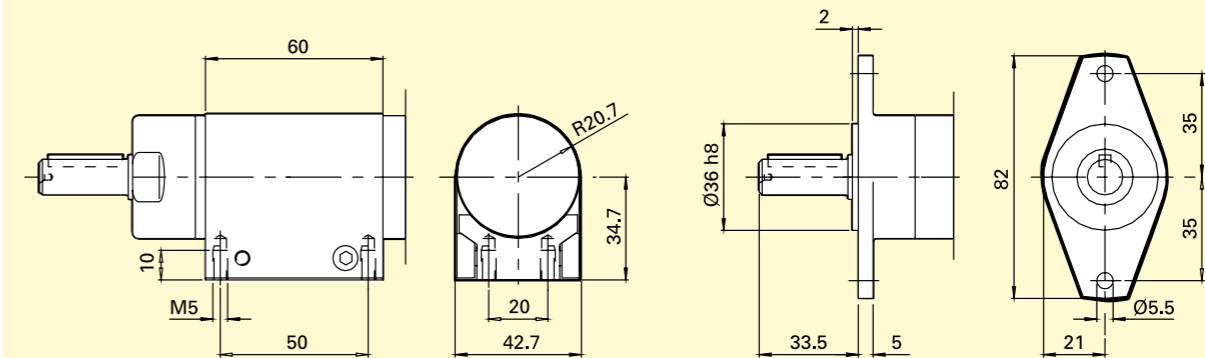
Dimensions (mm)

Conversion factor 1 mm = 0.04 inch



*) +34.5 mm for
LZB34-RL-A013, LZB34-RL-AR009
LZB34-RL-A007, LZB34-RL-AR005
LZB34-RL-A005, LZB34-RL-AR004

Optional mounting



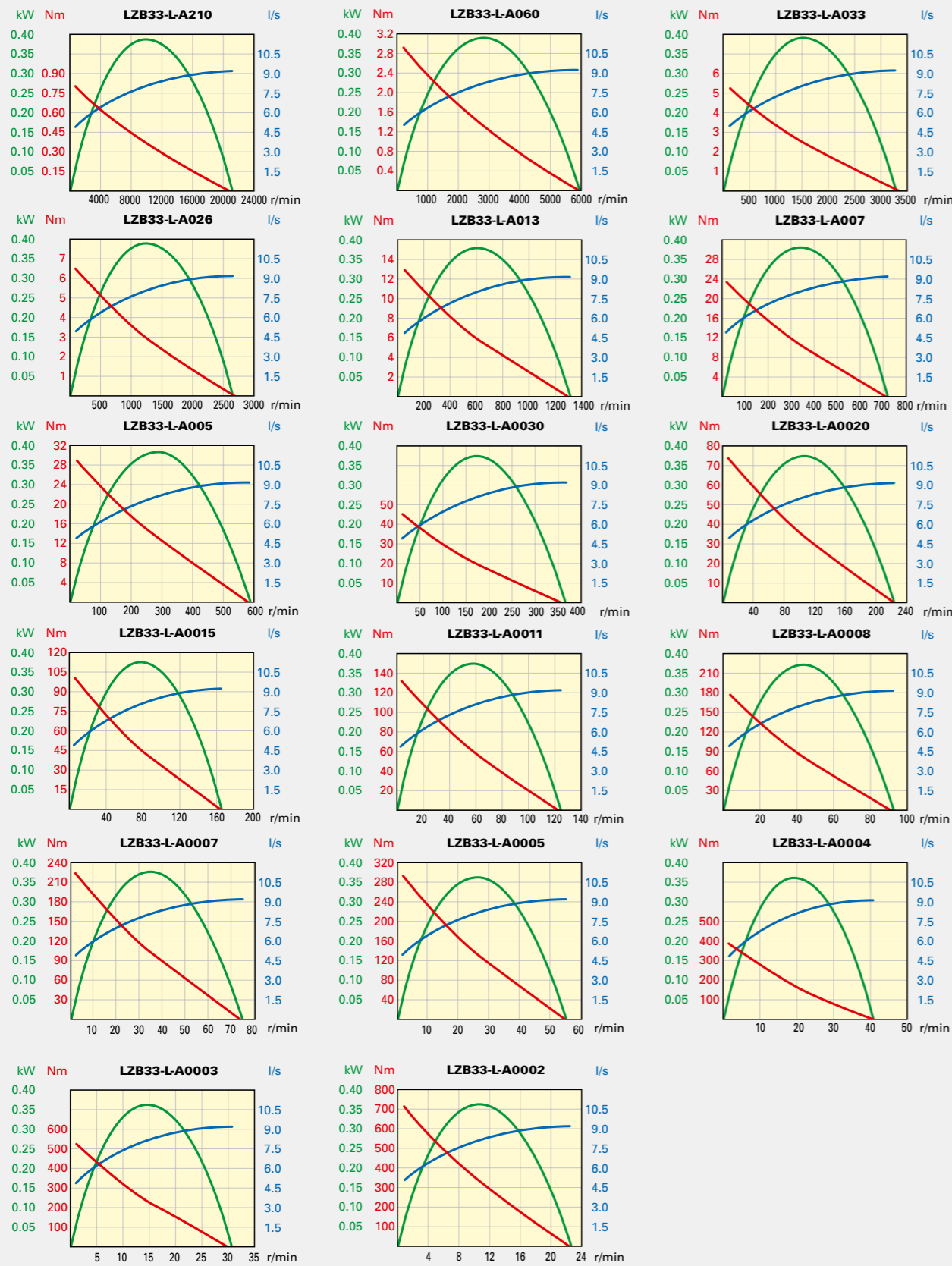
Foot
Ordering No. 4430 0855 80

Flange
Ordering No. 4430 0850 80

Optional accessories
pages 66-67.

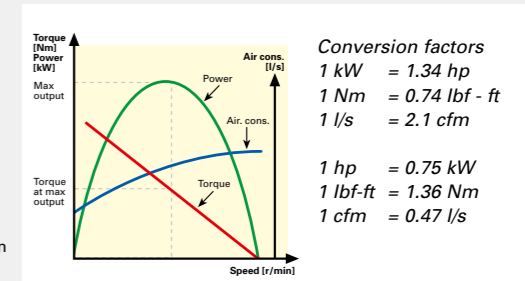
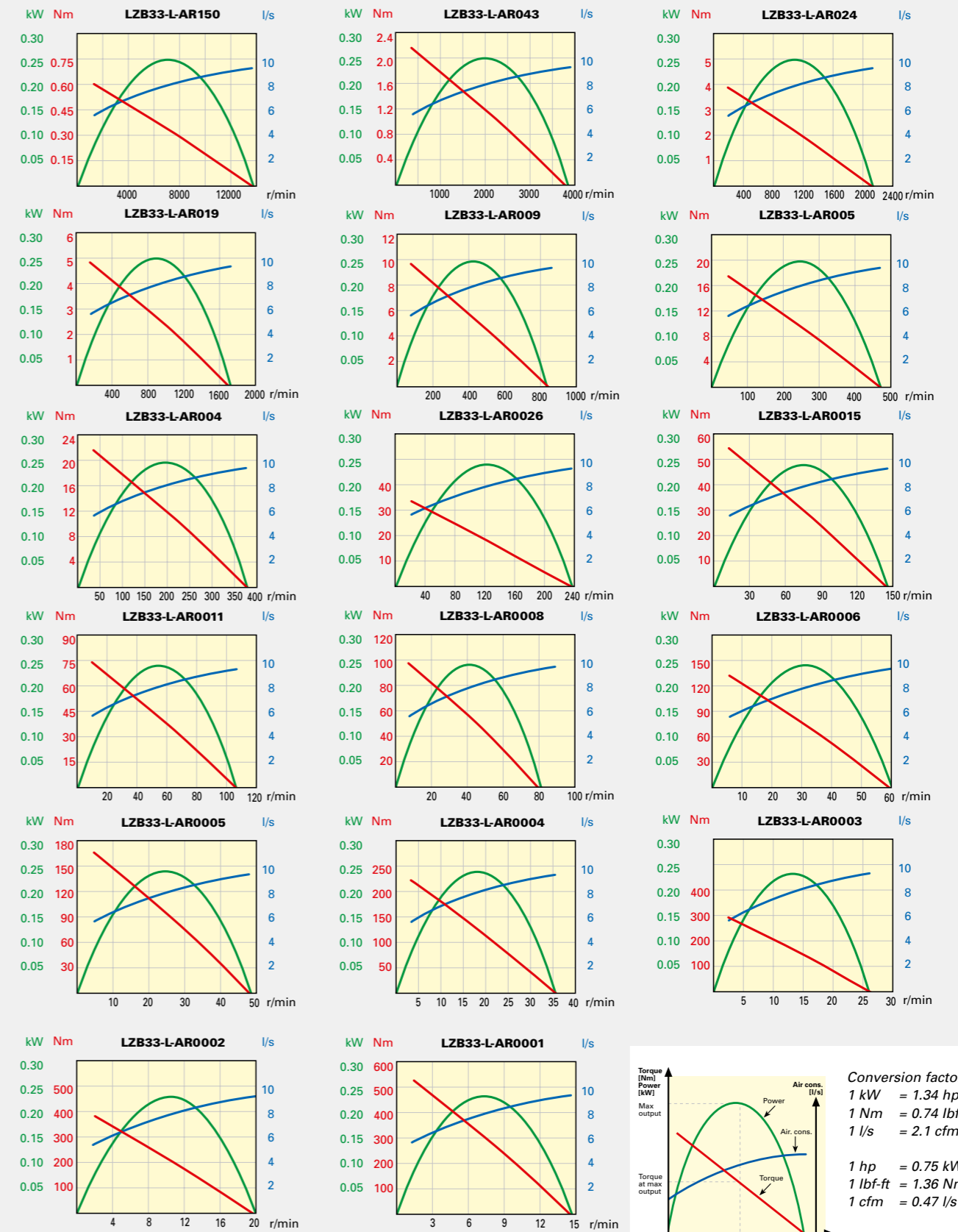
LZB33-L, LZB34-RL: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A and AV)



LZB33-L, LZB34-RL: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



For information about performance curves, see page 7.

VANE MOTORS LZB33-LR

Low speed, lubrication free and reversible
LZB34-RL-LR

Stainless steel, low speed, lubrication free
and reversible

Maximum permitted torque 14 Nm (10.3 lb_f-ft)

For applications where low speed and high torque are required LZB33 high torque/low speed motors should be considered, see page 36. Within their working range these motors have a very steep torque curve. Speed and air consumption are relatively constant regardless of the load.

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

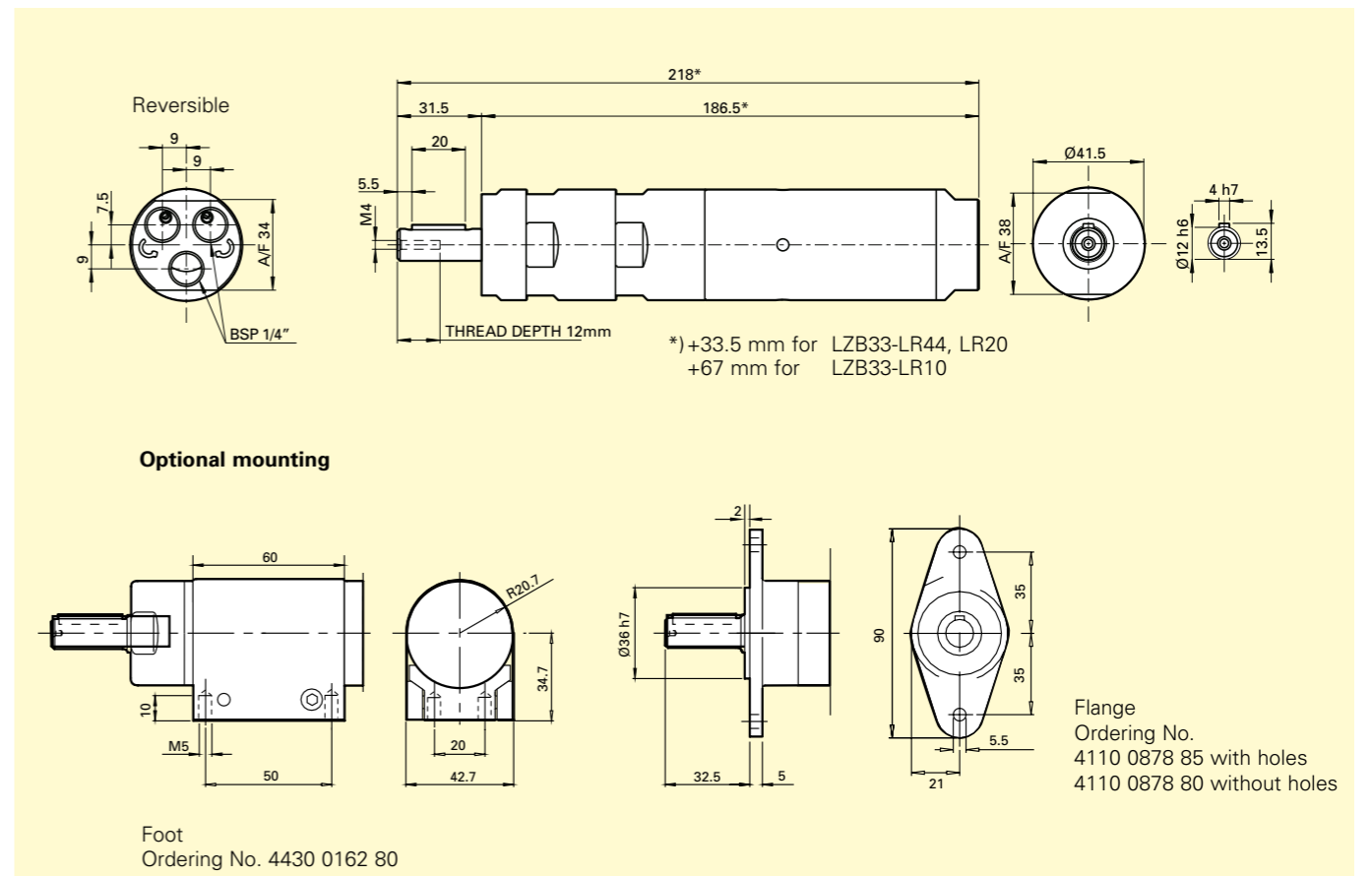
Model	Air consumption at max output			Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	Free speed	[l/s]	[cfm]	[kg]	[lb]			
Lubrication free								
Reversible (Keyed shaft)								
LZB33-L-LR200-11	180	9.9	21.0	1.25	2.78	c	Ex II 2GD c T6 IIC T85°C	8411 0308 62
LZB33-L-LR44-11	42	9.9	21.0	1.55	3.44	c	Ex II 2GD c T6 IIC T85°C	8411 0308 54
LZB33-L-LR20-11	18	9.9	21.0	1.55	3.44	c	Ex II 2GD c T6 IIC T85°C	8411 0308 47
LZB33-L-LR10-11	10	9.9	21.0	1.8	4.0	c	Ex II 2GD c T6 IIC T85°C	8411 0308 39
Lubrication free Stainless steel								
Reversible (Keyed shaft)								
LZB34-RL-LR200-11	180	9.9	21.0	1.45	3.2	c	Ex II 2GD c T6 IIC T85°C	8411 0343 44
LZB34-RL-LR44-11	42	9.9	21.0	1.75	3.86	c	Ex II 2GD c T6 IIC T85°C	8411 0343 51
LZB34-RL-LR20-11	18	9.9	21.0	1.75	3.86	c	Ex II 2GD c T6 IIC T85°C	8411 0343 69
LZB34-RL-LR10-11	10	9.9	21.0	2.0	4.4	c	Ex II 2GD c T6 IIC T85°C	8411 0343 77

¹⁾ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 10-20% at free speed.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

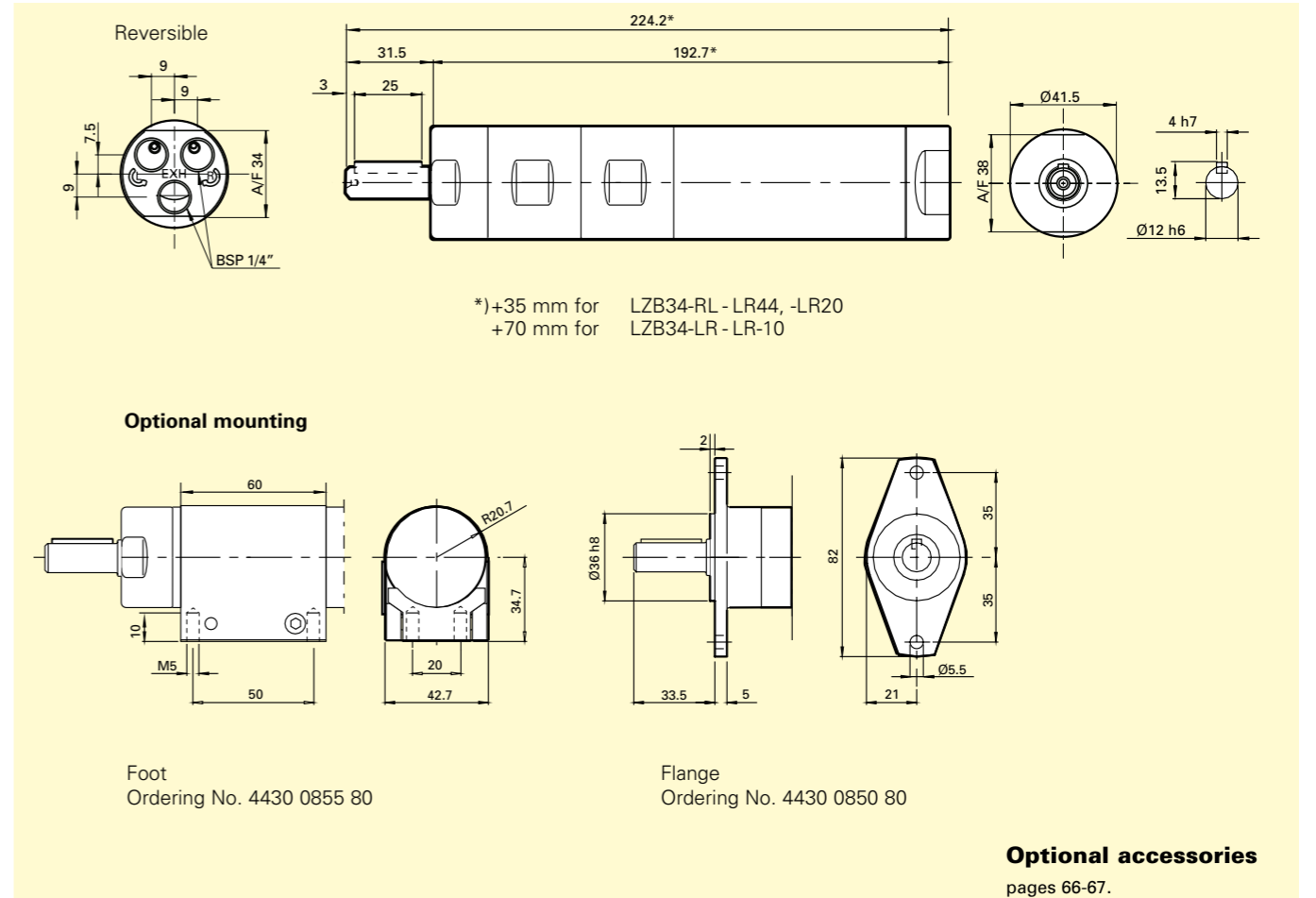
Dimensions LZB33-LR, LZB33-L-LR (mm)

Conversion factor 1 mm = 0.04 inch

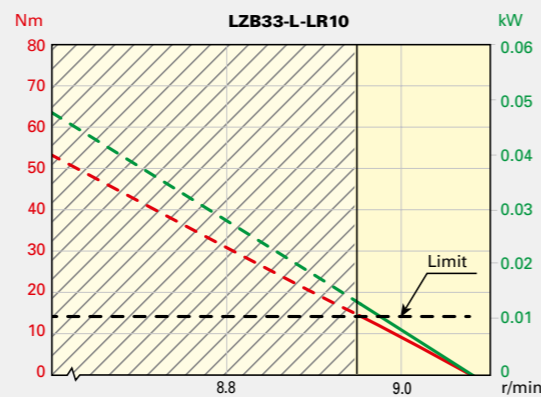
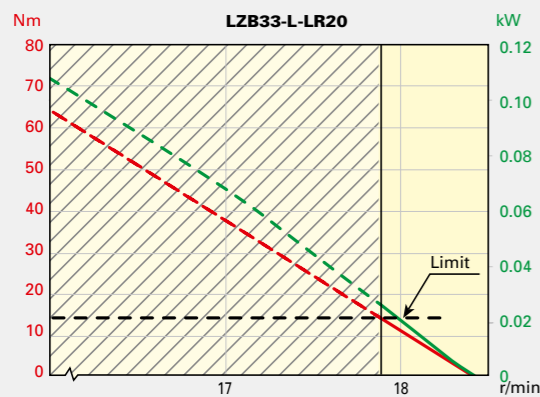
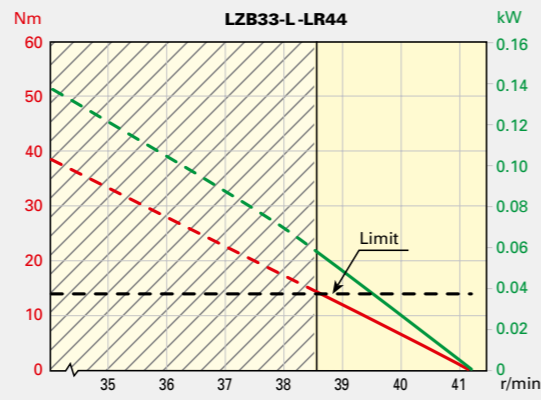
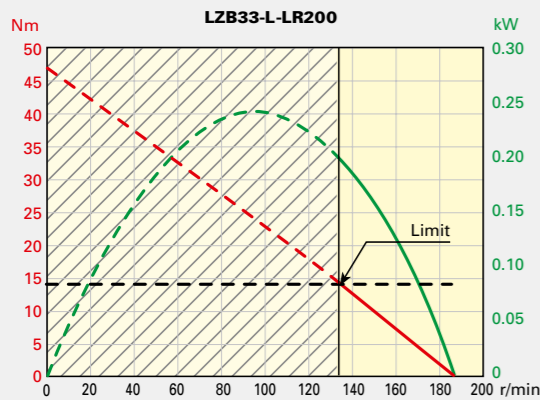


Dimensions LZB34-RL-LR

Conversion factor 1 mm = 0.04 inch



Optional accessories
pages 66-67.



VANE MOTORS LZB33-L

High torque and lubrication free

0.23 – 0.37 kW
0.31 – 0.50 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

Model	Max output		Speed at max output [r/min]	Torque at max output [Nm]	Torque at max output [lb-ft]	Min starting torque [Nm]	Min starting torque [lb-ft]	Stall torque [Nm]	Stall torque [lb-ft]	Free speed [r/min]	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	[kW]	[hp]									[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB33-L-A0020-11	0.37	0.50	100	36	27	66	49	72	53	210	8.1	17.2	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0322 07
LZB33-L-A0015-11	0.37	0.50	75	49	36	90	66	98	72	150	8.1	17.2	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0322 15
LZB33-L-A0011-11	0.37	0.50	55	65	48	118	87	130	96	115	8.1	17.2	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0322 23
LZB33-L-A0008-11	0.37	0.50	41	88	65	158	117	176	130	80	8.1	17.2	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0322 31
LZB33-L-A0007-11	0.37	0.50	33	110	81	200	148	220	162	70	8.1	17.2	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0322 49
LZB33-L-A0005-11	0.36	0.48	24	145	107	274	202	290	214	50	8.1	17.2	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0322 56
LZB33-L-A0004-11	0.36	0.48	18	195	144	360	266	390	288	38	8.1	17.2	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0322 64
LZB33-L-A0003-11	0.36	0.48	13	260	192	490	361	520	384	26	8.1	17.2	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0322 72
LZB33-L-A0002-11	0.36	0.48	10	349	257	680	502	698	515	20	8.1	17.2	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0322 80
Reversible (Keyed shaft)																	
LZB33-L-AR0015-11	0.24	0.32	75	31	23	41	30	62	46	140	7.9	16.8	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0323 06
LZB33-L-AR0011-11	0.24	0.32	55	42	31	56	41	84	62	100	7.9	16.8	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0323 14
LZB33-L-AR0008-11	0.24	0.32	41	56	41	74	55	112	83	75	7.9	16.8	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0323 22
LZB33-L-AR0006-11	0.24	0.32	31	75	55	100	74	150	111	60	7.9	16.8	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0323 30
LZB33-L-AR0005-11	0.24	0.32	25	93	69	125	92	186	137	45	7.9	16.8	2.6	5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0323 48
LZB33-L-AR0004-11	0.23	0.31	18	120	89	169	125	240	177	35	7.9	16.8	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0323 55
LZB33-L-AR0003-11	0.23	0.31	13	165	122	230	170	330	243	25	7.9	16.8	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0323 63
LZB33-L-AR0002-11	0.23	0.31	10	220	162	305	225	440	325	20	7.9	16.8	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0323 71
LZB33-L-AR0001-11	0.23	0.31	7	300	221	412	304	600	443	14	7.9	16.8	5.0	11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0323 89

¹⁾ For Shaft loading curves, see page 16.

