

For New Technology Network

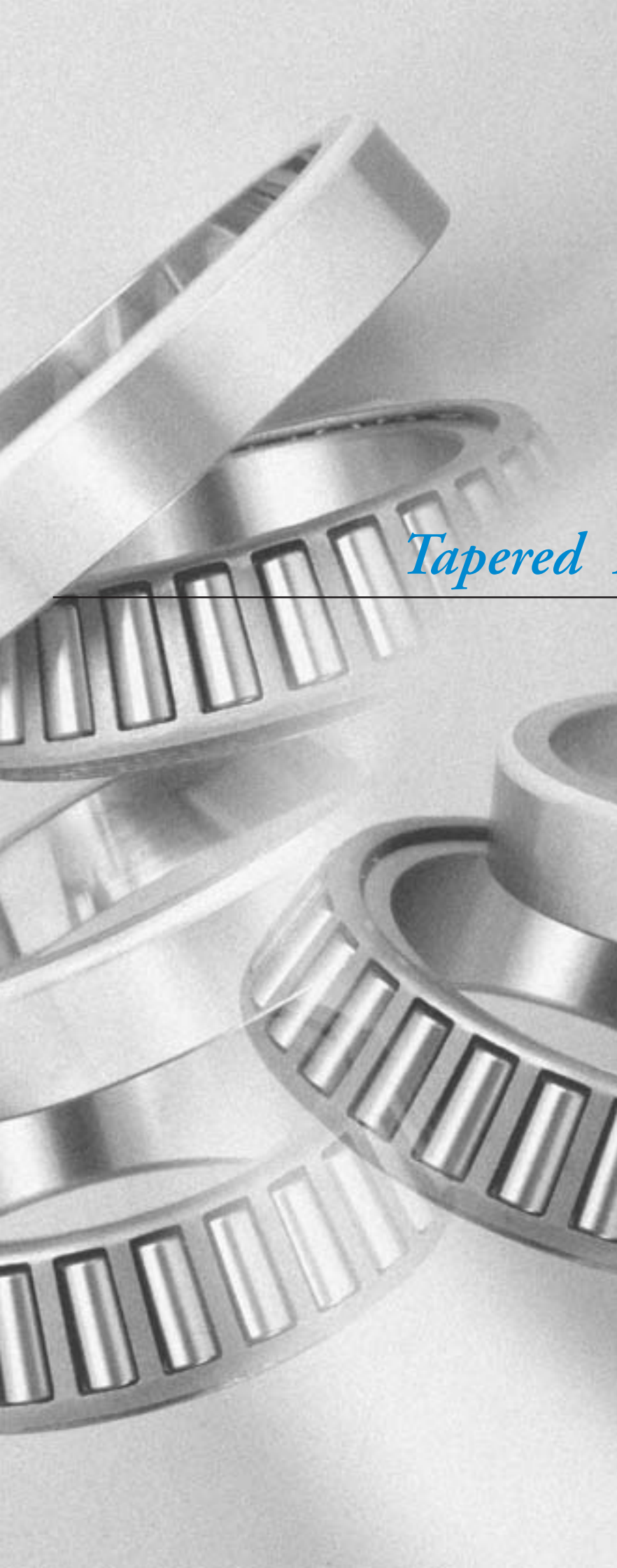


NTNcorporation

# LARGE BEARINGS



CAT. NO. 2250-IV/E



## *Tapered Roller bearings*

## 1. Type, Structure and Characteristics

Tapered roller bearings are designed such that their conical rollers and raceways are arranged so that all elements of the roller and race way cones meet at a common apex on the bearing axis. (Refer to **Fig.1**) The rolling elements perform the real rotating movement on the raceway; the synthesized force from the inner and outer ring raceways guides the rollers, pressing them to the large rib on the inner ring. Metric and inch series are considered standard and both systems are widely used.

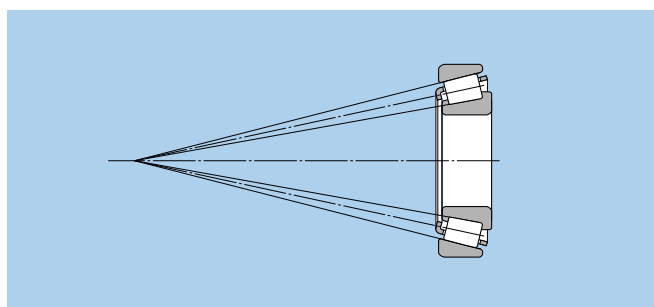


Fig.1

The inner ring, rollers and cage can be separated as a unit, or the CONE, from the outer ring, or the CUP. The cup and cone are called sub-units. Sub-unit dimensions for the nominal cup small inside diameter and bearing contact angle, as shown in **Fig. 2**, are standardized by ISO and ABMA and are compatible between sub-units. Double row and four row bearings are available in addition to single row bearings. Models and characteristics are shown in **Tables 1** and **2**.

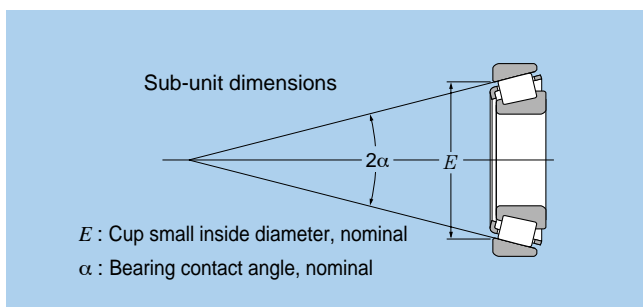
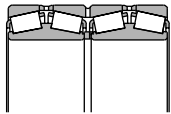
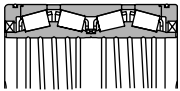


Fig.2

Table 1 Structure and characteristics of double row tapered roller bearings

Model	Drawing	Nominal number	Characteristics
Double row with vertex of contact angles outside of the bearing 413XXX 423XXX 430XXX 432XXX CRI			<ul style="list-style-type: none"> <li>These bearings are designed with one double row outer ring and two pairs of inner rings with rollers. Bearings are adjusted so that their internal clearance becomes the specified value, the parts which have the same serial numbers should be assembled according to the assembly codes.</li> <li>These bearings support radial and axial loads. Since the cone pressure apex is wide, bearings are suitable where moment loads are applied.</li> <li>These bearings have the same function as the back-to-back duplex arrangement of single row bearings.</li> </ul>
Double row with vertex of contact steep angles outside of the bearing CRI			<ul style="list-style-type: none"> <li>This bearing model has a larger and steeper contact angle than the double row with vertex of contact angles outside the bearing. These bearings are used when the axial load is large.</li> <li>Since these bearings are adjusted so that the internal clearance is a specified value (like the double row with vertex of contact angles outside of bearing) the parts which have the same serial numbers should be assembled according to the assembly codes.</li> </ul>
Double row with vertex of contact angles inside of the bearing 3230XX 3231XX CRD			<ul style="list-style-type: none"> <li>These bearings are designed with one double row inner ring with rollers and two pairs of outer rings and an outer ring spacer.</li> <li>These bearings accept the radial and axial loads. Since the cone pressure apex is short, bearings are not suitable when the moment is applied.</li> <li>Since these bearings are adjusted so that the internal clearance is the specified value (like the double row with vertex of contact angles outside of bearing) the parts which have the same serial numbers should be assembled according to the assembly codes.</li> </ul>
Double row with vertex of contact steep angles inside of the bearing CRD			<ul style="list-style-type: none"> <li>This bearing model has a larger and steeper contact angle than the double row with vertex of contact angles inside the bearing. These bearings are used when the axial load is large or only axials are applied.</li> <li>Models without an outer ring spacer and with a key groove or notch on the inner ring (refer to the drawing) are also available. Consult NTN Engineering about this bearing's fit.</li> <li>These bearings may be pressurized by using a spring between the housing shoulder and outer ring end.</li> </ul>

**Table 2 Structure and characteristics of the four row tapered roller bearings**

Model	Drawing	Nominal numbers	Characteristics
Four row tapered roller bearing		6259XX 6230XX 6231XX CRO	<ul style="list-style-type: none"> <li>These bearings are designed with two double row inner rings with rollers, one double row outer ring, two single outer ring and outer ring spacer/inner ring spacer. Bearings are adjusted so that their internal clearance becomes the specified value, the parts which have the same serial numbers should be assembled according to the assembly codes.</li> <li>The bearing is mainly used for the roll neck of rolling mill, and designed so as to become the maximum rating load for the allowable space in the roll neck part.</li> <li>The bearing uses the clearance-fit to make assemble and disassembly easier. For this purpose, bearings are designed with a helical groove on the inner ring bore to prevent wearing of the inner ring bore when creep occurs and uses the carbonized steel to prevent cracks on inner ring and improve the shock resistance.</li> <li>Please consult with NTN Engineering for fitting and bearing internal clearance.</li> </ul>
Four row tapered roller bearing enclosed type		CRO...LL	<ul style="list-style-type: none"> <li>Bearings are designed with oil seals on both side of the bearing which is the same as the four row tapered roller bearings.</li> <li>Please consult with NTN Engineering for fitting and bearing internal clearance.</li> </ul>

## 2. Dimensional Accuracy/Rotation Accuracy

Metric system bearings ..... **Table 3.4 (Page A-14)**

Inch system bearings ..... **Table 3.5 (Page A-16)**

## 3. Recommended Fitting

Metric system bearings ..... **Table 4.2 (Page A-24)**

Inch system bearings ..... **Table 4.5, 4.6 (Page A-27)**

## 4. Bearing Internal Clearance

Metric system bearings ..... **Table 5.7 (Page A-32)**

Inch system bearings ..... **Table 5.9 (Page A-34)**

## 5. General Operating Cautions

Slippage between the balls and raceways may occur when bearings are operated under small loads, or when the ratio between axial and radial loads of the duplexed bearings exceeds the value “e,” and may cause smearing. This is most apparent when using large size tapered roller bearings due to the large cage mass. Please consult NTN Engineering for further details.



**Inch system sizes: Tapered Roller Bearings (Single row · Double row) index**

Bearing number CONE / CUP	ABMA Type	Page
8573/8520	TS	B-109
8573/8520D+A	TDO	B-140
8575/8520	TS	B-109
8575/8520D+A	TDO	B-140
8578/8520	TS	B-111
8578/8520D+A	TDO	B-140
29875/29820	TS	B-111
29875/29820D+A	TDO	B-142
29880/29820	TS	B-111
29880/29820D+A	TDO	B-142
38880/38820	TS	B-111
38885/38820	TS	B-111
67983/67920	TS	B-107
67983/67920D+A	TDO	B-138
67985/67920	TS	B-107
67985/67920D+A	TDO	B-140
67989/67920	TS	B-109
67989/67920D+A	TDO	B-140
80170/80217	TS	B-117
80176/80217	TS	B-117
80180/80217	TS	B-117
80385/80325	TS	B-117
80780/80720	TS	B-121
87737/87111	TS	B-107
87737/87112D+A	TDO	B-138
87750/87111	TS	B-107
87750/87112D+A	TDO	B-138
87762/87111	TS	B-107
87762/87112D+A	TDO	B-138
93708/93125	TS	B-107
93750/93125	TS	B-107
93750/93127D+A	TDO	B-138
93787/93125	TS	B-107
93787/93727D+A	TDO	B-138
93800/93125	TS	B-107
93800/93127D+A	TDO	B-138
93800D/93125+A	TDI	B-161
93825/93125	TS	B-109
93825/93127D+A	TDO	B-140
94649/94113	TS	B-105
94649/94114D+A	TDO	B-138
94687/94113	TS	B-105
94687/94114D+A	TDO	B-138
94700/94113	TS	B-107
94700/94114D+A	TDO	B-138
94706D/94113+A	TDI	B-161
96900/96140	TS	B-109
96900/96140D+A	TDO	B-140
96925/96140	TS	B-109
96925/96140D+A	TDO	B-140
EE113089/113170	TS	B-109
EE113091/113170	TS	B-109
EE113091/113171D+A	TDO	B-140
EE114080/114160	TS	B-107

Bearing number CONE / CUP	ABMA Type	Page
EE114080/114161D+A	TDO	B-138
EE117063/117148	TS	B-105
EE126096D/126150+A	TDI	B-161
EE126097/126150	TS	B-111
EE126097/126151D+A	TDO	B-142
EE126098/126151D+A	TDO	B-142
EE126098/126150	TS	B-111
EE127095/127135	TS	B-111
EE127095/127136D+A	TDO	B-140
EE127097D/127135+A	TDI	B-161
EE128111/128160	TS	B-113
EE128111/128160D+A	TDO	B-142
EE128112/128160	TS	B-113
EE129120X/129172	TS	B-113
EE129120X/129120D+A	TDO	B-144
EE130902/131400	TS	B-109
EE130902/131401D+A	TDO	B-140
EE134100/134143	TS	B-111
EE134100/134144D+A	TDO	B-142
EE134102/134143	TS	B-111
EE134102/134144D+A	TDO	B-142
EE135111D/135155+A	TDI	B-163
HH144642/HH144614	TS	B-107
EE147112/147198D+A	TDO	B-144
EE161300/161900	TS	B-115
EE161300/161901D+A	TDO	B-144
EE161363/161900	TS	B-115
EE161363/161901D+A	TDO	B-144
EE161400/161850	TS	B-115
EE161400/161900	TS	B-115
EE161400/161901D+A	TDO	B-144
L163149/L163110	TS	B-115
L163149/L163110D+A	TDO	B-144
L163149D/L163110+A	TDI	B-163
EE170950/171450	TS	B-111
EE170950/171451D+A	TDO	B-142
EE170975/171450	TS	B-111
EE170975/171451D+A	TDO	B-140
EE170975D/171450+A	TDI	B-161
EE192150/192200	TS	B-115
EE192150/192201D+A	TDO	B-146
EE219068/219117	TS	B-105
EE219068/219122	TS	B-105
EE221025D/221575+A	TDI	B-161
EE221026/221575	TS	B-111
EE221026/221576D+A	TDO	B-142
EE222070/222127D+A	TDO	B-138
EE231400/231975	TS	B-115
EE231400/231976D+A	TDO	B-146
EE231401D/231975+A	TDI	B-163
EE231462/231975	TS	B-115
EE231462/231976D+A	TDO	B-146
HH231637/HH231615	TS	B-105
HH231649/HH231610	TS	B-105

Bearing number CONE / CUP	ABMA Type	Page
HH231649/HH231615	TS	B-105
HH234031/HH234010	TS	B-105
HH234031/HH234011D+A	TDO	B-138
HH234048/HH234010	TS	B-105
HH234048/HH234011D+A	TDO	B-138
EE234156/234213D+A	TDO	B-146
EE234156/234215	TS	B-117
EE234156/234216D+A	TDO	B-146
EE234160/234213D+A	TDO	B-146
EE234160/234215	TS	B-117
HM237532/HM237510	TS	B-105
HM237532/HM237510D+A	TDO	B-138
HM237535/HM237510	TS	B-105
HM237535/HM237510D+A	TDO	B-138
HM237542/HM237510	TS	B-105
HM237542/HM237510D+A	TDO	B-138
HM237545/HM237510	TS	B-107
HM237545/HM237513	TS	B-107
HM237545/HM237510D+A	TDO	B-138
HM237546D/HM237510+A	TDI	B-161
H238140/H238110	TS	B-105
H238148/H238110	TS	B-105
H239640/H239610	TS	B-107
H239640/H239612D+A	TDO	B-138
H239649/H239610	TS	B-107
H239649/H239612	TS	B-107
H239649/H239612D+A	TDO	B-138
H239649D/H239610+A	TDI	B-161
LM241149/LM241110	TS	B-107
LM241149/LM241110D+A	TDO	B-138
M241547/M241510	TS	B-107
M241543/M241510	TS	B-107
M241543/M241510D+A	TDO	B-138
M241547/M241510D+A	TDO	B-138
M241549/M241510	TS	B-107
M241549/M241510D+A	TDO	B-138
EE241701/242375	TS	B-117
EE241701/242377D+A	TDO	B-146
H242649/H242610	TS	B-107
H242649/H242610D+A	TDO	B-140
H242649D/H242610+A	TDI	B-161
EE243190/243250	TS	B-119
EE243190/243251D+A	TDO	B-146
EE243192/243250	TS	B-119
EE243192/243251D+A	TDO	B-148
EE243196/243250	TS	B-119
EE243196/243251D+A	TDO	B-148
EE244180/244235	TS	B-119
EE244180/244236D+A	TDO	B-146
M244249/M244210	TS	B-109
M244249/M244210D+A	TDO	B-140
M244249D/M244210+A	TDI	B-161
H244849D/H244810+A	TDI	B-161
M246942/M246910	TS	B-109

**Inch system sizes: Tapered Roller Bearings (Single row · Double row) index**

Bearing number CONE / CUP	ABMA Type	Page
M246949/M246910	TS	B-109
H247535/H247510	TS	B-107
H247535/H247510D+A	TDO	B-138
H247549/H247510	TS	B-109
H247549/H247510D+A	TDO	B-140
LM247748D/LM247710+A	TDI	B-161
H249148/H249111D+A	TDO	B-140
M249732/M249710	TS	B-109
M249732/M249710D+A	TDO	B-140
M249734/M249710	TS	B-109
M249734/M249710D+A	TDO	B-140
M249736/M249710	TS	B-109
M249736/M249710D+A	TDO	B-140
M249748D/M249710+A	TDI	B-161
M249749/M249710	TS	B-111
M249749/M249710D+A	TDO	B-142
HH249749/HH249910D+A	TDO	B-142
HH249949/HH249910	TS	B-111
HH249949D/HH249910+A	TDI	B-161
M252337/M252310	TS	B-111
HM252343/HM252310	TS	B-111
HM252343/HM252310D+A	TDO	B-142
HM252344/HM252310D+A	TDO	B-142
M252349D/M252310+A	TDI	B-161
HM252348/HM252310	TS	B-111
HM252348/HM252310D+A	TDO	B-142
HM252349/HM252310D+A	TDO	B-142
M252330/M252310	TS	B-109
M252349/M252310	TS	B-113
HH255149D/HH255110+A	TDI	B-161
M255449/M255410	TS	B-113
M255449/M255410D+A	TDO	B-144
M255449D/M255410A+A	TDI	B-163
HM256849/HM256810	TS	B-113
HM256849/HM256810D+A	TDO	B-144
HM256849D/HM256810+A	TDI	B-163
M257149D/M257110+A	TDI	B-163
M257248D/M257210+A	TDI	B-163
HH258248/HH258210	TS	B-113
HH258248/HH258210D+A	TDO	B-144
LM258648D/LM258610+A	TDI	B-163
HM259048/HM259010	TS	B-115
HM259049/HM259010D+A	TDO	B-144
HM259049D/HM259010+A	TDI	B-163
HM261049/HM261010	TS	B-115
HM261049/HM261010D+A	TDO	B-144
HM261049D/HM261010+A	TDI	B-163
M262449D/M262410+A	TDI	B-163
HM262749/HM262710	TS	B-115
HM262749/HM262710D+A	TDO	B-144
HM262749D/HM262710+A	TDI	B-163
HM262748/HM262710	TS	B-115
LM263149D/LM263110+A	TDI	B-163
M263349D/M263310+A	TDI	B-163

Bearing number CONE / CUP	ABMA Type	Page
HM265049/HM265010D+A	TDO	B-146
HM265049D/HM265010+A	TDI	B-163
HM265049/HM265010	TS	B-115
HM266447/HM266410	TS	B-117
HM266448/HM266410	TS	B-117
HM266449/HM266410	TS	B-117
HM266449/HM266410D+A	TDO	B-146
HM266446/HM266410	TS	B-117
HM266446/HM266410D+A	TDO	B-146
HM266448/HM266410D+A	TDO	B-146
HM266449D/HM266410+A	TDI	B-163
M268730/M268710	TS	B-117
HM268730/HM268710D+A	TDO	B-146
M268749/M268710	TS	B-117
M268749/M268710D+A	TDO	B-146
M268749D/M268710+A	TDI	B-165
M270749/M270710	TS	B-117
M270749/M270710D+A	TDO	B-146
M270749D/M270710+A	TDI	B-165
LM272235/LM272210	TS	B-119
LM272249/LM272210	TS	B-119
LM272249/LM272210D+A	TDO	B-146
LM272249D/LM272210+A	TDI	B-165
M272647D/M272610+A	TDI	B-165
M272749/M272710	TS	B-119
M272749/M272710D+A	TDO	B-146
M272749D/M272710+A	TDI	B-165
M274149/M274110	TS	B-119
M274149D/M274110+A	TDI	B-165
LM274449D/LM274410+A	TDI	B-165
EE275095/275155	TS	B-111
EE275095/275156D+A	TDO	B-140
EE275100/275155	TS	B-111
EE275100/275156D+A	TDO	B-142
EE275105/275155	TS	B-111
EE275105/275156D+A	TDO	B-142
EE275108/275155	TS	B-113
EE275108/275156D+A	TDO	B-142
EE275109D/275155+A	TDI	B-161
M275349D/M275310+A	TDI	B-165
M276449/M276410	TS	B-119
M276449/M276410D+A	TDO	B-148
M276449D/M276410+A	TDI	B-165
M276448D/M276410+A	TDI	B-165
M278749/M278710	TS	B-119
M278749/M278710D+A	TDO	B-148
M278749D/M278710+A	TDI	B-165
M280049D/M280010+A	TDI	B-167
M280349D/M280310+A	TDI	B-167
EE280626/281200	TS	B-105
M281049D/M281010+A	TDI	B-167
L281148/L281110	TS	B-121
L281148/L281110D+A	TDO	B-148
L281149D/L281110+A	TDI	B-167

Bearing number CONE / CUP	ABMA Type	Page
M281649D/M281610+A	TDI	B-167
LM281849D/LM281810+A	TDI	B-167
LM282549D/LM282510+A	TDI	B-167
LM283649/LM283610	TS	B-121
LM283649D/LM283649+A	TDI	B-167
M284148D/M284111+A	TDI	B-167
M284249D/M284210+A	TDI	B-167
LM286249D/LM286210+A	TDI	B-167
LM287649D/LM287610+A	TDI	B-167
LM287849D/LM287810+A	TDI	B-167
EE291175/291750	TS	B-113
EE291175/291751D+A	TDO	B-144
EE291200D/291750+A	TDI	B-161
EE291201/291750	TS	B-113
EE291201/291751D+A	TDO	B-144
EE291250/291750	TS	B-115
EE291250/291751D+A	TDO	B-144
EE295102/295193	TS	B-111
EE295102/295192D+A	TDO	B-142
EE295110/295193	TS	B-113
EE295110/295192D+A	TDO	B-142
EE329119D/329172+A	TDI	B-163
EE333137/333197	TS	B-115
EE333137/333203D+A	TDO	B-144
EE333140/333197	TS	B-115
EE333140/333203D+A	TDO	B-146
M348449/M348410	TS	B-111
M349549/M349510	TS	B-111
EE350701/351687	TS	B-107
EE350750/351687	TS	B-107
L357049/L357010	TS	B-113
L357049/L357010D+A	TDO	B-144
LM361649/LM361610	TS	B-115
LL365340/LL365310D+A	TDO	B-146
LL365348/LL365310	TS	B-117
LM377449/LM377410	TS	B-119
LM377449/LM377410D+A	TDO	B-148
LM377449D/LM377410+A	TDI	B-165
EE380080/380190	TS	B-107
EE380081/380190	TS	B-107
EE420751/421437	TS	B-107
EE420751/421451D+A	TDO	B-138
EE420750D/421437+A	TDI	B-161
EE420800D/421437+A	TDI	B-161
EE420801/421437	TS	B-107
EE420801/421451D+A	TDO	B-138
EE426200/426330	TS	B-119
EE426200/426331D+A	TDO	B-148
EE430900/431575	TS	B-109
EE430900/431576D+A	TDO	B-140
EE435102/435165	TS	B-111
EE435102/435165D+A	TDO	B-142
HH437549/HH437510	TS	B-105
LM446349/LM446310	TS	B-109

Bearing number	ABMA	Page	Bearing number	ABMA	Page	Bearing number	ABMA	Page
CONE / CUP	Type		CONE / CUP	Type		CONE / CUP	Type	
LM446349/LM446310D+A	TDO	B-140	EE655271D/655345+A	TDI	B-167	EE790114/790221	TS	B-113
EE450601/451212	TS	B-105	LM665949/LM665910	TS	B-117	EE790120/790221	TS	B-115
EE450601/451215D+A	TDO	B-138	LM665949/LM665910D+A	TDO	B-146	EE833160X/833232	TS	B-117
450900D/451212	TDI	B-161	M667935/M667911	TS	B-117	EE833160XD/833232+A	TDO	B-165
LM451345/LM451310	TS	B-111	M667947D/M667910+A	TDI	B-165	HH840249/HH840210	TS	B-107
LM451345/LM451310D+A	TDO	B-142	M667948/M667910	TS	B-117	EE843220/843290	TS	B-119
LM451349/LM451310	TS	B-111	EE671801/672873	TS	B-119	EE843220/843291D+A	TDO	B-148
LM451349/LM451310D+A	TDO	B-142	EE671801/672875D+A	TDO	B-146	EE843220D/843290+A	TDI	B-165
LM451349D/LM451310+A	TDI	B-161	680235/680270	TS	B-121	H852849/H852810	TS	B-113
L467549/L467510	TS	B-117	LL687949/LL687910	TS	B-121	L853049/L853010	TS	B-113
L476549/L476510	TS	B-119	LL687949/LL687910D+A	TDO	B-148	L860048/L860010	TS	B-115
L476549/L476510D+A	TDO	B-148	EE722110/722185	TS	B-113	L860049/L860010	TS	B-115
LL481448/LL481411	TS	B-121	EE722110/722186D+A	TDO	B-142	L865547/L865512	TS	B-115
EE526130/526190	TS	B-115	EE722115/722185	TS	B-113	LM869448/LM869410	TS	B-117
EE526130/526191D+A	TDO	B-144	EE722115/722186D+A	TDO	B-144	LM869448/LM869410D+A	TDO	B-146
EE529091D/529157+A	TDI	B-161	EE724120/724195	TS	B-113	LM869449D/LM869410+A	TDI	B-165
EE542220/542290	TS	B-119	EE724120/724196D+A	TDO	B-142	L879946/L879910	TS	B-121
EE542220/542291D+A	TDO	B-148	LM742745/LM742710	TS	B-109	L879947/L879910	TS	B-121
HM542948/HM542911	TS	B-107	LM742745/LM742710D+A	TDO	B-140	LL889049/LL889010	TS	B-121
543085/543114	TS	B-109	LM742747/LM742710	TS	B-109	LL889049/LL889010D+A	TDO	B-148
543085/543115D+A	TDO	B-140	LM742749/LM742710	TS	B-109	EE911600/912400	TS	B-117
544090/544118	TS	B-109	LM742749/LM742710D+A	TDO	B-140	EE911600/912401D+A	TDO	B-146
544091/544118	TS	B-109	LM742749D/LM742710+A	TDI	B-161	EE923095/923175	TS	B-111
545112/545141	TS	B-113	EE743240/743320	TS	B-121	EE923095/923176D+A	TDO	B-140
545112/545142D+A	TDO	B-144	EE743240/743321D+A	TDO	B-148	HH926744/HH926710	TS	B-105
LM545849/LM545810	TS	B-109	HM746646/HM746610	TS	B-109	HH926744/HH926716	TS	B-105
EE547341D/547480+A	TDI	B-167	HM746646/HM746610D+A	TDO	B-140	HH926749/HH926710	TS	B-105
L555233/L555210	TS	B-113	EE752305/752380	TS	B-121	HH932132/HH932110	TS	B-105
L555233/L555210D+A	TDO	B-142	EE755280/755360	TS	B-121	HH932145/HH932110	TS	B-105
L555249/L555210	TS	B-113	EE755280/755361D+A	TDO	B-148	HH932145/HH932115	TS	B-105
L555249/L555210D+A	TDO	B-144	EE755281D/755360+A	TDI	B-167	H936340/H936310	TS	B-105
LL562749/LL562710	TS	B-115	EE755285/755360	TS	B-121	H936340/H936316	TS	B-105
LM565943/LM565910	TS	B-115	EE755285/755361D+A	TDO	B-148	H936349/H936310	TS	B-105
LM565949/LM565910	TS	B-117	LM757049/LM757010	TS	B-113	EE941205/941950	TS	B-113
LM565949/LM565912	TS	B-117	M757449D/M757410+A	TDI	B-163	HH949549/HH949510	TS	B-109
LL566848/LL566810	TS	B-117	LM761649D/LM761610+A	TDI	B-163	HH949549/HH949510D+A	TDO	B-140
LM567949/LM567910	TS	B-117	EE763330/					

**Inch system sizes: Tapered Roller Bearings (Four Row) index**

Bearing number CONE / CUP	ABMA Type	Page
T-8576D/8520/8520D	TQO	B-185
9974D/9920/9920D	TQO	B-183
T-46791D/46720/46721D	TQO	B-181
T-48290D/48220/48220D	TQO	B-181
T-48393D/48320/48320D	TQO	B-181
T-48680D/48620/48620D	TQO	B-181
67791D/67720/67721D	TQO	B-183
T-67885D/67820/67820D	TQO	B-183
T-67986D/67920/67920D	TQO	B-183
81576D/81962/81963D	TQO	B-181
82681D/82620/82620D	TQO	B-183
EE126096D/126150/126151D	TQO	B-185
EE127097D/127137/127137D	TQO	B-185
EE132082D/132125/132126D	TQO	B-183
EE134102D/134143/134144D	TQO	B-185
EE135111D/135155/135156D	TQO	B-187
L163149D/L163110/L163110D	TQO	B-191
EE171000D/171450/171451D	TQO	B-185
EE181455D/182350/182351D	TQO	B-191
EE221027D/221575/221576D	TQO	B-185
M224749D/M224710/M224710D	TQO	B-181
T-M231649D/M231610/M231610D	TQO	B-181
EE234161D/234215/234216D	TQO	B-191
M238849D/M238810/M238810D	TQO	B-183
M240648D/M240611/M240611D	TQO	B-183
M241538D/M241510/M241510D	TQO	B-183
EE244181D/244235/244236D	TQO	B-193
T-M244249D/M244210/M244210D	TQO	B-185
LM247748D/LM247710/LM247710D	TQO	B-185
T-M249748D/M249710/M249710D	TQO	B-185
T-M252349D/M252310/M252310D	TQO	B-187
HM252349D/HM252310/HM252310D	TQO	B-185
M255449D/M255410/M255410D	TQO	B-187
HM256849D/HM256810/HM256810DG2	TQO	B-187
M257149D/M257110/M257110D	TQO	B-187

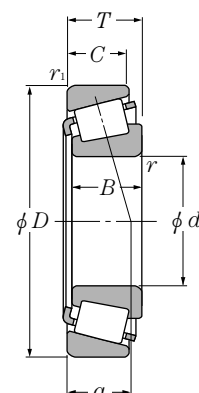
Bearing number CONE / CUP	ABMA Type	Page
M257248D/M257210/M257210D	TQO	B-189
LM258649D/LM258610/LM258610D	TQO	B-189
T-HM259049D/HM259010/HM259010D	TQO	B-189
HM261049D/HM261010/HM261010DA	TQO	B-189
M262449D/M262410/M262410DG2	TQO	B-189
T-HM262749D/HM262710/HM262710DG2	TQO	B-189
LM263149D/LM263110/LM263110D	TQO	B-191
M263349D/M263310/M263310D	TQO	B-191
HM265049D/HM265010/HM265010DG2	TQO	B-191
HM266449D/HM266410/HM266410DG2	TQO	B-191
M268749D/M268710/M268710DG2	TQO	B-193
M270749D/M270710/M270710DG2	TQO	B-193
LM272249D/LM272210/LM272210DG2	TQO	B-193
M274149D/M274110/M274110DG2	TQO	B-195
LM274449D/LM274410/LM274410D	TQO	B-195
EE275106D/275155/275156D	TQO	B-185
EE275109D/275160/275161D	TQO	B-187
M275349D/M275310/M275310DG2	TQO	B-195
M276449D/M276410/M276410DG2	TQO	B-195
M278749D/M278710/M278710DG2	TQO	B-195
LM278849D/LM278810/LM278810D	TQO	B-195
M280049D/M280010/M280010DG2	TQO	B-197
M280349D/M280310/M280310DG2	TQO	B-197
EE280700D/281200/281201D	TQO	B-183
L281149D/L281110/L281110DG2	TQO	B-197
M281649D/M281610/M281610DG2	TQO	B-197
LM281849D/LM281810/LM281810DG2	TQO	B-197
M282249D/M282210/M282210D	TQO	B-197
M283449D/M283410/M283410D	TQO	B-199
LM283649D/LM283610/LM283610DG2	TQO	B-199
M284148D/M284111/M284110DG2	TQO	B-199
M284249D/M284210/M284210DG2	TQO	B-199
M285848D/M285810/M285810D	TQO	B-199
LM286249D/LM286210/LM286210DG2	TQO	B-199
LM287649D/LM287610/LM287610DG2	TQO	B-199



## Inch system sizes: Tapered Roller Bearings (Four Row) index

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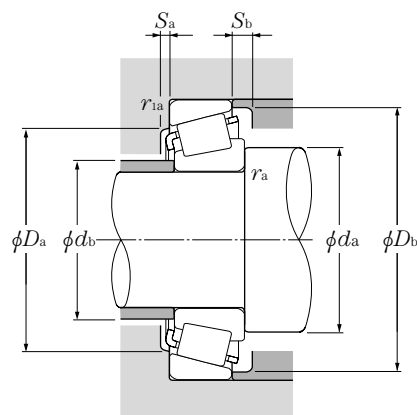
## Metric system sizes



**d 100~120mm**

Boundary dimensions							Basic load ratings				Bearing numbers
mm							dynamic	static	dynamic	static	
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>r</i> <sub>s min</sub> ❶	<i>r</i> <sub>is min</sub> ❶	kN		kgf		
<b>100</b>	140	25	25	20	1.5	1.5	121	206	12,300	21,000	32920XU
	140	25	24	20	1.5	1.5	97.5	162	9,950	16,500	32920®
	150	32	32	24	2	1.5	170	281	17,300	28,600	32020XU
	150	39	39	32.5	2	1.5	224	390	22,800	39,500	33020U
	180	37	34	29	3	2.5	258	335	26,300	34,500	30220U
	180	49	46	39	3	2.5	330	465	33,500	47,500	32220U
	215	51.5	47	39	4	3	410	500	41,500	51,000	30320U
	215	51.5	47	39	3	3	345	400	35,000	40,500	30320®
	215	56.5	51	35	4	3	355	435	36,000	44,000	31320XU
	215	77.5	73	60	4	3	570	770	58,500	78,500	32320U
<b>105</b>	145	25	25	20	1.5	1.5	126	219	12,800	22,400	32921XA®
	160	35	35	26	2.5	2	201	335	20,500	34,000	32021XU
	160	43	43	34	2.5	2	245	420	25,000	43,000	33021U
	190	39	36	30	3	2.5	287	380	29,300	38,500	30221U
	190	53	50	43	3	2.5	380	540	38,500	55,500	32221U
	225	53.5	49	41	4	3	435	535	44,500	54,500	30321U
	225	53.5	49	41	3	3	365	420	37,000	43,000	30321®
	225	58	53	36	4	3	380	470	39,000	47,500	31321XU
	225	81.5	77	63	4	3	610	825	62,500	84,500	32321U
<b>110</b>	150	25	25	20	1.5	1.5	127	226	13,000	23,100	32922XA®
	170	38	38	29	2.5	2	236	390	24,000	39,500	32022XU
	170	47	47	37	2.5	2	288	500	29,400	51,000	33022U
	200	41	38	32	3	2.5	325	435	33,000	44,000	30222U
	200	56	53	46	3	2.5	420	605	43,000	62,000	32222U
	240	54.5	50	42	4	3	480	590	49,000	60,000	30322U
	240	54.5	50	42	3	3	400	465	40,500	47,000	30322®
	240	63	57	38	4	3	430	535	44,000	54,500	31322XU
	240	84.5	80	65	4	3	705	970	72,000	98,500	32322U
	240	84.5	80	65	3	3	620	830	63,500	84,500	32322®
<b>120</b>	165	29	29	23	1.5	1.5	162	294	16,500	30,000	32924XU
	165	29	27	23	1.5	1.5	118	205	12,000	20,900	32924®
	180	38	38	29	2.5	2	245	420	25,000	43,000	32024XU
	215	43.5	40	34	3	2.5	345	470	35,500	48,000	30224U
	215	61.5	58	50	3	2.5	460	680	47,000	69,500	32224U
	260	59.5	55	46	4	3	560	695	57,000	71,000	30324U
	260	59.5	55	46	3	3	465	550	47,500	56,000	30324®

❶ Minimal allowable dimension for chamfer dimension *r* or *r*<sub>s</sub>. ❷ This bearing does not incorporate the subunit dimensions.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

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

### static

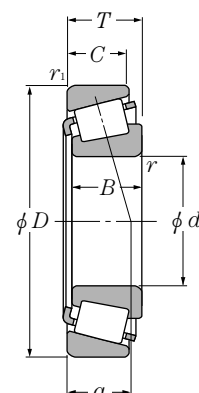
$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions									Load center	Constant	Axial load factors		Mass
$d_a$	$d_b$	$D_a$			$S_a$	$S_b$	$r_{as}$	$r_{1as}$	mm				kg
min	max	max	min	min	min	min	max	max	a	e	$Y_2$	$Y_0$	(approx.)
108.5	107.5	131.5	127.5	135.5	4	5	1.5	1.5	24.5	0.33	1.82	1.00	1.14
108.5	107.5	131.5	127.5	135.5	4	5	1.5	1.5	25	0.35	1.73	0.95	1.08
110	109	141.5	134	144	6	8	2	1.5	32.5	0.46	1.31	0.72	1.91
110	108	141.5	135	143	7	6.5	2	1.5	29.5	0.29	2.09	1.15	2.37
114	116	168	157	168	5	8	2.5	2	36	0.42	1.43	0.79	3.78
114	114	168	154	171	5	10	2.5	2	41.5	0.42	1.43	0.79	5.12
118	127	201	184	200	5	12.5	3	2.5	41.5	0.35	1.74	0.96	8.56
118	127	201	184	200	5	12.5	3	2.5	42	0.35	1.73	0.95	7.72
118	121	201	168	202	7	21.5	3	2.5	69	0.83	0.73	0.40	8.67
118	121	201	177	200	5	17.5	3	2.5	53	0.35	1.74	0.96	12.7
113.5	113.5	136.5	131.5	140.5	5	5	1.5	1.5	25	0.34	1.76	0.97	1.2
117	116	150	143	154	6	9	2	2	34.5	0.44	1.35	0.74	2.42
117	116	150	145	153	7	9	2	2	31	0.28	2.12	1.17	3
119	122	178	165	178	6	9	2.5	2	38	0.42	1.43	0.79	4.39
119	119	178	161	180	6	10	2.5	2	44	0.42	1.43	0.79	6.25
123	132	211	193	209	6	12.5	3	2.5	43.5	0.35	1.74	0.96	9.79
123	132	211	193	209	6	12.5	3	2.5	43.5	0.35	1.73	0.95	8.93
123	126	211	176	211	7	22	3	2.5	71.5	0.83	0.73	0.40	9.68
123	128	211	185	209	6	18.5	3	2.5	55	0.35	1.74	0.96	14.5
118.5	117.5	141.5	137	145.5	5	5	1.5	1.5	26.5	0.36	1.69	0.93	1.23
122	122	160	152	163	7	9	2	2	36.5	0.43	1.39	0.77	3.07
122	121	160	152	161	7	10	2	2	33.5	0.29	2.09	1.15	3.8
124	129	188	174	188	6	9	2.5	2	40	0.42	1.43	0.79	5.18
124	126	188	170	190	6	10	2.5	2	47	0.42	1.43	0.79	7.43
128	141	226	206	222	6	12.5	3	2.5	45.5	0.35	1.74	0.96	11.4
128	141	226	206	222	6	12.5	3	2.5	44	0.35	1.73	0.95	10.5
128	135	226	188	224	7	25	3	2.5	76	0.83	0.73	0.40	11.9
128	135	226	198	222	6	19.5	3	2.5	57.5	0.35	1.74	0.96	18
128	135	226	198	222	6.5	19.5	3	2.5	56	0.35	1.73	0.95	16.9
128.5	128.5	156.5	150	160	6	6	1.5	1.5	29.5	0.35	1.72	0.95	1.77
128.5	130.5	156.5	147.5	159.5	6	6	1.5	1.5	31	0.37	1.60	0.88	1.63
132	131	170	161	173	7	9	2	2	39	0.46	1.31	0.72	3.25
134	140	203	187	203	6	9.5	2.5	2	44	0.44	1.38	0.76	6.23
134	136	203	181	204	6	11.5	2.5	2	51.5	0.44	1.38	0.76	9.08
138	152	246	221	239	6	13.5	3	2.5	49	0.35	1.74	0.96	14.2
138	152	246	221	239	6	13.5	3	2.5	48.5	0.35	1.73	0.95	13.2

## Metric system sizes

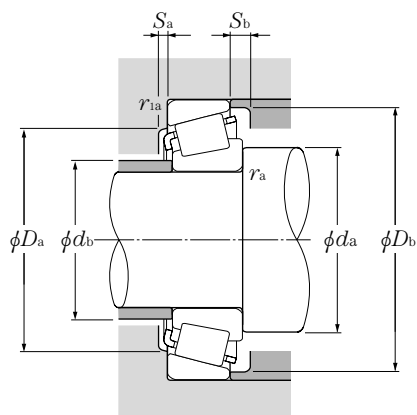


**d 120~160mm**

Boundary dimensions							Basic load ratings				Bearing numbers
mm							dynamic kN	static kN	dynamic kgf	static kgf	
d	D	T	B	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
<b>120</b>	260	68	62	42	4	3	515	655	52,500	67,000	31324XU
	260	90.5	86	69	4	3	815	1,130	83,000	116,000	32324U
<b>130</b>	180	32	32	25	2	1.5	194	350	19,800	36,000	32926XU
	180	32	30	26	2	2	142	252	14,500	25,700	32926 <sup>②</sup>
	200	45	45	34	2.5	2	320	545	32,500	55,500	32026XU
	230	43.75	40	34	4	3	375	505	38,000	51,500	30226U
	230	67.75	64	54	4	3	530	815	54,000	83,000	32226U
	280	63.75	58	49	5	4	650	830	66,000	84,500	30326U
	280	72	66	44	5	4	600	780	61,500	79,500	31326XU
	280	98.75	93	78	4	4	895	1,240	91,000	126,000	32326
<b>140</b>	190	32	32	25	2	1.5	200	375	20,400	38,000	32928XU
	210	45	45	34	2.5	2	330	580	33,500	59,500	32028XU
	250	45.75	42	36	4	3	420	570	43,000	58,500	30228U
	250	45.75	42	36	3	3	375	485	38,000	49,500	30228 <sup>②</sup>
	250	71.75	68	58	4	3	610	920	62,500	94,000	32228U
	300	67.75	62	53	5	4	735	950	75,000	97,000	30328U
	300	67.75	62	53	4	4	640	780	65,000	80,000	30328 <sup>②</sup>
	300	77	70	47	5	4	685	905	70,000	92,500	31328XU
	300	107.75	102	85	4	4	985	1,370	101,000	140,000	32328
<b>150</b>	210	38	38	30	2.5	2	268	490	27,300	50,000	32930XU
	225	48	48	36	3	2.5	370	655	37,500	67,000	32030XU
	270	49	45	38	4	3	450	605	46,000	61,500	30230U
	270	77	73	60	4	3	700	1,070	71,500	109,000	32230U
	320	72	65	55	5	4	825	1,070	84,000	109,000	30330U
	320	72	65	55	4	4	680	875	69,500	89,000	30330 <sup>②</sup>
	320	82	75	50	5	4	775	1,030	79,000	105,000	31330XU
	320	114	108	90	4	4	1,160	1,750	119,000	179,000	32330
<b>160</b>	220	38	38	30	2.5	2	276	520	28,200	53,000	32932XU
	240	51	51	38	3	2.5	435	790	44,500	80,500	32032XU
	290	52	48	40	4	3	525	720	53,500	73,500	30232U
	290	84	80	67	4	3	890	1,420	90,500	145,000	32232U
	340	75	68	58	5	4	915	1,200	93,500	122,000	30332U
	340	75	68	58	4	4	755	975	77,000	99,500	30332 <sup>②</sup>
	340	121	114	95	4	4	1,230	1,840	126,000	188,000	32332

① Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ . ② This bearing does not incorporate the subunit dimensions.





