
C R

bearings

Index

CR Factory

C.R. is an Italian company manufacturing SPECIAL ROLLER BEARINGS for industrial applications and internal movement plants and equipment.

C.R. was founded on 1984 by three owners-associates, starting from the beginning to fulfil the requirements of a constant growing worldwide market; at present, the export sale is 70% of the production of the company.

C.R. manufactures both special bearings according to its exclusive project, following the requirements of the customers, and perfectly interchangeable spare parts, according to the customers' drawings or samples.

Three Owners

Mr. Alberto Trabacchi
Technical & Production dep.

Mr. Giuseppe Bollani
Sales dep.

Mr. Alessandro Bertuzzi
Purchase & Marketing dep.

We are located in **CODOGNO**, 50Km far from Milan

CR in the World

Made in Italy

C.R. products are available worldwide.

- Argentina
- Austria
- Bangladesh
- Belgium
- Brazil
- Canada
- China
- Finland
- France
- Germany
- India
- Indonesia
- Iran
- Italy
- Japan

- Luxemburg
- Malaysia
- Mexico
- The Netherlands
- Norway
- Poland
- Portugal
- Russian Fed.
- South Africa
- Spain
- Sweden
- Taiwan
- Turkey
- U.S.A.
- United Kingdom


Production Department


Storage Department


Quality Control Department

CR Products

C.R. manufactures roller bearings for several production fields and different applications.

The main topic of C.R. company is the design of very special bearings, fulfilling the requirements of plant manufacturers and sophisticated machine builders, with high standard of performance.
The technical and structural features of C.R. bearings undergo constant and thorough analysis and test, both regarding quality and technical performance.

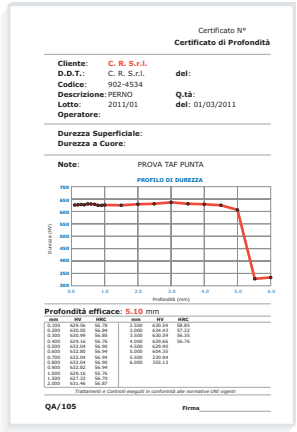
The structural dimension of the company (with more than 10.000 sqm), their know-ho due to more that 30 years of experience and the direct contact with customers, also after-sale, all this allows C.R. bearings to be successfully used by main worldwide machine manufacturers for the working of steel.

CR Products

1 Back-up rolls for leveler machines
2 Coil conveyors & Multiroll for rolling mills
3 NUTR, NUKR & Thrust bearings for many applications
4 Back-up rolls for Tension leveler machines
5 Combined bearings and profiles for the handling market

CR Quality

1 RAW MATERIAL CHECK


Certificato N°
Certificato di Profondità

Cliente: C. R. S.r.l.
D.D.T.: C. R. S.r.l. del:
Codice: 902-4534
Descrizione: PERNO Q.tà:
Lotto: 2011/01 del: 01/03/2011
Operatore:

Durezza Superficiale:
Durezza a Cuore:

Note: PROVA TAF PUNTA

PROFILO DI DUREZZA

Profondità efficace: 5.10 mm

QA/105 Firma

The types of steel used for our bearings are supplied by selected suppliers. An additional sample check is effected in laboratory to confirm the chemical structure of the steel, regarding the basic characteristics and the absence of faults.

2 TURNING CHECK

All the parts, once the turning phase is finished, are checked by our testing department to control the conformity of the treatment. The main dimensions are tested by regularly scaled instruments, and then recorded for the future working steps.

3 HEAT TREATMENT CHECK

Once the pieces have undergone the heat treatment, they are controlled once again to verify their conformity and precision, and the uniformity of the hardness obtained. The basic measurement is made through Rockwell method. It is possible to further check the pieces by breaking them through Vickers method.

4

CHECK OF GRINDING WORKING

Any singular grinded part is further checked during and after the grinding phase. The dimension, the surface finish and the shape faults are checked for any single part with updated high precision instruments. A further test is made on them with penetrants, which allows to find out possible cracks in the material.

5

TRACKING OF PRODUCTS

A laser marking allows to track the products, which are identified with their own reference number, and the information regarding the lot of production.

6

FINAL ASSEMBLING AND TEST

Once assembled, the products undergo a final control to check the complete conformity. Besides the dimension control, all the necessary verifications are made to guarantee the correct functioning of the product according to the requirements.

CR in the Steel Market

Rolling Mill

Sendzimir Mill

Tension Leveler Machines

Cold & Hot Leveler Machines

Coil conveyor

Roller Bearings Four Rows

MULTIROLL

Four-row cylindrical roller bearings are generally used on the neck of milling cylinders, of calenders and of rolling presses.

They are particularly suitable on high speed steel mills.

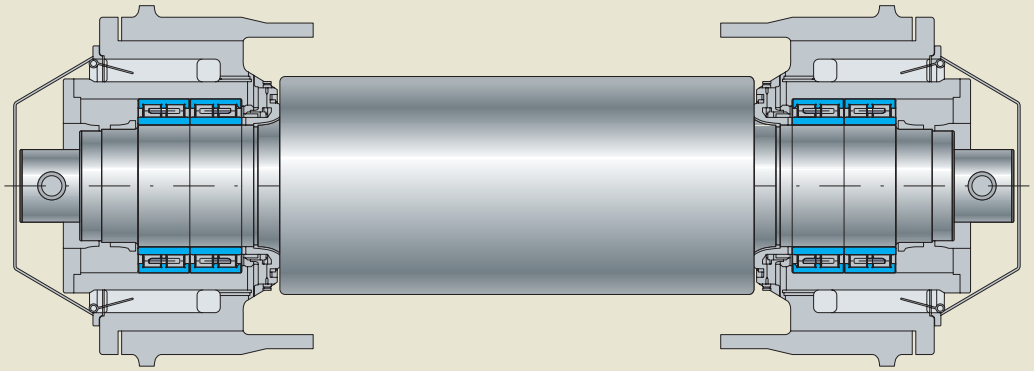
Thanks to the high quantity of rolling raceways, the radial load capacity is extremely high.

Four-row cylindrical roller bearings are dismountable, that is to say, the outer ring and the cages form a unique body named “R” and can be fixed independently from the inner ring, named “L”.

This makes the assembling and the maintenance of milling plant easier.

This series of bearings is available with different executions, according to specifications, application conditions and maintenance.

They differ from each other in the shape and in the number of parts that build the whole.