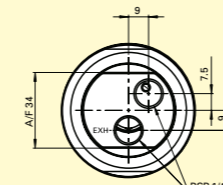
NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Dimensions (mm)

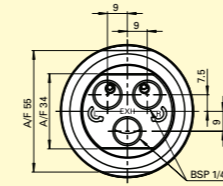
Conversion factor 1 mm = 0.04 inch

All versions

Clockwise



Reversible

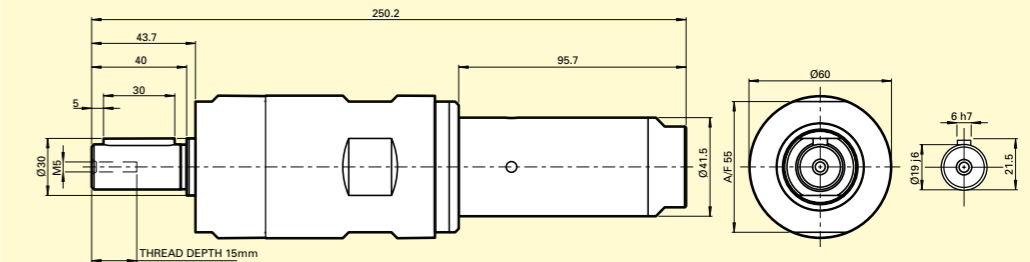


Clockwise

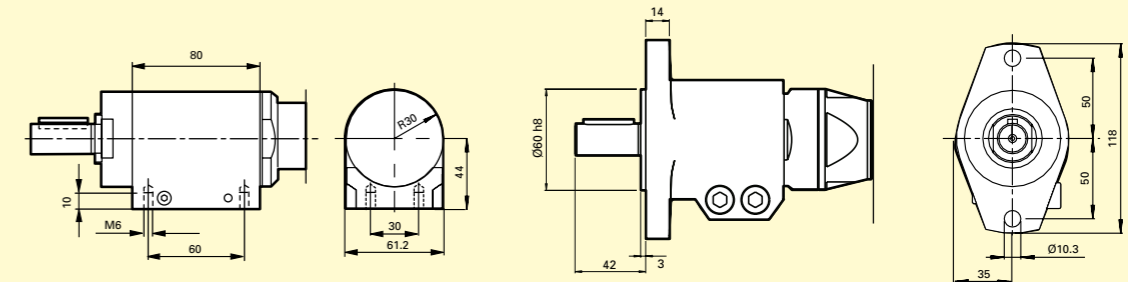
LZB33-L-A0020
LZB33-L-A0015
LZB33-L-A0011
LZB33-L-A0008
LZB33-L-A0007

Reversible

LZB33-L-AR0015
LZB33-L-AR0011
LZB33-L-AR0008
LZB33-L-AR0006
LZB33-L-AR0005



Optional mounting



Foot
Ordering No. 4430 0178 80

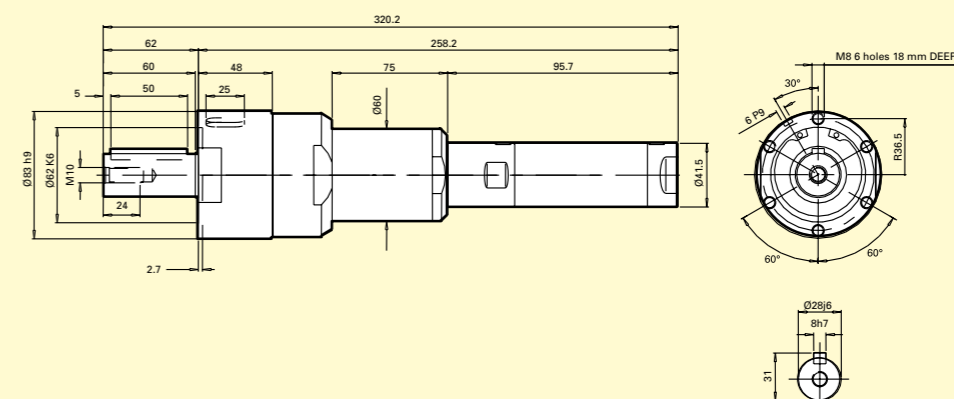
Flange
Ordering No. 4430 0569 84

Clockwise

LZB33-L-A0005
LZB33-L-A0004
LZB33-L-A0003
LZB33-L-A0002

Reversible

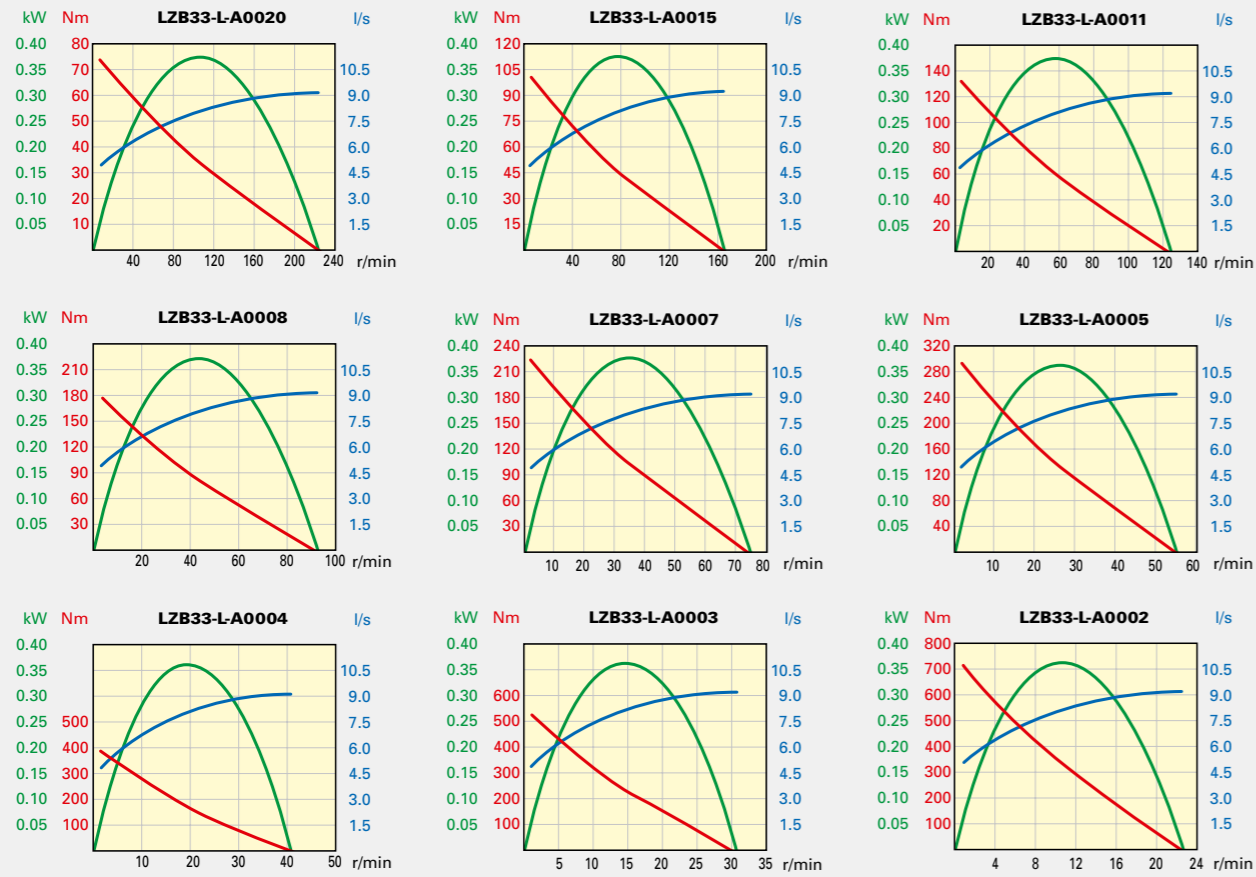
LZB33-L-AR0004
LZB33-L-AR0003
LZB33-L-AR0002
LZB33-L-AR0001



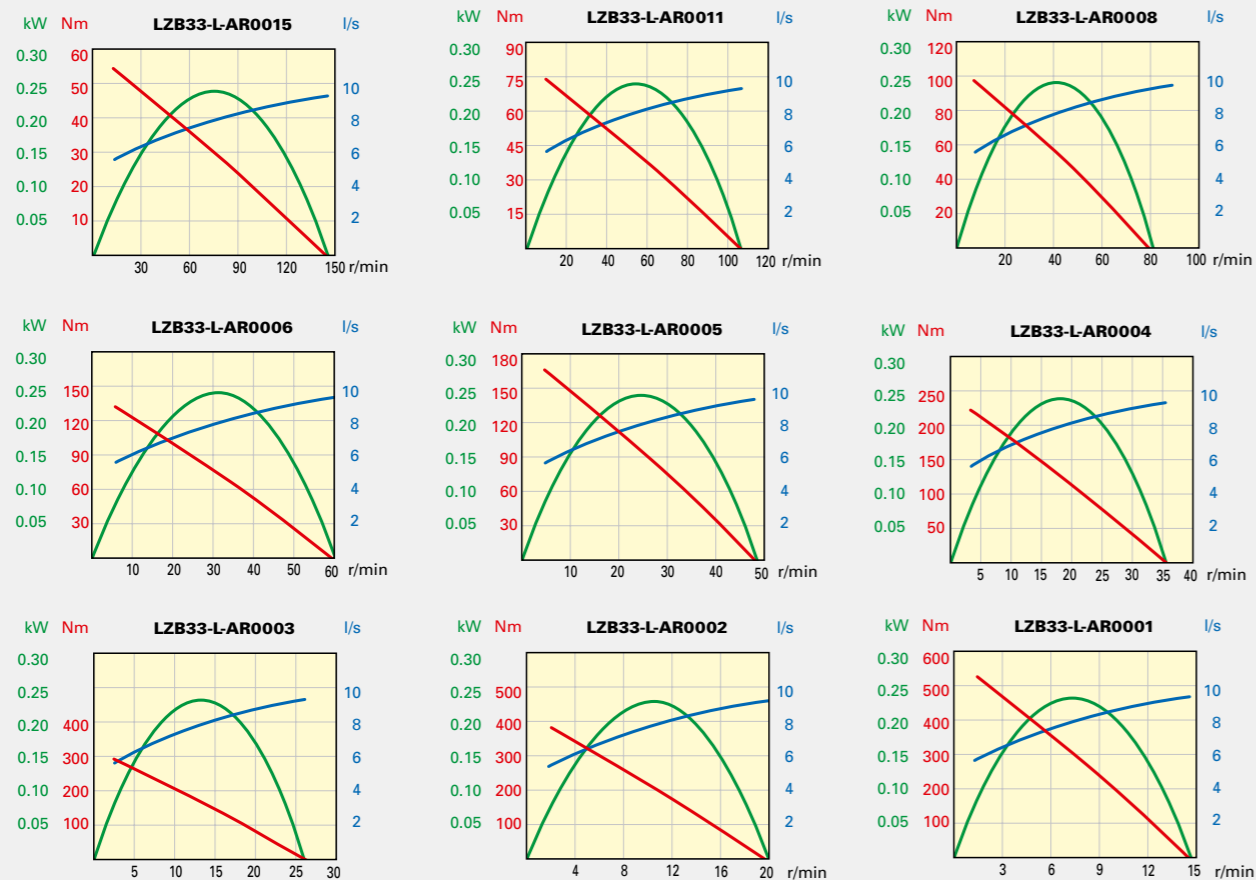
Optional accessories
pages 66-67.

LZB33-L high torque motors: Performance curves at 6.3 bar (91 psi)

Non-reversible (A)



Reversible (AR)



VANE MOTORS LZB33-LB

Brake module, lubrication free and reversible
LZB34-RLB

Stainless steel, brake module, lubrication free
and reversible

0.23 – 0.25 kW
0.31 – 0.34 hp

Braking torque from 0.55–520 Nm.
The brake is activated by spring force and released by air pressure.

EX certification valid for fixture mounted use only with a
maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



LZB VANE MOTORS

Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Braking torque	Braking torque	Free speed	Air consumption		Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.		
												[kW]	[hp]					[r/min]	[Nm]
Reversible (Keyed shaft)																			
LZB33-LB-AR150-11	0.25	0.34	7000	0.34	0.25	0.46	0.34	0.68	0.5	0.55	0.4	13300	7.9	16.8	1.35	2.97	c	Ex II 2GD c T4 IIC T110°C	8411 0340 05
LZB33-LB-AR043-11	0.25	0.34	1960	1.2	0.89	1.6	1.2	2.4	1.8	2.0	1.5	3800	7.9	16.8	1.35	2.97	c	Ex II 2GD c T6 IIC T85°C	8411 0340 13
LZB33-LB-AR024-11	0.25	0.34	1090	2.2	1.6	3.0	2.2	4.4	3.2	3.5	2.6	2000	7.9	16.8	1.35	2.97	c	Ex II 2GD c T6 IIC T85°C	8411 0340 21
LZB33-LB-AR019-11	0.25	0.34	880	2.7	2.0	3.7	2.7	5.4	4.0	4.4	3.2	1700	7.9	16.8	1.35	2.97	c	Ex II 2GD c T6 IIC T85°C	8411 0340 39
LZB33-LB-AR009-11	0.25	0.34	430	5.4	4.0	7.0	5.2	10.8	8.0	8.9	6.6	800	7.9	16.8	1.63	3.59	c	Ex II 2GD c T6 IIC T85°C	8411 0340 47
LZB33-LB-AR005-11	0.25	0.34	240	9.8	7.2	12.6	9.3	19.6	14.5	16	12	450	7.9	16.8	1.63	3.59	c	Ex II 2GD c T6 IIC T85°C	8411 0340 54
LZB33-LB-AR004-11	0.25	0.34	190	12.1	8.9	15.6	11.5	24	17.8	20	15	360	7.9	16.8	1.63	3.59	c	Ex II 2GD c T6 IIC T85°C	8411 0340 62
LZB33-LB-AR0026-11	0.24	0.32	120	19	14	20	14.8	38	28	32	24	230	7.9	16.8	2.1	4.6	d	Ex II 2GD c T6 IIC T85°C	8411 0340 70
LZB33-LB-AR0015-11	0.24	0.32	75	31	23	41	30	62	46	52	38	140	7.9	16.8	3.2	7.0	g	Ex II 2GD c T6 IIC T85°C	8411 0340 88
LZB33-LB-AR0011-11	0.24	0.32	55	42	31	56	41	84	62	71	52	100	7.9	16.8	3.2	7.0	g	Ex II 2GD c T6 IIC T85°C	8411 0340 96
LZB33-LB-AR0008-11	0.24	0.32	41	56	41	74	55	112	83	93	67	75	7.9	16.8	3.2	7.0	g	Ex II 2GD c T6 IIC T85°C	8411 0341 04
LZB33-LB-AR0006-11	0.24	0.32	31	75	55	100	74	150	111	130	95	60	7.9	16.8	3.2	7.0	g	Ex II 2GD c T6 IIC T85°C	8411 0341 12
LZB33-LB-AR0005-11	0.24	0.32	25	93	69	125	92	186	137	160	120	45	7.9	16.8	3.2	7.0	g	Ex II 2GD c T6 IIC T85°C	8411 0341 20
LZB33-LB-AR0004-11	0.23	0.31	18	120	89	169	125	240	177	210	160	35	7.9	16.8	5.6	12.3	h	Ex II 2GD c T6 IIC T85°C	8411 0341 38
LZB33-LB-AR0003-11	0.23	0.31	13	165	122	230	170	330	243	290	210	25	7.9	16.8	5.6	12.3	h	Ex II 2GD c T6 IIC T85°C	8411 0341 46
LZB33-LB-AR0002-11	0.23	0.31	10	220	162	305	225	440	325	380	280	20	7.9	16.8	5.6	12.3	h	Ex II 2GD c T6 IIC T85°C	8411 0341 53
LZB33-LB-AR0001-11	0.23	0.31	7	300	221	412	304	600	443	520	380	14	7.9	16.8	5.6	12.3	h	Ex II 2GD c T6 IIC T85°C	8411 0341 61

¹⁾ For Shaft loading curves, see page 16.

The brake needs minimum 3 bar to release. Performance curves same as standard motors, see page 33 and 38.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.

- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Braking torque	Braking torque	Free speed	Air consumption		Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.		
												[kW]	[hp]					[r/min]	[Nm]
Stainless steel																			
Lubrication free																			
Reversible (Keyed shaft)																			
LZB34-RLB-AR150-11	0.25	0.34	7000	0.34	0.25	0.46	0.34	0.68	0.5	0.55	0.4	13300	7.9	16.8	1.39	3.06	c	Ex II 2GD c T4 IIC T110°C	8411 0341 79
LZB34-RLB-AR043-11	0.25	0.34	1960	1.2	0.89	1.6	1.2	2.4	1.8	2.0	1.5	3800	7.9	16.8	1.39	3.06	c	Ex II 2GD c T6 IIC T85°C	8411 0341 87
LZB34-RLB-AR024-11	0.25	0.34	1090	2.2	1.6	3.0	2.2	4.4	3.2	3.5	2.6	2000	7.9	16.8	1.39	3.06	c	Ex II 2GD c T6 IIC T85°C	8411 0341 95
LZB34-RLB-AR019-11	0.25	0.34	880	2.7	2.0	3.7	2.7	5.4	4.0	4.4	3.2	1700	7.9	16.8	1.39	3.06	c	Ex II 2GD c T6 IIC T85°C	8411 0342 03
LZB34-RLB-AR009-11	0.25	0.34	430	5.4	4.0	7.0	5.2	10.8	8.0	9.0	6.6	800	7.9	16.8	1.66	3.66	c	Ex II 2GD c T6 IIC T85°C	8411 0342 11
LZB34-RLB-AR005-11	0.25	0.34	240	9.8	7.2	12.6	9.3	19.6	14.5	16	12	450	7.9	16.8	1.66	3.66	c	Ex II 2GD c T6 IIC T85°C	8411 0342 29
LZB34-RLB-AR004-11	0.25	0.34	190	12.1	8.9	15.6	11.5	24	17.7	20	15	360	7.9	16.8	1.66	3.66	c	Ex II 2GD c T6 IIC T85°C	8411 0342 37

¹⁾ For Shaft loading curves, see page 16.

The brake needs minimum 3 bar to release. Performance curves same as standard motors, see page 33 and 38.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.

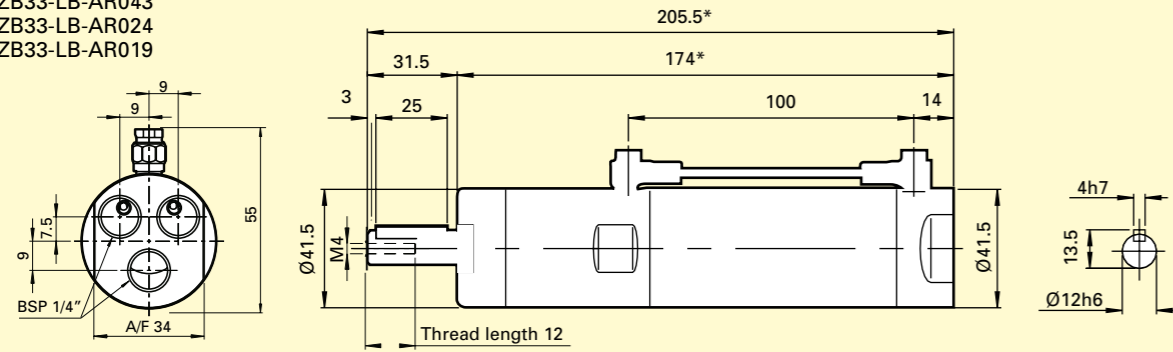
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

Dimensions (mm)

Conversion factor 1 mm = 0.04 inch

Reversible with brake

LZB33-LB-AR150
LZB33-LB-AR043
LZB33-LB-AR024
LZB33-LB-AR019

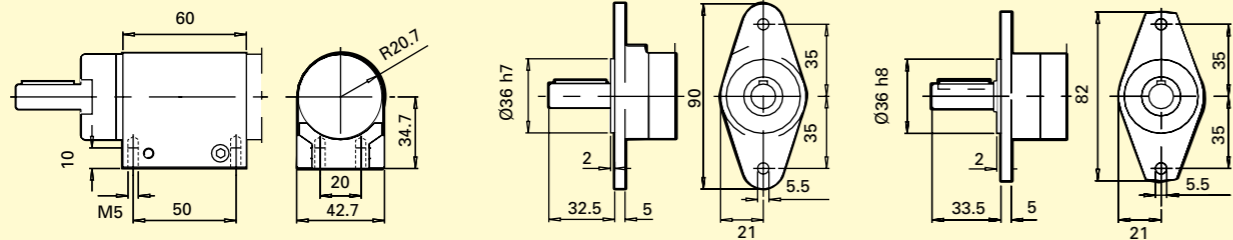


*) +4 mm for LZB34-RLB-AR150
LZB34-RLB-AR043
LZB34-RLB-AR024
LZB34-RLB-AR019

*) +34 mm for LZB33-LB-AR009
LZB33-LB-AR005
LZB33-LB-AR004

*) +39 mm for LZB34-RLB-AR009
LZB34-RLB-AR005
LZB34-RLB-AR004

Optional mounting



Foot
Ordering No. 4430 0162 80

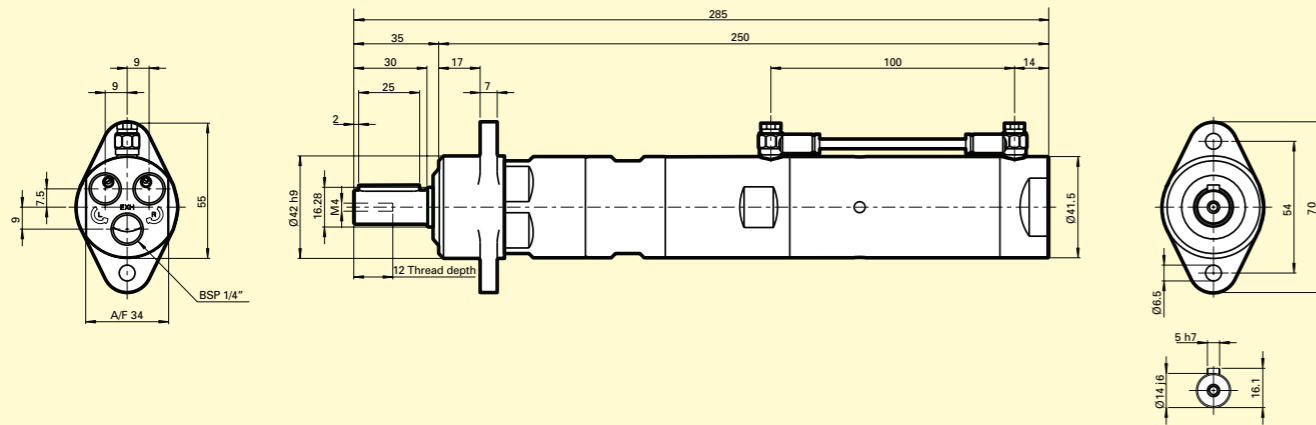
Stainless foot
Ordering No. 4430 0855 80

LZB33-LB, Flange
Ordering No.
4110 0878 85 with holes
4110 0878 80 without holes

LZB34-RLB, Stainless flange
Ordering No. 4430 0850 80

Reversible with brake

LZB33-LB-AR0026



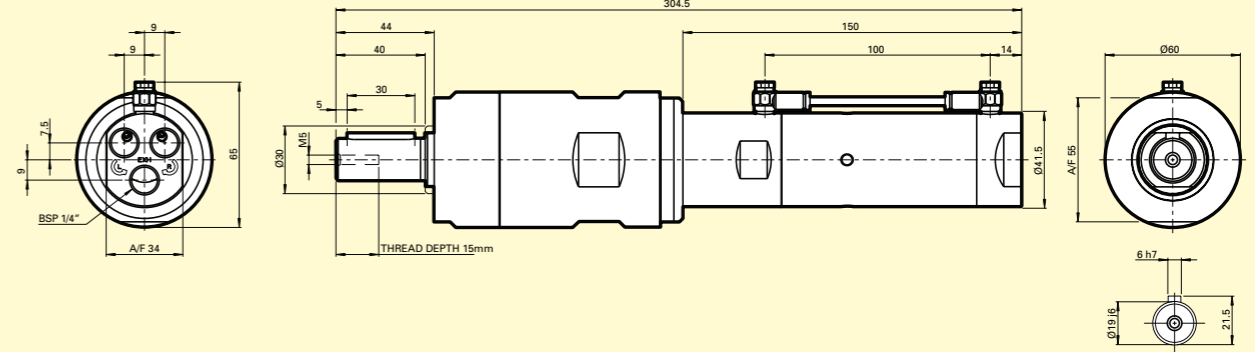
Optional accessories
pages 66-67.

Dimensions (mm)

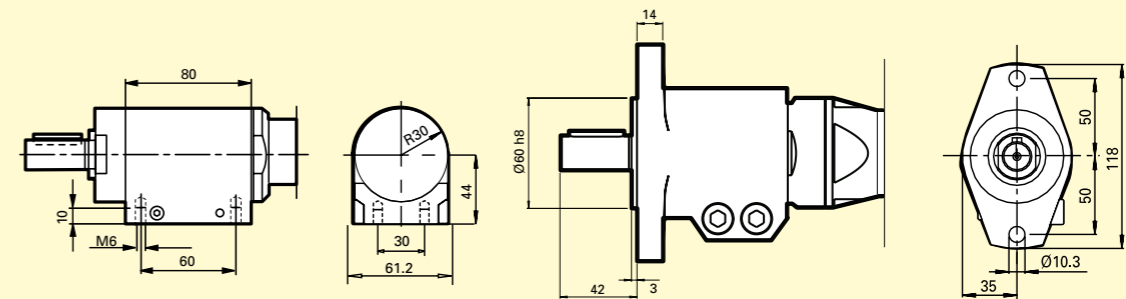
Conversion factor 1 mm = 0.04 inch

Reversible with brake

LZB33-LB-AR0015
LZB33-LB-AR0011
LZB33-LB-AR0008
LZB33-LB-AR0006



Optional mounting

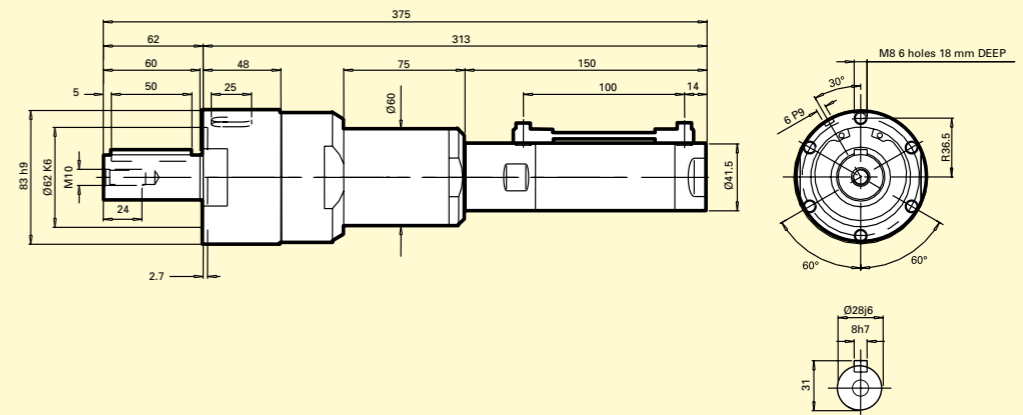


Foot
Ordering No. 4430 0178 80

Flange
Ordering No. 4430 0569 84

Reversible with brake

LZB33-LB-AR0004
LZB33-LB-AR0003
LZB33-LB-AR0002
LZB33-LB-AR0001



Optional accessories
pages 66-67.

VANE MOTORS LZB42

0.50 – 0.71 kW
0.67 – 0.95 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

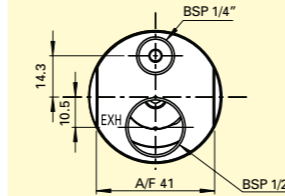
Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.
Lubricated	[kW] [hp]	[r/min]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[r/min]	[l/s] [cfm]	[kg] [lb]			
Clockwise rotation (Keyed shaft)														
LZB42-A200-11	0.71 0.95	10000	0.68 0.5	1.09 0.8	1.4 1.0	19000	13.0 28.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0420 08			
LZB42-A065-11	0.71 0.95	3100	2.2 1.6	3.5 2.6	4.4 3.2	6100	13.0 28.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0420 16			
LZB42-A040-11	0.71 0.95	1960	3.5 2.6	5.6 4.1	7.0 5.2	3800	13.0 28.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0420 24			
LZB42-A025-11	0.71 0.95	1180	5.8 4.3	9.3 6.9	11.6 8.6	2200	13.0 28.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0420 32			
LZB42-A015-11	0.70 0.94	690	9.7 7.2	15.5 11.4	19.4 14.3	1300	13.0 28.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0420 40			
LZB42-A010-11	0.70 0.94	440	15.1 11.1	24 18	30 22	850	13.0 28.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0420 57			
LZB42-A005-11	0.70 0.94	260	25 18.4	40 30	50 37	500	13.0 28.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0420 65			
LZB42-A0030-11	0.68 0.91	150	44 32	70 52	88 65	270	13.0 28.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0420 73			
LZB42-A0020-11	0.68 0.91	95	69 51	110 81	138 102	180	13.0 28.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0420 81			
LZB42-A0012-11	0.68 0.91	55	114 84	182 134	228 168	105	13.0 28.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0420 99			
LZB42-A0008-11	0.66 0.89	37	173 128	277 204	346 255	70	13.0 28.0	4.9 10.7	h	Ex II 2GD c T6 IIC T85°C	8411 0421 07			
LZB42-A0005-11	0.66 0.89	23	272 201	435 321	544 401	42	13.0 28.0	4.9 10.7	h	Ex II 2GD c T6 IIC T85°C	8411 0421 15			
Reversible (Keyed shaft)														
LZB42-AR170-11	0.53 0.71	8000	0.63 0.46	0.85 0.63	1.3 1.0	14200	12.5 27.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0423 05			
LZB42-AR050-11	0.53 0.71	2500	2.0 1.5	2.7 2.0	4.0 3.0	4500	12.5 27.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0423 13			
LZB42-AR030-11	0.53 0.71	1570	3.2 2.4	4.3 3.2	6.4 4.7	2800	12.5 27.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0423 21			
LZB42-AR020-11	0.53 0.71	940	5.4 4.0	7.3 5.4	10.8 8.0	1700	12.5 27.0	1.2 2.65	e	Ex II 2GD c T4 IIC T110°C	8411 0423 39			
LZB42-AR010-11	0.52 0.70	550	9.0 6.6	12.2 9.0	18 13.3	980	12.5 27.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0423 47			
LZB42-AR007-11	0.52 0.70	350	14 10.3	18.9 13.9	28 21	640	12.5 27.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0423 54			
LZB42-AR004-11	0.52 0.70	210	23 17	31 23	46 34	375	12.5 27.0	1.25 2.75	e	Ex II 2GD c T6 IIC T85°C	8411 0423 62			
LZB42-AR0025-11	0.51 0.68	120	41 30	55 41	82 60	210	12.5 27.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0423 70			
LZB42-AR0015-11	0.51 0.68	75	64 47	86 63	128 94	140	12.5 27.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0423 88			
LZB42-AR0010-11	0.51 0.68	46	106 78	143 105	212 156	80	12.5 27.0	2.7 5.8	g	Ex II 2GD c T6 IIC T85°C	8411 0423 96			
LZB42-AR0006-11	0.50 0.67	29	162 119	219 162	324 239	50	12.5 27.0	4.9 10.7	h	Ex II 2GD c T6 IIC T85°C	8411 0424 04			
LZB42-AR0004-11	0.50 0.67	19	255 188	344 254	510 376	33	12.5 27.0	4.9 10.7	h	Ex II 2GD c T6 IIC T85°C	8411 0424 12			

¹⁾ For Shaft loading curves, see page 16.