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

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

### static

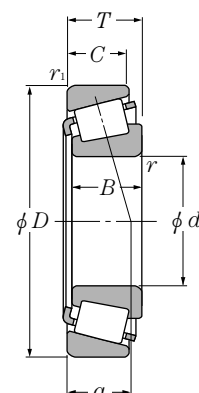
$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions									Load center	Constant	Axial load factors		Mass
mm									mm				kg
$d_a$	$d_b$	$D_a$		$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{1as}$	$a$	$e$	$Y_2$	$Y_0$	(approx.)
min	max	max	min	min	min	min	max	max					
138	145	246	203	244	9	26	3	2.5	82.5	0.83	0.73	0.40	15.4
138	145	246	213	239	6	21.5	3	2.5	61.5	0.35	1.74	0.96	22.4
140	139	171.5	163.5	174	6	7	2	1.5	31.5	0.34	1.77	0.97	2.36
140	139	170	163.5	174	6	6	2	2	34	0.37	1.60	0.88	2.22
142	144	190	178	192	8	11	2	2	43.5	0.43	1.38	0.76	4.96
148	152	216	203	218	7	9.5	3	2.5	45.5	0.44	1.38	0.76	7.25
148	146	216	193	219	7	13.5	3	2.5	57	0.44	1.38	0.76	11.2
152	164	262	239	255	8	14.5	4	3	53.5	0.35	1.74	0.96	17.4
152	155.5	262	214.5	263	9	28	4	3	87.5	0.83	0.73	0.40	19
148	160.5	262	230	264	2.4	20	3	3	67.5	0.35	1.73	0.95	27.2
150	150	181.5	177	184	6	6	2	1.5	34	0.36	1.67	0.92	2.51
152	153	200	187	202	8	11	2	2	46	0.46	1.31	0.72	5.28
158	163	236	219	237	7	9.5	3	2.5	48.5	0.44	1.38	0.76	9.26
158	163	236	219	237	7	9.5	2.5	2.5	47.5	0.43	1.39	0.77	8.37
158	158	236	210	238	9	13.5	3	2.5	61	0.44	1.38	0.76	14.1
162	179	282	251	273	9	14.5	4	3	56.5	0.35	1.74	0.96	21.2
162	179	282	252	273	9	14.5	4	3	57	0.35	1.73	0.95	20.4
162	165	282	234	280	9	30	4	3	94	0.83	0.73	0.40	23
158	170.5	282	244	281	1.5	20	3	3	74.5	0.35	1.73	0.95	33.2
162	162	200	192	202	7	8	2	2	36.5	0.33	1.83	1.01	3.92
164	164	213	200	216	8	12	2.5	2	49.5	0.46	1.31	0.72	6.37
168	175	256	234	255	7	11	3	2.5	51.5	0.44	1.38	0.76	11.2
168	170	256	226	254	8	17	3	2.5	64.5	0.44	1.38	0.76	18.2
172	193	302	269	292	8	17	4	3	61	0.35	1.74	0.96	25.5
172	193	302	269	292	8	17	4	3	62.5	0.37	1.60	0.88	24.7
172	176	302	250	302	9	32	4	3	100	0.83	0.73	0.40	27.7
168	184	302	254	298	4.3	24	3	3	80	0.37	1.60	0.88	42
172	170.5	210	199	213.5	7	8	2	2	38.5	0.35	1.73	0.95	4.15
174	175	228	213	231	8	13	2.5	2	52.5	0.46	1.31	0.72	7.8
178	189	276	252	272	8	12	3	2.5	55.5	0.44	1.38	0.76	12.9
178	182	276	242	275	10	17	3	2.5	70	0.44	1.38	0.76	23.5
182	205	322	286	310	10	17	4	3	64	0.35	1.74	0.96	29.9
182	205	322	286	311	10	17	4	3	65.5	0.37	1.60	0.88	29.2
178	197.5	322	272	318.5	2.3	26	3	3	85	0.37	1.60	0.88	49

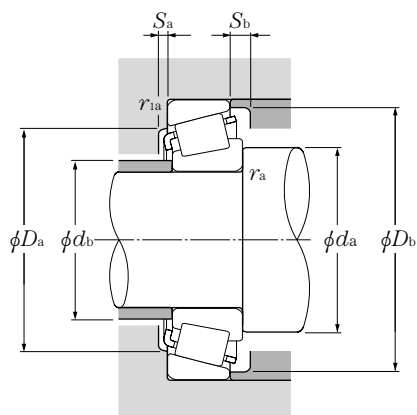
## Metric system sizes



**d 170~220mm**

Boundary dimensions							Basic load ratings				Bearing numbers
mm							dynamic kN	static kN	dynamic kgf	static kgf	
d	D	T	B	C	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
170	230	38	38	30	2.5	2	286	560	29,200	57,000	32934XU
	260	57	57	43	3	2.5	500	895	51,000	91,000	32034XU
	310	57	52	43	5	4	610	845	62,000	86,500	30234U
	310	91	86	71	5	4	1,000	1,600	102,000	163,000	32234U
	360	80	72	62	5	4	1,010	1,320	103,000	135,000	30334U
	360	80	72	62	4	4	845	1,100	86,000	113,000	30334❷
	360	127	120	100	4	4	1,310	1,940	133,000	198,000	32334
180	250	45	45	34	2.5	2	350	700	36,000	71,500	32936XU
	280	64	64	48	3	2.5	645	1,170	66,000	119,000	32036XUE1
	320	57	52	43	5	4	630	890	64,000	91,000	30236U
	320	91	86	71	5	4	1,030	1,690	105,000	172,000	32236U
	380	83	75	64	4	4	910	1,190	93,000	121,000	30336
	380	134	126	106	4	4	1,440	2,150	147,000	219,000	32336
190	260	45	45	34	2.5	2	355	710	36,000	72,000	32938XU
	260	45	42	36	2.5	2.5	280	525	28,600	53,500	32938❷
	290	64	64	48	3	2.5	655	1,210	67,000	124,000	32038XUE1
	340	60	55	46	5	4	715	1,000	73,000	102,000	30238U
	340	97	92	75	5	4	1,150	1,850	117,000	189,000	32238U
	340	97	92	75	4	4	1,000	1,670	102,000	171,000	32238❷
	400	86	78	65	5	5	935	1,200	95,000	123,000	30338
200	400	140	132	109	5	5	1,590	2,390	162,000	244,000	32338
	280	51	51	39	3	2.5	485	895	49,000	91,000	32940XUE1
	310	70	70	53	3	2.5	800	1,470	81,500	149,000	32040XUE1
	360	64	58	48	5	4	785	1,110	80,000	113,000	30240U
	360	104	98	82	5	4	1,320	2,130	134,000	217,000	32240U
	360	104	98	82	4	4	1,150	1,970	118,000	201,000	32240❷
	420	89	80	67	5	5	1,050	1,370	107,000	140,000	30340
220	420	146	138	115	5	5	1,740	2,650	178,000	270,000	32340
	300	51	51	39	3	2.5	480	950	49,000	97,000	32944XUE1
	300	51	48	41	2.5	2.5	345	670	35,500	68,500	32944E1❷
	340	76	76	57	4	3	920	1,690	94,000	173,000	32044XU
	400	72	65	54	4	4	815	1,220	83,000	124,000	30244
	400	114	108	90	4	4	1,390	2,410	142,000	246,000	32244
	460	97	88	73	5	5	1,260	1,690	129,000	172,000	30344
220	460	154	145	122	5	5	2,020	3,050	206,000	315,000	32344

❶ Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ This bearing does not incorporate the subunit dimensions.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

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

### static

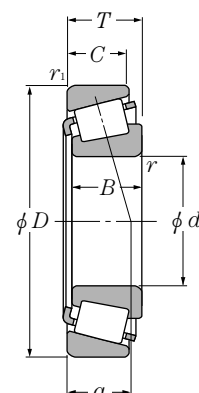
$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions									Load center	Constant	Axial load factors		Mass
mm									mm				kg
$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{1as}$		$a$	$e$	$Y_2$	$Y_0$	(approx.)
min	max	max	min	min	min	max	max						
182	183	220	213	222	7	8	2	2	42.5	0.38	1.57	0.86	4.4
184	187	248	230	249	10	14	2.5	2	56	0.44	1.35	0.74	10.5
192	203	292	266	288	8	14	4	3	60.5	0.44	1.38	0.76	17
192	201	292	258	293	10	20	4	3	75	0.44	1.38	0.76	28.7
192	221	342	303	329	10	18	4	3	68	0.35	1.74	0.96	35.3
192	221	342	303	332	10	18	4	3	69.5	0.37	1.60	0.88	34.8
188	209	342	287	336	1.5	27	3	3	89.5	0.37	1.60	0.88	56.5
192	193	240	225	241	8	11	2	2	54	0.48	1.25	0.69	6.54
194	199	268	247	267	10	16	2.5	2	59.5	0.42	1.42	0.78	14.5
202	211	302	274	297	9	14	4	3	63	0.45	1.33	0.73	17.7
202	204	302	267	305	10	20	4	3	77.5	0.45	1.33	0.73	30.7
198	227.5	362	314	345	1.5	19	3	3	72.5	0.37	1.60	0.88	38.9
198	221	362	305	357	2.4	28	3	3	95	0.37	1.60	0.88	67.8
202	204	250	235	251	8	11	2	2	55	0.48	1.26	0.69	6.77
202	204	248	235	251	8	9	2	2	48.5	0.37	1.60	0.88	6.43
204	209	278	257	279	10	16	2.5	2	62.5	0.44	1.36	0.75	15.1
212	228	322	295	316	9	14	4	3	64	0.44	1.38	0.76	20.8
212	216	322	282	323	11	22	4	3	82	0.44	1.38	0.76	36.1
212	216	322	286	323	11	22	4	3	87.5	0.49	1.23	0.68	33.3
212	242	378	335	366.5	2.3	21	4	4	74.5	0.37	1.60	0.88	43.5
212	233.5	378	320	373.5	1.5	31	4	4	100	0.37	1.60	0.88	76.9
214	214	268	254	271	9	12	2.5	2	53.5	0.39	1.52	0.84	8.88
214	221	298	273	297	11	17	2.5	2	66.5	0.43	1.39	0.77	19.3
222	242	342	311	336	10	16	4	3	70	0.44	1.38	0.76	25.4
222	230	342	298	340	11	22	4	3	85	0.41	1.48	0.81	43.6
222	230	342	302	344	11	22	4	3	91.5	0.49	1.23	0.68	43.6
222	252.5	398	350	382.5	5.3	22	4	4	77	0.37	1.60	0.88	51.5
222	243.5	398	335	391.5	3.2	31	4	4	105	0.37	1.60	0.88	88.8
234	234	288	271	290	10	12	2.5	2	59.5	0.43	1.41	0.78	10.2
234	235	288	274	290	10	10	2.5	2	57	0.39	1.55	0.85	9.63
238	243	326	300	326	12	19	3	2.5	72.5	0.43	1.39	0.77	25
238	263	382	334	368	3.4	18	3	3	82	0.49	1.23	0.68	34.7
238	255	382	323	380.5	4.4	24	3	3	102	0.49	1.23	0.68	59.9
242	276.5	438	383	418.5	4.2	24	4	4	86.5	0.37	1.60	0.88	66.7
242	267.5	438	371	431	1.5	32	4	4	112	0.37	1.60	0.88	112.8

## Metric system sizes

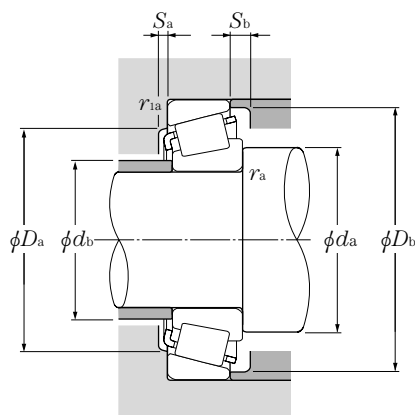


### d 240~380mm

Boundary dimensions							Basic load ratings				Bearing numbers
mm							dynamic kN	static kN	dynamic kgf	static kgf	
d	D	T	B	C	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
240	320	51	51	39	3	2.5	490	1,000	50,000	102,000	32948XUE1
	360	76	76	57	4	3	930	1,760	95,000	179,000	32048XU
	440	79	72	60	4	4	975	1,480	99,500	151,000	30248
	440	127	120	100	4	4	1,700	2,750	174,000	280,000	32248
	500	105	95	80	5	5	1,480	2,000	151,000	204,000	30348
	500	165	155	132	5	5	2,330	3,600	238,000	365,000	32348
260	360	63.5	63.5	48	3	2.5	705	1,430	72,000	146,000	32952XUE1
	400	87	87	65	5	4	1,200	2,270	123,000	231,000	32052XU
	480	89	80	67	5	5	1,170	1,810	119,000	185,000	30252
	480	137	130	106	5	5	1,880	3,350	192,000	340,000	32252
280	380	63.5	63.5	48	3	2.5	725	1,520	74,000	155,000	32956XUE1
	420	87	87	65	5	4	1,220	2,350	125,000	240,000	32056XU
	500	89	80	67	5	5	1,240	1,910	126,000	195,000	30256
	500	137	130	106	5	5	1,980	3,500	202,000	355,000	32256
	580	187	175	145	6	6	3,250	5,250	335,000	535,000	32356
300	420	76	76	57	4	3	1,010	2,090	103,000	213,000	32960XUE1
	460	100	100	74	5	4	1,490	2,830	152,000	289,000	32060XU
	540	96	85	71	5	5	1,420	2,220	145,000	226,000	30260
	540	149	140	115	5	5	2,300	4,100	235,000	420,000	32260
320	440	76	76	57	4	3	1,010	2,150	103,000	219,000	32964XUE1
	440	76	72	63	3	3	865	1,880	88,000	192,000	32964E1❷
	480	100	100	74	5	4	1,520	2,940	155,000	300,000	32064XU
	580	104	92	75	5	5	1,660	2,580	170,000	263,000	30264
	580	159	150	125	5	5	2,620	4,650	267,000	470,000	32264
340	460	76	76	57	4	3	1,040	2,270	106,000	232,000	32968XUE1
	460	76	72	63	3	3	910	1,980	93,000	201,000	32968E1❷
	520	112	106	90	5	5	1,650	3,150	169,000	320,000	32068
360	480	76	76	57	4	3	1,050	2,330	107,000	238,000	32972XUE1
	540	112	106	90	5	5	1,740	3,300	178,000	340,000	32072
380	520	87	82	72	4	4	1,140	2,500	116,000	255,000	32976
	560	112	106	90	5	5	1,920	3,800	196,000	390,000	32076

❶ Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ This bearing does not incorporate the subunit dimensions.





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

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

### static

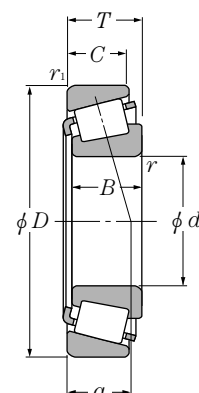
$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions									Load center	Constant	Axial load factors		Mass
mm									mm				kg
$d_a$	$d_b$	$D_a$	$D_b$	$S_a$	$S_b$	$r_{as}$	$r_{1as}$		$a$	$e$	$Y_2$	$Y_0$	(approx.)
min	max	max	min	min	min	max	max						
254	254	308	290	311	10	12	2.5	2	65.5	0.46	1.31	0.72	10.9
258	261	346	318	346	12	19	3	2.5	78	0.46	1.31	0.72	26.8
258	290	422	368	408	3.9	19	3	3	91	0.49	1.23	0.68	47.7
258	277.5	422	365	421.5	4.1	27	3	3	107	0.43	1.39	0.77	78.8
262	301	478	417	456	8.1	25	4	4	94	0.37	1.60	0.88	87.2
262	291	478	402	467	1.5	33	4	4	120.5	0.37	1.60	0.88	141.9
274	279	348	325	347	11	15	2.5	2	69.5	0.41	1.48	0.81	18.8
282	287	382	352	383	14	22	4	3	85.5	0.43	1.38	0.76	39.4
282	312	458	396	438.5	4.2	22	4	4	99.5	0.49	1.23	0.68	63.4
282	302	458	385	453	2.9	31	4	4	121.5	0.49	1.23	0.68	103.6
294	298	368	344	368	11	15	2.5	2	75	0.43	1.39	0.76	20
302	305	402	370	402	14	22	4	3	90.5	0.46	1.31	0.72	41.8
302	331	478	422	464.5	5.9	22	4	4	102	0.49	1.23	0.68	66.6
302	318	478	405	473	6.4	31	4	4	123.5	0.49	1.23	0.68	110
308	340.5	552	469.5	540.5	3.4	42	5	5	137.5	0.37	1.60	0.88	222
318	324	406	379	405	13	19	3	2.5	80	0.39	1.52	0.84	31.4
322	329	442	404	439	15	26	4	3	98	0.43	1.38	0.76	57.2
322	356	518	453	498	4.9	25	4	4	111	0.49	1.23	0.68	84.3
322	345	518	438	511.5	2.6	34	4	4	135.5	0.49	1.23	0.68	138.7
338	344	426	398	426	13	19	3	2.5	85	0.42	1.44	0.79	33.1
338	344	426	398	425	13	13	3	2.5	85	0.39	1.55	0.85	33.2
342	344.5	462	418.5	463	15	26	4	3	104	0.46	1.31	0.72	60.2
342	379	558	485	531.5	4.7	29	4	4	118.5	0.47	1.27	0.70	103.9
342	369	558	473	551	3.9	34	4	4	142	0.47	1.27	0.70	172.1
358	362	446	417	446	13	19	3	2.5	90.5	0.44	1.37	0.75	34.9
358	362	446	414	445.5	13	13	3	2.5	87	0.39	1.55	0.85	36
362	374	498	452	496	3.5	22	4	4	103.5	0.37	1.60	0.88	78.7
378	381	466	436	466	13	19	3	2.5	96.5	0.46	1.31	0.72	36.6
382	393.5	518	476	519	5.5	22	4	4	106	0.37	1.60	0.88	83.7
398	408	502	464.5	503	4	15	3	3	101	0.40	1.49	0.82	51.3
402	412.5	538	495	539	6.5	22	4	4	109.5	0.37	1.60	0.88	89.3

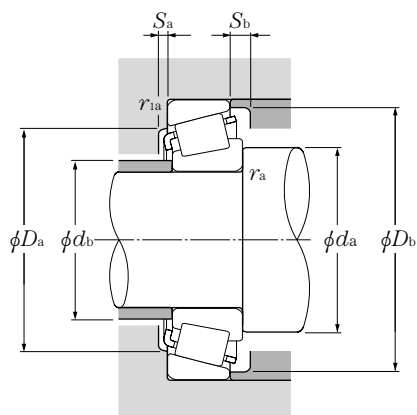
## Metric system sizes



### d 400~850mm

Boundary dimensions							Basic load ratings				Bearing numbers
mm							dynamic kN	static kN	dynamic kgf	static kgf	
d	D	T	B	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
400	540	87	82	71	4	4	1,200	2,710	122,000	276,000	32980
	600	125	118	100	5	5	2,180	4,250	222,000	435,000	32080
420	560	87	82	71	4	4	1,230	2,840	125,000	290,000	32984
	620	125	118	100	6	5	2,280	4,550	233,000	465,000	32084
440	600	100	95	82	4	4	1,600	3,450	164,000	355,000	32988
	650	130	122	104	6	6	2,530	5,000	258,000	510,000	32088
500	640	87.36	82	72	4	4	1,330	3,300	141,000	335,000	CR-10010
	750	150	140	120	7.5	7.5	3,100	6,950	315,000	705,000	☆CR-10024
530	670	100	95	82	5	5	1,540	3,800	157,000	385,000	CR-10601
570	695	57	52	50	3	2.5	865	2,080	88,000	212,000	CR-11402
600	870	118	111	93	6	6	2,870	5,700	292,000	580,000	CR-12006
720	880	80	75	60	5	5	1,300	3,450	132,000	350,000	CR-14403
740	900	80	75	65	5	5	1,370	3,700	140,000	375,000	CR-14803
750	1,000	110	107	80	6	6	2,620	5,800	267,000	590,000	CR-15002
780	925	95	92	75	5	5	2,120	6,600	216,000	675,000	CR-15602
850	1,120	118	112	80	6	6	2,880	7,100	294,000	720,000	CR-17001

① Minimal allowable dimension for chamfer dimension  $r$  or  $r_1$ . ② This bearing does not incorporate the subunit dimensions.  
Remarks: 1. Bearing numbers marked ☆ designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

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

### static

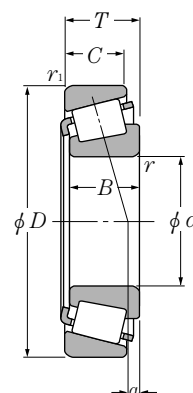
$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions									Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
$d_a$ min	$d_b$ max	$D_a$ max	$D_b$ min	$S_a$ min	$S_b$ min	$r_{as}$ max	$r_{1as}$ max	mm			$Y_2$	$Y_0$	
418	427	522	482	521.5	4	16	3	3	106	0.42	1.43	0.79	54
422	434.5	578	526	575	5	25	4	4	119	0.37	1.60	0.88	115
438	445.5	542	501.5	543	3.5	16	3	3	111.5	0.44	1.37	0.76	56.6
422	455.5	598	549	598	6.5	25	4	4	120	0.37	1.60	0.88	121
458	472.5	582	543	580.5	3.5	18	3	3	106	0.35	1.70	0.93	76
468	475	622	576.5	627.5	5	26	5	5	127	0.37	1.60	0.88	136
518	523.5	622	584.5	627.5	3.5	15	3	3	125	0.45	1.34	0.74	64.3
536	566.5	714	658.5	722.5	1.5	30	6	6	154	0.41	1.48	0.81	224
552	552	648	616.5	653	1.5	18	4	4	111	0.33	1.80	0.99	76.2
584	598.5	683	652.5	675.5	5	7	2.5	2	102.5	0.36	1.67	0.92	41.7
628	656	842	782.5	828	1.5	25	5	5	147	0.37	1.60	0.88	208
742	757	858	818	853.5	5.5	20	4	4	158.5	0.46	1.31	0.72	94
762	775.5	878	839	877.5	5	15	4	4	159	0.46	1.31	0.72	96
778	801.5	972	915	954	7	30	5	5	155	0.37	1.60	0.88	210
802	810	903	873.5	907	9.5	20	4	4	137.5	0.33	1.80	0.99	115
878	920.5	1,092	1,026.5	1,063	8.5	38	5	5	154.5	0.33	1.80	0.99	276

## Inch system sizes

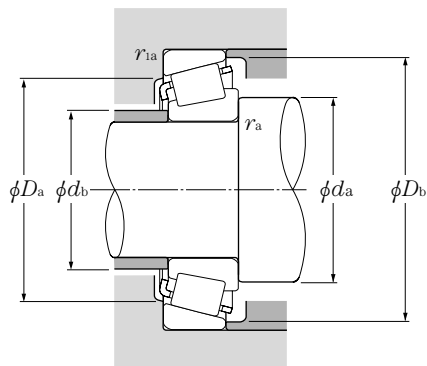


**d 114.300~174.625mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
114.300	273.050	82.550	82.550	53.975	760	975	77,500	99,500
	279.400	82.550	82.550	53.975	760	975	77,500	99,500
120.650	273.050	82.550	82.550	53.975	760	975	77,500	99,500
127.000	295.275	82.550	87.312	57.150	880	1,190	89,500	122,000
	304.800	88.900	82.550	57.150	820	1,120	83,500	115,000
139.700	288.925	82.550	87.312	57.150	880	1,190	89,500	122,000
	295.275	82.550	87.312	57.150	880	1,190	89,500	122,000
	307.975	88.900	93.662	66.675	1,010	1,390	103,000	142,000
146.050	304.800	88.900	82.550	57.150	820	1,120	83,500	115,000
	311.150	88.900	82.550	57.150	820	1,120	83,500	115,000
152.400	307.975	88.900	93.662	61.912	880	1,310	89,500	133,000
	307.975	88.900	93.662	66.675	1,010	1,390	103,000	142,000
155.575	330.200	85.725	79.375	53.975	875	1,260	89,000	129,000
	342.900	85.725	79.375	53.975	875	1,260	89,000	129,000
158.750	304.800	66.675	69.106	42.862	540	780	55,000	79,500
160.325	288.925	63.500	63.500	47.625	680	1,070	69,000	109,000
161.925	374.650	87.312	79.375	60.325	845	1,140	86,500	117,000
165.100	288.925	63.500	63.500	47.625	550	950	56,000	97,000
	288.925	63.500	63.500	47.625	680	1,070	69,000	109,000
	311.150	82.550	82.550	65.088	925	1,480	94,500	151,000
	336.550	92.075	95.250	69.850	1,060	1,510	108,000	154,000
168.275	330.200	85.725	79.375	53.975	875	1,260	89,000	129,000
174.625	288.925	63.500	63.500	47.625	550	950	56,000	97,000
	288.925	63.500	63.500	47.625	680	1,070	69,000	109,000
	298.450	82.550	82.550	63.500	810	1,330	83,000	136,000
	311.150	82.550	82.550	63.500	810	1,330	83,000	136,000
	311.150	82.550	82.550	65.088	925	1,480	94,500	151,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{2s}$  are larger than the maximum value.





## Equivalent bearing load

**dynamic**  
 $P_r = X F_r + Y F_a$

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

## static

$P_{or} = 0.5 F_r + Y_0 F_a$

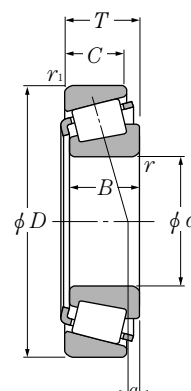
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load <sup>①</sup> center mm	Constant	Axial load factors		Mass  kg  (approx.)
	mm										
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{1as}$ max	$a$	$e$	$Y_2$	$Y_0$	
T-HH926744/HH926710	164	147	230	253	6.4	6.4	6.6	0.63	0.95	0.52	22.2
T-HH926744/HH926716	164	147	233	253	6.4	6.4	6.6	0.63	0.95	0.52	23.5
T-HH926749/HH926710	168	147	230	253	6.4	6.4	6.6	0.63	0.95	0.52	21.7
T-HH231637/HH231615	174	150	258	264	13.5	6.4	26.7	0.32	1.88	1.04	27.1
T-HH932132/HH932110	182	172	260	288	6.4	6.4	−1.9	0.73	0.82	0.45	32.8
T-HH231649/HH231610	177	161	255	264	9.7	6.4	26.7	0.32	1.88	1.04	24.4
T-HH231649/HH231615	177	161	258	264	9.7	6.4	26.7	0.32	1.88	1.04	25.8
T-HH234031/HH234010	180	168	276.1	285.5	9.7	6.8	26.7	0.33	1.84	1.01	30.9
T-HH932145/HH932110	195	174	260	288	6.4	6.4	−1.9	0.73	0.82	0.45	30.6
T-HH932145/HH932115	195	174	262	288	6.4	6.4	−1.9	0.73	0.82	0.45	32.2
T-EE450601/451212	189	177	269	275	9.7	6.8	28.2	0.33	1.84	1.01	29.4
T-HH234048/HH234010	191	179	276	285	9.7	6.8	26.4	0.33	1.84	1.01	29.4
T-H936340/H936310	209	193	282	311	6.4	6.4	−16.9	0.81	0.74	0.41	34.9
T-H936340/H936316	209	193	287	311	6.4	6.4	−16.9	0.81	0.74	0.41	38.4
EE280626/281200	192	180	279	282	6.4	3.3	12.5	0.36	1.67	0.92	20.8
T-HM237532/HM237510	192	181	266	271	7	3.3	11.6	0.32	1.88	1.04	16.0
EE117063/117148	207	197	322	341	6.4	3.3	−11.5	0.71	0.85	0.47	47.9
T-94649/94113	197	186	259	272	7	3.3	0.9	0.47	1.28	0.70	17.1
T-HM237535/HM237510	195	184	266	271	7	3.3	11.6	0.32	1.88	1.04	15.6
T-H238140/H238110	198	188	280	289	6.4	6.4	18.8	0.33	1.81	1.00	27.5
T-HH437549/HH437510	196	196	297	308	3.3	6.4	21.4	0.37	1.62	0.89	36.6
T-H936349/H936310	218	193	282	311.4	6.4	6.4	−16.9	0.81	0.74	0.41	33.2
T-94687/94113	204	193	259	272	7	3.3	0.9	0.47	1.28	0.70	14.7
T-HM237542/HM237510	202	191	266	271	7	3.3	11.6	0.32	1.88	1.04	14.7
T-EE219068/219117	204	193	269	282	6.4	6.4	15.3	0.38	1.59	0.87	21.1
T-EE219068/219122	204	193	275	282	6.4	6.4	15.3	0.38	1.59	0.87	23.9
T-H238148/H238110	205	195	280	289	6.4	6.4	18.8	0.33	1.81	1.00	23.9

① "—" means that load center at outside on end of inner ring.

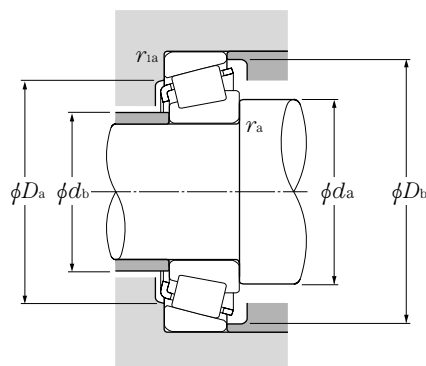
## Inch system sizes



**d 177.800~206.375mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
177.800	288.925	63.500	63.500	47.625	550	950	56,000	97,000
	288.925	63.500	63.500	47.625	680	1,070	69,000	109,000
	※289.974	63.500	63.500	48.000	680	1,070	69,000	109,000
	319.964	88.900	85.725	65.088	930	1,400	94,500	142,000
	428.625	106.362	95.250	61.912	1,190	1,610	122,000	165,000
※179.975	317.500	63.500	63.500	46.038	615	1,160	63,000	118,000
187.325	282.575	50.800	47.625	36.512	365	615	37,000	63,000
	319.964	88.900	85.725	65.088	925	1,400	94,500	142,000
	320.675	88.900	85.725	65.088	925	1,400	94,500	142,000
190.500	282.575	50.800	47.625	36.512	365	615	37,000	63,000
	317.500	63.500	63.500	46.038	615	1,160	63,000	118,000
	336.550	98.425	95.250	73.025	1,030	1,830	105,000	187,000
	365.049	92.075	88.897	63.500	975	1,600	99,500	164,000
	428.625	106.362	95.250	61.912	1,190	1,610	122,000	165,000
193.675	282.575	50.800	47.625	36.512	365	615	37,000	63,000
200.025	292.100	57.945	57.945	46.038	535	1,030	54,500	105,000
	317.500	63.500	63.500	46.038	615	1,160	63,000	118,000
	384.175	112.712	112.712	90.488	1,460	2,730	149,000	279,000
	393.700	111.125	111.125	84.138	1,340	2,020	137,000	206,000
203.200	276.225	42.862	42.862	34.133	340	690	35,000	70,500
	282.575	46.038	46.038	36.512	360	785	37,000	80,000
	292.100	57.945	57.945	46.038	535	1,030	54,500	105,000
	317.500	63.500	63.500	46.038	615	1,160	63,000	118,000
	346.075	79.375	80.962	60.325	900	1,460	92,000	149,000
	365.049	92.075	88.897	63.500	975	1,600	99,500	164,000
	406.400	92.075	85.725	57.150	960	1,480	98,000	151,000
	482.600	117.475	95.250	73.025	1,310	1,860	134,000	190,000
204.788	292.100	57.945	57.945	46.038	535	1,030	54,500	105,000
206.375	282.575	46.038	46.038	36.512	360	785	37,000	80,000
	336.550	98.425	100.012	77.788	1,110	2,030	113,000	207,000
	482.600	117.475	95.250	73.025	1,310	1,860	134,000	190,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{1es}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

static

$$P_{or} = 0.5F_r + Y_0F_a$$

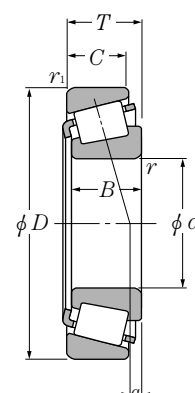
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load <sup>①</sup> center mm	Constant	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$e$	$Y_2$	$Y_0$
T-94700/94113	207	195	259	272	7	3.3	0.9	0.47	1.28	0.70	14.4
T-HM237545/HM237510	205	194	266	271	7	3.3	11.6	0.32	1.88	1.04	14.4
T-HM237545/HM237513	205	194	267	272	7	3	11.6	0.32	1.88	1.04	14.6
T-H239640/H239610	202	198	293	301	3.5	4.8	22.3	0.32	1.88	1.04	30.2
EE350701/351687	230	221	365	383	6.4	6.4	-13.8	0.76	0.79	0.43	77.7
T-93708/93125	209	204	286	300	3.5	3.3	-7.9	0.52	1.15	0.63	19.0
T-87737/87111	207	201	261	267	3.5	3.3	-3.8	0.42	1.44	0.79	10.9
T-H239649/H239610	214	205	293	301	5.5	4.8	22.3	0.32	1.88	1.04	28.7
T-H239649/H239612	214	205	293	301	5.5	4.8	22.3	0.32	1.88	1.04	28.9
T-87750/87111	209	203	261	267	3.5	3.3	-3.8	0.42	1.44	0.79	10.6
T-93750/93125	218	212	286	300	4.3	3.3	-7.9	0.52	1.15	0.63	17.9
T-HH840249/HH840210	234	216	290	318	6.4	6.4	5.4	0.58	1.04	0.57	36.4
T-EE420751/421437	227	218	329	334	6.4	3.3	15.4	0.40	1.49	0.82	42.9
EE350750/351687	240	237	365	383	6.4	6.4	-13.9	0.76	0.79	0.43	75.3
T-87762/87111	211	206	261	267	3.5	3.3	-3.8	0.42	1.44	0.79	10.3
T-M241543/M241510	219	215	272	279	3.5	3.3	4.7	0.33	1.80	0.99	11.5
T-93787/93125	225	219	286	300	4.3	3.3	-7.9	0.52	1.15	0.63	18.3
T-H247535/H247510	241	231	346	362	6.4	6.4	28.1	0.33	1.80	0.99	53.0
HH144642/HH144614	235	226	352	357	6.4	6.4	35.1	0.30	2.01	1.11	55.9
LM241149/LM241110	220	214.1	260	267	3.5	3.3	-2.1	0.32	1.88	1.04	6.56
T-67983/67920	222	216	260	275	3.5	3.3	-15.9	0.51	1.18	0.65	7.76
T-M241547/M241510	221	217	272	279	3.5	3.3	4.7	0.33	1.80	0.99	11.2
T-93800/93125	227	222	286	300	4.3	3.3	-7.9	0.52	1.15	0.63	16.5
T-HM542948/HM542911	224	224	315	322	1.5	3.3	9	0.39	1.55	0.85	28.8
T-EE420801/421437	230	227	329	334.4	3.3	3.3	15.4	0.40	1.49	0.82	40.7
EE114080/114160	246	237	349	374	6.4	6.4	-27.9	0.80	0.75	0.41	54.8
☆T-EE380080/380190G2	262	256	402	428	6.4	6.4	-34.3	0.87	0.69	0.38	108
T-M241549/M241510	223	219	272	279	3.5	3.3	4.7	0.33	1.80	0.99	11.0
T-67985/67920	224	219	260	275	3.5	3.3	-15.9	0.51	1.18	0.65	8.4
T-H242649/H242610	231	227	306	318	3.3	3.3	25.4	0.33	1.80	0.99	32.1
☆T-EE380081/380190G2	264	258	402	428	6.4	6.4	-34.3	0.87	0.69	0.38	107

① "—" means that load center at outside on end of inner ring.

## Inch system sizes

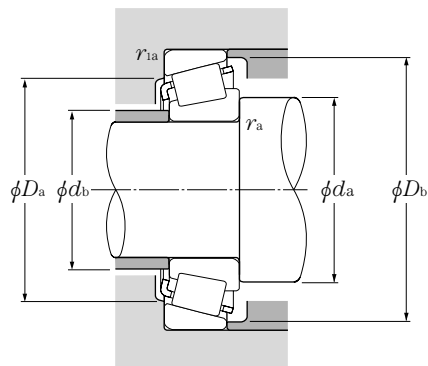


### d 209.550~237.330mm

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
209.550	282.575	46.038	46.038	36.512	360	785	37,000	80,000
	317.500	63.500	63.500	46.038	615	1,160	63,000	118,000
212.725	285.750	46.038	46.038	34.925	380	820	38,500	83,500
215.900	285.750	46.038	46.038	34.925	380	820	38,500	83,500
	290.010	31.750	31.750	22.225	206	405	21,100	41,000
216.408	285.750	46.038	49.212	34.925	380	820	38,500	83,500
220.662	314.325	61.912	61.912	49.212	625	1,220	63,500	125,000
228.397	431.800	92.075	85.725	49.212	855	1,240	87,000	126,000
228.460	431.800	92.075	85.725	49.212	855	1,240	87,000	126,000
228.600	300.038	33.338	31.750	23.812	215	435	22,000	44,500
	327.025	52.388	52.388	36.512	475	950	48,500	97,000
	355.600	68.262	66.675	47.625	640	1,270	65,500	130,000
	355.600	69.850	69.850	49.212	715	1,260	73,000	128,000
	355.600	69.850	69.850	50.800	720	1,240	73,500	127,000
	358.775	71.438	71.438	53.975	815	1,640	83,000	168,000
	400.050	88.900	87.312	63.500	945	1,620	96,500	166,000
	488.950	123.825	111.125	73.025	1,570	2,260	161,000	231,000
231.775	300.038	33.338	31.750	23.812	215	435	22,000	44,500
	336.550	65.088	65.088	50.800	710	1,410	72,500	144,000
	358.775	71.438	71.438	53.975	815	1,640	83,000	168,000
234.950	311.150	46.038	46.038	33.338	405	820	41,500	83,500
	314.325	49.212	49.212	36.512	470	935	48,000	95,500
	327.025	52.388	52.388	36.512	475	950	48,500	97,000
	355.600	68.262	66.675	47.625	640	1,270	65,500	130,000
	381.000	74.612	74.612	57.150	885	1,790	90,500	183,000
	384.175	112.712	112.712	90.488	1,460	2,730	149,000	279,000
237.330	336.550	65.088	65.088	50.800	710	1,410	72,500	144,000
	358.775	71.438	71.438	53.975	815	1,640	83,000	168,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_1$  and  $r_{1s}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

## static

$$P_{or} = 0.5F_r + Y_0F_a$$

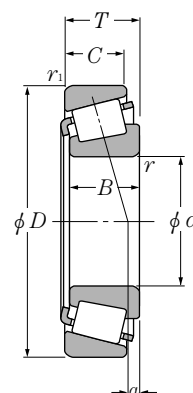
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$Y_2$	$Y_0$	
T-67989/67920	227	221	260	275	3.5	3.3	-15.9	0.51	1.18	0.65	7.23
T-93825/93125	233	227	286	300	4.3	3.3	-7.9	0.52	1.15	0.63	15.8
T-LM742745/LM742710	230	225	266	279	3.5	3.3	-14.2	0.48	1.25	0.69	7.33
T-LM742749/LM742710	233	227	266	279	3.5	3.3	-14.2	0.48	1.25	0.69	7.05
543085/543114	232	226	272	276	3.5	3.3	-12.5	0.38	1.58	0.87	5.20
T-LM742747/LM742710	233	227	266	279	3.5	3.3	-14.2	0.48	1.25	0.69	7.40
T-M244249/M244210	245	235	293	300	6.4	3.3	4.4	0.33	1.80	0.99	13.6
EE113089/113170	274	267	375	397	6.4	6.4	-40.3	0.88	0.68	0.37	59.4
EE113091/113170	274	267	375	397	6.4	6.4	-40.3	0.88	0.68	0.37	59.4
T-544090/544118	244	240	282	287	3.5	3.3	-15.8	0.40	1.49	0.82	6.05
T-8573/8520	255	244	305	313	6.4	3.3	-7.8	0.41	1.48	0.81	12.5
T-96900/96140	260	249	318	334	7	3.3	-16.9	0.59	1.02	0.56	24.3
T-EE130902/131400	257	247	329	330	6.8	1.5	9.9	0.33	1.82	1.00	22.7
HM746646/HM746610	258	248	324	338.7	6.4	6.4	-6	0.47	1.27	0.70	22.7
T-M249732/M249710	256	251	335	343	3.5	3.3	6.9	0.33	1.80	0.99	23.9
EE430900/431575	271	253	360	364	10.5	3.3	2.8	0.44	1.36	0.75	46.0
☆T-HH949549/HH949510G2	297	280	416	456	6.4	6.4	-39.9	0.94	0.64	0.35	111
T-544091/544118	247	243	282	287	3.5	3.3	-15.8	0.40	1.49	0.82	5.81
T-M246942/M246910	258	249	313	322	6.4	3.3	4.7	0.33	1.80	0.99	16.9
T-M249734/M249710	263	254	335	343	6.4	3.3	6.9	0.33	1.80	0.99	23.4
LM446349/LM446310	252	246	294	301	3.5	3.3	-6.6	0.36	1.66	0.91	8.38
T-LM545849/LM545810	252	246	296	306	3.5	3.3	-8.4	0.40	1.51	0.83	9.38
T-8575/8520	259	248	305	313	6.4	3.3	-7.8	0.41	1.48	0.81	11.9
T-96925/96140	265	254	318	334	7	3.3	-16.9	0.59	1.02	0.56	22.5
T-M252330/M252310	271	261	356	364	6.4	3.3	6.2	0.33	1.80	0.99	29.3
T-H247549/H247510	269	259	346	362	6.4	6.4	28.1	0.33	1.80	0.99	45.5
T-M246949/M246910	262	253	313	322	6.4	3.3	4.7	0.33	1.80	0.99	16.2
T-M249736/M249710	267	258	335	343	6.4	3.3	6.9	0.33	1.80	0.99	22.6

① "—" means that load center at outside on end of inner ring.

