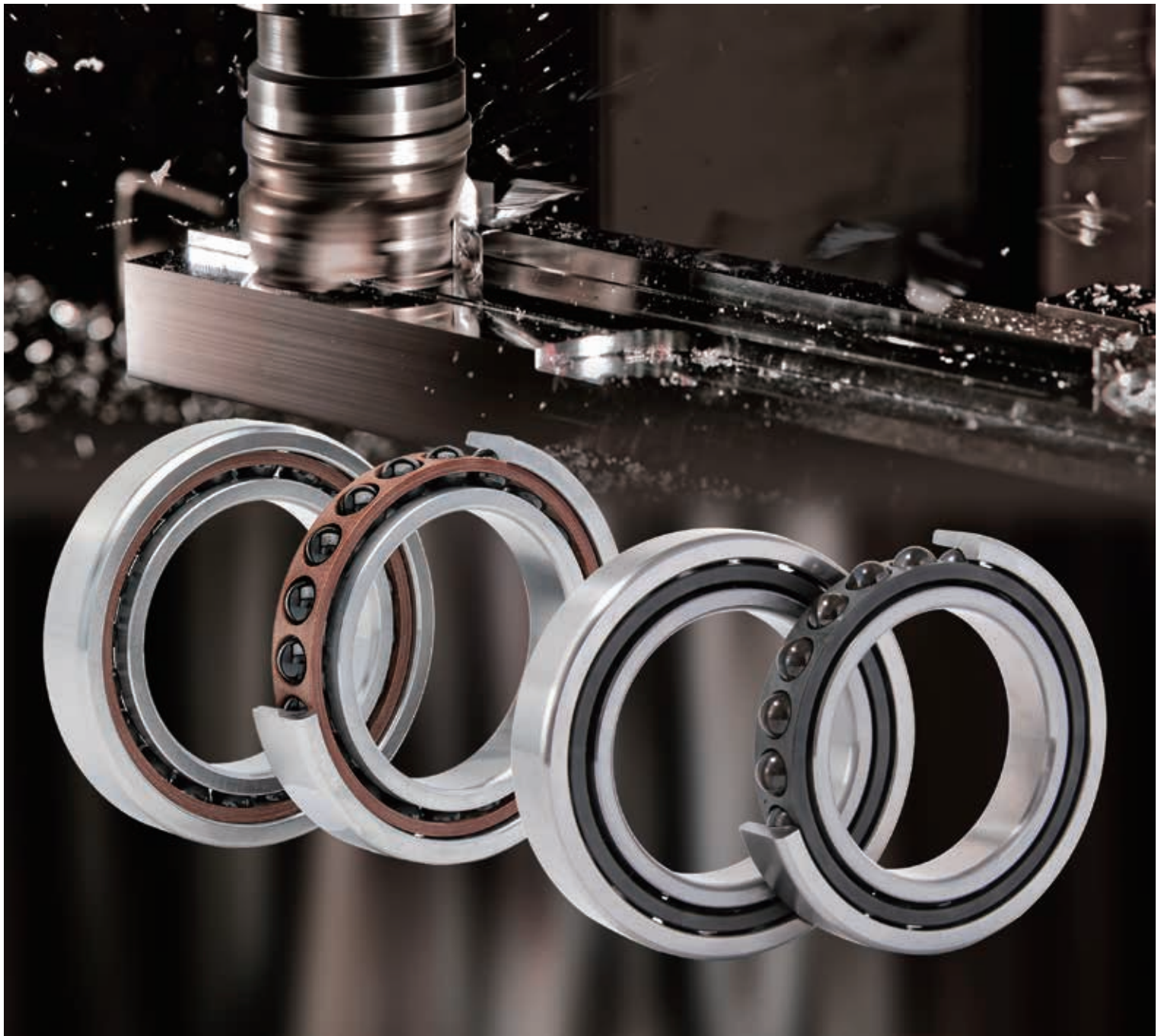


Designed for Machine Tool Spindles
**High Load Capacity Ultra-High Speed
Angular Contact Ball Bearings**
ROBUSTDYNA™

Built with NSK-exclusive materials and analysis technologies,
ROBUSTDYNA bearings help reduce environmental impacts with reduced
machining time and stable operation over long periods.

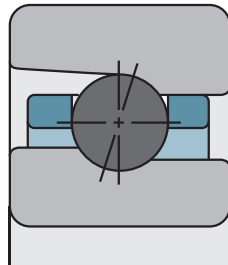


ROBUSTDYNA™ Bearings

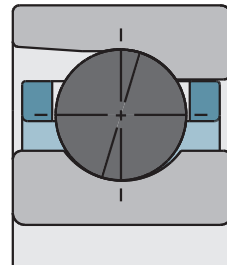


ROBUSTDYNA bearings expand upon the proven lineup of NSKROBUST bearings for machine tools. By using NSK's advanced materials and analysis technologies, ROBUSTDYNA bearings offer high load capacity without compromising on speed.

