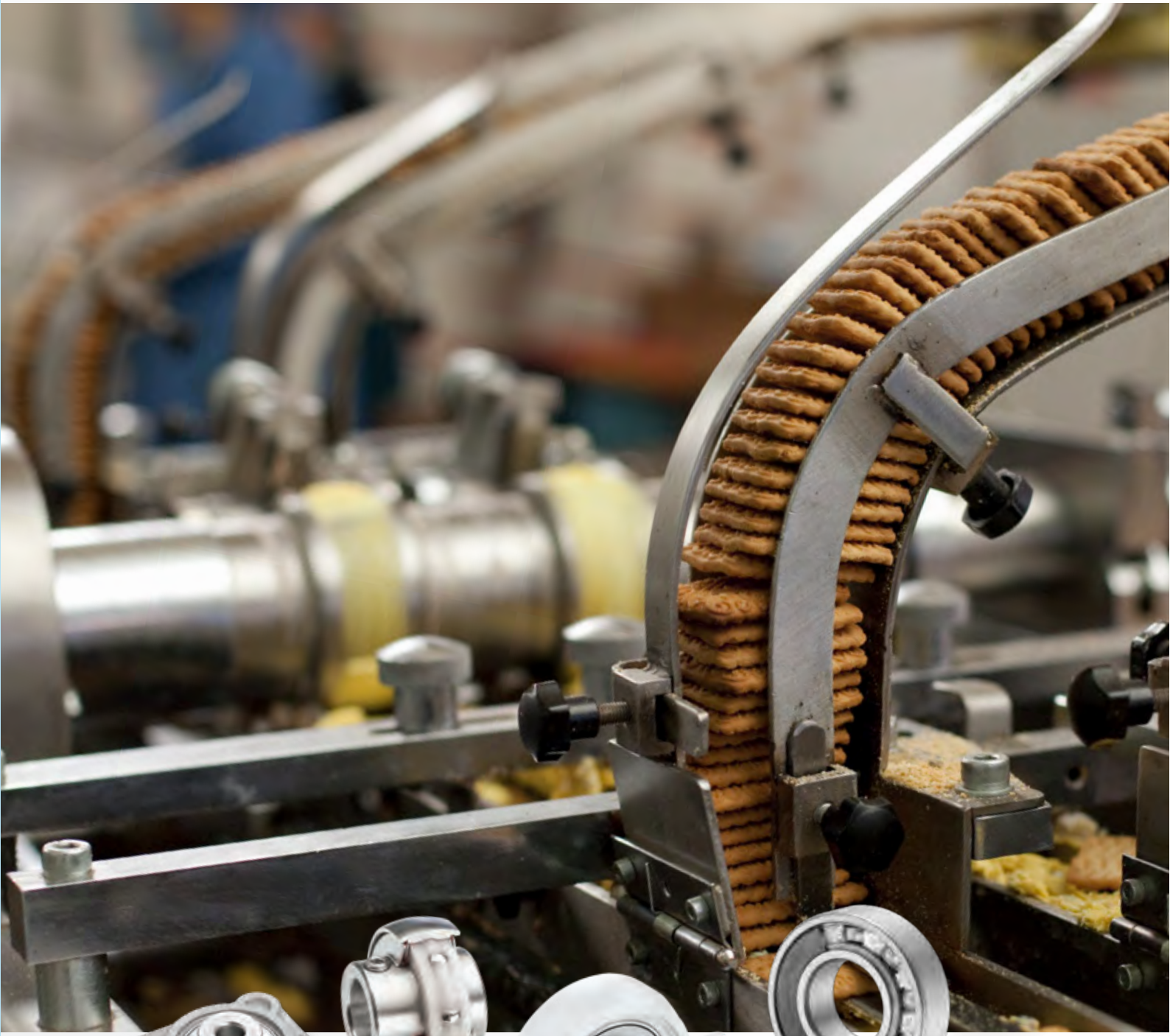
NTN®

SENTINEL SERIES
SOLID LUBRICATION FOR THE FOOD-PROCESSING INDUSTRY



SENTINEL™
SERIES

YOUR CONSTRAINTS

HYGIENE STANDARDS:

High pressure washing: progressive disappearance of grease in the bearings

Grease leaks: risk of contaminating the product and deposits on the ground causing safety risks

MAINTENANCE:

Production downtime for intervention: re-lubrication or change of bearing units/bearings

ENVIRONMENTAL STANDARDS:

Taking into account the production impact: ISO 14001 compliance, respecting the CSR action plan, etc.