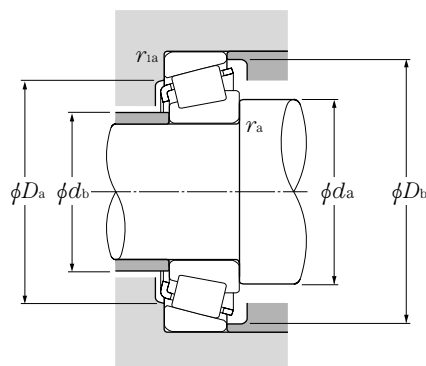
## Inch system sizes



### d 241.300~266.700mm

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
241.300	327.025	52.388	52.388	36.512	475	950	48,500	97,000
	349.148	57.150	57.150	44.450	550	1,000	56,000	103,000
	368.300	50.800	50.800	33.338	460	810	47,000	83,000
	393.700	73.817	69.850	50.005	780	1,400	79,500	143,000
	444.500	101.600	100.012	76.200	1,390	2,120	142,000	216,000
244.475	381.000	79.375	76.200	57.150	755	1,440	77,000	147,000
247.650	346.075	63.500	63.500	50.800	720	1,450	73,500	148,000
	368.300	50.800	50.800	33.338	460	815	47,000	83,000
	381.000	74.612	74.612	57.150	885	1,790	90,500	183,000
	406.400	115.888	117.475	93.662	1,650	3,000	168,000	305,000
249.250	381.000	79.375	76.200	57.150	755	1,440	77,000	147,000
254.000	323.850	22.225	22.225	15.875	126	315	12,800	32,500
	358.775	71.438	71.438	53.975	815	1,640	83,000	168,000
	365.125	58.738	58.738	42.862	615	1,190	62,500	122,000
	393.700	73.817	69.850	50.005	780	1,400	79,500	143,000
	422.275	86.121	79.771	66.675	1,160	1,800	119,000	184,000
	533.400	133.350	120.650	77.788	1,680	2,610	171,000	266,000
257.175	342.900	57.150	57.150	44.450	580	1,270	59,000	130,000
	342.900	57.150	57.150	44.450	580	1,270	59,000	130,000
260.350	365.125	58.738	58.738	42.862	615	1,190	62,500	122,000
	400.050	69.850	67.470	46.038	710	1,230	72,500	126,000
	419.100	85.725	84.138	61.912	925	1,610	94,000	165,000
	422.275	86.121	79.771	66.675	1,160	1,800	119,000	184,000
	488.950	120.650	120.650	92.075	1,760	2,970	180,000	305,000
263.525	325.438	28.575	28.575	25.400	211	520	21,600	53,000
	355.600	57.150	57.150	44.450	625	1,330	64,000	136,000
266.700	323.850	22.225	22.225	15.875	126	315	12,800	32,500
	325.438	28.575	28.575	25.400	211	520	21,600	53,000
	355.600	57.150	57.150	44.450	625	1,340	54,000	136,000
	355.600	57.150	57.150	44.450	500	995	51,000	101,000
	393.700	73.817	69.850	50.005	780	1,400	79,500	143,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{1e}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

static

$$P_{or} = 0.5F_r + Y_0F_a$$

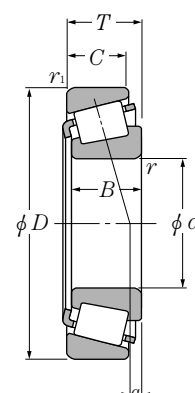
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load <sup>①</sup> center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$Y_2$	$Y_0$	
T-8578/8520	264	253	305	313	6.4	3.3	-7.8	0.41	1.48	0.81	11.2
EE127095/127135	267	257	325	329	6.4	3.3	-3.2	0.35	1.70	0.93	15.9
EE170950/171450	269	260	340	337	6.4	3.3	-6.2	0.36	1.65	0.90	17.2
T-EE275095/275155	278	268	366	378	6.4	6.4	-2.5	0.40	1.49	0.82	34.3
☆T-EE923095/923175G2	277	268	403	407	6.4	4.8	19.3	0.34	1.78	0.98	68.0
EE126097/126150	275	266	343	358	6.4	4.8	-8	0.52	1.16	0.64	32.6
T-M348449/M348410	273	263	321	332	6.4	6.4	1.3	0.34	1.75	0.96	16.2
EE170975/171450	274	264	340	337	6.4	3.3	-6.2	0.36	1.65	0.90	16.5
T-M252337/M252310	280	271	356	364	6.4	3.3	6.2	0.33	1.80	0.99	27.3
HH249949/HH249910	284	275	366	383	6.4	6.4	28.9	0.33	1.80	0.99	55.6
EE126098/126150	279	269	343	358	6.4	4.8	-8	0.52	1.16	0.64	31.7
29875/29820	267	266	310	312	1.5	1.5	-21.1	0.35	1.73	0.95	3.92
T-M249749/M249710	274	270	335	343	3.5	3.3	-6.9	0.33	1.80	0.99	20.1
T-EE134100/134143	281	272	339	347	6.4	6.4	-5	0.37	1.60	0.88	17.7
T-EE275100/275155	287	277	366	378	6.4	6.4	-2.5	0.40	1.49	0.82	32.1
T-HM252343/HM252310	287	281	392	400	6.8	3.3	9.3	0.33	1.80	0.99	47.1
HH953749/HH953710	328	306.3	455	496	6.4	6.4	-44.7	0.94	0.64	0.35	141
M349549/M349510	281	269	322	333	6.4	3.3	-2.5	0.35	1.73	0.95	12.9
M349549A/M349510	289	269	322	333	10.7	3.3	-2.5	0.35	1.73	0.95	12.9
T-EE134102/134143	286	276	339	347	6.4	6.4	-5	0.37	1.60	0.88	16.8
EE221026/221575	296	280	366	372	9.7	6.4	-1.8	0.39	1.52	0.84	27.0
EE435102/435165	295	285	376	395	6.4	3.3	-20.7	0.61	0.99	0.54	44.4
T-HM252348/HM252310	292	285	392	400	6.8	3.3	9.3	0.33	1.80	0.99	45.7
EE295102/295193	299	290	444	451	6.4	6.4	28.7	0.31	1.92	1.06	90.3
T-38880/38820	275	275	312	315	1.5	1.5	-20.5	0.37	1.64	0.90	4.56
T-LM451345/LM451310	283	279	335	343	3.5	3.3	-4.7	0.36	1.67	0.92	14.2
29880/29820	277	275	310	312	1.5	1.5	-21.1	0.35	1.73	0.95	3.28
T-38885/38820	277	277	312	315	1.5	1.5	-20.5	0.37	1.64	0.90	4.35
T-LM451349/LM451310	285	281	335	343	3.5	3.3	-4.7	0.36	1.67	0.92	15.0
T-LM451349A/LM451310	299	281	335	343	10.5	3.3	-4.7	0.36	1.67	0.92	13.8
T-EE275105/275155	296	287	366	378	6.4	6.4	-2.5	0.40	1.49	0.82	29.7

① "—" means that load center at outside on end of inner ring.

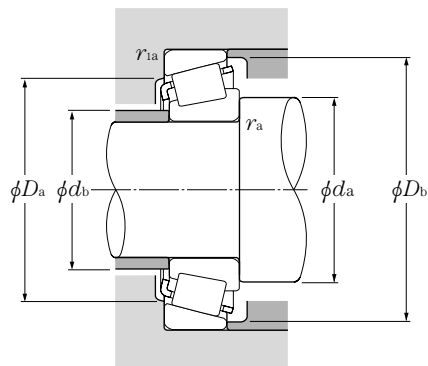
## Inch system sizes



**d 266.700~304.800mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
266.700	444.500	120.650	117.475	88.900	1,570	3,050	160,000	310,000
269.875	381.000	74.612	74.612	57.150	885	1,790	90,500	183,000
273.050	393.700	73.817	69.850	50.005	780	1,400	79,500	143,000
276.225	352.425	36.512	34.925	23.812	295	605	30,000	61,500
279.400	374.650	47.625	47.625	34.925	470	1,010	48,000	103,000
	469.900	95.250	93.662	69.850	1,180	2,170	121,000	222,000
	488.950	120.650	120.650	92.075	1,760	2,970	180,000	305,000
279.982	380.898	65.088	65.088	49.212	660	1,550	67,500	159,000
280.000	406.400	69.850	67.673	53.975	760	1,550	77,500	158,000
280.192	406.400	69.850	67.673	53.975	760	1,550	77,500	158,000
285.750	358.775	33.338	31.750	22.225	263	540	26,900	55,000
	380.898	65.088	65.088	49.212	660	1,550	67,500	159,000
288.925	406.400	77.788	77.788	60.325	1,010	2,080	103,000	212,000
292.100	374.650	47.625	47.625	34.925	470	1,010	48,000	103,000
	469.900	95.250	93.662	69.850	1,180	2,170	121,000	222,000
	558.800	136.525	136.525	98.425	1,950	3,800	199,000	385,000
298.450	444.500	63.500	61.912	39.688	630	1,150	64,000	117,000
※299.974	495.300	141.288	141.288	114.300	2,440	4,900	249,000	500,000
300.038	422.275	82.550	82.550	63.500	1,130	2,400	116,000	245,000
304.800	393.700	50.800	50.800	38.100	485	1,030	49,500	105,000
	406.400	63.500	63.500	47.625	700	1,580	71,500	161,000
	438.048	76.200	76.992	53.975	805	1,590	82,000	163,000
	444.500	63.500	61.912	39.688	630	1,150	64,000	117,000
	495.300	76.200	74.612	53.975	1,140	1,940	116,000	198,000
	495.300	95.250	92.075	69.850	1,230	2,350	126,000	240,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{1es}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

## static

$$P_{or} = 0.5F_r + Y_0F_a$$

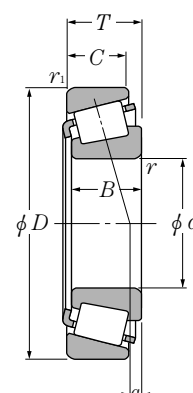
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{las}$ max			$Y_2$	$Y_0$	
H852849/H852810	315	297	390	422	6.4	0.6	0.3	0.58	1.04	0.57	73.3
T-M252349/M252310	296	287	356	364	6.4	3.3	6.2	0.33	1.80	0.99	25.4
T-EE275108/275155	301	291	366	378	6.4	6.4	-2.5	0.40	1.49	0.82	28.5
L853049/L853010	293	288	332	342	3.5	3.3	-34.8	0.54	1.12	0.62	8.40
L555233/L555210	300	296	355	362	3.5	3.3	-17	0.40	1.49	0.82	13.0
EE722110/722185	321	314	430	433	9.7	3.3	6.3	0.38	1.58	0.87	65.3
EE295110/295193	303	304	444	451	1.3	6.4	28.7	0.31	1.92	1.06	84.9
T-LM654642/LM654610	302	298	356	368	3.5	3.3	-11.5	0.43	1.39	0.76	19.0
EE128112/128160	308	307	378	384	6.4	3.3	-4.4	0.39	1.56	0.86	29.1
EE128111/128160	309	307	378	384	6.8	3.3	-4.4	0.39	1.56	0.86	29.1
545112/545141A	302	298	340	345	3.5	3.3	-33.9	0.49	1.22	0.67	7.54
T-LM654649/LM654610	306	302	356	368	3.5	3.3	-11.5	0.43	1.39	0.76	18.0
M255449/M255410A	316	310	379	388	6.4	3.3	4.1	0.34	1.78	0.98	27.8
L555249/L555210	309	305	355	362	3.5	3.3	-17	0.40	1.49	0.82	11.5
EE722115/722185	330	324	430	433	9.7	3.3	6.3	0.38	1.58	0.87	62.0
EE790114/790221	335	329	501	513	6.4	6.4	23.8	0.39	1.52	0.84	135
EE291175/291750	332	320	416	415	8	1.5	-9.1	0.38	1.58	0.87	33.1
☆HH258248/HH258210G2	342	332	448	467	6.4	6.4	35.4	0.33	1.80	0.99	96.0
☆T-HM256849/HM256810G2	328	319	394	403	6.4	3.3	5.7	0.34	1.78	0.98	31.9
L357049/L357010	329	319	374	380	6.4	3.3	-12.5	0.36	1.67	0.92	13.8
T-LM757049/LM757010	331	322	380	393	6.4	3.3	-16.3	0.44	1.36	0.75	20.1
T-EE129120X/129172	334	328	406	411	6.4	4.8	-7.3	0.42	1.44	0.79	34.8
EE291201/291750	337	324	416	415	8	1.5	-9.1	0.38	1.58	0.87	31.9
EE941205/941950A	339	329	459	463	6.4	3.3	-10	0.40	1.49	0.82	55.8
EE724120/724195	359	330	450	459	16	6.4	0.9	0.40	1.49	0.82	69.7

① "—" means that load center at outside on end of inner ring.

## Inch system sizes

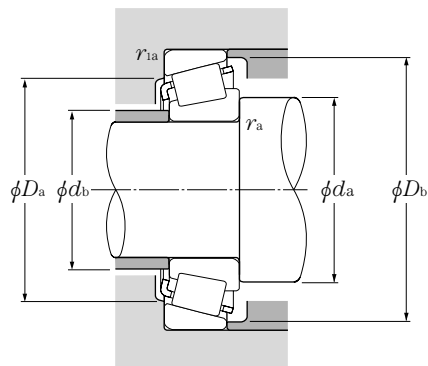


**d 304.800~381.000mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>
304.800	558.800	136.525	136.525	98.425	1,950	3,800	199,000	385,000
317.500	444.500	63.500	61.912	39.688	630	1,150	64,000	117,000
	447.675	85.725	85.725	68.262	1,160	2,390	118,000	244,000
	622.300	147.638	131.762	82.550	2,080	3,550	212,000	365,000
330.200	415.925	47.625	47.625	34.925	445	1,060	45,000	108,000
	415.925	47.625	47.625	34.925	445	1,060	45,000	108,000
	482.600	60.325	55.562	38.100	700	1,430	71,500	146,000
	482.600	85.725	80.167	60.325	955	1,970	97,500	201,000
333.375	469.900	90.488	90.488	71.438	1,350	2,760	138,000	282,000
342.900	450.850	66.675	66.675	52.388	785	1,780	80,000	182,000
	457.098	68.262	63.500	47.625	705	1,640	72,000	167,000
	533.400	76.200	76.200	50.800	1,070	1,730	109,000	176,000
346.075	482.600	60.325	55.562	38.100	700	1,430	71,500	146,000
	488.950	95.249	95.250	74.612	1,420	3,000	145,000	305,000
	488.950	95.250	95.250	74.612	1,480	3,200	151,000	325,000
349.250	501.650	90.488	84.138	69.850	1,190	2,280	122,000	233,000
355.600	444.500	60.325	60.325	47.625	655	1,740	67,000	177,000
	469.900	60.325	55.562	38.100	700	1,430	71,500	146,000
	482.600	60.325	55.562	38.100	700	1,430	71,500	146,000
	501.650	74.612	66.675	50.800	900	1,830	92,000	187,000
	501.650	90.488	84.138	69.850	1,190	2,280	122,000	233,000
361.950	406.400	23.812	23.812	17.462	173	470	17,600	48,000
368.249	523.875	101.600	101.600	79.375	1,520	3,250	155,000	335,000
371.475	501.650	74.612	66.675	50.800	900	1,830	92,000	187,000
374.650	522.288	85.725	84.138	61.912	1,060	2,270	108,000	232,000
381.000	479.425	49.212	47.625	34.925	540	1,270	55,500	130,000
	508.000	63.500	58.738	38.100	540	1,130	55,000	116,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{2s}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

## static

$$P_{or} = 0.5F_r + Y_0F_a$$

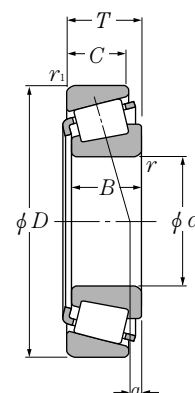
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$Y_2$	$Y_0$	
EE790120/790221	335	335	501	513	1.3	6.4	23.8	0.39	1.52	0.84	131
EE291250/291750	346	334	416	415	8	1.5	-9.1	0.38	1.58	0.87	29.5
T-HM259048/HM259010	341	337	418	428	3.5	3.3	4.8	0.33	1.79	0.99	37.3
☆H961649/H961610G2	410	373	531	582	14.3	12.7	-60.7	0.95	0.63	0.35	203
T-L860048/L860010	367	345	394	402	12.7	3.3	-35.4	0.50	1.20	0.66	13.3
T-L860049/L860010	349	345	394	402	3.5	3.3	-35.4	0.50	1.20	0.66	13.3
T-EE161300/161900	367	356	451	455	7	6.4	-33.6	0.50	1.20	0.66	35.9
EE526130/526190	360	351	449	454	6.4	3.3	-2.8	0.39	1.53	0.84	51.0
HM261049/HM261010A	363	357	439	449	6.4	3.3	5.4	0.33	1.79	0.99	43.4
LM361649/LM361610	373	360	425	435	8.5	3.5	-8.7	0.35	1.71	0.94	25.0
LM961548/LM961511	367	363	423	443	3.3	3.3	-53.6	0.71	0.84	0.46	30.0
EE971354/972100	373	367	501	501	4.8	3.3	-2.5	0.33	1.80	0.99	55.6
T-EE161363/161900	379	368	451	455	7	6.4	-33.6	0.50	1.20	0.66	32.8
T-HM262748/HM262710	377	367	456	467	6.4	3.3	6.4	0.33	1.79	0.99	52.5
☆T-HM262749/HM262710G2	377	367	456	467	6.4	3.3	6.4	0.33	1.79	0.99	49.7
EE333137/333197	382	372	470	478	6.4	3.3	-1.9	0.36	1.65	0.90	56.4
T-L163149/L163110	374	370	422	430	3.5	3.3	-7.2	0.31	1.95	1.07	18.8
T-EE161400/161850	386	375	445	455	7	6.4	-33.6	0.50	1.20	0.66	27.3
T-EE161400/161900	386	375	451	455	7	6.4	-33.6	0.50	1.20	0.66	30.8
T-EE231400/231975	388	379	472	481	6.4	3.3	-19.8	0.44	1.36	0.75	44.9
EE333140/333197	387	377	470	483	6.4	3.3	-1.9	0.36	1.65	0.90	50.8
LL562749/LL562710	372	371	396	401	2.3	1.5	-38.3	0.40	1.49	0.82	3.56
☆HM265049/HM265010G2	400	394	487	499	6.4	6.4	8	0.33	1.80	0.99	61.7
T-EE231462/231975	400	390	472	481	6.4	3.3	-19.8	0.44	1.36	0.75	40.7
LM565943/LM565910	407	397	493	500	6.4	3.3	-7.6	0.39	1.56	0.86	54.5
L865547/L865512	407	395	456	465	6.4	3.3	-42.4	0.49	1.21	0.67	20.0
EE192150/192200	410	400	478	482	6.4	3.3	-40.6	0.53	1.13	0.62	34.4

① "—" means that load center at outside on end of inner ring.

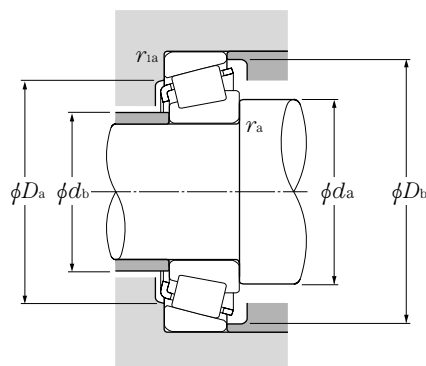
## Inch system sizes



### d 381.000~457.200mm

Boundary dimensions					dynamic kN	Basic load ratings		static kgf
mm						static	dynamic	
$d$	$D$	$T$	$B$	$C$	$C_r$	$C_{or}$	$C_r$	$C_{or}$
381.000	522.288	85.725	84.138	61.912	1,060	2,270	108,000	232,000
	523.875	85.725	84.138	61.912	1,060	2,270	108,000	232,000
	546.100	104.775	104.775	82.550	1,720	3,700	176,000	375,000
	546.100	104.775	104.775	82.550	1,840	4,000	188,000	410,000
	590.550	114.300	114.300	88.900	2,140	4,700	218,000	480,000
384.175	441.325	28.575	28.575	20.638	246	655	25,100	66,500
	546.100	104.775	104.775	82.550	1,720	3,700	176,000	375,000
	546.100	104.775	104.775	82.550	1,840	4,000	188,000	410,000
385.762	514.350	82.550	82.550	63.500	1,230	2,780	126,000	283,000
387.248	546.100	87.312	87.312	68.262	1,390	3,150	142,000	325,000
396.875	546.100	76.200	61.120	55.562	775	1,640	79,500	167,000
403.225	460.375	28.575	28.575	20.638	206	600	21,000	61,500
406.400	508.000	61.912	61.912	47.625	660	1,690	67,500	172,000
	546.100	76.200	61.120	55.562	775	1,640	79,500	167,000
	549.275	85.725	84.138	61.912	1,320	2,920	135,000	298,000
	590.550	107.950	107.950	80.962	1,640	3,400	167,000	345,000
	609.600	92.075	84.138	60.325	1,260	2,400	129,000	245,000
409.575	546.100	87.312	87.312	68.262	1,350	3,050	137,000	310,000
415.925	590.550	114.300	114.300	88.900	2,140	4,700	218,000	480,000
431.800	533.400	46.038	46.038	34.925	555	1,310	56,500	134,000
	552.450	44.450	44.450	31.750	615	1,340	62,500	137,000
	571.500	74.612	74.612	52.388	1,090	2,470	112,000	252,000
	603.250	76.200	73.025	50.800	975	2,050	99,500	209,000
	673.100	88.900	87.833	60.325	1,490	2,670	152,000	272,000
447.675	552.450	44.450	44.450	31.750	615	1,340	62,500	137,000
	635.000	120.650	120.650	95.250	2,420	5,550	247,000	565,000
457.200	552.450	44.450	44.450	31.750	615	1,340	62,500	137,000
	573.088	74.612	74.612	57.150	1,000	2,680	103,000	274,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{2s}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = X F_r + Y F_a$$

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

## static

$$P_{or} = 0.5 F_r + Y_0 F_a$$

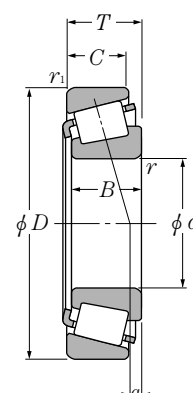
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$Y_2$	$Y_0$	
LM565949/LM565910	411	402	493	500	6.4	3.3	-7.6	0.39	1.56	0.86	52.5
LM565949/LM565912	411	402	493	500	6.4	3.3	-7.6	0.39	1.56	0.86	53.2
T-HM266446/HM266410	415	405	507	520	6.4	6.4	7.1	0.33	1.80	0.99	76.0
☆T-HM266447/HM266410G2	415	405	507	520	6.4	6.4	7.1	0.33	1.80	0.99	70.1
☆T-M268730/M268710G2	425	415	549	561	6.4	6.4	9.4	0.33	1.80	0.99	102
LL365348/LL365310	399	393	427	433	3.5	3.3	-30	0.34	1.77	0.97	5.89
T-HM266448/HM266410	417	407	507	519	6.4	6.4	7.1	0.33	1.80	0.99	69.0
☆T-HM266449/HM266410G2	417	407	507	519	6.4	6.4	7.1	0.33	1.80	0.99	69.0
LM665949/LM665910	415	406	482	495	6.4	3.3	-16.3	0.42	1.43	0.79	41.8
☆M667935/M667911G2	424	414	510	528	6.4	6.4	-16.2	0.42	1.43	0.79	56.6
EE234156/234215	428	418	504	516	6.4	6.4	-35.8	0.47	1.27	0.70	51.5
LL566848/LL566810	418	414	445	452	3.5	3.3	-41.5	0.40	1.49	0.82	6.17
L467549/L467510	426	423	483	492	3.3	3.3	-19.6	0.37	1.63	0.90	25.1
EE234160/234215	435	425	504	516	6.4	6.4	-35.8	0.47	1.27	0.70	48.7
LM567949/LM567910	437	427	519	525	6.4	3.3	-14.7	0.41	1.47	0.81	56.2
EE833160X/833232	448	435	549	561	9.7	6.4	8.5	0.33	1.84	1.01	86.6
EE911600/912400	443	439	567	570	6.8	6.4	-11.5	0.38	1.57	0.86	91.3
M667948/M667911	440	431	510	528	6.4	6.4	-16.2	0.42	1.43	0.79	49.8
☆T-M268749/M268710G2	451	441	549	561	6.4	6.4	9.4	0.33	1.80	0.99	87.8
T-80385/80325	450	446	510	510	3.3	3.3	-23.4	0.31	1.94	1.07	19.7
80170/80217	456	452	531	536	3.3	3.3	-27.5	0.32	1.88	1.04	23.1
T-LM869448/LM869410	457	453	537	549	3.3	3.3	-50.1	0.55	1.10	0.60	45.7
EE241701/242375	446	457	558	564	6.4	6.4	-46.5	0.53	1.14	0.63	64.9
EE571703/572650	472	466	630	632.6	6.4	3.3	-21.4	0.40	1.49	0.82	114
80176/80217	467	464	531	536	3.3	3.3	-27.5	0.32	1.88	1.04	20.4
☆M270749/M270710AG2	484	474	591	606	6.4	6.4	8.5	0.33	1.80	0.99	107
80180/80217	474	471	531	536	3.3	3.3	-27.5	0.32	1.88	1.04	18.7
L570649/L570610	485	475	543	558	6.4	6.4	-26.2	0.40	1.49	0.82	38.9

① "—" means that load center at outside on end of inner ring.

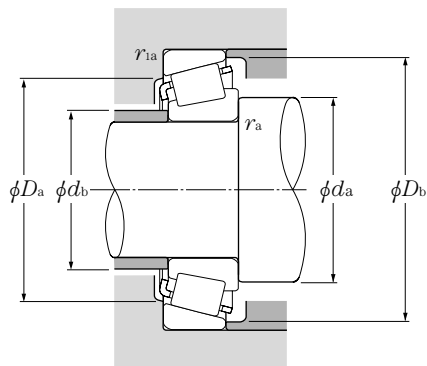
## Inch system sizes



**d 457.200~584.200mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>0r</sub></i>
457.200	596.900	76.200	73.025	53.975	975	2,350	99,500	239,000
	603.250	85.725	84.138	60.325	1,140	2,680	116,000	274,000
	615.950	85.725	85.725	66.675	1,350	3,350	138,000	340,000
	730.148	120.650	114.300	82.550	2,540	4,350	259,000	445,000
476.250	565.150	41.275	41.275	31.750	405	1,200	41,500	122,000
479.425	679.450	128.588	128.588	101.600	2,850	6,500	290,000	660,000
482.600	615.950	85.725	85.725	66.675	1,350	3,350	138,000	340,000
	634.873	80.962	80.962	63.500	1,170	3,100	119,000	315,000
488.950	634.873	84.138	84.138	61.912	1,460	3,450	149,000	355,000
	660.400	93.662	94.458	69.850	1,830	4,000	186,000	410,000
489.026	634.873	80.962	80.962	63.500	1,170	3,100	119,000	315,000
498.475	634.873	80.962	80.962	63.500	1,170	3,100	119,000	315,000
501.650	711.200	136.525	136.525	106.362	2,940	6,850	300,000	695,000
508.000	838.200	146.050	139.700	104.775	3,150	6,400	325,000	655,000
533.400	635.000	50.800	50.800	38.100	695	1,680	71,000	171,000
536.575	761.873	146.050	146.050	114.300	3,450	7,600	350,000	775,000
539.750	635.000	50.800	50.800	38.100	695	1,680	71,000	171,000
549.275	692.150	80.962	80.962	61.912	1,350	3,500	138,000	355,000
558.800	736.600	76.200	76.200	50.800	1,200	2,690	122,000	275,000
	736.600	88.108	88.108	63.500	1,460	3,350	148,000	345,000
	736.600	104.775	104.775	80.962	1,850	4,400	189,000	450,000
571.500	812.800	155.575	155.575	120.650	4,050	9,150	415,000	935,000
584.200	685.800	49.212	49.212	34.925	705	1,930	72,000	197,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_{1s}$  and  $r_{2s}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

## static

$$P_{or} = 0.5F_r + Y_0F_a$$

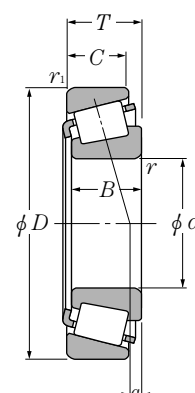
When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions						Load center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{ias}$ max			$Y_2$	$Y_0$	
EE244180/244235	494	478	567	570	9.7	3.3	-27.1	0.40	1.48	0.82	53.9
LM770949/LM770910	489	479	570	579	6.4	3.3	-29.7	0.46	1.32	0.72	63.8
☆LM272235/LM272210G2	493	483	585	597	6.4	6.4	-11.3	0.33	1.80	0.99	63.8
EE671801/672873	507	491	675	681	9.7	6.4	-6.6	0.39	1.53	0.84	188
LL771948/LL771911	495	491	543	549	3.3	3.3	-58.4	0.47	1.28	0.70	16.7
☆T-M272749/M272710G2	516	507	633	648	6.4	6.4	8.9	0.33	1.80	0.99	130
☆LM272249/LM272210G2	513	501	585	597	6.4	6.4	-11.3	0.33	1.80	0.99	54.9
EE243190/243250	516	510	603	609	6.4	3.3	-18.5	0.34	1.76	0.97	60.2
LM772748/LM772710A	522	510	600	613	6.4	3.3	-40.4	0.47	1.27	0.70	60.3
☆T-EE640192/640260G2	522	513	624	630	6.4	6.4	-4.9	0.31	1.95	1.07	85.2
EE243192/243250	522	516	603	609	6.4	3.3	-18.5	0.34	1.76	0.97	58.0
EE243196/243250	528	522	603	609	6.4	3.3	-18.5	0.34	1.76	0.97	54.7
☆M274149/M274110G2	540	534	663	678	6.4	6.4	11.8	0.33	1.80	0.99	152
EE426200/426330	564	552	759	768	9.7	9.7	-26.1	0.48	1.25	0.69	296
LL575343/LL575310	558	549	612	621	6.4	6.4	-50.3	0.41	1.48	0.81	26.4
☆M276449/M276410G2	576	570	711	726	6.4	6.4	10.5	0.33	1.80	0.99	187
LL575349/LL575310	564	555	612	621	6.4	6.4	-50.3	0.41	1.48	0.81	24.9
L476549/L476510	579	570	657	666	6.4	6.4	-32.2	0.38	1.59	0.88	68.2
EE542220/542290	594	585	696	705	6.4	6.4	-66.6	0.51	1.17	0.65	76.7
EE843220/843290	591	585	699	708	6.4	6.4	-21.8	0.34	1.76	0.97	88.7
LM377449/LM377410	594	585	696	708	6.4	6.4	-15.6	0.35	1.73	0.95	106
☆M278749/M278710AG2	615	609	756	774	6.4	6.4	12.7	0.33	1.80	0.99	227
T-LL778149/LL778110	603	600	663	669	3.5	3.3	-64.5	0.44	1.37	0.75	27.8

① "—" means that load center at outside on end of inner ring.

## Inch system sizes

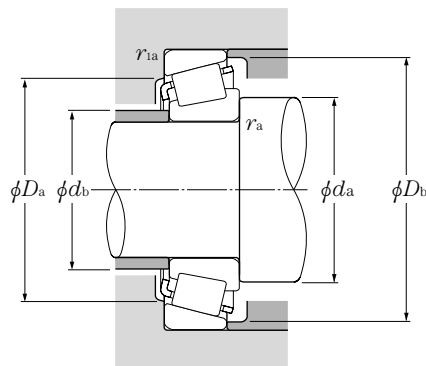


**d 596.900~1,270.000mm**

Boundary dimensions					dynamic kN	Basic load ratings		
mm						static	dynamic	static
<i>d</i>	<i>D</i>	<i>T</i>	<i>B</i>	<i>C</i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>
596.900	685.800	31.750	31.750	25.400	335	895	34,000	91,000
609.396	762.000	95.250	92.075	71.438	1,770	4,850	180,000	495,000
609.600	762.000	95.250	92.075	71.438	1,770	4,850	180,000	495,000
	787.400	93.662	93.662	69.850	2,190	5,050	223,000	515,000
	812.800	82.550	82.550	60.325	1,670	3,900	170,000	400,000
635.000	736.600	57.150	53.975	41.275	695	1,980	71,000	202,000
660.400	812.800	95.250	95.250	73.025	1,950	5,150	199,000	530,000
673.100	793.750	66.675	61.912	49.212	985	2,700	101,000	275,000
685.800	876.300	93.662	92.075	69.850	2,060	5,450	210,000	555,000
711.200	914.400	85.725	82.550	60.325	1,810	4,450	185,000	455,000
723.900	914.400	84.138	80.962	60.325	1,810	4,450	185,000	455,000
749.300	990.600	159.500	160.337	123.000	4,300	11,300	440,000	1,160,000
774.700	965.200	93.662	80.962	66.675	1,530	3,450	156,000	350,000
838.200	1,041.400	93.662	88.900	66.675	2,120	5,200	216,000	530,000
977.900	1,130.300	66.675	63.500	47.625	1,190	3,600	122,000	365,000
1,063.625	1,219.200	65.088	65.088	42.862	1,410	4,300	144,000	435,000
1,066.800	1,219.200	65.088	65.088	42.862	1,410	4,300	144,000	435,000
	1,320.800	95.250	88.900	69.850	2,330	6,200	237,000	635,000
1,092.200	1,320.800	95.250	88.900	69.850	2,330	6,200	237,000	635,000
1,270.000	1,435.100	69.850	65.088	47.625	1,590	5,050	162,000	515,000

Remarks: 1. With regard to the chamfer dimensions on the back face of the inner and outer rings, installation dimensions  $r_1$  and  $r_{1s}$  are larger than the maximum value.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

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

## static

$$P_{or} = 0.5F_r + Y_0F_a$$

When  $P_{or} < F_r$  use  $P_{or} = F_r$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

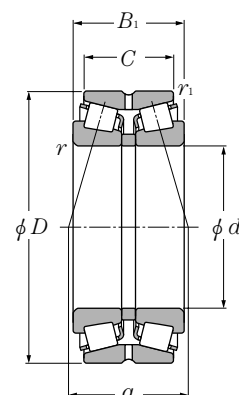
Bearing numbers	Abutment and fillet dimensions						Load <sup>①</sup> center mm	Constant $e$	Axial load factors		Mass kg (approx.)
	$d_a$	$d_b$	$D_a$	$D_b$	$r_{as}$ max	$r_{1as}$ max			$Y_2$	$Y_0$	
680235/680270	615	615	663	669	3.5	3.3	-94.8	0.53	1.14	0.63	15.8
L879946/L879910	642	633	720	741	6.4	6.4	-58.2	0.49	1.23	0.68	95.7
L879947/L879910	642	633	720	741	6.4	6.4	-58.2	0.49	1.23	0.68	95.6
☆EE649240/649310G2	642	633	747	764	6.4	6.4	-23.8	0.33	1.80	0.99	112
EE743240/743320	645	636	768	768	6.4	6.4	-31.8	0.33	1.83	1.01	104
80780/80720	654	651	714	717	3.3	3.3	-69.2	0.44	1.37	0.75	38.3
L281148/L281110A	693	681	777	789	6.4	6.4	-27.7	0.33	1.80	0.99	93.5
LL481448/LL481411	702	690	765	771	6.4	6.4	-53.8	0.36	1.67	0.92	51.3
☆EE655270/655345G2	723	714	831	843	6.4	6.4	-56.6	0.42	1.43	0.79	134
☆EE755280/755360G2	750	741	873	876	6.4	6.4	-52.4	0.38	1.58	0.87	136
☆EE755285/755360G2	756	750	873	876	5.5	6.4	-54	0.38	1.58	0.87	126
☆LM283649/LM283610G2	792	786	936	952	6.4	6.4	-4.4	0.33	1.80	0.99	309
EE752305/752380	810	798	921	924	6.4	3.3	-66.6	0.40	1.49	0.82	126
☆EE763330/763410G2	876	870	996	1,000	6.4	6.4	-85.3	0.44	1.36	0.75	172
LL687949/LL687910	1,010	1,005	1,095	1,100	6.4	6.4	-118.2	0.44	1.37	0.75	103
LL788345/LL788310	1,090	1,085	1,185	1,190	3.3	3.3	-142.8	0.48	1.26	0.69	422
LL788349/LL788310	1,090	1,090	1,185	1,190	3.3	3.3	-142.8	0.48	1.26	0.69	422
EE776420/776520	1,115	1,115	1,260	1,289	6.4	6.4	-175.6	0.57	1.05	0.58	796
EE776430/776520	1,135	1,130	1,260	1,289	6.4	6.4	-175.6	0.57	1.05	0.58	794
LL889049/LL889010	1,305	1,300	1,395	1,405	6.4	6.4	-220.2	0.58	1.04	0.57	666

① "—" means that load center at outside on end of inner ring.

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

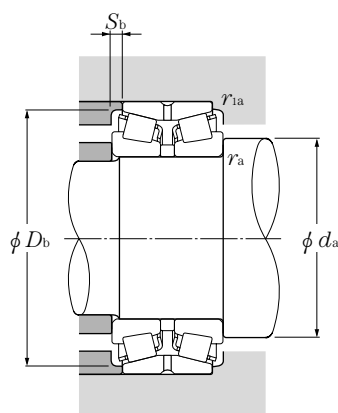
Metric system sizes



d 100~120mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>	d <sub>h</sub> dynamic kN	C <sub>or</sub> static	C <sub>r</sub> dynamic kgf	C <sub>or</sub> static	
100	165	52	46	2.5	0.8	204	305	20,800	31,500	CRI-2052
	180	82	66	3	1	440	675	45,000	68,500	CRI-2059
	180	83	67	3	1	440	675	45,000	68,500	430220XU
	180	107	87	3	1	565	925	58,000	94,500	432220XU
	180	140	115	2.5	1	585	1,090	59,500	111,000	CRI-2010
	190	124.5	102	3	1	760	1,220	77,500	124,000	CRI-2072
	215	112	87	4	1	700	995	71,500	102,000	430320XU
	215	112	87	3	1	590	800	60,000	81,500	430320X
105	215	162	127	4	1	980	1,540	100,000	157,000	432320U
	190	88	70	3	1	490	760	50,000	77,500	430221XU
	190	115	95	3	1	650	1,080	66,000	111,000	432221XU
	190	117	96	3	1	650	1,080	66,000	111,000	CRI-2152
	225	116	91	4	1	750	1,060	76,000	109,000	430321XU
	225	116	91	3	1	625	845	63,500	86,000	430321X
	225	170	133	3	1	955	1,470	97,500	150,000	432321
110	160	57.5	47.5	1.5	0.5	218	450	22,200	46,000	CRI-2258
	180	56	50	2.5	0.6	228	340	23,300	35,000	413122
	180	70	56	2.5	0.6	298	485	30,500	49,500	423122
	180	125	100	2.5	0.6	515	980	52,500	99,500	CRI-2219
	200	92	74	3	1	555	865	56,500	88,500	430222XU
	200	121	101	3	1	720	1,210	73,500	124,000	432222XU
	240	118	93	4	1	825	1,180	84,000	120,000	430322U
	240	118	93	3	1	685	925	69,500	94,500	430322
	240	181	142	4	1	1,210	1,940	123,000	197,000	432322U
	240	181	142	3	1	1,070	1,660	109,000	169,000	432322
120	180	46	41	2.5	0.6	193	298	19,700	30,500	413024
	180	58	46	2.5	0.6	230	375	23,500	38,000	423024
	200	62	55	2.5	0.6	263	435	26,800	44,500	413124
	200	78	62	2.5	0.6	370	610	38,000	62,500	423124
	200	78	62	2.5	0.6	370	610	38,000	62,500	CRI-2460
	200	100	84	2.5	1	530	1,100	54,000	113,000	CRI-2416
	215	97	78	3	1	595	940	60,500	96,000	430224XU
	215	132	109	3	1	790	1,360	80,500	139,000	432224XU
	260	128	101	4	1	960	1,390	97,500	142,000	430324XU
	260	128	101	3	1	800	1,100	81,500	112,000	430324X
	260	188	145	4	1	1,400	2,270	143,000	231,000	432324U

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_0 F_a$$

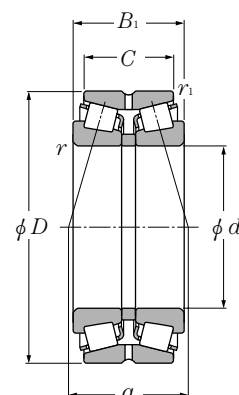
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$S_b$	$r_{as}$	$r_{las}$	mm					
min	min	min	max	max	$a$	$e$	$Y_1$	$Y_2$	$Y_0$	kg (approx.)
112	153	3	2	0.8	53.5	0.33	2.03	3.02	1.98	3.94
114	169	8	2.5	1	80.5	0.42	1.61	2.39	1.57	8.08
114	168	8	2.5	1	81.5	0.42	1.61	2.39	1.57	8.11
114	171	10	2.5	1	92	0.42	1.61	2.39	1.57	10.7
112	168.5	12.5	2	1	97.5	0.33	2.06	3.06	2.01	13.8
114	179.5	11.5	2.5	1	95.5	0.33	2.02	3.00	1.97	14.3
118	200	12.5	3	1	92	0.35	1.96	2.91	1.91	18.4
118	200	12.5	3	1	93.5	0.35	1.95	2.90	1.91	16.5
118	200	17.5	3	1	113	0.35	1.96	2.91	1.91	26.5
119	178	9	2.5	1	86	0.42	1.61	2.39	1.57	9.73
119	180	10	2.5	1	97.5	0.42	1.61	2.39	1.57	13.1
119	179.5	10.5	2.5	1	99.5	0.42	1.61	2.39	1.57	12.9
123	209	12.5	3	1	96.5	0.35	1.96	2.91	1.91	21
123	209	12.5	3	1	96.5	0.35	1.95	2.90	1.91	19.6
119	208	18.5	2.5	1	117.5	0.35	1.96	2.90	1.91	30.2
118.5	146	5	1.5	0.5	60.5	0.36	1.90	2.83	1.86	3.41
122	169	3	2	0.6	66.5	0.40	1.68	2.50	1.64	5.2
122	166	7	2	0.6	66.5	0.33	2.03	3.02	1.98	6.38
122	168	12.5	2	0.6	87	0.26	2.55	3.80	2.50	11.2
124	188	9	2.5	1	90	0.42	1.61	2.39	1.57	11.4
124	190	10	2.5	1	102	0.42	1.61	2.39	1.57	15.5
128	222	12.5	3	1	100	0.35	1.96	2.91	1.91	24.5
128	222	12.5	3	1	97.5	0.35	1.95	2.90	1.91	22.1
128	222	19.5	3	1	127	0.35	1.96	2.91	1.91	38.2
128	222	19.5	3	1	124	0.35	1.95	2.90	1.91	35.6
132	171	2.5	2	0.6	59	0.37	1.80	2.69	1.76	3.85
132	170	6	2	0.6	66	0.37	1.80	2.69	1.76	4.41
132	184	3.5	2	0.6	76.5	0.43	1.57	2.34	1.53	7.24
132	188	8	2	0.6	76.5	0.37	1.80	2.69	1.76	8.96
132	187	8	2	0.6	81.5	0.37	1.80	2.69	1.76	8.78
132	190.5	8	2	1	87.5	0.34	1.96	2.92	1.92	12.6
134	203	9.5	2.5	1	98	0.44	1.55	2.31	1.52	13.6
134	204	11.5	2.5	1	112	0.44	1.55	2.31	1.52	18.9
138	239	13.5	3	1	107	0.35	1.96	2.91	1.91	30.5
138	239	13.5	3	1	106	0.35	1.95	2.90	1.91	29.4
138	239	21.5	3	1	130	0.35	1.96	2.91	1.91	47