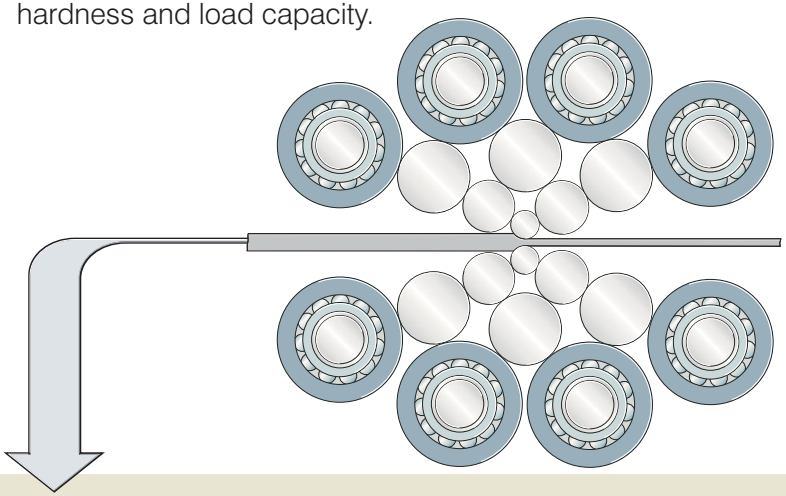
Sendzimir bearings

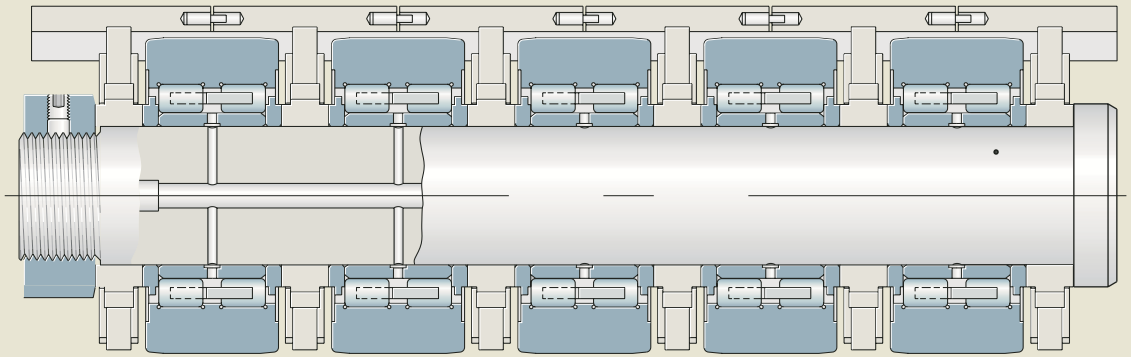
with Two/Three/Four Rows

Shoulder bearings have been projected on purpose for Sendzimir cold steel mills; they can be used also in straightening or flattening machines. Shoulder bearings show different shapes in construction, in order to fulfil several application requirements.

Cylindrical roller shoulder bearings can have up to 4 rows of rollers, with cages or without cages. They have the advantage of having a simple shape and a high radial load capacity.
Some series are manufactured with entire edges obtained on the outer ring, other series are without entire parts, with distance rings and lateral thrust rings.

The material used for the production of the outer ring can be of two types, according to the requests of the customer (UNI 100Cr6), with core hardening, or 18 NiCrMo5 with 3,5 mm depth, with extreme precision in the working tolerances, radial clearance, hardness and load capacity.

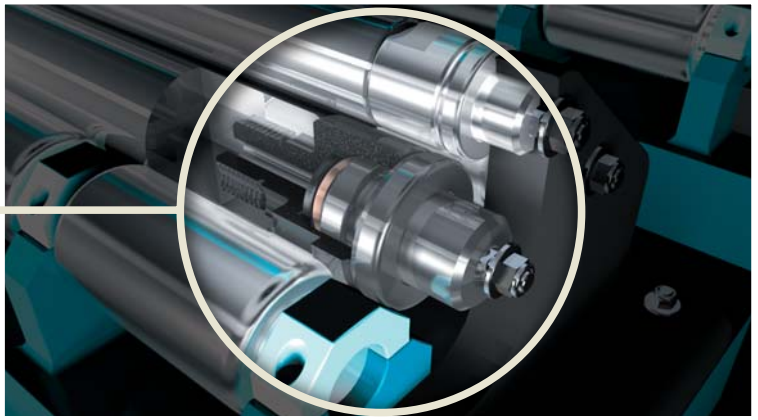




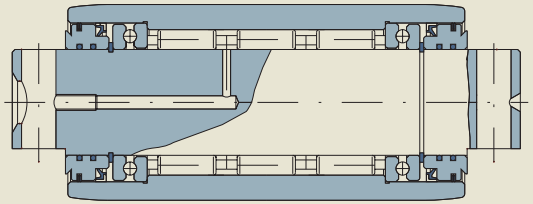
Tension Leveler

The bearings for tension leveler machines are considered back up bearings.
If compared to the ones used in the flattening machines these back up bearings must have a very high speed. They are manufactured with radial and axial cages in a lot of typologies and executions.

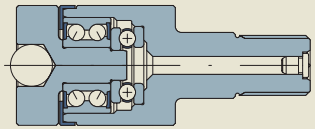
C.R. naturally guarantees the perfect interchangeability with the original bearings, trying in many cases to improve their design and consequently their performance.

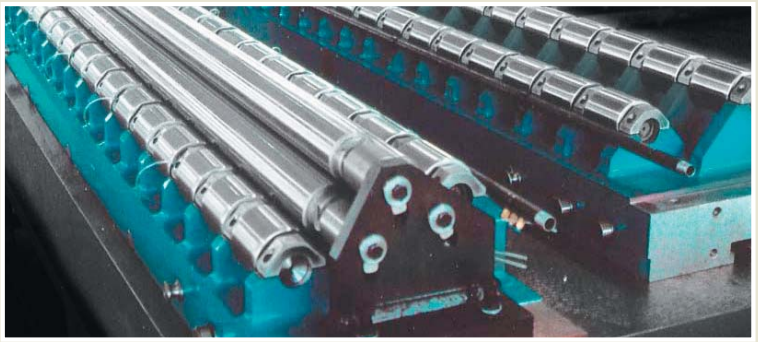


BACK-UP
ROLLER BEARING



THRUST
BEARING





Leveler or Straightener

Machines

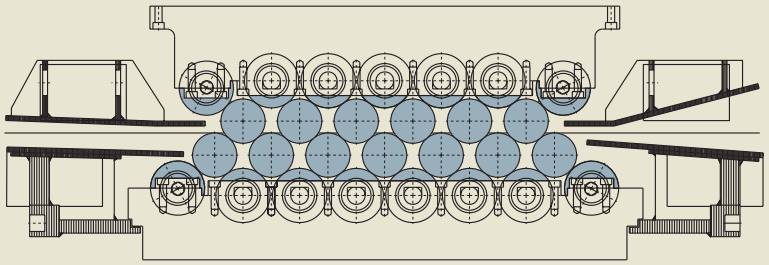
Leveler and straightener machines can be provided with five typologies of back up rolls. C.R. manufactures all these typologies with the required technical features.

The back up rolls for leveler and straightener machines are very resistant to the applied loads and have a perfect combination between the tangent force and the grease tightness.

The metal flattening machines are manufactured with the possibility to quickly remove the cassette (work rolls and back-up rollers). During maintenance phase, it is possible to insert the spare cassette so that the cost of the stop of the machine are dramatically reduced.

