



News from us, news for you!

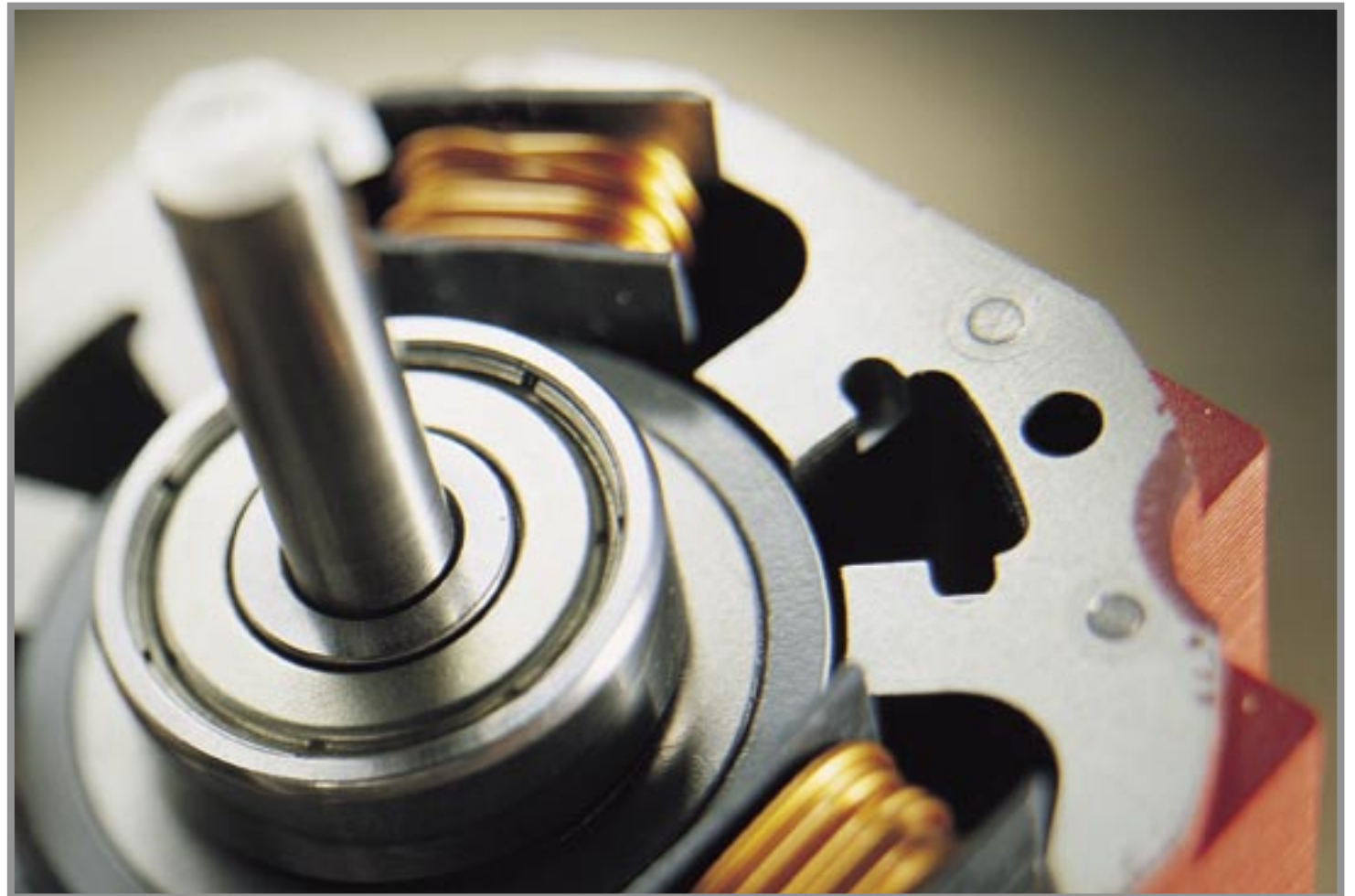
Faithful to its tradition for innovation, SONCEBOZ today unveils its new BLDC motor.

It's not just another motor, but a new technology that is now placed at your service, side by side with our stepping motors, linear actuators and mechatronic systems. In combination with our know-how in mechanical engineering and electronics, it enables us to offer new compact, integrated solutions.

This motor is based on a brand new concept and has been developed to cover a new range of applications in markets as varied as Textiles, Medical and Automation.

Let's hope that this newcomer contributes to the success of your motion control projects by the high technical and economic performance.