BUDGET CONSTRAINTS

Overconsumption of grease

Increase in the bearing purchase budget

High maintenance costs

Reduced productivity relating to operating stops

OUR SOLUTION

SUPERIOR QUALITY AND OPTIMAL SAFETY FOR THE FOOD-PROCESSING MARKET

SENTINEL™ SERIES

COMMERCIAL SUCCESS
in America since 2016. Winner of the product design award consecutively in 2018 and 2019.

① NTN food-grade solid lubricants (NSF H1 approved)

- Resistance of bearings to high pressure washing
- A solution against grease leaks on the production line and on the floor

② 100% stainless steel

- Resistance to corrosion
- Bearings and bearing units without any coating: no spalling that could contaminate production

③ Insert sealing

- Combination of silicone seal and shield to create a second protection against water and any contamination

④ Optional protective covers

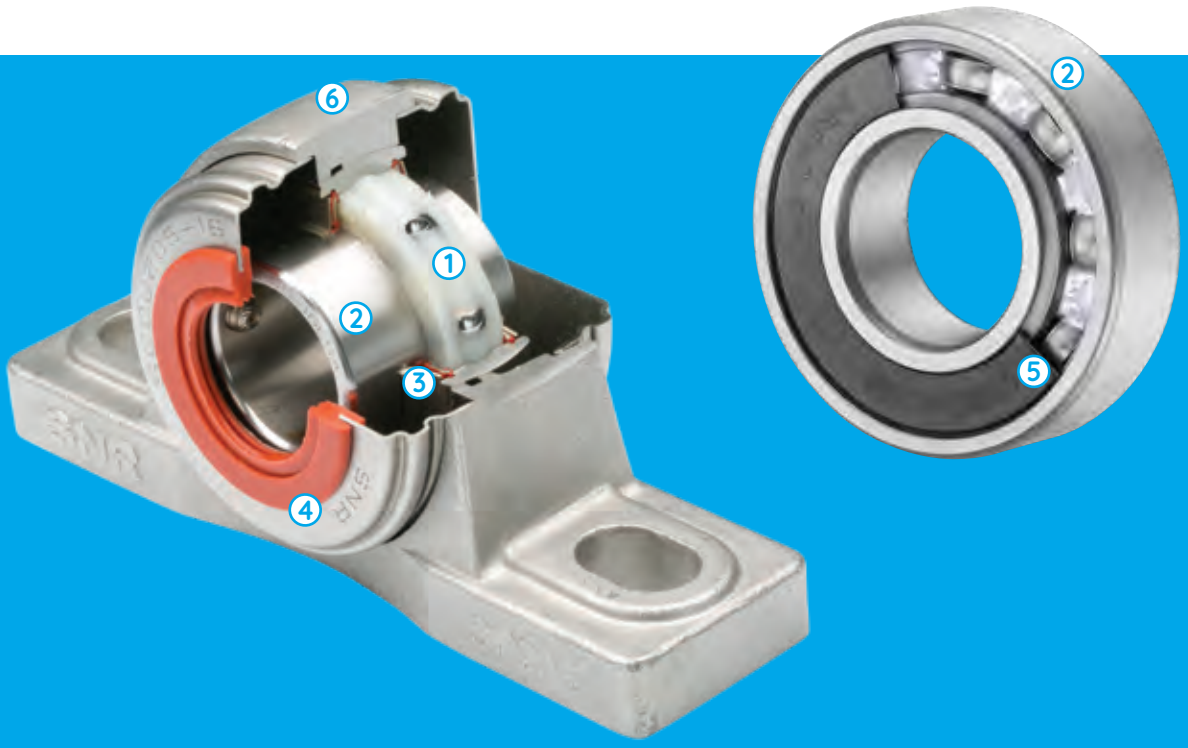
- Barrier against contaminants and mould
- Safety for manufacturing and maintenance personnel

