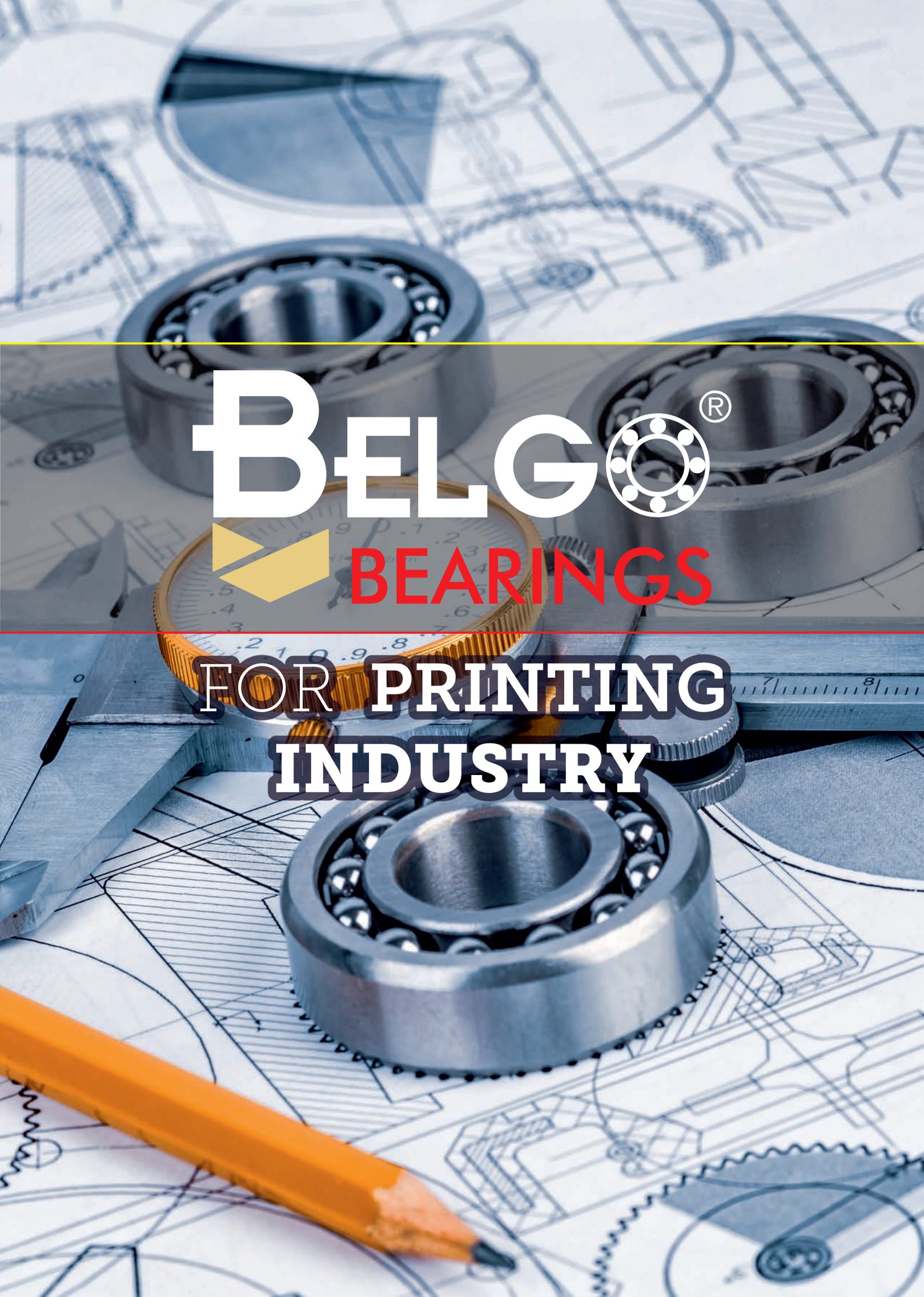
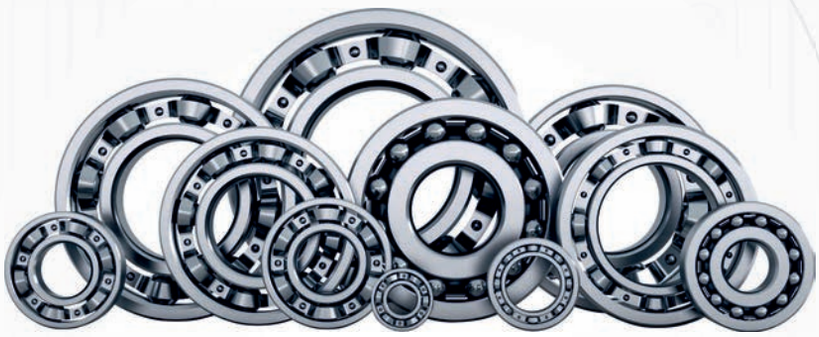