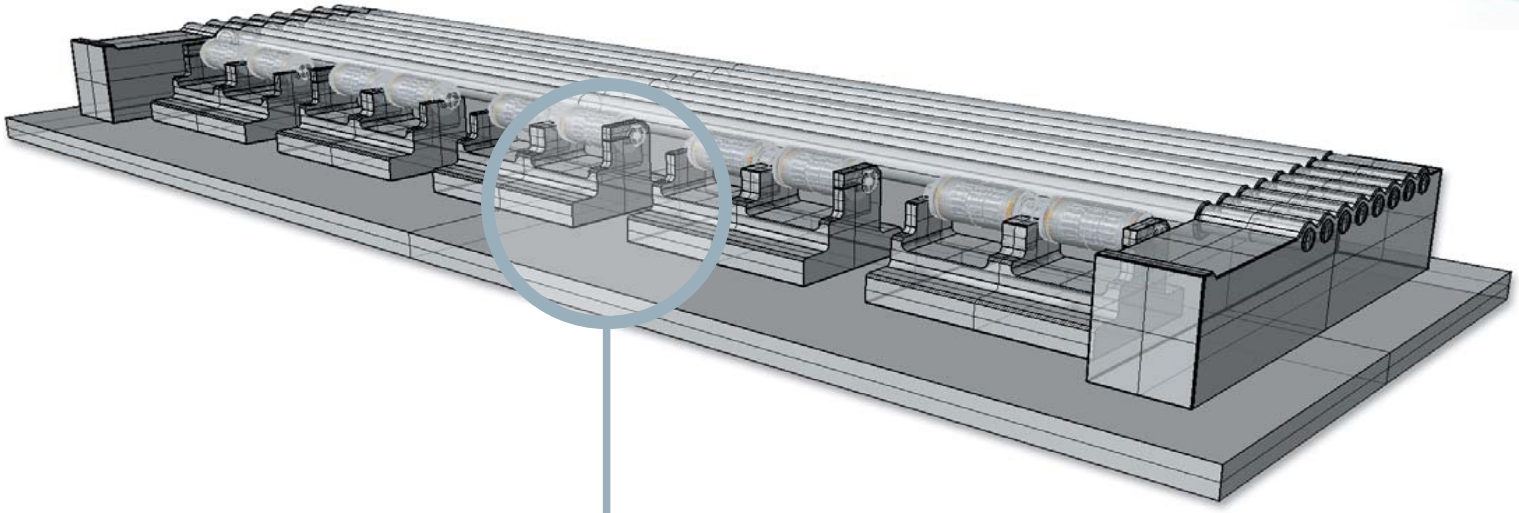
C.R. in accordance with service centers, can foresee the complete of partial revision of the back-up rollers, once verified the condition of them.

Leveler Cassette



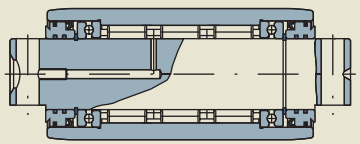
Leveler or Straightener

Machines

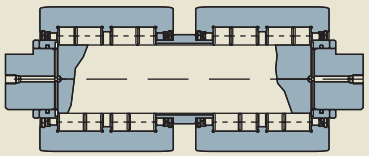


5 TYPES

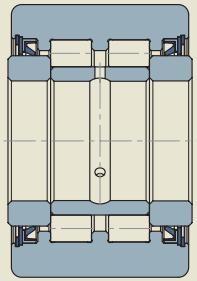
BACK-UP ROLL
CYLINDRICAL ROLLERS



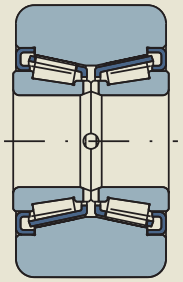
DOUBLE BACK-UP ROLL
CYLINDRICAL ROLLERS



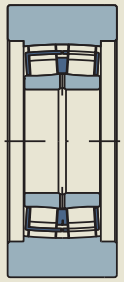
SIMPLE BACK-UP BEARING
CYLINDRICAL ROLLERS



SIMPLE BACK-UP BEARING
TAPERED ROLLERS



SIMPLE BACK-UP BEARING
SPHERICAL ROLLERS

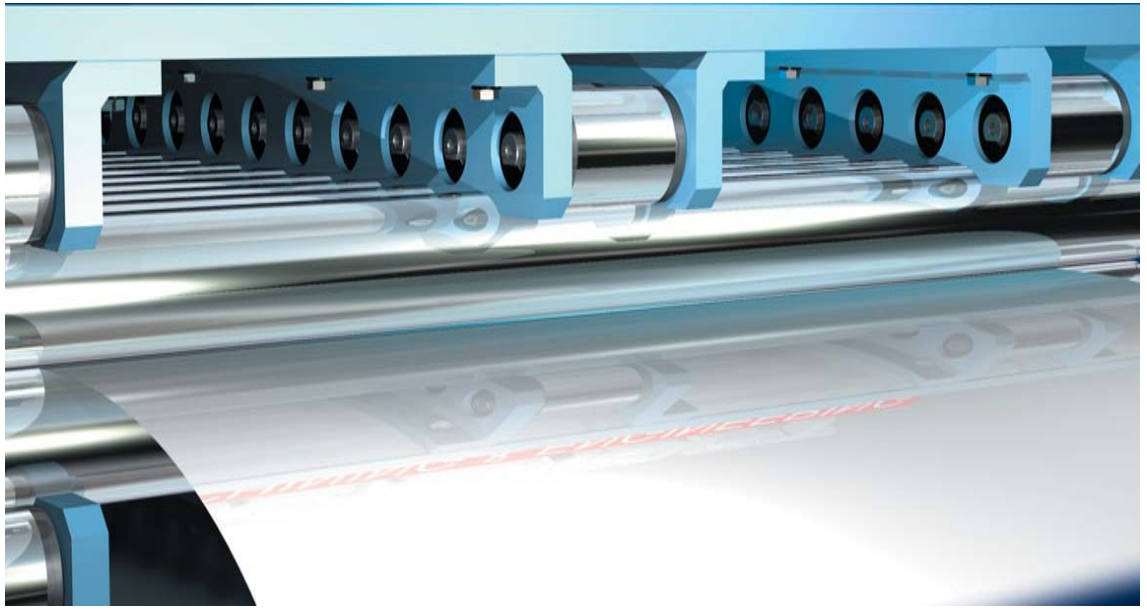


1 & 2

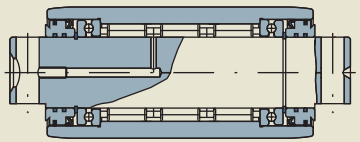
The wide working surface, along with the rolling system, made of two or more cages, allow the plant to reach very high flattening performance and high speed.
The distance rings, which are obtained entirely on the outer ring and the pivot, and the circle clearance, which is calculated at the minimum, allow a good support of axial loads.
The execution with roller cages represent the most advantage series of back-up rolls.
The series of back-up rollers is usually manufactured with two lateral thrust bearings in the inner body, either with balls or rollers, which guarantee a very strong support of axial loads.

BACK-UP ROLL with SHAFT

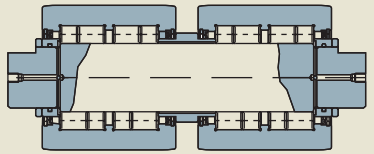
Back-up rollers for metal flattening machines are made in two different executions: Full complement of cylindrical rollers & with roller cages in mould steel or bronze. The full complement execution allows the bearing to reach a high load capacity both dynamic and static.