⑤ Reinforced nitrile seals to prevent any seepage

- Excellent resistance to outdoor pollution

⑥ Bearings without re-lubrication system as inserts are greased for life with solid lubricant

- No maintenance intervention
- Environmental commitment



YOUR ADVANTAGES

SAFETY

Total elimination of grease leaks at the self-aligning bearing units

- A pledge of seriousness in front of customers during workshop visits
- Solid lubricant resistant to high pressure washing
- NSF category H1 certification guaranteeing the safety of the product

PRODUCTIVITY

A profitable investment (TCO*)

- Increased service life of the bearing
- Significantly reduced maintenance interventions: lower production downtime
- Maintenance teams assigned to other tasks

ECO-RESPONSIBILITY

A true environmental approach

- Reduced grease and bearing consumption in the workshop
- Positive environmental impact

* TCO (Total Cost of Ownership)

SOLID LUBRICATION

Porous polymer matrix, our solid lubrication contains up to **3 to 4 times more oil than any standard grease.**

This solid lubricant cannot flow out from the bearing and ensures the cleanliness of your environment. Adaptable to all bearing types, this matrix is filled either:

100% of the free volume, known as “Full pack”

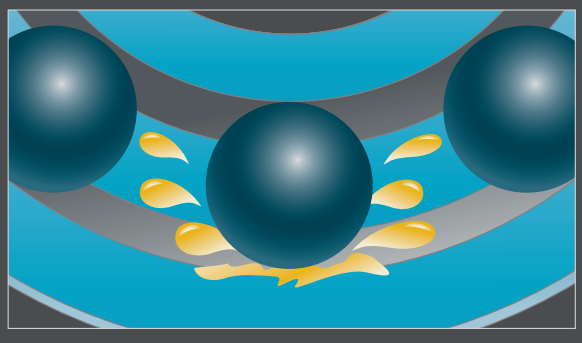
Example: SNR SUCFG1 LUBSOLID® stainless steel insert ball bearings

By packet between rolling housings, known as “Spot Pack”

Example: NTN SSN/LP09 “Solid Grease” stainless steel ball bearings

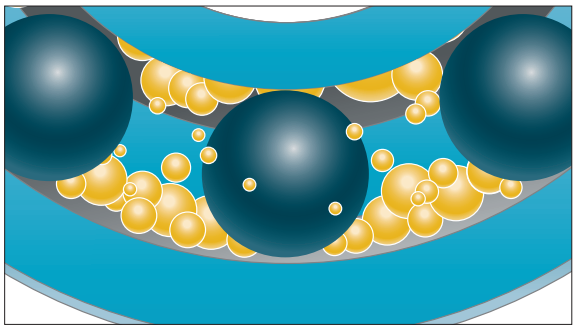
This reliability of lubrication enables to extend the service life of a bearing to its end without ever having to re-lubricate it, while significantly improving your budget and your environmental impact.

Operation with standard grease

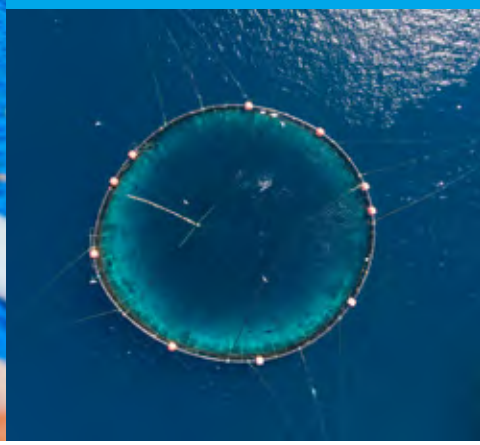


Due to mechanical and thermal stress, the grease is laminated and driven out of the contact surface between the rolling housing and the raceway. This loss demands frequent re-lubrication (case of self-aligning bearing units).