H. Poinceau
Motors R&D Manager



■ BLDC motors more mechanical power, high speed and reliability

Ever since 1950, SONCEBOZ has been manufacturing increasingly high-performance stepping motors to meet its customers' requirements. The advent of on-board electronics has created a new dynamism oriented towards reducing the overall cost of functions and increasing added value for our partners. In a continual endeavour to increase customer satisfaction, SONCEBOZ is now introducing a new range of brushless direct current motors (BLDC motors).

This new range of motors quite naturally complements and expands the solutions offered to date. On account of their simplicity, permanent magnet stepping motors are today perfectly adapted to low-cost applications and their transformation into efficient linear actuators.

Hybrid stepping motors represent an excellent alternative when torques have to be high. With 200 steps per revolution, they pro-

vide the precision and resolution necessary for many applications. When faced with such tried and tested technologies, the BLDC motor presents the advantage of high dynamic performance and very great operating safety due to its integrated sensors. More mechanical power, high speed and increased reliability are thus the principal advantages of these motors.

What conclusions should be

drawn from this? Firstly, we are delighted with the unprecedented opportunities offered by this new range to meet your requirements in the best possible way.

Secondly, we stress the ever-growing range of technologies that SONCEBOZ is continually developing to solve the motion control problems of its customer-partners with unrelenting concern for the quality and competitiveness of the solutions we offer.

Feature

Contactless high-speed drive

SONCEBOZ brushless DC motors use a technology developed by the MMT (Moving Magnet Technologies) company, the group's advanced research division. The original, patented design, which has already proved itself in the automotive industry, has been adapted to the needs and specific constraints of industrial applications. The result is a

range of simple, reliable, high-performance motors that can be used in many applications. This series of motors will also form the basis of new mechatronic systems developed according to specifications in close partnership with our customers. The chief advantages of this new brushless DC motor concept are: reduced noise, low heat generation and high motor constant!

■ Technical description

SONCEBOZ BLDC motors are three-phase motors with integrated Hall sensors. The rotor consists of an NdFeB-base permanent magnet with 5 pairs of N-S poles. The 3 Hall sensors of the stator detect the position of the rotor, thus giving the necessary information to the electronics for driving the motor.

The stator is made conventionally from FeSi plates. The number of poles, their shapes and their angular positions are calculated to reduce torque harmonics. The coils are connected in star and a 3-pin connector supplies the electric power.

The electronic controller supplies the motor phases according to the position of the rotor. In contrast to the case of a DC motor, position is detected without contact, thus ensuring reliability and long service life. But the basic principles and the simplicity of operation of these motors remain unchanged, offering, in particular, torque as a function of supply current and rotation speed as a function of voltage.

Features	Advantages
<ul style="list-style-type: none"> No brushes (contactless) 	<ul style="list-style-type: none"> no friction no operating limit due to brushes, collector or high currents high reliability and long service life
<ul style="list-style-type: none"> Integrated Hall sensors 	<ul style="list-style-type: none"> closed-loop operation optimized acceleration and deceleration low current consumption
<ul style="list-style-type: none"> Innovative design 	<ul style="list-style-type: none"> high motor constant (Nm/√W) high efficiency reduced heat generation cost-effectiveness
<ul style="list-style-type: none"> Compensation of torque harmonics 	<ul style="list-style-type: none"> low torque ripple reduced noise
<ul style="list-style-type: none"> Rotor with 5 pairs of poles 	<ul style="list-style-type: none"> high-speed operation
<ul style="list-style-type: none"> Stator winding 	<ul style="list-style-type: none"> good heat dissipation
<ul style="list-style-type: none"> Option for integrating electronics (driver) 	<ul style="list-style-type: none"> simplicity of operation



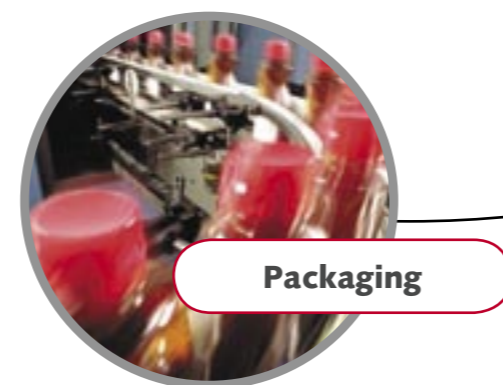
Automotive



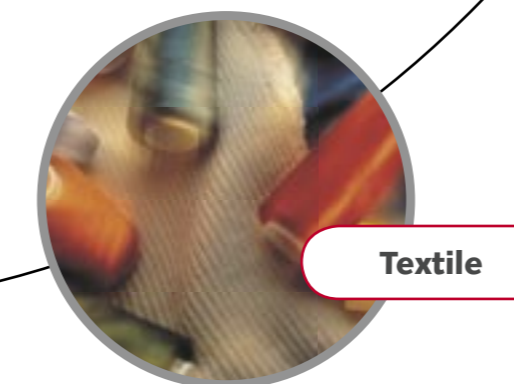
Medical



Banking



Packaging



Textile

Applications

One technology, three sizes, numerous adaptations

Using the same technology, SONCEBOZ has developed a range of BLDC motors - the 5455 series - Nema size 23 (57 mm).