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

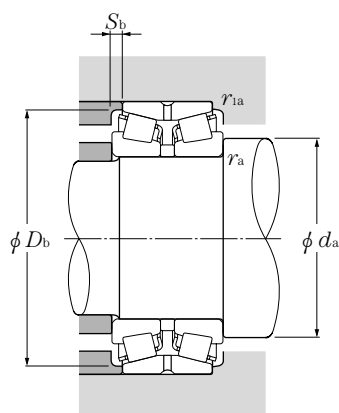
Metric system sizes



d 125~150mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s min</sub> ①	r <sub>ls min</sub> ①	dynamic kN	static	dynamic kgf	static	
						C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
<b>125</b>	210	110	88	3	1	570	1,080	58,000	110,000	CRI-2555
<b>130</b>	200	52	46	2.5	0.6	224	365	22,900	37,500	413026
	200	65	52	2.5	0.6	294	490	29,900	50,000	423026
	210	64	57	2.5	0.6	315	485	32,000	49,500	413126
	210	80	64	2.5	0.6	410	675	42,000	69,000	423126
	210	109	90	2.5	0.6	530	1,100	54,000	113,000	CRI-2619
	214	115	98	2.5	0.6	540	1,040	55,000	106,000	CRI-2651
	230	95	75	3	1	560	840	57,000	86,000	CRI-2614
	230	98	78.5	4	1	640	1,010	65,500	103,000	430226XU
	230	100	80.5	3	1	560	840	57,000	86,000	CRI-2655
	230	145	115	3	1	895	1,460	91,000	149,000	CRI-2616
	230	145	117.5	4	1	905	1,630	92,500	166,000	432226XU
	230	149	120	3	1	905	1,630	92,500	166,000	CRI-2654
	280	137	107.5	5	1.5	1,110	1,660	113,000	169,000	430326XU
	280	205	163.5	4	1.5	1,530	2,470	156,000	252,000	432326
<b>140</b>	210	53	47	2.5	0.6	262	415	26,700	42,500	413028
	210	66	53	2.5	0.6	300	535	30,500	54,500	423028
	210	106	94	2.5	0.6	580	1,220	59,000	124,000	CRI-2818
	225	68	61	3	1	370	580	37,500	59,500	413128
	225	84	68	3	1	390	650	40,000	66,000	423128
	225	85	68	3	1	390	650	40,000	66,000	CRI-2872
	230	120	94	2.5	0.8	680	1,280	69,500	131,000	CRI-2855
	230	140	110	3	1	750	1,470	76,500	150,000	CRI-2825
	240	132	106	3	1.5	755	1,480	77,000	150,000	CRI-2869
	250	102	82.5	3	1	640	970	65,500	99,000	430228X
	250	102	82.5	4	1	720	1,140	73,500	117,000	430228XU
	250	153	125.5	4	1	1,050	1,840	107,000	188,000	432228XU
	270	120	95	4	3	835	1,240	85,000	127,000	CRI-2874
	300	102	77	2.5	1	645	1,010	66,000	103,000	CRI-2834
	300	145	115.5	4	1.5	1,100	1,560	112,000	160,000	430328X
	300	145	115.5	5	1.5	1,260	1,900	129,000	194,000	430328XU
	300	223	177.5	4	1.5	1,690	2,740	173,000	279,000	432328
<b>150</b>	225	56	50	3	1	274	430	27,900	44,000	413030
	225	70	56	3	1	355	630	36,000	64,500	423030
	250	80	71	3	1	485	805	49,500	82,000	413130
	250	100	80	3	1	600	1,040	61,500	106,000	423130

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_0 F_a$$

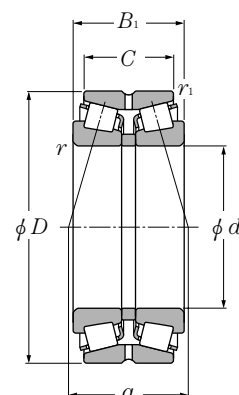
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center mm $a$	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ min	$D_b$ min	$S_b$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_0$	
139	197.5	11	2.5	1	101	0.42	1.62	2.42	1.59	14.5
142	186	3	2	0.6	66	0.37	1.80	2.69	1.76	5.55
142	189	6.5	2	0.6	71.5	0.37	1.80	2.69	1.76	6.62
142	196	3.5	2	0.6	69	0.33	2.03	3.02	1.98	7.83
142	198	8	2	0.6	79.5	0.37	1.80	2.69	1.76	9.77
142	191.5	9.5	2	0.6	89	0.34	1.96	2.90	1.90	14.2
142	198	8.5	2	0.6	111	0.46	1.47	2.20	1.40	15.5
144	215.5	10	2.5	1	96	0.43	1.57	2.30	1.50	15
148	218	9.5	3	1	102	0.44	1.55	2.31	1.52	15.9
144	215.5	9.5	2.5	1	101	0.43	1.57	2.30	1.50	15.8
144	220	15	2.5	1	117.5	0.40	1.68	2.50	1.60	23
148	219	13.5	3	1	124	0.44	1.55	2.31	1.52	24.1
144	220	14.5	2.5	1	128	0.44	1.55	2.30	1.50	24.6
152	255	14.5	4	1.5	116	0.35	1.96	2.91	1.91	37.9
148	264	20.5	3	1.5	143	0.35	1.95	2.90	1.90	56.6
152	199	3	2	0.6	68.5	0.37	1.80	2.69	1.76	5.88
152	197	6.5	2	0.6	75	0.37	1.84	2.74	1.80	7.11
152	201.5	6	2	0.6	93	0.35	1.95	2.90	1.91	12.5
154	210	3.5	2.5	1	73.5	0.33	2.03	3.02	1.98	9.18
154	209	8	2.5	1	88	0.37	1.80	2.69	1.76	11.8
154	211	8.5	2.5	1	88	0.37	1.80	2.69	1.76	11.8
152	214	13	2	0.8	108	0.40	1.68	2.50	1.64	15.5
154	216	15	2.5	1	106	0.32	2.12	3.15	2.07	20.5
154	226.5	13	2.5	1.5	124.5	0.44	1.53	2.27	1.49	22.1
158	237	9.5	3	1	106	0.43	1.57	2.34	1.53	18
158	237	9.5	3	1	107	0.44	1.55	2.31	1.52	19.9
158	238	13.5	3	1	131	0.44	1.55	2.31	1.52	30.1
158	249	12.5	3	2.5	104	0.33	2.05	3.05	2.00	27.6
152	264	12.5	2	1	129	0.55	1.24	1.84	1.21	32.5
162	272	14.5	4	1.5	123	0.35	1.95	2.90	1.91	44.4
162	273	14.5	4	1.5	123	0.35	1.96	2.91	1.91	46.6
158	282	22.5	3	1.5	156	0.35	1.95	2.90	1.91	69
164	213	3	2.5	1	73.5	0.37	1.80	2.69	1.76	6.66
164	212	7	2.5	1	79.5	0.37	1.80	2.69	1.76	8.76
164	231	4.5	2.5	1	82.5	0.33	2.03	3.02	1.98	14.3
164	234	10	2.5	1	96.5	0.37	1.80	2.69	1.76	18

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Metric system sizes

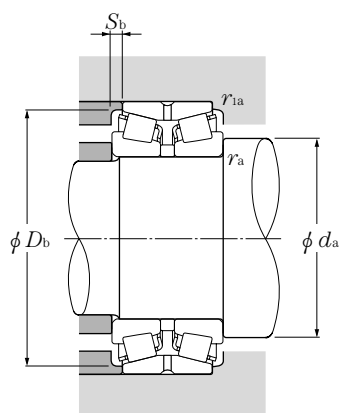


**d 150~180mm**

	Boundary dimensions					Basic load ratings				Bearing numbers
	mm					dynamic kN	static	dynamic kgf	static	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>	<i>r</i> <sub>s min</sub> <sup>❶</sup>	<i>r</i> <sub>ls min</sub> <sup>❶</sup>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	
<b>150</b>	250	115	95	2.5	1	660	1,230	67,500	126,000	CRI-3015
	250	137	112	2.5	1	865	1,590	88,500	162,000	CRI-3061
	260	150	115	4	1	945	1,820	96,000	185,000	CRI-3063
	270	109	87	4	1	770	1,210	78,500	123,000	430230U
	270	164	130	4	1	1,200	2,140	122,000	218,000	432230XU
	320	154	120	5	1.5	1,410	2,140	144,000	218,000	430330U
	320	154	120	4	1.5	1,170	1,750	119,000	178,000	430330
<b>160</b>	240	60	53	3	1	330	535	34,000	54,500	413032
	240	75	60	3	1	430	765	44,000	78,000	423032
	240	110	90	2.5	0.6	660	1,230	67,500	126,000	CRI-3256
	270	86	76	3	1	595	965	60,500	98,000	413132E1
	270	108	86	3	1	675	1,180	69,000	120,000	423132E1
	270	110	86	2.5	1	785	1,360	80,000	138,000	CRI-3210
	270	140	120	2.5	1	960	1,910	98,000	195,000	CRI-3225
	270	150	120	2.5	1	960	1,860	98,000	190,000	CRI-3219
	280	150	125	4	1	1,090	1,940	112,000	198,000	CRI-3258
	290	115	91	4	1	900	1,440	92,000	147,000	430232U
	290	178	144	4	1	1,530	2,840	156,000	290,000	432232U
	340	160	126	5	1.5	1,570	2,390	160,000	244,000	430332XU
	340	160	126	4	1.5	1,290	1,950	132,000	199,000	430332X
<b>165</b>	290	150	125	5	1	1,030	1,820	105,000	186,000	CRI-3309
	350	146	108	7.5	1.5	1,220	1,980	124,000	202,000	CRI-3305
<b>170</b>	250	85	65	2.5	1	425	815	43,500	83,000	CRI-3420
	260	67	60	3	1	365	620	37,000	63,500	413034
	260	84	67	3	1	490	865	50,000	88,000	423034
	280	88	78	3	1	550	900	56,000	92,000	413134E1
	280	110	88	3	1	725	1,270	74,000	130,000	423134E1
	280	134	106	3	1	855	1,790	87,500	182,000	CRI-3452
	280	150	130	2.5	1	980	1,880	100,000	192,000	CRI-3410
	310	125	97	5	1.5	1,050	1,690	107,000	173,000	430234U
	310	192	152	5	1.5	1,710	3,200	174,000	325,000	432234XU
<b>180</b>	280	74	66	3	1	425	735	43,000	75,000	413036E1
	280	93	74	3	1	580	1,050	59,500	107,000	423036E1
	280	134.5	108	2.5	1	885	1,800	90,000	183,000	CRI-3623
	300	96	85	4	1.5	705	1,190	72,000	121,000	413136E1

❶ Minimum allowable dimension for chamfer dimension *r* or *r*<sub>1</sub>.





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_0 F_a$$

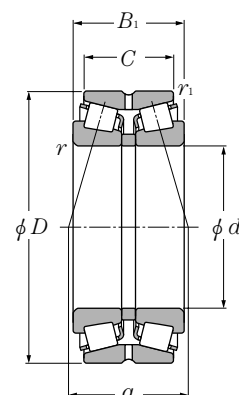
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center	Constant	Axial load factors			Mass
mm					mm					kg
$d_a$	$D_b$	$S_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_0$	(approx.)
min	min	min	max	max						
162	234	10	2	1	107.5	0.37	1.80	2.69	1.76	21.2
162	238	12.5	2	1	119	0.41	1.66	2.47	1.62	27.7
168	239.5	17.5	3	1	125	0.41	1.66	2.47	1.62	31.4
168	255	11	3	1	114	0.44	1.55	2.31	1.52	24.4
168	254	17	3	1	139	0.44	1.55	2.31	1.52	37.3
172	292	17	4	1.5	132	0.35	1.96	2.91	1.91	55.4
172	292	17	4	1.5	135	0.37	1.80	2.69	1.76	52.8
174	227	3.5	2.5	1	79	0.37	1.80	2.69	1.76	8.29
174	227	7.5	2.5	1	85.5	0.37	1.80	2.69	1.76	10.7
172	231.5	10	2	0.6	107	0.37	1.80	2.69	1.76	15.6
174	254	5	2.5	1	98.5	0.40	1.68	2.50	1.64	18.2
174	250	11	2.5	1	106	0.37	1.80	2.69	1.76	22.8
172	250.5	12	2	1	95	0.31	2.21	3.29	2.16	22.9
172	251.5	10	2	1	113.5	0.32	2.12	3.15	2.07	31.8
172	252	15	2	1	119.5	0.32	2.12	3.15	2.07	32.8
178	264.5	12.5	3	1	119.5	0.32	2.12	3.15	2.07	34.8
178	272	12	3	1	122	0.44	1.55	2.31	1.52	31.9
178	275	17	3	1	150	0.44	1.55	2.31	1.52	46.9
182	310	17	4	1.5	138	0.35	1.96	2.91	1.91	65.5
182	311	17	4	1.5	141	0.37	1.80	2.69	1.76	62.4
187	274	12.5	4	1	127.5	0.32	2.12	3.15	2.07	37.5
201	308.5	19	6	1.5	124.5	0.34	2.00	2.98	1.96	61.2
182	237.5	10	2	1	103	0.44	1.54	2.29	1.50	12.6
184	242	3.5	2.5	1	86.5	0.37	1.80	2.69	1.76	11.6
184	244	8.5	2.5	1	93.5	0.37	1.80	2.69	1.76	14.3
184	260	5	2.5	1	104	0.40	1.68	2.50	1.64	19.5
184	260	11	2.5	1	109	0.37	1.80	2.69	1.76	24.7
184	250.5	14	2.5	1	132.5	0.44	1.52	2.26	1.49	32.8
182	265	10	2	1	125.5	0.33	2.03	3.02	1.98	34.3
192	290.5	14	4	1.5	132	0.44	1.55	2.31	1.52	38
192	293	20	4	1.5	160	0.44	1.55	2.31	1.52	58.2
194	260	4	2.5	1	94	0.37	1.80	2.69	1.76	15.9
194	262	9.5	2.5	1	102	0.37	1.80	2.69	1.76	19
192	266	13.5	2	1	122	0.37	1.80	2.69	1.76	27
198	280	5.5	3	1.5	111	0.40	1.68	2.50	1.64	24.6

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

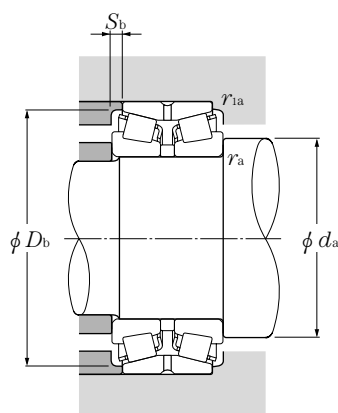
Metric system sizes



**d 180~220mm**

	Boundary dimensions					Basic load ratings				Bearing numbers
	mm					dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>	<i>r</i> <sub>s min</sub> <sup>①</sup>	<i>r</i> <sub>ls min</sub> <sup>①</sup>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	
<b>180</b>	300	120	96	4	1.5	885	1,530	90,500	156,000	423136E1
	300	164	134	3	1	1,150	2,270	118,000	231,000	CRI-3625
	320	127	99	5	1.5	1,080	1,780	110,000	182,000	430236U
	320	192	152	5	1.5	1,760	3,350	180,000	345,000	432236U
	340	180	140	4	1.5	1,390	2,590	142,000	264,000	CRI-3618
<b>190</b>	290	75	67	3	1	430	740	44,000	75,500	413038E1
	290	94	75	3	1	615	1,110	63,000	113,000	423038E1
	320	104	92	4	1.5	780	1,280	79,500	131,000	413138
	320	130	104	4	1.5	985	1,710	100,000	174,000	423138
	340	133	105	5	1.5	1,230	2,010	125,000	205,000	430238U
	340	204	160	5	1.5	1,970	3,700	201,000	380,000	432238U
	340	204	160	4	1.5	1,710	3,350	175,000	340,000	432238
<b>200</b>	310	82	73	3	1	530	940	54,000	96,000	413040E1
	310	103	82	3	1	720	1,320	73,000	135,000	423040E1
	310	151	123	2.5	1	1,020	2,080	105,000	212,000	CRI-4020
	310	170	140	4	1	1,270	2,690	130,000	274,000	CRI-4027
	320	146	110	4	1.5	910	1,950	92,500	199,000	CRI-4036
	330	180	140	4	1.5	1,330	2,610	136,000	266,000	CRI-4030
	340	112	100	4	1.5	965	1,660	98,500	169,000	413140
	340	140	112	4	1.5	1,090	1,910	111,000	195,000	423140
	340	184	150	3	1.5	1,530	3,000	156,000	305,000	CRI-4019
	360	142	110	5	1.5	1,350	2,210	137,000	226,000	430240U
	360	218	174	5	1.5	2,260	4,250	230,000	435,000	432240U
	360	218	174	4	1.5	1,980	3,950	201,000	400,000	432240
<b>206</b>	283	102	83	3	0.6	540	1,320	55,000	134,000	CRI-4107
<b>210</b>	355	116	103	3	1.5	880	1,500	89,500	153,000	CRI-4202
<b>220</b>	300	110	88	2.5	1	660	1,550	67,500	158,000	CRI-4410
	340	90	80	4	1.5	595	1,060	61,000	108,000	413044E1
	340	113	90	4	1.5	880	1,650	89,500	168,000	423044E1
	340	158	130	4	1	1,340	2,750	137,000	281,000	CRI-4409
	340	164	130	3	1	1,360	2,810	139,000	287,000	CRI-4411
	370	120	107	5	1.5	1,110	1,920	113,000	196,000	413144
	370	150	120	5	1.5	1,220	2,260	125,000	230,000	423144
	370	150	120	5	1.5	1,440	2,550	147,000	260,000	CRI-4416

① Minimum allowable dimension for chamfer dimension *r* or *r*<sub>s</sub>.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_0 F_a$$

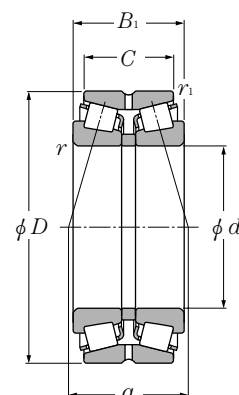
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center mm	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ min	$D_b$ min	$S_b$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_0$	
198	279	12	3	1.5	119	0.37	1.80	2.69	1.76	31.4
194	281	15	2.5	1	125.5	0.26	2.55	3.80	2.50	43.7
202	297	14	4	1.5	139	0.45	1.50	2.23	1.47	39.4
202	305	20	4	1.5	165	0.45	1.50	2.23	1.47	60.6
198	302	20	3	1.5	142.5	0.32	2.12	3.15	2.07	68.5
204	271	4	2.5	1	96	0.37	1.80	2.69	1.76	16.2
204	272	9.5	2.5	1	104	0.37	1.80	2.69	1.76	19.6
208	300	6	3	1.5	119	0.40	1.68	2.50	1.64	30.8
208	299	13	3	1.5	126	0.37	1.80	2.69	1.76	38.6
212	316	14	4	1.5	141	0.44	1.55	2.31	1.52	45.4
212	323	22	4	1.5	174	0.44	1.55	2.31	1.52	73.3
212	323	22	4	1.5	185	0.49	1.38	2.06	1.35	75.8
214	288	4.5	2.5	1	101	0.37	1.80	2.69	1.76	20.6
214	291	10.5	2.5	1	112	0.37	1.80	2.69	1.76	25.7
212	296	14	2	1	141	0.37	1.80	2.69	1.76	38.2
218	296	15	3	1	138	0.33	2.03	3.02	1.98	42.4
218	299	18	3	1.5	160.5	0.52	1.31	1.95	1.28	40.1
218	314	20	3	1.5	161.5	0.42	1.60	2.39	1.57	55.5
218	320	6	3	1.5	125	0.40	1.68	2.50	1.64	38.6
218	316	14	3	1.5	134	0.37	1.80	2.69	1.76	47.5
214	324	17	2.5	1.5	149	0.32	2.12	3.15	2.07	67
222	336	16	4	1.5	154	0.44	1.55	2.31	1.52	62.8
222	340	22	4	1.5	180	0.41	1.66	2.47	1.62	95.2
222	340	22	4	1.5	193	0.49	1.38	2.06	1.35	90.7
220	275	9.5	2.5	0.6	134	0.52	1.31	1.95	1.28	16.9
224	331	6.5	2.5	1.5	130.5	0.40	1.68	2.50	1.64	44
232	289	11	2	1	121.5	0.39	1.74	2.59	1.70	21.1
238	318	5	3	1.5	112	0.37	1.80	2.69	1.76	26.7
238	319	11.5	3	1.5	125	0.37	1.80	2.69	1.76	33.3
238	324	14	3	1	138.5	0.33	2.03	3.02	1.98	46.7
234	323	17	2.5	1	145	0.35	1.95	2.90	1.91	48.5
242	346	6.5	4	1.5	135	0.40	1.68	2.50	1.64	47.8
242	341	15	4	1.5	154	0.40	1.68	2.50	1.64	59.6
242	346.5	15	4	1.5	142	0.35	1.95	2.90	1.91	59.0

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

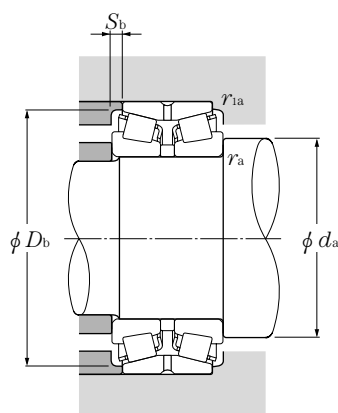
Metric system sizes



d 220~300mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
	mm					kN		kgf		
220	400	158	122	4	1.5	1,400	2,440	143,000	249,000	430244
	420	130	100	5	2.5	1,160	1,820	119,000	185,000	CRI-4407
230	380	175	115	4	2	1,540	2,890	157,000	295,000	CRI-4612
	380	200	160	4	2	1,740	3,700	178,000	380,000	CRI-4606
	400	188	136	8	1.5	1,620	3,250	165,000	330,000	CRI-4605
235	330	115	85	5	1.5	745	1,700	76,000	173,000	CRI-4701
240	320	110	90	2.5	1	795	1,890	81,000	193,000	CRI-4813
	360	92	82	4	1.5	655	1,160	66,500	118,000	413048E1
	360	115	92	4	1.5	910	1,770	92,500	181,000	423048E1
	360	164	130	3	1	1,420	3,050	145,000	310,000	CRI-4806
	360	170	142	3	1	1,360	2,810	139,000	287,000	CRI-4805
	400	128	114	5	1.5	1,230	2,130	126,000	217,000	413148
	400	160	128	5	1.5	1,400	2,600	142,000	265,000	423148
	400	209	168	4	1.5	2,140	4,350	218,000	445,000	CRI-4807
	440	165	127	4	1.5	1,680	2,960	171,000	300,000	430248
250	440	266	212	4	1.5	2,920	5,500	298,000	560,000	432248
250	380	98	87	3	1.5	750	1,360	76,500	139,000	CRI-5004
260	400	104	92	5	1.5	840	1,540	85,500	157,000	413052
	400	130	104	5	1.5	1,150	2,190	117,000	223,000	423052
	400	185	146	4	1.5	1,720	3,650	175,000	370,000	CRI-5218
	440	144	128	5	1.5	1,500	2,630	152,000	268,000	413152
	440	172	145	4	2	1,960	3,750	200,000	380,000	CRI-5224
	440	180	144	5	1.5	1,960	3,750	200,000	380,000	423152
280	400	150	120	5	1.5	1,380	3,150	141,000	325,000	CRI-5615
	420	106	94	5	1.5	890	1,630	91,000	166,000	413056
	420	133	106	5	1.5	1,200	2,340	123,000	238,000	423056
	460	146	130	6	2	1,640	2,900	167,000	296,000	413156
	460	183	146	6	2	1,940	3,650	198,000	375,000	423156
290	400	120	90	4	1.5	1,200	2,600	122,000	265,000	CRI-5808
	430	150	135	4	1.5	1,350	3,200	138,000	325,000	CRI-5810
300	460	118	105	5	1.5	1,070	1,990	109,000	203,000	413060

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_0 F_a$$

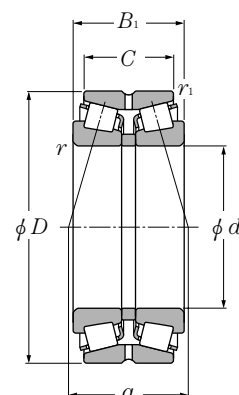
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center mm $a$	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ min	$D_b$ min	mm $S_b$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_0$	
238	368	18	3	1.5	178.5	0.49	1.38	2.06	1.40	77.5
242	378	15	4	2	148	0.40	1.68	2.50	1.64	73.1
248	359	30	3	2	154.5	0.40	1.68	2.50	1.64	67
248	355	20	3	2	164	0.33	2.03	3.02	1.98	84.4
266	367	26	6	1.5	181	0.44	1.54	2.29	1.50	88.5
257	312.5	15	4	1.5	129.5	0.41	1.66	2.47	1.62	27.3
252	314	10	2	1	139.5	0.46	1.47	2.19	1.44	21.6
258	339	5	3	1.5	117	0.37	1.80	2.69	1.76	30.2
258	339	11.5	3	1.5	131	0.37	1.80	2.69	1.76	36.5
254	356	17	2.5	1	145	0.32	2.12	3.15	2.07	53
254	347	14	2.5	1	161	0.37	1.80	2.69	1.76	53.8
262	375	7	4	1.5	144	0.40	1.68	2.50	1.64	58.9
262	373	16	4	1.5	164	0.40	1.68	2.50	1.64	71.7
258	376	20.5	3	1.5	167.5	0.32	2.12	3.15	2.07	96
258	406	19	3	1.5	189	0.49	1.38	2.06	1.35	100.4
258	421.5	27	3	1.5	226	0.43	1.57	2.34	1.53	164.8
264	357	5.5	2.5	1.5	123.5	0.37	1.80	2.69	1.80	35.3
282	372	6	4	1.5	131	0.37	1.80	2.69	1.76	41.5
282	374	13	4	1.5	143	0.37	1.80	2.69	1.76	53
278	376	19.5	3	1.5	154.5	0.29	2.32	3.45	2.26	79
282	412	8	4	1.5	161	0.40	1.68	2.50	1.64	82.2
278	416.5	13.5	3	1.5	175	0.40	1.68	2.50	1.64	99.0
282	413	18	4	1.5	176	0.40	1.68	2.50	1.64	101
302	383	15	4	1.5	161	0.39	1.70	2.59	1.70	53.8
302	394	6	4	1.5	136	0.37	1.80	2.69	1.76	47.2
302	397	13.5	4	1.5	148	0.37	1.80	2.69	1.76	57.3
308	435	8	5	2	168	0.40	1.68	2.50	1.64	87.4
308	433	18.5	5	2	177	0.40	1.68	2.50	1.64	109
308	386	15	3	1.5	154	0.42	1.62	2.42	1.59	40
308	407	7.5	3	1.5	162	0.39	1.74	2.59	1.70	72.7
322	428	6.5	4	1.5	151	0.37	1.80	2.69	1.76	65.6

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Metric system sizes



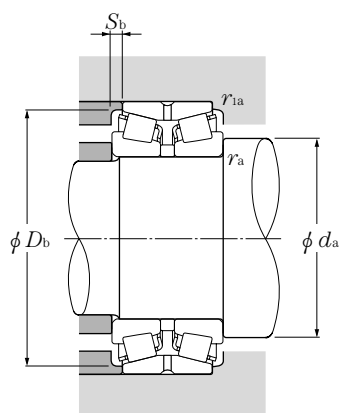
d 300~400mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>	d <sub>yn</sub> kN	C <sub>or</sub> static	C <sub>r</sub> dynamic	C <sub>or</sub> static	
								kgf		
300	460	148	118	5	1.5	1,610	3,150	165,000	320,000	423060
	500	160	142	6	2	2,010	3,600	205,000	370,000	413160
	500	200	160	6	2	2,100	4,050	214,000	415,000	423160
	540	208	158	5	2.5	2,440	4,450	249,000	450,000	CRI-6010
320	480	121	108	5	1.5	1,190	2,250	121,000	229,000	413064
	480	151	121	5	1.5	1,580	3,100	162,000	315,000	423064
	540	176	157	6	2	2,240	4,100	228,000	415,000	413164
	540	220	176	6	2	2,500	4,900	255,000	500,000	423164
	550	240	180	5	2.5	3,300	6,500	340,000	665,000	☆CRI-6410
330	500	190	150	6	1.5	2,480	5,550	252,000	565,000	CRI-6603
340	460	160	128	3	1	1,630	4,250	167,000	430,000	CRI-6808
	500	249	203	5	1.5	2,690	6,200	274,000	630,000	CRI-6812
	520	133	118	6	2	1,480	2,870	150,000	293,000	413068
	520	165	133	6	2	1,890	3,750	193,000	380,000	423068
	580	190	169	6	2	2,690	4,900	274,000	500,000	413168
	580	238	190	6	2	3,350	6,500	345,000	660,000	423168
360	540	134	120	6	2	1,470	2,810	150,000	287,000	413072
	540	169	134	6	2	2,050	4,200	209,000	430,000	423072
	600	192	171	6	2	2,720	5,050	277,000	515,000	413172
	600	240	192	6	2	3,200	6,500	325,000	660,000	423172
380	508	139.7	88.9	6.4	1.5	920	2,270	94,000	232,000	CRI-7619
	560	135	122	6	2	1,690	3,350	172,000	340,000	413076
	560	171	135	6	2	2,080	4,350	213,000	445,000	423076
	620	194	173	6	2	2,840	5,250	289,000	535,000	413176
	620	241	170	5	2	3,700	7,400	380,000	755,000	CRI-7614
	620	243	194	6	2	3,350	6,700	340,000	685,000	423176
390	600	185	130	4	2	2,680	5,550	273,000	565,000	☆CRI-7803
400	540	140	100	6.4	1.5	1,620	3,800	165,000	390,000	CRI-8005
	600	148	132	6	2	1,860	3,700	190,000	375,000	413080
	600	185	148	6	2	2,530	5,450	258,000	555,000	423080
	650	200	178	6	3	3,000	5,800	305,000	590,000	413180
	650	250	200	6	3	3,750	7,850	385,000	800,000	423180

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Remarks: 1. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_0 F_a$$

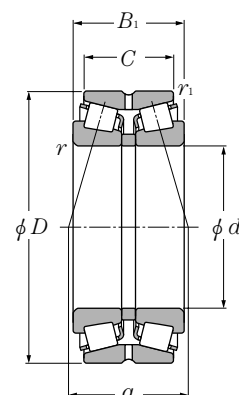
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$S_b$	$r_{as}$	$r_{las}$	mm					
min	min	min	max	max	$a$	$e$	$Y_1$	$Y_2$	$Y_0$	kg (approx.)
322	434	15	4	1.5	163	0.37	1.80	2.69	1.76	80.2
328	471	9	5	2	182	0.40	1.68	2.50	1.64	115
328	467	20	5	2	202	0.40	1.68	2.50	1.64	144
322	498	25	4	2	238	0.49	1.38	2.06	1.35	184
342	449	6.5	4	1.5	157	0.37	1.80	2.69	1.76	70.9
342	455	15	4	1.5	170	0.37	1.80	2.69	1.76	85.4
348	505	9.5	5	2	197	0.40	1.68	2.50	1.64	150
348	504.5	22	5	2	217	0.40	1.68	2.50	1.64	186
342	514	30	4	2	233	0.40	1.68	2.50	1.64	223
358	477	20	5	1.5	195	0.39	1.74	2.59	1.70	117
354	441	16	2.5	1	161.5	0.32	2.12	3.15	2.07	70
362	481	23	4	1.5	218.5	0.33	2.03	3.02	1.98	154
368	488	7.5	5	2	170	0.37	1.80	2.69	1.76	89.2
368	489	16	5	2	184	0.37	1.80	2.69	1.76	113
368	548	10.5	5	2	213	0.40	1.68	2.50	1.64	188
368	542	24	5	2	237	0.40	1.68	2.50	1.64	235
388	507	7	5	2	176	0.37	1.80	2.69	1.76	98.2
388	509	17.5	5	2	192	0.37	1.80	2.69	1.76	120
388	561	10.5	5	2	219	0.40	1.68	2.50	1.64	199
388	563	24	5	2	240	0.40	1.68	2.50	1.64	248
408	483	25.5	5	1.5	221	0.53	1.27	1.89	1.24	69.5
408	528	6.5	5	2	183	0.37	1.80	2.69	1.76	95.9
408	529	18	5	2	196	0.37	1.80	2.69	1.76	126
408	583	10.5	5	2	225	0.40	1.68	2.50	1.64	210
402	582	35.5	4	2	263	0.46	1.47	2.19	1.44	252
408	578	24.5	5	2	249	0.40	1.68	2.50	1.64	262
408	564	27.5	3	2	216.5	0.40	1.70	2.50	1.66	175
428	519.5	20	5	1.5	216	0.48	1.41	2.09	1.37	80.6
428	564	8	5	2	194	0.37	1.80	2.69	1.76	105
428	564	18.5	5	2	210	0.37	1.80	2.69	1.76	163
428	610	11	5	2.5	232	0.40	1.68	2.50	1.64	236
428	610	25	5	2.5	256	0.40	1.68	2.50	1.64	294

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Metric system sizes

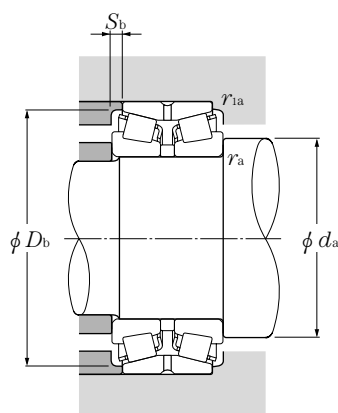


d 420~560mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s min</sub> ①	r <sub>ls min</sub> ①	d <sub>yn</sub> kN	d <sub>st</sub> static	d <sub>yn</sub> kgf	d <sub>st</sub> static	
420	620	150	134	6	2	2,110	4,250	215,000	435,000	413084
	620	188	150	6	2	2,650	5,900	270,000	600,000	423084
	700	224	200	6	3	3,700	7,200	375,000	735,000	413184
	700	274	200	6	2.5	4,850	9,850	495,000	1,000,000	☆CRI-8403
	700	280	224	6	3	4,800	9,700	490,000	990,000	423184
440	650	157	140	6	3	2,470	5,150	252,000	525,000	413088
	650	196	157	6	3	2,600	5,450	266,000	560,000	423088
	720	226	201	6	3	4,000	7,800	410,000	795,000	413188
	720	283	226	6	3	5,000	10,300	510,000	1,050,000	423188
460	680	163	145	6	3	2,600	5,350	265,000	550,000	413092
	680	204	163	6	3	3,100	6,750	315,000	685,000	423092
	760	240	214	7.5	4	4,550	9,150	465,000	930,000	413192
	760	300	240	7.5	4	4,900	10,300	500,000	1,050,000	423192
480	700	165	147	6	3	2,490	5,000	254,000	510,000	413096
	700	206	165	6	3	3,050	6,700	310,000	685,000	423096
	790	248	221	7.5	4	4,800	9,600	490,000	975,000	413196
	790	310	248	7.5	4	5,300	11,100	540,000	1,130,000	423196
500	670	180	130	5	2	2,400	6,100	245,000	625,000	CRI-10004
	720	167	149	6	3	2,610	5,400	266,000	550,000	4130/500
	720	209	167	6	3	3,050	6,900	315,000	700,000	4230/500
	830	264	235	7.5	4	5,200	10,500	530,000	1,070,000	4131/500
	830	330	264	7.5	4	6,400	14,000	650,000	1,420,000	☆4231/500G2
530	780	185	163	6	3	2,910	5,900	297,000	600,000	4130/530
	780	231	185	6	3	4,050	9,050	415,000	920,000	4230/530
	870	272	239	7.5	4	6,000	12,200	615,000	1,240,000	☆4131/530G2
	870	340	272	7.5	4	7,750	16,700	790,000	1,710,000	☆4231/530AG2
560	735	225	180	6.4	1.5	3,150	8,800	325,000	895,000	CRI-11206
	740	190	140	6.4	1.5	2,360	6,250	241,000	640,000	CRI-11211
	820	195	173	6	3	3,600	7,850	370,000	800,000	☆CRI-11214
	820	244	195	6	3	4,750	11,000	485,000	1,120,000	☆CRI-11213
	920	280	246	7.5	4	5,900	12,100	600,000	1,230,000	4131/560
	920	350	280	7.5	4	7,600	17,400	775,000	1,780,000	☆4231/560G2

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Remarks: 1. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_0 F_a$$

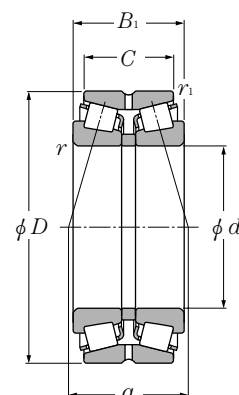
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center mm $a$	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ min	$D_b$ min	mm $S_b$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_0$	
448	586	8	5	2	200	0.37	1.80	2.69	1.76	135
448	583	19	5	2	220	0.37	1.80	2.69	1.76	172
448	655	12	5	2.5	258	0.40	1.68	2.50	1.64	317
448	649	37	5	2	245	0.32	2.12	3.15	2.07	387
448	659	28	5	2.5	287	0.40	1.68	2.50	1.64	394
468	618	8.5	5	2.5	208	0.37	1.80	2.69	1.76	160
468	614	19.5	5	2.5	229	0.37	1.80	2.69	1.76	198
468	675	12.5	5	2.5	263	0.40	1.68	2.50	1.64	330
468	678	28.5	5	2.5	288	0.40	1.68	2.50	1.64	412
488	646	9	5	2.5	217	0.37	1.80	2.69	1.76	179
488	644	20.5	5	2.5	239	0.37	1.80	2.69	1.76	225
496	714	13	6	3	276	0.40	1.68	2.50	1.64	395
496	712	30	6	3	305	0.40	1.68	2.50	1.64	493
508	665	9	5	2.5	223	0.37	1.80	2.69	1.76	189
508	664	20.5	5	2.5	246	0.37	1.80	2.69	1.76	236
516	743	13.5	6	3	281	0.40	1.68	2.50	1.64	442
516	738	31	6	3	329	0.40	1.68	2.50	1.64	548
522	637	25	4	2	242	0.40	1.68	2.50	1.64	175
528	686	9	5	2.5	230	0.37	1.80	2.69	1.76	202
528	683	21	5	2.5	250	0.37	1.80	2.69	1.76	247
536	780	14.5	6	3	296	0.40	1.68	2.50	1.64	528
536	773	33	6	3	331	0.40	1.68	2.50	1.64	678
558	740	11	5	2.5	250	0.37	1.80	2.69	1.76	265
558	738.5	23	5	2.5	276	0.37	1.80	2.69	1.76	331
566	820	16.5	6	3	303	0.38	1.77	2.64	1.73	620
566	822.5	34	6	3	340	0.39	1.74	2.59	1.70	774
588	709	22.5	5	1.5	257	0.35	1.95	2.90	1.91	232
588	705.5	25	5	1.5	231	0.34	1.98	2.94	1.93	198
588	777	11	5	2.5	277	0.39	1.74	2.59	1.70	340
588	774	24.5	5	2.5	272	0.33	2.03	3.02	1.98	415
596	865	17	6	3	326	0.40	1.68	2.50	1.64	1,310
596	865	35	6	3	362	0.40	1.68	2.50	1.64	894

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Metric system sizes

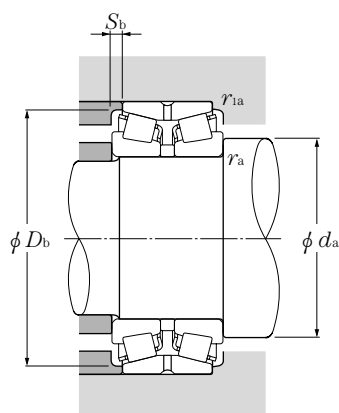


d 570~1,115mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing numbers
	D	B <sub>1</sub>	C	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>		static	dynamic		
570	815	345	265	6	3	6,300	16,600	640,000	1,690,000	CRI-11401
590	780	255	178	5	2.5	3,900	10,500	400,000	1,070,000	CRI-11801
600	870	200	176	6	3	3,900	8,550	400,000	870,000	4130/600
	980	300	264	7.5	4	7,400	15,400	755,000	1,570,000	☆4131/600G2
	980	388	300	7.5	4	8,600	18,400	875,000	1,870,000	☆4231/600G2
670	830	180	145	4	1.5	3,050	9,150	310,000	935,000	☆CRI-13402
	880	185	130	4	2	3,500	9,100	360,000	930,000	☆CRI-13401
	1,090	336	295	7.5	4	9,250	19,700	945,000	2,010,000	☆4131/670G2
	1,090	392	336	7.5	4	10,500	24,800	1,070,000	2,530,000	☆4231/670G2
710	1,030	236	208	7.5	4	5,900	13,900	600,000	1,420,000	☆4130/710G2
	1,030	236	208	7.5	4	5,750	14,000	590,000	1,430,000	☆CRI-14207
	1,030	295	236	7.5	4	6,900	16,100	700,000	1,640,000	☆CRI-14209
800	1,150	350	256	7.5	4	9,350	24,200	955,000	2,470,000	☆CRI-16001
1,040	1,290	350	270	6	2.5	8,850	30,000	900,000	3,050,000	☆CRI-20802
1,115	1,460	300	220	5	2.5	8,200	24,000	835,000	2,450,000	☆CRI-22303

① Minimum allowable dimension for chamfer dimension r or r<sub>1</sub>.

