Upgraded Products for Steel, Cement, Mining and Power Sector Industries

The Concept of Ultimate Performance

- The Next Generation of Bearings

ULTAGE®

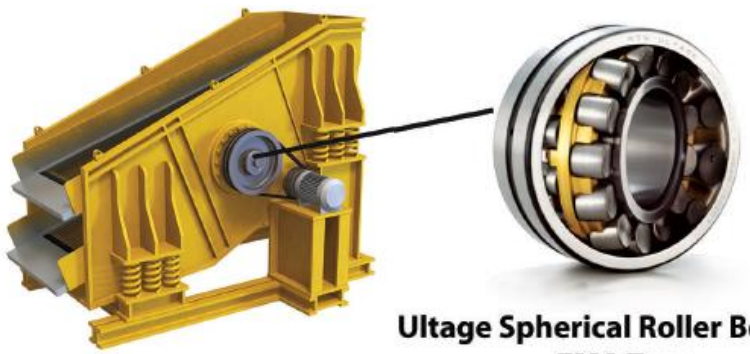
The name for NTN's new generation of bearings that are noted for their industry-leading performance.

The name comes from the combination of "**Ultimate**," signifying refinement, and "**Stage**," signifying NTN's intention that this series of products be employed in diverse applications.

Design Aspect	Advantages (SRB)
Dynamic load capacity	Max **65% UP**
Static load capacity	Max **35% UP**
Compact Size	Min **30% Down**
Limiting Speed	Max **20% UP**

The ULTAGE Range

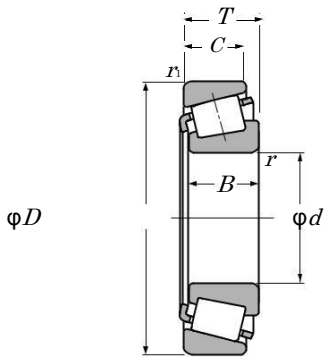
- Spherical roller bearings
- Thrust roller bearings
- Large Taper roller bearings
- Cylindrical roller bearings
- Ball Bearings



Ultage Spherical Roller Bearings
EMA Type

1. Dimension Table

1.1 Single row tapered roller bearings



Equivalent radial load
dynamic
$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static
$P_{0r} = 0.5F_r + Y_0F_a$
When $P_{0r} < F_r$ use $P_{0r} = F_r$
For values of e, Y_2, and Y_0 refer to that of conventional bearings.

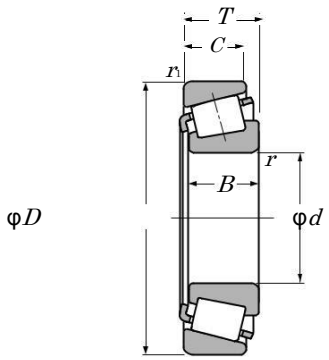
d 90～130mm

Boundary dimensions mm							Bearing numbers	Basic load ratings dynamic kN	Basic load ratings static kN
D	D	T	B	C	$r_{s\ min}$ 1)	$r_{1s\ min}$ 1)		C_r	C_{0r}
90	140	32	32	24	2	1.5	**32018XU**	218	270
95	200	49.5	45	32	4	3	**30319DU**	385	355
120	180	38	29	2.5	2	245	**32024XU**	314	420
130	280	107.75	102	85	4	4	**32226U**	689	815
130	230	43.75	40	34	4	3	**30226U**	488	505

1) Minimal allowable dimension for chamfer dimension r or r_1 .

1. Dimension Table

1.2 Single row tapered roller bearings



Equivalent radial load
dynamic

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$P_{0r} = 0.5F_r + Y_0F_a$

When $P_{0r} < F_r$ use $P_{0r} = F_r$

For values of e, Y_2, and Y_0 refer to that of conventional bearings.

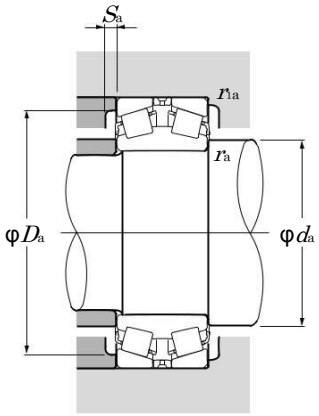
d 200～260mm

Boundary dimensions mm						Bearing numbers	Basic load ratings dynamic kN	Basic load ratings static kN
d	D	T	B	C	$r_{s\,min}$ 1)		C_r	C_{0r}
165	336.55	92.07	95.250	69.85	4	**T-HH437549/HH437510**	1378	1510
206	336.50	98.42	100.01	77.788	6.4	**T-H242649/H242610**	1443	2030
254	533.40	133.35	120.63	77.788	6.4	**HH953749/HH953710**	2184	2610

1) Minimal allowable dimension for chamfer dimension r_1 .