BACK-UP ROLL with **SHAFT**



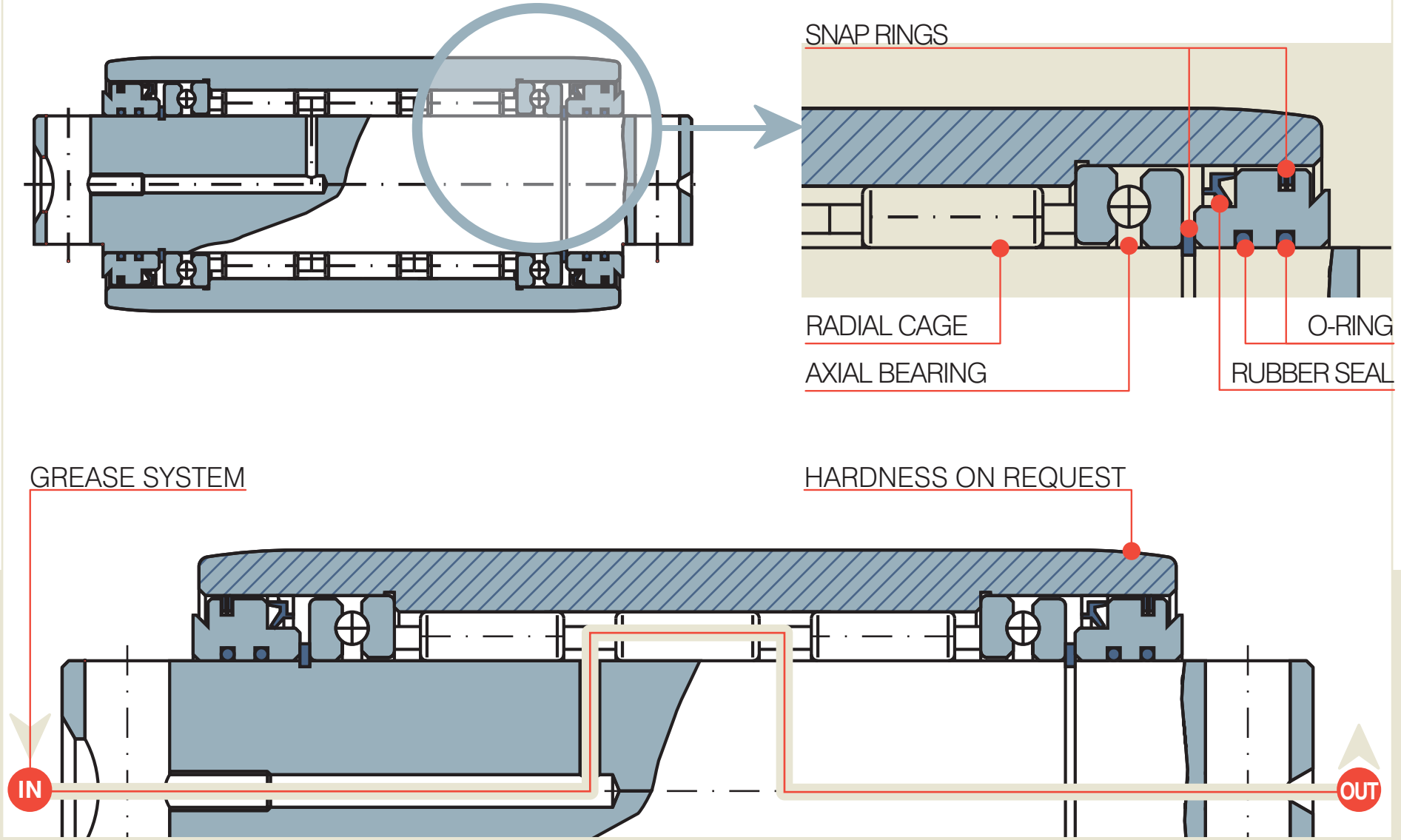
DOUBLE BACK-UP ROLL with **SHAFT**



Leveler or Straightener

Machines

Technical Details



Leveler or Straightener

Machines

3

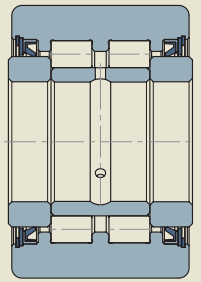
SIMPLE **BACK-UP** BEARING WITH **CYLINDRICAL ROLLERS**

The series of back-up rollers without pivot is manufactured with two or more full-complement-cylindrical-roller rows; they are separated by spacers obtained entirely on the outer ring.

These bearings are particularly used on machines that work continuously and in extremely tough conditions, because of their high dynamic and static load capacity.

These spacers between the rolling raceways guarantee the bearing of the axial thrust.