BELGO®
BEARINGS
FOR PRINTING
INDUSTRY

BELGO® BEARINGS



FOR PRINTING INDUSTRY

Belgo® Bearings offer a wide selection of bearing types and tailored solutions for printing industry. Our printing machinery bearings are used to centre plate cylinders, blanket cylinders, impression cylinders and transfer cylinders in printing machinery. Due to their load carrying capacity, rigidity, accuracy and precise adjustability, they provide excellent support for the central requirement in printing machinery, namely the highest possible print quality.

BELGO® BEARINGS

GO FOR REVOLUTIONARY ENGINEERING

www.belgo-bearings.com
www.belgo-industry.com

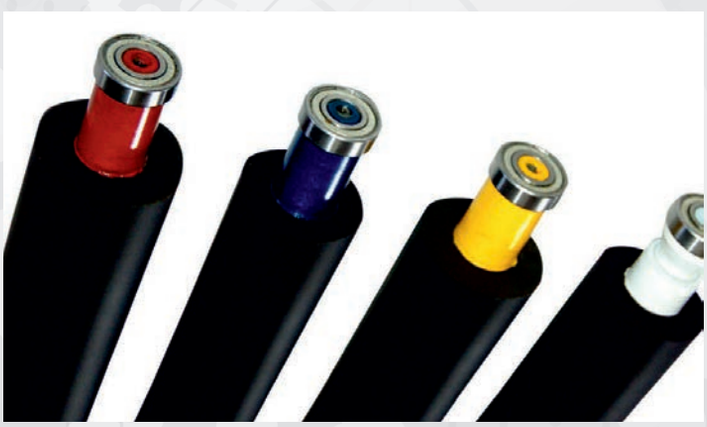
The accuracy of the cylinder bearing arrangement has a decisive influence on the print quality output. Printing machinery bearings must ensure that the cylinders in the print process work together to the optimum degree. There must be no relative motion in a radial or axial direction.

The bearings are therefore subject to high demands in terms of freedom from clearance, rigidity and runout quality. Furthermore, it must be possible to move the plate or form cylinders axially in a controlled manner and, depending on the machine type, to achieve oblique adjustment (diagonal register function).

In order to carry out printing machine functions such as; on-pressure, off-pressure or compensating for different paper thicknesses, it must be possible to change the centre distances of the cylinders in the printing press. To this end, the printing machinery bearings have eccentric rings that can be swivelled through a specific angle reliably and with low frictionhe highest possible print quality.

IN THE DESIGN OF THE MAIN BEARING OF PRINT ROLLERS, WE ENSURE THE FOLLOWING REQUIREMENTS THROUGH OUR **BELGO**® BEARINGS:

- **High radial running precision**
- **High axial running precision**
- **High rigidity**
- **High carrying capacity**



BELGO® SPHERICAL ROLLER BEARINGS FOR PRINTING INDUSTRY

This type of **Belgo**® Bearings are mainly used on plate and blanket cylinder assemblies of printing presses and related machines such as; perforators, cutters and slitters.