Remarks: 1. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_0 F_a$$

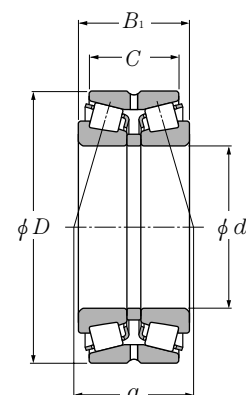
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions					Load center mm $a$	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ min	$D_b$ min	mm $S_b$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_0$	
598	781	40	5	2.5	318	0.35	1.95	2.90	1.91	512
612	754	38.5	4	2	288	0.39	1.74	2.59	1.70	291
628	828	12	5	2.5	277	0.37	1.80	2.69	1.76	348
636	925	18	6	3	350	0.40	1.68	2.50	1.64	858
636	923	44	6	3	380	0.38	1.77	2.64	1.73	1,050
688	809	17.5	3	1.5	283	0.40	1.68	2.50	1.64	201
688	845.5	27.5	3	2	317	0.45	1.51	2.25	1.48	277
706	1,033	20.5	6	3	397	0.40	1.68	2.50	1.64	1,180
706	1,021	28	6	3	397	0.37	1.80	2.69	1.76	1,410
746	974	14	6	3	327	0.37	1.80	2.69	1.76	640
746	974	14	6	3	324	0.36	1.87	2.79	1.83	654
746	982	29.5	6	3	362	0.39	1.73	2.58	1.69	810
836	1,092.5	47	6	3	400	0.37	1.80	2.69	1.76	1,119
1,068	1,260	40	5	2	472.3	0.40	1.68	2.50	1.64	975
1,137	1,396.5	40	4	2	554	0.47	1.43	2.12	1.40	1,255

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

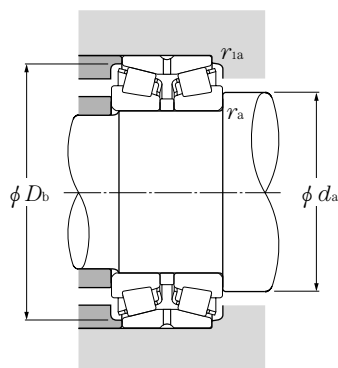
Inch system sizes



**d 139.700 ~ 204.788mm**

Boundary dimensions				Basic load ratings				Bearing numbers
mm				dynamic	static	dynamic	static	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>	<i>C</i> <sub>r</sub> kN	<i>C</i> <sub>0r</sub> kN	<i>C</i> <sub>r</sub> kgf	<i>C</i> <sub>0r</sub> kgf	
<b>139.700</b>	307.975	200.025	155.575	1,740	2,780	177,000	283,000	T-HH234031/HH234011D+A
<b>152.400</b>	307.975	200.025	146.050	1,510	2,620	154,000	267,000	T-EE450601/451215D+A
	307.975	200.025	155.575	1,740	2,780	177,000	283,000	T-HH234048/HM234011D+A
<b>160.325</b>	288.925	142.875	111.125	1,160	2,140	119,000	218,000	T-HM237532/HM237510D+A
<b>165.100</b>	288.925	142.875	111.125	940	1,900	96,000	194,000	T-94649/94114D+A
	288.925	142.875	111.125	1,160	2,140	119,000	218,000	T-HM237535/HM237510D+A
<b>174.625</b>	288.925	142.875	111.125	940	1,900	96,000	194,000	T-94687/94114D+A
	288.925	142.875	111.125	1,160	2,140	119,000	218,000	T-HM237542/HM237510D+A
<b>177.800</b>	288.925	142.875	111.125	940	1,900	96,000	194,000	T-94700/94114D+A
	288.925	142.875	111.125	1,160	2,140	119,000	218,000	T-HM237545/HM237510D+A
	320.675	185.738	138.112	1,300	2,480	132,000	253,000	EE222070/222127D+A
	320.675	185.738	138.112	1,590	2,790	162,000	285,000	T-H239640/H239612D+A
<b>187.325</b>	282.575	107.950	79.375	625	1,230	63,500	126,000	T-87737/87112D+A
	320.675	185.738	138.112	1,590	2,790	162,000	285,000	T-H239649/H239612D+A
<b>190.500</b>	282.575	107.950	79.375	625	1,230	63,500	126,000	T-87750/87112D+A
	317.500	146.050	111.125	1,060	2,310	108,000	236,000	T-93750/93127D+A
	368.300	193.675	136.525	1,670	3,200	170,000	330,000	T-EE420751/421451D+A
<b>193.675</b>	282.575	107.950	79.375	625	1,230	63,500	126,000	T-87762/87112D+A
<b>200.025</b>	292.100	125.415	101.600	915	2,070	93,000	211,000	T-M241543/M241510D+A
	317.500	146.050	111.125	1,060	2,310	108,000	236,000	T-93787/93727D+A
	384.175	238.125	193.675	2,500	5,450	255,000	555,000	T-H247535/H247510D+A
<b>203.200</b>	276.225	90.485	73.025	585	1,380	60,000	141,000	LM241149/LM241110D+A
	282.575	101.600	82.550	620	1,570	63,000	160,000	T-67983/67920D+A
	292.100	125.415	101.600	915	2,070	93,000	211,000	T-M241547/M241510D+A
	317.500	146.050	111.125	1,060	2,310	108,000	236,000	T-93800/93127D+A
	368.300	193.675	136.525	1,670	3,200	170,000	330,000	T-EE420801/421451D+A
	406.400	196.850	127.000	1,650	2,950	168,000	300,000	EE114080/114161D+A
<b>204.788</b>	292.100	125.415	101.600	915	2,070	93,000	211,000	T-M241549/M241510D+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.



## Equivalent bearing load

**dynamic**

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

## static

$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

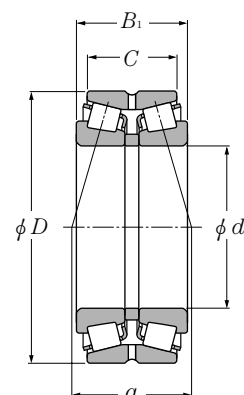
Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_0$	kg
min	max	max	max						(approx.)
180	285	9.7	2.3	149.5	0.33	2.07	3.08	2.02	65.9
189	275	9.7	2.3	143.5	0.33	2.07	3.08	2.02	62.6
191	285	9.7	2.3	149.5	0.33	2.07	3.08	2.02	62.6
192	271	7	1.5	119.5	0.32	2.12	3.15	2.07	36.1
197	272	7	1.5	141	0.47	1.44	2.15	1.41	35.1
195	271	7	1.5	119.5	0.32	2.12	3.15	2.07	35.1
204	272	7	1.5	141	0.47	1.44	2.15	1.41	33.1
202	271	7	1.5	119.5	0.32	2.12	3.15	2.07	33.1
207	272	7	1.5	141	0.47	1.44	2.15	1.41	32.4
205	271	7	1.5	119.5	0.32	2.12	3.15	2.07	32.4
204	298	3.5	1.5	152.5	0.40	1.68	2.50	1.64	57.8
202	301	3.5	1.5	141	0.32	2.12	3.15	2.07	57.8
207	267	3.5	1.5	115.5	0.42	1.62	2.42	1.59	21.1
214	301	5.5	1.5	141	0.32	2.12	3.15	2.07	55
209	267	3.5	1.5	115.5	0.42	1.62	2.42	1.59	20.6
218	300	4.3	1.5	162	0.52	1.29	1.92	1.26	41.2
227	334.4	6.4	1.5	163	0.40	1.68	2.50	1.64	84.1
211	267	3.5	1.5	115.5	0.42	1.62	2.42	1.59	20
219	279	3.5	1.5	116	0.33	2.03	3.02	1.98	24.8
225	300	4.3	1.5	162	0.52	1.29	1.92	1.26	38.8
241	362	6.4	1.5	182	0.33	2.03	3.02	1.98	112
220	267	3.5	0.8	95	0.32	2.12	3.15	2.07	13.8
222	275	3.5	0.8	133.5	0.51	1.33	1.97	1.30	17.1
221	279	3.5	1.5	116	0.33	2.03	3.02	1.98	24.1
227	300	4.3	1.5	162	0.52	1.29	1.92	1.26	37.1
230	334.4	3.3	1.5	163	0.40	1.68	2.50	1.64	79.9
246	374	6.4	3.3	252.5	0.80	0.85	1.26	0.83	107
223	279	3.5	1.5	116	0.33	2.03	3.02	1.98	23.8



# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

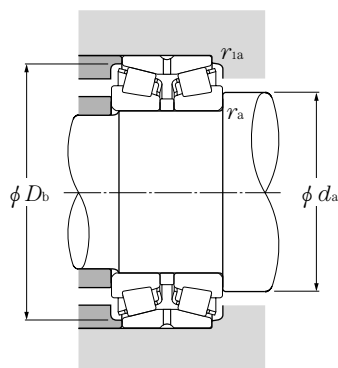
Inch system sizes



**d 206.375~241.300mm**

	Boundary dimensions				Basic load ratings				Bearing numbers
	mm				dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>		<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	
<b>206.375</b>	282.575	101.600	82.550		620	1,570	63,000	160,000	T-67985/67920D+A
	336.550	211.138	169.862		1,900	4,050	194,000	415,000	T-H242649/H242610D+A
<b>209.550</b>	282.575	101.600	82.550		620	1,570	63,000	160,000	T-67989/67920D+A
	317.500	146.050	111.125		1,060	2,310	108,000	236,000	T-93825/93127D+A
<b>212.725</b>	285.750	98.425	76.200		650	1,640	66,500	167,000	T-LM742745/LM742710D+A
<b>215.900</b>	285.750	98.425	76.200		650	1,640	66,500	167,000	T-LM742749/LM742710D+A
	287.338	69.850	50.800		355	810	36,000	82,500	543085/543115D+A
<b>220.662</b>	314.325	131.762	106.362		1,070	2,450	109,000	250,000	T-M244249/M244210D+A
<b>228.460</b>	431.800	196.850	111.125		1,470	2,480	150,000	253,000	EE113091/113171D+A
<b>228.600</b>	327.025	114.300	82.550		815	1,900	83,000	194,000	T-8573/8520D+A
	355.600	152.400	111.125		1,100	2,540	112,000	259,000	T-96900/96140D+A
	355.600	152.400	111.125		1,230	2,510	125,000	256,000	T-EE130902/131401D+A
	355.600	152.400	114.300		1,230	2,490	126,000	254,000	HM746646/HM746610D+A
	358.775	152.400	117.475		1,390	3,300	142,000	335,000	T-M249732/M249710D+A
	400.050	187.325	136.525		1,620	3,250	165,000	330,000	EE430900/431576D+A
	488.950	254.000	152.400		2,700	4,550	275,000	460,000	☆T-HH949549/HH949510DG2+A
<b>231.775</b>	358.775	152.400	117.475		1,390	3,300	142,000	335,000	T-M249734/M249710D+A
<b>234.950</b>	311.150	98.425	73.025		695	1,640	71,000	167,000	LM446349/LM446310D+A
	327.025	114.300	82.550		815	1,900	83,000	194,000	T-8575/8520D+A
	355.600	152.400	111.125		1,100	2,540	112,000	259,000	T-96925/96140D+A
	384.175	238.125	193.675		2,500	5,450	255,000	555,000	T-H247549/H247510D+A
<b>237.330</b>	358.775	152.400	117.475		1,390	3,300	142,000	335,000	T-M249736/M249710D+A
<b>241.300</b>	327.025	114.300	82.550		815	1,900	83,000	194,000	T-8578/8520D+A
	349.148	127.000	101.600		940	2,010	96,000	205,000	EE127095/127136D+A
	368.300	120.650	85.725		790	1,630	80,500	166,000	EE170950/171450D+A
	393.700	157.162	109.538		1,340	2,800	137,000	286,000	T-EE275095/275156D+A
	406.400	215.900	184.150		2,460	4,750	251,000	485,000	T-H249148/H249111D+A
	444.500	209.550	158.750		2,380	4,250	243,000	430,000	☆T-EE923095/923176DG2+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

## static

$$P_{or} = F_r + Y_0 F_a$$

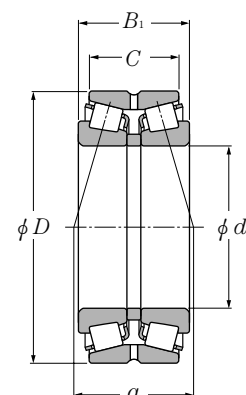
For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_0$	kg
min	max	max	max						(approx.)
224	275	3.5	0.8	133.5	0.51	1.33	1.97	1.30	16.5
231	318	3.3	1.5	160	0.33	2.03	3.02	1.98	65.2
227	275	3.5	0.8	133.5	0.51	1.33	1.97	1.30	16
233	300	4.3	1.5	161	0.52	1.29	1.92	1.26	36.3
230	279	3.5	0.8	126.5	0.48	1.40	2.09	1.37	15.7
233	279	3.5	0.8	126.5	0.48	1.40	2.09	1.37	15.1
232	276	3.5	0.8	94.5	0.38	1.77	2.64	1.73	11
245	300	6.4	1.5	122.5	0.33	2.03	3.02	1.98	28.9
274	397	6.4	3.3	276	0.88	0.77	1.14	0.75	116
255	313	6.4	1.5	129.5	0.41	1.66	2.47	1.62	27.3
260	334	7	1.5	185	0.59	1.14	1.70	1.12	49.4
257	330	6.8	1.5	132.5	0.33	2.04	3.04	2.00	49.4
258	339	6.4	1.5	164	0.47	1.43	2.12	1.40	49.4
256	343	3.5	1.5	138.5	0.33	2.03	3.02	1.98	50.9
271	367	10.5	1.5	181.5	0.44	1.54	2.29	1.50	88.3
297	456	6.4	1.5	333.5	0.94	0.72	1.07	0.70	207
263	343	6.4	1.5	138.5	0.33	2.03	3.02	1.98	50
252	301	3.5	0.8	111.5	0.36	1.86	2.77	1.82	17.9
259	313	6.4	1.5	129.5	0.41	1.66	2.47	1.62	25.9
265	334	7	1.5	185	0.59	1.14	1.70	1.12	47.5
269	362	6.4	1.5	181.5	0.33	2.03	3.02	1.98	96.2
267	343	6.4	1.5	138.5	0.33	2.03	3.02	1.98	48.2
264	313	6.4	1.5	129.5	0.41	1.66	2.47	1.62	24.3
267	329	6.4	1.5	133	0.35	1.91	2.85	1.87	35.4
269	337	6.4	1.5	132.5	0.36	1.85	2.76	1.81	40.8
278	378.1	6.4	1.5	162	0.40	1.68	2.50	1.64	66.5
273	385	6.4	1.5	177.5	0.33	2.03	3.02	1.98	101
277	407	6.4	1.5	170.5	0.34	2.00	2.98	1.96	128

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

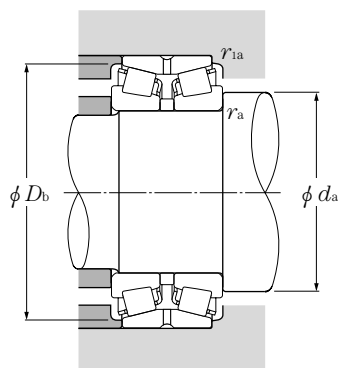
Inch system sizes



**d 244.475~280.192mm**

	Boundary dimensions				Basic load ratings				Bearing numbers
	mm				dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>		<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	
<b>244.475</b>	381.000	171.450	127.000		1,300	2,880	132,000	294,000	EE126097/126151D+A
<b>247.650</b>	368.300	120.650	85.725		790	1,630	80,500	166,000	EE170975/171451D+A
	406.400	247.650	203.200		2,830	6,000	289,000	615,000	HH249949/HH249910D+A
<b>249.250</b>	381.000	171.450	127.000		1,300	2,880	132,000	294,000	EE126098/126151D+A
<b>254.000</b>	323.850	63.500	50.800		216	635	22,000	64,500	29875/29820D+A
	358.775	152.400	117.475		1,390	3,300	142,000	335,000	T-M249749/M249710D+A
	365.125	130.175	98.425		1,050	2,380	107,000	243,000	T-EE134100/134144D+A
	393.700	157.162	109.538		1,340	2,800	137,000	286,000	T-EE275100/275156D+A
	422.275	178.592	139.700		2,000	3,600	204,000	365,000	T-HM252343/HM252310D+A
	533.400	276.225	165.100		2,880	5,200	293,000	530,000	HH953749/HH953710D+A
<b>260.350</b>	365.125	130.175	98.425		1,050	2,380	107,000	243,000	T-EE134102/134144D+A
	400.050	155.575	107.950		1,220	2,460	124,000	251,000	EE221026/221576D+A
	419.100	184.150	136.525		1,580	3,250	161,000	330,000	EE435102/435165D+A
	422.275	178.592	139.700		2,000	3,600	204,000	365,000	T-HM252348/HM252310D+A
	488.950	254.000	196.850		3,000	5,950	310,000	605,000	EE295102/295192D+A
<b>263.525</b>	355.600	127.000	101.600		1,070	2,670	110,000	272,000	T-LM451345/LM451310D+A
<b>266.700</b>	323.850	63.500	50.800		216	635	22,000	64,500	29880/29820D+A
	355.600	127.000	101.600		1,070	2,670	110,000	272,000	T-LM451349/LM451310D+A
	393.700	157.162	109.538		1,340	2,800	137,000	286,000	T-EE275105/275156D+A
<b>269.875</b>	381.000	158.750	123.825		1,520	3,600	155,000	365,000	T-M252349/M252310D+A
<b>273.050</b>	393.700	157.162	109.538		1,340	2,800	137,000	286,000	T-EE275108/275156D+A
<b>279.400</b>	374.650	104.775	79.375		810	2,020	82,500	206,000	L555233/L555210D+A
	469.900	200.025	149.225		2,030	4,350	207,000	445,000	EE722110/722186D+A
	488.950	254.000	196.850		3,000	5,950	310,000	605,000	EE295110/295192D+A
<b>279.982</b>	380.898	139.700	107.950		1,140	3,100	116,000	315,000	T-LM654642/LM654610D+A
<b>280.192</b>	406.400	149.225	117.475		1,310	3,100	133,000	315,000	EE128111/128160D+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.



## Equivalent bearing load

**dynamic**

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

## static

$$P_{or} = F_r + Y_o F_a$$

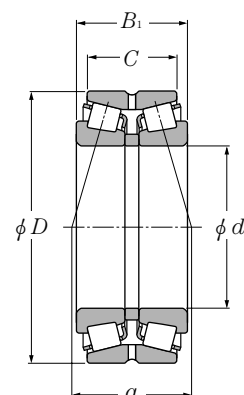
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	kg
min	max	max	max						(approx.)
275	358	6.4	1.5	186.5	0.52	1.31	1.95	1.28	64
274	337	6.4	1.5	132.5	0.36	1.85	2.76	1.81	39.2
284	383	6.4	1.5	189.5	0.33	2.03	3.02	1.98	112
279	358	6.4	1.5	186.5	0.52	1.31	1.95	1.28	62.2
267	312	1.5	0.8	105	0.35	1.95	2.90	1.91	11.2
274	343	3.5	1.5	138.5	0.33	2.03	3.02	1.98	42.8
281	347	6.4	1.5	140	0.37	1.80	2.69	1.76	39.2
287	378	6.4	1.5	162.5	0.40	1.68	2.50	1.64	62.2
287	400	6.8	1.5	160	0.33	2.03	3.02	1.98	88.9
328	496	6.4	1.5	365.5	0.94	0.71	1.06	0.70	266
286	347	6.4	1.5	140	0.37	1.80	2.69	1.76	37.3
296	372	9.7	1.5	159	0.39	1.71	2.54	1.67	62.7
295	395	6.4	1.5	225.5	0.61	1.11	1.66	1.09	86.8
292	400	6.8	1.5	160	0.33	2.03	3.02	1.98	86.3
299	451	6.4	1.5	196.5	0.31	2.16	3.22	2.12	190
283	343	3.5	1.5	136.5	0.36	1.87	2.79	1.83	31.7
277	312	1.5	0.8	105	0.35	1.95	2.90	1.91	9.37
285	343	3.5	1.5	136.5	0.36	1.87	2.79	1.83	30.7
296	378	6.4	1.5	162.5	0.40	1.68	2.50	1.64	57.6
296	364	6.4	1.5	146.5	0.33	2.03	3.02	1.98	52.3
301	378	6.4	1.5	162.5	0.40	1.68	2.50	1.64	55.3
300	362	3.5	1.5	138.5	0.40	1.68	2.50	1.64	28.5
321	433	9.7	1.5	187.5	0.38	1.78	2.65	1.74	125
303	451	1.3	1.5	196.5	0.31	2.16	3.22	2.12	179
302	368	3.5	1.5	163	0.43	1.56	2.33	1.53	40.7
309	384	6.8	1.5	158	0.39	1.75	2.61	1.71	56.5

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Inch system sizes

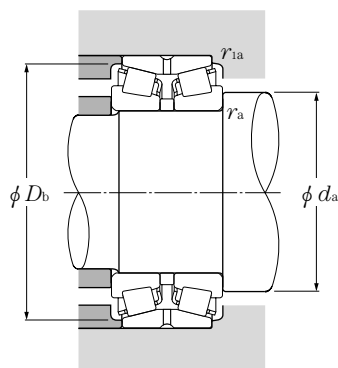


**d 285.750~355.600mm**

	Boundary dimensions				Basic load ratings				Bearing numbers
	mm				dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>		<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	
<b>285.750</b>	358.775	76.200	53.975		450	1,080	46,000	110,000	545112/545142DA+A
	380.898	139.700	107.950		1,140	3,100	116,000	315,000	T-LM654649/LM654610D+A
	501.650	203.200	120.650		1,960	3,700	200,000	375,000	EE147112/147198D+A
<b>288.925</b>	406.400	165.100	130.175		1,740	4,150	177,000	425,000	M255449/M255410DA+A
<b>292.100</b>	374.650	104.775	79.375		810	2,020	82,500	206,000	L555249/L555210D+A
	469.900	200.025	149.225		2,030	4,350	207,000	445,000	EE722115/722186D+A
<b>298.450</b>	444.500	146.050	98.425		1,080	2,300	110,000	234,000	EE291175/291751D+A
<b>299.974</b>	495.300	301.625	247.650		4,200	9,800	425,000	1,000,000	☆HH258248/HH258210DG2+A
<b>300.038</b>	422.275	174.625	136.525		1,950	4,800	198,000	490,000	☆T-HM256849/HM256810DG2+A
<b>304.800</b>	393.700	107.950	82.550		835	2,070	85,500	211,000	L357049/L357010D+A
	438.048	165.100	120.650		1,380	3,200	141,000	325,000	T-EE129120X/129120D+A
	444.500	146.050	98.425		1,080	2,300	110,000	234,000	EE291201/291751D+A
	495.300	196.850	146.050		2,120	4,700	216,000	480,000	EE724120/724196D+A
<b>317.500</b>	444.500	146.050	98.425		1,080	2,300	110,000	234,000	EE291250/291751D+A
	447.675	180.975	146.050		1,990	4,800	203,000	485,000	T-HM259049/HM259010D+A
	622.300	304.800	174.625		3,250	6,250	330,000	640,000	☆H961649/H961610DG2+A
<b>330.200</b>	482.600	133.350	88.900		1,200	2,870	122,000	293,000	T-EE161300/161901D+A
	482.600	177.800	127.000		1,640	3,950	167,000	400,000	EE526130/526191D+A
<b>333.375</b>	469.900	190.500	152.400		2,320	5,500	237,000	565,000	HM261049/HM261010DA+A
<b>342.900</b>	457.098	142.875	104.775		1,210	3,300	124,000	335,000	LM961548/LM961511D+A
	533.400	165.100	114.300		1,830	3,450	187,000	355,000	EE971354/972102D+A
<b>346.075</b>	482.600	133.350	88.900		1,200	2,870	122,000	293,000	T-EE161363/161901D+A
	488.950	200.025	158.750		2,540	6,400	259,000	650,000	☆T-HM262749/HM262710DG2+A
<b>349.250</b>	514.350	193.675	152.400		2,040	4,550	209,000	465,000	EE333137/333203D+A
<b>355.600</b>	444.500	136.525	111.125		1,120	3,500	114,000	355,000	T-L163149/L163110D+A
	482.600	133.350	88.900		1,200	2,870	122,000	293,000	T-EE161400/161901D+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.

2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

## static

$$P_{or} = F_r + Y_o F_a$$

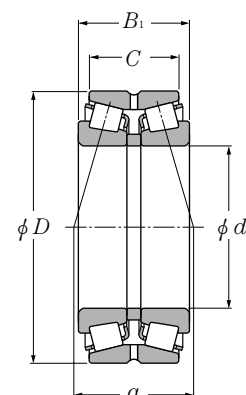
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	kg
min	max	max	max						(approx.)
302	345	3.5	1.5	144	0.49	1.38	2.05	1.34	15.7
306	368	3.5	1.5	163	0.43	1.56	2.33	1.53	38.7
329	468	6.4	3.3	307	0.84	0.81	1.20	0.79	151
316	388	6.4	1.5	157	0.34	2.00	2.98	1.96	59
309	362	3.5	1.5	138.5	0.40	1.68	2.50	1.64	25.2
330	433	9.7	1.5	187.5	0.38	1.78	2.65	1.74	118
332	414	8	1.5	164	0.38	1.78	2.65	1.74	69.3
342	467	6.4	1.5	231	0.33	2.03	3.02	1.98	205
328	403	6.4	1.5	163.5	0.34	2.00	2.99	1.96	67.4
329	380	6.4	1.5	133	0.36	1.87	2.79	1.83	29.3
334	411	6.4	1.5	179.5	0.42	1.62	2.42	1.59	71.4
337	414	8	1.5	164	0.38	1.78	2.65	1.74	66.8
359	459	16	1.5	195	0.40	1.68	2.50	1.64	131
346	414	8	1.5	164	0.38	1.78	2.65	1.74	61.8
341	428	3.5	1.5	162	0.33	2.02	3.00	1.97	78.8
410	582	14.3	3.3	430	0.95	0.71	1.06	0.70	382
367	455	7	1.5	200.5	0.50	1.35	2.01	1.32	72.2
360	454	6.4	1.5	183.5	0.39	1.72	2.56	1.68	96.3
363	449	6.4	1.5	179.5	0.33	2.02	3.00	1.97	91.3
367	443.1	3.3	1.5	253.5	0.71	0.95	1.41	0.93	57.1
373	496	4.8	1.5	170	0.33	2.03	3.02	1.98	120
379	455	7	1.5	200.5	0.50	1.35	2.01	1.32	66
377	467	6.4	1.5	187.5	0.33	2.02	3.00	1.97	104
382	478	6.4	1.5	197.5	0.36	1.85	2.76	1.81	121
374	430	3.5	1.5	151	0.31	2.20	3.27	2.15	42.5
386	455	7	1.5	200.5	0.50	1.35	2.01	1.32	62.1

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

Inch system sizes

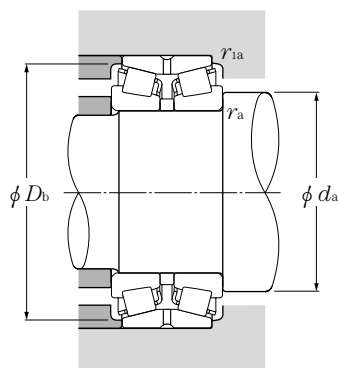


**d 355.600~482.600mm**

	Boundary dimensions				Basic load ratings				Bearing numbers
	mm				dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>		<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	
<b>355.600</b>	501.650	155.575	107.950		1,550	3,650	158,000	375,000	T-EE231400/231976D+A
	514.350	193.675	152.400		2,040	4,550	209,000	465,000	EE333140/333203D+A
<b>368.249</b>	523.875	214.312	169.862		2,610	6,550	266,000	665,000	☆HM265049/HM265010DG2+A
<b>371.475</b>	501.650	155.575	107.950		1,550	3,650	158,000	375,000	T-EE231462/231976D+A
<b>381.000</b>	508.000	139.700	88.900		920	2,270	94,000	232,000	EE192150/192201D+A
	546.100	222.250	177.800		2,950	7,350	300,000	750,000	T-HM266446/HM266410D+A
	590.550	244.475	193.675		3,650	9,450	375,000	965,000	☆T-M268730/M268710DG2+A
<b>384.175</b>	441.325	68.262	52.388		360	1,060	36,500	108,000	LL365340/LL365310D+A
	546.100	222.250	177.800		2,950	7,350	300,000	750,000	T-HM266448/HM266410D+A
	546.100	222.250	177.800		3,150	8,050	320,000	820,000	☆T-HM266449/HM266410DG2+A
<b>385.762</b>	514.350	177.800	139.700		2,120	5,550	216,000	565,000	LM665949/LM665910D+A
<b>396.875</b>	539.750	142.875	101.600		1,330	3,300	136,000	335,000	EE234156/234213D+A
	546.100	158.750	117.475		1,330	3,300	136,000	335,000	EE234156/234216D+A
<b>406.400</b>	539.750	142.875	101.600		1,330	3,300	136,000	335,000	EE234160/234213D+A
	609.600	187.325	123.825		2,110	4,650	215,000	475,000	EE911600/912401D+A
<b>415.925</b>	590.550	244.475	193.675		3,650	9,450	375,000	965,000	☆T-M268749/M268710DG2+A
<b>431.800</b>	571.500	155.575	111.125		1,880	4,950	191,000	505,000	T-LM869448/LM869410D+A
	603.250	159.639	104.775		1,670	4,100	171,000	420,000	EE241701/242377D+A
	673.100	192.639	127.000		2,560	5,350	261,000	545,000	EE571703/572651D+A
<b>447.675</b>	635.000	257.175	206.375		4,150	11,100	425,000	1,130,000	☆M270749/M270710DAG2+A
<b>457.200</b>	596.900	165.100	120.650		1,670	4,700	170,000	480,000	EE244180/244236D+A
	730.148	254.000	177.800		4,350	8,750	445,000	895,000	EE671801/672875D+A
<b>479.425</b>	679.450	276.225	222.250		4,900	13,000	500,000	1,320,000	☆T-M272749/M272710DG2+A
<b>482.600</b>	615.950	184.150	146.050		2,320	6,700	237,000	685,000	☆LM272249/LM272210DG2+A
	634.873	177.800	142.875		2,000	6,150	204,000	630,000	EE243190/243251D+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





## Equivalent bearing load

**dynamic**

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

## static

$$P_{or} = F_r + Y_o F_a$$

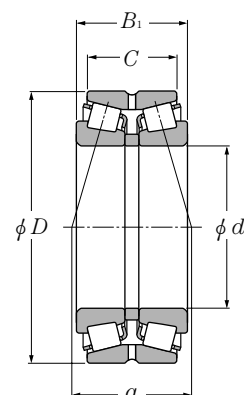
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
mm				mm					kg
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
min	max	max	max						
388	481	6.4	1.5	195	0.44	1.53	2.28	1.50	85.2
387	478	6.4	1.5	197.5	0.36	1.85	2.76	1.81	117
400	499	6.4	1.5	198.5	0.33	2.03	3.02	1.98	142
400	481	6.4	1.5	195	0.44	1.53	2.28	1.50	77.3
410	482	6.4	1.5	221	0.53	1.27	1.89	1.24	69
415	519	6.4	1.5	208	0.33	2.03	3.02	1.98	149
425	561	6.4	1.5	226	0.33	2.03	3.02	1.98	247
399	433	3.5	0.8	128.5	0.34	1.99	2.96	1.94	14.1
417	519	6.4	1.5	208	0.33	2.03	3.02	1.98	146
417	520	6.4	1.5	208	0.33	2.03	3.02	1.98	146
415	495	6.4	1.5	210.5	0.42	1.61	2.40	1.58	90
428	516	6.4	1.5	214.5	0.47	1.43	2.12	1.40	83.6
428	516	6.4	1.5	230.5	0.47	1.43	2.12	1.40	97.7
435	518	6.4	1.5	214.5	0.47	1.43	2.12	1.40	78.8
443	570	6.8	1.5	209	0.38	1.76	2.62	1.72	169
451	561	6.4	1.5	226	0.33	2.03	3.02	1.98	188
457	549	3.3	1.5	255.5	0.55	1.24	1.84	1.21	95.3
446	561	6.4	1.5	252.5	0.53	1.28	1.91	1.25	124
472	630	6.4	1.5	235.5	0.40	1.68	2.50	1.64	225
484	606	6.4	1.5	240	0.33	2.03	3.02	1.98	228
494	570	9.7	1.5	219	0.40	1.67	2.49	1.63	106
507	681	9.7	1.5	266	0.39	1.72	2.56	1.68	360
516	648	6.4	1.5	258.5	0.33	2.03	3.02	1.98	310
513	597	6.4	1.5	206.5	0.33	2.03	3.02	1.98	118
516	609	6.4	1.5	215	0.34	1.98	2.94	1.93	148

# ● Double Row Tapered Roller Bearings (Outside Direction)

NTN

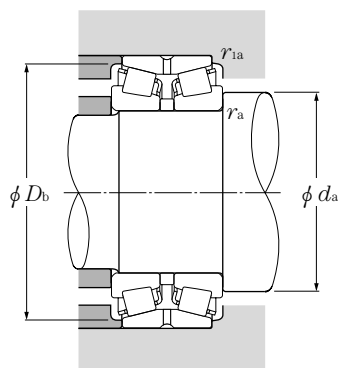
Inch system sizes



**d 488.950~1,270.000mm**

	Boundary dimensions				Basic load ratings				Bearing numbers
	mm				dynamic kN	static kN	dynamic kgf	static kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>1</sub>	<i>C</i>		<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>0r</sub>	
<b>488.950</b>	634.873 660.400	180.975 206.375	136.525 158.750		2,500 3,150	6,950 8,050	255,000 320,000	710,000 820,000	LM772748/LM772710DA+A ☆T-EE640192/640261DG2+A
<b>489.026</b>	634.873	177.800	142.875		2,000	6,150	204,000	630,000	EE243192/243251D+A
<b>498.475</b>	634.873	177.800	142.875		2,000	6,150	204,000	630,000	EE243196/243251D+A
<b>508.000</b>	838.200	304.800	222.250		5,450	12,800	555,000	1,310,000	EE426200/426331D+A
<b>533.400</b>	812.800	269.875	187.325		4,450	10,400	455,000	1,060,000	EE626210/626321D+A
<b>536.575</b>	761.873	311.150	247.650		5,900	15,200	600,000	1,550,000	☆M276449/M276410DG2+A
<b>549.275</b>	692.150	174.625	136.525		2,320	6,950	236,000	710,000	L476549/L476510D+A
<b>558.800</b>	736.600	165.100	114.300		2,050	5,400	209,000	550,000	EE542220/542291D+A
	736.600	187.328	138.112		2,500	6,750	255,000	690,000	EE843220/843291D+A
	736.600	225.425	177.800		3,150	8,800	325,000	895,000	LM377449/LM377410D+A
<b>571.500</b>	812.800	333.375	263.525		6,950	18,300	710,000	1,870,000	☆M278749/M278710DAG2+A
<b>609.600</b>	787.400	206.375	158.750		3,750	10,100	380,000	1,030,000	☆EE649240/649311DG2+A
	812.800	190.500	146.050		2,860	7,850	292,000	800,000	EE743240/743321D+A
<b>660.400</b>	812.800	203.200	158.750		3,250	10,300	330,000	1,060,000	L281148/L281110DA+A
<b>711.200</b>	914.400	190.500	139.700		3,100	8,950	315,000	910,000	☆EE755280/755361DG2+A
<b>723.900</b>	914.400	187.325	139.700		3,100	8,950	315,000	910,000	☆EE755285/755361DG2+A
<b>977.900</b>	1,130.300	139.700	101.600		2,050	7,200	209,000	735,000	LL687949/LL687910D+A
<b>1,270.000</b>	1,435.100	146.050	101.600		2,730	10,100	278,000	1,030,000	LL889049/LL889010D+A

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

## static

$$P_{or} = F_r + Y_o F_a$$

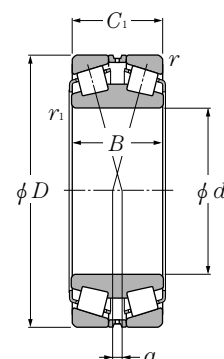
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions				Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$r_{as}$	$r_{las}$	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	kg
min	max	max	max						(approx.)
522	613	6.4	1.5	262	0.47	1.43	2.12	1.40	130
522	627	6.4	1.5	216	0.31	2.20	3.27	2.15	178
522	609	6.4	1.5	215	0.34	1.98	2.94	1.93	140
528	609	6.4	1.5	215	0.34	1.98	2.94	1.93	129
564	768	9.7	3.3	357	0.48	1.41	2.09	1.37	592
585	762	9.7	3.3	322.5	0.44	1.52	2.26	1.49	444
576	726	6.4	1.5	290	0.33	2.03	3.02	1.98	398
579	666	6.4	1.5	239	0.38	1.79	2.67	1.75	135
594	705	6.4	3.3	298	0.51	1.32	1.96	1.29	166
591	708	6.4	1.5	231	0.34	1.98	2.94	1.93	189
594	708	6.4	1.5	256.5	0.35	1.95	2.90	1.91	227
615	774	6.4	1.5	308	0.33	2.03	3.02	1.98	487
642	764	6.4	1.5	254	0.33	2.03	3.02	1.98	235
645	765	6.4	3.3	254	0.33	2.06	3.06	2.01	241
693	789	6.4	1.5	667.5	0.37	1.80	2.69	1.76	199
750	876	6.4	3.3	295.5	0.38	1.77	2.64	1.73	275
756	876	5.5	3.3	295.5	0.38	1.77	2.64	1.73	256
1,010	1,100	6.4	3.3	376	0.44	1.54	2.30	1.51	196
1,305	1,400	6.4	3.3	586.5	0.58	1.17	1.75	1.15	285

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

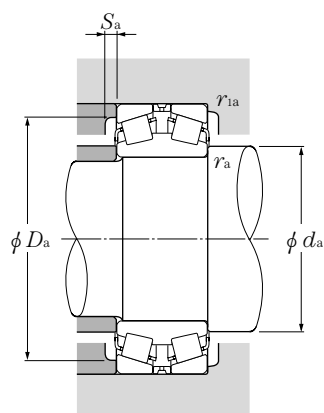
Metric system sizes



**d 100~180mm**

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing numbers
	D	B	C <sub>1</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶		static C <sub>0r</sub>	dynamic C <sub>r</sub>		
<b>100</b>	250	116	116	4	4	790	1,050	80,500	107,000	CRD-2051
<b>105</b>	170	90	90	2.5	2.5	420	860	42,500	87,500	CRD-2151
<b>110</b>	180	56	56	2	2.5	298	485	30,500	49,500	323122
	190	102	98	3	1.5	515	950	52,500	96,500	CRD-2252
	200	82	82	2.5	1	555	865	56,500	88,500	CRD-2254
<b>120</b>	170	120	120	2	2	415	890	42,500	91,000	CRD-2421
	180	46	46	2	2.5	230	375	23,500	38,000	323024
	200	62	62	2	2.5	370	610	38,000	62,500	323124
	215	113	113	2.5	2.5	735	1,300	75,000	133,000	CRD-2420
	280	150	140	3	3	1,130	1,840	115,000	187,000	CRD-2422
<b>130</b>	190	120	120	1.5	1.5	415	840	42,000	85,500	CRD-2652
	195	120	120	2.5	1.5	475	1,040	48,500	106,000	CRD-2654
	200	52	52	2	2.5	294	490	29,900	50,000	323026
	210	64	64	2	2.5	410	675	42,000	69,000	323126
<b>140</b>	210	53	53	2	2.5	300	535	30,500	54,500	323028
	225	68	68	2.5	3	390	650	40,000	66,000	323128
<b>150</b>	225	56	56	2.5	3	355	630	36,000	64,500	323030
	250	80	80	2.5	3	600	1,040	61,500	106,000	323130
	250	110	110	2.5	2.5	855	1,590	87,500	162,000	CRD-3052
<b>160</b>	240	60	60	2.5	3	430	765	44,000	78,000	323032
	240	110	110	2.5	2.5	750	1,560	76,500	159,000	CRD-3254
	260	130	130	3	1.5	880	1,740	89,500	178,000	CRD-3253
	270	86	86	2.5	3	675	1,180	69,000	120,000	323132E1
	270	116	116	2.5	2.5	835	1,640	85,500	167,000	CRD-3208
<b>170</b>	260	67	67	2.5	3	490	865	50,000	88,000	323034
	280	76	76	2.5	2.5	550	900	56,000	92,000	CRD-3413
	280	88	88	2.5	3	725	1,270	74,000	130,000	323134E1
<b>177.000</b>	248.000	90.488	90.488	3.3	1.57	515	1,180	52,500	120,000	* CRD-3502
<b>180</b>	280	74	74	2.5	3	580	1,050	59,500	107,000	323036E1

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ "—" means the load center is out side the inner ring.  
Remarks: 1. The marked "\*" bearings are inch system sizes.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

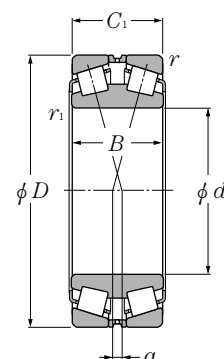
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions						Load <sup>®</sup> center mm	Constant	Axial load factors			Mass
mm											kg
$d_a$ max	$D_a$ max	$D_a$ min	$S_a$ min	$r_{as}$ max	$r_{las}$ max	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
135	232	200	4.5	3	3	-14.5	0.40	1.68	2.50	1.64	30
124.5	158	148.5	2.5	2	2	-22.5	0.29	2.35	3.50	2.30	7.92
124	170	160	8	2	2	1	0.33	2.03	3.02	1.98	5.6
128.5	176	160	5	2.5	1.5	-16	0.42	1.62	2.42	1.59	12.1
128.5	188	170.5	4	2	1	-2	0.42	1.61	2.39	1.57	11.3
130.5	160	149	0.4	2	2	-49	0.25	2.69	4.00	2.63	8.57
134	170	164	8	2	2	12	0.37	1.80	2.69	1.76	4.08
134	190	175	8	2	2	6.5	0.37	1.80	2.69	1.76	7.82
141	203	180.5	4.3	2	2	-22	0.35	1.95	2.90	1.91	17.7
172	266	237	7.3	2.5	2.5	-28.5	0.33	2.03	3.02	1.98	47.3
144	181.5	171	2	1.5	1.5	-43.5	0.33	2.03	3.02	1.98	11.4
142.5	183	166	2.7	2	1.5	-26.5	0.47	1.43	2.12	1.40	12.5
144	190	184	8	2	2	13.5	0.37	1.80	2.69	1.76	5.92
144	200	185	8	2	2	7.5	0.37	1.80	2.69	1.76	8.58
155	200	190	8	2	2	10	0.37	1.84	2.74	1.80	6.4
156	213	200	10	2	2.5	8	0.37	1.80	2.69	1.76	10.7
165	213	205	10	2	2.5	15.5	0.37	1.80	2.69	1.76	7.76
168	238	220	10	2	2.5	6.5	0.37	1.80	2.69	1.76	15.7
169	238	213	4.4	2	2	1	0.46	1.47	2.19	1.44	21.7
175	228	215	10	2	2.5	17.5	0.37	1.80	2.69	1.76	9.46
175.5	228	211	2.1	2	2	-14.5	0.33	2.03	3.02	1.98	17.3
175	246	213	3.5	2.5	1.5	15	0.62	1.09	1.62	1.06	26.9
178	258	240	10	2	2.5	8	0.37	1.80	2.69	1.76	20
184.5	258	227	4.2	2	2	-4.5	0.40	1.68	2.50	1.64	27.1
185	248	235	10	2	2.5	18	0.37	1.80	2.69	1.76	12.8
195	264	245	4.5	2	2	18	0.40	1.68	2.50	1.64	18.5
188	268	250	10	2	2.5	8.5	0.37	1.80	2.69	1.76	21.5
189	234	218	3.4	3.3	1.5	15.5	0.44	1.52	2.26	1.49	13.45
198	268	250	10	2	2.5	17	0.37	1.80	2.69	1.76	16.5

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

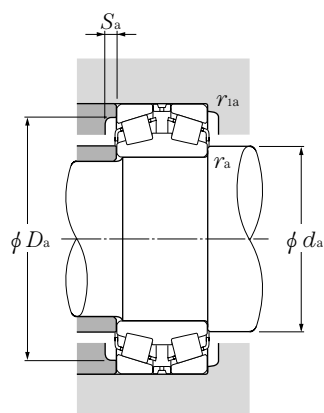
Metric system sizes



d 180~280mm

d	Boundary dimensions						Basic load ratings			Bearing numbers
	D	B	C <sub>1</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
	mm	mm	mm	mm	mm	mm	kN	kgf	kgf	
180	300	96	96	3	4	885	1,530	90,500	156,000	323136E1
	330	190	190	5	1.5	1,710	3,250	175,000	330,000	CRD-3615
190	290	75	75	2.5	3	615	1,110	63,000	113,000	323038E1
	320	104	104	3	4	985	1,710	100,000	174,000	323138
195	305	120	120	2.5	3	1,130	2,200	115,000	225,000	CRD-3906
200	310	82	82	2.5	3	720	1,320	73,000	135,000	323040E1
	340	112	112	3	4	1,090	1,910	111,000	195,000	323140
	340	140	140	3	3	1,490	2,780	152,000	283,000	CRD-4019
	340	150	150	3	1.5	1,290	2,490	131,000	254,000	CRD-4015
	420	235	235	5	2	3,000	5,350	305,000	545,000	☆CRD-4020
220	320	76.2	76.2	2.5	2.5	630	1,220	64,500	125,000	CRD-4405
	340	90	90	3	4	880	1,650	89,500	168,000	323044E1
	370	120	120	4	5	1,220	2,260	125,000	230,000	323144
240	360	92	92	3	4	910	1,770	92,500	181,000	323048E1
	395	124	124	4	4	1,400	2,630	143,000	268,000	CRD-4804
	400	128	128	4	5	1,400	2,600	142,000	265,000	323148
	400	160	160	4	4	1,770	3,550	181,000	360,000	CRD-4805
	400	160	160	4	4	1,770	3,550	181,000	36,000	CRD-4811
241.300	355.524	109.538	109.538	3.3	1.57	940	2,010	96,000	205,000	* CRD-4803
259.5	481	250	250	5	2	3,250	6,650	330,000	680,000	CRD-5215
260	400	104	104	4	5	1,150	2,190	117,000	223,000	323052
	400	150	150	4	4	1,470	3,200	150,000	325,000	CRD-5212
	440	144	144	4	5	1,960	3,750	200,000	380,000	323152
260.350	419.100	180.000	158.750	3.3	1.57	1,580	3,250	161,000	330,000	* CRD-5217
270	395	94	94	3	4	1,090	2,290	111,000	233,000	CRD-5403
280	420	106	106	4	5	1,200	2,340	123,000	238,000	323056
	460	146	146	5	6	1,940	3,650	198,000	375,000	323156