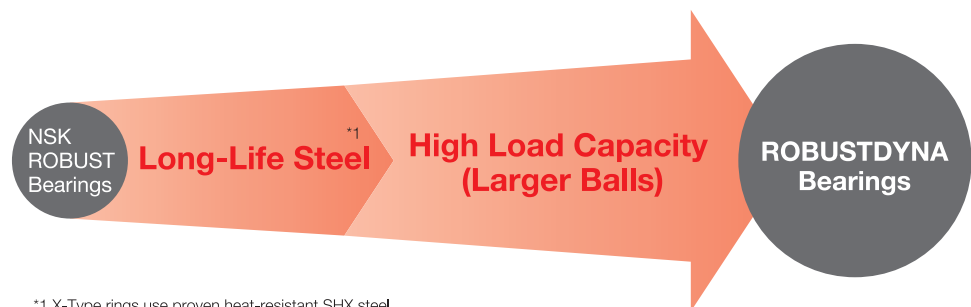
NEW



NSKROBUST Bearing
 Ring material:
 X Type:
 Heat-resistant SHX steel
 H Type:
 SUJ2 bearing steel
 Balls: Ceramic



ROBUSTDYNA Bearing
 Ring material:
 X Type:
 Heat-resistant SHX steel
 J Type:
 Long-life SHJ steel
 Balls: Ceramic

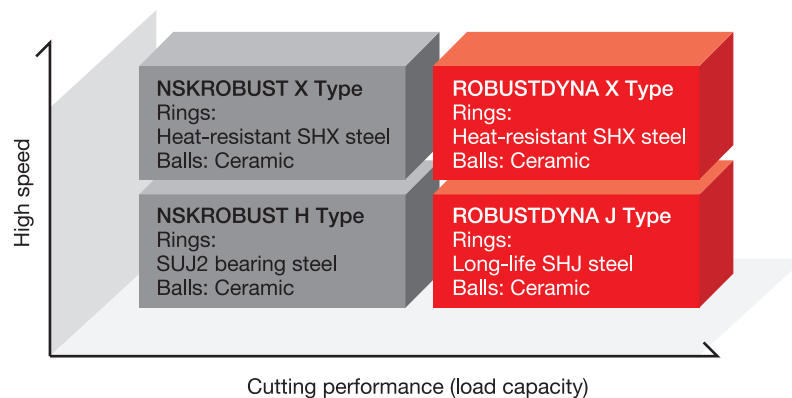


*1 X-Type rings use proven heat-resistant SHX steel

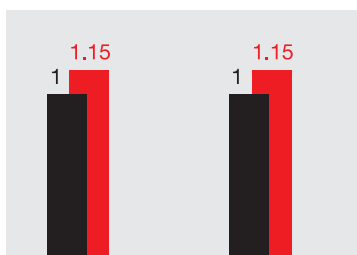
Product Range



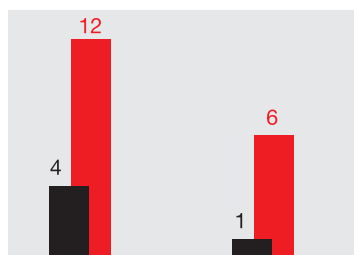
ROBUSTDYNA bearings support machining across an even wider range than NSKROBUST bearings.



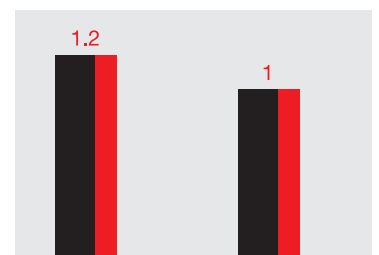
Load Capacity



Rolling Fatigue Life



Speed



ROBUSTDYNA X Type
 NSKROBUST X Type

ROBUSTDYNA J Type
 NSKROBUST H Type

ROBUSTDYNA X Type
 NSKROBUST X Type

ROBUSTDYNA J Type
 NSKROBUST H Type

ROBUSTDYNA X Type
 NSKROBUST X Type

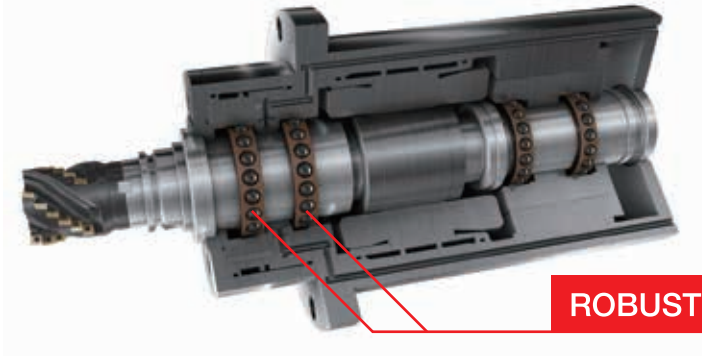
ROBUSTDYNA J Type
 NSKROBUST H Type

*NSKROBUST bearings have lower heat generation than ROBUSTDYNA bearings. Contact NSK for full performance details.