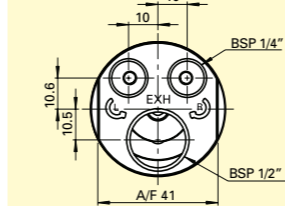
Dimensions (mm)

All versions

Clockwise

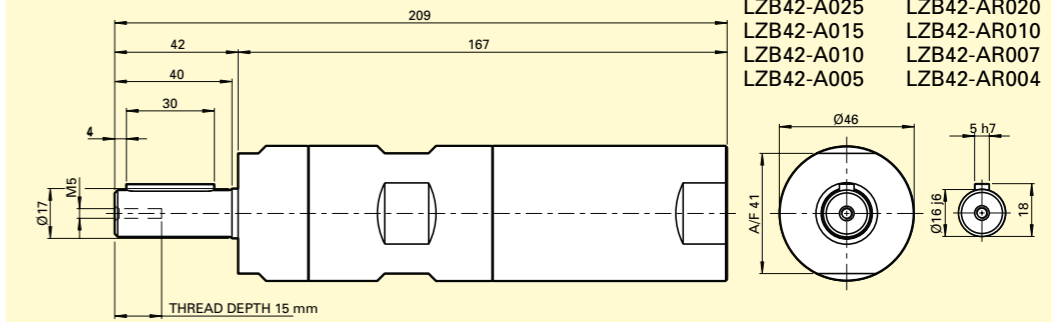


Reversible

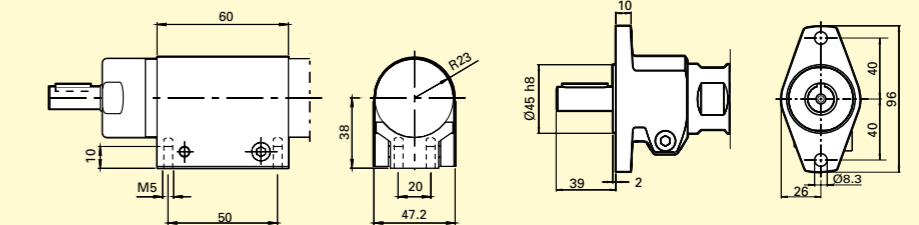


Conversion factor 1 mm = 0.04 inch

Clockwise	Reversible
LZB42-A200	LZB42-AR170
LZB42-A065	LZB42-AR050
LZB42-A040	LZB42-AR030
LZB42-A025	LZB42-AR020
LZB42-A015	LZB42-AR010
LZB42-A010	LZB42-AR007
LZB42-A005	LZB42-AR004



Optional mountings



Foot Ordering No. 4430 0575 80

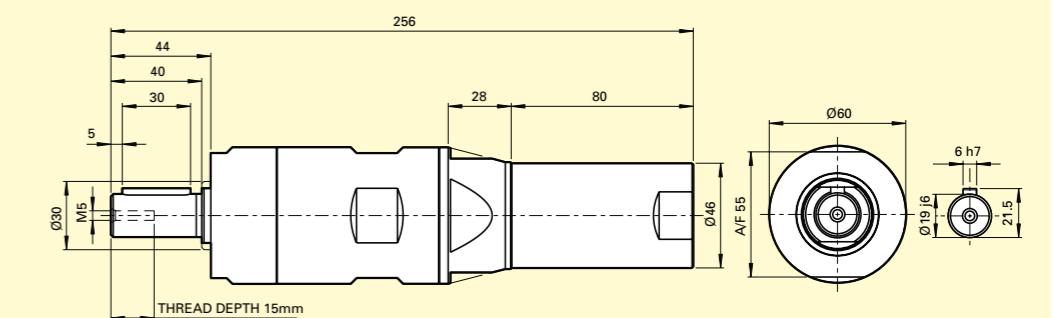
Flange Ordering No. 4430 0490 81

Clockwise

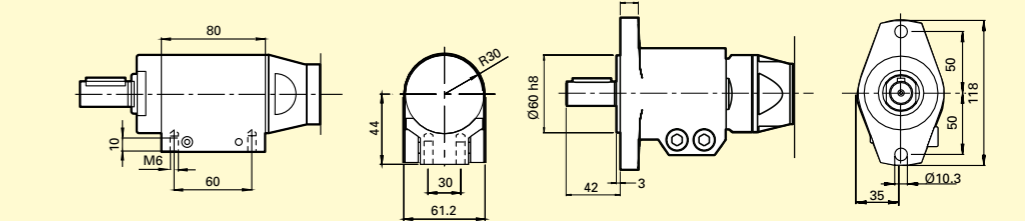
LZB42-A0030
LZB42-A0020
LZB42-A0012

Reversible

LZB42-AR0025
LZB42-AR0015
LZB42-AR0010



Optional mountings



Foot Ordering No. 4430 0178 80

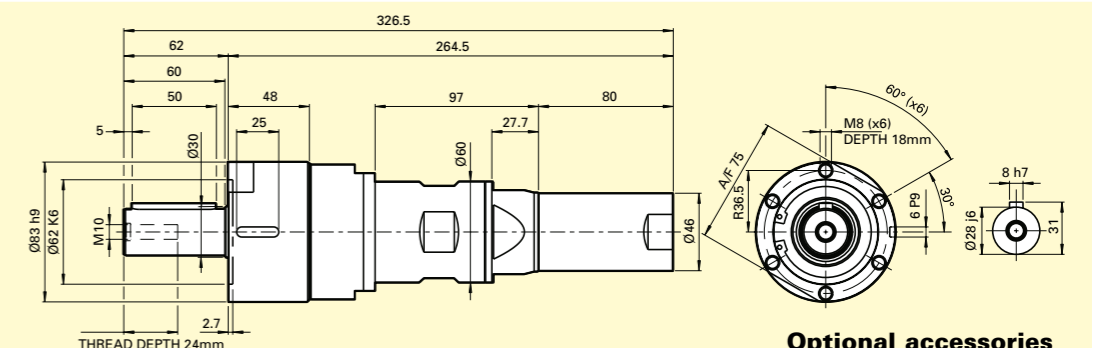
Flange Ordering No. 4430 0569 84

Clockwise

LZB42-A0008
LZB42-A0005

Reversible

LZB42-AR0006
LZB42-AR0004

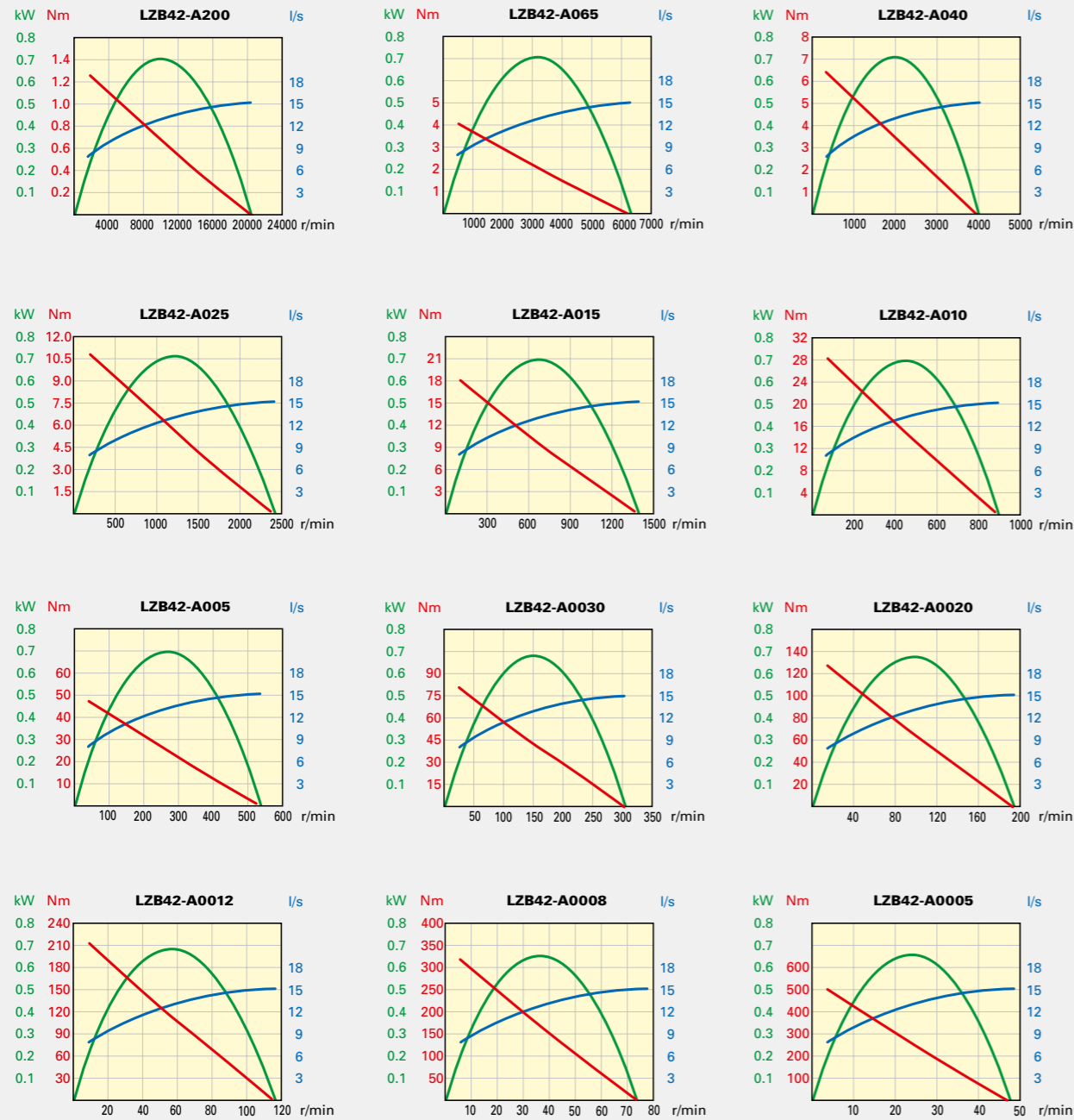


Optional accessories

pages 66-67.

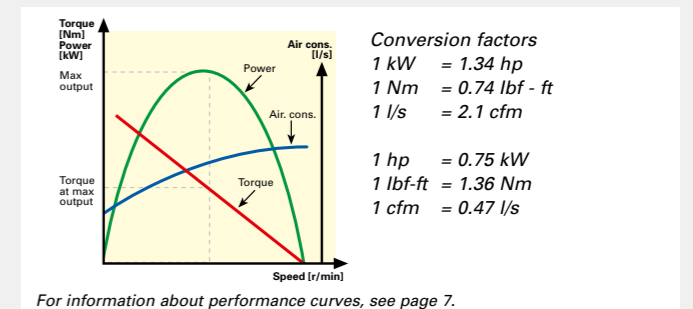
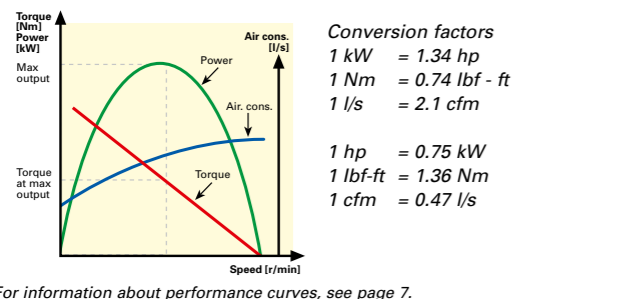
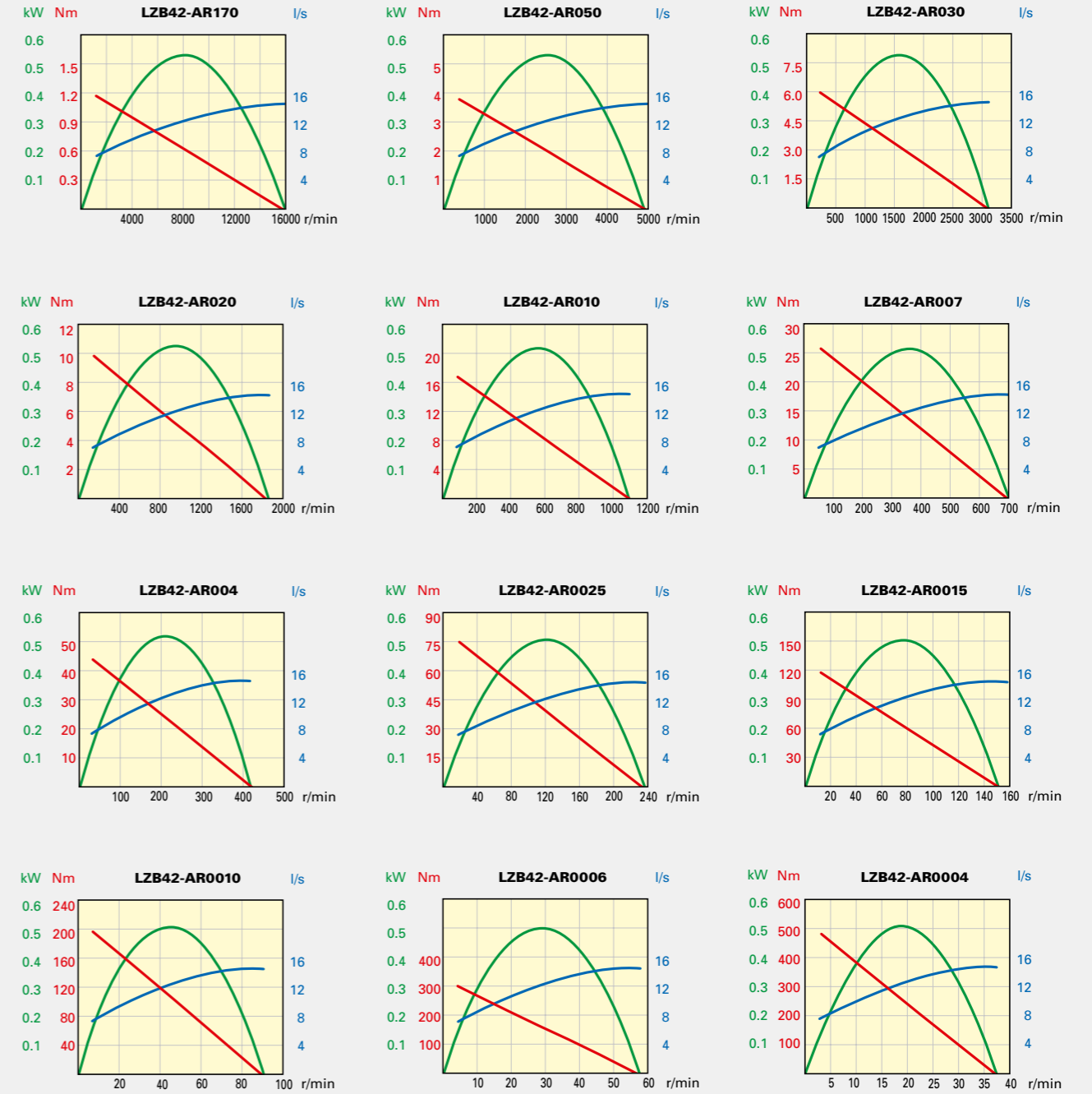
LZB42: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A)



LZB42: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



VANE MOTORS LZB46-RL

Stainless steel and lubrication free

0.60 – 0.84 kW
0.80 – 1.13 hp

Material in parts:

- Casing and front part stainless steel: ISO 683/XIII Type 17, SS 14 2346, DIN 17440 X12CrNiS188
- Outgoing shaft and gear rim stainless steel: ISO 683/XIII Type 9b, SS 14 2321, DIN 17440 X22CrNi17

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Air consumption at max output	Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.		
Lubrication free	[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB46-RL-A200-11	0.84	1.13	10800	0.74	0.55	1.2	0.89	1.48	1.09	20000	16.2	34.4	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 15
LZB46-RL-A065-11	0.84	1.13	3300	2.4	1.8	3.9	2.9	4.8	3.5	6300	16.2	34.4	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 23
LZB46-RL-A040-11	0.84	1.13	2100	3.8	2.8	6.1	4.5	7.6	5.6	4000	16.2	34.4	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 31
LZB46-RL-A025-11	0.84	1.13	1270	6.3	4.6	10	7.4	12.6	9.3	2400	16.2	34.4	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 49
LZB46-RL-A015-11	0.82	1.10	740	10.5	7.7	17	12.5	21	15.5	1400	16.2	34.4	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0470 82
LZB46-RL-A010-11	0.82	1.10	480	16.5	12.2	26	19.2	33	24.3	900	16.2	34.4	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0471 08
LZB46-RL-A005-11	0.82	1.10	280	27	20	44	32	55	41	540	16.2	34.4	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0471 16
LZB46-RL-A0030-11	0.81	1.09	160	48	35	77	57	95	70	300	16.2	34.4	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0471 24
LZB46-RL-A0020-11	0.81	1.09	105	75	55	121	89	149	110	200	16.2	34.4	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0471 32
LZB46-RL-A0012-11	0.81	1.09	62	124	91	201	148	248	183	115	16.2	34.4	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0471 40
Reversible (Keyed shaft)																	
LZB46-RL-AR170-11	0.63	0.84	8500	0.71	0.52	0.96	0.71	1.42	1.0	15800	14.0	29.7	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 56
LZB46-RL-AR050-11	0.63	0.84	2600	2.3	1.7	3.1	2.3	4.6	3.4	5000	14.0	29.7	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 64
LZB46-RL-AR030-11	0.63	0.84	1670	3.6	2.7	4.9	3.6	7.2	5.3	3200	14.0	29.7	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 72
LZB46-RL-AR020-11	0.63	0.84	1000	6.0	4.4	8.1	6.0	12	8.9	1900	14.0	29.7	1.8	4.0	e	Ex II 2GD c T4 IIC T110 °C	8411 0472 80
LZB46-RL-AR010-11	0.62	0.83	590	10.1	7.4	13.5	10	20	14.9	1100	14.0	29.7	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0471 57
LZB46-RL-AR007-11	0.62	0.83	370	15.8	11.7	21	15.5	32	23.3	700	14.0	29.7	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0471 65
LZB46-RL-AR004-11	0.62	0.83	220	26	19.5	35	26	53	39	420	14.0	29.7	1.9	4.2	e	Ex II 2GD c T4 IIC T110°C	8411 0471 73
LZB46-RL-AR0025-11	0.60	0.80	125	46	34	61	45	91	67	230	14.0	29.7	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0471 81
LZB46-RL-AR0015-11	0.60	0.80	80	72	53	96	71	143	105	150	14.0	29.7	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0471 99
LZB46-RL-AR0010-11	0.60	0.80	49	119	88	161	119	238	175	90	14.0	29.7	3.8	8.4	g	Ex II 2GD c T6 IIC T85°C	8411 0472 07

¹⁾ For Shaft loading curves, see page 16.

NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

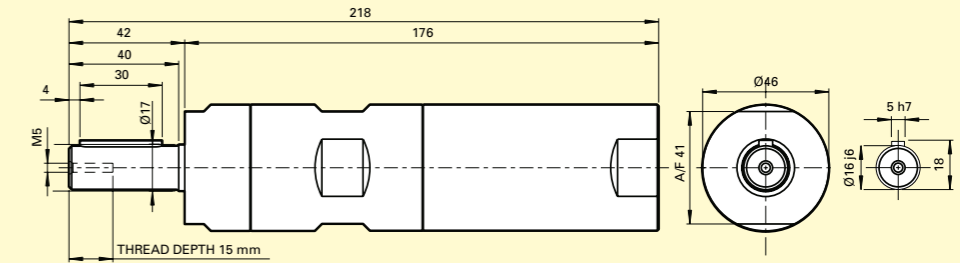
Dimensions (mm)

Conversion factor 1 mm = 0.04 inch

Clockwise

- LZB46-RL-A200
- LZB46-RL-A065
- LZB46-RL-A040
- LZB46-RL-A025
- LZB46-RL-A015
- LZB46-RL-A010
- LZB46-RL-A005

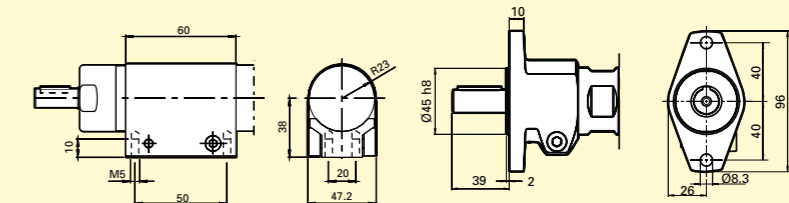
Keyed shaft (-11)



Reversible

- LZB46-RL-AR170
- LZB46-RL-AR050
- LZB46-RL-AR030
- LZB46-RL-AR020
- LZB46-RL-AR010
- LZB46-RL-AR007
- LZB46-RL-AR004

Optional mountings

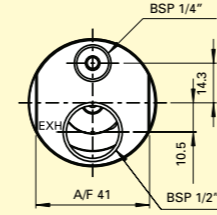


Foot Ordering No. 4430 0575 81

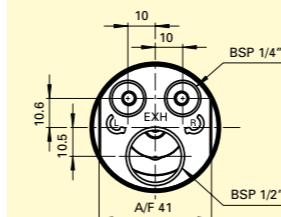
Flange Ordering No. 4430 0490 81

All versions

Clockwise/
Anti-clockwise



Reversible



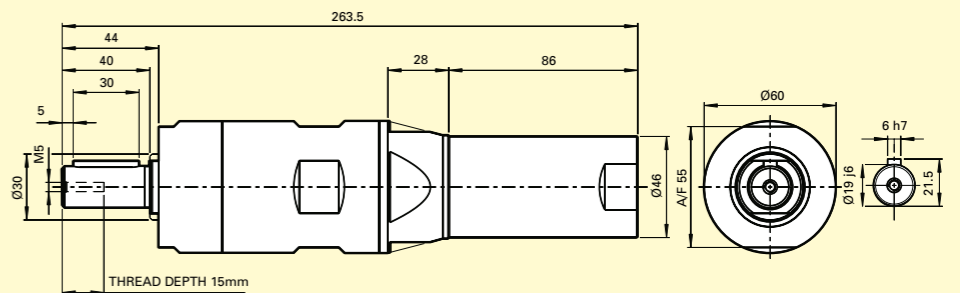
Keyed shaft (-11)

Clockwise

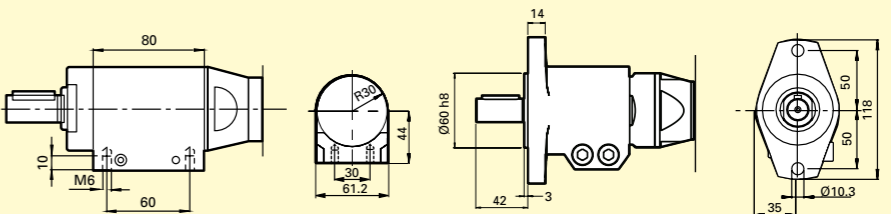
- LZB46-RL-A0030
- LZB46-RL-A0020
- LZB46-RL-A0012

Reversible

- LZB46-RL-AR0025
- LZB46-RL-AR0015
- LZB46-RL-AR0010



Optional mountings



Foot Ordering No. 4430 0178 81

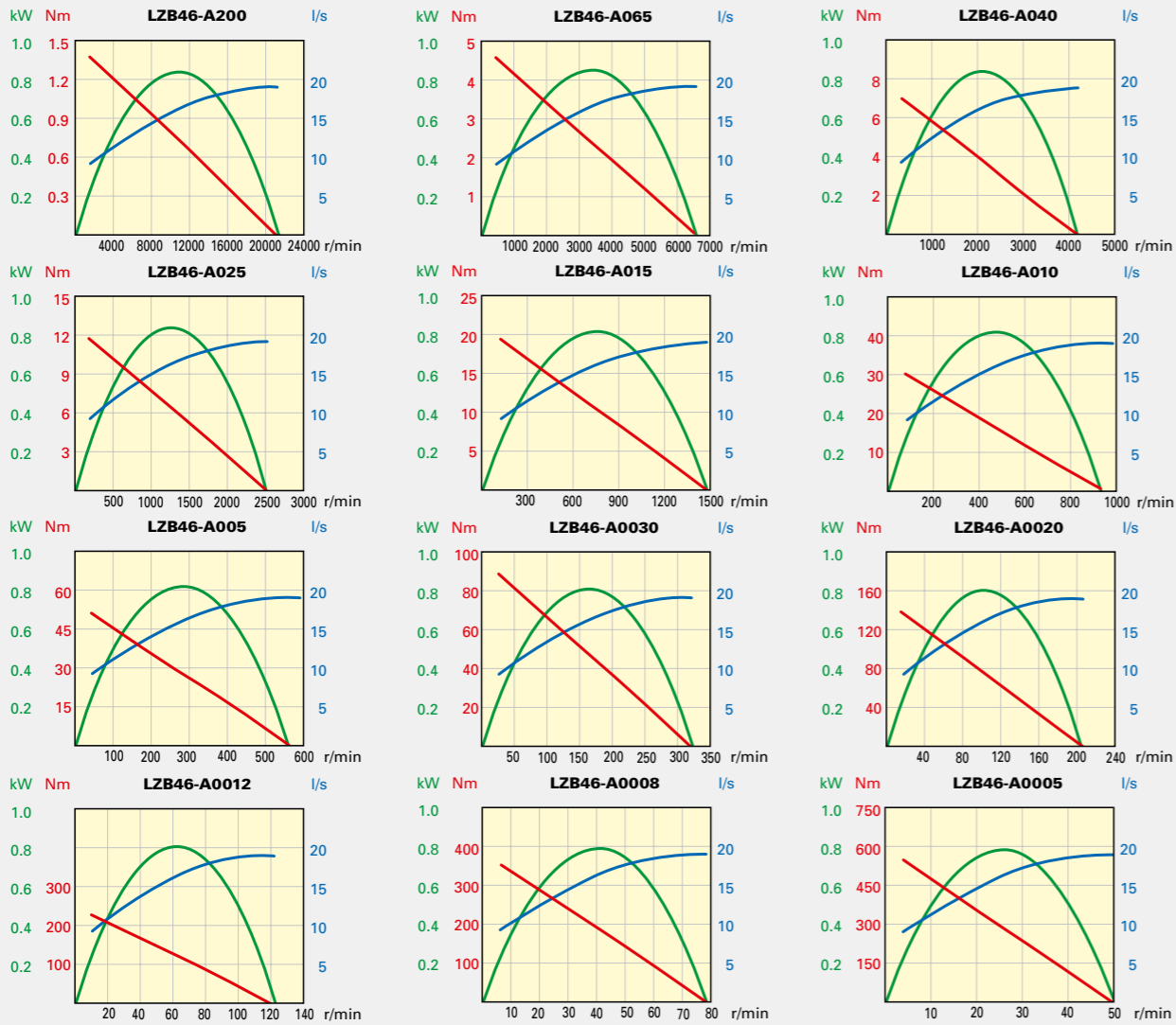
Flange Ordering No. 4430 0569 84

Optional accessories

pages 66-67.

