made in Italy

SB Hydraulic Motors

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1-DECLARATION of Conformity.

SB series threephase and singlephase standard asynchronous electric submersed and dry motors comply with the essential requirements as reported below :

Dichiarazione UE di Conformità/*EU Declaration of Conformity*

CE

n°: **02/2023 Italian / English**

Il costruttore/*The Manufacturer*: **S.B. Srl**
Indirizzo/*Address*: **Via Mantova, 54 - ROZZANO (Milano) - Italy**

dichiara qui di seguito che il prodotto/ *herewith declares that the product*

Motori elettrici immersi per ascensori idraulici tipo[1] (ad es. SB.....)
Submersible electric motors for hydraulic lifts type[1] (*e.g.* SB.....)

Model	SBMinilift		SB150A China		SB150A		SB150B		SB200		SB200 USA		SB250		SBDry	
	da/from	a/to	da/from	a/to	da/from	a/to	da/from	a/to	da/from	a/to	da/from	a/to	da/from	a/to	da/from	a/to
	SBBL010	SBBL125	SBBL440	SBBL555	SBBL150	SBBL951	SBBL840	SBBL873	SBBL308	SBBL410	SBBL308	SBBL410	SBBL303	SBBL368	SBBL820	SBBL839
	SB1.5/220A	SB3.3/220A	SBBL440E	SBBL555E	SB1/220A	SB24/440A	SB11/220B	SB24/440B	SB29/220	SB48/440			SB57/380	SB92/440		

risulta in conformità a quanto previsto dalle seguenti direttive comunitarie, comprese tutte le modifiche applicabili/ *is compliant with provisions of directives and with following standards*:

Norma-Direttiva/ *Norm-Directive*	**Titolo/ *Title***
IEC 60034-1:2022, IEC 60034-5:2020, IEC 60034-6:1991, IEC 60034-7:2020, IEC 60034-8:2007, IEC 60034-11:2020, IEC 60034-14:2018 (IEC 60038:2009 *only for standard voltages*).	Macchine elettriche rotanti - Parte 1: Caratteristiche nominali e di funzionamento; e altro./ *Rotating electrical machines - Part 1: Rating and performance; and more.*
2014/33/UE, 2014/33/EU, *current consolidated version*: 18/04/2014.	Direttiva Ascensori/ *Lifts Directive.*
2006/42/CE, 2006/42/EC, 2006/42/EG (sono applicabili solo i requisiti 1.1.2. e 1.5.1. dell'Allegato I/ *the requirements 1.1.2. and 1.5.1, in ANNEX I are applicable only), current consolidated version*: 26/07/2019.	Direttiva Macchine/ *Machinery Directive.*
2014/35/UE, 2014/35/EU (è applicabile solo l'Allegato I/ *ANNEX I is applicable only*).	Direttiva Bassa Tensione/ *Low Voltage Directive.*
2014/30/UE, 2014/30/EU (questa direttiva non è direttamente applicabile al prodotto/ *this directive is not directly applicable to product*), *current consolidated version*: 11/09/2018.	Direttiva Compatibilità Elettromagnetica/ *Electromagnetic Compatibility Directive.*
CISPR 11:2015/AMD2:2019, EN 55011:2016/A2:2021 (questi regolamenti non sono direttamente applicabili al prodotto/ *these standards are not directly applicable to product*).	Attrezzature industriali, scientifiche e mediche. Caratteristiche dei disturbi a radiofrequenza. Limiti e metodi di misurazione./ *Industrial, scientific and medical equipment. Radio-frequency disturbance characteristics. Limits and methods of measurement.*
CISPR 14-1:2020, EN 55014-1:2017/A11:2020 (questi regolamenti non sono direttamente applicabili al prodotto/ *these standards are not directly applicable to product*).	Compatibilità elettromagnetica. Prescrizioni per gli elettrodomestici, gli utensili elettrici e gli apparecchi similari - Parte 1: Emissione./ *Electromagnetic compatibility. Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission.*
2011/65/UE, 2011/65/EU, *current consolidated version*: 01/10/2022.	Direttiva RoHS 2-su restrizione dell'uso di determinate sostanze pericolose nelle apparecchiature elettriche ed elettroniche (rifusione)/ *RoHS 2 directive-on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment (recast).*
1907/2006/CE, 1907/2006/EC, 1907/2006/EG, *current version*: 17/12/2022 (il costruttore non ha l'obbligo di registrare nessuna sostanza a norma del regolamento REACH/ *the manufacturer do not need to register any substance under REACH*).	Regolamento REACH (concernente la registrazione, la valutazione, l'autorizzazione e la restrizione delle sostanze chimiche)/ *REACH regulation (Registration, Evaluation, Authorisation and restriction of CHemicals).*

È fatto divieto di mettere in servizio il motore elettrico prima che l'insieme, in cui sarà incorporato, sia stato dichiarato conforme alle proprie direttive./ *It is prohibited to run the electric motor before the machine on which it is fitted has been declared compliant with relative directives.*

Altre soluzioni tecniche e i dettagli sono inclusi nella documentazione tecnica o fascicolo tecnico di costruzione/ *Other technical solutions and the details are included in the technical documentation/files or technical issue* of construction.

