



**SNR Bearings:  
Your Guarantee  
in Sugar Refining**

**Industry**





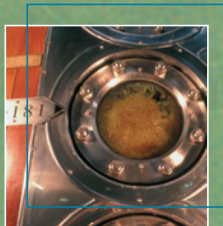
# Granulated sugar ...

## Imechanical problems ... SNR has the answers

*With today's diverse range of products, flavours and textures; sugar production has become one of the most technically advanced sectors in the agri-food industry. It has very specific requirements, due to the fact that production is managed in "runs", setting a high production rhythm. If one machine fails, the entire production is affected. In this demanding environment, SNR Bearings provides reliable, efficient and appropriate solutions.*

### Constraints of an Extraction Industry

Sugar is an everyday pleasure, ubiquitous in tea and coffee cups the world over. However; very specific transformation processes must occur so that it may be used by a consumer. Numerous operations involving bearings convert the raw materials (beet/sugar cane) into the finished product. In each of the different phases (i.e. conveying, washing, grinding, pulping), SNR has a technical solution.



### We all love sugar... but mechanical parts DO NOT!

Bearings sustain various stresses during the production process:

- **Moisture:** water and steam throughout the process
- **Numerous contaminants:** stones, dirt, grass, sugar particles
- **High temperatures:** up to 100°C during some phases
- **Production rhythms:** the machinery operates 24 hours/day, requiring perfectly balanced lubrication.
- **Heavy loads:** conveyors transport thousands of tons of raw material daily.