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ "—" means the load center is out side the inner ring.  
 Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.  
 B-154



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

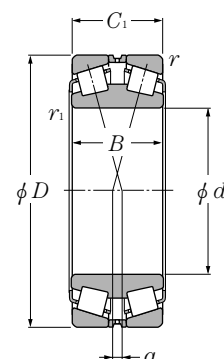
Abutment and fillet dimensions						Load <sup>®</sup> center mm	Constant	Axial load factors			Mass
mm											kg
$d_a$ max	$D_a$ max	min	$S_a$ min	$r_{as}$ max	$r_{las}$ max	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
200	286	265	12	2.5	3	8	0.37	1.80	2.69	1.76	27.2
197.5	238	264	3.5	4	1.5	-5.5	0.58	1.17	1.75	1.15	71.6
208	278	260	12	2	2.5	17.5	0.37	1.80	2.69	1.76	17.9
212	306	285	12	2.5	3	8.5	0.37	1.80	2.69	1.76	34
215	293	267	5.4	2	2.5	-1	0.37	1.80	2.69	1.76	32.5
218	298	280	12	2	2.5	19	0.37	1.80	2.69	1.76	21.7
222	326	300	12	2.5	3	8.5	0.37	1.80	2.69	1.76	41.7
226.5	326	290	7.8	2.5	2.5	-1.5	0.40	1.68	2.50	1.64	52.1
224	326	277.5	3.1	2.5	1.5	-2.5	0.42	1.60	2.39	1.57	55.9
248.5	398	341	6.3	4	2	-48.5	0.37	1.80	2.69	1.76	158
244	308	288	5.5	2	2	28.5	0.39	1.74	2.59	1.70	20.3
242	326	310	12	2.5	3	21.5	0.37	1.80	2.69	1.76	29.8
248	352	325	14	3	4	14	0.40	1.68	2.50	1.64	52.2
262	346	330	14	2.5	3	23.5	0.37	1.80	2.69	1.76	32.6
276	377	345	6.6	3	3	20.5	0.40	1.68	2.50	1.64	60.2
268	382	355	14	3	4	17	0.40	1.68	2.50	1.64	64.6
275	382	343	7.5	3	3	-1	0.40	1.68	2.50	1.64	80.7
275	382	342	7.5	3	3	-1	0.40	1.68	2.50	1.64	80.7
265	341	311.5	3.5	3.3	1.5	11	0.35	1.91	2.85	1.87	36.8
297	459	385	3.5	4	2	-7	0.49	1.38	2.06	1.35	202
285	382	365	14	3	4	25	0.37	1.80	2.69	1.76	47.3
289	382	345	3.4	3	3	15	0.43	1.57	2.34	1.53	68.3
290	422	385	16	3	4	16.5	0.40	1.68	2.50	1.64	90
287	405	355	7.5	3.3	1.5	49.5	0.61	1.11	1.66	1.09	95.7
300	381	353	7.1	2.5	3	27	0.35	1.95	2.90	1.91	38.5
305	402	385	16	3	4	29.5	0.37	1.80	2.69	1.76	51.2
315	438	400	16	4	5	16	0.40	1.68	2.50	1.64	95.8



# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

Metric system sizes

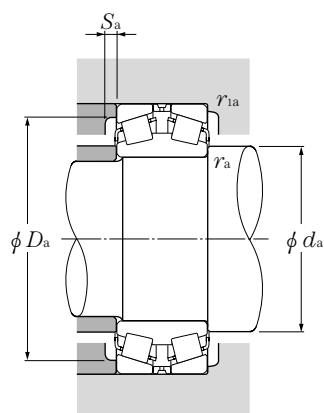


d 300~420mm

d	Boundary dimensions						Basic load ratings			Bearing numbers
	D	B	C <sub>1</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❷	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
	mm	mm	mm	mm	mm	mm	kN	kgf	kgf	
300	460	118	118	4	5	1,610	3,150	165,000	320,000	323060
	500	160	160	5	6	2,100	4,050	214,000	415,000	323160
304.648	438.048	128.575	138.112	4.83	3.3	1,480	3,450	151,000	350,000	*CRD-6132
320	480	121	121	4	5	1,580	3,100	162,000	315,000	323064
	510.8	220	220	4	4	3,100	6,850	320,000	700,000	CRD-6409
	540	176	176	5	6	2,500	4,900	255,000	500,000	323164
	580	240	240	5	3	3,700	7,800	380,000	795,000	☆CRD-6415
	620	280	280	5	5	5,250	10,300	535,000	1,050,000	☆CRD-6420
340	470	110	110	3	3	1,320	3,050	134,000	310,000	CRD-6804
	520	133	133	5	6	1,890	3,750	193,000	380,000	323068
	580	190	190	5	6	3,350	6,500	345,000	660,000	323168
350	480	110	110	4	4	1,400	3,150	143,000	320,000	CRD-7015
	590	192	192	5	5	3,200	6,100	330,000	620,000	CRD-7011
360	540	134	134	5	6	2,050	4,200	209,000	430,000	323072
	600	192	192	5	6	3,200	6,500	325,000	660,000	323172
	680	320	330	6	6	6,500	13,900	665,000	1,410,000	☆CRD-7207
379	681.5	307	307	6	6	6,450	14,300	660,000	1,460,000	☆CRD-7615
	681.5	307	307	6	6	6,450	14,300	660,000	1,460,000	☆CRD-7621
380	560	135	135	5	6	2,080	4,350	213,000	445,000	323076
	620	194	194	5	6	3,350	6,700	340,000	685,000	323176
385	530	180	180	4	2	2,370	5,750	241,000	590,000	CRD-7701
400	590	142	142	5	5	2,400	5,050	245,000	515,000	☆CRD-8008
	590	142	142	5	5	2,080	4,150	212,000	425,000	☆CRD-8012
	600	148	148	5	6	2,530	5,450	258,000	555,000	323080
	650	200	200	6	6	3,750	7,850	385,000	800,000	323180
	650	250	250	6	6	4,900	10,500	500,000	1,070,000	☆CRD-8017
	730	340	340	7.5	7.5	7,400	15,900	755,000	1,620,000	☆CRD-8029
	780	380	380	7.5	7.5	8,800	17,700	900,000	1,800,000	☆CRD-8040
420	520	90	90	4	1.5	1,020	2,700	105,000	275,000	CRD-8402

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ "—" means the load center is out side the inner ring.

Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_o F_a$$

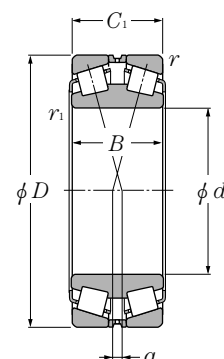
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions						Load <sup>®</sup> center mm	Constant	Axial load factors			Mass
mm											kg
$d_a$ max	$D_a$ max	min	$S_a$ min	$r_{as}$ max	$r_{las}$ max	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
330	442	425	16	3	4	31	0.37	1.80	2.69	1.76	70.7
335	478	440	16	4	5	18	0.40	1.68	2.50	1.64	126
327	416	379.5	5.2	4.8	3.3	73	0.60	1.12	1.67	1.10	62.8
350	462	440	16	3	4	34	0.37	1.80	2.69	1.76	76.3
358	493	442.5	2.5	3	3	-23	0.35	1.95	2.90	1.91	173
355	518	480	18	4	5	18.5	0.40	1.68	2.50	1.64	164
379	558	480	5.5	2.5	4	3	0.43	1.57	2.34	1.53	288
360	598	544	19.5	4	4	-16.5	0.43	1.57	2.34	1.53	390
369	456	424	6.5	2.5	2.5	49.5	0.40	1.68	2.50	1.64	57.8
370	498	480	18	4	5	36	0.37	1.80	2.69	1.76	101
380	558	515	18	4	5	35.5	0.40	1.68	2.50	1.64	207
376.5	462	436	5.4	3	3	57.5	0.42	1.62	2.42	1.59	58.7
407	568	515	3.5	4	4	6	0.33	2.03	3.02	1.98	218
395	518	495	18	4	5	41	0.37	1.80	2.69	1.76	107
400	578	535	18	4	5	25.5	0.40	1.68	2.50	1.64	218
431	652	552	16.5	5	5	-12	0.47	1.43	2.12	1.40	570
456	653.5	575	19.5	5	5	-18.5	0.40	1.68	2.50	1.64	525
456	653.5	575	15.5	5	5	-18.5	0.40	1.68	2.50	1.64	525
418	538	504	18	4	5	44.5	0.37	1.80	2.69	1.76	110
428	598	537.5	20	4	5	29	0.40	1.68	2.50	1.64	231
407.5	512	476	7.5	2	3	26	0.43	1.57	2.34	1.53	116
440.5	568	533	8.5	4	4	28.5	0.33	2.03	3.02	1.98	134
440.5	568	533	8.5	4	4	36.5	0.33	2.03	3.02	1.98	134
440	578	550	18	4	5	45	0.37	1.80	2.69	1.76	146
445	622	580	20	5	5	32.5	0.40	1.68	2.50	1.64	259
457.5	622	565	11.5	5	5	-1	0.39	1.74	2.59	1.70	325
470	694	604	20.5	6	6	-32	0.40	1.68	2.50	1.64	672
477.5	744	639	16.6	6	6	-47	0.40	1.68	2.50	1.64	895
441	502	486	6.5	1.5	3	99.5	0.47	1.43	2.12	1.40	41.9

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

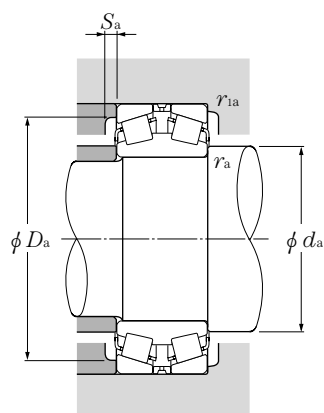
Metric system sizes



d 420~630mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing numbers
	D	B	C <sub>1</sub>	r <sub>s</sub> min <sup>①</sup>	r <sub>ls</sub> min <sup>①</sup>		static	dynamic		
	mm						C <sub>or</sub>	C <sub>r</sub>		
420	620	150	150	5	6	2,650	5,900	270,000	600,000	323084
	700	224	224	6	6	4,800	9,700	490,000	990,000	323184
	735	406	406	7.5	7.5	8,600	20,400	880,000	2,080,000	☆CRD-8405
440	650	157	157	6	6	2,600	5,450	266,000	560,000	323088
	720	226	226	6	6	5,000	10,300	510,000	1,050,000	323188
	730	290	290	6	6	6,400	13,900	650,000	1,420,000	☆CRD-8822
450	720	300	300	7.5	4	5,550	12,600	565,000	1,290,000	☆CRD-9011
458	830.5	377	377	7.5	7.5	9,250	20,100	940,000	2,050,000	☆CRD-9203
460	680	163	163	6	6	3,050	6,600	310,000	670,000	323092
	760	240	240	7.5	7.5	4,900	10,300	500,000	1,050,000	323192
	860	420	420	6	6	10,500	22,700	1,070,000	2,320,000	☆CRD-9204
480	700	165	165	6	6	3,050	6,700	310,000	685,000	323096
	790	248	248	7.5	7.5	5,300	11,100	540,000	1,130,000	323196
481.228	615.950	158.750	158.750	6.4	3.3	2,240	6,450	228,000	660,000	☆*CRD-9605
482.600	615.950	158.750	158.750	6.4	3.3	2,240	6,450	228,000	660,000	☆*CRD-9709
	615.950	163.750	158.750	6.4	3.3	2,430	7,100	248,000	725,000	☆*CRD-9708
500	670	150	150	5	2.5	2,400	6,100	245,000	625,000	CRD-10005
	720	167	167	6	6	3,100	6,900	315,000	700,000	3230/500
	820	256	256	9.5	9.5	5,250	11,900	535,000	1,210,000	CRD-10008
	830	264	264	7.5	7.5	6,400	14,000	650,000	1,420,000	☆3231/500G2
560	820	195	195	6	6	4,550	10,300	465,000	1,050,000	☆CRD-11207
585.788	771.525	230.188	230.188	6.4	3.3	4,300	12,900	440,000	1,310,000	☆*CRD-11701
600	760	115	115	4	4	1,740	4,400	178,000	450,000	CRD-12005
	870	380	400	7.5	4	8,500	24,100	865,000	2,460,000	☆CRD-12006
630	920	212	212	7.5	7.5	5,350	12,800	545,000	1,310,000	☆3230/630G2

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ② "—" means the load center is out side the inner ring.  
 Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.  
 B-158



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

$$P_{or} = F_r + Y_o F_a$$

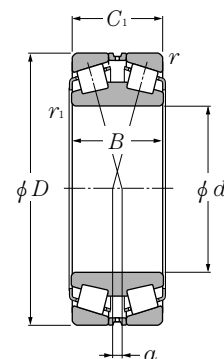
For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Abutment and fillet dimensions						Load <sup>®</sup> center mm	Constant	Axial load factors			Mass
mm											kg
$d_a$ max	$D_a$ max	$d_a$ min	$S_a$ min	$r_{as}$ max	$r_{las}$ max	$a$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
460	598	570	20	4	5	48.5	0.37	1.80	2.69	1.76	154
465	672	625	25	5	5	60	0.40	1.68	2.50	1.64	346
489.5	699	609	6.2	6	6	-67	0.37	1.80	2.69	1.76	780
480	622	600	20	5	5	53.5	0.37	1.80	2.69	1.76	177
485	692	645	25	5	5	44	0.40	1.68	2.50	1.64	361
503.5	702	632	10	5	5	-24.5	0.33	2.03	3.02	1.98	513
500.5	684	619.5	15.5	3	6	-8	0.43	1.57	2.34	1.53	483
537	794.5	690.5	19.5	6	6	-29	0.40	1.68	2.50	1.64	890
500	652	620	25	5	5	56.5	0.37	1.80	2.69	1.76	201
525	724	660	25	6	6	34.5	0.40	1.68	2.50	1.64	431
547	832	709.5	19.5	5	5	-43	0.40	1.68	2.50	1.64	1,120
520	672	640	25	5	5	63	0.37	1.80	2.69	1.76	211
547.5	754	688.5	30	6	6	36	0.40	1.68	2.50	1.64	478
500	577	557	6.5	3.3	6.4	133.5	0.61	1.11	1.66	1.09	108
500	577	557	6.5	3.3	6.4	133.5	0.61	1.11	1.66	1.09	108
504	585	567.5	6.5	3.3	6.4	35.5	0.33	2.03	3.02	1.98	121
536	648	609	7.5	2	4	75.5	0.40	1.68	2.50	1.64	148
540	692	655	25	5	5	61.5	0.37	1.80	2.69	1.76	221
583.5	776	709	7.5	8	8	44	0.40	1.68	2.50	1.64	535
550	794	740	30	6	6	37.5	0.40	1.68	2.50	1.64	570
620	792	738	11	5	5	54.5	0.35	1.92	2.86	1.88	347
622.5	743.5	698	10.5	3.3	6.4	31.5	0.35	1.95	2.90	1.91	285
639	742	708	5	3	3	110.5	0.37	1.80	2.69	1.76	120
641	834	747	7.5	3	6	5.5	0.47	1.43	2.12	1.40	758
399	884	825.5	8.5	6	6	93.5	0.40	1.68	2.50	1.64	479

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

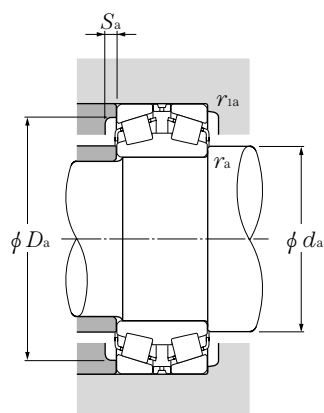
Metric system sizes



**d 660.4~1,400mm**

d	Boundary dimensions						Basic load ratings			Bearing numbers
	mm						dynamic kN	static kgf	static kgf	
	D	B	C <sub>1</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
<b>660.400</b>	762.000	98.425	101.600	3	2.5	1,250	4,250	128,000	435,000	* CRD-13209
<b>700</b>	890	150	160	5	5	2,850	8,600	291,000	880,000	CRD-14003
<b>710</b>	1,150	345	345	12	12	10,900	25,300	1,120,000	2,580,000	☆3231/710BG2
<b>850</b>	1,250	370	370	7.5	7.5	11,800	31,500	1,210,000	3,250,000	☆CRD-17003
<b>1,400</b>	1,600	180	180	5	2.5	4,400	16,300	445,000	1,670,000	CRD-28003

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ "—" means the load center is out side the inner ring.  
 Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

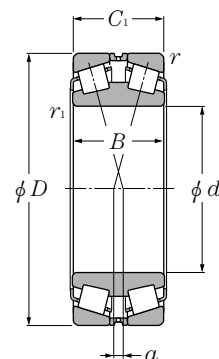
Abutment and fillet dimensions						Load <sup>®</sup> center mm	Constant $e$	Axial load factors			Mass kg (approx.)
$d_a$ max	$D_a$ max	$D_a$ min	$S_a$ min	$r_{as}$ max	$r_{las}$ max			$Y_1$	$Y_2$	$Y_o$	
684	748	724	4.5	2	2.5	198.5	0.53	1.27	1.89	1.24	71.1
746	868	817	6.5	4	4	− 5.5	0.45	1.50	2.24	1.47	224
828	1,098	1,012	1.5	10	10	23	0.32	2.12	3.15	2.07	1,464
942	1,214	1,104	13.5	6	6	81.5	0.40	1.68	2.50	1.64	1,562
1,437.5	1,578	1,524	11.5	2	4	445.5	0.55	1.24	1.84	1.21	534



# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

Inch system sizes

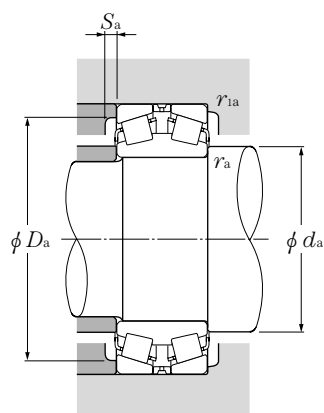


**d 152.400~276.225mm**

Boundary dimensions				Basic load ratings			
mm				dynamic	static	dynamic	static
d	D	B	C <sub>1</sub>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>152.400</b>	307.975	171.450	161.924	1,510	2,620	154,000	267,000
<b>177.800</b>	288.925	123.825	123.825	940	1,900	96,000	194,000
	288.925	123.825	123.825	1,160	2,140	119,000	218,000
<b>187.325</b>	319.964	161.925	168.276	1,590	2,790	162,000	285,000
<b>190.500</b>	365.049	152.400	158.750	1,670	3,200	171,000	330,000
<b>203.200</b>	317.500	123.825	123.825	1,060	2,310	108,000	236,000
	365.049	152.400	158.750	1,670	3,200	171,000	330,000
<b>206.375</b>	336.550	184.150	180.976	1,900	4,050	194,000	415,000
<b>215.900</b>	285.750	85.725	85.725	650	1,640	66,500	167,000
<b>219.075</b>	358.775	200.025	196.850	2,130	4,550	217,000	465,000
<b>220.662</b>	314.325	115.888	115.886	1,070	2,450	109,000	250,000
<b>228.600</b>	400.050	139.700	139.700	1,500	2,870	153,000	293,000
<b>241.478</b>	349.148	107.950	107.950	940	2,010	96,000	205,000
<b>244.475</b>	327.025	92.075	92.075	835	2,050	85,000	209,000
	381.000	146.050	146.050	1,300	2,880	132,000	294,000
<b>247.650</b>	406.400	219.075	215.900	2,830	6,000	289,000	615,000
<b>254.000</b>	358.775	130.175	130.175	1,390	3,300	142,000	335,000
	368.300	92.862	92.710	790	1,630	80,500	166,000
<b>260.350</b>	400.050	114.300	119.060	1,220	2,460	124,000	251,000
<b>266.700</b>	355.600	109.538	107.950	1,070	2,670	110,000	272,000
<b>269.875</b>	381.000	136.525	136.525	1,520	3,600	155,000	365,000
<b>276.225</b>	393.700	130.175	130.175	1,340	2,800	137,000	286,000

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

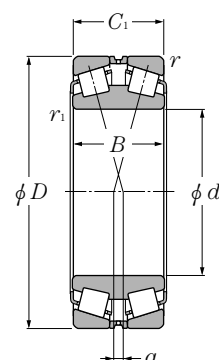
Bearing numbers	Abutment and fillet dimensions				Load <sup>®</sup> center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>as</sub>	<i>r</i> <sub>las</sub>			<i>Y</i> <sub>1</sub>	<i>Y</i> <sub>2</sub>	<i>Y</i> <sub>o</sub>	
	min	min	max	max						
T-450900D/451212+A	187.5	269	9.7	6.8	−40.5	0.33	2.07	3.08	2.02	60.5
T-94706D/94113+A	195	259	1.5	3.3	1.5	0.47	1.44	2.15	1.41	31.6
T-HM237546D/HM237510+A	194	266	1.5	3.3	−20	0.32	2.12	3.15	2.07	31.6
T-H239649D/H239610+A	209	293	3.3	4.8	−35	0.32	2.12	3.15	2.07	53.7
T-EE420750D/421437+A	221	329	3.3	3.3	−5.5	0.40	1.68	2.50	1.64	72.8
T-93800D/93125+A	222	286	1.5	3.3	19	0.52	1.29	1.92	1.26	36.3
T-EE420800D/421437+A	230	329	3.3	3.3	−5.5	0.40	1.68	2.50	1.64	69.0
T-H242649D/H242610+A	227	306	1.5	3.3	−35	0.33	2.03	3.02	1.98	64.1
T-LM742749D/LM742710+A	229	266	2.3	3.3	35	0.48	1.40	2.09	1.37	14.8
H244849D/H244810A+A	242	323	1.5	6.4	−42	0.33	2.03	3.02	1.98	79.5
T-M244249D/M244210+A	235	293	1.5	3.3	−97	0.33	2.03	3.02	1.98	28.6
EE529091D/529157+A	256	367	3.3	3.3	−8	0.31	2.18	3.24	2.13	74.2
EE127097D/127135+A	258	325	1.5	3.3	12.5	0.35	1.91	2.85	1.87	33.8
LM247748D/LM247710A+A	257	310	1.5	3.3	12.5	0.32	2.09	3.11	2.04	21.4
EE126096D/126150+A	269	343	3.3	4.8	28.5	0.52	1.31	1.95	1.28	61.4
HH249949D/HH249910+A	278	366	3.3	6.4	−42	0.33	2.03	3.02	1.98	112
T-M249748D/M249710+A	273	335	3.3	3.3	−1	0.33	2.03	3.02	1.98	41.2
EE170975D/171450+A	269	340	1.5	3.3	20	0.36	1.85	2.76	1.81	32.5
EE221025D/221575+A	290	366	6.4	6.4	24.5	0.39	1.71	2.54	1.67	52.0
T-LM451349D/LM451310+A	281	335	1.5	3.3	16	0.36	1.87	2.79	1.83	29.9
T-M252349D/M252310+A	290	356	3.3	3.3	0.5	0.33	2.03	3.02	1.98	48.6
T-EE275109D/275155+A	294	366	1.5	6.4	22.5	0.40	1.68	2.50	1.64	50.5

① "−" means the load center is out side the inner ring.

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

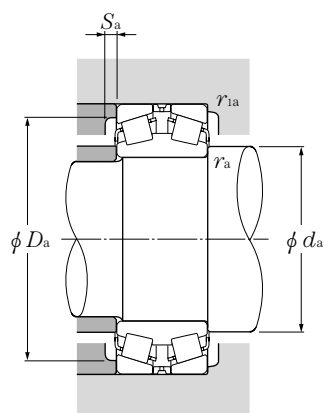
Inch system sizes



**d 279.400~384.175mm**

Boundary dimensions				Basic load ratings			
mm				dynamic	static	dynamic	static
				kN		kgf	
d	D	B	C <sub>1</sub>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>279.400</b>	393.700	127.000	127.000	1,130	2,670	115,000	272,000
	457.200	244.475	244.475	3,550	7,900	365,000	805,000
<b>285.750</b>	380.898	117.475	117.475	1,140	3,100	116,000	315,000
<b>288.925</b>	406.400	144.462	144.463	1,740	4,150	177,000	425,000
<b>300.038</b>	422.275	150.812	150.813	1,950	4,800	198,000	490,000
<b>304.648</b>	438.048	131.762	131.762	1,440	3,250	147,000	330,000
<b>304.800</b>	419.100	130.175	130.175	1,400	3,400	142,000	350,000
	444.500	107.950	111.126	1,080	2,300	110,000	234,000
<b>304.902</b>	412.648	128.588	128.588	1,500	3,700	153,000	380,000
<b>305.000</b>	438.048	134.145	138.112	1,530	3,450	156,000	350,000
<b>317.500</b>	422.275	128.588	128.587	1,320	3,500	135,000	360,000
	447.675	158.750	158.750	1,990	4,800	203,000	485,000
<b>333.375</b>	469.900	166.688	166.688	2,320	5,500	237,000	565,000
<b>343.052</b>	457.098	122.238	122.238	1,380	3,450	141,000	350,000
<b>346.075</b>	488.950	174.625	174.625	2,490	6,150	254,000	630,000
<b>347.662</b>	469.900	138.112	138.112	1,860	4,550	190,000	465,000
<b>355.600</b>	444.500	114.300	112.712	1,120	3,500	114,000	355,000
	457.200	120.650	120.650	1,440	3,900	147,000	400,000
	482.600	128.588	133.350	1,630	3,850	166,000	390,000
	488.950	153.988	153.988	2,030	5,000	207,000	510,000
	501.650	111.125	127.000	1,550	3,650	158,000	375,000
<b>368.300</b>	523.875	185.738	185.738	2,610	6,550	266,000	665,000
<b>384.175</b>	546.100	193.675	193.675	3,150	8,050	320,000	820,000

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

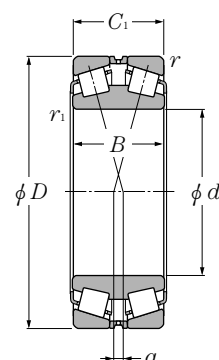
Bearing numbers	Abutment and fillet dimensions				Load <sup>®</sup> center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>as</sub>	<i>r</i> <sub>las</sub>			<i>Y</i> <sub>1</sub>	<i>Y</i> <sub>2</sub>	<i>Y</i> <sub>o</sub>	
	min	min	max	max						
EE135111D/135155+A HH255149D/HH255110+A	297 309	368 412	1.5 1.5	6.4 6.4	24 −49	0.40 0.33	1.68 2.03	2.50 3.02	1.64 1.98	48.1 158
T-LM654648D/LM654610+A	302	356	1.5	3.3	36	0.43	1.56	2.33	1.53	36.7
M255449D/M255410A+A	310	379	3.3	3.3	3	0.34	2.00	2.98	1.96	58.1
☆T-HM256849D/HM256810G2+A	322	394	3.3	3.3	66	0.34	2.00	2.99	1.96	65.6
EE329119D/329172+A	327	410	3.3	3.3	11.5	0.33	2.04	3.04	2.00	64.3
M257149D/M257110+A EE291200D/291750+A	322 337	392 416	1.5 7.9	6.4 1.5	12.5 34	0.33 0.38	2.03 1.78	3.02 2.65	1.98 1.74	53.1 55.7
M257248D/M257210+A	325	388	3.3	3.3	9.5	0.32	2.12	3.15	2.07	49
M757449D/M757410+A	328	407	3.3	4.8	44	0.47	1.43	2.12	1.40	65.3
LM258648D/LM258610+A T-HM259049D/HM259010+A	334 340	398 418	1.5 3.3	3.3 3.3	9 3	0.32 0.33	2.10 2.02	3.13 3.00	2.06 1.97	49.1 77.9
HM261049D/HM261010A+A	357	439	3.3	3.3	3.5	0.33	2.02	3.00	1.97	90.1
LM761649D/LM761610+A	361	432	1.5	3.3	63	0.47	1.43	2.12	1.40	55
☆T-HM262749D/HM262710G2+A	371	456	3.3	3.3	2	0.33	2.02	3.00	1.97	103
M262449D/M262410+A	369	443	3.3	3.3	14.5	0.33	2.03	3.02	1.98	68
T-L163149D/L163110+A LM263149D/LM263110+A LM763449D/LM763410+A M263349D/M263310+A T-EE231401D/231975+A	370 372 375 374 382	422 434 453 459 472	1.5 1.5 1.5 1.5 3.3	3.3 3.3 3.3 3.3 3.3	22.5 23 62.5 11.5 62	0.31 0.32 0.47 0.33 0.44	2.20 2.12 1.43 2.03 1.53	3.27 3.15 2.14 3.02 2.28	2.15 2.07 1.40 1.98 1.50	40.1 49.1 67.4 85.4 68.5
☆HM265049D/HM265010G2+A	394	487	3.3	6.4	1.5	0.33	2.03	3.02	1.98	130
☆T-HM266449D/HM266410G2+A	411	507	3.3	6.4	1.5	0.33	2.03	3.02	1.98	153

① "—" means the load center is out side the inner ring.

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

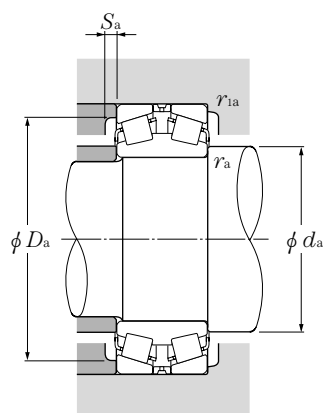
Inch system sizes



**d 393.700~584.200mm**

Boundary dimensions				dynamic kN	Basic load ratings		
mm					static	dynamic	static
<i>d</i>	<i>D</i>	<i>B</i>	<i>C</i> <sub>1</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>
393.700	546.100	138.112	138.112	1,870	5,100	191,000	520,000
406.400	546.100	138.112	138.112	1,870	5,100	191,000	520,000
	590.550	193.675	193.674	2,820	6,800	287,000	690,000
409.575	546.100	161.925	161.925	2,390	6,350	243,000	645,000
415.925	590.550	209.550	209.550	3,650	9,450	375,000	965,000
431.800	571.500	133.350	136.526	1,880	4,950	191,000	505,000
	571.500	161.925	161.925	2,160	5,900	221,000	600,000
447.675	635.000	223.838	223.838	4,150	11,100	425,000	1,130,000
457.200	596.900	133.350	136.525	2,070	5,200	211,000	530,000
	596.900	133.350	136.525	2,070	5,200	211,000	530,000
479.425	679.450	238.125	238.125	4,900	13,000	500,000	1,320,000
482.600	615.950	158.750	158.750	2,320	6,700	237,000	685,000
	647.700	201.612	201.612	3,700	10,100	380,000	1,030,000
489.026	634.873	153.988	153.988	2,500	6,950	255,000	710,000
501.650	711.200	250.825	250.825	5,050	13,700	515,000	1,390,000
514.350	673.100	203.200	203.200	3,450	10,200	355,000	1,040,000
519.112	736.600	258.762	258.762	5,300	14,400	540,000	1,470,000
536.575	761.873	269.875	269.875	5,900	15,200	600,000	1,550,000
	761.873	269.875	269.875	5,900	15,200	600,000	1,550,000
558.800	736.600	155.575	155.575	2,500	6,750	255,000	690,000
	736.600	196.850	196.850	3,550	10,300	365,000	1,050,000
571.500	812.800	285.750	285.750	6,950	18,300	710,000	1,870,000
584.200	762.000	188.912	193.675	3,850	11,200	390,000	1,140,000

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

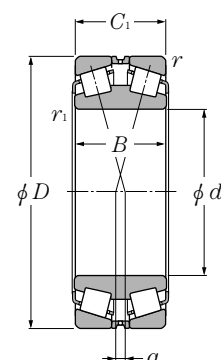
Bearing numbers	Abutment and fillet dimensions				Load <sup>®</sup> center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>as</sub>	<i>r</i> <sub>las</sub>			<i>Y</i> <sub>1</sub>	<i>Y</i> <sub>2</sub>	<i>Y</i> <sub>o</sub>	
	min	min	max	max						
LM767745D/LM767710+A	418	510	1.5	6.4	78	0.48	1.42	2.11	1.38	97.4
LM767749D/LM767710+A EE833160XD/833232+A	427	510	1.5	6.4	78	0.48	1.42	2.11	1.38	90.5
	435	549	3.3	6.4	5.5	0.33	2.07	3.09	2.03	175
☆M667947D/M667910G2+A	431	510	1.5	6.4	47	0.42	1.61	2.40	1.58	104
☆T-M268749D/M268710G2+A	444	549	3.3	6.4	0.5	0.33	2.03	3.02	1.98	181
T-LM869449D/LM869410+A LM769349D/LM769310+A	453	537	1.5	3.3	113	0.55	1.24	1.84	1.21	92.1
	453	534	1.5	6.4	62.5	0.44	1.52	2.26	1.49	112
☆M270749D/M270710AG2+A	478	591	3.3	6.4	0.5	0.33	2.03	3.02	1.98	224
☆L770847D/L770810AG2+A L770849D/L770810+A	478	567	1.5	3.3	97	0.47	1.43	2.12	1.40	96.7
	478	567	1.5	3.3	97	0.47	1.43	2.12	1.40	96.7
☆T-M272749D/M272710G2+A	510	633	3.3	6.4	1.5	0.33	2.03	3.02	1.98	293
☆LM272249D/LM272210G2+A ☆M272647D/M272610G2+A	504	585	3.3	6.4	35.5	0.33	2.03	3.02	1.98	115
	510	609	3.3	6.4	18	0.33	2.03	3.02	1.98	185
LM772749D/LM772710A+A	516	600	3.3	3.3	95	0.47	1.43	2.12	1.40	124
☆M274149D/M274110G2+A	534	663	3.3	6.4	−1.5	0.33	2.03	3.02	1.98	314
LM274449D/LM274410+A	540	636	3.3	6.4	23	0.33	2.03	3.02	1.98	189
☆M275349D/M275310G2+A	552	684	3.3	6.4	−1.5	0.33	2.03	3.02	1.98	348
☆M276448D/M276410G2+A ☆M276449D/M276410G2+A	564	711	3.3	6.4	1	0.33	2.03	3.02	1.98	389
	564	711	3.3	6.4	1	0.33	2.03	3.02	1.98	389
EE843220D/843290+A ☆LM377449D/LM377410G2+A	585	699	3.3	6.4	64.5	0.34	1.98	2.94	1.93	177
	588	696	3.3	6.4	43	0.35	1.95	2.9.0	1.91	223
☆M278749D/M278710AG2+A	609	756	3.3	6.4	0	0.33	2.03	3.02	1.98	470
☆LM778549D/LM778510G2+A	615	717	3.3	6.4	108	0.47	1.43	2.14	1.40	223

① "—" means the load center is out side the inner ring.

# ● Double Row Tapered Roller Bearings (Inside Direction)

NTN

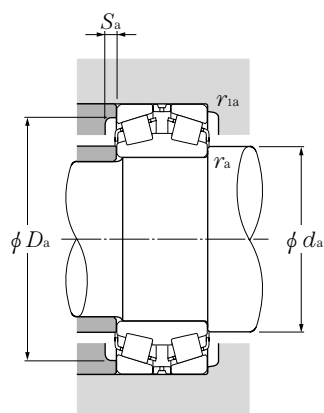
Inch system sizes



**d 595.312~939.800mm**

Boundary dimensions				Basic load ratings			
	mm			dynamic	static	dynamic	static
				kN		kgf	
<i>d</i>	<i>D</i>	<i>B</i>	<i>C</i> <sub>1</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>
<b>595.312</b>	844.550	296.862	296.862	7,350	20,200	750,000	2,060,000
<b>609.600</b>	787.400	171.450	171.450	3,500	9,950	360,000	1,020,000
	863.600	317.500	317.500	7,900	21,100	805,000	2,150,000
<b>635.000</b>	901.700	317.500	317.500	8,300	22,100	845,000	2,250,000
<b>657.225</b>	933.450	328.612	328.612	8,950	24,000	910,000	2,450,000
<b>660.400</b>	812.800	176.212	176.212	3,600	11,600	370,000	1,180,000
<b>679.450</b>	901.700	265.112	265.112	6,500	19,000	665,000	1,940,000
<b>685.800</b>	876.300	168.275	171.450	3,550	10,900	360,000	1,110,000
<b>708.025</b>	930.275	273.050	273.050	6,750	20,400	690,000	2,080,000
<b>711.200</b>	914.400	149.225	149.225	3,100	8,950	315,000	910,000
<b>749.300</b>	990.600	293.000	293.000	7,400	22,700	750,000	2,310,000
<b>762.000</b>	1,066.800	352.425	365.125	10,300	29,300	1,050,000	2,990,000
	1,079.500	381.000	381.000	11,100	32,000	1,130,000	3,250,000
<b>863.600</b>	1,130.300	323.850	323.850	9,200	29,600	935,000	3,000,000
	1,219.200	425.450	438.150	14,000	41,500	1,430,000	4,200,000
<b>938.212</b>	1,270.000	400.050	400.050	13,100	40,000	1,340,000	4,100,000
<b>939.800</b>	1,333.500	349.250	463.550	16,900	48,500	1,720,000	4,950,000

Remarks: 1. The above chamfer of inner and outer ring are bigger than  $r_{as}$  max or  $r_{bs}$  max.  
2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

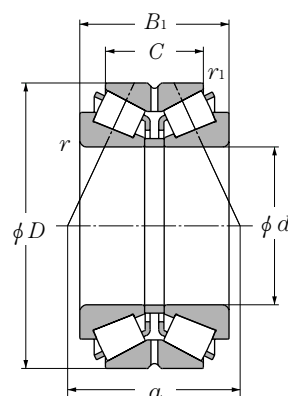
Bearing numbers	Abutment and fillet dimensions				Load <sup>®</sup> center mm <i>a</i>	Constant <i>e</i>	Axial load factors			Mass kg (approx.)
	<i>d</i> <sub>a</sub>	<i>D</i> <sub>a</sub>	<i>r</i> <sub>as</sub>	<i>r</i> <sub>las</sub>			<i>Y</i> <sub>1</sub>	<i>Y</i> <sub>2</sub>	<i>Y</i> <sub>o</sub>	
	min	min	max	max						
☆M280049D/M280010G2+A	633	786	3.3	6.4	1	0.33	2.03	3.02	1.98	525
☆T-EE649241D/649310G2+A	636	747	3.3	6.4	79	0.37	1.82	2.71	1.78	210
☆M280349D/M280310G2+A	648	807	3.3	6.4	−4.5	0.33	2.03	3.02	1.98	585
☆M281049D/M281010G2+A	675	843	3.3	6.4	6	0.33	2.03	3.02	1.98	641
☆M281649D/M281610G2+A	699	870	3.3	6.4	6	0.33	2.03	3.02	1.98	711
☆L281149D/L281110G2+A	684	777	3.3	6.4	89	0.37	1.80	2.69	1.76	195
☆LM281849D/LM281810G2+A	714	852	3.3	6.4	31.5	0.33	2.03	3.02	1.98	459
☆EE655271D/655345G2+A	717	831	3.3	6.4	129	0.42	1.61	2.4.0	1.58	247
☆LM282549D/LM282510G2+A	741	879	3.3	6.4	33	0.33	2.03	3.02	1.98	490
☆EE755281D/755360G2+A	744	873	3.3	6.4	127	0.38	1.77	2.64	1.73	243
☆LM283649D/LM283610G2+A	786	936	3.3	6.4	34.5	0.33	2.03	3.02	1.98	606
☆M284148D/M284111G2+A	819	996	special chamfer 4.8	12.7	14	0.33	2.03	3.02	1.98	968
☆M284249D/M284210G2+A	810	1,005		12.7	0	0.33	2.03	3.02	1.98	1,097
☆LM286249D/LM286210G2+A	906	1,065	4.8	12.7	49.5	0.33	2.03	3.02	1.98	848
☆EE547341D/547480G2+A	918	1,135	4.8	12.7	1.5	0.33	2.03	3.02	1.98	1,552
☆LM287649D/LM287610G2+A	990	1,190	4.8	12.7	30.5	0.33	2.03	3.02	1.98	1,444
☆LM287849D/LM287810G2+A	999	1,240	4.8	12.7	3.5	0.33	2.03	3.02	1.98	1,540

① "—" means the load center is out side the inner ring.