Operation with solid lubrication



The solid lubrication cannot be ejected, it constantly supplies the bearing core with oil. This enables to eliminate all downtime and re-lubrication (case of self-aligning bearing units).



NTN “SOLID GREASE” STAINLESS STEEL BALL BEARINGS

Protection/Rotation speed

TECHNICAL CHARACTERISTICS

- High-quality stainless steel 440C
- Reinforced elastomer seals (LL)
- “Solid Grease” lubrication NSF category H1 and FDA approved
- (US Food and Drug Administration)
- Bearing greased for life
- Available for 6000 and 6200 series (shaft diameters from 10 to 40 mm)

BENEFITS

- High rotation speed thanks to the “Spot Pack” application
- Very good resistance to corrosion
- Excellent resistance to outdoor pollution
- Keeps the production chain clean

ENVIRONMENTAL BONUS

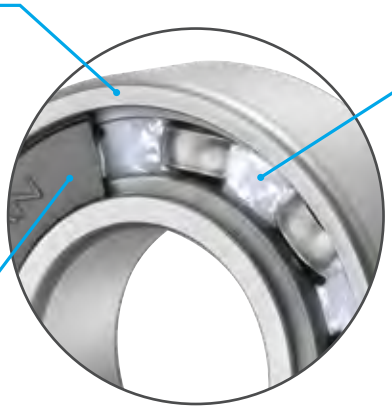
Significant savings in the number of bearings consumed and therefore also fewer maintenance interventions.

STEEL QUALITY AND SEALING

SENTINEL SERIES

440C Stainless steel

- Resistance to corrosion
- 304C Stainless steel cage



Solid Grease "Spot Pack"

Advantages of solid lubrication while maintaining high rotation speed

Nitrile seal

- Bearing protection
- Reinforced armature
- Resistance to wear

SSN 004 LL /LP09

MATERIAL
Stainless steel ball bearing

TYPE OF SERIES
Radial ball bearing Series 6000
Example: 004 = 6004

SEALING
Double sealing

LUBRICANT
Food grade H1 category solid lubricant

SSN “SOLID GREASE” WATER PENETRATION PERFORMANCE TEST

TESTS CONDITIONS:

Principle:
Figure 1

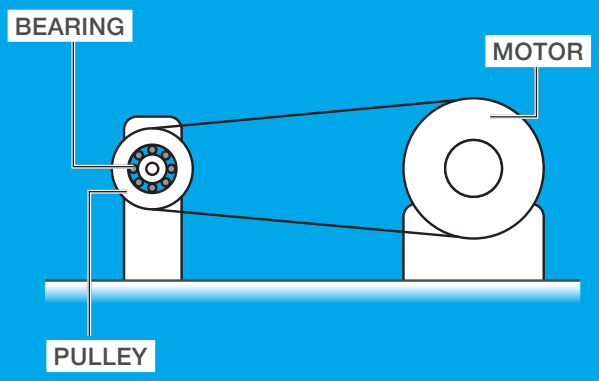
Ref. Bearings compared:
6204 (standard grease) vs SSN204 (solid lubricant)

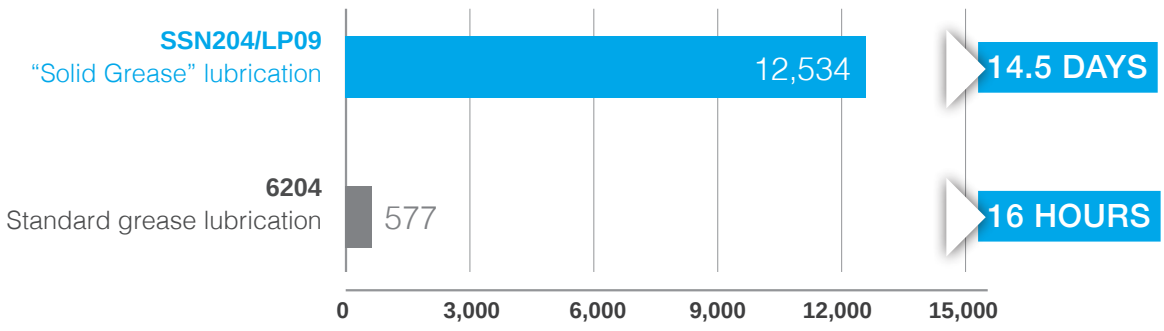
Bearing load:
785 N (belt tension)