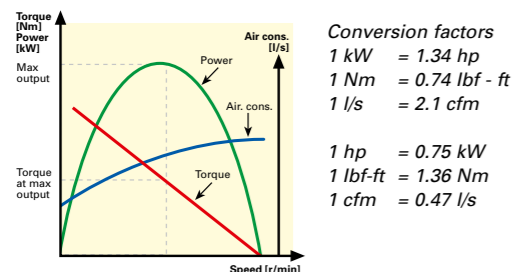
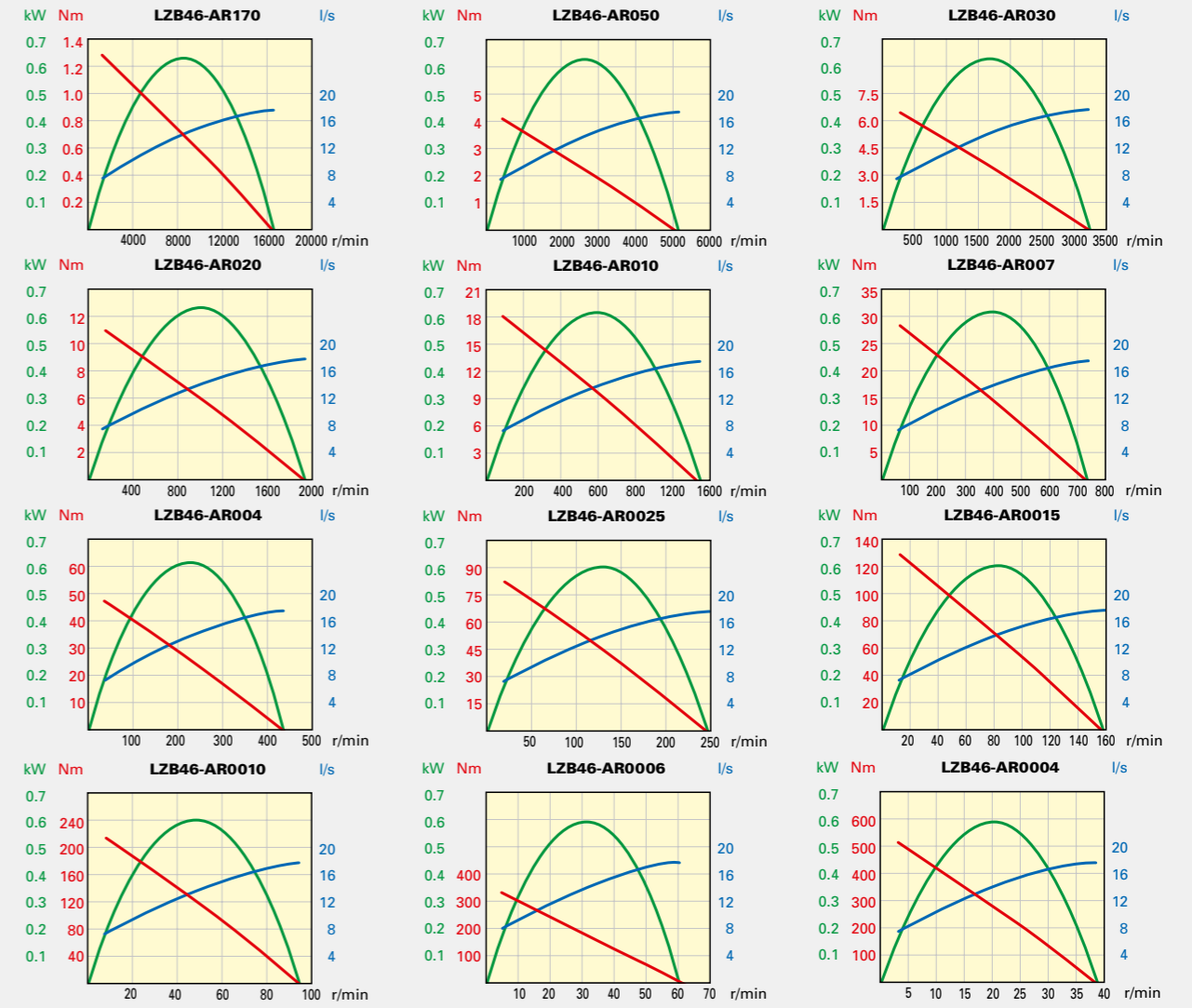
LZB46, LZB46-RL: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A and AV)

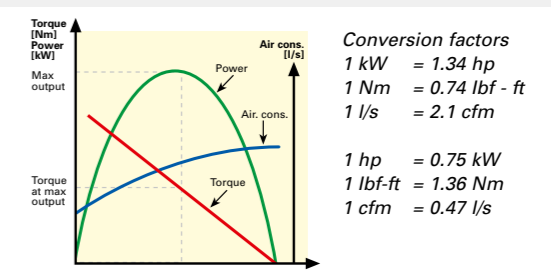


LZB46, LZB-46RL: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



For information about performance curves, see page 7.



For information about performance curves, see page 7.

VANE MOTORS LZB54

0.79 – 1.20 kW
1.06 – 1.61 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

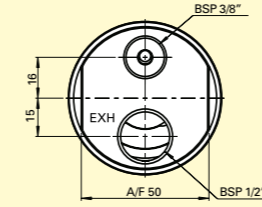
Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Weight	Shaft loading code ¹⁾	ATEX code	Ordering No.
Lubricated	[kW] [hp]	[r/min]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[r/min]	[l/s] [cfm]	[kg] [lb]				
Clockwise rotation (Keyed shaft)														
LZB54-A180-11	1.20 1.61	10000	1.15 0.85	0.85 0.85	1.8 1.33	2.3 1.7	8.0 5.9	17500	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0560 08	
LZB54-A050-11	1.20 1.61	2900	4.0 3.0	3.0 3.0	6.4 4.7	8.0 5.9	5100	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0560 16		
LZB54-A030-11	1.20 1.61	1750	6.6 4.9	4.9 10.5	7.7 13.2	9.7 13.2	3100	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0560 24		
LZB54-A020-11	1.20 1.61	1300	8.9 6.6	6.6 14	10.3 17.8	13.1 17.8	2300	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0560 32		
LZB54-A010-11	1.18 1.58	630	18 13.3	13.3 29	21 36	27 1050	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0560 40			
LZB54-A007-11	1.18 1.58	380	30 22	22 48	35 60	44 650	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0560 57			
LZB54-A005-11	1.18 1.58	280	40 30	30 65	48 80	59 500	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0560 65			
LZB54-A0025-11	1.15 1.54	150	72 53	53 117	86 144	106 270	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0560 73			
LZB54-A0017-11	1.15 1.54	95	119 88	88 193	142 238	176 160	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0560 81			
LZB54-A0012-11	1.15 1.54	70	161 119	119 261	193 322	237 120	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0560 99			
Anti-clockwise rotation (Keyed shaft)														
LZB54-AV180-11	1.20 1.61	10000	1.15 0.85	0.85 0.85	1.8 1.33	2.3 1.7	8.0 5.9	17500	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0564 04	
LZB54-AV050-11	1.20 1.61	2900	4.0 3.0	3.0 6.4	4.7 8.0	5.9 8.0	5100	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0564 12		
LZB54-AV030-11	1.20 1.61	1750	6.6 4.9	4.9 10.5	7.7 13.2	9.7 13.2	3100	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0564 20		
LZB54-AV020-11	1.20 1.61	1300	8.9 6.6	6.6 14	10.3 17.8	13.1 17.8	2300	22.0 47.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0564 38		
LZB54-AV010-11	1.18 1.58	630	18 13.3	13.3 29	21 36	27 1050	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0564 46			
LZB54-AV007-11	1.18 1.58	380	30 22	22 48	35 60	44 650	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0564 53			
LZB54-AV005-11	1.18 1.58	280	40 30	30 65	48 80	59 500	22.0 47.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0564 61			
LZB54-AV0025-11	1.15 1.54	150	72 53	53 117	86 144	106 270	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0564 79			
LZB54-AV0017-11	1.15 1.54	95	119 88	88 193	142 238	176 160	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0564 87			
LZB54-AV0012-11	1.15 1.54	70	161 119	119 261	193 322	237 120	22.0 47.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0564 95			
Reversible (Keyed shaft)														
LZB54-AR130-11	0.82 1.10	6800	1.15 0.85	0.85 1.4	1.03 1.03	2.3 1.7	12000	18.0 38.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0563 05		
LZB54-AR035-11	0.82 1.10	1960	4.0 3.0	3.0 5.1	3.8 8.0	5.9 8.0	3700	18.0 38.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0563 13		
LZB54-AR020-11	0.82 1.10	1190	6.6 4.9	4.9 8.4	6.2 13.2	9.7 13.2	2300	18.0 38.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0563 21		
LZB54-AR015-11	0.82 1.10	880	8.9 6.6	6.6 11	8.1 17.8	13.1 17.8	1700	18.0 38.0	2.4 5.2	g	Ex II 2GD c T4 IIC T110°C	8411 0563 39		
LZB54-AR008-11	0.80 1.07	430	18 13.3	13.3 23	17 36	27 800	18.0 38.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0563 47			
LZB54-AR005-11	0.80 1.07	260	30 22	22 38	28 60	44 500	18.0 38.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0563 54			
LZB54-AR004-11	0.80 1.07	190	40 30	30 51	38 80	59 370	18.0 38.0	2.5 5.5	g	Ex II 2GD c T6 IIC T85°C	8411 0563 62			
LZB54-AR0020-11	0.79 1.06	105	72 53	53 93	69 144	106 190	18.0 38.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0563 70			
LZB54-AR0012-11	0.79 1.06	65	119 88	88 153	113 238	176 120	18.0 38.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0563 88			
LZB54-AR0009-11	0.79 1.06	47	161 119	119 207	153 322	237 90	18.0 38.0	4.7 10.3	h	Ex II 2GD c T6 IIC T85°C	8411 0563 96			

¹⁾ For Shaft loading curves, see page 16.

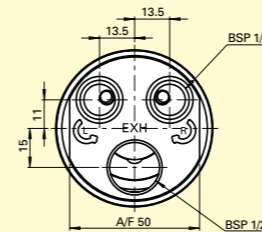
Dimensions (mm)

All versions

Clockwise/
Anti-clockwise



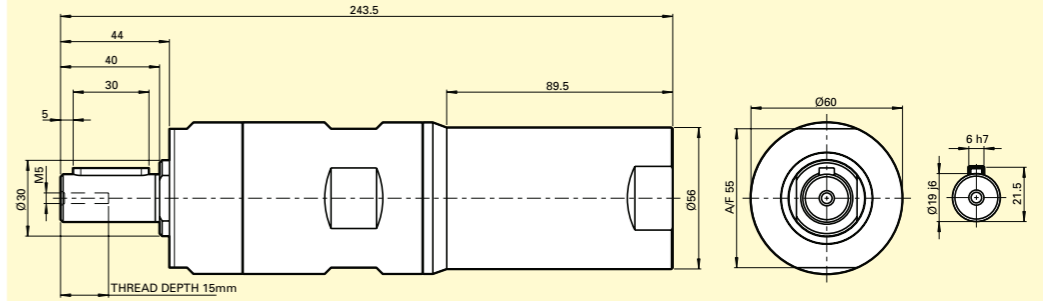
Reversible



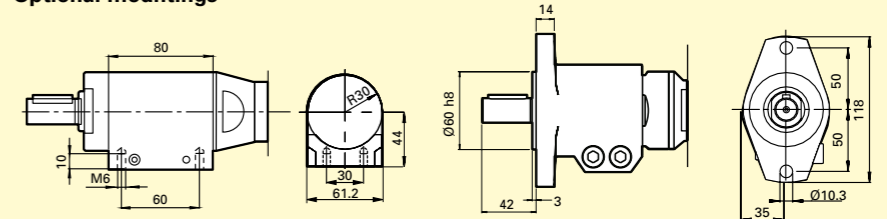
Conversion factor 1 mm = 0.04 inch

Clockwise/
Anti-clockwise

LZB54-A180	LZB54-AV180	LZB54-AR130
LZB54-A050	LZB54-AV050	LZB54-AR035
LZB54-A030	LZB54-AV030	LZB54-AR020
LZB54-A020	LZB54-AV020	LZB54-AR015
LZB54-A010	LZB54-AV010	LZB54-AR008
LZB54-A007	LZB54-AV007	LZB54-AR005
LZB54-A005	LZB54-AV005	LZB54-AR004



Optional mountings

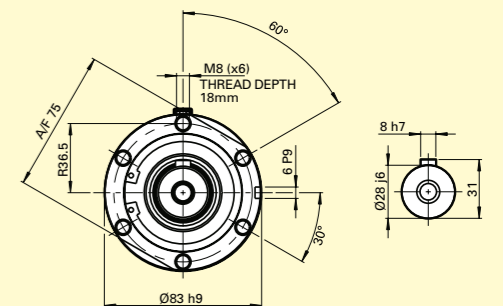
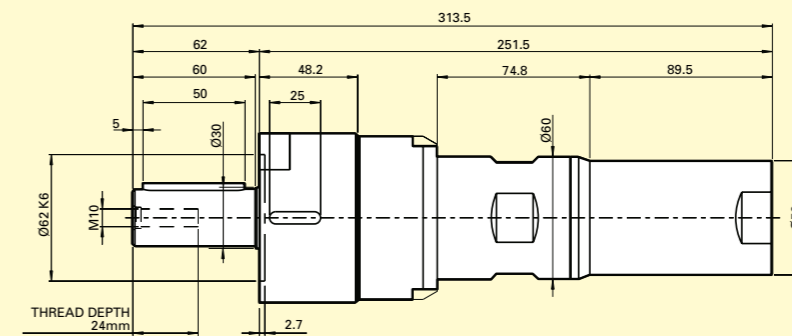


Foot Ordering No. 4430 0178 80

Flange Ordering No. 4430 0569 84

Clockwise/
Anti-clockwise

LZB54-A0025	LZB54-AR0020
LZB54-A0017	LZB54-AR0012
LZB54-A0012	LZB54-AR0009
LZB54-AV0025	
LZB54-AV0017	
LZB54-AV0012	



Optional accessories

pages 66-67.

VANE MOTORS LZB54-LB

Brake module, lubrication free and reversible



0.79 – 0.82 kW
1.05 – 1.10 hp

Braking torque from 15–200 Nm.
The brake is activated by spring force and released by air pressure.

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

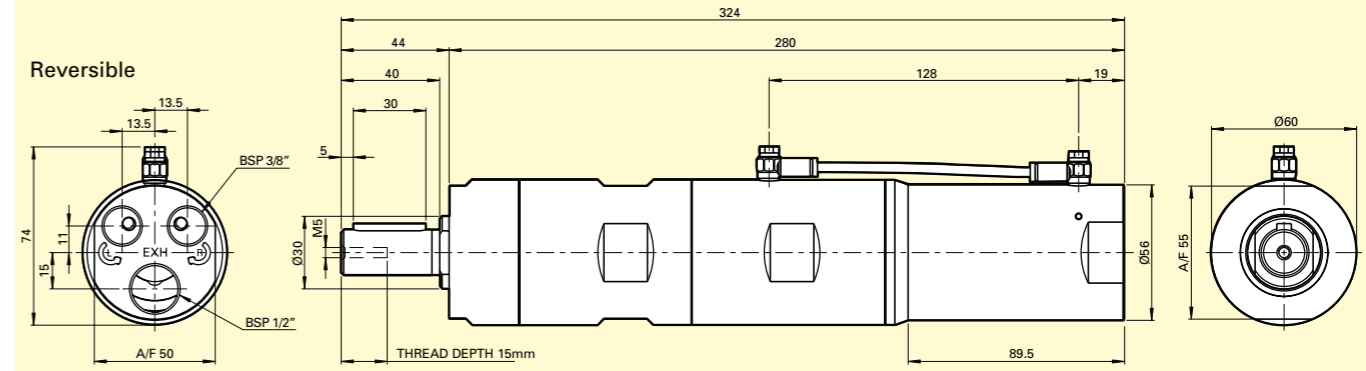
Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Braking torque	Braking torque	Free speed	Air consumption at max output	Weight	Shaft loading	Ordering No.				
Lubrication free	[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[ft lb]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[l/s]	[cfm]	[kg]	[lb]	code ¹⁾	ATEX code	
Reversible (Keyed shaft)																			
LZB54-LB-AR015-11	0.82	1.10	880	8.9	6.6	11	8.1	17.8	13.1	15	1700	18	38	4.1	9.0	g	Ex II 2GD c T4 IIC T110°C	8411 0568 42	
LZB54-LB-AR005-11	0.80	1.07	260	30	22	38	28	60	44	50	37	500	18	38	4.3	9.4	g	Ex II 2GD c T6 IIC T85°C	8411 0568 59
LZB54-LB-AR004-11	0.80	1.07	190	40	30	51	38	80	59	70	52	370	18	38	4.3	9.4	g	Ex II 2GD c T6 IIC T85°C	8411 0568 67
LZB54-LB-AR0020-11	0.79	1.06	105	72	53	93	69	144	106	125	92.5	190	18	38	6.4	14.0	h	Ex II 2GD c T6 IIC T85°C	8411 0568 75
LZB54-LB-AR0012-11	0.79	1.06	65	119	88	153	113	238	176	200	148	120	18	38	6.4	14.0	h	Ex II 2GD c T6 IIC T85°C	8411 0568 83

¹⁾ For Shaft loading curves, see page 16.
The brake needs minimum 3 bar to release. Performance curves same as standard motors.
NOTE: - If running motors with 100% dry air and no lubrication, performance can be reduced with 5-15% at max output.
- To optimize life time for a lubrication free motor, use lubricated air if the application allows it.

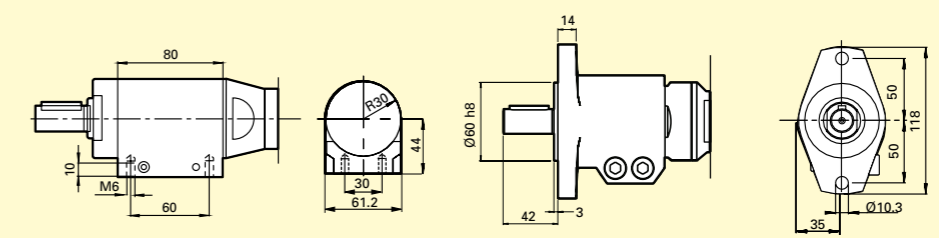
Dimensions (mm)

Conversion factor 1 mm = 0.04 inch

Reversible with brake
LZB54-LB-AR015
LZB54-LB-AR005
LZB54-LB-AR004



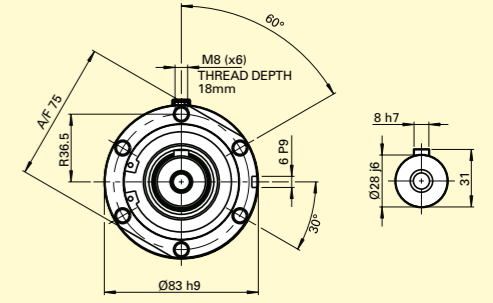
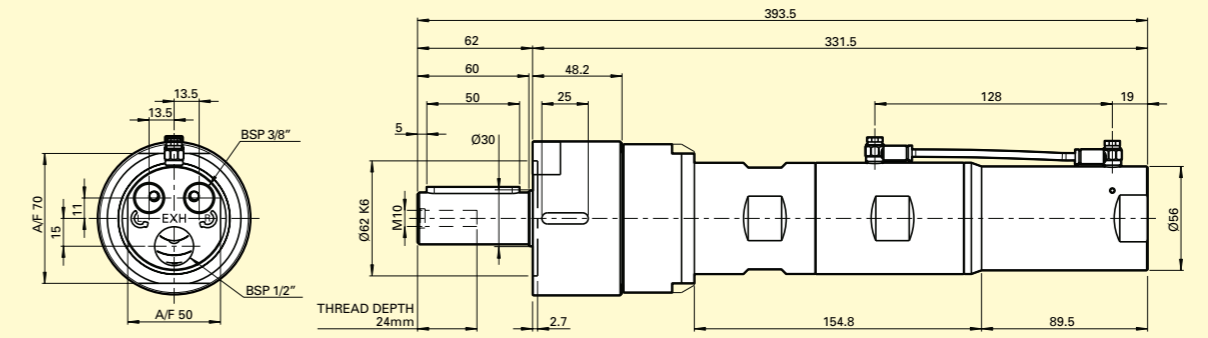
Optional mountings



Foot Ordering No. 4430 0178 80

Flange Ordering No. 4430 0569 84

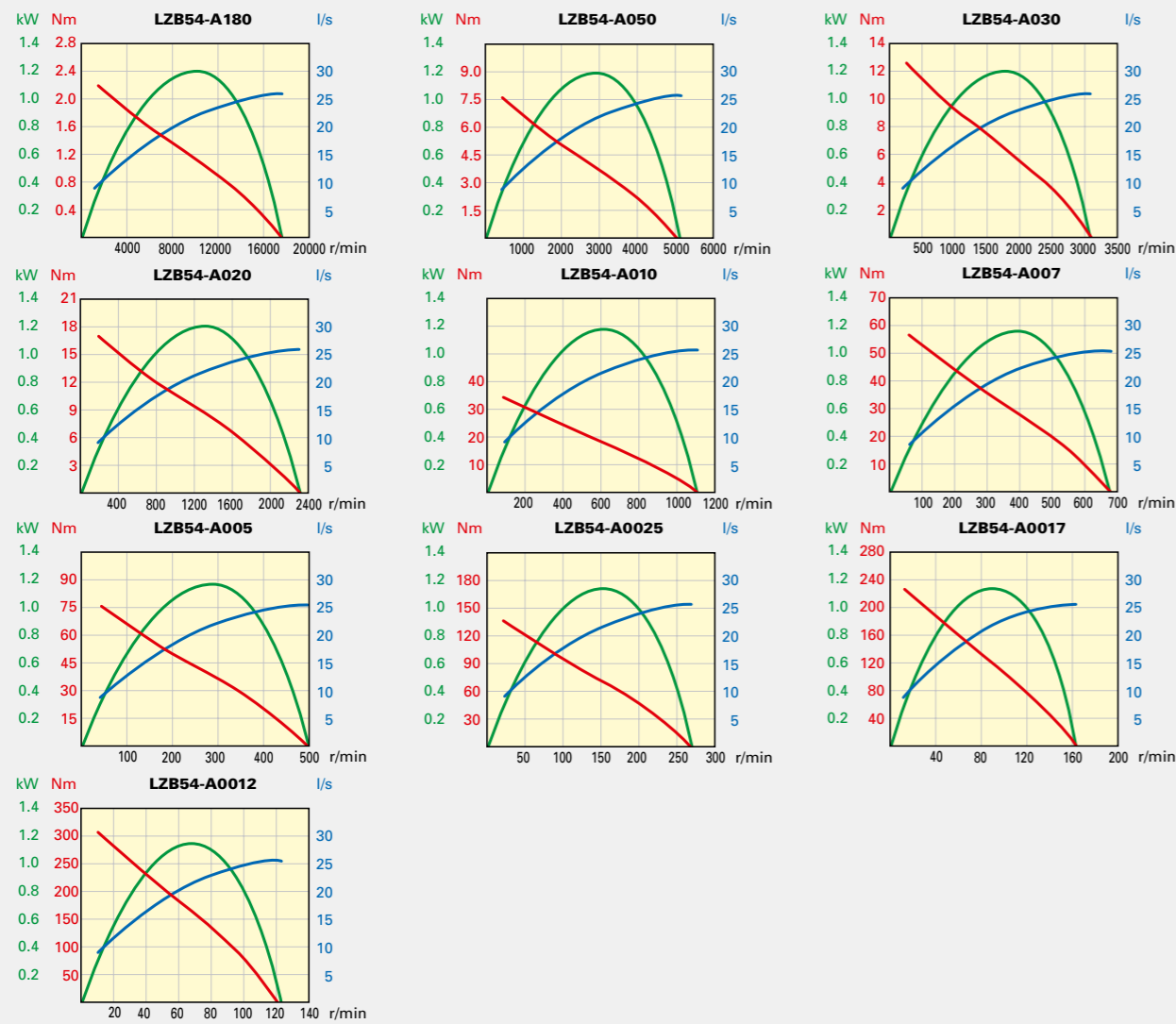
Reversible with brake
LZB54-LB-AR0020
LZB54-LB-AR0012



Optional accessories
pages 66-67.

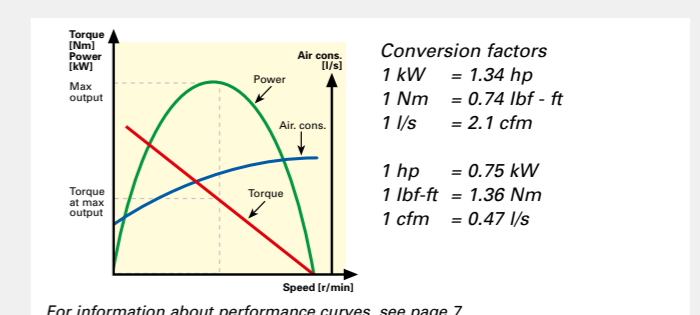
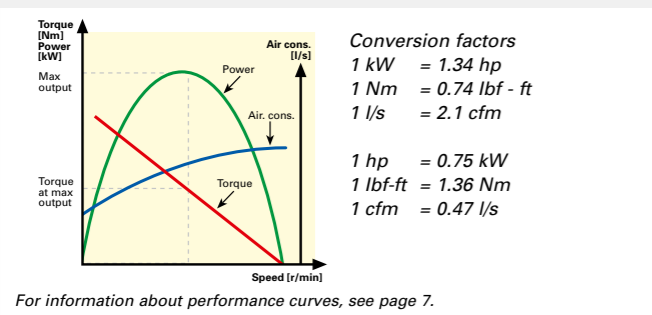
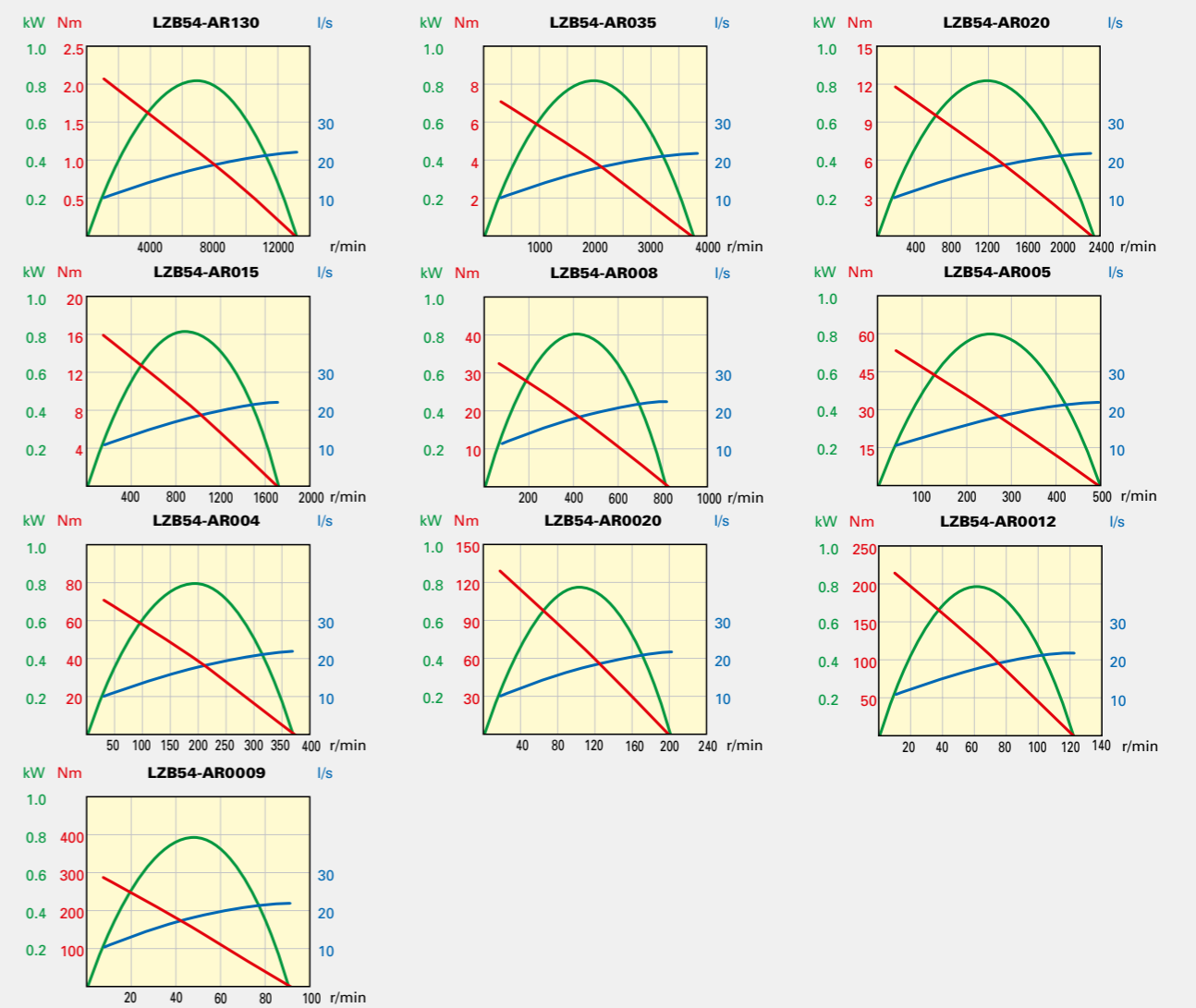
LZB54: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A and AV)



LZB54: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



VANE MOTORS LZB66

1.41 – 1.87 kW
1.89 – 2.51 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Weight	Shaft loading code 1)	ATEX code	Ordering No.
Lubricated	[kW] [hp]	[r/min]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[Nm] [lb-ft]	[r/min]	[l/s] [cfm]	[kg] [lb]			
Clockwise rotation (Keyed shaft)														
LZB66-A180-11	1.87 2.51	8200	2.2 1.62	3.2 2.4	4.4 3.2	16000	34 72	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0602 59			
LZB66-A050-11	1.87 2.51	2400	7.6 5.6	11.3 8.3	15.2 11.2	4500	34 72	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0602 67			
LZB66-A030-11	1.87 2.51	1440	12.5 9.2	18.6 13.7	25 18.4	2700	34 72	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0602 75			
LZB66-A020-11	1.87 2.51	1060	17 12.5	25 18.4	34 25	2000	34 72	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0602 42			
LZB66-A010-11	1.83 2.45	510	34 25	51 38	68 50	950	34 72	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0600 59			
LZB66-A007-11	1.83 2.45	310	57 42	84 62	114 84	600	34 72	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0600 67			
LZB66-A005-11	1.83 2.45	230	77 57	113 83	154 114	440	34 72	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0600 75			
LZB66-A0025-11	1.80 2.41	125	139 103	205 151	278 205	230	34 72	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0600 83			
LZB66-A0017-11	1.80 2.41	75	227 167	337 249	454 335	145	34 72	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0600 91			
LZB66-A0012-11	1.80 2.41	55	308 227	456 336	616 454	110	34 72	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0602 83			
Reversible (Keyed shaft)														
LZB66-AR130-11	1.46 1.96	7500	1.9 1.4	2.4 1.8	3.8 2.8	13500	31 66	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0602 91			
LZB66-AR035-11	1.46 1.96	2200	6.4 4.7	8.3 6.1	12.8 9.4	3900	31 66	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0603 09			
LZB66-AR020-11	1.46 1.96	1320	10.5 7.7	13.5 10	21 15.5	2400	31 66	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0603 17			
LZB66-AR015-11	1.46 1.96	970	14.3 10.5	18.5 13.6	29 21	1750	31 66	2.8 6.2	g	Ex II 2GD c T4 IIC T110°C	8411 0603 25			
LZB66-AR008-11	1.43 1.92	470	29 21	37 27	58 43	830	31 66	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0601 25			
LZB66-AR005-11	1.43 1.92	290	48 35	62 46	96 71	500	31 66	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0601 33			
LZB66-AR004-11	1.43 1.91	210	64 47	84 62	128 94	370	31 66	2.9 6.4	g	Ex II 2GD c T6 IIC T85°C	8411 0601 41			
LZB66-AR0020-11	1.41 1.89	115	117 86	151 111	233 172	200	31 66	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0601 58			
LZB66-AR0012-11	1.41 1.89	70	191 141	249 184	382 282	120	31 66	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0601 66			
LZB66-AR0009-11	1.41 1.89	50	259 191	337 249	518 382	90	31 66	5.1 11.1	h	Ex II 2GD c T6 IIC T85°C	8411 0603 33			

¹⁾ For Shaft loading curves, see page 16.