SIMPLE **BACK-UP** BEARING WITH CYLINDRICAL ROLLERS

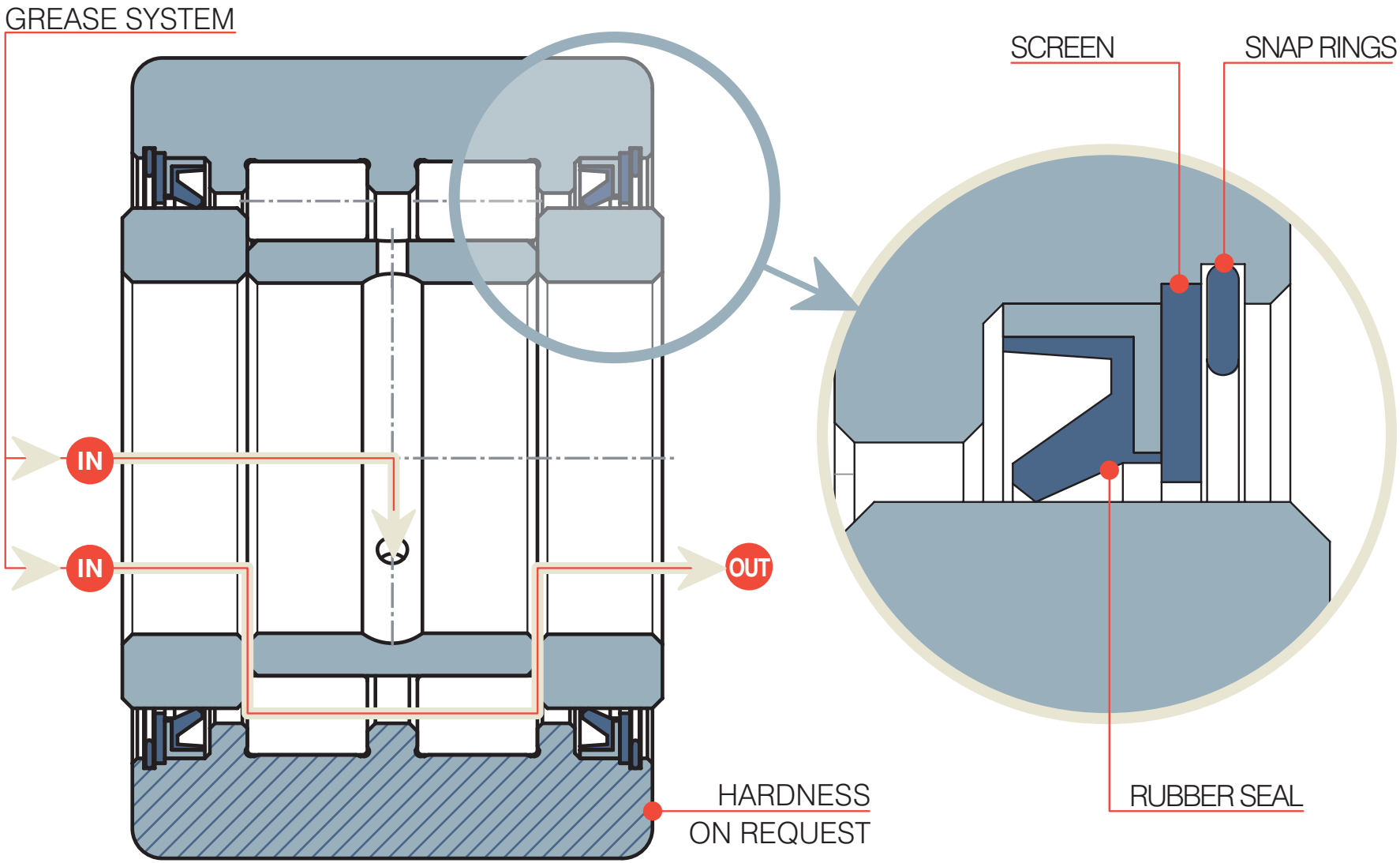


- WITH SCREEN or RUBBER SEALS
- WITH GREASE HOLE or LONG LIFE

Leveler or Straightener

Machines

Technical Details

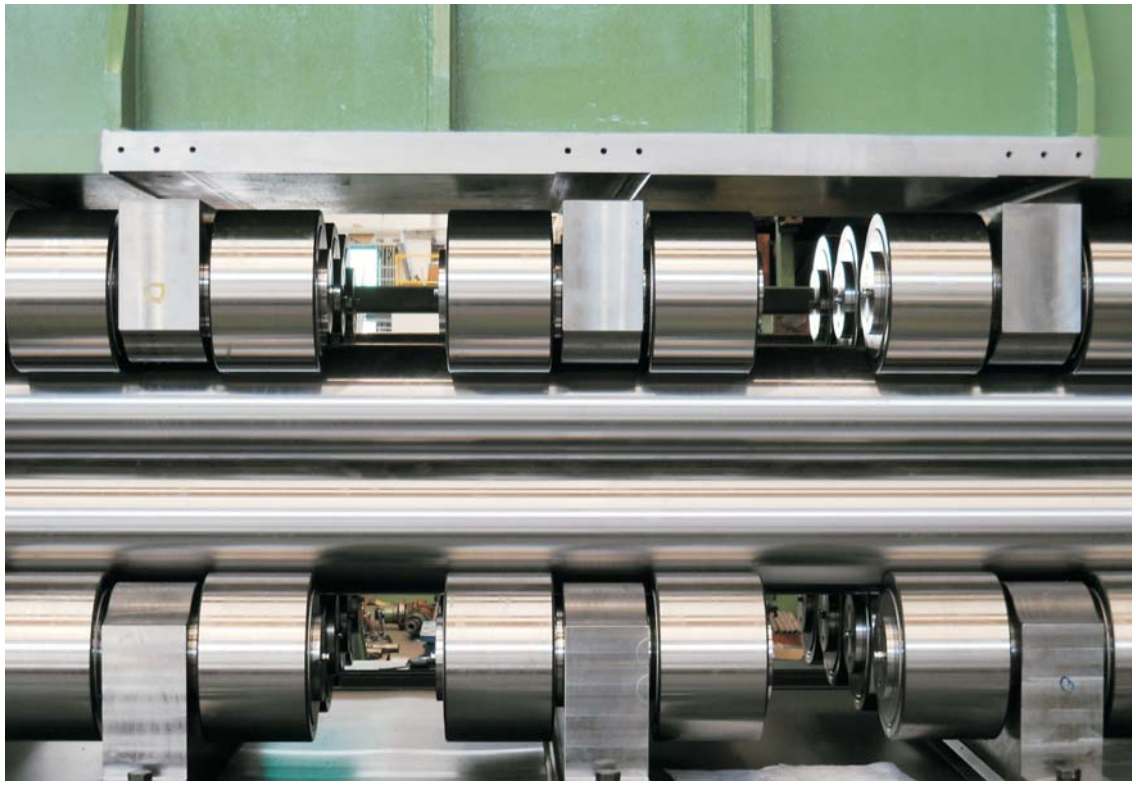


Leveler or Straightener

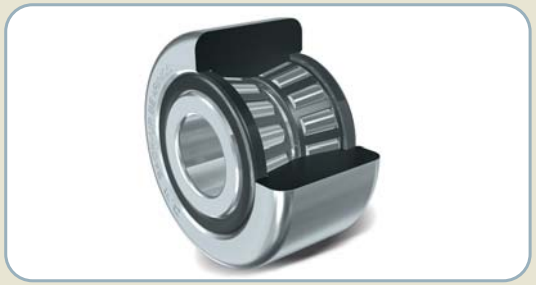
Machines

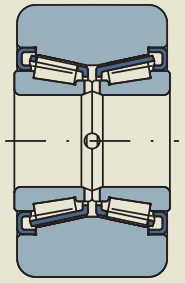
4

SIMPLE **BACK-UP** BEARING WITH **TAPERED ROLLERS**



Tapered roller-back up bearings in inch dimensions are mounted on sheet metal leveling machines operating under very heavy working conditions.
Their design is suitable to bear big axial loads together with big radial loads.
They are supplied for complete units ready for the assembling and produced in normal precision class.
On request, the outer diameter can be manufactured with cambered or cylindrical shape.
Considering the working conditions, the sealing system is designed with rubber seals or with steel rings. C.R. tapered roller back-up bearings are designed for allowing a fast maintenance procedure both of the back-up and of the whole cassette.