Rotation speed:
1 cycle = from 0 to 10,000 rpm (100 sec) at 0

Water injection cycle:
On an average, every 200 cycles, water is injected with a syringe (10 cc) inside the bearing for 10 consecutive cycles

Figure 1





Service life of the bearing - Number of cycles

SNR LUBSOLID® STAINLESS STEEL INSERT BEARINGS

Safety/Efficiency

TECHNICAL CHARACTERISTICS

- Insert bearing fully filled with LUBSOLID® solid lubricant
- All metallic components made of high-quality of stainless steel
- Sealing reinforced against humidity and contamination
- Food grade seal with additional slinger
- Anti-rotation ball on the outer ring (increased safety especially in combination with thermoplastic bearings)
- Lubrication complying with the sanitary requirements of NSF code category: H1

BENEFITS

- Cleanliness of the production line, no leakage of grease
- Elimination of re-greasing and maintenance
- No more difficulties of accessibility for maintenance
- Significantly increased insert service life
- LUBSOLID® withstands high pressure washing
- Reduction of the number of machine shutdowns
- Reduction of maintenance interventions
- Reduction of environmental impact

ENVIRONMENTAL BONUS

- Increased service life of the bearing
  - › gain/purchase budget
- Elimination of re-greasing inserts/ bearing units
  - › gain / lubrication campaigns
  - › gain/grease consumption

SNR STAINLESS STEEL SELF-ALIGNING BEARING UNITS

The ideal solution against humidity

HOUSING:

TECHNICAL CHARACTERISTICS

- 100% stainless steel resistant to corrosion: will never chip and contaminate the end product
- Without re-greasing device
- Design to withstand aggressive cleaning and corrosive environments
- Additional stainless steel covers with double lip seal

BENEFITS

- Protection against corrosion
- Optimal resistance to direct washing, even at high pressure
- Excellent mounting stability and high impact resistance
- Recess-free bearing surface of the housing, preventing material deposits
- Bearing unit covers provide additional protection during high-pressure washing with plenty of water

ENVIRONMENTAL BONUS

Single-component bearing unit made of 100% recyclable stainless steel

SENTINEL SERIES

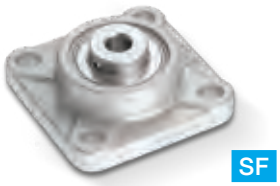
AVAILABLE DESIGNS


SP


SPA


SFL


SFB


SF


ST


SCC


SCO

The protective covers must be ordered separately.
All bearings are grooved to accommodate the protective covers.

SUC P 204 FG1

INSERT

SUC: Stainless steel insert bearing, fitting on shaft with screws

HOUSING

SP: With sole

SPA: With sole with blind holes

SFL: Flange bearing with 2 holes

SFB: Flange bearing with 3 holes

SF: Flange bearing with 4 holes

ST: Take-up pulleys

S : Bearing unit prefix only in stainless steel

DIMENSIONAL

From 204 to 210
(bore- Ø 20 - 50 mm)

LUBRICANT

FG1: Lubsolid® solid lubrication H1 category certified

NTN

SUCCESS STORY: STAINLESS STEEL SELF-ALIGNING BEARING UNITS WITH LUBSOLID® INSERT

CUSTOMER SITUATION

A large poultry plant, processing 175,000 birds per day, was experiencing problems with SUCF206 rolling bearing failures on their poultry cage washing machines and cage unloading system. Equipment affected by corrosion and cleaning agents. Loss: €231 per minute.