Compact mounting

Data at air pressure 6.3 bar (91 psi)

Model	Max output	Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output	Weight	Shaft loading code 1)	ATEX code	Ordering No.
Lubricated	[kW] [hp]	[r/min]	[Nm] [ft lb]	[Nm] [ft lb]	[Nm] [ft lb]	[Nm] [ft lb]	[Nm] [ft lb]	[Nm] [ft lb]	[r/min]	[l/s] [cfm]	[kg] [lb]			
Clockwise rotation (Keyed shaft)														
LZB66-A0025-15	1.80 2.41	125	139 103	205 151	278 205	230	34 72	5.3 11.7	h	Ex II 2GD c T6 IIC T85°C	8411 0600 18			
LZB66-A0017-15	1.80 2.41	75	227 167	337 249	454 335	145	34 72	5.3 11.7	h	Ex II 2GD c T6 IIC T85°C	8411 0600 26			
Reversible (Keyed shaft)														
LZB66-AR0020-15	1.41 1.89	115	117 86	151 111	233 172	200	31 66	5.3 11.7	h	Ex II 2GD c T6 IIC T85°C	8411 0601 09			
LZB66-AR0012-15	1.41 1.89	70	191 141	249 184	382 282	120	31 66	5.3 11.7	h	Ex II 2GD c T6 IIC T85°C	8411 0601 17			

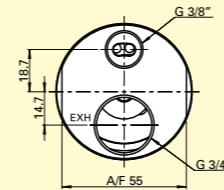
¹⁾ For Shaft loading curves, see page 16.

Dimensions (mm)

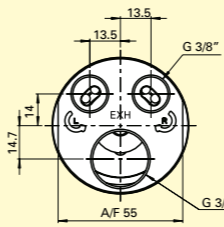
Conversion factor 1 mm = 0.04 inch

All versions

Clockwise



Reversible

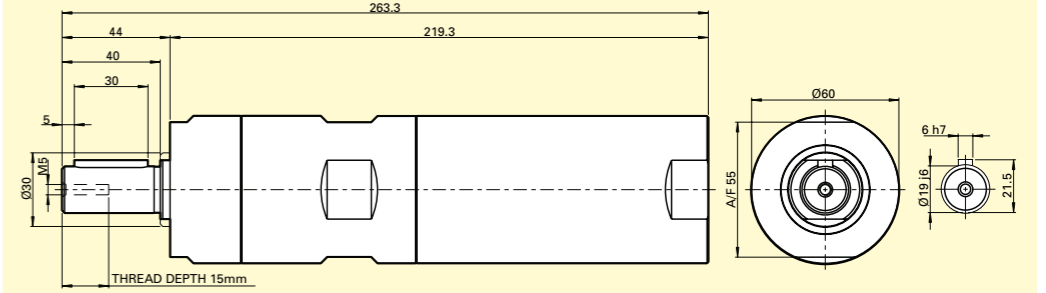


Clockwise

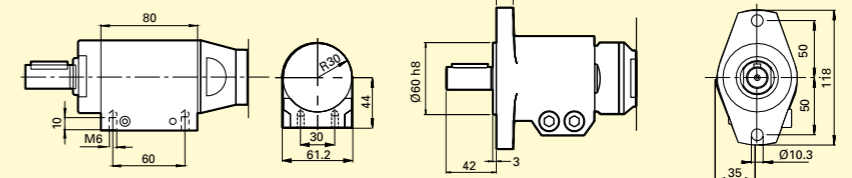
LZB66-A180 LZB66-A010
LZB66-A050 LZB66-A007
LZB66-A030 LZB66-A005
LZB66-A020

Reversible

LZB66-AR130 LZB66-AR008
LZB66-AR035 LZB66-AR005
LZB66-AR020 LZB66-AR004
LZB66-AR015



Optional mounting



Foot Ordering No. 4430 0178 80

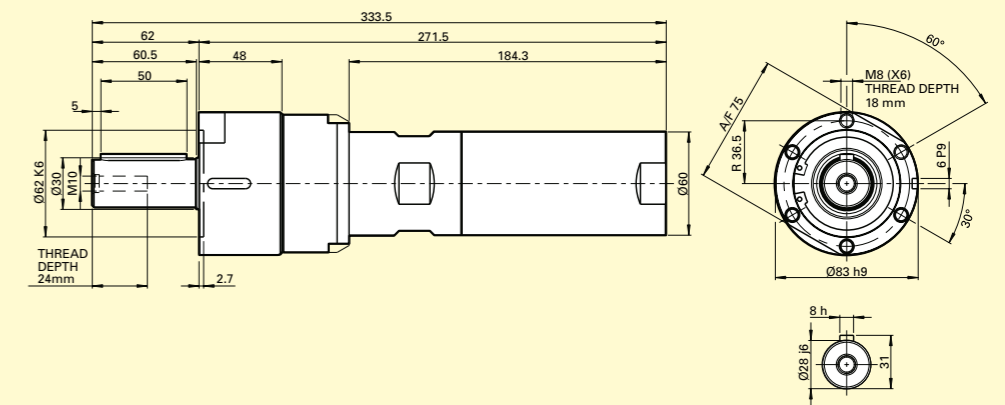
Flange Ordering No. 4430 0569 84

Clockwise

LZB66-A0025-11
LZB66-A0017-11
LZB66-A0012-11

Reversible

LZB66-AR0020-11
LZB66-AR0012-11
LZB66-AR0009-11

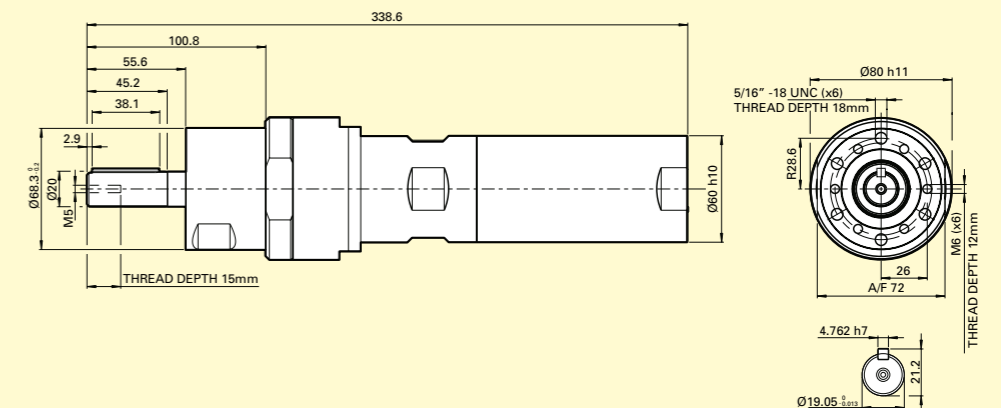


Clockwise

LZB66-A0025-15
LZB66-A0017-15

Reversible

LZB66-AR0020-15
LZB66-AR0012-15

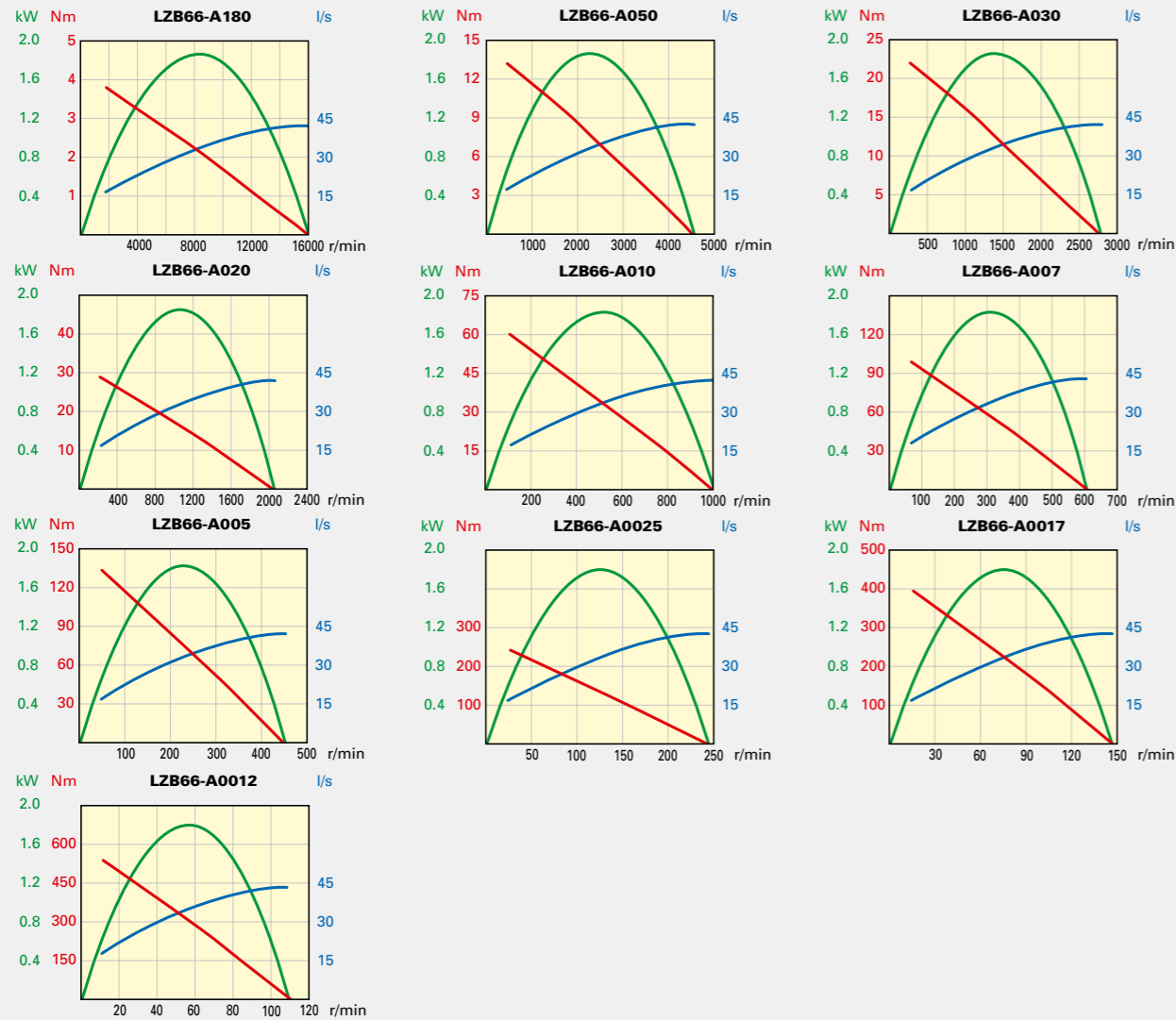


Optional accessories

pages 66-67.

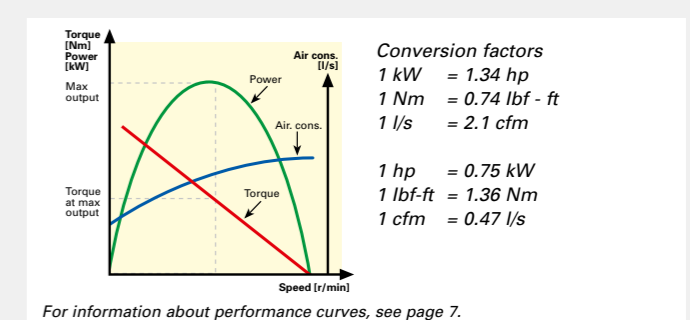
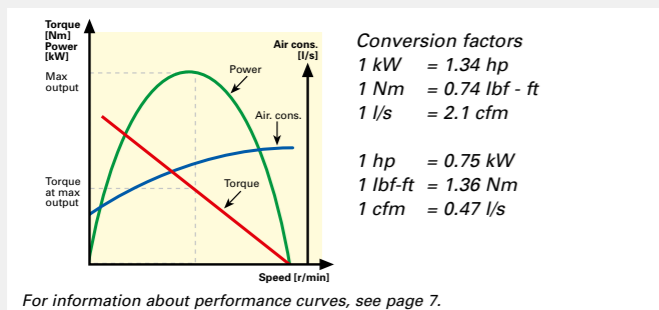
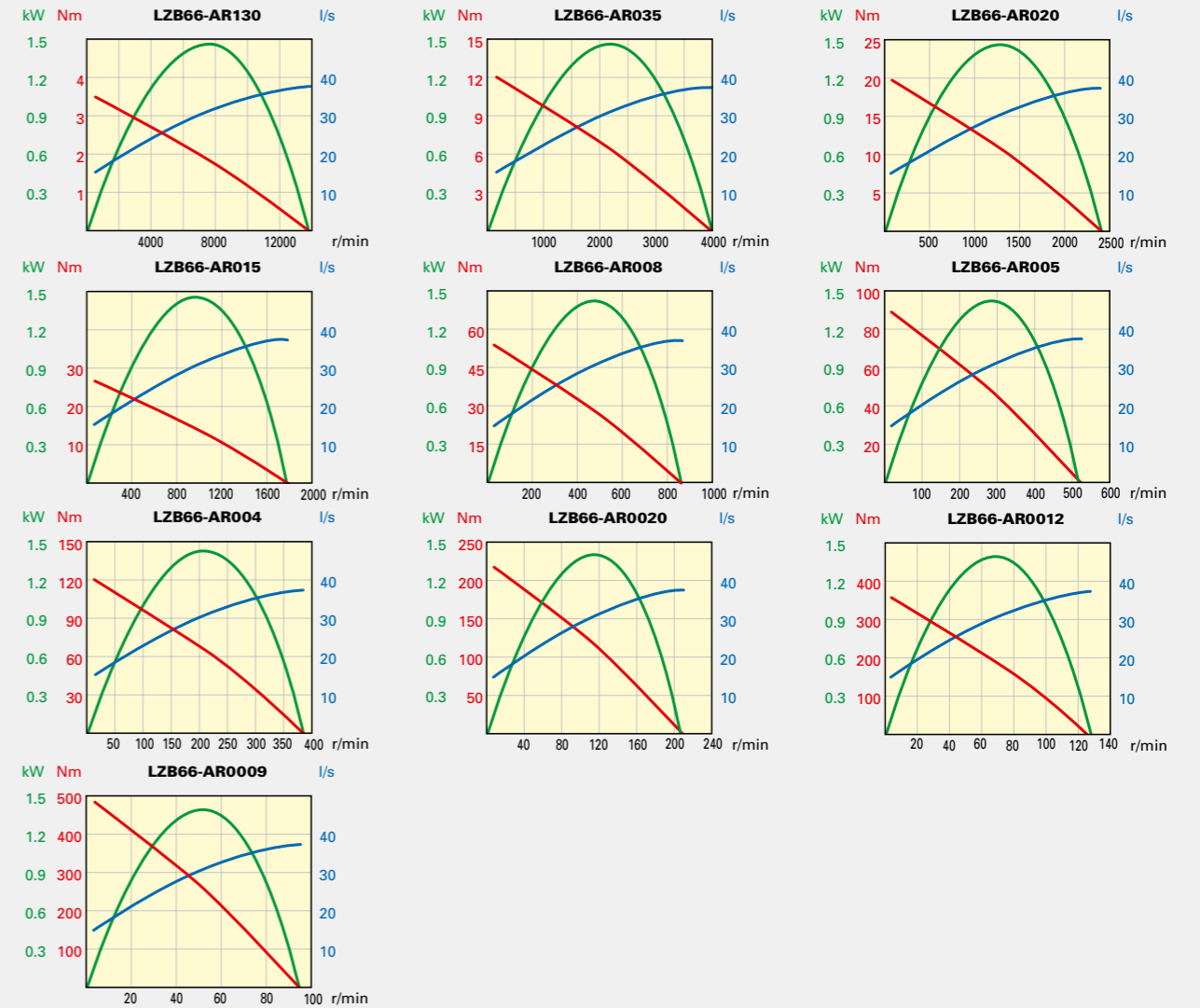
LZB66: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A)



LZB66: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



VANE MOTORS LZB77

2.35 – 2.80 kW
3.15 – 3.75 hp

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).

For optional vanes and accessories see pages 66-67.



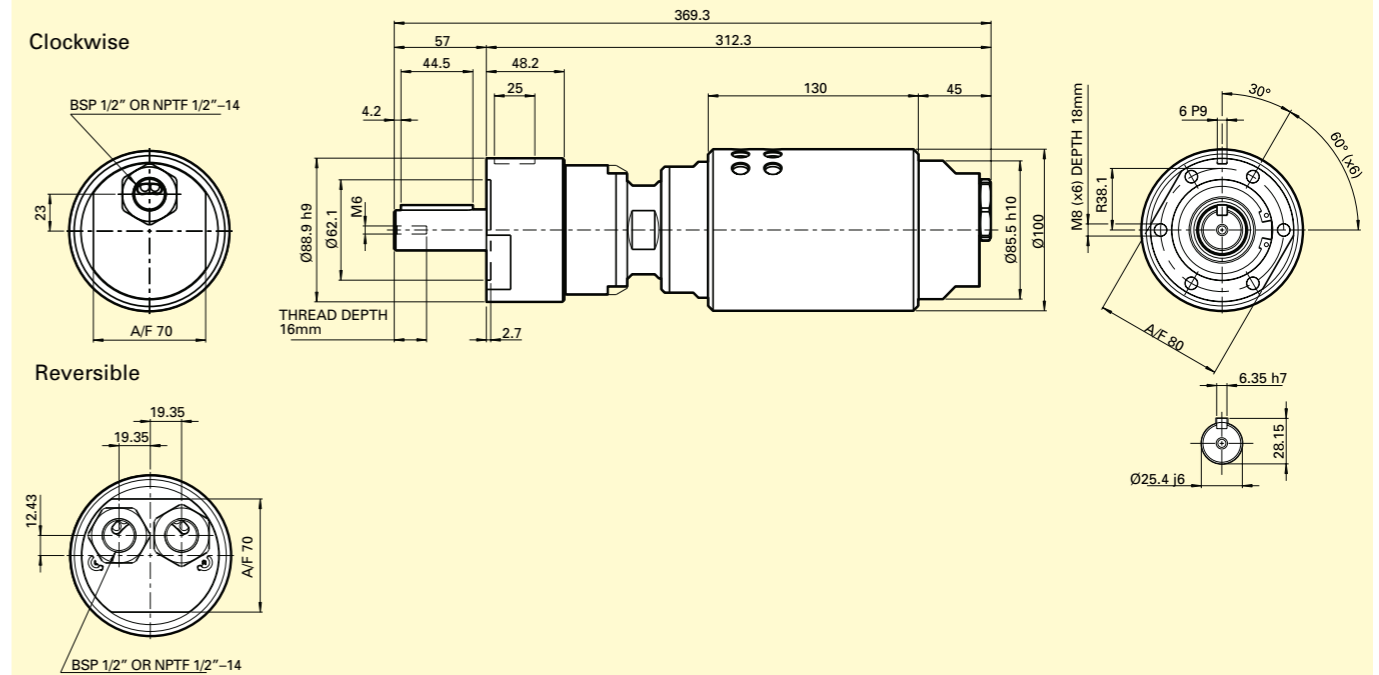
Data at air pressure 6.3 bar (91 psi)

Model	Max output		Speed at max output	Torque at max output	Torque at max output	Min starting torque	Min starting torque	Stall torque	Stall torque	Free speed	Air consumption at max output		Weight		Shaft loading code ¹⁾	ATEX code	Ordering No.
	[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[ft lb]	[Nm]	[lb-ft]	[r/min]	[l/s]	[cfm]	[kg]	[lb]			
Clockwise rotation (Keyed shaft)																	
LZB77-A027-15	2.80	3.75	1220	22	16	35	26	44	32	2600	52	110	8.4	18.5	h	Ex II 2GD c T4 IIC T110°C	8411 0700 25
LZB77-A008-15	2.77	3.71	350	75	55	121	89	150	111	750	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0700 70
LZB77-A007-15	2.77	3.71	310	85	63	137	101	170	125	660	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0700 17
LZB77-A005-15	2.77	3.71	210	123	91	199	147	246	181	460	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0700 88
LZB77-A004-15	2.77	3.71	160	166	122	269	198	332	245	340	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0700 96
LZB77-A0020-15	2.74	3.67	90	293	216	474	350	586	432	190	52	110	8.7	19.1	h	Ex II 2GD c T6 IIC T85°C	8411 0701 00
LZB77-A0017-15	2.74	3.67	80	332	245	536	395	664	490	165	52	110	8.7	19.1	h	Ex II 2GD c T6 IIC T85°C	8411 0700 09
Reversible (Keyed shaft)																	
LZB77-AR024-15	2.40	3.22	1280	18	13.3	24	18	36	27	2300	52	110	8.4	18.5	h	Ex II 2GD c T4 IIC T110°C	8411 0700 58
LZB77-AR007-15	2.38	3.19	370	62	46	84	62	124	91	680	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0701 18
LZB77-AR006-15	2.38	3.19	320	70	52	96	71	140	103	600	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0700 41
LZB77-AR004-15	2.38	3.19	220	102	75	139	103	204	150	420	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0701 26
LZB77-AR003-15	2.38	3.19	170	137	101	188	139	274	202	310	52	110	8.4	18.5	h	Ex II 2GD c T6 IIC T85°C	8411 0701 34
LZB77-AR0018-15	2.35	3.15	95	242	178	331	244	484	357	170	52	110	8.7	19.1	h	Ex II 2GD c T6 IIC T85°C	8411 0701 42
LZB77-AR0015-15	2.35	3.15	80	274	202	374	276	548	404	155	52	110	8.7	19.1	h	Ex II 2GD c T6 IIC T85°C	8411 0700 33

¹⁾ For Shaft loading curves, see page 16. NOTE: The motors have built-in silencer.

Dimensions (mm)

Conversion factor 1 mm = 0.04 inch

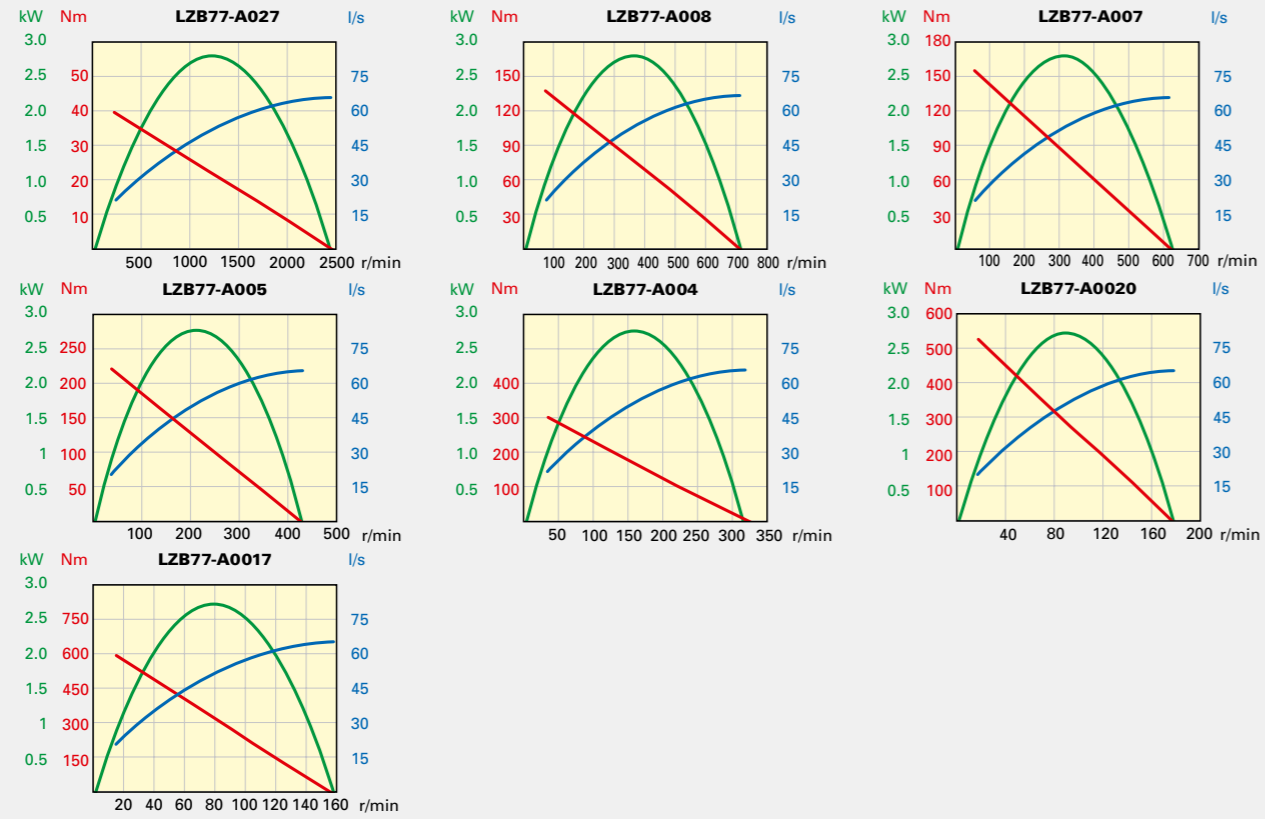


Optional accessories

pages 66-67.