Applications



ROBUSTDYNA bearings are designed to support the needs of machining center spindles. With high load capacity and high speed performance, ROBUSTDYNA bearings provide heavy cutting capabilities and stable finishing at high speeds, supporting machine tools that process difficult-to-cut materials such as titanium alloys.



ROBUSTDYNA Bearings

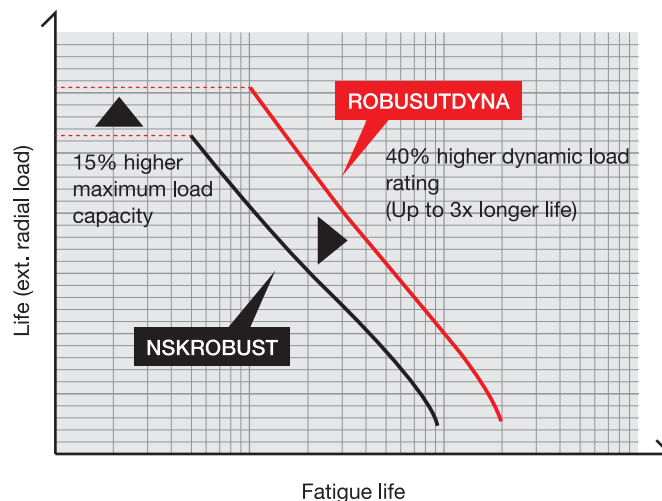
Features



1 Optimized Internal Design

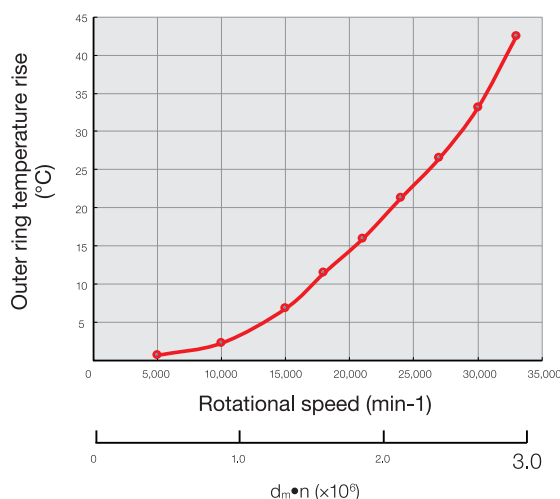
High Load Capacity

An optimized internal design increases maximum load capacity by **15%** and dynamic load rating by **40%**, providing up to **3x** longer bearing life.



High Speed

An optimized internal design achieves high speeds **matching** conventional bearings. X-Type ROBUSTDYNA bearings reach a dmn value of 3 million without seizing and with stable temperature rise.



Test Conditions

Test bearing:
X-Type ROBUSTDYNA Brg.
(Bearing bore diameter: $\Phi 70$)

Preload method:
Constant pressure preload

Preload: 1400 N/row

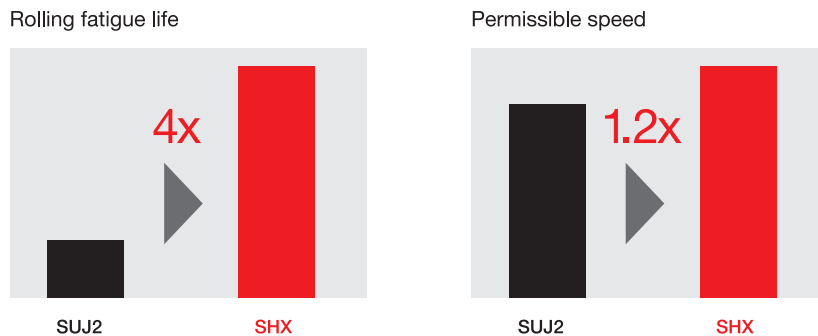
Lubrication: Oil-air

External cooling: Jacket cooling

2 Specialized Materials

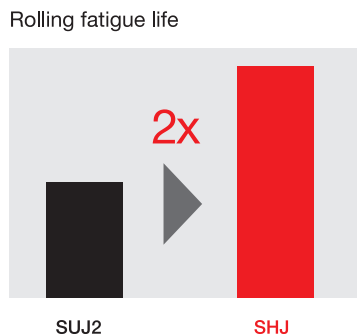
Heat-Resistant SHX Steel: X Type

X-Type ROBUSTDYNA bearings have rings made with the same proven heat-resistant SHX steel found in X-Type NSKROBST Bearings. NSK-exclusive SHX steel has **4x** longer fatigue life and supports **1.2x** higher speeds than typical bearing steel (SUJ2).