# ● Double Row Steep Slope Tapered Roller Bearings (Outside Direction)

NTN

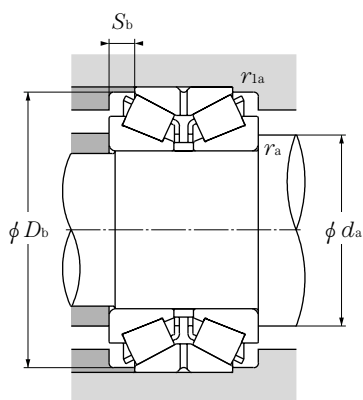


**d 100~533.400mm**

Boundary dimensions						Basic load ratings		Bearing numbers		
mm						dynamic	static	dynamic	static	
						kN		kgf		
$d$	$D$	$B_1$	$C$	$r_{s\min}^{\text{①}}$	$r_{ls\min}^{\text{①}}$	$C_r$	$C_{or}$	$C_r$	$C_{or}$	
100	215	115	74	3	1	510	680	52,000	69,500	CRI-2054
105	240	110	75	3	1	585	790	60,000	80,500	CRI-2105
110	240	118	81	3	1	585	790	60,000	80,500	CRI-2262
	240	119	74	3	1	585	790	60,000	80,500	CRI-2252
115	230	116	84	3	1.5	680	1,100	69,000	112,000	CRI-2301
125	230	116	84	3	2	735	1,240	75,000	127,000	CRI-2554
128	229	116	74	3	1	525	830	53,500	84,500	CRI-2663
130	280	137	93.5	4	1.5	835	1,170	85,500	120,000	CRI-2618
	299	137	87.5	4	1.5	895	1,420	91,500	145,000	CRI-2624
140	260	120	84	3	1.5	735	1,210	75,000	123,000	CRI-2826
155	330	180	120	5	1.5	1,350	2,210	137,000	226,000	CRI-3101
230	380	175	115	4	1.5	1,410	2,970	144,000	305,000	CRI-4613
260	530	275	163.9	6	2.5	2,880	5,200	293,000	530,000	CRI-5215
305	560	223	130	5	2.5	2,530	4,700	258,000	480,000	☆CRI-6108
317.500	558.800	254.000	162.000	5	2	3,000	5,900	310,000	600,000	☆* CRI-6412
370	680	280	188	7.5	4	4,300	8,400	440,000	855,000	☆CRI-7402
533.400	736.600	225.425	177.800	6.4	1.5	3,300	9,250	340,000	940,000	☆* CRI-10702

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

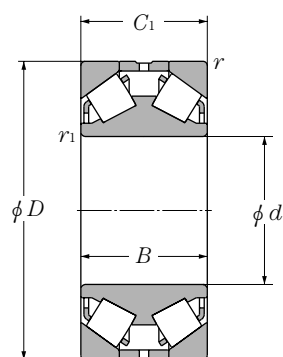
$$P_{0r} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

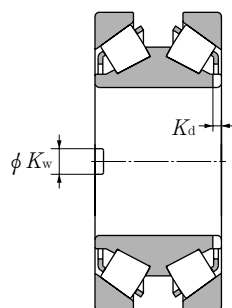
Abutment and fillet dimensions					Load center	Constant	Axial load factors			Mass
$d_a$	$D_b$	$S_b$	$r_{1a}$	$r_{1b}$	$\alpha$	$e$	$Y_1$	$Y_2$	$Y_0$	kg
min	min	min	max	max						(approx.)
114	202	20.5	2.5	1	54	0.81	0.83	1.23	0.81	18.2
119	227.5	17.5	2.5	1	146	0.81	0.83	1.23	0.81	23.6
124	228	18.5	2.5	1	153	0.81	0.83	1.23	0.81	22
124	223.5	22.5	2.5	1	152	0.81	0.83	1.23	0.81	25
129	221	16	2.5	1.5	143.5	0.74	0.92	1.36	0.90	21.2
139	221	16	2.5	2	143.5	0.74	0.92	1.36	0.90	19.9
142	220.5	21	2.5	1	192.5	1.10	0.61	0.91	0.60	17.8
148	268.5	21.5	3	1.5	176.5	0.81	0.83	1.23	0.81	34.5
148	270	24.5	3	1.5	184.5	0.83	0.81	1.21	0.79	45.8
154	245	18	2.5	1.5	155.5	0.74	0.92	1.36	0.90	26.6
177	313	30	4	1.5	219	0.81	0.83	1.24	0.82	66
248	363.5	30	3	1.5	241	0.80	0.85	1.26	0.83	73.9
288	494	55.5	5	2	364.5	0.94	0.71	1.06	0.70	248
327	530	46.5	4	2	414	1.09	0.62	0.92	0.61	227
339.5	531.5	46	4	2	351	0.81	0.84	1.25	0.82	248
406	633	46	6	3	370.5	0.70	0.97	1.44	0.94	420
561.5	718.5	24	5	1.5	399.5	0.70	0.97	1.44	0.94	268

# ● Double Row Steep Slope Tapered Roller Bearings (Inside Direction)

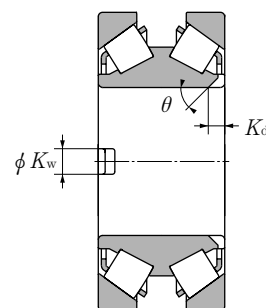
NTN



Drawing A



Drawing B



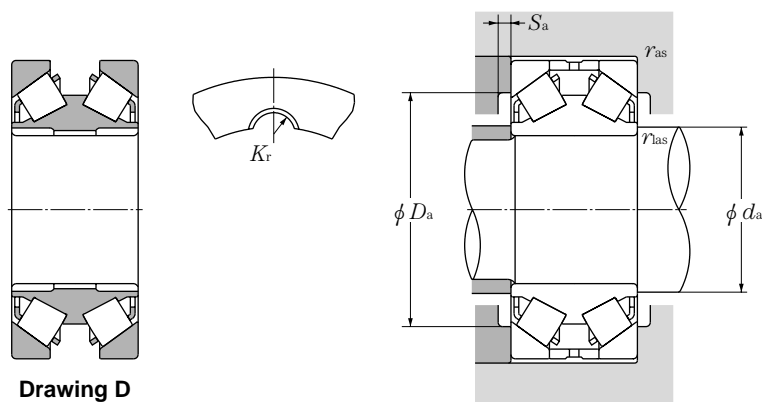
Drawing C

d 100~260mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing numbers	Drawing No.
	D	B	C <sub>r</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶		static kN	dynamic kgf			
100	215	105	110	3	1	585	825	60,000	84,500	CRD-2005	A
	250	120	120	3	2.5	750	1,080	76,500	110,000	CRD-2011	A
110	240	118	118	3	1	750	1,080	76,500	110,000	CRD-2214	A
120	260	130	130	3	1	830	1,200	85,000	122,000	CRD-2410	A
125	305	180	180	3	3	1,410	2,250	143,000	230,000	CRD-2503	B
140	305	160	160	5	1.5	1,160	1,850	118,000	189,000	CRD-2819	A
150	320	144	144	4	4	1,050	1,490	107,000	152,000	CRD-3013	A
	380	235	235	5	2.5	2,320	4,000	236,000	410,000	CRD-3011	A
160	260	130	130	3	1.5	880	1,740	89,500	178,000	CRD-3253	A
170	300	100	100	3	2.5	845	1,450	86,000	148,000	CRD-3423	A
	360	144	160	4	2.5	1,270	2,000	129,000	204,000	CRD-3414	A
	360	144	160	4	1.5	1,440	2,300	147,000	234,000	CRD-3416	A
180	330	190	190	5	1.5	1,710	3,250	175,000	330,000	CRD-3615	A
	380	158	158	3	4	1,380	1,980	141,000	202,000	CRD-3623	A
	400	232	232	4	4	2,090	3,600	213,000	370,000	CRD-3622	A
190	320	104	104	3	3	810	1,460	83,000	149,000	CRD-3801	A
	320	104	104	3	4	850	1,540	86,500	157,000	CRD-3813	A
	350	135	135	3	3	1,130	1,950	116,000	199,000	CRD-3811	A
210	480	230	230	6	6	2,690	4,300	274,000	440,000	CRD-4209	A
228.600	431.800	177.800	177.800	5	5	1,630	3,100	166,000	315,000	*CRD-4604	A
240	460	140	140	5	5	1,380	2,510	140,000	256,000	☆CRD-4808	B
254	585	260	285	4	4	3,700	6,450	375,000	660,000	☆CRD-5102	A
260	458	155	155	5	5	1,740	3,150	177,000	320,000	☆CRD-5214	B
	459	155	155	5	5	1,740	3,150	177,000	320,000	☆CRD-5216	A
	459	155	155	4	4	1,740	3,150	177,000	320,000	☆CRD-5224	B

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .

Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



Drawing D

## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

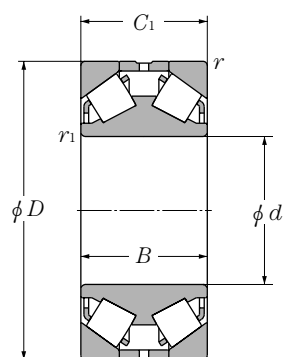
$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

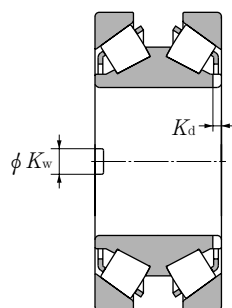
$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

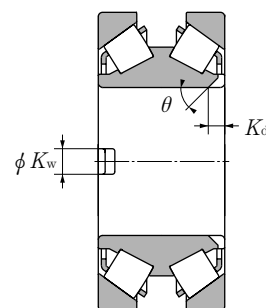
Groove dimensions					Abutment and fillet dimensions					Constant	Axial load factors			Mass
mm width <i>K<sub>w</sub></i>	mm depth <i>K<sub>d</sub></i>	angle <i>θ</i> °	numbers × side face	mm key groove <i>K<sub>r</sub></i>	<i>d<sub>a</sub></i> max	<i>D<sub>a</sub></i> min	<i>S<sub>a</sub></i> min	<i>r<sub>as</sub></i> max	<i>r<sub>1as</sub></i> max	<i>e</i>	<i>Y</i> <sub>1</sub>	<i>Y</i> <sub>2</sub>	<i>Y</i> <sub>o</sub>	kg (approx.)
—	—	—	—	—	117.5	201	3.7	2.5	3	0.81	0.83	1.23	0.81	19.7
—	—	—	—	—	130.5	236	6.6	2.5	3	0.81	0.83	1.23	0.81	31.2
—	—	—	—	—	129	226	5.8	2.5	3	0.81	0.83	1.23	0.81	26.6
—	—	—	—	—	147.5	246	3.1	2.5	3	0.81	0.83	1.23	0.81	34.2
30.2	11	90	1-2	—	160.5	291	1.5	2.5	3	0.73	0.93	1.38	0.91	68.9
—	—	—	—	—	168.5	283	7.5	4	5	0.73	0.92	1.37	0.90	58.1
—	—	—	—	—	180	302	8	3	4	0.81	0.83	1.23	0.81	56.9
—	—	—	—	—	186.5	358	6.5	4	5	0.81	0.83	1.23	0.81	142
—	—	—	—	—	177	246	3.5	2.5	3	0.62	1.09	1.62	1.06	27
—	—	—	—	—	195	286	5.4	2.5	3	0.70	0.97	1.44	0.94	30.2
—	—	—	—	—	204.5	342	1.5	3	4	1.10	0.62	0.92	0.60	79.7
—	—	—	—	—	197	342	1.5	3	4	1.10	0.61	0.91	0.60	79.7
—	—	—	—	—	200.5	308	3.5	4	5	0.58	1.17	1.75	1.15	71.9
—	—	—	—	—	208.5	366	3.4	2.5	3	0.81	0.83	1.23	0.81	87.6
—	—	—	—	—	211.5	382	6.8	3	4	0.81	0.83	1.23	0.81	146.5
—	—	—	—	—	216.5	306	5.5	2.5	3	0.73	0.92	1.37	0.90	34.1
—	—	—	—	—	214	306	4.6	2.5	3	0.80	0.85	1.26	0.83	34.1
—	—	—	—	—	216	336	5.5	2.5	3	0.81	0.83	1.23	0.81	57.7
—	—	—	—	—	253	367	5.9	5	5	0.81	0.83	1.23	0.81	212
—	—	—	—	—	278	410	1.5	4	5	1.01	0.67	0.99	0.65	118
50	15	90	2-2	—	296	438	1.5	4	5	0.87	0.78	1.16	0.76	107
—	—	—	—	—	301	567	4.5	3	4	1.17	0.58	0.86	0.56	392
32	15	90	2-2	—	304	436	1.5	4	5	0.87	0.78	1.16	0.76	109
—	—	—	—	—	304	437	1.5	4	5	0.87	0.78	1.16	0.76	110
32	15	90	2-2	—	304	441	1.5	3	4	0.87	0.78	1.16	0.76	110



Drawing A



Drawing B



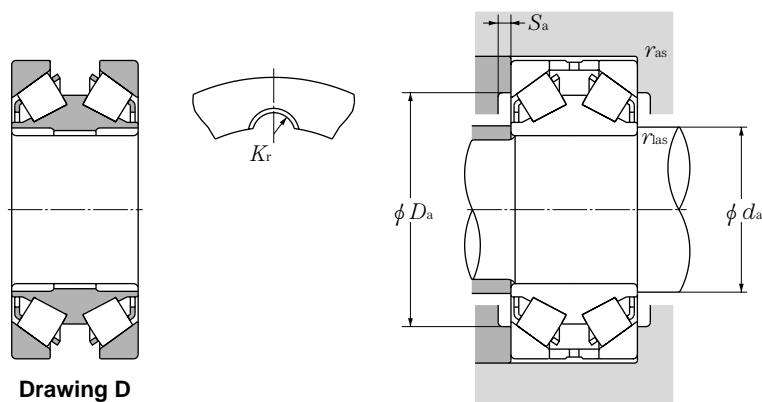
Drawing C

**d 279.400~305.105mm**

Boundary dimensions						Basic load ratings		Bearing numbers		Drawing No.	
mm						dynamic	static	dynamic	static		
						kN		kgf			
<i>d</i>	<i>D</i>	<i>B</i>	<i>C<sub>r</sub></i>	<i>r<sub>s min</sub></i> <sup>❶</sup>	<i>r<sub>ls min</sub></i> <sup>❷</sup>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>	<i>C<sub>r</sub></i>	<i>C<sub>or</sub></i>		
279.400	533.400	241.300	266.700	6.4	2	3,150	6,100	320,000	620,000	☆ * CRD-5613	A
280	410	110	110	2.5	2.5	985	1,960	101,000	200,000	CRD-5616	A
285	380	92	92	2.5	1	730	1,720	74,500	176,000	CRD-5704	C
300	440	105	105	4	4	1,000	2,150	102,000	219,000	CRD-6025	C
	440	105	105	3	3	1,000	2,150	102,000	219,000	CRD-6027	C
	500	180	180	5	5	1,720	3,300	176,000	340,000	CRD-6006	B
	500	200	200	5	5	2,460	5,300	251,000	540,000	☆ CRD-6028	C
	500	200	200	5	6	2,480	5,400	253,000	550,000	☆ CRD-6030	A
	520	180	210	4	4	2,200	4,650	225,000	475,000	CRD-6026	A
304.800	499.948	158.750	203.200	6.4	3.3	1,670	3,300	171,000	340,000	* CRD-6109	A
	499.948	200.000	200.000	6	6	1,670	3,300	171,000	340,000	* CRD-6123	A
305.000	500.000	200.000	200.000	5	5	2,170	5,050	222,000	515,000	* CRD-6120	C
	500.000	200.000	200.000	special chamfer	5	2,460	5,300	251,000	540,000	☆ * CRD-6148	C
	500.000	200.000	200.000	5	5	2,170	5,050	222,000	515,000	* CRD-6151	C
	500.000	200.000	200.000	5	5	2,460	5,300	251,000	540,000	☆ * CRD-6137	C
	559.968	169.977	176.434	4	4	2,020	3,950	206,000	405,000	* CRD-6140	A
	560.000	200.000	200.000	10	6.4	2,340	4,700	239,000	480,000	☆ * CRD-6146	B
	560.000	200.000	200.000	20	6.4	2,340	4,700	239,000	480,000	☆ * CRD-6154	B
	560.000	200.000	200.000	10	6.4	2,270	4,500	232,000	460,000	☆ * CRD-6135	C
305.003	559.867	169.977	176.352	4	6.4	2,010	3,950	205,000	400,000	☆ * CRD-6113	A
305.069	559.999	200.000	200.000	19.7	6.4	2,270	4,500	232,000	460,000	* CRD-6112A.D <sup>❸</sup>	
	559.999	200.000	200.000	9.5	6	2,270	4,500	232,000	460,000	* CRD-6152	C
	560.000	200.000	200.000	19.7	6.4	2,530	4,700	258,000	480,000	☆ * CRD-6136	B
305.079	500.000	200.000	200.000	5	6	2,170	5,050	222,000	515,000	* CRD-6125	C
	500.000	200.000	200.000	5	6	2,440	5,900	249,000	600,000	* CRD-6101	D
	500.000	200.000	200.000	5	6	2,440	5,900	249,000	600,000	* CRD-6116	D
305.105	559.867	169.977	200.000	3	4	2,160	4,300	220,000	440,000	* CRD-6104	A
	559.867	169.977	200.508	4	4	2,230	4,500	227,000	455,000	☆ * CRD-6117	A
	559.968	200.000	200.000	19	7	2,530	4,700	258,000	480,000	☆ * CRD-6110	B
	599.968	170.434	170.434	4	2.5	2,040	4,000	208,000	410,000	☆ * CRD-6115	A

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ❷ This bearing's shape is half of drawing 3 and 4.

Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



Drawing D

## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

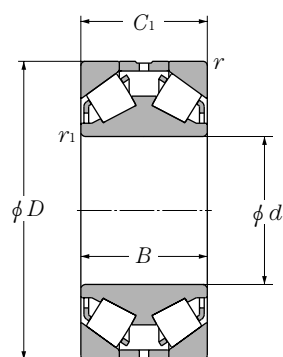
$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

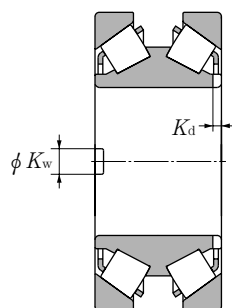
Groove dimensions					Abutment and fillet dimensions					Constant	Axial load factors			Mass
mm	mm	mm	numbers	mm	mm									kg
width	depth	angle	×	key groove	$d_a$	$D_a$	$S_a$	$r_{as}$	$r_{las}$	$e$	$Y_1$	$Y_2$	$Y_0$	(approx.)
$K_w$	$K_d$	$\theta^\circ$	side face	$K_r$	max	min	min	max	max					
—	—	—	—	—	306	505.5	1.5	5	5	1.09	0.62	0.92	0.61	272
—	—	—	—	—	300	398	5	2	2.5	1.05	0.64	0.96	0.63	49
32	13	45	1-2	—	299.5	368	6.5	2	2.5	0.81	0.83	1.23	0.81	29
32.13	22.225	45	1-2	—	325	422	4.5	3	4	0.81	0.83	1.23	0.81	54
32.1	22.2	45	1-2	—	325	381.5	4.5	2.5	3	0.81	0.83	1.23	0.81	54
40	15	90	2-2	—	345	478	1.5	4	5	1.19	0.57	0.85	0.56	143
50.8	34.925	45	2-2	—	342	478	1.5	4	5	0.76	0.88	1.31	0.86	158
—	—	—	—	—	341	478	1.5	4	5	0.76	0.88	1.31	0.86	158
—	—	—	—	—	332.5	502	1.5	3	4	1.17	0.58	0.86	0.56	187
—	—	—	—	—	344	472	1.5	5	5	1.19	0.57	0.84	0.55	158
—	—	—	—	—	343	472	2.5	5	5	1.19	0.57	0.84	0.55	155
51.5	35	45	2-2	—	347	478	1.5	4	5	0.70	0.97	1.44	0.94	135
50.9	35	45	2-2	—	342	478	1.5	4	5	0.76	0.88	1.31	0.86	155
40.5	35	45	2-2	—	347	478	1.5	4	5	0.70	0.97	1.44	0.94	155
50.8	34.925	45	1-2	—	342	478	1.5	4	5	0.76	0.88	1.31	0.86	155
—	—	—	—	—	372.5	542	1.5	3	4	0.92	0.73	1.09	0.72	193
50	19	90	2-2	—	369	514	1.5	9	5	1.09	0.62	0.92	0.61	218
50	19	90	2-2	—	369	468	1.5	19	5	1.09	0.62	0.92	0.61	218
50.7	39.7	45	1-2	—	372	514	1.5	9	5	1.09	0.62	0.92	0.61	218
—	—	—	—	—	350	542	1.5	3	5	1.09	0.62	0.92	0.61	192
50.8	19.05	90	2-2	14.5	372	470	1.5	18	5	1.09	0.62	0.92	0.61	218
50.8	39.69	45	2-2	—	372	516	1.5	8	5	1.09	0.62	0.92	0.61	218
50.8	19.05	90	2-2	—	354	470	4.7	18	5	1.09	0.62	0.92	0.61	218
50.8	34.9	45	1-2	—	347	478	1.5	4	5	0.70	0.97	1.44	0.94	155
—	—	—	—	7.938	334	478	3.5	5	4	0.70	0.97	1.44	0.94	155
—	—	—	—	7.938	334	478	3.5	5	4	0.70	0.97	1.44	0.94	155
—	—	—	—	—	355	546	1.5	3	2.5	1.09	0.62	0.92	0.61	217
—	—	—	—	—	350	532	8	3	3	1.09	0.62	0.92	0.61	217
50.7	19	90	2-2	—	353.5	476	4.7	5	17	1.09	0.62	0.92	0.61	217
—	—	—	—	—	350	582	5.5	2	3	1.09	0.62	0.92	0.61	169

# ● Double Row Steep Slope Tapered Roller Bearings (Inside Direction)

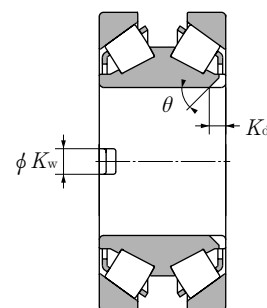
NTN



Drawing A



Drawing B



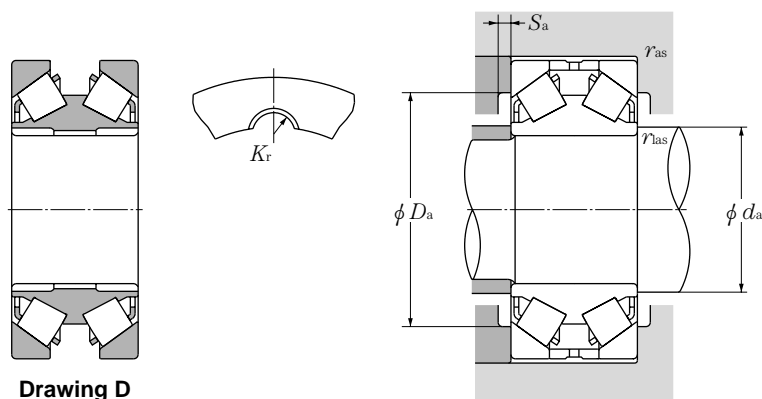
Drawing C

d 330~460mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	Bearing numbers	Drawing No.
	D	B	C <sub>r</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>ls min</sub> <sup>①</sup>		static kN	dynamic kgf			
330	458	120	120	3	3	990	2,220	101,000	226,000	CRD-6604	B
	650	248	248	7.5	6	3,450	6,500	350,000	665,000	CRD-6608	A
350	590	192	192	3	3	2,990	6,400	305,000	655,000	☆CRD-7017	B <sup>②</sup>
	618	200	200	6	6	3,000	5,700	310,000	580,000	☆CRD-7004	A <sup>②</sup>
360	540	200	200	5	5	2,480	6,150	253,000	630,000	CRD-7201	B
370	630	240	240	5	6	3,550	7,450	365,000	760,000	☆CRD-7401	B
380	559.5	160	160	5	5	1,890	4,250	192,000	435,000	CRD-7614	A
	650	240	240	6	3	3,600	7,950	370,000	810,000	☆CRD-7623	C
	650	240	240	6	3	3,600	7,950	370,000	810,000	☆CRD-7612	B
400	650	200	200	17.4	6	3,050	6,100	310,000	625,000	☆CRD-8010	C
	650	240	240	6	3	3,350	7,450	340,000	760,000	☆CRD-8013	C
	650	240	240	6	4	3,600	8,450	365,000	865,000	☆CRD-8026	C
	650	240	240	6	3	3,350	7,450	340,000	760,000	☆CRD-8027	C
	650	240	240	6	4	3,600	8,450	365,000	865,000	☆CRD-8032	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8034	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8035	C
	650	240	240	6	4	3,600	8,450	365,000	865,000	☆CRD-8038	C
	650	240	240	6	4	3,600	8,450	365,000	865,000	☆CRD-8039	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8042	C
	650	240	240	6	5	3,350	7,450	340,000	760,000	☆CRD-8044	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8046	D
	650	240	240	6	4	3,600	8,450	365,000	865,000	☆CRD-8047	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8048	C
	650	240	240	6	6	3,600	8,450	365,000	865,000	☆CRD-8049	C.D <sup>③</sup>
	650	240	240	6	3	3,350	7,450	340,000	760,000	☆CRD-8014	C
	650	240	240	6	6	3,350	7,450	340,000	760,000	☆CRD-8023	D
410	580	160	160	4	5	1,890	4,550	192,000	460,000	CRD-8201	B
440	650	155	155	6	6	2,330	5,300	238,000	540,000	☆CRD-8808	A
460	618	150	150	4	4	1,720	4,400	176,000	450,000	CRD-9202	B
	618	150	150	4	4	1,720	4,400	176,000	450,000	CRD-9211	A
	720	250	250	6	2.5	4,450	10,100	450,000	1,030,000	☆CRD-9214	C

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ② This bearing has slots at the side face of inner ring. ③ This bearing's shape is half of drawing 3 and 4.  
Remarks: 1. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.





Drawing D

## Equivalent bearing load

### dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

### static

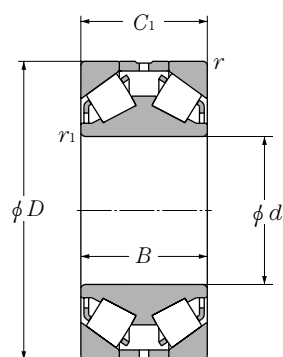
$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

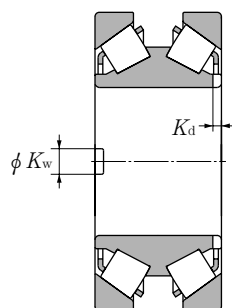
Groove dimensions					Abutment and fillet dimensions					Constant	Axial load factors			Mass
mm	mm	mm	numbers	mm	mm									kg
width	depth	angle	×	key groove	$d_a$	$D_a$	$S_a$	$r_{as}$	$r_{las}$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
$K_w$	$K_d$	$\theta^\circ$	side face	$K_r$	max	min	min	max	max					
32	12	90	2-2	—	355.5	444	8	2.5	2.5	1.05	0.64	0.96	0.63	59.7
—	—	—	—	—	407	624	8	5	6	0.90	0.75	1.12	0.73	383
32	12	90	2-2	—	409.5	576	6.5	2.5	2.5	0.55	1.24	1.84	1.21	209
50	20	90	2-2	—	410	510	1.5	5	5	0.87	0.78	1.16	0.76	252
40	12	90	2-2	—	389.5	518	4.7	4	4	0.70	0.97	1.44	0.94	160
34	20	90	2-2	—	420	608	8	5	4	0.76	0.88	1.31	0.86	316
—	—	—	—	—	414.5	537.5	1.5	4	4	0.70	0.97	1.44	0.94	133
50.8	40	45	2-2	—	435	622	1.5	2.5	5	1.05	0.64	0.96	0.63	329
50	15	90	2-2	—	430	622	8	2.5	5	1.05	0.64	0.96	0.63	338.2
50.4	38.1	45	1-2	—	449	618	2.5	5	12	0.81	0.83	1.23	0.81	260
64.3	32	45	1-2	—	437	622	8	2.5	5	1.05	0.64	0.96	0.63	303
63.6	32	45	1-2	—	456	535	2.5	3	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	437	622	8	2.5	5	1.05	0.64	0.96	0.63	303
64.3	32	45	1-2	—	454	622	2.5	3	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	454	622	1.5	5	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	454	622	8	5	5	0.80	0.85	1.26	0.83	303
63.6	32	45	2-2	—	454	622	2.5	3	5	0.80	0.85	1.26	0.83	302
64.3	32	45	1-2	—	454	622	8	4	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	454	622	2	5	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	437	525	8	4	5	1.05	0.64	0.96	0.63	292
—	—	—	—	11.25	454	622	1.5	5	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	454	622	2.5	3	5	0.80	0.85	1.26	0.83	303
64.3	32	45	2-2	—	454	622	1.5	5	5	0.80	0.85	1.26	0.83	303
63.6	32	45	1-2	11.25	454	622	1.5	5	5	0.80	0.85	1.26	0.83	303
64.3	32	45	1-2	—	437	622	8	2.5	5	1.05	0.64	0.96	0.63	303
—	—	—	—	11.25	437	622	8	5	5	1.05	0.64	0.96	0.63	303
50.8	10	90	1-2	—	440	562	1.5	4	3	0.83	0.81	1.21	0.79	133
—	—	—	—	—	487	622	6.5	5	5	0.80	0.85	1.26	0.83	163
50	15	90	2-2	—	489	600	8	3	3	1.05	0.64	0.96	0.63	126
—	—	—	—	—	489.5	600	1.5	3	3	1.05	0.64	0.96	0.63	120
50.8	35	45	2-2	—	500	692	4.8	2	5	0.80	0.85	1.26	0.83	388

# ● Double Row Steep Slope Tapered Roller Bearings (Inside Direction)

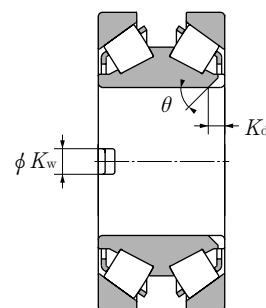
NTN



Drawing A



Drawing B

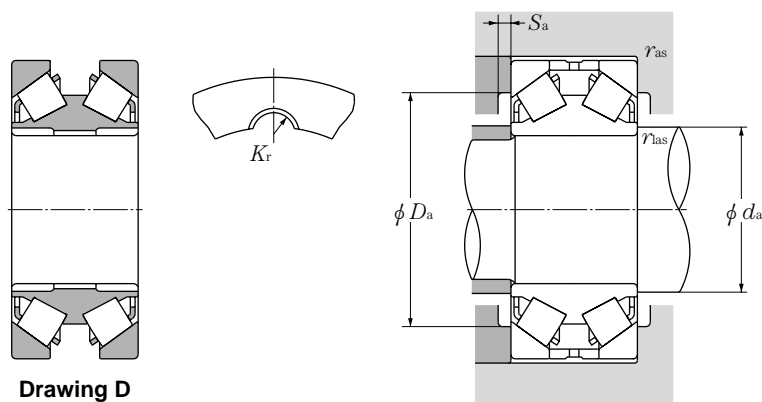


Drawing C

d 470~1,400mm

d	Boundary dimensions					dynamic kN	Basic load ratings		static kgf	static kgf	Bearing numbers	Drawing No.
	D	B	C <sub>r</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>ls min</sub> <sup>②</sup>		static kN	dynamic kgf				
470	720	216	216	6	6	2,790	6,800	284,000	690,000		CRD-9404	B
480	689.5	180	180	6	6	2,670	6,400	272,000	655,000		☆CRD-9609	B
	690	180	180	6	6	2,670	6,400	272,000	655,000		☆CRD-9603	B
482.600	615.950	158.750	158.750	6.4	3.3	2,240	6,450	228,000	660,000		☆ * CRD-9709	A <sup>②</sup>
	733.500	200.000	200.000	17.5	5	2,740	6,550	279,000	665,000		☆ * CRD-9704	C
509.948	733.425	200.02	200.02	5	5	3,250	8,350	330,000	855,000		☆ * CRD-10208	C
510.134	800.001	284.493	284.493	6.4	6.4	5,200	12,100	530,000	1,230,000		☆ * CRD-10206	C
550	920	330	330	7.5	7.5	6,800	15,700	695,000	1,600,000		☆CRD-11001	B
600	1,000	350	350	7.5	7.5	8,250	19,500	840,000	1,990,000		☆CRD-12002	A
660.000	814.000	176.212	176.212	6.4	3.3	2,600	8,200	266,000	835,000		☆ * CRD-13208	C
685.800	939.800	234.950	228.575	3.3	6.4	4,950	13,500	505,000	1,380,000		☆ * CRD-13702	B
685.876	939.876	234.950	227.813	3.3	6.4	4,950	13,500	505,000	1,380,000		☆ * CRD-13701	C
720	920	130	150	5	4	2,760	7,300	281,000	745,000		☆CRD-14403	A
780	1,000	200	200	5	2	4,200	12,900	430,000	1,320,000		☆CRD-15601	C
1,400	1,600	180	180	5	2.5	4,400	16,300	445,000	1,670,000		CRD-28003	A

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ . ② This bearing has a screw groove at inner ring's bore and slots at the side face of inner ring.  
Remarks: 1. The marked "\*" bearings are inch system sizes. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages.



Drawing D

## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

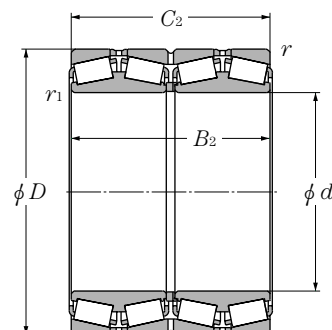
$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	$Y_1$	0.67	$Y_2$

### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

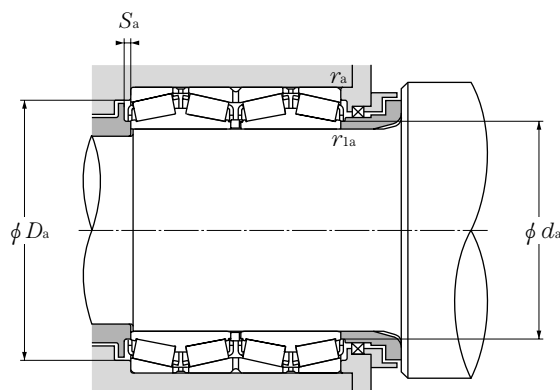
Groove dimensions					Abutment and fillet dimensions					Constant	Axial load factors			Mass
mm	mm	mm	numbers	mm	mm									kg
width	depth	angle	×	key groove	$d_a$	$D_a$	$S_a$	$r_{as}$	$r_{las}$	$e$	$Y_1$	$Y_2$	$Y_o$	(approx.)
$K_w$	$K_d$	$\theta^\circ$	side face	$K_r$	max	min	min	max	max					
63.6	30	90	1-2	—	503	692	3	5	5	1.09	0.62	0.92	0.61	315
50	15	90	2-2	—	525	661.5	8	5	5	0.87	0.78	1.16	0.76	223
50	15	90	2-1	—	525	662	8	5	5	0.87	0.78	1.16	0.76	224
—	—	—	—	—	500.5	588	6.5	2.5	5	0.61	1.11	1.66	1.09	115
50.8	38	45	2-2	—	546.5	669.5	8	4	12	1.09	0.62	0.92	0.61	301
50.8	38.1	45	2-2	—	560	711.5	8	4	4	0.87	0.78	1.16	0.76	256
70.358	44.45	45	1-2	12.865	560	772	8	5	5	0.81	0.83	1.23	0.81	511
56	22	90	1-2	—	629.5	884	4.5	6	6	0.87	0.78	1.16	0.76	914
—	—	—	—	—	687	964	8	6	6	0.87	0.78	1.16	0.76	1,130
50	20	45	2-2	—	684.5	886	8	2.5	5	0.70	0.97	1.44	0.94	202
63.5	19.05	90	2-2	—	738	926	1.5	5	2.5	0.70	0.97	1.44	0.94	478
63.5	38.1	45	2-2	—	738.5	926	8	5	2.5	0.70	0.97	1.44	0.94	435
—	—	—	—	—	760.5	898	5.8	3	4	0.81	0.83	1.23	0.81	240
90	35	45	1-2	—	824.5	978	3.6	2	4	0.80	0.85	1.26	0.83	384
—	—	—	—	—	1,437.5	1,578	12.5	2	4	0.55	1.24	1.84	1.21	532



●  $d$  100~165.100mm

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
$d$	$D$	$B_2$	$C_2$	$r_{s \min}^{\text{①}}$	$r_{is \min}^{\text{①}}$	$C_r$	$C_{or}$	$C_r$	$C_{or}$
100	170	155	155	2.5	0.6	595	1,170	61,000	119,000
105	190	210	210	2.5	1	760	1,630	77,500	166,000
110	150	150	150	1.5	1.5	505	1,280	51,500	131,000
120	170	124	124	2	2.5	390	1,020	40,000	104,000
	180	100	100	2	2.5	395	745	40,000	76,000
	200	132	132	2	2.5	640	1,220	65,000	125,000
	210	174	174	2.5	2.5	855	1,710	87,500	174,000
120.650	174.625	141.288	139.703	1.5	0.8	510	1,220	52,000	124,000
127.000	182.562	158.750	158.750	3.3	1.5	660	1,730	67,000	177,000
130	184	134	134	2	2.5	480	1,190	49,000	122,000
135	180	160	160	2	1	500	1,360	51,000	138,000
136.525	190.500	161.925	161.925	3.3	1.5	695	1,900	71,000	193,000
139.700	200.025	157.165	160.340	3.3	0.8	700	1,950	71,500	199,000
140	198	144	144	2	2.5	575	1,460	58,500	149,000
	210	114	114	2	2.5	515	1,070	52,500	109,000
	210	115	115	2	2.5	515	1,070	52,500	109,000
146.050	244.475	192.088	187.325	3.3	1.5	955	1,980	97,000	202,000
150	210	190	190	2.5	1.5	860	2,240	87,500	229,000
	212	155	155	2.5	3	660	1,700	67,500	173,000
152.400	222.250	174.625	174.625	1.5	1.5	930	2,350	94,500	239,000
160	226	165	165	2.5	3	775	2,030	79,000	207,000
	265	173	173	2.5	2.5	1,100	2,270	112,000	231,000
165.100	225.425	165.100	168.275	3.3	0.8	745	2,220	76,000	226,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = X F_r + Y F_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

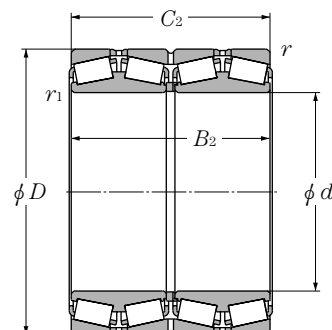
$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{las}$ max		$e$	$Y_1$	$Y_2$	
CRO-2008	120	152.5	3.7	2	0.6	0.32	2.12	3.15	2.07	14.5
CRO-2151	135	168.5	2.5	2	1	0.42	1.60	2.38	1.56	26
CRO-2252	119	140.5	1.2	1.5	1.5	0.18	3.66	5.46	3.58	7.7
625924 623024 623124 CRO-2418	135	155.5	5	2	2	0.33	2.03	3.02	1.98	8.97
	135	166.5	3.8	2	2	0.37	1.80	2.69	1.76	8.87
	143	182	4.1	2	2	0.37	1.80	2.69	1.76	16.7
	140	190	4.5	2	2	0.40	1.67	2.50	1.64	22.2
* M224749D/M224710/M224710D	129	163	3	1.5	0.8	0.33	2.03	3.02	1.98	11.5
* T-48290D/48220/48220D	137	168	4.5	3.3	1.5	0.31	2.21	3.29	2.16	14.3
625926	144.5	169	5	2	2	0.33	2.03	3.02	1.98	11.3
CRO-2701	143	165	2	2	1	0.33	2.03	3.02	1.98	13.5
* T-48393D/48320/48320D	144	177	4	3.3	1.5	0.32	2.10	3.13	2.05	14.8
* T-48680D/48620/48620D	150	185	3	3.3	0.8	0.34	2.01	2.99	1.96	17.3
625928 623028 CRO-2817	156	183	5	2	2	0.33	2.03	3.02	1.98	14
	159	193	3.5	2	2	0.37	1.84	2.74	1.80	13.8
	159	193	3.4	2	2	0.37	1.84	2.74	1.80	13.9
* 81576D/81962/81963D	163	225	6.5	3.3	1.5	0.35	1.92	2.86	1.88	36.8
CRO-3052 625930	162	192.5	2.5	2	1.5	0.40	1.68	2.50	1.64	20.3
	167.5	195	5.5	2	2.5	0.33	2.03	3.02	1.98	16.9
* T-M231649D/M231610/M231610D	165	207	4	1.5	1.5	0.36	1.87	2.79	1.83	24.7
625932 CRO-3209 (CRO-3210)	177.5	208.5	5.5	2	2.5	0.33	2.03	3.02	1.98	20.2
	184	247	4.5	2	2	0.33	2.03	3.02	1.98	37.0
* T-46791D/46720/46721D	175	209	3	0.8	2.5	0.38	1.76	2.62	1.72	20.7

Remarks: 1. Bearing numbers marked "\*" designate inch system bearings.

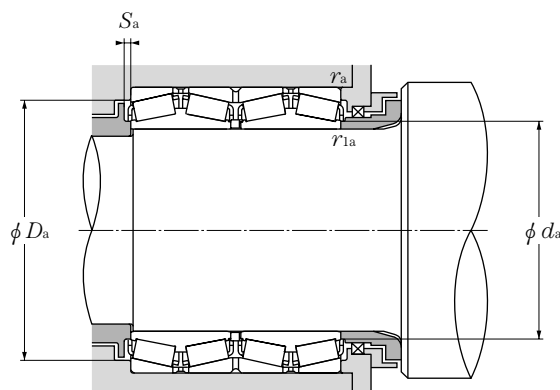
2. The bearing where parentheses adhered abolished inner ring spacer.



**d 170~220mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
d	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>ls min</sub> <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>170</b>	240	175	175	2.5	3	835	2,200	85,500	224,000
	260	144	144	2.5	3	840	1,730	85,500	176,000
	280	181	181	2.5	2.5	1,150	2,420	117,000	247,000
	280	185	185	2.5	3	1,240	2,540	127,000	259,000
<b>177.800</b>	247.650	192.088	192.088	3.3	1.5	1,000	2,760	102,000	281,000
	279.400	234.950	234.947	3.3	1.5	1,420	3,400	145,000	345,000
	304.800	238.227	233.365	3.3	3.3	1,580	3,100	161,000	320,000
<b>180</b>	250	185	185	2	2.5	895	2,350	91,500	239,000
	254	185	185	2.5	3	910	2,390	93,000	244,000
	300	280	280	3	3	2,160	4,800	220,000	490,000
<b>187.325</b>	269.875	211.138	211.138	3.3	1.5	1,240	3,400	127,000	345,000
<b>190.000</b>	268	196	196	2.5	3	1,060	2,850	108,000	291,000
	270	190	190	2.5	2.5	1,080	2,940	111,000	300,000
	270	190	190	2.5	0.6	1,220	3,050	125,000	310,000
	292.100	225.425	225.425	3.3	1.5	1,570	4,150	160,000	425,000
<b>190.500</b>	266.700	187.325	188.912	3.3	1.5	1,040	2,990	106,000	305,000
<b>198.438</b>	284.162	225.425	225.425	3.3	1.5	1,530	4,000	156,000	410,000
<b>200</b>	282	206	206	2.5	3	1,200	3,300	122,000	335,000
	290	160	160	2.5	2.5	925	2,210	94,500	226,000
	310	200	200	3	3	1,530	3,300	156,000	340,000
<b>203.200</b>	317.500	215.900	209.550	3.3	3.3	1,270	2,820	129,000	288,000
<b>206.375</b>	282.575	190.500	190.500	3.3	0.8	1,120	2,890	114,000	294,000
<b>215.900</b>	288.925	177.800	177.800	3.3	0.8	1,110	3,250	114,000	335,000
<b>216.103</b>	330.200	263.525	269.875	3.3	1.5	2,000	5,150	204,000	525,000
<b>220</b>	300	230	230	2.5	2.5	1,360	3,650	138,000	375,000
	310	226	226	3	4	1,380	3,800	141,000	385,000
	320	200	200	3	1	1,390	3,400	141,000	345,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

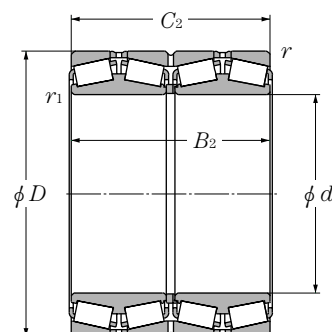
$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{las}$ max		$e$	$Y_1$	$Y_2$	
625934	187.5	220	5.5	2	2.5	0.33	2.03	3.02	1.98	24.4
623034	192.5	239	3.8	2	2.5	0.37	1.80	2.69	1.76	27.5
CRO-3409	192	255	5	2	2	0.40	1.68	2.50	1.64	44
623134	197	253.5	6.4	2	2.5	0.37	1.80	2.69	1.76	45.2
* 67791D/67720/67721D (CRO-3664)	190	229	5	3.3	1.5	0.44	1.54	2.29	1.48	29.4
* 82681D/82620/82620D	195	251	5	1.5	3.3	0.53	1.28	1.91	1.25	55.3
* EE280700D/281200/281201D (CRO-3663)	198	279	7	3.3	3.3	0.36	1.87	2.79	1.83	69.9
CRO-3658	195	229	3.1	2	2.5	0.44	1.54	2.30	1.51	27.5
625936	200.5	233.5	5.5	2	2.5	0.33	2.03	3.02	1.98	28.9
CRO-3617	201	274	5	2.5	2.5	0.37	1.80	2.69	1.76	69.4
* M238849D/M238810/M238810D	199.9	250	4	3.3	1.5	0.33	2.03	3.02	1.98	41.8
625938	209	245.5	6	2	2.5	0.33	2.03	3.02	1.98	34.7
CRO-3812	205	250	6	2	2	0.33	2.03	3.02	1.98	34.7
CRO-3813	207	248.5	2.5	2	0.6	0.40	1.68	2.50	1.64	34.5
* M241538D/M241510/M241510D	222	271	5	3.3	1.5	0.33	2.03	3.02	1.98	59.6
* T-67885D/67820/67820D	204	246	3	1.5	2.5	0.48	1.41	2.11	1.38	33.6
* M240648D/M240611/M240611D	212	264	5.5	3.3	1.5	0.33	2.03	3.02	1.98	46
625940	219.5	258	6	2	2.5	0.33	2.03	3.02	1.98	40.5
CRO-4013	221	271	5	2	2	0.37	1.80	2.69	1.76	35.1
CRO-4014	222	284	6	2.5	2.5	0.39	1.74	2.59	1.70	54.0
* EE132082D/132125/132126D	224	294	9.5	3.3	3.3	0.31	2.15	3.20	2.10	62.5
* T-67986D/67920/67920D	219	260	5	3.3	0.8	0.51	1.33	1.97	1.30	35.4
* T-LM742749D/LM742714/LM742714D	227	267	5	0.8	2.5	0.48	1.40	2.09	1.37	34.3
* 9974D/9920/9920D	235	277	6	3.3	1.5	0.55	1.23	1.82	1.20	82.1
CRO-4412	236.5	277.5	6.5	0	2	0.43	1.59	2.36	1.55	42.1
625944	242	284.5	6	2.5	3	0.33	2.03	3.02	1.98	53.5
CRO-4411	245	294.5	6.5	2.5	2	0.35	1.95	2.90	1.91	53

Remarks: 1. Bearing numbers marked "\*" designate inch system bearings.