CUSTOMER NEED

Improve the reliability of the bearing during the high pressure washing to increase his profitability.

NTN SOLUTION

Use of stainless steel bearing units with additional covers and stainless steel insert with LUBSOLID®: SUCF206FG1.

Perfect solution against corrosion and exposure to highpressure washing.

CUSTOMER BENEFITS

Considerable increase in bearing service life, faster maintenance (no need for special care to protect bearings from washing).

SAVING ACHIEVED

REDUCTION IN BEARING CONSUMPTION
€74,200

REDUCED MAINTENANCE
€31,200

IMPROVING THE AVAILABILITY
€15,080

TOTAL
€120,480/YEAR

SNR THERMOPLASTIC SELF-ALIGNING BEARING UNITS

Specifically designed to prevent the collection of dirt

HOUSING:

TECHNICAL CHARACTERISTICS

- Resistant to numerous chlorine containing and corrosive cleaning agents
- Housing material made of thermoplastic (PBT) with particularly smooth surfaces to prevent deposits of the process material
- Design without any recesses or indentations guaranteeing easy and thorough cleaning
- Mounting holes reinforced with stainless steel metal bushes
- Prepared for tool-free mounting of protective covers

BENEFITS

- Good friction and wear resistance
- Excellent internal and external protection
- Insensitive to the formation of bacteria
- Extra resistance during wash cycles
- Clean operating environment ensured
- Unit protection covers provide additional protection against direct washing, even at high pressure

ENVIRONMENTAL BONUS

Significantly increased frequency of insert bearing replacement, thus increasing the service life of the thermoplastic bearing unit

SENTINEL SERIES

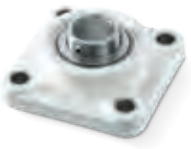
AVAILABLE DESIGNS

WPPL

WTBL

WNFL

WFBL



WFPL

CF CV

The protective covers must be ordered separately.
All bearings are grooved to accommodate the protective covers.

SUC PPL 204 FG1

INSERT

SUC: Stainless steel insert bearing, fitting on shaft with screws

HOUSING

WPPL: With sole

WTBL: With sole with blind holes

WNFL: Flange bearing with 2 holes

WFBL: Flange bearing with 3 holes

WFPL: Flange bearing with 4 holes

W : Bearing unit prefix only without lubrication system

DIMENSIONAL

From 204 to 210 (bore- Ø 20 - 50 mm)

LUBRICANT

FG1: LUBSOLID® solid lubrication H1 category certified

SUCCESS STORY: THERMOPLASTIC SELF-ALIGNING BEARING UNITS WITH LUBSOLID® INSERT

CUSTOMER SITUATION

A producer of french fries replaced 432 MUCNFL205 bearings on a potato calibration machine. Application affected by water infiltration and residues in the bearings.

CUSTOMER NEED

Find a solution to optimise the sealing of bearings and increase their service life.

NTN SOLUTION

Use of thermoplastic bearing units and stainless steel inserts with LUBSOLID® lubrication: SUCNFL205FG1.

CUSTOMER BENEFITS

Bearing consumption reduced to 72 (from 432), an 82% improvement.

SAVING ACHIEVED

REDUCTION IN BEARING CONSUMPTION
€27,936

REDUCED MAINTENANCE
€5,580

IMPROVING THE AVAILABILITY
€1,277,100

TOTAL
€1,310,616/YEAR

SENTINEL™
SERIES

In 2016, NTN Bearings Corporation of America (NBCA), a subsidiary of NTN Corp, began marketing the SENTINEL SERIES.

This launch was based on products from the NTN group's food-processing ranges as well as our know-how and expertise in solid lubrication.

This range quickly established itself in North America as being THE answer to the production problems of food products.

74 %

is the increase in demand for SENTINEL products over three years.

BSA CBS Excellence Award in 2018 and 2019
Bearing Specialists Association (BSA) award for excellence in product innovation and design.

2021

In 2021, NTN has decided to continue this commercial success by extending the development of this range on the European continent.

NTN