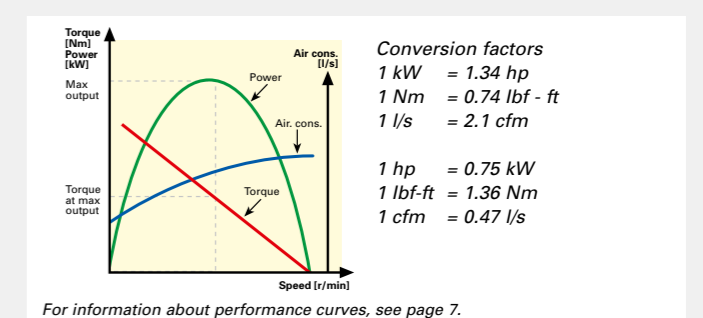
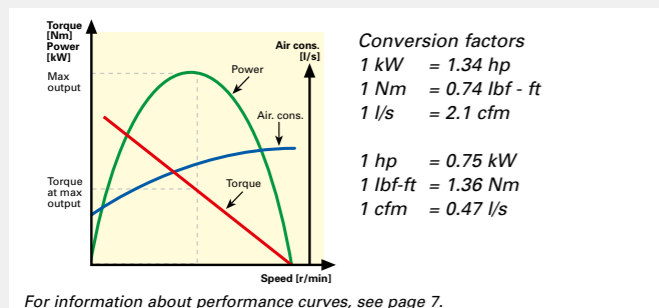
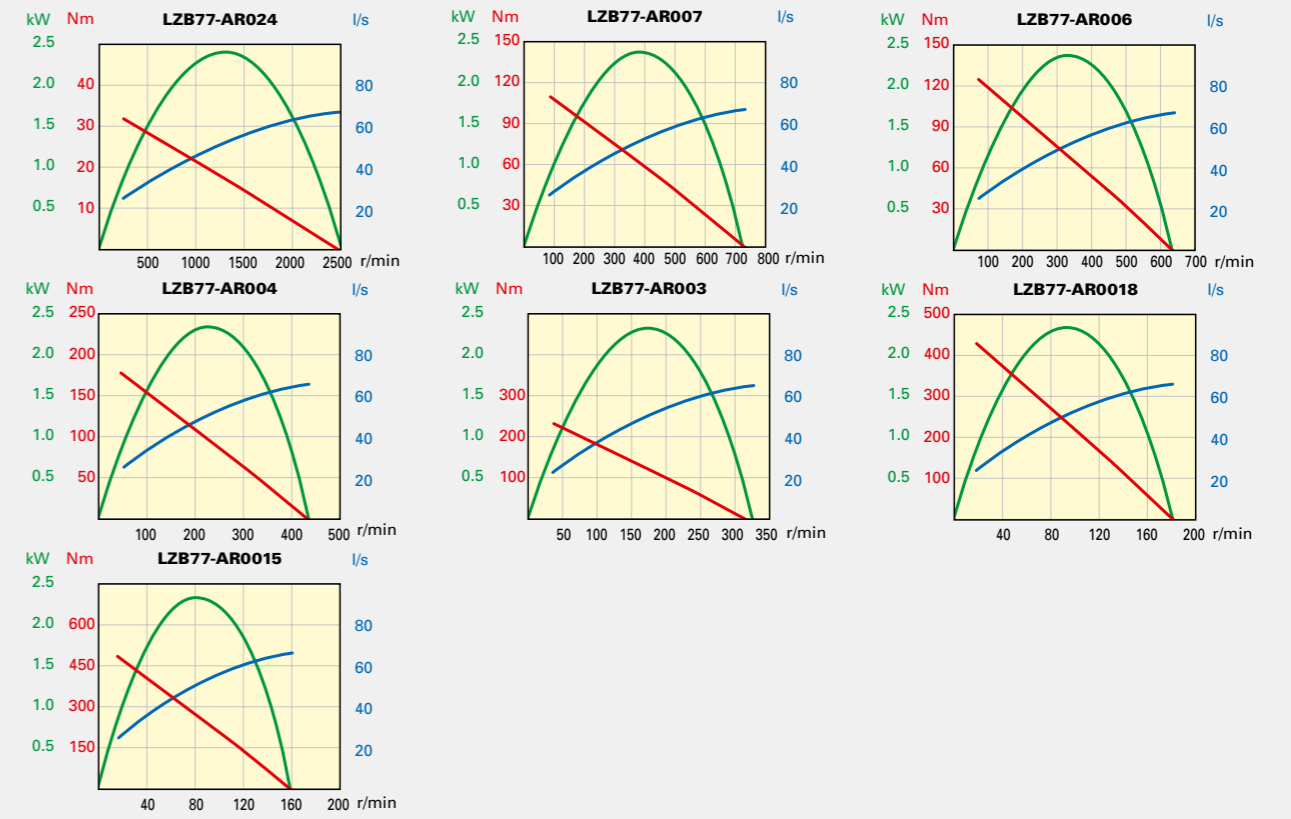
LZB77: Performance curves at air pressure 6.3 bar (91 psi)

Non-reversible (A)



LZB77: Performance curves at air pressure 6.3 bar (91 psi)

Reversible (AR)



ACCESSORIES FOR LZB AIR MOTORS



Key chuck and quick chuck for LZB22/33-12

Chuck type	Mount	Body diameter (mm)	Capacity (mm)	Ordering No.
Key chuck	3/8"-24 UNF	30	0 - 6.5	4021 0283 00
Key chuck	3/8"-24 UNF	36	2.0 - 10.0	4021 0416 00
Key chuck	3/8"-24 UNF	46	2.0 - 13.0	4021 0289 00
Key chuck	1/2"-20 UNF	42.8	1.5 - 13	4021 0289 01
Quick chuck	3/8"-24 UNF	34	0 - 6.5	4021 0401 00
Quick chuck	3/8"-24 UNF	36	0 - 10.0	4021 0402 00
Quick chuck	3/8"-24 UNF	36	2.0 - 13.0	4021 0403 00

Threaded shafts for re-building standard motors

Motor	Thread dimension	Ordering No.
LZB42-A200	1/2"-20 UNF	4430 0868 80
LZB42-A065	1/2"-20 UNF	4430 0868 80
LZB42-A040	1/2"-20 UNF	4430 0868 81
LZB42-A025	1/2"-20 UNF	4430 0868 82
LZB42-A015	1/2"-20 UNF	4430 0869 80
LZB42-A010	1/2"-20 UNF	4430 0869 80
LZB42-A005	1/2"-20 UNF	4430 0869 80
LZB42-A0030	3/4"-16 UNF	4430 0870 80
LZB42-A0020	3/4"-16 UNF	4430 0870 80
LZB42-A0012	3/4"-16 UNF	4430 0870 80
LZB54 / LZB66-A180	1/2"-20 UNF	4430 0871 80
LZB54 / LZB66-A050	1/2"-20 UNF	4430 0871 80
LZB54 / LZB66-A030	1/2"-20 UNF	4430 0871 81
LZB54 / LZB66 -A020	1/2"-20 UNF	4430 0871 82
LZB54 / LZB66-A010	3/4"-16 UNF	4430 0870 80
LZB54 / LZB66- A007	3/4"-16 UNF	4430 0870 80
LZB54 / LZB66-A005	3/4"-16 UNF	4430 0870 80

Collet chuck and collets for LZB22/33-12

Type	Capacity		Ordering No.
	mm	in	
Collet holder cpl.			4110 0844 90
Collet	3		4150 0081 00
Collet	5		4150 0075 01
Collet	6		4150 0075 00
Collet	8	5/16"	4150 0074 00
Collet		1/8"	4150 0082 00
Collet		5/32"	4150 0648 00
Collet		3/16"	4150 0649 00
Collet		1/4"	4150 0076 00

Lubrication free vane sets

Motor	Ordering No.
LZB14	4210 0479 97
LZB22	4110 0861 97
LZB33/34	4110 0621 97
LZB42	4430 0517 97
LZB46	4430 0525 97
LZB54	4430 0543 97
LZB66	4430 1355 97
LZB77	4430 1487 97

NOTE: If running motors with 100% dry air and no lubrication, performance can be reduced by 5-15% at max output.

Standard vane sets

Motor	Ordering No.
LZB14	4210 0479 90
LZB22	4110 0861 90
LZB33/34	4110 0621 90
LZB42	4430 0517 90
LZB46	4430 0525 90
LZB54	4430 0543 90
LZB66	4430 1355 90
LZB77	4430 1487 90

Spring supported lubrication free vane sets Not to be used over 3 bar

Motor	Ordering No.
LZB22	4430 0686 97
LZB33/34	4430 1349 97



Silencers

Motor	A Sinter bronze Ordering No.	B LBB Ordering No.	C ECSB-2 Ordering No.
LZB 14	9090 0507 00	4250 1878 83	9090 2100 01
LZB 22	9090 0508 00	4250 1878 83	9090 2100 01
LZB 33	9090 0508 00	4250 1878 83	9090 2100 01
LZB 42	9090 0510 00	4250 1878 83	9090 2100 01
LZB 46	9090 0510 00	4250 1878 83	9090 2100 01
LZB 54	9090 0510 00	4250 1878 83	9090 2100 02
Noise damp dB(A)	15	20	25
Power loss %	10	10	7

Note: The noise damping and power loss values are approximate. The ECSB-2 silencer -01 has 1/2" and the -02 has 1" threaded port. They need to be connected to the motor via tube or hose with suitable connections.

Different noise reduction possibilities and the effects thereof:

0.36 - kW motor No-load speed Anechoic room Interval of 1 m	Measure	Noise Level dB(A)
	None	94
	Silencer only	77
	Hose only	84
	Hose with silencer	75

A worker in a blue uniform is crouching and working on a large, shiny, cylindrical industrial tank in a factory. The tank is supported by a metal frame. The background is a blurred industrial environment with various pipes and structures. The lighting is bright, highlighting the metallic surfaces.

LZL *VANE MOTORS*

LZL VANE MOTORS

Introduction



LZL vane motors are available in five sizes, offering outputs of 1.05 kW, 1.3 kW, 2.3 kW, 3.4 kW and 5.2 kW, respectively.

They are designed to give outstanding starting and low speed performance. This is achieved by using a six vane motor and by optimum vane/cylinder sealing – obtained through a combination of ‘vane air’ and interconnecting pins.

Featuring few components, these motors are ruggedly constructed and offer a long service life.

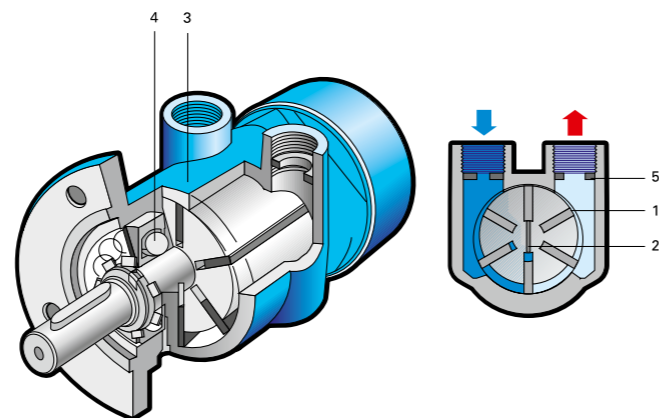


Figure 1

1. Six vanes for high starting torque.
2. Pins to force vanes out and provide starting reliability.
3. Cast iron housing.
4. Long life bearings.
5. Restriction at inlet and outlet ports.

Shaft loading

The permitted radial and axial shaft extension loadings are illustrated in Figure 2. These values have been calculated for shaft and bearing working lives of at least 1.000 hours at a speed that gives maximum output.

Restrictors

LZL vane motors are supplied with internal restrictors in the connection ports, to limit the maximum speed.

Clockwise rotation – the smaller restrictor (1) is fitted in the inlet port and the larger restrictor (2) in the outlet port (see Figure 3). This is how the motor is delivered.

Anti-clockwise rotation – the position of these restrictors must be reversed. Reversing duty – restrictor (1) must be replaced by a second restrictor of type (2). The restrictor (1) must then be fitted into the inlet to the control valve.

For further information, see page 11 chapter “Installation Examples”.

It is permissible to remove these restrictors to increase motor output. However, the motor should not be run faster than max allowed speed (see data table).

Mounting

LZL vane motors may be mounted in any position. To facilitate this, a flange is integrated into the motor casing and a foot mounting is available for some motor variants.

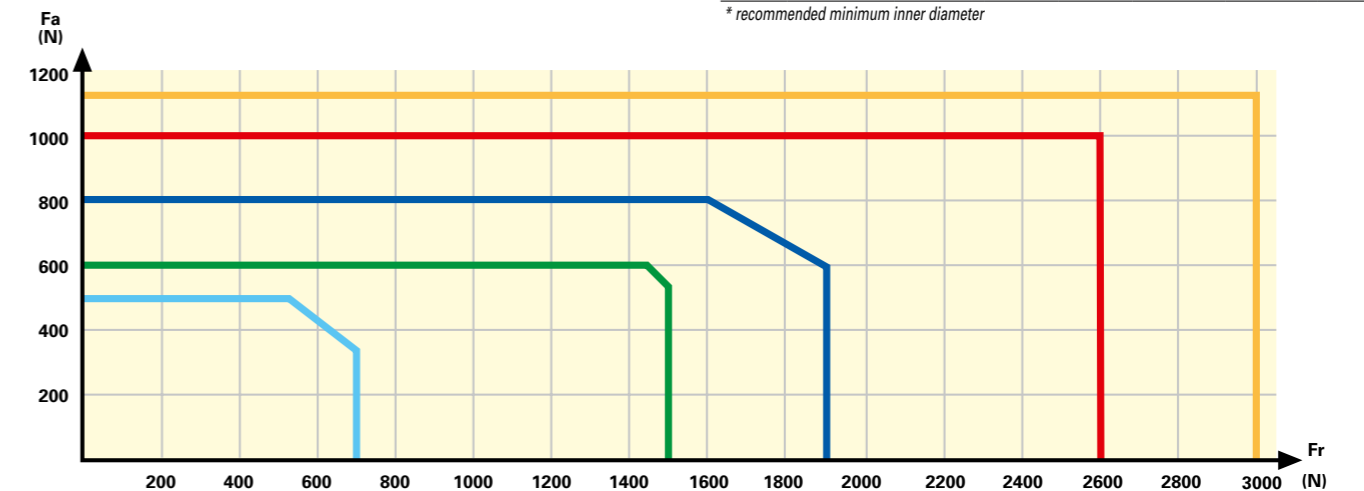
Connection and hose dimensions

Information on connection size and recommended nipple and hose dimensions for use with LZL vane motors is shown in Table 2. These dimensions are valid for hose lengths up to 3 m. For lengths above 3 m, choose a hose one size larger.

Hose size up to 3m length

Motor size	Used as	Inlet connection thread (BSP)	Inlet hose* (mm)	Inlet nipple* diameter (mm)	Outlet connection thread (BSP)	Outlet hose* (mm)	Outlet nipple* diameter (mm)
LZL03	Non-reversible	3/8"	13	10.3	3/8"	16	13.4
	Reversible	3/8"	16	13.4	3/8"	16	13.4
LZL05	Non-reversible	1/2"	13	10.3	1/2"	20	17
	Reversible	1/2"	20	17	1/2"	20	17
LZL15	Non-reversible	3/4"	16	13.4	3/4"	25	21.8
	Reversible	3/4"	25	21.8	3/4"	25	21.8
LZL25	Non-reversible	1"	20	17	1"	32	28
	Reversible	1"	32	28	1"	32	28
LZL35	Non-reversible	1 1/4"	20	17	1 1/4"	32	28
	Reversible	1 1/4"	32	28	1 1/4"	32	28

* recommended minimum inner diameter



- LZL 35 — A = 25 mm
- LZL 25 — A = 25 mm
- LZL 15 — A = 25 mm
- LZL 05 — A = 20 mm
- LZL 03 — A = 20 mm

Figure 2

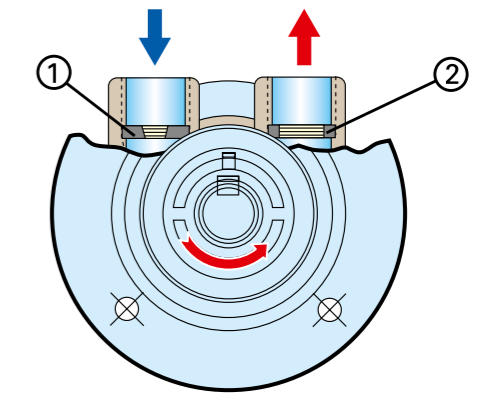
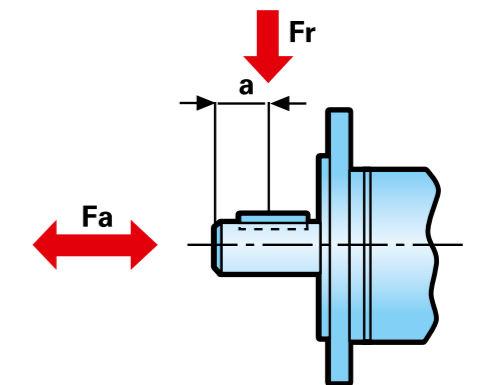


Figure 3



LZL VANE MOTORS

1.05 – 6.5 kW
1.4 – 8.7 hp



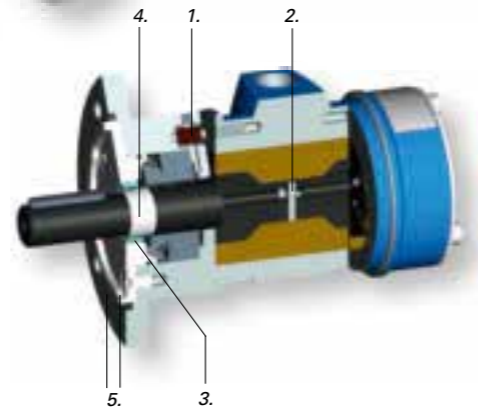
Power motors

The power motors come in all five sizes and are designed to give highest power and still maintain good low speed characteristics. These motors need lubricated air.

Typically these motors are characterized by:

- Reliable starting.
- High starting torque and good low speed characteristics.
- Wide speed and torque range.
- Sturdy, compact construction to withstand rough treatment.
- Inlet and outlet port restrictors permit free speed running.
- Long working life and easy servicing.

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).



1. Rubber hose valves for venting bearing and seals.
2. Vane pins.
3. Double seals.
4. Stainless steel bushing.
5. Aluminum front with stainless steel screws.

Data at air pressure 6.3 bar (91 psi)

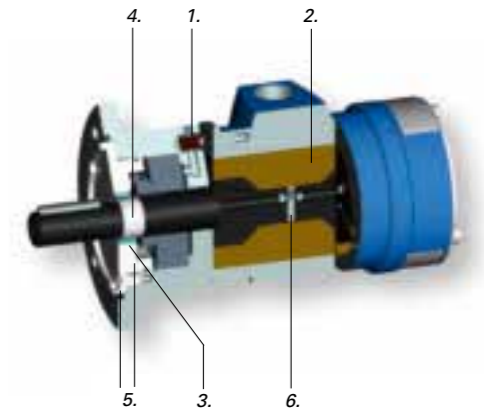
Model	Max output		Speed at max output	Torque at max output		Min starting torque	Min starting torque	Stall torque		Free speed	Max allowed speed	Air consumption at max output		Weight		ATEX code	Ordering No.
	[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[r/min]	[l/s]	[cfm]	[kg]	[lb]		
LZL03-S	1.05	1.4	5300	1.9	1.4	2.8	2.1	3.8	2.8	11000		29	61	2.9	6.4	Ex II 2GD c T2 IIC T240°C	8411 1006 32
LZL03-S-IEC	1.05	1.4	5300	1.9	1.4	2.8	2.1	3.8	2.8	11000		29	61	3.9	8.6	Ex II 2GD c T2 IIC T240°C	8411 1007 15
LZL03-S-NEMA	1.05	1.4	5300	1.9	1.4	2.8	2.1	3.8	2.8	11000		29	61	3.8	8.4	Ex II 2GD c T2 IIC T240°C	8411 1007 07
Unrestricted*	1.7	2.5	7500	2.2	1.6	2.8	2.1	3.8	2.8		11000		45	95			
LZL05-S	1.3	1.7	4300	2.9	2.1	4.8	3.5	5.8	4.3	9000		37	78	3.9	8.6	Ex II 2GD c T2 IIC T240°C	8411 1007 56
LZL05-S-IEC	1.3	1.7	4300	2.9	2.1	4.8	3.5	5.8	4.3	9000		37	78	4.8	10.6	Ex II 2GD c T2 IIC T240°C	8411 1007 72
LZL05-S-NEMA	1.3	1.7	4300	2.9	2.1	4.8	3.5	5.8	4.3	9000		37	78	4.9	10.8	Ex II 2GD c T2 IIC T240°C	8411 1007 64
Unrestricted*	2.1	2.8	6300	3.1	2.3	4.8	3.5	5.8	4.3		9200	50	106				
LZL15	2.3	3.1	3380	6.5	4.8	10.9	8.0	13	9.6	7000		61	129	7.1	15.7	Ex II 2GD c IIC T2 T240°C	8411 1005 17
LZL15-P-IEC	2.3	3.1	3380	6.5	4.8	10.9	8.0	13	9.6	7000		61	129	8.3	18.3	Ex II 2GD c IIC T2 T240°C	8411 1009 21
Unrestricted*	3.2	4.3	4500	6.8	5.0	10.9	8.0	13	9.6		7200	87	184				
LZL25	3.4	4.6	2800	11.6	8.5	18	13.2	23	17	5800		86	182	11.3	24.9	Ex II 2GD c IIC T2 T240°C	8411 1005 25
LZL25-P-IEC	3.4	4.6	2800	11.6	8.5	18	13.2	23	17	5800		86	182	15.2	33.5	Ex II 2GD c IIC T2 T240°C	8411 1009 39
Unrestricted*	5.0	6.7	4000	12.0	8.8	18	13.2	23	17		6000	135	286				
LZL35	5.2	7.0	2500	20	14.7	32	23.6	40	30	5000		130	275	20	44.1	Ex II 2GD c IIC T2 T240°C	8411 1005 74
LZL35-P-IEC	5.2	7.0	2500	20	14.7	32	23.6	40	30	5000		130	275	20	44.1	Ex II 2GD c IIC T2 T240°C	8411 1009 47
Unrestricted*	6.5	8.7	3100	20	14.7	32	23.6	40	30		5000	160	339				

* Motor without restrictor plates in the air in- and outlet, the motors should not be run above max allowed speed.

Lubrication free motors

The lube free LZL models are designed for reliable running at very low and medium speeds. The absence of lubrication results in a cleaner surrounding area and no contaminating aerosols to come in contact with the driven equipment. These motors are, among other applications, ideal for mixing. To further ensure a clean and hygienic environment, a double shaft seal is used and all components that come in contact with the mixed medium are made of corrosion-resistant material. Thanks to the cylinder design and highly stable bearings, LZL motors require no extra drive shaft support and are ready for mounting without add-ons. For good adaptability, the lube free motors are available with IEC or NEMA.

EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).



1. Rubber hose valves for venting bearing and seals.
2. Lube free vanes.
3. Double seals.
4. Stainless steel bushing.
5. Aluminum front with stainless steel screws.
6. Spring loaded pins.

Model	Power at 3000 rpm		Torque at 3000 rpm	Torque at 3000 rpm	Stall torque	Stall torque	Max allowed speed	Air consumption at 3000 rpm	Air consumption at 3000 rpm	Weight		ATEX code	Ordering No.
	[kW]	[hp]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[l/s]	[cfm]	[kg]	[lb]		
Lubrication free													
LZL03-M	0.41	0.55	1.3	0.95	3.3	2.4	3000	16	34	2.9	6.4	Ex II 2GD c T6 IIC T85°C	8411 1006 73
LZL03-M-IEC	0.41	0.55	1.3	0.95	3.3	2.4	3000	16	34	3.8	8.4	Ex II 2GD c T6 IIC T85°C	8411 1006 92
LZL03-M-NEMA	0.41	0.55	1.3	0.95	3.3	2.4	3000	16	34	3.9	8.6	Ex II 2GD c T6 IIC T85°C	8411 1006 81
Unrestricted*	1.0	1.3	3.3	2.4	3.7	3.7	3000	24	51				
LZL05-M	0.63	0.84	2.0	1.5	5.8	4.3	3000	25	52	3.9	8.6	Ex II 2GD c T6 IIC T85°C	8411 1007 23
LZL05-M-IEC	0.63	0.84	2.0	1.5	5.8	4.3	3000	25	52	4.8	10.6	Ex II 2GD c T6 IIC T85°C	8411 1007 49
LZL05-M-NEMA	0.63	0.84	2.0	1.5	5.8	4.3	3000	25	52	4.9	10.8	Ex II 2GD c T6 IIC T85°C	8411 1007 31
Unrestricted*	1.7	2.2	5.3	3.9	6.7	4.9	3000	35	74				

* Motor without restrictor plates in the air in- and outlet, the motors should not be run above max allowed speed.

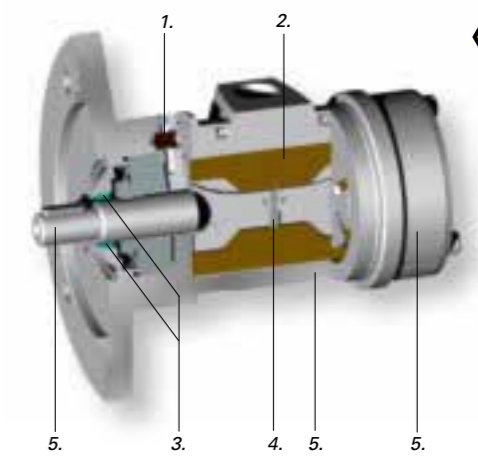
Stainless steel motors

Stainless steel motors are available in the size LZL05. They are lube free and have the same features as the other lube free motors. All external parts, including the output shaft, are made of stainless steel, which makes the motors very corrosion resistant and ideal for applications such as the food industry, corrosive mixing and the chemical industry.

The material used in all external parts is ISO 683/XIII Type 17, SS 14 2346, DIN 17440 X 12CrNiS188.

The material in the output shaft is ISO 683/XIII Type 9b, SS 14 2321, DIN 17440 X 22CrNi17.

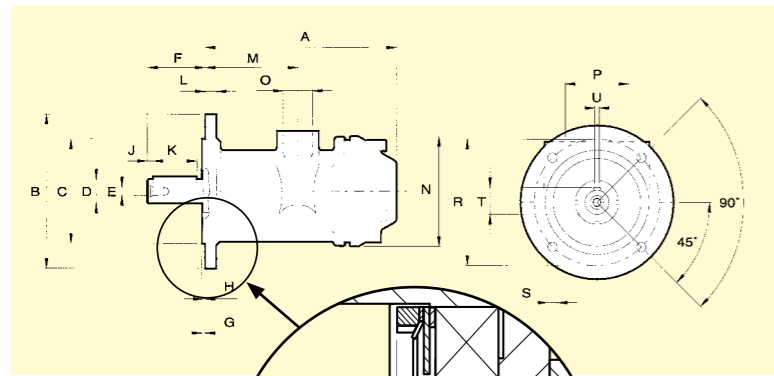
EX certification valid for fixture mounted use only with a maximum surrounding temperature of +40°C (104°F).



1. Rubber hose valves for venting bearing and seals.
2. Lube free vanes.
3. Double seals.
4. Vane pins.
5. Stainless steel.

Model	Power at 3000 rpm		Torque at 3000 rpm	Torque at 3000 rpm	Stall torque	Stall torque	Max allowed speed	Air consumption at 3000 rpm	Air consumption at 3000 rpm	Weight		ATEX code	Ordering No.
	[kW]	[hp]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[l/s]	[cfm]	[kg]	[lb]		
Lubrication free													
LZL05-R-SL-IEC	0.63	0.84	2.0	1.5	4.8	3.5	3000	25	52	6.1	13.4	Ex II 2GD c T4 IIC T110°C	8411 1008 44
LZL05-R-SL-NEMA	0.63	0.84	2.0	1.5	4.8	3.5	3000	25	52	6.1	13.4	Ex II 2GD c T4 IIC T110°C	8411 1008 36
Unrestricted*	1.7	2.2	5.3	3.9	6.7	4.9	3000	35	74				

* Motor without restrictor plates in the air in- and outlet, the motors should not be run above max allowed speed.