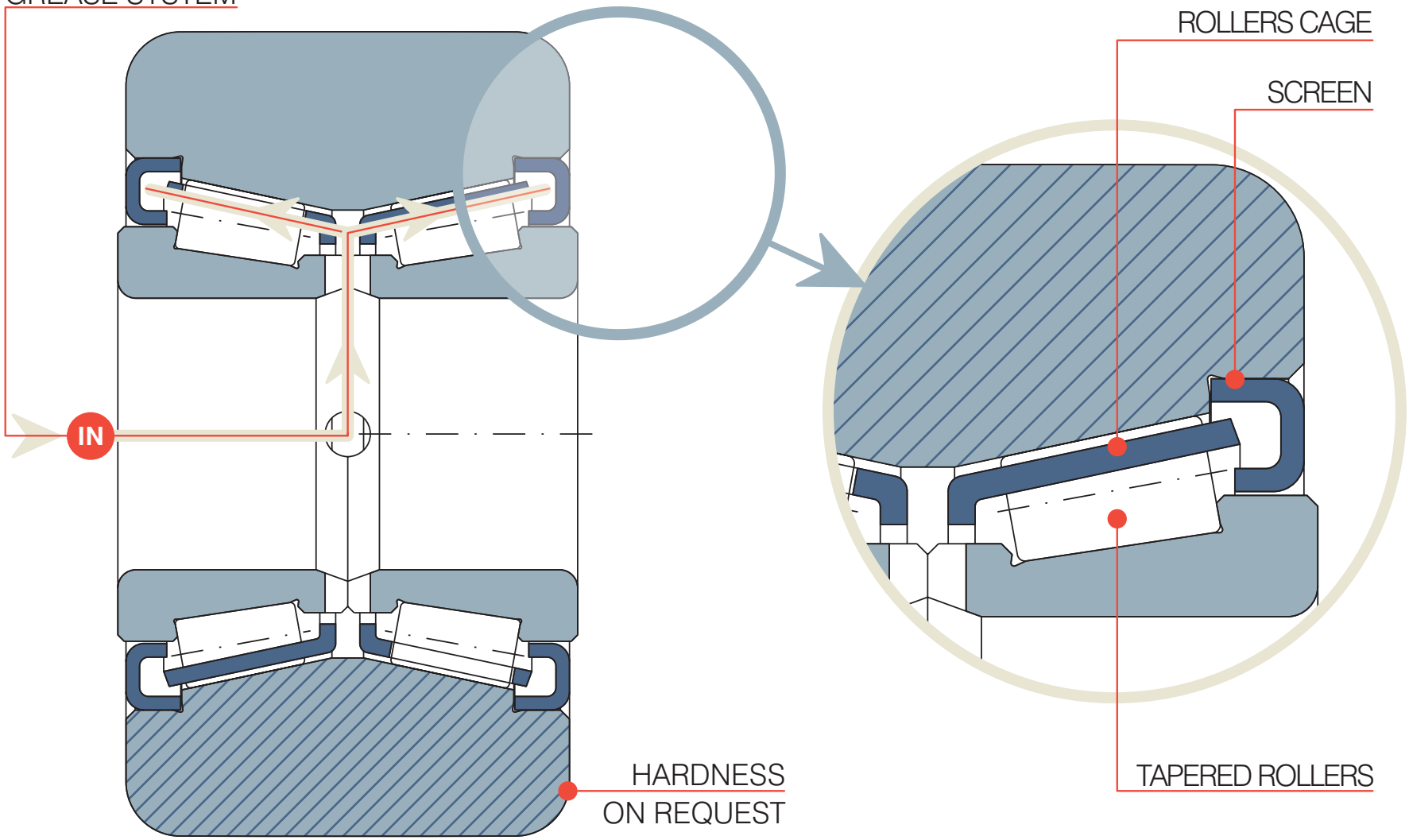


- WITH SCREEN or RUBBER SEALS
- WITH GREASE HOLE

Leveler or Straightener

Machines

Technical Details



Leveler or Straightener

Machines

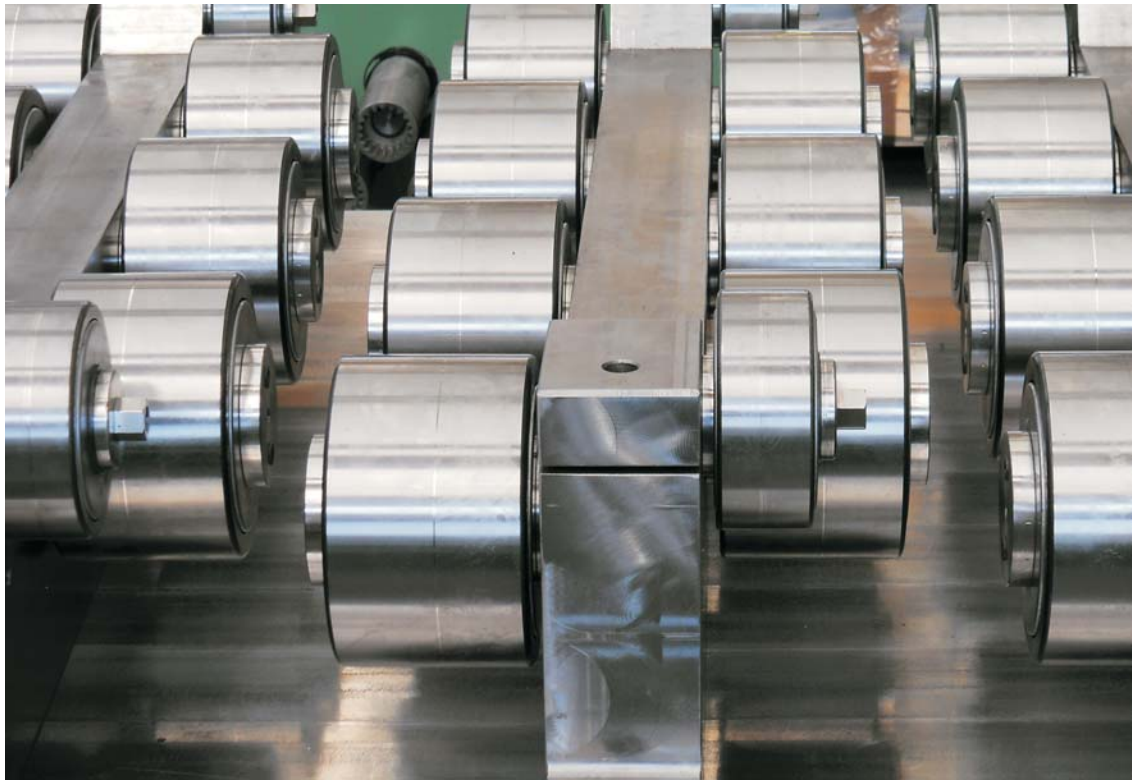
5

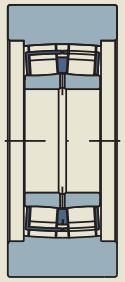
The revolving spherical roller bearings (execution in mm or iches) can be mounted on metal flattening machines in rare cases.

This type of bearing can adapt, during the working phase, thanks to its oscillations, to the possible coupling irregularities between work roll and back up bearing.

After the customer's request, C.R. evaluates the possibility of manufacturing the pieces, by considering the quantity and the dimensions.