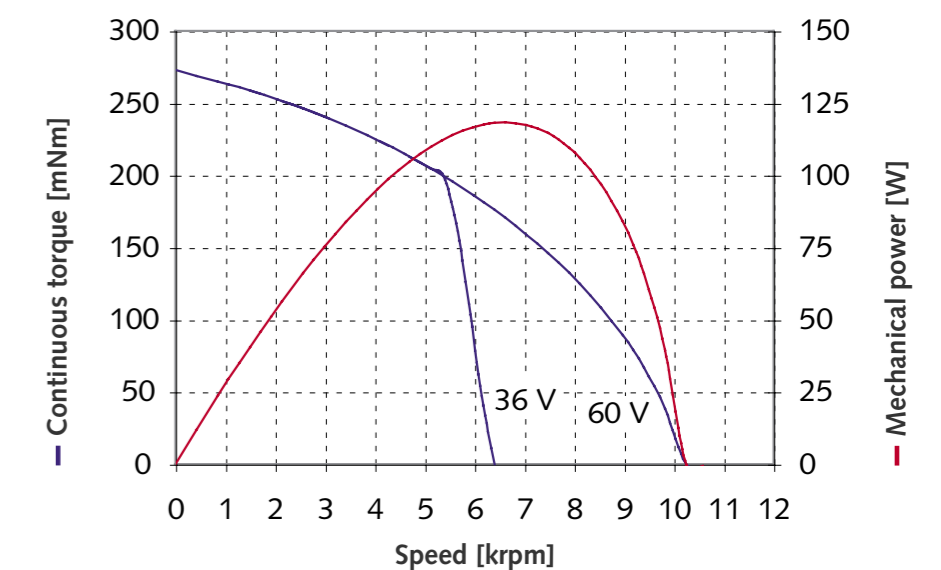
Depending on the torques required, three lengths are available: 1.5" - 2" and 3".

Terminal resistances and mechanical adaptations are configured on request.

Type	5455-15	5455-20	5455-30
Continuous static torque ¹ [mNm]	210	335	520
Max. static torque ² [mNm]	420	670	1040
No-load speed [rpm]	12 000	10 000	6 500
Motor constant [mNm/√w]	46,5	66	92
Torque constant [mNm/A]	36	54	85

¹) Continuous values based on an ambient temperature of 25°C, motor mounted on a 150 x 150 x 10 mm aluminium bracket

²) 10 seconds max. at an ambient temperature of 25°C



Typical power and torque curves for SONCEBOZ BLDC motor (continuous values for a 2" motor)

PROSPECTIVE

Men at work!

Business has expanded hearteningly over the last few years, so that SONCEBOZ S.A. is beginning to be short of space in the infrastructure it has at its disposal. After careful consideration, it has been decided to build an extension to the production areas.

Context

SONCEBOZ develops, manufactures and markets innovative products for industrial markets in Europe. Through its MMT Research Center in France, SONCEBOZ is striving to set world technology standards for applications in the automotive, medical, heating, mobile hydraulics and textiles sectors.

SONCEBOZ continues to select business projects based on innovation and providing added value to the customer.

Within the framework of this strategy, it proves to be worthwhile to integrate all the links in the added-value chain on one site.



Project

The extension basically consists of the construction of an extra story on the North building (adding 5 000 m²), together with a high-rise automatic storage tunnel, which will serve to accommodate 800 pallets.

This investment will enable business activities to be continued and expanded at SONCEBOZ, underpinned by modern infrastructures and an efficient production tool.

The quality awarded !

To satisfy the productivity, quality and delivery requirements, the Management Quality System implemented has evolved and improved for many years.

SONCEBOZ is reaping today the rewards of this improvement program. By awarding us "Supplier of the year", Magneti Marelli acknowledges the excellence in deliveries and low reject rate of 0.7 ppm achieved in more than one million actuators supplied.



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