Air motor
Measurements (mm)
Conversion factor
1 mm = 0.04 inch

Air motor
Measurements (mm) Conversion factor 1 mm = 0.04 inch

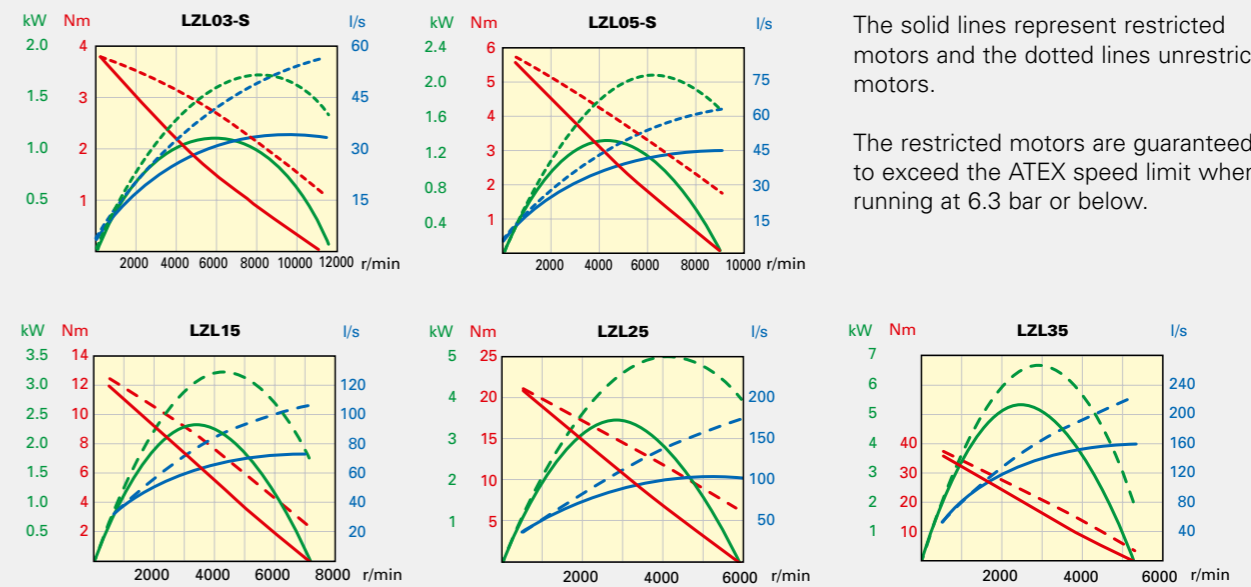
Model	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	S	T	U
LZL03-M/S	[mm] 124	Ø105	Ø70 j6	Ø16 js7	M5x15	40	2.5	1.5	2.0	30	8.5	65	Ø69	BSP 3/8"	36	Ø85	Ø7	18	5 h9
LZL03-M/S-IEC	[mm] 124	Ø160	Ø110 j6	Ø14 js7	M5x15	30	3.5	1.5	2.0	20	10	65	Ø69	BSP 3/8"	36	Ø130	Ø10	16	5 h9
LZL03-M/S-NEMA	[mm] 124	Ø165.1	Ø114.3	Ø15.875	M5x15	51.5	3.0	1.5	1.7	31.75	10	65	Ø69	BSP 3/8"	36	Ø149.4	3/8"-16 UNC	17.95	5 h9
LZL03-M/S-NEMA	[inch] 4.88	Ø6.5	Ø4.5	Ø0.625	M5x15	2.03	0.12	0.06	0.07	1.25	0.39	2.56	Ø2.72	BSP 3/8"	1.42	Ø5.882	3/8"-16 UNC	0.706	0.197 h9
LZL05-S	[mm] 153	Ø105	Ø70 j6	Ø18 js7	M5x15	40	2.5	0.8	3.0	30	8.5	81	Ø76	BSP 1/2"	44	Ø85	Ø7	20.5	6 h9
LZL05-M	[mm] 153	Ø105	Ø70 j6	Ø16 js7	M5x15	40	2.5	0.8	2.0	30	8.5	81	Ø76	BSP 1/2"	44	Ø85	Ø7	18	5 h9
LZL05-M/S-IEC	[mm] 153	Ø160	Ø110 j6	Ø14 js7	M5x15	30	3.5	0.8	2.0	20	10	81	Ø76	BSP 1/2"	44	Ø130	Ø10	16	5 h9
LZL05-M/S-NEMA	[mm] 153	Ø165.1	Ø114.3	Ø15.875	M5x15	51.5	3.0	0.8	1.7	31.75	10	81	Ø76	BSP 1/2"	44	Ø149.4	3/8"-16 UNC	17.95	5 h9
LZL05-M/S-NEMA	[inch] 6.02	Ø6.5	Ø4.5	Ø0.625	M5x15	2.03	0.12	0.03	0.07	1.25	0.39	3.19	Ø3.00	BSP 1/2"	1.73	Ø5.882	3/8"-16 UNC	0.706	0.197 h9
LZL05-R-SL-IEC	[mm] 146.7	Ø160	Ø110 j6	Ø14 js7	-	30	3.5	4.3	2.0	20	12.5	74.7	Ø83	BSP 1/2"	44	Ø130	Ø10	16	5 h9
LZL05-R-SL-NEMA	[mm] 146.7	Ø165.1	Ø114.3	Ø15.875	-	51.5	3.0	2.8	1.7	31.75	12.5	74.7	Ø83	BSP 1/2"	44	Ø149.4	3/8"-16 UNC	17.95	5 h9
LZL05-R-SL-NEMA	[inch] 5.76	Ø6.5	Ø4.5	Ø0.625	-	2.3	0.12	0.11	0.07	1.25	0.49	2.94	Ø3.27	BSP 1/2"	1.73	Ø5.882	3/8"-16 UNC	0.71	0.197 h9
LZL15	[mm] 174	Ø140	Ø95 j6	Ø22 js7	M8x15	52.5	3.0	0.0	5.0	40	10	84	Ø100	BSP 3/4"	58	Ø115	Ø8.8	24.5	6 h9
LZL15-P-IEC	[mm] 182	Ø200	Ø130 j6	Ø19 j6	M6x16	40	3.5	-	5.0	30	12	95.5	Ø100	BSP 3/4"	54	Ø165	Ø12	21.5	6 h9
LZL25	[mm] 206	Ø160	Ø110 j6	Ø28 js7	M10x15	62.5	3.5	1.8	5.0	50	12	103	Ø120	BSP 1"	70	Ø130	Ø8.8	31	8 h7
LZL25-P-IEC	[mm] 220.5	Ø200	Ø130 j6	Ø24 j6	M10x22	50	3.5	-	5.0	40	12	117.5	Ø120	BSP 1"	70	Ø165	Ø12	27	8 h7
LZL35	[mm] 238	Ø200	Ø130 j6	Ø28 js7	M10x15	62.5	3.5	1.8	5.0	50	14	119	Ø134	BSP 1 1/4"	70	Ø165	Ø12	31	8 h7
LZL35-P-IEC	[mm] 248.5	Ø250	Ø180 j6	Ø28 j6	M10x22	60	4.0	-	5.0	50	14	129	Ø134	BSP 1 1/4"	70	Ø215	Ø14.5	31	8 h7

LZL motors with IEC interface
Measurements (mm) Conversion factor 1 mm = 0.04 inch

Model	Flange mounting	IEC frame	Flange No.
LZL05-S-IEC	B5	71	FF 130
LZL15-P-IEC	B5	80	FF 165
LZL25-P-IEC	B5	90	FF 165
LZL35-P-IEC	B5	112	FF 215

LZL: Performance curves at air pressure 6.3 bar (91 psi)

Power motors

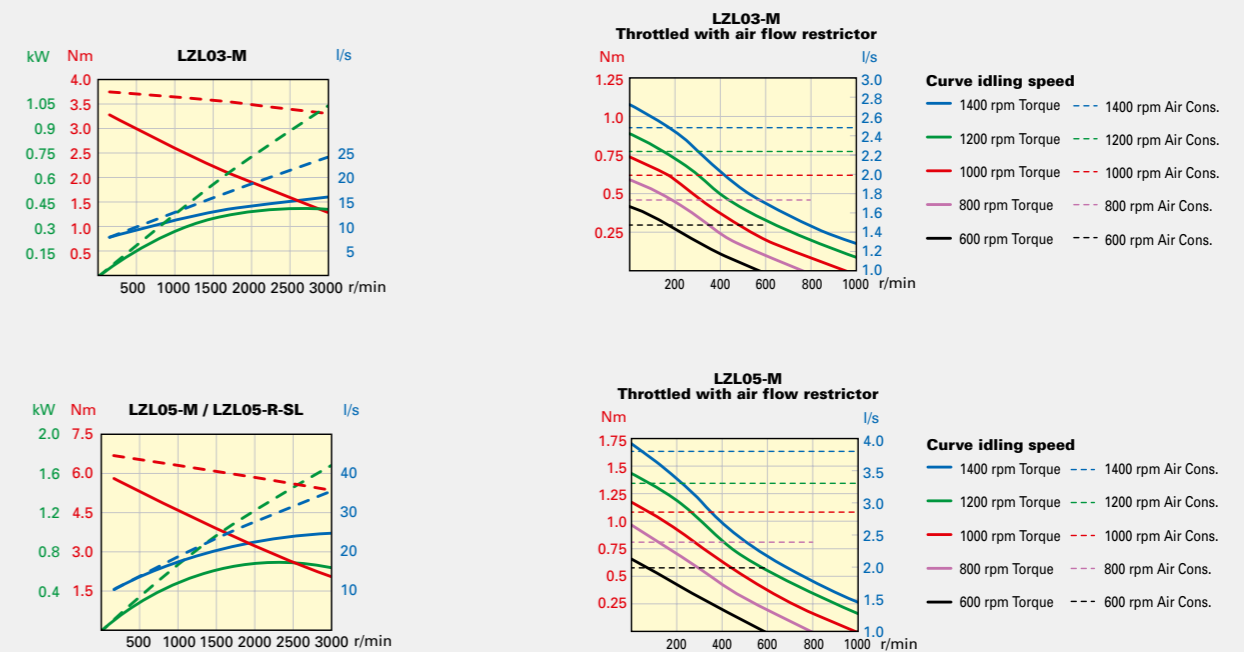


The solid lines represent restricted motors and the dotted lines unrestricted motors.

The restricted motors are guaranteed not to exceed the ATEX speed limit when running at 6.3 bar or below.

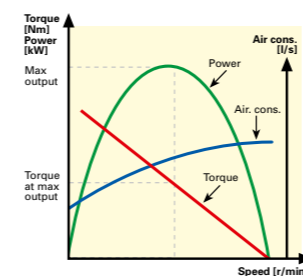
LZL: Performance curves at air pressure 6.3 bar (91 psi)

Lubrication free motors and stainless steel motors



Curve idling speed
 — 1400 rpm Torque --- 1400 rpm Air Cons.
 — 1200 rpm Torque --- 1200 rpm Air Cons.
 — 1000 rpm Torque --- 1000 rpm Air Cons.
 — 800 rpm Torque --- 800 rpm Air Cons.
 — 600 rpm Torque --- 600 rpm Air Cons.

Curve idling speed
 — 1400 rpm Torque --- 1400 rpm Air Cons.
 — 1200 rpm Torque --- 1200 rpm Air Cons.
 — 1000 rpm Torque --- 1000 rpm Air Cons.
 — 800 rpm Torque --- 800 rpm Air Cons.
 — 600 rpm Torque --- 600 rpm Air Cons.



Conversion factors
 1 kW = 1.34 hp
 1 Nm = 0.74 lbf - ft
 1 l/s = 2.1 cfm

1 hp = 0.75 kW
 1 lbf-ft = 1.36 Nm
 1 cfm = 0.47 l/s

For information about performance curves, see page 7.

Performance with restrictors

Performance without restrictors, (unrestricted)

LZL VANE MOTOR/GEAR UNIT COMBINATIONS

Combined with helical gear units, LZL vane motors can be used over a very wide torque and speed range. Gears have a ratio range between 6.3:1 to 164.5:1, corresponding to a speed range of 512 to 17 r/min and output torque up to 1836 Nm at max. output.

Helical gear units, type BF

Helical gear units are available in 2, 3, or 4-stage configurations. They deliver high efficiency levels and are available in a wide choice of ratios, Figure 4.



Figure 4

Shaft loading

The maximum allowable radial load on the output shaft of each gear unit, at the halfway point on the shaft can be obtained from the data tables for each model.

The maximum permitted axial load is 20% of the table value for radial load if full permitted radial load is occurring. If there is no radial load the maximum permissible axial load is 50% of the table value for radial force.

Calculating sprocket or gearwheel dimensions

If it is intended to fit a sprocket, gearwheel or pulley onto the output shaft, the radial load generated when running must be within the permitted level.

The following formula is used to calculate the minimum diameter of these components, to ensure the radial load does not exceed this limit.

$$D_{min} = \frac{2 \times M \times kt}{F} [m]$$

where M = load torque in Nm
 F = permitted radial force halfway along the shaft extension
 kt = 1.0 for sprocket
 1.3 for gear wheel
 1.5 for pulley

Operating speed

To avoid damage to seals the gear units should not be run continuously above 4200 rpm.

Mounting

There are two options of mounting arrangement: Foot or Flange as illustrated in Figure 5.

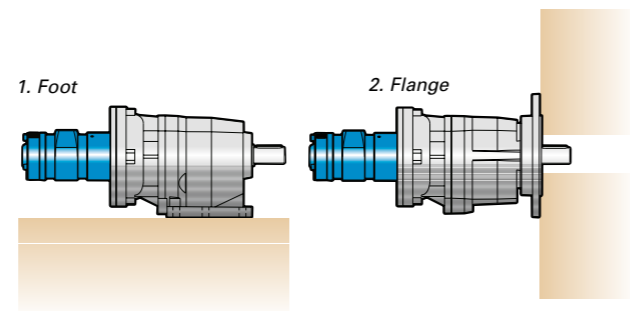


Figure 5

Temperature

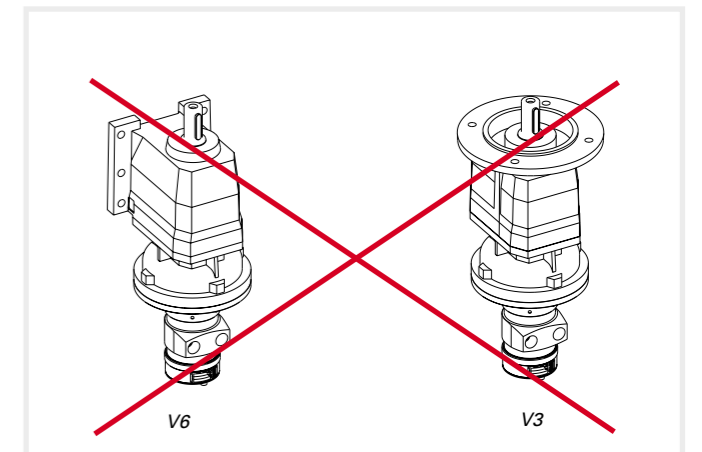
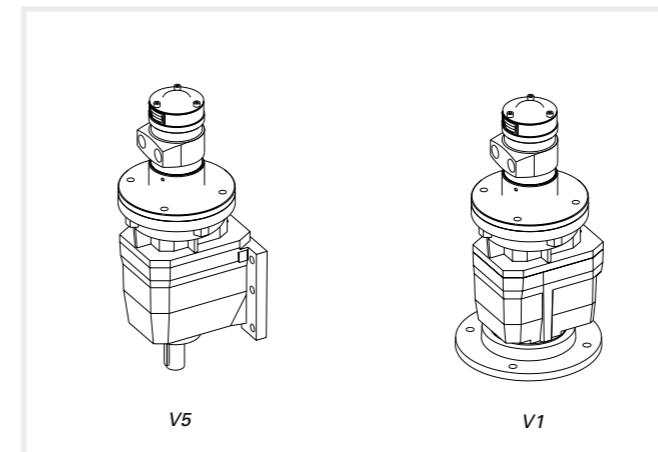
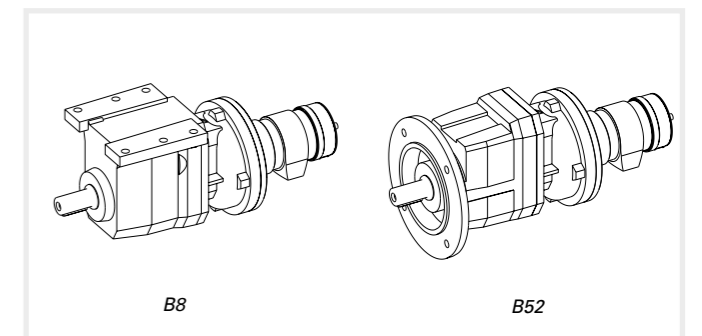
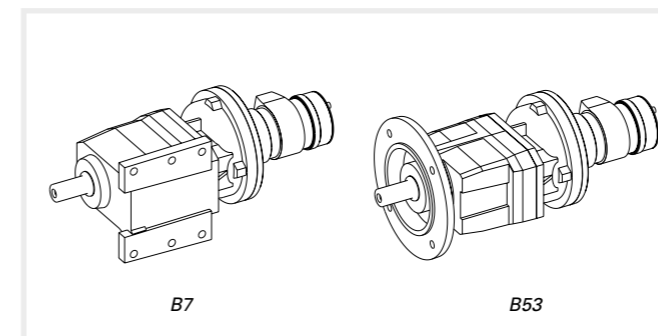
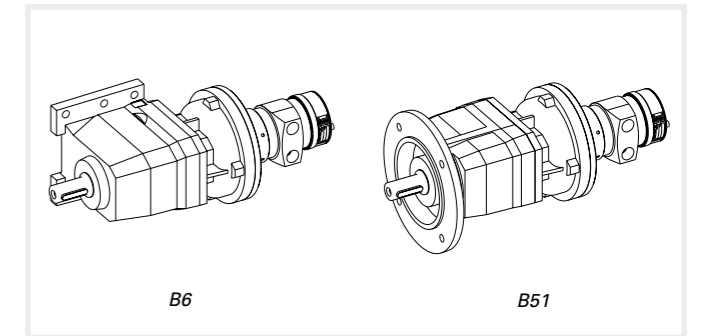
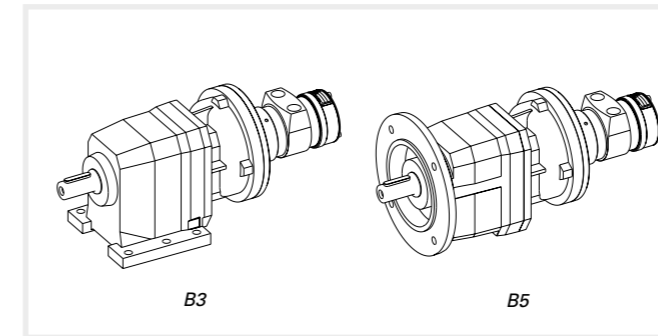
The gear units can operate within an ambient temperature range of -20°C (-4°F) and +40°C (104°F).

If it is required to use a gear unit outside these temperature limits please consult your local Atlas Copco representative.

Mounting position

Allowed mounting positions are shown below. Installing the motor underneath the gear unit is not allowed.

The alphanumeric numbers B3, B5, etc., are referred to in the product information enclosed at delivery.



Position not allowed.

AIR MOTORS LZL05 with helical gear units

1.2 – 2.0 kW
1.7 – 2.6 hp

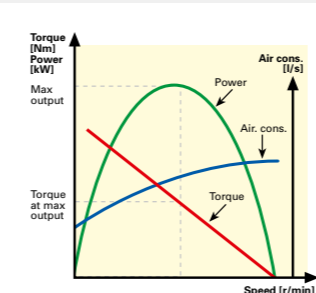
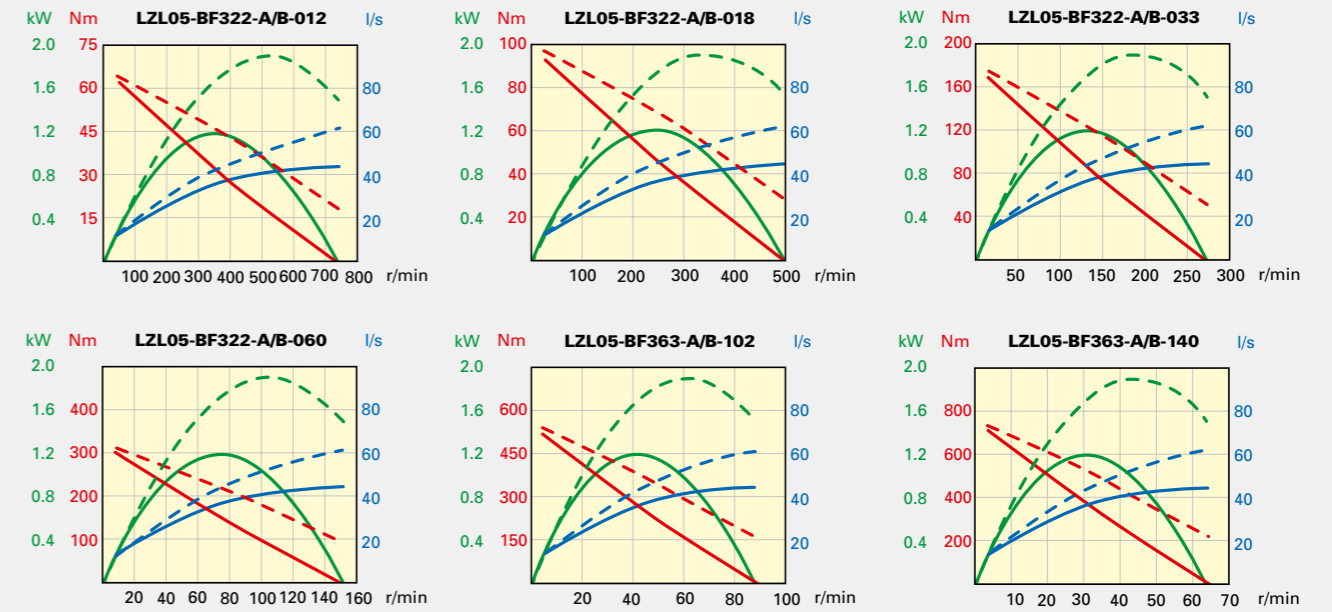


Data at air pressure 6.3 bar (91 psi)

Model	Ratio	Max output		Speed at max output	Torque max output		Min starting torque		Free speed	Max allowed speed	Air cons. at max output		Weight		Max radial load at max output	Ordering No.
		[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[r/min]	[l/s]	[cfm]	[kg]	[lb]	[N]	
LZL05-BF322-A-012	12.3	1.2	1.7	352	33	25	56	41	740		36	77	14	31	2360	8411 1808 40
LZL05-BF322-B-012	12.3	1.2	1.7	352	33	25	56	41	740		36	77	14	31	2360	8411 1808 57
Unrestricted*	12.3	2.0	2.6	512	36	27	56	41	740	740	54	114	14	31	2100	
LZL05-BF322-A-018	18.2	1.2	1.7	238	49	36	83	61	500		36	77	14	31	2770	8411 1808 65
LZL05-BF322-B-018	18.2	1.2	1.7	238	49	36	83	61	500		36	77	14	31	2770	8411 1808 73
Unrestricted*	18.2	2.0	2.6	346	54	40	83	61	500	500	54	114	14	31	2450	
LZL05-BF322-A-033	33.1	1.2	1.7	131	90	66	151	111	275		36	77	14	31	3370	8411 1808 81
LZL05-BF322-B-033	33.1	1.2	1.7	131	90	66	151	111	275		36	77	14	31	3370	8411 1808 99
Unrestricted*	33.1	2.0	2.6	190	97	72	151	111	275	275	54	114	14	31	3000	
LZL05-BF322-A-060	59.4	1.2	1.7	73	161	119	271	200	153		36	77	14	31	4800	8411 1809 07
LZL05-BF322-B-060	59.4	1.2	1.7	73	161	119	271	200	153		36	77	14	31	4800	8411 1810 15
Unrestricted*	59.4	2.0	2.6	106	174.9	129	271	200	153	153	54	114	14	31	4280	
LZL05-BF363-A-102	102.2	1.2	1.6	42	272	200	456	336	89		36	77	22	49	5650	8411 1810 23
LZL05-BF363-B-102	102.2	1.2	1.6	42	272	200	456	336	89		36	77	22	49	5650	8411 1810 31
Unrestricted*	102.2	1.9	2.6	62	295	217	456	336	89	89	54	114	22	49	5020	
LZL05-BF363-A-140	139.8	1.2	1.6	31	372	274	624	460	65		36	77	22	49	5690	8411 1810 49
LZL05-BF363-B-140	139.8	1.2	1.6	31	372	274	624	460	65		36	77	22	49	5690	8411 1810 56
Unrestricted*	139.8	1.9	2.6	45	403	297	624	460	65	65	54	114	22	49	5060	

*) Unrestricted, the motors should not be run without load
A = Foot mount
B = Flange mount

Air motor LZL05 with helical gear units type BF: Performance curves at air pressure 6.3 bar (91 psi)



Conversion factors
1 kW = 1.34 hp
1 Nm = 0.74 lbf - ft
1 l/s = 2.1 cfm

1 hp = 0.75 kW
1 lbf-ft = 1.36 Nm
1 cfm = 0.47 l/s

For information about performance curves, see page 7.

Performance with restrictors

Performance without restrictors (unrestricted)

AIR MOTORS LZL15 with helical gear units

2.1 – 3.0 kW
2.9 – 4.1 hp

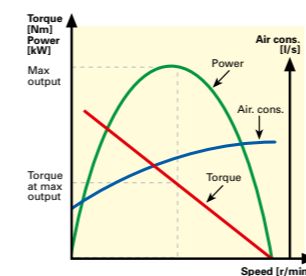
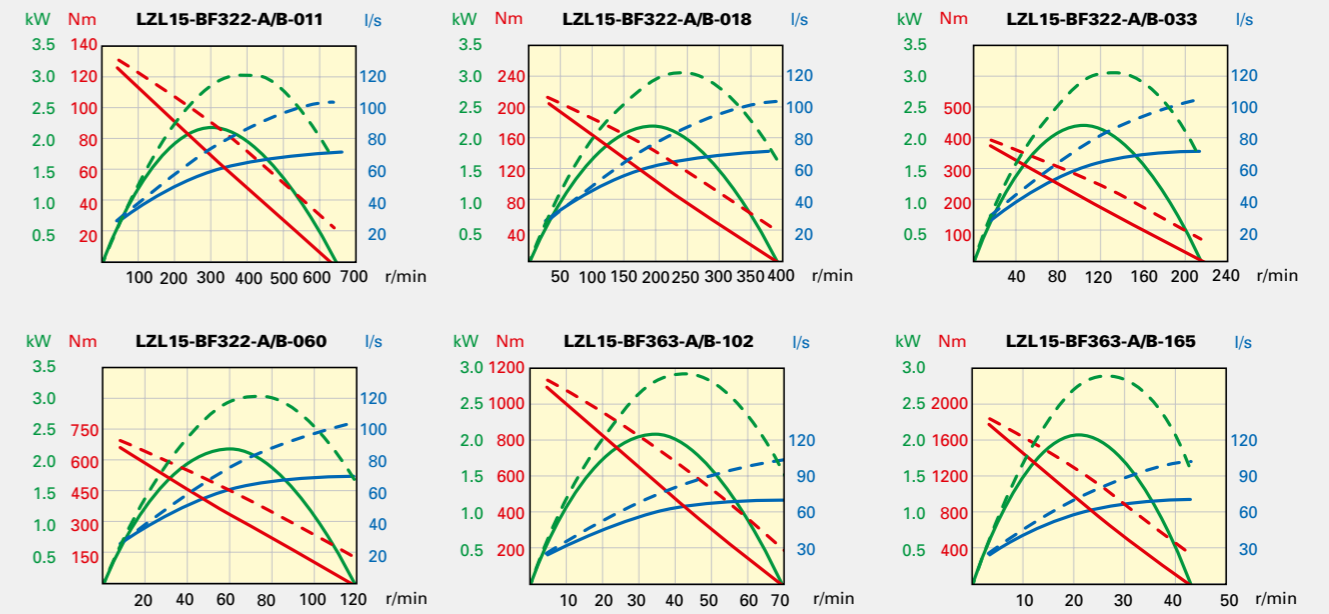


Data at air pressure 6.3 bar (91 psi)

Model	Ratio	Max output		Speed at max output	Torque max output		Min starting torque		Free speed	Max allowed speed	Air cons. at max output		Weight		Max radial load at max output	Ordering No.
		[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[r/min]	[l/s]	[cfm]	[kg]	[lb]	[N]	
LZL15-BF322-A-011	11.2	2.2	2.9	307	68	50	116	86	639		61	129	19	42	2530	8411 1810 61
LZL15-BF322-B-011	11.2	2.2	2.9	307	68	50	116	86	639		61	129	19	42	2530	8411 1810 79
Unrestricted*	11.2	3.0	4.1	389	74	55	116	86		639	86	181	19	42	2310	
LZL15-BF322-A-018	18.2	2.2	2.9	189	111	82	188	139	393		61	129	19	42	2970	8411 1810 87
LZL15-BF322-B-018	18.2	2.2	2.9	189	111	82	188	139	393		61	129	19	42	2970	8411 1810 95
Unrestricted*	18.2	3.0	4.1	239	121	89.3	188	139		393	86	181	19	42	2710	
LZL15-BF322-A-033	33.1	2.2	2.9	104	202	149	343	253	216		61	129	19	42	3600	8411 1811 03
LZL15-BF322-B-033	33.1	2.2	2.9	104	202	149	343	253	216		61	129	19	42	3600	8411 1811 11
Unrestricted*	33.1	3.0	4.1	132	220	162	343	253		216	86	181	19	42	3300	
LZL15-BF322-A-060	59.4	2.2	2.9	58	362	267	615	454	120		61	129	19	42	5150	8411 1811 29
LZL15-BF322-B-060	59.4	2.2	2.9	58	362	267	615	454	120		61	129	19	42	5150	8411 1811 37
Unrestricted*	59.4	3.0	4.1	73	395	291	615	454		120	86	181	19	42	4710	
LZL15-BF363-A-102	102.2	2.1	2.9	34	609	449	1036	764	70		61	129	27	60	6040	8411 1811 45
LZL15-BF363-B-102	102.2	2.1	2.9	34	609	449	1036	764	70		61	129	27	60	6040	8411 1811 52
Unrestricted*	102.2	3.0	4.0	43	665	491	1036	764		70	86	181	27	60	5520	
LZL15-BF613-A-165	164.5	2.1	2.9	21	981	723	1668	1230	43		61	129	70	154	15000	8411 1811 60
LZL15-BF613-B-165	164.5	2.1	2.9	21	981	723	1668	1230	43		61	129	70	154	15000	8411 1811 78
Unrestricted*	164.5	3.0	4.0	26	1071	790	1668	1230		43	86	181	70	154	15000	

*) Unrestricted, the motors should not be run without load
A = Foot mount
B = Flange mount

Air motor LZL15 with helical gear units type BF: Performance curves at air pressure 6.3 bar (91 psi)



Conversion factors
1 kW = 1.34 hp
1 Nm = 0.74 lbf - ft
1 l/s = 2.1 cfm

1 hp = 0.75 kW
1 lbf-ft = 1.36 Nm
1 cfm = 0.47 l/s

For information about performance curves, see page 7.