SIMPLE **BACK-UP** BEARING WITH **SPHERICAL ROLLERS**



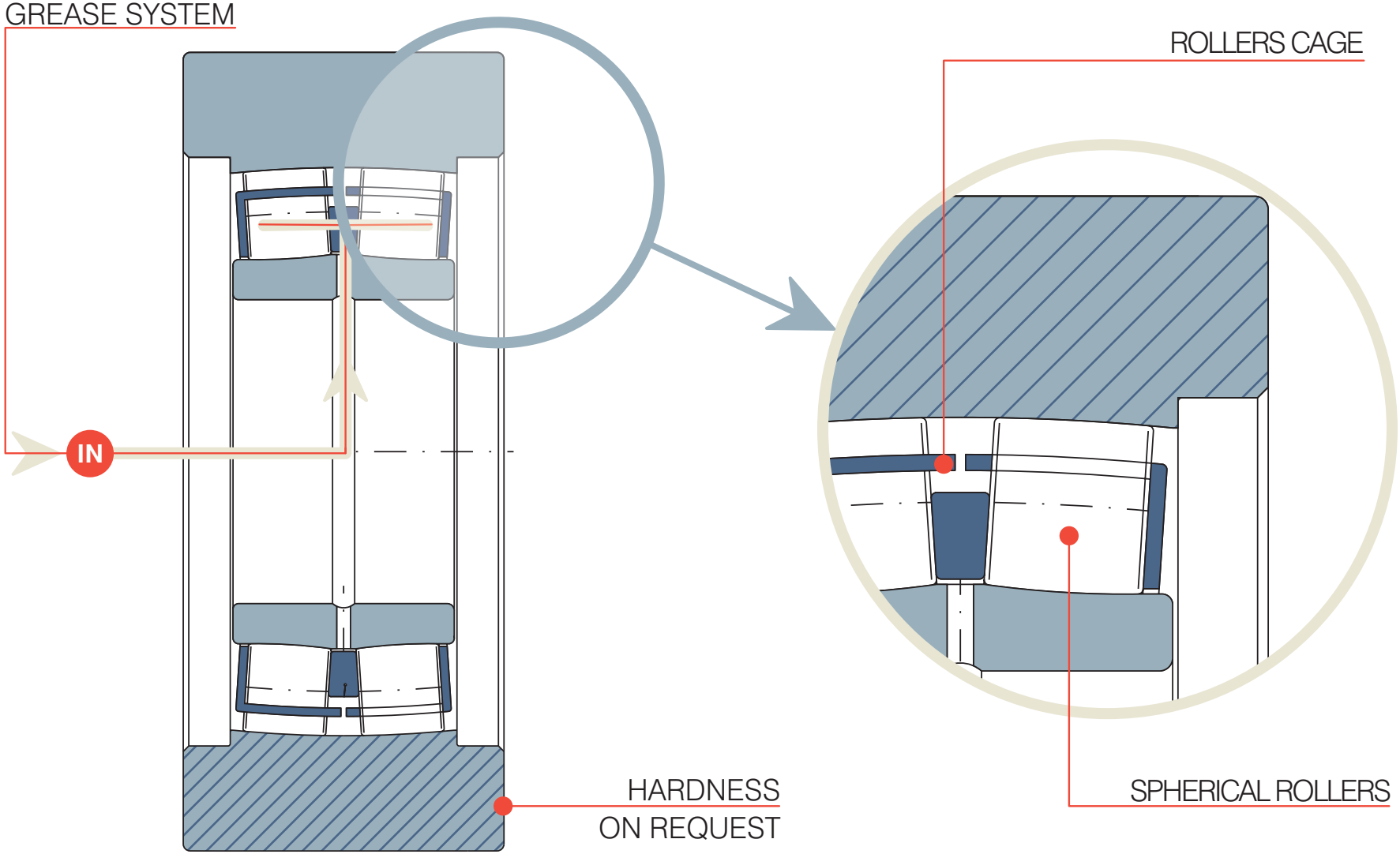


- WITH SCREEN or RUBBER SEALS
- WITH GREASE HOLE

Leveler or Straightener

Machines

Technical Details



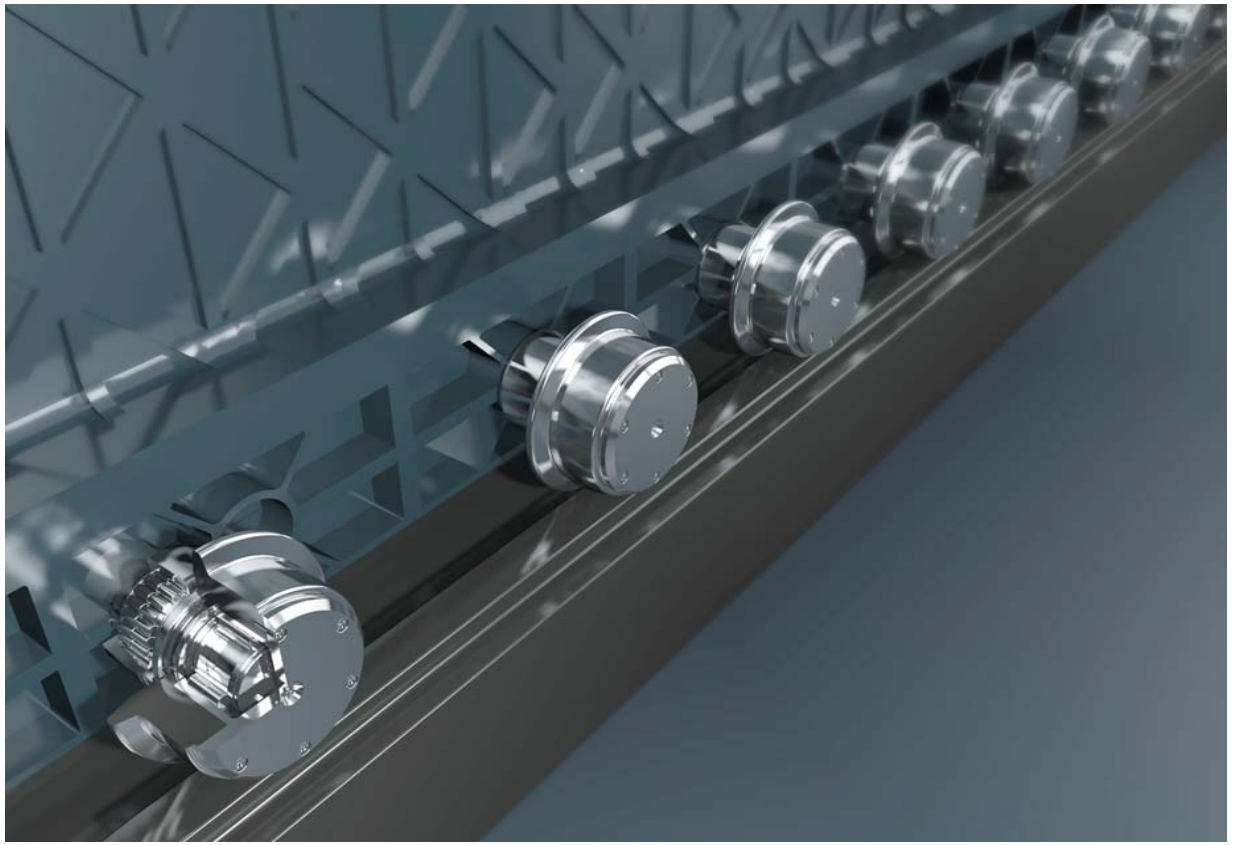
Wheels and Pressure Rolls

C.R. has developed a series of bearings suitable to work under **extremely heavy and difficult conditions**.
The agglomeration line is one of the main strategic issues in the steel plants, as the line that carries the ferrous materials never stops.

The load applied are very high, dust and high temperature contribute to determine the worst possible working condition.
Both the outer ring and the inner ring of the bearings are made in 100CrMo7 core hardened steel.

Viton seals are inserted in the sides, in order to increase the lifetime, by preventing dust to enter the roller.
The rings undergo bainitic tempering treatment.
The choice of the lubricant and its quantity are very important.

Generally, a special lithium soap grease is used for extremely high pressures.