2. GENERAL SAFETY WARNINGS .

2.1 Foreword

Before installing and commissioning the motor, read this manual thoroughly and strictly observe all the provisions set forth. The motor is built on a single bearing and equipped with a coupling flange to the corresponding pump (not supplied by SB). The motor must never and for any reason be put into operation before correctly coupling it with the specific pump.

All operations - from transport, to installation, commissioning and maintenance - should be performed by expert and qualified personnel, in compliance with all applicable regulatory and safety provisions and technical standards. “Expert and qualified personnel” means personnel that, due to their professional training, experience, instruction and knowledge of standards, anti-accident provisions and company situation, has appropriate qualifications, is authorized to perform the required operations, has been instructed on the equipment safe use and on the relevant dangers, and does not have limited physical, sensory and mental capacities. This document does not exempt from applying all specific general technical standards for the electric motor application field, and/or general safety provisions for people, animals and objects, according to existing legislation.

2.2 List of safety and installation warnings

When the motors are running, they have dangerous live, moving and very hot surfaces, therefore removing the required electric and mechanic guards, an improper use or insufficient maintenance may cause damages and/or injuries. In case of malfunction (temperature increase, unusual noise, etc.), stop the machine immediately.

Danger of shock

The motor is powered by dangerous electric voltage. Touching certain electrically conductive components (power terminals and power lines) may cause electric shock with deadly consequences. Even when the motor is not running, connection terminals and power lines may still have a dangerous voltage. Stopping the motor is not the same as galvanically isolating it from the mains. Any activity on the electric machine must be performed with the machine stopped and disconnected from the mains (including any auxiliary equipment). The installation and general works must be performed exclusively with the equipment disconnected from the mains and the motor stopped. If electric/thermal guards are present, prevent any accidental restart, by observing the specific equipment use provisions. In single-phase motors, the operation capacitor may still be live, and temporarily keep also the related terminals live, even with the motor stopped. Install an electric motor surge protection, using an amperometric relay and a contactor, or fuses.

In summary: Observe the 5 safety rules: 1. Disconnect it from the mains 2. Prevent accidental restart 3. Make sure there is no voltage 4. Connect the grounding wires 5. Cover or close off adjacent live components.

3. SCOPE of APPLICATION and USE.

The following instructions apply to induction asynchronous electric motors belonging to: - SB series - single-phase - SB series - three-phase in their basic versions. For additional info on special motors or versions (i.e. different than those described in the catalogues and/or related offers), contact SB Technical Service. Electric motors are designed and manufactured to operate - in compliance with plate data - in environments with a temperature comprises between -15°C and +40°C (EN60034) at a maximum altitude of 1000 m above sea level; the failure to comply with the instructions herein and the reference Standards

could make the motor unsuitable for use. If the electric motor must operate at room temperature lower than 0°C, contact SB Technical Service. Do not use the electric motor in incompatible environmental conditions, as specified on the plate IP degree of protection. Do not use the electric motors described in this manual in potentially explosive atmospheres or ATEX areas.

4. INSTALLATION AND COMMISSIONING.

4.1 Foreword

Make sure the power supply, installation and service conditions match those indicated on the plate and described in the technical documents. The electric motor is equipped with normally closed thermal ceramic protector, one for each phase. The opening threshold is at 110°C. Use the protector effectively, to prevent the excessive electric motor overheating. If the motor is not supplied with the Ptc thermal protector, the installer is responsible for the overtemperature protection. Connection to the motor control circuit is borne by the customer; for safety reasons, series connection is not recommended. Before commissioning the electric motor, check the general conditions of the mechanical parts, and make sure the motor is not damaged. If the motor is damaged, do not start it.

4.2 Mechanical installation

Motors can be handled individually, by lifting it with straps or belts, if their weight is excessive. Do not handle the motor holding it only from the input shaft. Fasten the motor in its seat. Do not power the motor if it's not securely connected to the machine mechanics. To fasten the threaded holes, choose the length of the fastening screws carefully to ensure a sufficient thread grip, to ensuring the correct motor fixing to the pump. Position the motor so that a large oil (for submersed motors) or air (for dry motors) intake is ensured for cooling. Therefore, you need to prevent any situation that may affect regular heat dissipation: - bottlenecks in the application oil/air intakes; - heat sources nearby that may affect the cooling oil/air and motor temperature (by irradiation); - in general, insufficient oil/air circulation or applications that compromise the regular heat exchange.