We offer two different spherical roller bearing designs to the printing machine industry. Spherical roller bearings which are self-aligning and consist of two rows of rollers common two inner ring raceway and a common sphered outer ring raceway that provides to be used for high loads in extreme severe applications.

This type of bearings can accommodate radial and axial loads in both directions. **Belgo**® spherical roller bearings are manufactured with the latest available technology so that they can easily handle contamination, high temperatures, shocks, misalignment at the time of high radial loads even at high speeds. **Belgo**® spherical roller bearings are available in many series and versions (from 25 mm bore up to 1800 mm bore)

213 / 222 / 223 / 230 / 231 / 232 / 239 / 240 / 241

C — Symmetrical rollers, flangeless inner ring, a non - integral guide ring and a floating rib with pressed

CA — Symmetrical rollers and retaining ribs with one - piece brass cage

MA — Retaining flanges guided on the inner ring and two - piece machined brass cage guided on the other ring

MAC4 F80 — Special design for vibration applications with machined brass cage on the outer ring

MB — Retaining flanges guided on the inner ring central fixed rib with two - piece machined brass cage

All the **Belgo**® spherical roller bearings are manufactured according to ISO & DIN standard with 3 lubrication holes on the outer ring as a standard lubrication groove (W33). Due to this advanced feature, the lubricantflows between the roller paths via a single lubrication fitting. The diameters of spherical roller bearings are indicated in ISO 15.

Also, **Belgo**®spherical roller bearings can be manufactured in tailored - made which are larger clearances than standard C3, C4, C5 or smaller clearances than C2 upon our customers' requests. In terms of their bore, they could have either cylindrical or tapered bore

(1 :30 - suffix K30 for 240 and 241 series and 1: 12 - suffix K for other series)

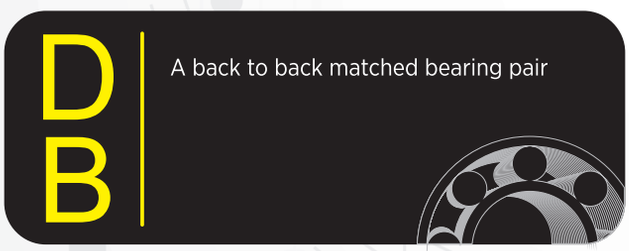
BELGO® TAPERED ROLLER BEARINGS FOR PRINTING INDUSTRY

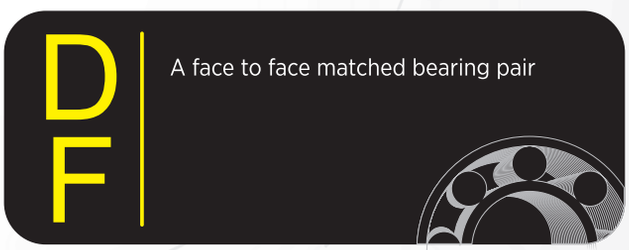
In Printing Industry, tapered roller bearings are very often used as the locating bearing for the press cylinders or within the transfer cylinders for sheet-fed offset presses.

This type of bearings are used to accommodate large radial and thrust loads in a single direction and consist of the cup (outer ring) and the cone (inner ring), the tapered rollers (rolling elements), the cage (roller retainer). **Belgo**® tapered roller bearings are also available in two and four - row versions in order to support axial loads in either direction. Due to high accuracy pressed steel cage of **Belgo**® tapered roller bearings, these bearings are operated in low heat generation and reduced lubrication. In addition to that, it is used high carbon chromium steel as a material technology

Belgo® single - row tapered roller bearings are widely used in many applications and have a cone and cup with the positive roller alignment which can be mounted separately as well as interchangeable. **Belgo**® single - row tapered roller bearings are available in many series and versions:

302 / 303 / 313 / 320 / 322 / 323 / 330 / 331 / 332





Belgo® double - row tapered roller bearings are available with the rollers in face to face arrangement such as;

(TDO) which contains two outer rings, a double inner ring respectively and in back to back arrangement

(TDI) which contains a double outer ring and two inner rings. In terms of cage production for this type of **Belgo**® bearings, pressed steel cages are used for small & medium - sized and machined steel or brass for large - sized

Belgo® four - row tapered roller bearings are available in different designs such as;

TQO : Straight bore four - row assembly with one double cup, two single cups, four rows, one cone spacer, two cup spacers having annular groove and lubrication holes and two double cones including helical groove in bore. They are used in low and medium speed rolling mill applications. TQIT: Tapered bore four - row assembly with two loose flange rings, two single cones, one double cone, two cone spacers, four pressed steel cages, four rows of rollers, two double cups. They are used in high speed rolling mill applications.

BELGO® CYLINDRICAL ROLLER BEARINGS FOR PRINTING INDUSTRY

Conventional solutions for the main cylinder arrangements are cylindrical roller bearings. For blanket cylinders, these bearings can be mounted in an eccentric housing (sleeve) which acts as a plain bearing.

By turning the eccentric sleeve, the printing cylinders can be adjusted. Cylindrical roller bearings used for this application are double-row designs based on series NNU 49 and NN 30. Rollers of the NNU type bearings are guided between the flanges of the outer ring, those of NN type bearings between the flanges of the inner ring.

The bearings have tighter tolerances than normal (SP) and can be supplied with cylindrical bore or with tapered bore (taper 1:12). To achieve efficient lubrication, all bearings are provided with an annular groove and lubrication holes in the outer ring (W33). Cage designs are available in brass and for larger quantities in polyamide 6,6.

BELGO® STAINLESS STEEL PILLOW BLOCK BEARING FOR PRINTING INDUSTRY

Both the bearing housing and insert bearing of the stainless steel pillow block bearing are made of stainless steel materials, this type of mounted bearing has advantages of self-aligning, repeated lubrication, good dust-proof sealing, easy installation and disassembly, etc., to achieve high strength and precision features. Also, the surface of such bearing housing is generally rust-proof plated, polymer sealing rings on both sides of the bearing, and a mirror steel cover is added. Compared with cast iron types, while ensuring wear resistance, it also has the advantages of corrosion resistance and cleanliness.