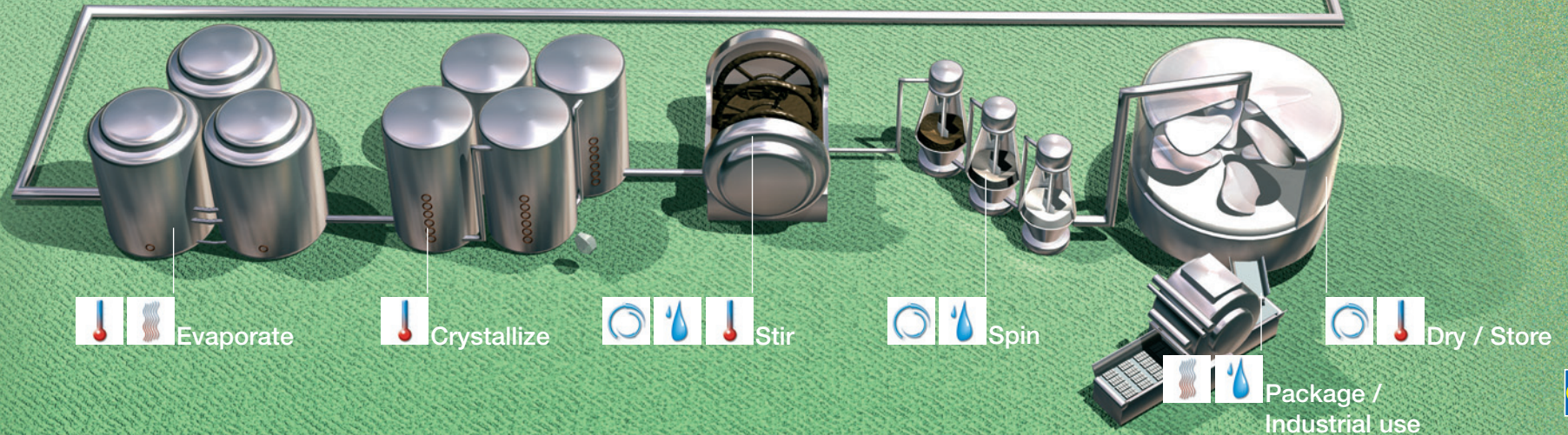
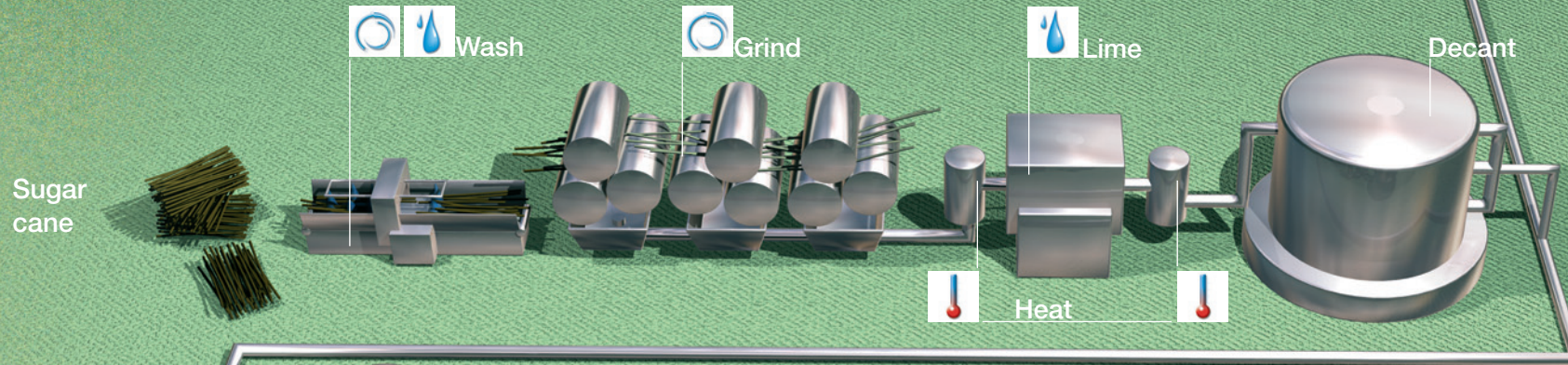
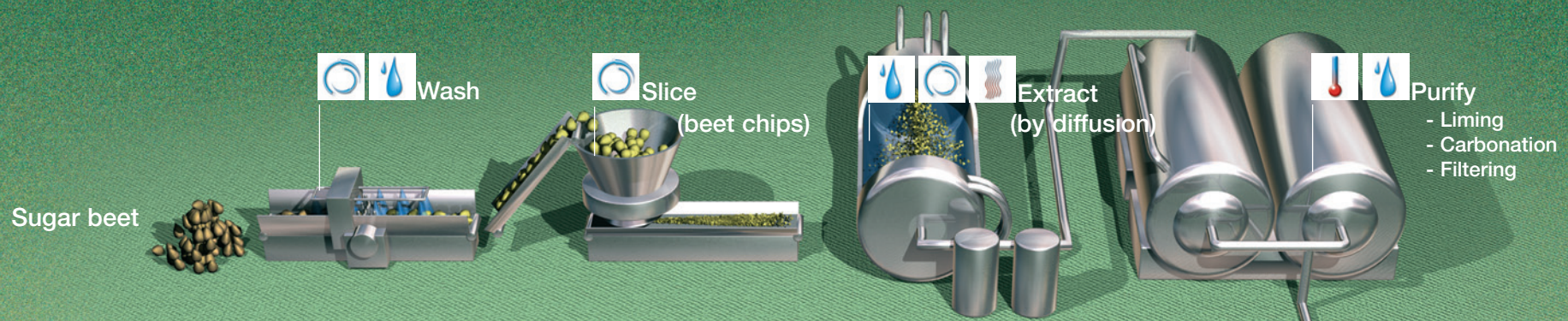
### Between Runs - Opportunity to Increase Bearing Life





A break in production in the sugar industry is generally used for maintenance. It provides an opportunity to detect any bearing problems. Experience shows that 90% of bearing defects are caused by external issues.

SNR's engineers want to draw your attention to the following issues, in order to prevent that from occurring.

- **False brinelling:** Damage to bearings subject to vibrations during shutdown phases (i.e. railways, local roads)
- **Oxidation/corrosion:** Internal oxidation mainly occurs on bearings when machinery has been shut down (i.e. condensation resulting from varying temperatures, washing when seals are damaged, etc.)
- **No lubrication or Poor Lubrication:** i.e. unsuitable grease, etc.