Performance with restrictors

Performance without restrictors, (unrestricted)

AIR MOTORS LZL25 with helical gear units

3.3 – 4.8 kW
4.4 – 6.4 hp

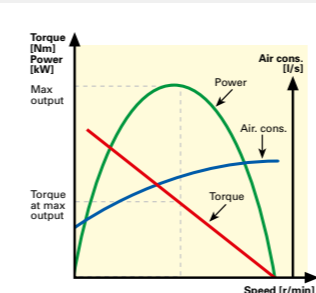
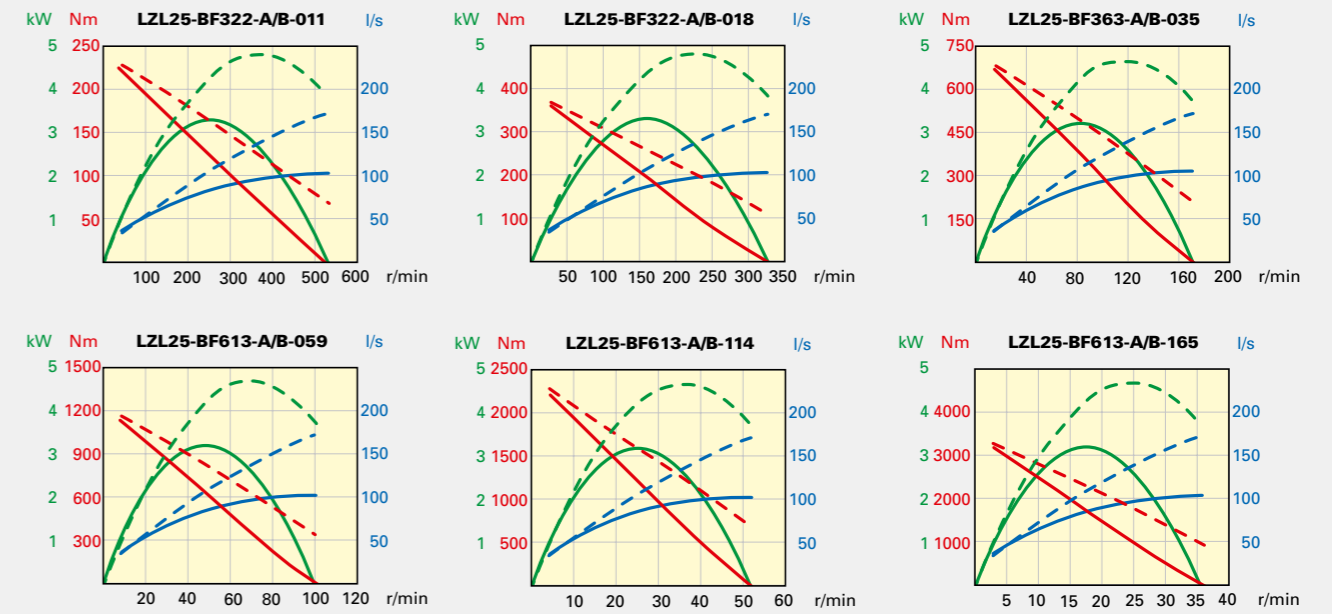


Data at air pressure 6.3 bar (91 psi)

Model	Ratio	Max output		Speed at max output	Torque max output		Min starting torque		Free speed	Max allowed speed	Air cons. at max output		Weight		Max radial load at max output	Ordering No.
		[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[r/min]	[l/s]	[cfm]	[kg]	[lb]	[N]	
LZL25-BF322-A-011	11.2	3.3	4.4	254	123	91	192	141	531		86	183	26	57	2700	8411 1811 86
LZL25-BF322-B-011	11.2	3.3	4.4	254	123	91	192	141	531		86	183	26	57	2700	8411 1811 94
Unrestricted*	11.2	4.8	6.4	370	128	94	192	141		531	140	297	26	57	2430	
LZL25-BF322-A-018	18.2	3.3	4.4	156	201	148	311	230	327		86	183	26	57	3170	8411 1812 02
LZL25-BF322-B-018	18.2	3.3	4.4	156	201	148	311	230	327		86	183	26	57	3170	8411 1812 10
Unrestricted*	18.2	4.8	6.4	227	207	153	311	230		327	140	297	26	57	2860	
LZL25-BF363-A-035	34.6	3.2	4.3	82	373	275	579	427	172		86	183	34	75	4100	8411 1812 28
LZL25-BF363-B-035	34.6	3.2	4.3	82	373	275	579	427	172		86	183	34	75	4100	8411 1812 36
Unrestricted*	34.6	4.7	6.2	120	386	285	579	427		172	140	297	34	75	3700	
LZL25-BF613-A-059	58.6	3.2	4.3	48	632	466	981	724	101		86	183	77	170	13000	8411 1812 44
LZL25-BF613-B-059	58.6	3.2	4.3	48	632	466	981	724	101		86	183	77	170	13000	8411 1812 51
Unrestricted*	58.6	4.7	6.2	71	654	482	981	724		101	140	297	77	170	11700	
LZL25-BF613-A-114	113.6	3.2	4.3	25	1226	904	1902	1403	52		86	183	77	170	16000	8411 1812 69
LZL25-BF613-B-114	113.6	3.2	4.3	25	1226	904	1902	1403	52		86	183	77	170	16000	8411 1812 77
Unrestricted*	113.6	4.7	6.2	36	1268	935	1902	1403		52	140	297	77	170	16000	
LZL25-BF613-A-165	164.5	3.2	4.3	17	1775	1309	2754	2031	36		86	183	77	170	16000	8411 1812 85
LZL25-BF613-B-165	164.5	3.2	4.3	17	1775	1309	2754	2031	36		86	183	77	170	16000	8411 1812 94
Unrestricted*	164.5	4.7	6.2	25	1836	1354	2754	2031		36	140	297	77	170	16000	

*) Unrestricted, the motors should not be run without load
A = Foot mount
B = Flange mount

Air motor LZL25 with helical gear units type BF: Performance curves at air pressure 6.3 bar (91 psi)



Conversion factors
1 kW = 1.34 hp
1 Nm = 0.74 lbf-ft
1 l/s = 2.1 cfm

1 hp = 0.75 kW
1 lbf-ft = 1.36 Nm
1 cfm = 0.47 l/s

For information about performance curves, see page 7.

Performance with restrictors

Performance without restrictors, (unrestricted)

AIR MOTORS LZL35 with helical gear units

5.1 – 6.3 kW
6.8 – 8.4 hp

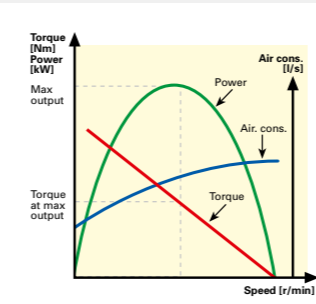
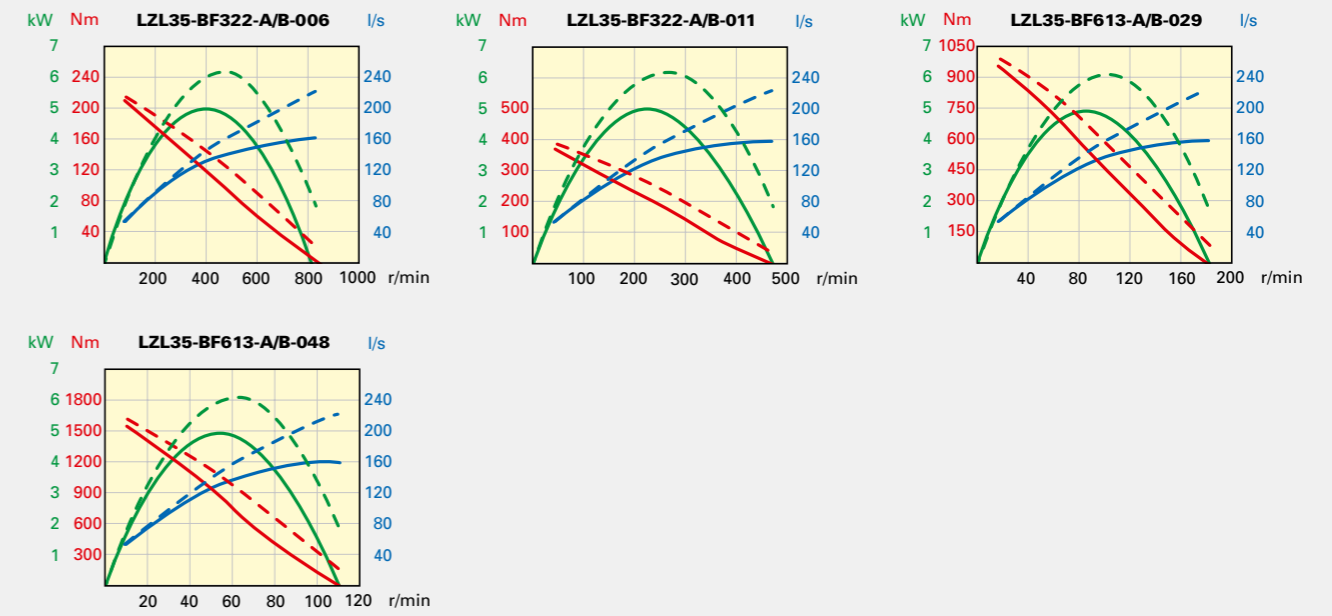


Data at air pressure 6.3 bar (91 psi)

Model	Ratio	Max output		Speed at max output	Torque max output		Min starting torque		Free speed	Max allowed speed	Air cons. at max output		Weight		Max radial load at max output	Ordering No.
		[kW]	[hp]	[r/min]	[Nm]	[lb-ft]	[Nm]	[lb-ft]	[r/min]	[r/min]	[l/s]	[cfm]	[kg]	[lb]	[N]	
LZL35-BF322-A-006	6.3	5.0	6.7	394	121	90	192	141	838		385	815	34	75	2360	8411 1813 01
LZL35-BF322-B-006	6.3	5.0	6.7	394	121	90	192	141	838		385	815	34	75	2360	8411 1813 19
Unrestricted*	6.3	6.2	8.3	464	128	94	192	141		838	159	337	34	75	2230	
LZL35-BF322-A-011	11.2	5.0	6.7	221	216	159	340	251	471		129	273	34	75	2810	8411 1813 27
LZL35-BF322-B-011	11.2	5.0	6.7	221	216	159	340	251	471		129	273	34	75	2810	8411 1813 35
Unrestricted*	11.2	6.2	8.3	261	227	167	340	251		471	159	337	34	75	2650	
LZL35-BF613-A-029	29.4	4.9	6.6	84	555	409	875	645	180		129	273	85	187	10600	8411 1813 43
LZL35-BF613-B-029	29.4	4.9	6.6	84	555	409	875	645	180		129	273	85	187	10600	8411 1813 50
Unrestricted*	29.4	6.1	8.1	99	583	430	875	645		180	159	337	85	187	10000	
LZL35-BF613-A-048	47.6	4.9	6.6	52	899	663	1417	1045	111		129	273	85	187	12100	8411 1813 68
LZL35-BF613-B-048	47.6	4.9	6.6	52	899	663	1417	1045	111		129	273	85	187	12100	8411 1813 78
Unrestricted*	47.6	6.1	8.1	61	944	696	1417	1045		111	159	337	85	187	11400	

*) Unrestricted, the motors should not be run without load
A = Foot mount
B = Flange mount

Air motor LZL35 with helical gear units type BF: Performance curves at air pressure 6.3 bar (91 psi)



Conversion factors
 1 kW = 1.34 hp
 1 Nm = 0.74 lbf-ft
 1 l/s = 2.1 cfm

 1 hp = 0.75 kW
 1 lbf-ft = 1.36 Nm
 1 cfm = 0.47 l/s

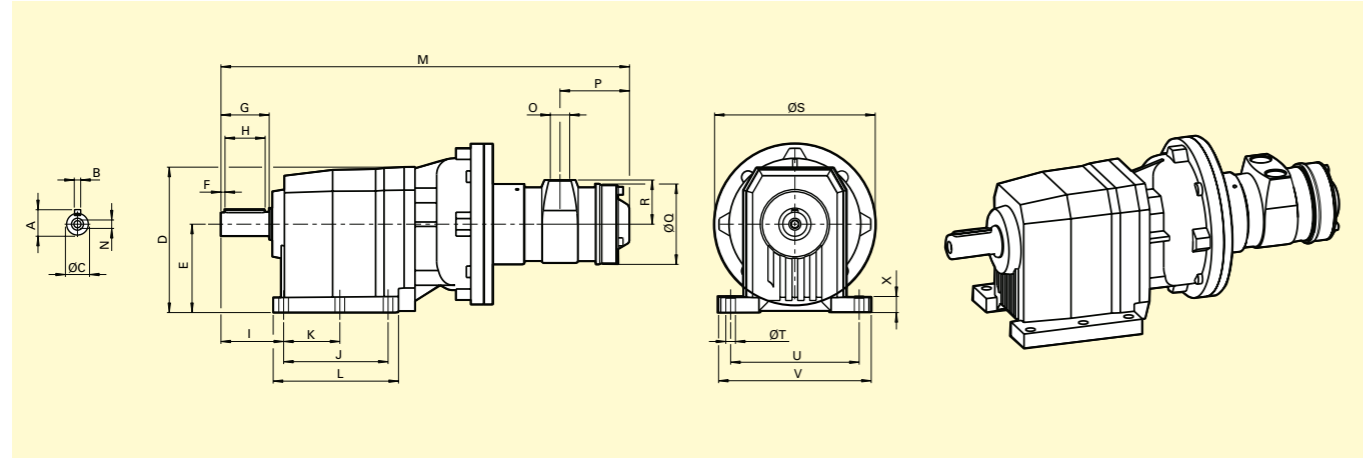
For information about performance curves, see page 7.

—————
 Performance with restrictors
 - - - - -
 Performance without restrictors, (unrestricted)

DIMENSIONS LZL WITH HELICAL GEAR UNITS

Foot models

Conversion factor 1 mm = 0.04 inch



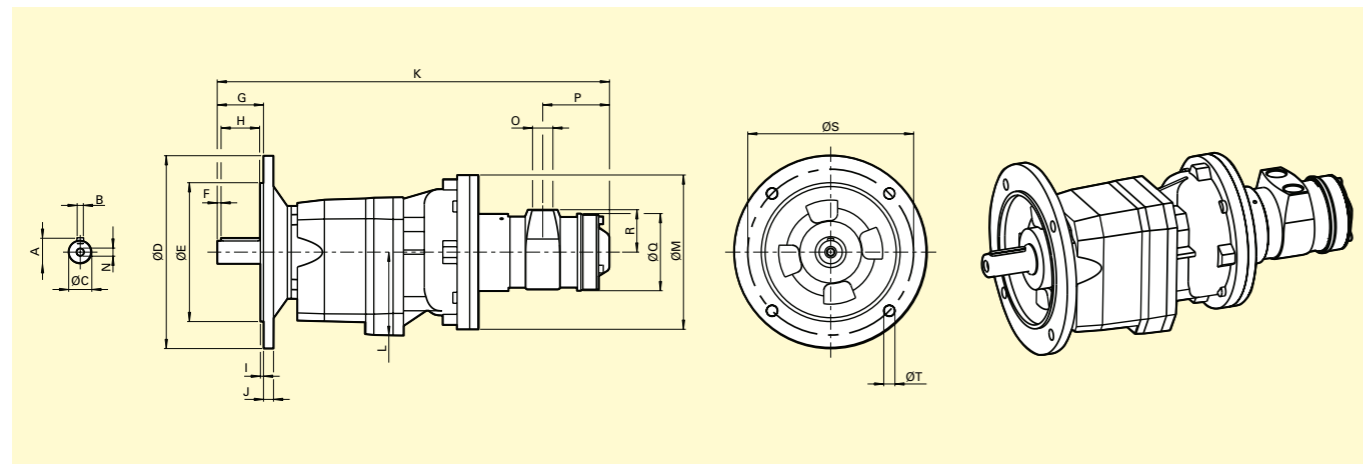
LZL type BF FOOT

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	X
LZL05-BF322-A-xxx	33	8 h9	30 h6	181	110	5.0	60	50	78	130	70	156	459.5	M10x22	BSP 1/2"	71	Ø76	42	Ø160	Ø11	160	190	20
LZL05-BF363-A-xxx	38	10 h9	35 h6	206	115	5.0	70	60	93.5	130	N/A	168	478	M10x22	BSP 1/2"	71	Ø76	42	Ø160	Ø14	170	205	16
LZL15-BF322-A-xxx	33	8 h9	30 h6	181	110	5.0	60	50	78	130	70	156	509	M10x22	BSP 3/4"	86.5	Ø100	55	Ø200	Ø11	160	190	20
LZL15-BF363-A-xxx	38	10 h9	35 h6	206	115	5.0	70	60	93.5	130	N/A	168	527.5	M10x22	BSP 3/4"	86.5	Ø100	55	Ø200	Ø14	170	205	16
LZL15-BF613-A-xxx	53.5	14 h9	50 h6	316	195	5.0	100	90	125	180	N/A	232	617	M16x36	BSP 3/4"	86.5	Ø100	55	Ø200	Ø18	250	300	25
LZL25-BF322-A-xxx	33	8 h9	30 h6	181	110	5.0	60	50	78	130	70	156	547.5	M10x22	BSP 1"	103	Ø120	62	Ø200	Ø11	160	190	20
LZL25-BF363-A-xxx	38	10 h9	35 h6	206	115	5.0	70	60	93.5	130	N/A	168	566	M10x22	BSP 1"	103	Ø120	62	Ø200	Ø14	170	205	16
LZL25-BF613-A-xxx	53.5	14 h9	50 h6	316	195	5.0	100	90	125	180	N/A	232	655.5	M16x36	BSP 1"	103	Ø120	62	Ø200	Ø18	250	300	25
LZL35-BF322-A-xxx	33	8 h9	30 h6	181	110	5.0	60	50	78	130	70	156	585.5	M10x22	BSP 1 1/4"	119.5	Ø134	68	Ø250	Ø14	160	190	20
LZL35-BF613-A-xxx	53.5	14 h9	50 h6	316	195	5.0	100	90	125	180	N/A	232	692.5	M16x36	BSP 1 1/4"	119.5	Ø134	68	Ø250	Ø18	250	300	25

DIMENSIONS LZL WITH HELICAL GEAR UNITS

Flange models

Conversion factor 1 mm = 0.04 inch



LZL type BF FLANGE

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
LZL05-BF322-B-xxx	33	8 h9	30 h6	Ø250	Ø180 f7	5.0	60	50	4.0	13	459.5	108	Ø160	M10x22	BSP 1/2"	71	Ø76	42	Ø160	Ø14
LZL05-BF363-B-xxx	38	10 h9	35 h6	Ø250	Ø180 f7	5.0	70	60	4.0	14	478	111	Ø160	M10x22	BSP 1/2"	71	Ø76	42	Ø160	Ø14
LZL15-BF322-B-xxx	33	8 h9	30 h6	Ø250	Ø180 f7	5.0	60	50	4.0	13	509	108	Ø200	M10x22	BSP 3/4"	86.5	Ø100	55	Ø215	Ø14
LZL15-BF363-B-xxx	38	10 h9	35 h6	Ø250	Ø180 f7	5.0	70	60	4.0	14	527.5	111	Ø200	M10x22	BSP 3/4"	86.5	Ø100	55	Ø215	Ø14
LZL15-BF613-B-xxx	53.5	14 h9	50 h6	Ø300	Ø230 f7	5.0	100	90	4.0	16	617	178.5	Ø200	M16x36	BSP 3/4"	86.5	Ø100	55	Ø265	Ø14
LZL25-BF322-B-xxx	33	8 h9	30 h6	Ø250	Ø180 f7	5.0	60	50	4.0	13	547.5	108	Ø200	M10x22	BSP 1"	103	Ø120	62	Ø215	Ø14
LZL25-BF363-B-xxx	38	10 h9	35 h6	Ø250	Ø180 f7	5.0	70	60	4.0	14	566	111	Ø200	M10x22	BSP 1"	103	Ø120	62	Ø215	Ø14
LZL25-BF613-B-xxx	53.5	14 h9	50 h6	Ø300	Ø230 f7	5.0	100	90	4.0	16	655.5	178.5	Ø200	M16x36	BSP 1"	103	Ø120	62	Ø265	Ø14
LZL35-BF322-B-xxx	33	8 h9	30 h6	Ø250	Ø180 f7	5.0	60	50	4.0	13	585.5	108	Ø250	M10x22	BSP 1 1/4"	119.5	Ø134	68	Ø215	Ø14
LZL35-BF613-B-xxx	53.5	14 h9	50 h6	Ø300	Ø230 f7	5.0	100	90	4.0	16	692.5	178.5	Ø250	M16x36	BSP 1 1/4"	119.5	Ø134	68	Ø265	Ø14

EXPLOSION PREVENTION GUIDELINES



In addition to the product instructions for air motors, the following guidelines apply to explosion protected air motors.

Temperatures

- The maximum surrounding temperature for which the certification is valid is 40°C (104°F).
- 40°C (104°F) is also the maximum allowed temperature of the compressed air when it enters the motor.
- If the motor is installed in a equipment, the entire equipment has to correspond to the guidelines 94/9/EC.
- Make sure that the compressed air fulfill our quality demands (quality classes 2.4.3. and 3.4.4 respectively 3.5.4 acc. to ISO/DIS 8573-1).
- Do not exceed maximum pressure of 6.3 bar, or as stated on the motor nameplate. Exceeding the operating pressure can increase the surface temperature due to higher rotating speed and the motor can become an ignition source.

ATEX CODE DEFINITION



ATEX certificate:

For information about the ATEX certificate, refer to the ATEX Technical File, 9836 4610 00.

If the product is part of an assembly where the components have different ATEX codes, the component with the lowest level of safety defines the ATEX code of the whole assembly.

Description	Value	Definition
Equipment group	I	Mining applications
	II	Surface industry
Equipment category Group I	M1	May continue to operate when a potentially explosive atmosphere is present
	M2	Shall not operate when a potentially explosive atmosphere is present.
Equipment category Group II	1	Very high level of protection • zone 0 (gas) • zone 1 (gas) • zone 2 (gas) • zone 20 (dust) • zone 21 (dust) • zone 22 (dust)
	2	High level of protection • zone 1 (gas) • zone 2 (gas) • zone 21 (dust) • zone 22 (dust)
	3	Normal level of protection • zone 2 (gas) • zone 22 (dust)
Atmosphere	G	Atmosphere containing Gas, Vapors or Mist
	D	Atmosphere containing Dust
Safety design	c	Constructional safety
Type of protection	Ex nL	Explosion protection. Type: "Energy limited apparatus and circuits"
Gas group	IIA	Propane/Acetone/Ammonia
	IIB	Ethylene
	IIC	Hydrogen/Acetylene
Max surface temperature in Gas		T1 = 450°C (848°F) T2 = 300°C (572°F) T3 = 200°C (392°F) T4 = 135°C (275°F) T5 = 100°C (212°F) T6 = 85°C (185°F)
Max surface temperature in Dust		Example temperatures: T85°C (185°F) T110°C (230°F) T120°C (248°F) T125°C (257°F) T240°C (464°F)
Ambient temperature range	Ta	Example: 20°C Ta +40°C

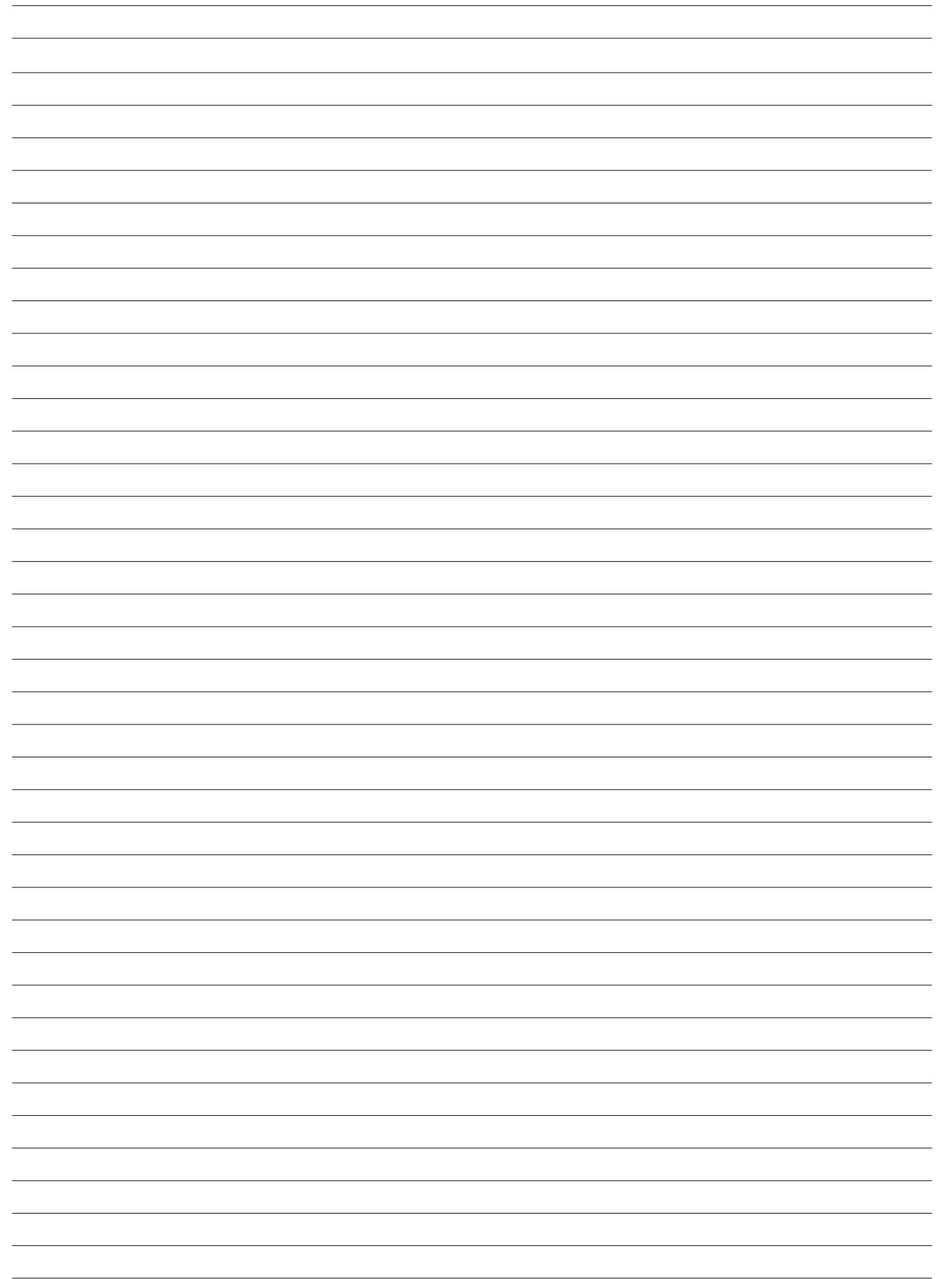
SPECIAL MOTORS

Atlas Copco is a premier supplier of air motors, manufactured to individual customer specifications.

Particularly for "OEM" requirements, a customized air motor can be the most efficient solution when integrating an air motor into a machine or tool. Typical examples of special motors are those having unique casing or mounting arrangements, motors utilizing non-standard materials or surface coatings and types designed to achieve a specific output.

Whatever the requirement, Atlas Copco welcomes the opportunity to work with its customers in finding the best solution for their needs.





COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers,
towards the environment and the people around us.
We make performance stand a test of time.
This is what we call – Sustainable Productivity.

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