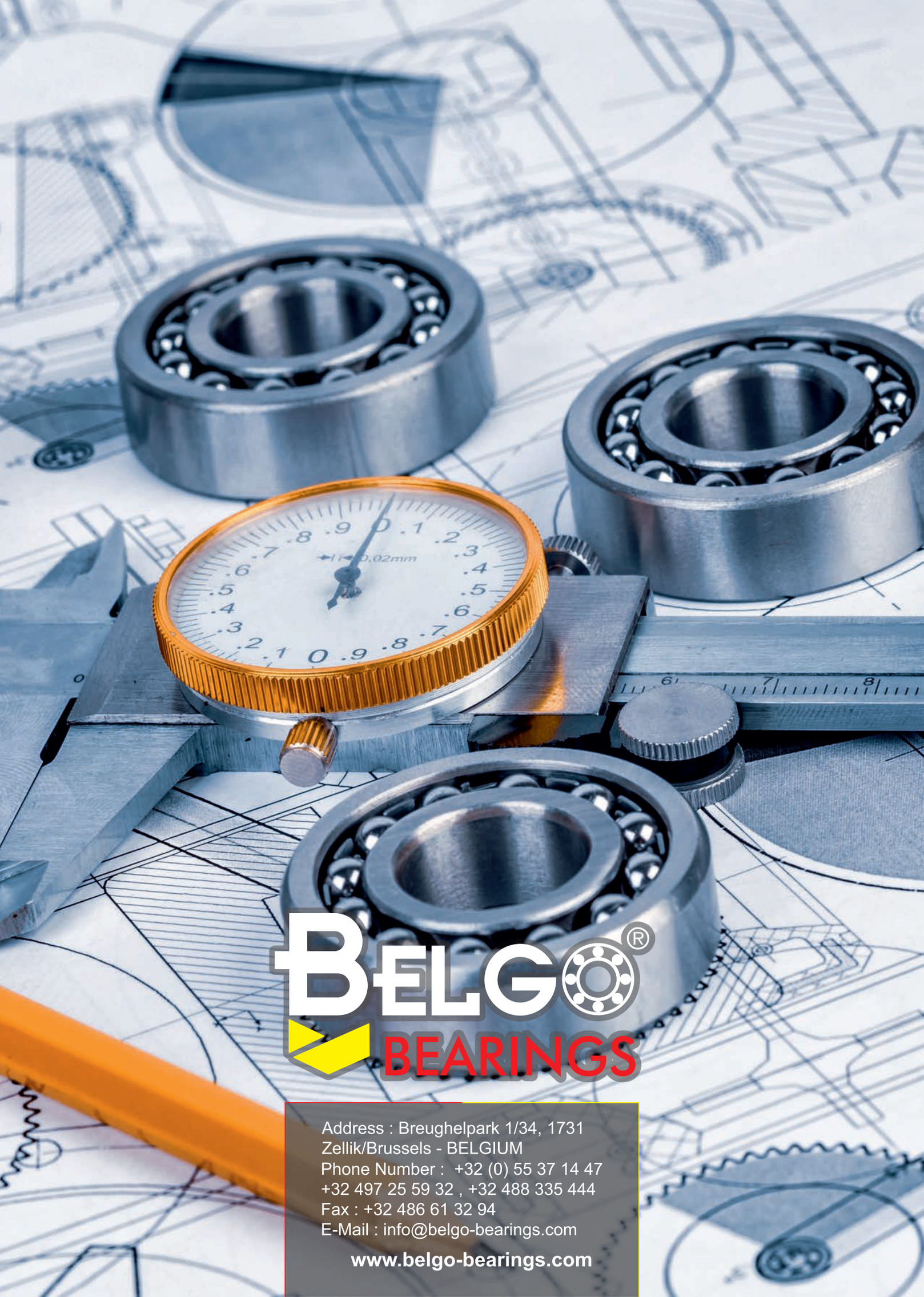
BELGO® STAINLESS STEEL BALL BEARING FOR PRINTING INDUSTRY

Stainless steel ball bearings refer to stainless steel radial ball bearings, especially stainless steel deep groove ball bearings. Generally, the balls and bearing rings are made of 400 series stainless steel, after heat treatment, the hardness can reach 58HRC. The retainers and seal ring frames are made of 304 stainless steel. Compared with ordinary ball bearings, stainless steel ball bearings not only have obvious advantages in terms of materials, but also have stricter technical and precision control. In the working process, this type of bearing has performances of stable operation, low noise and corrosion resistance. In the environment with salt water or other corrosion, stainless steel bearings are used to improve the bearing capacity and heat transfer effect and widely used in textile printing machineries

BELGO® STAINLESS STEEL INSERTBEARING FOR PRINTING INDUSTRY

Stainless steel insert bearings are the same in size and structure as standard bearing steel insert bearings. The difference is their rings and rolling balls are made of 400 series stainless steel materials; their retainers, dust shield, sealing ring skeleton, and the set screws are made of 300 series stainless steel.

Compared with the performance of ordinary insert bearings, stainless steel insert bearings have a lower vibration, lower noise, and higher rotation accuracy. Besides, this type of bearing can be used in complex environments, it has acid and alkali resistance, corrosion resistance, can work in corrosive media like seawater for a long time.
In particular, it has better temperature resistance, the operating temperature range can be from -60℃ to 300℃.



BELGO® BEARINGS

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