# Extraction, Transformation, Packaging ... SNR has an answer for each stage.



-  Rotation
-  Eau
-  Vapeur d'eau
-  Température

# Material, Geometry, Sealing ... your constraints ... SNR's solutions.

## Conveyor mechanisms Peripheral installations

- **SNR Self-Aligning Bearings in Cast-Iron or Sheet Steel**
  - . SNR bearings (delivered sealed and pre-lubricated) with excentric ring or screw with cup point
  - . Increased clearance C3
  - . Operating temperatures:
    - standard (-30° to +110°C),
    - specific (-40°C to +250°C)
  - . Can be fitted with protective covers
  - . High performance lubrication (food-grade grease)
  - . In compliance with ISO standards
  - . Large selection of sealing solutions:
    - effective sealing: nitrile rubber double lip seal
    - enhanced sealing: lip seal + baffle plates
    - maximum sealing: **triple lip seal (maximum protection against external contamination and splashes)**





## For generic applications

- **SNR Cast-Iron Two-Part Bearings**
  - . Easy assembly
  - . Effective seals :
    - Nitrile lip seal or felt ring
    - V ring seal
    - Nitrile fluorocarbon elastomer double lip seal
  - . Operating temperatures: -30°C to + 110°C
- **SNR Bearings with Solid Lubrication LubSolid LSA**
  - . High performance in dusty environments (sealed version)
  - . Reduced grease consumption and leakage
  - . Optimized service life: porous polymer matrix, which can take 3 to 4 times more oil than grease.
  - . This concept reduces machine shutdown and re-greasing time
  - . Special food-grade, environmentally friendly grease
  - . Operating temperatures: -20°C or -50°C to + 80°C or + 100°C
  - . Available on ball bearings and spherical or tapered roller bearings (sealed, protected or open)



## Premier Spherical Roller Bearings

 **+18%**  
Increased load capacity

 **+75%**  
service life



- **SNR EA Series, Steel Cage**
  - . Designed for standard applications
  - . Resistant to extreme temperatures: from 60°C to + 200°C by means of dimensional stability heat treatment on both rings.
  - . Higher limit speed all-around cage providing enhanced roller guidance via the cage and lower heating
  - . Excellent lubrication as a result of cage shape: increases the amount of lubricant in the bearing and facilitates lubricant flow.
  - . Available with cylindrical or tapered bore
  - . Standard or enhanced clearance
  - . Re-greasing groove and holes (W33)
- **SNR EM Series, Solid Cage**
  - . One-piece solid cage: highly rigid and extremely resistant to impacts
  - . Cage centered on rolling elements to avoid any cage seizure in the event of thermal expansion
  - . Perfect bearing guidance
  - . Available with cylindrical or tapered bores
  - . Standard or enhanced clearance
  - . Re-greasing groove and holes (W33)





# Specific Solutions and Technical Support

*SNR has a wide range of solutions for sugar industry processes. Our standard (Premier and TOPLINE ranges) and specifically-developed ranges (Lubsolid) of bearings offer high performance levels. In addition, our experts are available to offer suggestions to enhance productivity.*

## SNR TOPLINE Ball Bearings (extreme temperatures, high speeds)



This range provides products to work under very specific operating constraints.

- . Heat treatment adapted to external conditions (both hot and cold)
- . Lubricated with grease, according to application-specific requirements
- . Extreme temperature seals and baffle plates
- . Operating temperatures: -60°C to +200°C
- . Resistant to high speeds and/or low torque
- . Optimal internal geometry, with better tolerances and greater precision on the HV series

**FT150 and FT150 ZZ** : High temperature - 150°C peak temp.

High speed, up to 500,000 N.Dm

**HT200 and HT200ZZ** : High temperature: 200°C peak temp

Average speed up to 150,000 N.Dm

**LT and LT ZZ** : Low temperature, to -60°C (LT ZZ series)

**HV ZZ** : High speed, up to 700,000 N.Dm



## Standard SNR Bearings and Automatic Greaser

SNR offers a wide range of standardized ball and roller bearings: tapered and cylindrical. All types of machines with a standard open bearing and a lubrication system can be fitted with an automatic greaser.

- Constant, regular lubrication
- Reduced maintenance work in hazardous areas and lower maintenance costs
- Grease flow can be visually monitored
- Extremely flexible (can be stopped and restarted)
- Can operate in contaminated, damp environments, up to +55°C.
- Grease available: SNR-LUB EP, SNR-LUB HT, SNR-LUB VX and SNR-LUB AL1\* (other versions available upon request)

\*: Food-grade grease SNR-LUB AL1 complies with the stringent requirements of standard USDA H1 in terms of hygiene and purity of raw materials.





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