Long-Life SHJ Steel: J Type

J-Type ROBUSTDYNA bearings have rings made with long-life SHJ steel. SHJ steel offers **2x** longer fatigue life than typical bearing steel (SUJ2).



Why Choose ROBUSTDYNA?



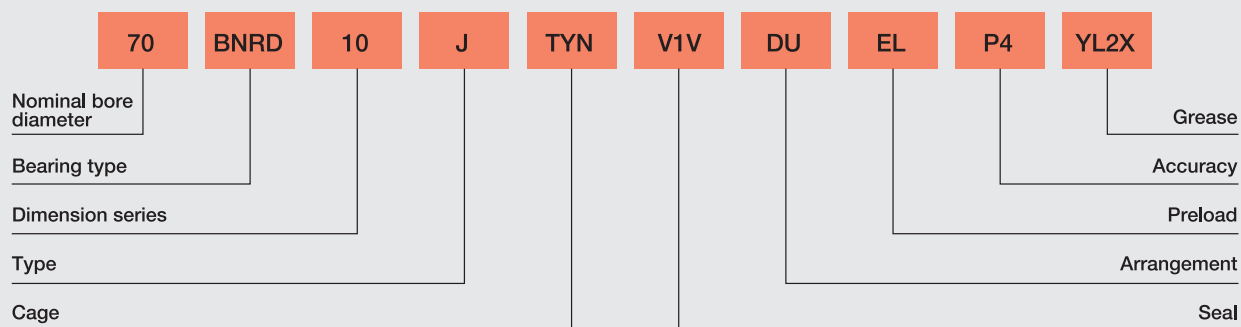
ROBUSTDYNA bearings help increase productivity and reduce environmental impacts. With higher load capacity and longer life than conventional bearings alongside heavy cutting performance, ROBUSTDYNA bearings help ensure stable operation over long periods.



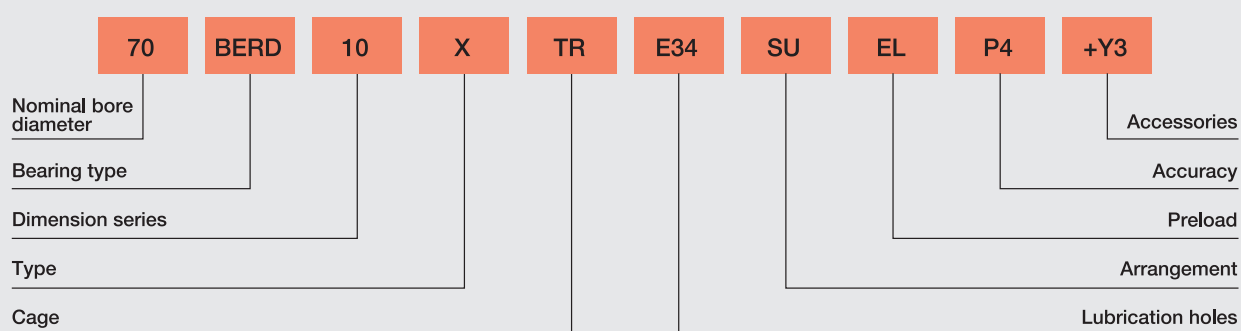
Designation Structure



Example Designation:



呼び番号例



Specifications



Nominal bore diameter	Φ40 to 90, Φ100, Φ110
Bearing type (contact angle)	BNRD(18°), BERD(25°)
Dimension series	10
Type	J, X, XE
Ball material	Silicon nitride ceramic (Si ₃ N ₄)
Cage	TR (Phenolic resin), TYN (Polyamide resin)
Seal	Blank: None (open), V1V: Non-contact rubber seal
Lubrication holes	Blank: None, E34: direct lubrication bearing
Arrangement	SU, DU, etc.
Preload	EL, L
Accuracy	P2, P3, P4, P4Y
Accessories	+Y3: O-ring on bearing outside surface Available for ROBUSTSHOT direct lubrication bearings (E34) only

Available models are subject to change. Contact NSK when considering specifications.

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www.nsk.com

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NSK used environmentally friendly paper and printing methods for this publication.

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