1. Dimension Table

1.3 Double row tapered roller bearings



Equivalent radial load
dynamic

$P_r = XF_r + YF_a$

$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	0	0.4	Y_2

static

$P_{0r} = 0.5F_r + Y_0F_a$

When $P_{0r} < F_r$ use $P_{0r} = F_r$

For values of e, Y_2, and Y_0 refer to that of conventional bearings.

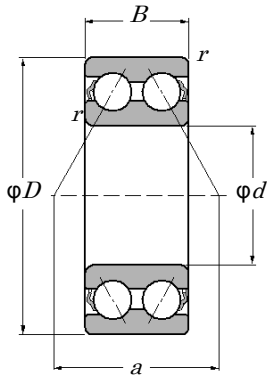
d 270～280mm

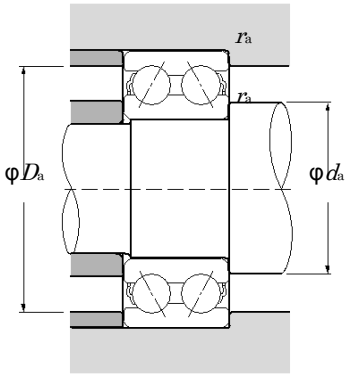
Boundary dimensions mm					Bearing numbers	Basic load ratings kN	
d	D	B	C	$r_{s\ min}$ 1)		dynamic C_r	static C_{0r}
279.400	457.200	244.475	244.475	6.4	**HH255149D/HH255110+A**	4615	7900

1) Minimal allowable dimension for chamfer dimension r_1 .

2. Dimension Table

2.1 Double row angular contact bearings





Dynamic equivalent radial load

$P_r = XF_r + YF_a$

e	$\frac{F_a}{F_r} \leqq e$		$\frac{F_a}{F_r} > e$	
	X	Y	X	Y
0.68	1	0.92	0.67	1.41

Static equivalent radial load

$P_{or} = F_r + 0.76F_a$

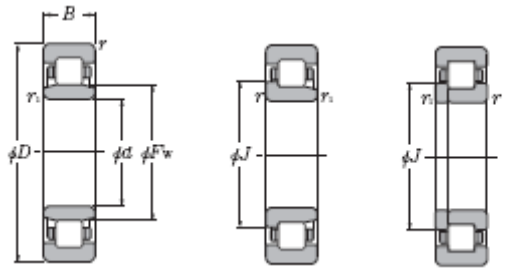
d 60～65mm

Boundary dimensions mm				Bearing numbers	Basic load ratings dynamic kN	static
d	D	B	$r_{s\ min}$ 1)		C_r	C_{0r}
65	140	58.7	2	**3313S**	131	150

1) Minimal allowable dimension for chamfer dimension r_1 .

3. Dimension Table

3.1 Cylindrical roller bearings



d 70～280mm

Boundary dimensions mm					Bearing numbers	Basic load ratings dynamic kN	static
d	D	B_1	$r_{s\ min}$ [1]	$r_{1s\ min}$ [1]		C_r	C_{0r}
70	150	35	2.1	2.1	**E-NU314E**	227	222
80	170	39	2.1	2.1	**NU316E**	256	282
120	215	40	2.1	2.1	**NU224E**	335	420
130	230	40	3	3	**E-NUP226E**	404	455
130	230	64	3	3	**E-NU2226E**	586	735
140	250	42	3	3	**E-NU228E**	437	515
150	270	45	3	3	**NU230E**	450	595
160	290	48	3	3	**NU232E**	500	665
170	360	72	4	4	**NU334**	795	1 010
180	320	52	4	4	**E-NU236E**	691	850
280	500	165.1	5	5	**RNU5617**	2 190	3 850

1) Minimal allowable dimension for chamfer dimension r or r_1 .
Remarks: Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.