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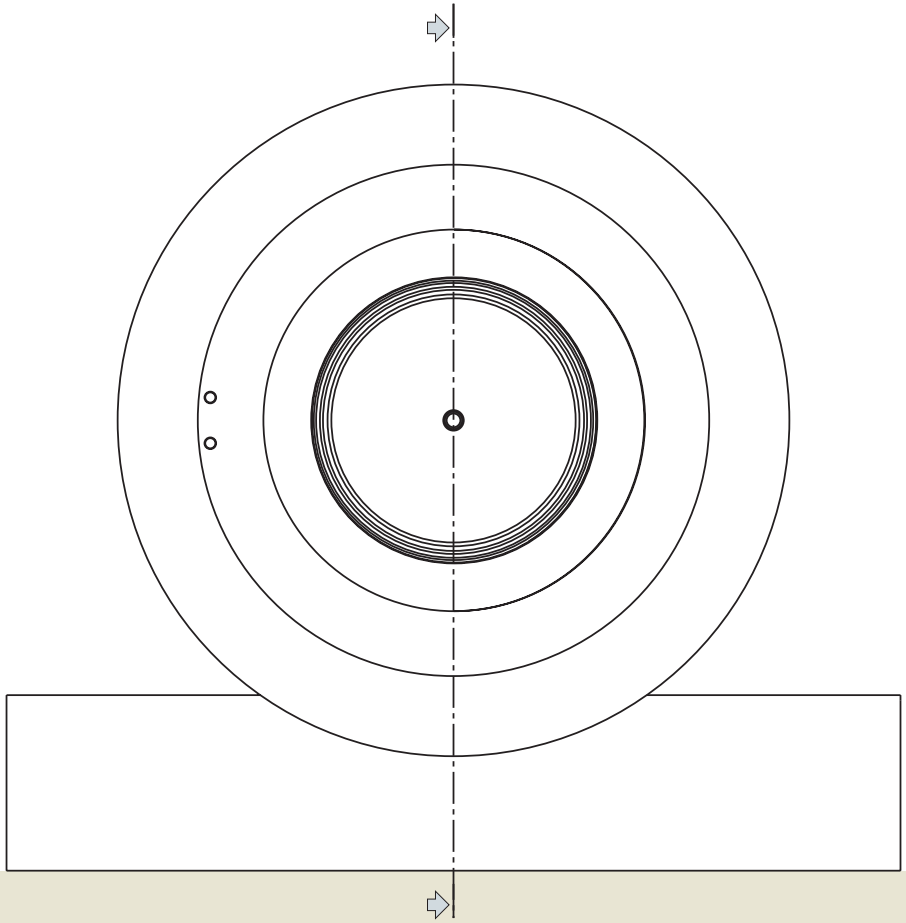
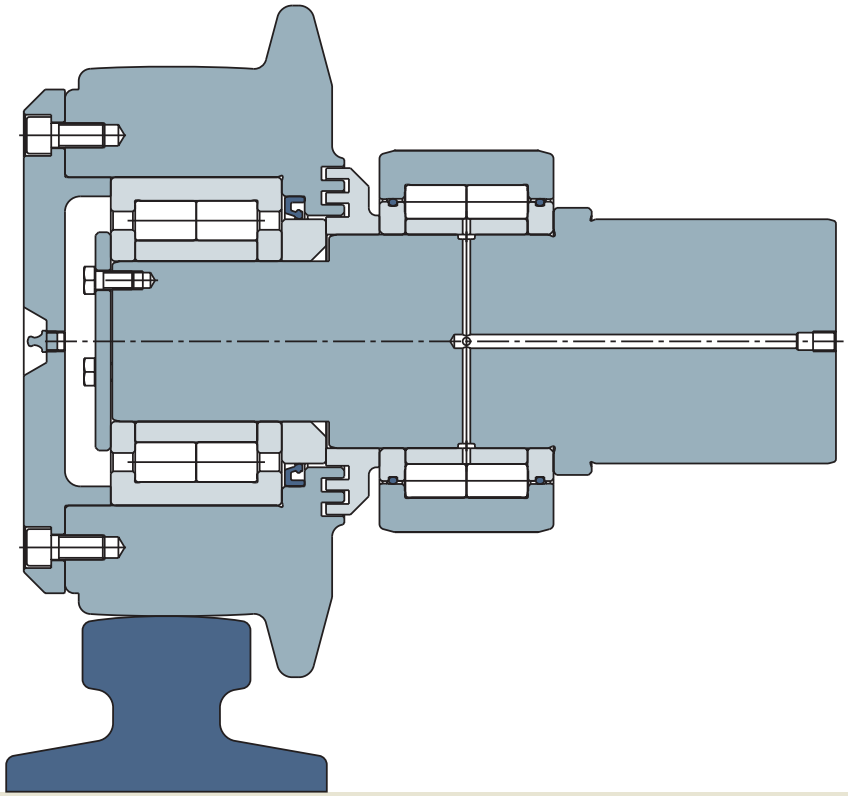
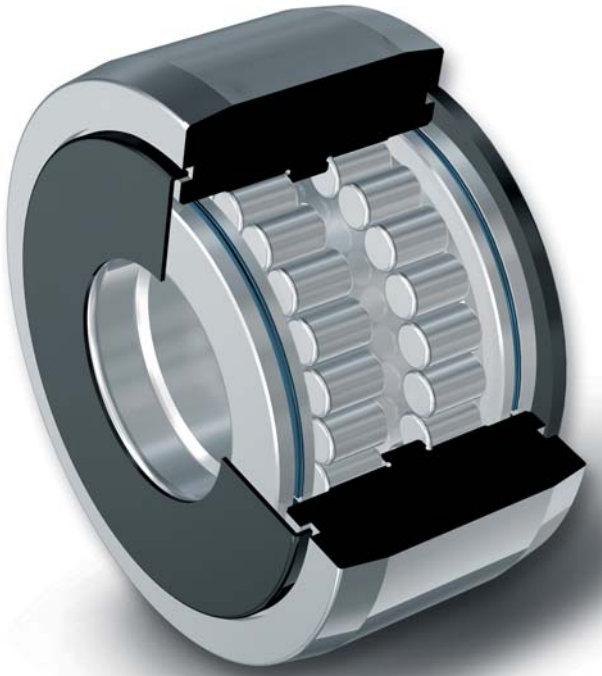




COIL CONVEYORS



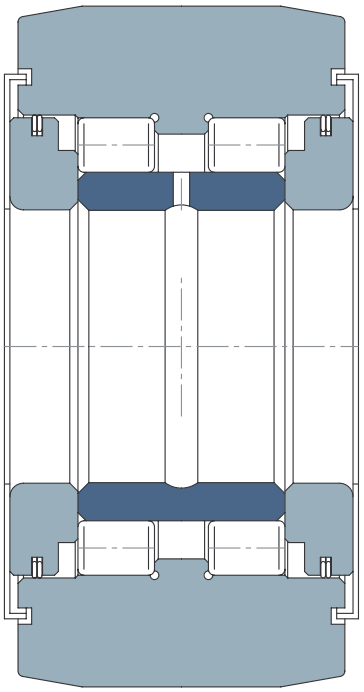
Series of rollers with different profiles of the outer ring have been developed for various applications in the field of steel industry.

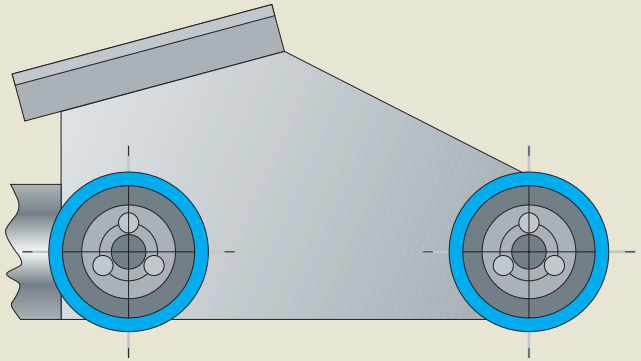
They are mainly used as support bearings in conveyor belts for coils.

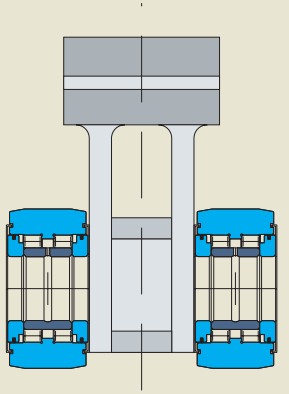
The execution with tapered rollers is particularly suitable in case of high radial loads and strong axial thrust, which are due to the shape and the length of the belt.

As the path of transportation is not linear, variations of directions of the applied load should be foreseen.

These tapered roller bearings are fixed in pre-loaded groups through an adjusted central distance ring.







Quality

Experience

Research

Price

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FAX: +39 0377 437.107