The rotation shaft uses a bearing locked in its seat, in the aluminum casing, by a seeger sealing ring. However, in the event of improper handling of the motor, the bearing could move slightly causing then a bad coupling with the pump with consequent blockage and/or noise. It is recommended, before coupling with the pump, to manually check the free rotation of the shaft/rotor. If not, strike the shaft head sharply with a wooden or rubber hammer to bring everything back into place.

The rotation shaft has a keyway (female) which could receive dirt or metal scrap inside it during handling of the motor which would then cause a bad coupling to the pump with consequent blockage and/or noise. Before coupling the pump, it is recommended to check that the keyway is perfectly clean and, if necessary, intervene with a blast of compressed air or with a fine sanding action.

4.3 Electric installation

Check that the electric cables are correctly tightened. Choose the power supply cables size accordingly. When choosing the electric cable size, refer to the 230V or 400V absorption data for the motors, listed in the Technical Data section (www. sbmotori.com) or contact SB Technical Service.

SB supplies standard three-phase motors with 9 cables with cable length = 1 metre.

n° 1 ground cable with eyelet termination

n° 2 thermal protection cables

n° 6 power cables with eyelet termination

The three phases coils are marked:

first phase coil = U1-U2

second phase coil = V1-V2

third phase coil = W1-W1

The marking of the cables is :

Red = V1-U2

Green = U1-W2

White = W1-V2

The DELTA connection is made by joining :

V1+U2 (red wires)+Power

U1+W2 (green wires)+Power

W1+V2 (white cables) +Power

Connecting to STAR is done by joining :

U2+V2+W2 to create the starpoint e

U1+Power / V1+Power / W1+Power

SB supplies standard single-phase motors with 6 cables with cable length = 1 metre.

n° 1 ground cable with eyelet termination

n° 2 thermal protection cables

n° 3 power cables with eyelet termination

The two phases coils are marked:

starter coil = V-W

running coil = U-W

The marking of the cables is :

Red = V

Green = U

White = W

The connections are made by joining :

U + Capacitor + Power

V + Capacitor

W + Power

Make sure the motor is not damaged in any of its parts; in case of damage and/or plate values that do not match the use/environment, do not start the electric motor. In off-load operations, single-phase motors have higher losses than in load operations. Do not make them run off-load for extended periods of time.

4.4 Checking the insulation resistance

Before commissioning the motor, after an extended period of stop or storage, or if you suspect moisture build-up in the windings, check the insulation resistance. In general, the insulation resistance should not be < 10MΩ at 20°C, and never lower than < 1MΩ, measured by applying a continuous voltage of at least 500V between the phases to earth.

To prevent electric shocks, the motor housing must be grounded, and windings should be immediately discharged after every measurement. Always make sure no network cables are connected. During the measurement and immediately after it, the terminals have a dangerous voltage: do not touch them, for any reason, and strictly observe the insulation measuring tool use instructions. In motor sizes where the capacitor is supplied loose, the installer must perform the connection safely with qualified personnel and according to applicable standards.

5. INSPECTION AND MAINTENANCE

To prevent electric shocks, the motor housing must be grounded, and windings should be immediately discharged after every measurement. Always make sure no network cables are connected. During the measurement and immediately after it, the terminals have a dangerous voltage: do not touch them, for any reason, and strictly observe the insulation measuring tool use instructions. In motor sizes where the capacitor is supplied loose, the installer must perform the connection safely with qualified personnel and according to applicable standards. Before performing any intervention on the motor, make sure the power voltage has been physically and safely cut-off, to prevent any accidental restart, that the motor temperature is acceptable and not dangerous to touch, and that moving parts have stopped and are not being dragged by other components. When cutting off the voltage supply, do not touch any conductive parts and conductor connections right away: some motor parts - such as the capacitor - may still be live. Any inspection and maintenance operation should only be performed by qualified personnel, with knowledge on the connection and use, and authorized to work on these motors. Inspect the motor frequently, and perform periodical checks, at least once a year or every 5000 hours of operation.

You should proceed as follows: - Check the regular operation, without vibration or anomalous noise and absorption within the plate values .

Keep the oil of the Unit Power totally clean.

In case of doubts on the sealer conditions, do not power and contact SB Technical Service.

6. STORAGE

After a long period of storage, check the insulation resistance. The insulation resistance should not be < 10MΩ at 20°C, and never lower than < 1MΩ, measured by applying a continuous voltage of at least 500V between the phases to earth. Store the motor in a dry, clean and dust-free environment, at a temperature comprised between -25°C and +55°C (EN60204). We suggest not below zero, due condensing. When stored, the motor should not be subjected to external vibration, to prevent damages to the bearings.