2. The bearing where parentheses adhered abolished inner ring spacer.

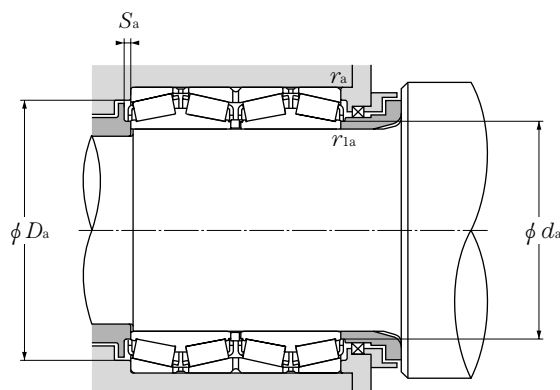


**d 220~266.700mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
d	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> ❶	r <sub>ls min</sub> ❶	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>220</b>	340	190	190	3	4	1,510	3,300	154,000	335,000
	340	194	194	3	3	1,510	3,300	154,000	335,000
<b>220.662</b>	314.325	239.712	239.712	3.3	1.5	1,840	4,900	187,000	500,000
<b>228.600</b>	364.000	296.875	296.875	3.3	3.3	2,370	5,550	242,000	565,000
	425.450	349.250	361.950	6.4	3.5	3,450	8,250	355,000	845,000
<b>234.950</b>	327.025	196.850	196.850	3.3	1.5	1,370	3,700	140,000	380,000
<b>240</b>	338	248	248	3	4	1,870	4,950	191,000	505,000
<b>241.478</b>	350.838	228.600	228.600	3.3	1.5	1,610	4,000	164,000	410,000
<b>244.475</b>	327.025	193.675	193.675	3.3	1.5	1,430	4,100	146,000	415,000
	381.000	304.800	304.800	4.8	3.3	2,220	5,750	227,000	590,000
<b>245</b>	380	255.5	254	6.4	1.5	2,060	4,750	210,000	485,000
<b>250</b>	365	270	270	3	1.5	2,150	6,150	219,000	630,000
	365	270	270	3	2	2,150	6,150	219,000	630,000
	370	220	220	4	4	2,050	5,750	209,000	590,000
<b>254.000</b>	358.775	269.875	269.875	3.3	3.3	2,390	6,550	244,000	670,000
	368.300	204.622	204.470	3.3	1.5	1,350	3,250	138,000	330,000
	444.500	279.400	279.400	6.4	3.3	2,890	5,900	294,000	600,000
<b>260</b>	360	272	272	2.5	1	2,080	5,750	212,000	585,000
	368	268	268	4	5	1,990	5,700	203,000	580,000
	400	220	220	4	5	1,970	4,400	201,000	445,000
	400	255	255	7.5	4	2,210	5,300	225,000	540,000
<b>260.350</b>	365.125	228.600	228.600	6.4	3.3	1,750	4,550	178,000	465,000
	400.050	255.588	253.995	6.4	1.5	2,090	4,950	213,000	505,000
	422.275	314.325	317.500	3.3	6.4	2,980	7,100	305,000	725,000
<b>266.700</b>	355.600	230.188	228.600	3.3	1.5	1,840	5,350	188,000	545,000
	355.600	230.188	228.600	3.3	1.5	1,430	4,350	146,000	445,000
	393.700	269.878	269.878	6.4	3.3	2,110	6,000	216,000	610,000

❶ Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

### static

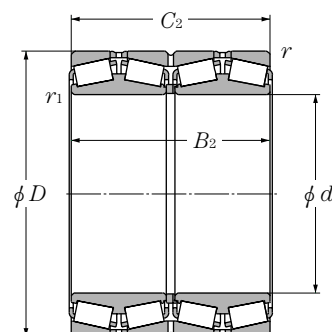
$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{1as}$ max		$e$	$Y_1$	$Y_2$	$Y_o$
623044 CRO-4409	250.5	312.5	5.5	2.5	3	0.37	1.80	2.69	1.76	63.2
	250.5	312.5	6	2.5	2.5	0.37	1.80	2.69	1.76	64.5
* T-M244249D/M244210/M244210D	235	293	4	1.5	2.5	0.33	2.03	3.02	1.98	60.2
CRO-4606 * EE700090D/700167/700168D	262	332	6.5	3.3	3.3	0.32	2.12	3.15	2.07	117.9
	263	381	3	6.4	3.5	0.33	2.03	3.02	1.98	232
* T-8576D/8520/8520D	250	305	5	3.3	1.5	0.41	1.66	2.47	1.62	53.6
625948A (CRO-4825)	260.5	312	6	3	2.5	0.33	2.03	3.02	1.98	70
* EE127097D/127137/127137D	262	325	6.5	3.3	1.5	0.35	1.91	2.85	1.87	76.4
* LM247748D/LM247710/LM247710DA * EE126096D/126150/126151D	257	310	5	3.3	1.5	0.32	2.09	3.11	2.04	46.1
	262	343	6.5	3.3	4.8	0.52	1.31	1.95	1.28	132
CRO-4901	275.5	344.5	6.5	6.4	1.5	0.37	1.80	2.69	1.76	106.7
CRO-5004 CRO-5012 CRO-5001	275	339	5	2.5	1.5	0.33	2.03	3.02	1.98	82.1
	279	332.5	6	3	2	0.33	2.03	3.02	1.98	96.7
	276	344	6	3	3	0.26	2.55	3.80	2.49	87
* T-M249748D/M249710/M249710D * EE171000D/171450/171451D * EE822101D/822175/822176D	272.5	335	5	2.5	2.5	0.33	2.03	3.02	1.98	85.6
	269	340	6	3.3	1.5	0.36	1.85	2.76	1.81	71.8
	289	406	8	6.4	3.3	0.34	1.98	2.94	1.93	185
CRO-5218 625952 623052 CRO-5215	279	332.5	6.5	2.5	1	0.41	1.66	2.47	1.62	74.2
	287	338.5	6	3	3	0.33	2.03	3.02	1.98	90.3
	292	366.5	6.5	3	3	0.37	1.80	2.69	1.76	98.9
	290	359	8	6	3	0.39	1.71	2.54	1.67	106
* EE134102D/134143/134144D * EE221027D/221575/221576D * HM252349D/HM252310/HM252310D	282	340	6.5	6.4	3.3	0.37	1.80	2.69	1.76	76.5
	292	367	8	6.4	1.5	0.39	1.71	2.54	1.67	117
	290	392	5.5	3.3	6.4	0.33	2.03	3.02	1.98	180
* T-LM451349D/LM451310/LM451310D (CRO-5307) * CRO-5305 * EE275106D/275155/275156D	281	335	6.5	3.3	1.5	0.36	1.87	2.79	1.83	62
	281	330.5	3.5	3.3	1.5	0.37	1.83	2.72	1.79	62.3
	292	367	5	6.4	3.3	0.40	1.68	2.50	1.64	116

Remarks: 1. Bearing numbers marked "\*" designate inch system bearings.

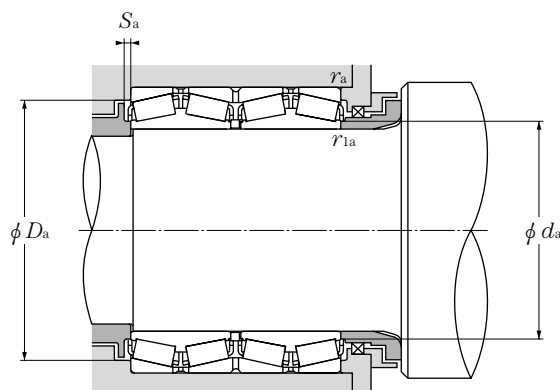
2. The bearing where parentheses adhered abolished inner ring spacer.



**d 269.875~304.800mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
d	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>ls min</sub> <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>269.875</b>	381.000	282.575	282.575	3.3	3.3	2,470	6,850	252,000	700,000
<b>270</b>	410	222	222	4	4	1,910	4,550	195,000	465,000
<b>275</b>	385	200	200	3	3	1,610	4,250	165,000	435,000
<b>276.225</b>	406.400	268.290	260.355	6.4	1.5	2,110	6,000	216,000	610,000
<b>279.400</b>	381.000	269.875	269.875	3.3	1.5	2,240	6,450	229,000	655,000
	393.700	269.875	269.875	6.4	1.5	1,940	5,350	197,000	545,000
	419.100	292.100	292.100	6.4	3.3	2,770	6,950	283,000	705,000
	469.900	346.075	349.250	3.3	6.4	3,500	8,700	355,000	885,000
<b>279.578</b>	380.898	244.475	244.475	3.3	1.5	1,950	6,200	199,000	635,000
<b>280</b>	380	290	290	3.1	1.7	2,470	7,250	252,000	740,000
	395	288	288	4	5	2,560	7,100	261,000	725,000
<b>285.750</b>	380.898	244.475	244.475	3.3	1.5	1,950	6,200	199,000	635,000
<b>288.925</b>	406.400	298.450	298.450	3.3	3.3	2,980	8,300	305,000	850,000
<b>292.100</b>	476.250	296.047	292.100	3.3	1.5	3,050	6,800	310,000	695,000
<b>300</b>	424	310	310	4	5	2,570	7,450	262,000	760,000
	430	280	280	4	4	2,690	7,100	275,000	725,000
	430	300	300	4	4	2,690	7,100	275,000	725,000
	460	360	360	4	4	4,050	10,100	415,000	1,030,000
	470	270	270	4	4	3,200	7,250	325,000	740,000
	470	292	292	4	4	3,500	8,300	360,000	845,000
	500	332	332	5	6	3,600	8,100	370,000	825,000
<b>300.038</b>	422.275	311.150	311.150	3.3	3.3	3,350	9,600	340,000	980,000
<b>304.648</b>	438.048	279.400	279.400	3.3	3.3	2,470	6,500	252,000	665,000
	438.048	280.990	279.400	4.8	3.3	2,630	6,900	268,000	700,000
<b>304.800</b>	419.100	269.875	269.875	6.4	1.5	2,390	6,850	244,000	695,000
	444.500	247.650	241.300	1.5	8	1,850	4,600	188,000	470,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

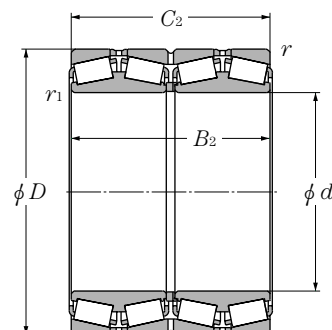
### static

$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{las}$ max		$e$	$Y_1$	$Y_2$	
* T-M252349D/M252310/M252310D	290	356	6	2.5	2.5	0.33	2.03	3.02	1.98	97.5
CRO-5403	305	382	6	3	3	0.27	2.49	3.71	2.43	91
CRO-5501	300	355	6	2.5	2.5	0.40	1.68	2.50	1.64	62.5
* EE275109D/275160/275161D	293.6	366	8	6.4	1.5	0.40	1.68	2.69	1.64	122
* CRO-5628	298.5	353	5	2.5	1.5	0.37	1.80	2.69	1.76	79.6
* EE135111D/135155/135156D	297	368	6.5	5	1.5	0.40	1.68	2.50	1.64	103
CRO-5614	312.5	383.5	6	5	2.5	0.37	1.80	2.69	1.76	141
* EE722111D/722185/722186D	316	432	5	3.3	6.4	0.37	1.78	2.65	1.74	258
* T-LM654644D/LM654610/LM654610D (CRO-5679)	297	356	5	3.3	1.5	0.43	1.56	2.33	1.52	83.2
CRO-5650 (CRO-5676)	300	354	6.5	2.5	1.5	0.33	2.03	3.02	1.98	105
625956 (CRO-5684)	304.5	363.5	7	3	4	0.33	2.03	3.02	1.98	111
* T-LM654648D/LM654610/LM654610D (CRO-5710)	302	356	5	1.5	2.5	0.43	1.56	2.33	1.53	82.5
* M255449D/M255410/M255410DA	310	379	5	3.3	3.3	0.34	2.00	2.98	1.96	125
* EE921150D/921875/921876D	321	441	7	3.3	1.5	0.29	2.30	3.42	2.25	208
625960	329	389.5	7	3	4	0.33	2.03	3.02	1.98	138
CRO-6019	325.5	395.5	8	3	3	0.47	1.45	2.16	1.42	132
CRO-6022	323	394	3	3	3	0.47	1.45	2.16	1.42	141
CRO-6015	330	427	10	3	3	0.31	2.21	3.29	2.16	180
☆CRO-6012	338	438	7	3	3	0.37	1.80	2.69	1.76	152
☆CRO-6013 (CRO-6033)	336	437	7	3	3	0.37	1.80	2.69	1.76	164
623160	346.5	449	5	4	4	0.40	1.68	2.50	1.64	257
☆ * T-HM256849D/HM256810/HM256810DG2	322	394	6	3.3	3.3	0.34	2.00	2.98	1.95	143
* EE329119D/329172/329173D	328	409	8	3.3	3.3	0.33	2.04	3.04	2.00	143
* M757448D/M757410/M757410D	328	407	7	4.8	3.3	0.47	1.43	2.12	1.39	140
* M257149D/M257110/M257110D	322	392	5	6.4	1.5	0.33	2.03	3.02	1.98	115
* EE291202D/291750/291751D	328	416	9.5	1.5	8	0.38	1.78	2.65	1.74	127

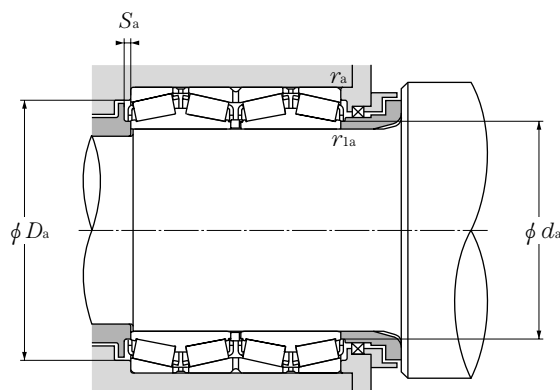
Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



## $d$ 304.800~355mm

Boundary dimensions						dynamic kN	Basic load ratings		
mm							static	dynamic	static
								kgf	
$d$	$D$	$B_2$	$C_2$	$r_{s\min}^{\bullet}$	$r_{ls\min}^{\bullet}$	$C_r$	$C_{or}$	$C_r$	$C_{or}$
304.800	495.300	342.900	349.250	6.4	3.3	3,650	9,400	370,000	960,000
304.902	412.648	266.700	266.700	3.3	3.3	2,610	7,450	267,000	760,000
305.003	438.048	280.990	279.400	4.8	3.3	2,630	6,900	268,000	700,000
310	430	310	310	4	2.2	2,880	8,100	294,000	825,000
	430	310	310	5.5	2.2	3,050	8,600	310,000	875,000
317.500	422.275	269.875	269.875	3.3	1.5	2,260	7,050	231,000	715,000
	447.675	327.025	327.025	3.3	3.3	3,400	9,550	345,000	995,000
320	460	338	338	4	5	2,940	8,650	300,000	880,000
327	445	230	230	4	2	2,150	5,650	219,000	575,000
330	470	340	340	2.5	2.5	3,150	10,200	320,000	1,040,000
	510	340	340	6	6	3,900	9,650	395,000	985,000
330.200	482.600	306.388	311.150	3.3	1.5	2,810	7,900	287,000	805,000
	533.400	254.000	254.000	6	6	3,200	6,750	330,000	690,000
333.375	469.900	342.900	342.900	3.3	3.3	4,000	11,000	405,000	1,130,000
340	480	350	350	5	6	3,450	10,400	350,000	1,060,000
	520	278	278	5	6	3,250	7,500	330,000	765,000
341.312	457.098	254.000	254.000	3.3	1.5	2,370	6,900	241,000	705,000
342.900	533.400	307.985	301.625	3.3	3.3	3,150	6,900	320,000	705,000
343.052	457.098	254.000	254.000	3.3	1.5	2,370	6,900	241,000	705,000
	457.098	254.000	254.000	3.3	1.5	2,430	6,750	248,000	685,000
346.075	488.950	358.775	358.775	3.3	3.3	4,350	12,800	445,000	1,300,000
347.662	469.900	292.100	292.100	3.3	3.3	3,200	9,100	325,000	925,000
355	490	316	316	3.3	1.5	3,500	10,000	355,000	1,020,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

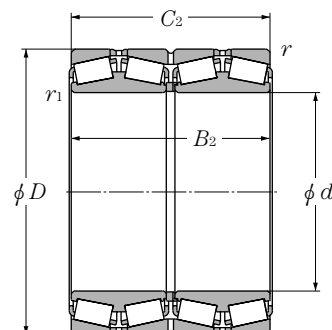
### static

$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{1as}$ max		$e$	$Y_1$	$Y_2$	
* EE724121D/724195/724196D	330	450	3	6.4	3.3	0.40	1.68	2.50	1.64	273
* M257248D/M257210/M257210D	325	388	5	3.3	3.3	0.32	2.12	3.15	2.07	107
* M757449D/M757410/M757410D	328	407	7	4.8	3.3	0.47	1.43	2.12	1.39	139
CRO-6213 CRO-6204	333	396.5	8.5	3	2	0.40	1.68	2.50	1.64	133
	333.5	397.5	7.5	4	2	0.33	2.03	3.02	1.98	136
LM258649D/LM258610/LM258610D (CRO-6431) * T-HM259049D/HM259010/HM259010D	334	398	7	3.3	1.5	0.32	2.10	3.13	2.06	110
	339.6	418	5	2.5	2.5	0.33	2.02	3.00	1.97	161
625964	355	420.5	7	3	4	0.33	2.03	3.02	1.98	183
CRO-6501	353.5	416	5.5	3	2	0.33	2.03	3.02	1.98	99.8
CRO-6604 CRO-6602	366	440	5.5	2	2	0.33	2.02	3.00	1.97	141
	366	469	5	5	5	0.40	1.68	2.50	1.64	221
* EE526131D/526190/526191D * CRO-6606	351	448	3	3.3	1.5	0.39	1.72	2.56	1.68	197
	378.5	488	6.5	5	5	0.37	1.80	2.69	1.76	221
* HM261049D/HM261010/HM261010DA	357	439	5	2.5	2.5	0.33	2.02	3.00	1.97	187
625968 623068	373	440	7	4	5	0.33	2.03	3.02	1.98	200
	382.5	478	6.5	4	4	0.37	1.80	2.69	1.76	213
* LM761648D/LM761610/LM761610D	359	432	5	1.5	2.5	0.47	1.43	2.12	1.40	125
* EE971355D/972100/972103D	378	502	11	3.3	3.3	0.33	2.03	3.02	1.98	252
* LM761649D/LM761610/LM761610D (CRO-6945) CRO-6910 (CRO-6944)	361	432	5	3.3	1.5	0.47	1.43	2.12	1.39	117
	361	426	5	3.3	1.5	0.47	1.43	2.12	1.40	105
☆ * T-HM262749D/HM262710/HM262710DG2	371	456	6	2.5	2.5	0.33	2.02	3.00	1.97	227
* M262449D/M262410/M262410D	369	443	8	3.3	3.3	0.33	2.03	3.02	1.98	148
CRO-7105	378	450	7	3.3	1.5	0.33	2.03	3.02	1.98	170

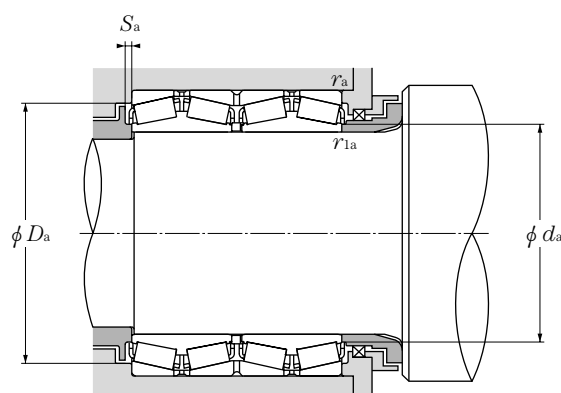
Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



**d 355.600~406.400mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
d	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>ls min</sub> <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>355.600</b>	444.500	241.300	241.300	3.3	1.5	1,760	6,200	180,000	635,000
	457.200	252.412	252.412	3.3	1.5	2,470	7,850	251,000	800,000
	482.600	265.112	269.875	3.3	1.5	2,790	7,650	285,000	780,000
	488.950	317.500	317.500	3.3	1.5	3,500	10,000	350,000	1,020,000
<b>360</b>	508	370	370	5	6	3,700	11,200	380,000	1,140,000
	520	370	370	5.5	3.5	4,500	12,300	455,000	1,260,000
	520	410	410	5	5	5,150	14,700	525,000	1,500,000
	540	340	340	5	3	4,350	11,100	445,000	1,130,000
	600	540	540	5	5	6,700	18,100	685,000	1,840,000
	600	396	396	5	6	5,500	13,000	560,000	1,320,000
<b>368.300</b>	523.875	382.588	382.588	6.4	3.3	4,450	13,100	455,000	1,330,000
	596.900	342.900	342.900	6.4	6.4	4,600	10,600	470,000	1,090,000
<b>374.650</b>	501.650	250.825	260.350	3.3	1.5	2,360	6,250	241,000	640,000
<b>380</b>	536	390	390	5	6	4,900	14,100	500,000	1,440,000
	560	282	282	5	6	3,550	8,700	365,000	890,000
	560	285	285	5	5	3,250	7,700	330,000	785,000
	560	360	360	6	1.5	4,650	12,100	470,000	1,230,000
	560	360	360	5	1.5	5,050	13,500	515,000	1,380,000
<b>384.175</b>	546.100	400.050	400.050	6.4	3.3	5,400	16,100	550,000	1,640,000
<b>385.762</b>	514.350	317.500	317.500	3.3	3.3	3,650	11,100	370,000	1,130,000
<b>390</b>	510	350	350	3.5	1.5	3,700	11,800	375,000	1,210,000
<b>393.700</b>	546.100	288.925	288.925	6.4	1.5	3,200	10,200	325,000	1,040,000
<b>395</b>	545	268.7	288.7	7.5	4	2,970	8,650	305,000	880,000
<b>400</b>	560	380	380	5	5	4,800	14,100	490,000	1,440,000
	564	412	412	5	6	4,850	14,700	495,000	1,500,000
	635	470	470	5	2.5	7,200	18,000	735,000	1,840,000
<b>406.400</b>	546.100	268.288	288.925	6.4	1.5	2,290	6,550	233,000	670,000
	546.100	288.925	288.925	6.4	1.5	3,200	10,200	325,000	1,040,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

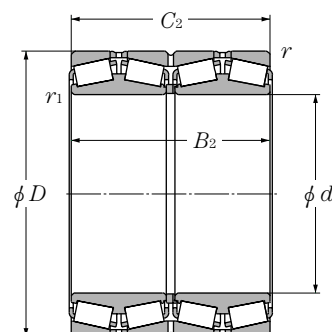
### static

$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{las}$ max		$e$	$Y_1$	$Y_2$	
* L163149D/L163110/L163110D	370	422	6.5	3.3	1.5	0.31	2.20	3.27	2.15	89.5
* LM263149D/LM263110/LM263110D	372	434	6	3.3	1.5	0.32	2.12	3.15	2.07	106
* LM763449D/LM763410/LM763410D	375	453	3	3.3	1.5	0.47	1.43	2.14	1.40	145
* M263349D/M263310/M263310D (CRO-7123)	374	459	5	3.3	1.5	0.33	2.03	3.02	1.98	173
625972 (CRO-7227)	394	466.5	7	4	5	0.33	2.03	3.02	1.98	236
CRO-7220	391	0	5	4.5	3	0.33	2.03	3.02	1.98	260
☆CRO-7217	396	478	8.5	4	4	0.33	2.03	3.02	1.98	297
CRO-7211	400	496	5	4	2.5	0.33	2.03	3.02	1.98	270
CRO-7210	400	550	8	4	4	0.36	1.89	2.81	1.98	520
623172 (CRO-7228)	414.6	541.5	8	4	4.5	0.40	1.68	2.50	1.64	447
☆ * HM265049D/HM265010/HM265010DG2 (CRO-7406)	393.7	487	6	6.4	3.3	0.33	2.03	3.02	1.98	280
* EE181455D/182350/182351D	421	541	7.5	6.4	6.4	0.42	1.62	2.42	1.59	373
* LM765149D/LM765110/LM765110D	393	472	2	3.3	1.5	0.47	1.43	2.12	1.40	145
625976	410	494	8	4	5	0.33	2.03	3.02	1.98	277
623076	421	518	6.5	4	4	0.37	1.80	2.69	1.76	240
CRO-7612	417	525	7	4	4	0.40	1.68	2.50	1.64	208
CRO-7622	416	514	7	5	1.5	0.40	1.68	2.50	1.64	302.22
☆CRO-7621	423	515	6.5	4	1.5	0.40	1.68	2.50	1.64	312
☆ * T-HM266449D/HM266410/HM266410DG2	411	507	6.5	6.4	3.3	0.33	2.03	3.02	1.98	312
* LM665949D/LM665910/LM665910D	409	482	7	2.5	2.5	0.42	1.61	2.40	1.58	240
CRO-7801	411	478	7	3	1.5	0.33	2.03	3.02	1.98	186
* LM767745D/LM767710/LM767710D	418	510	6.5	6.4	1.5	0.48	1.42	2.11	1.38	219
CRO-7901	434	508	3	6	3	0.48	1.42	2.11	1.39	200
☆CRO-8005	436	515	8	4	4	0.40	1.68	2.50	1.64	300
625980	434	518.5	7	4	5	0.33	2.03	3.02	1.98	324
CRO-8010	447	579	6.5	4	2	0.33	2.03	3.02	1.98	564
* EE234161D/234215/234216D	438	505	1.5	6.4	1.5	0.47	1.43	2.12	1.40	190
* LM767749D/LM767710/LM767710D	427	510	6.5	6.4	1.5	0.48	1.42	2.11	1.38	201

Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.

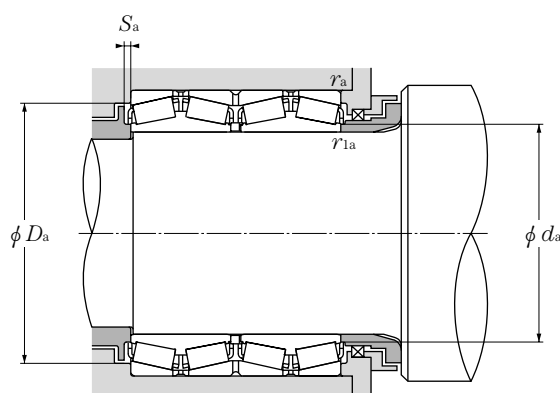


## d 406.400~488.950mm

Boundary dimensions						dynamic kN	Basic load ratings		
mm							static	dynamic	static
								kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>2</sub>	<i>C</i> <sub>2</sub>	<i>r</i> <sub>s min</sub> <sup>●</sup>	<i>r</i> <sub>ls min</sub> <sup>●</sup>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>
406.400	565.150	381.000	381.000	6.4	3.3	4,750	14,100	485,000	1,440,000
	590.550	400.050	400.050	6.4	3.3	4,850	13,600	490,000	1,380,000
	609.600	309.562	317.500	6.4	3.5	3,700	9,600	380,000	980,000
409.575	546.100	334.962	334.962	6.4	1.5	4,100	12,700	415,000	1,290,000
415.925	590.550	434.975	434.975	6.4	3.3	6,300	18,900	640,000	1,930,000
420	592	432	432	5	6	5,350	16,300	545,000	1,660,000
	650	460	460	5	5	6,950	18,300	710,000	1,870,000
431.800	571.500	279.400	279.400	3.3	1.5	3,200	9,850	330,000	1,010,000
	571.500	336.550	336.550	6.4	1.5	3,700	11,800	380,000	1,200,000
	635.000	355.600	355.600	6.4	6.4	5,650	15,000	580,000	1,530,000
432.003	609.524	317.500	317.500	6.4	3.5	4,350	11,500	445,000	1,170,000
440	620	454	454	6	6	6,500	19,900	665,000	2,030,000
	635	470	470	6.4	3.3	7,100	22,100	725,000	2,260,000
	650	355	355	7.5	4	5,350	13,400	545,000	1,370,000
	650	460	460	6	6	6,750	20,700	690,000	2,110,000
447.675	635.000	463.550	463.550	6.4	3.3	7,100	22,100	725,000	2,260,000
457.200	596.900	276.225	279.400	3.3	1.5	2,900	9,150	296,000	935,000
	596.900	276.225	279.400	3.3	1.6	2,870	9,400	292,000	955,000
	660.400	323.850	323.847	6.4	3.3	4,150	11,200	425,000	1,140,000
460	650	474	474	6	6	6,500	19,900	665,000	2,030,000
475	660	450	450	5	3	6,300	20,400	645,000	2,080,000
480	678	494	494	6	6	6,250	19,600	640,000	2,000,000
	678	494	494	6	6	6,250	19,600	640,000	2,000,000
	700	390	390	6	6	4,700	13,400	480,000	1,370,000
482.600	615.950	330.200	330.200	6.4	3.3	4,000	13,400	405,000	1,370,000
488.950	660.400	365.125	361.950	6.4	8	5,350	16,100	550,000	1,640,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .





## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
X	Y	X	Y
1	Y <sub>1</sub>	0.67	Y <sub>2</sub>

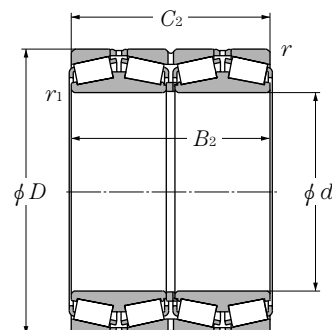
### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass	
	$d_a$	$D_a$	mm				$e$	$Y_1$	$Y_2$		$Y_o$
			$S_a$ min	$r_{as}$ max	$r_{las}$ max					(approx.)	
CRO-8103	441	525	6.5	6.4	3.3	0.35	1.95	2.90	1.91	310	
*EE833161D/833232/833233D	448	549	6.5	6.4	3.3	0.33	2.07	3.09	2.03	395	
*EE911603D/912400/912401D	441	568	1.5	6.4	3.5	0.38	1.76	2.62	1.72	332	
☆* M667947D/M667911/M667911DG2	431	510	5.5	6.4	1.5	0.42	1.61	2.40	1.57	226	
☆* T-M268749D/M268710/M268710DG2	444	549	9	6.4	3.3	0.33	2.03	3.02	1.98	421	
625984 (CRO-8414)	457	545	7	4	5	0.33	2.03	3.02	1.98	374	
	455	593	8	4	4	0.33	2.03	3.02	1.98	600	
* T-LM869449D/LM869410/LM869410D	453	537	8	1.5	2.5	0.55	1.24	1.84	1.21	193	
* LM769349D/LM769310/LM769310D	453	534	6.5	6.4	1.5	0.44	1.52	2.26	1.49	232	
☆* EE931170D/931250/931251XDG2	490	607	6.6	5	5	0.32	2.12	3.15	2.07	402	
EE736173D/736238/736239D	464	572	6.5	6.4	3.5	0.35	1.95	2.90	1.91	297	
625988 (CRO-8839)	479	572.5	8	5	5	0.33	2.03	3.02	1.64	430	
	☆CRO-8808	494	607	9	5	5	0.33	2.03	3.02	1.98	498
	☆CRO-8807	484	607	9	6	3	0.33	2.03	3.02	1.98	400
	CRO-8806	483	595	11	5	5	0.33	2.03	3.02	1.98	600
☆* M270749D/M270710/M270710DG2	478	591	8	6.4	3.3	0.33	2.03	3.02	1.98	509	
* L770849D/L770810/L770810D	478	567	5.5	3.3	1.5	0.47	1.43	2.12	1.39	201	
	* EE244181D/244235/244236D	490	583	5.5	2.5	3	0.40	1.67	2.49	1.63	207
	* EE737179D/737260/737260D	495	616	6.5	6.4	3.3	0.37	1.80	2.69	1.76	379
625992A	499	598.5	7	5	5	0.33	2.03	3.02	1.98	493	
CRO-9501	506	614	10	4	2.5	0.34	1.98	2.94	1.93	465	
625996	525	623	7	5	5	0.33	2.03	3.02	1.98	563	
	CRO-9612	524	650	2	5	5	0.33	2.03	3.02	1.98	554
	CRO-9602	517	645	8	5	5	0.4	1.68	2.50	1.64	436
☆* LM272249D/LM272210/LM272210DG2	504	585	6.5	6.4	3.3	0.33	2.03	3.02	1.98	250	
☆* T-EE640193D/640260/640261DG2	519	624	9	6	5	0.31	2.20	3.27	2.15	364	

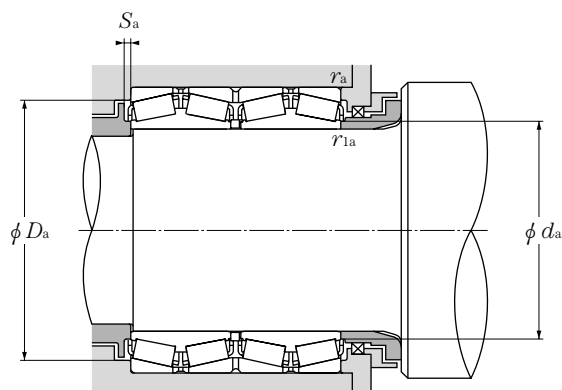
Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



**d 489.026~585.788mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
d	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> <sup>①</sup>	r <sub>is min</sub> <sup>①</sup>	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>
<b>489.026</b>	634.873	320.675	320.675	3.3	3.3	3,650	12,000	370,000	1,220,000
<b>500</b>	670	515	515	5	1.5	6,900	24,600	700,000	2,510,000
	690	480	480	5	5	6,000	19,900	610,000	2,020,000
	705	515	515	6	6	8,450	27,100	860,000	2,760,000
	730	420	420	6	6	7,450	19,900	760,000	2,030,000
	730	440	440	6	6	7,200	20,600	735,000	2,100,000
<b>501.650</b>	711.200	520.700	520.700	6.4	3.3	8,650	27,300	885,000	2,790,000
<b>508.000</b>	762.000	463.550	463.550	6.4	6.4	7,800	21,400	795,000	2,180,000
<b>509.948</b>	654.924	377.000	379.000	6.4	1.5	5,100	17,600	520,000	1,790,000
<b>514.350</b>	673.100	422.275	422.275	6.4	3.3	5,950	20,500	605,000	2,090,000
<b>519.112</b>	736.600	536.575	536.575	6.4	3.3	9,100	28,700	925,000	2,930,000
<b>520</b>	735	535	535	5	7	9,100	28,700	925,000	2,930,000
<b>533.400</b>	965.200	495.300	495.300	7.5	7.5	11,100	28,700	1,130,000	2,920,000
<b>536.575</b>	761.873	558.800	558.800	6.4	3.3	10,100	30,500	1,030,000	3,100,000
<b>539.750</b>	784.225	339.725	342.900	6.4	3.3	4,800	12,200	490,000	1,240,000
<b>555.625</b>	698.500	349.250	349.250	6.4	3.2	4,350	14,300	445,000	1,460,000
<b>558.800</b>	736.600	322.265	322.268	6.4	3.3	4,300	13,500	435,000	1,380,000
	736.600	409.575	409.575	6.4	3.3	6,100	20,500	625,000	2,090,000
<b>570</b>	780	515	515	6	6	9,200	31,000	935,000	3,150,000
	810	590	590	6	6	11,000	35,500	1,120,000	3,600,000
<b>571.500</b>	812.800	593.725	593.725	6.4	3.3	11,900	36,500	1,220,000	3,750,000
<b>584.200</b>	762.000	396.875	401.638	6.4	3.3	6,550	22,300	670,000	2,280,000
<b>585.788</b>	771.525	479.425	479.425	6.4	3.3	8,550	29,000	875,000	2,960,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

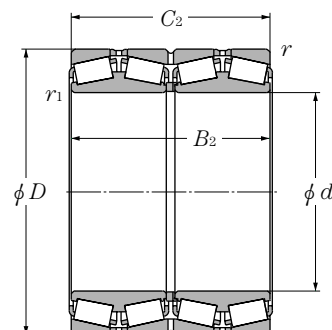
### static

$$P_{or} = F_r + Y_0 F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_0$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass kg (approx.)
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{1as}$ max		$e$	$Y_1$	$Y_2$	
* LM772749D/LM772710/LM772710DA	513	600	6.5	2.5	2.5	0.47	1.43	2.12	1.40	268
CRO-10008 CRO-10005 6259/500 ☆CRO-10023 ☆CRO-10003	520	616	8	4	1.5	0.40	1.68	2.50	1.64	598
	530	640	7	4	4	0.33	2.03	3.02	1.98	600
	553	649.5	7.5	5	5	0.33	2.03	3.02	1.98	632
	554	702	7.5	5	5	0.40	1.68	2.50	1.64	606
	550	683	11	5	5	0.33	2.03	3.02	1.98	535
☆ * M274149D/M274110/M274110DG2	534	663	9.5	6.4	3.3	0.33	2.03	3.02	1.98	726
☆ * EE531201D/531300/531301XDG2	549	711	9.5	5	5	0.38	1.77	2.64	1.73	740
☆CRO-10208 (CRO-10214)	533.5	527	5	5	5	0.41	1.65	2.46	1.61	320
* LM274449D/LM274410/LM274410D	540	648	8	6.4	3.3	0.33	2.03	3.02	1.98	390
☆ * M275349D/M275310/M275310DG2 (CRO-10408)	552	684	9.5	6.4	3.3	0.33	2.03	3.02	1.98	761
☆CRO-10402	558	688	11	4	6	0.33	2.03	3.02	1.98	750
☆CRO-10702	680	929.2	7.5	6	6	0.32	2.12	3.15	2.07	1,662
☆ * M276449D/M276410/M276410DG2	564	711	9.5	6.4	3.3	0.33	2.03	3.02	1.98	890
* EE522126D/523087/523088D	575	733	6.5	6.4	3.3	0.48	1.41	2.10	1.38	552
CRO-11101 (CRO-11103)	579	670.5	6.5	5	5	0.33	2.03	3.02	1.98	298
* EE843221D/843290/843291D (CRO-11217)	585	699	8.5	6.4	3.3	0.34	1.98	2.94	1.93	388
☆ * LM377449D/LM377410/LM377410DG2 (CRO-11216)	588	696	8	6.4	3.3	0.35	1.95	2.90	1.90	502
☆CRO-11402 ☆CRO-11403	609	733	7.5	5	5	0.33	2.03	3.02	1.98	625
	620	760	10	5	5	0.33	2.03	3.02	1.98	845
☆ * M278749D/M278710/M278710DAG2	609	756	11	6.4	3.3	0.33	2.03	3.02	1.98	1,080
☆ * LM778549D/LM778510/LM778510DG2	615	717	7	6.4	3.3	0.47	1.43	2.14	1.40	511
* LM278849D/LM278810/LM278810D	615	726	10	6.4	3.3	0.35	1.95	2.90	1.91	750

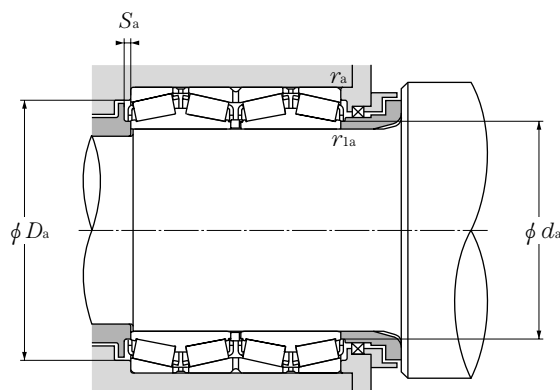
Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



**d 585.788~730mm**

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
<i>d</i>	<i>D</i>	<i>B</i> <sub>2</sub>	<i>C</i> <sub>2</sub>	<i>r</i> <sub>s min</sub> <sup>①</sup>	<i>r</i> <sub>is min</sub> <sup>①</sup>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>	<i>C</i> <sub>r</sub>	<i>C</i> <sub>or</sub>
<b>585.788</b>	771.525	479.425	479.425	6.4	3.3	7,350	25,700	750,000	2,620,000
<b>595.312</b>	844.550	615.950	615.950	6.4	3.3	12,300	39,000	1,250,000	4,000,000
	844.550	615.950	615.950	6.4	3.3	12,600	40,500	1,290,000	4,100,000
<b>609.600</b>	787.400	361.950	361.950	6.4	3.3	6,450	20,300	655,000	2,070,000
	863.600	660.400	660.400	6.4	3.3	13,500	42,000	1,380,000	4,300,000
<b>611.500</b>	832.800	593.725	593.725	6.4	3.3	11,500	37,500	1,170,000	3,850,000
<b>630</b>	920	600	600	7.5	7.8	13,100	39,000	1,340,000	3,950,000
<b>650</b>	1,030	560	560	7.5	12	13,500	35,000	1,380,000	3,550,000
<b>657.225</b>	933.450	676.275	676.275	6.4	3.3	15,300	48,000	1,560,000	4,900,000
<b>660</b>	1,070	642	642	7.5	7.5	15,400	43,500	1,570,000	4,450,000
<b>660.400</b>	812.800	365.125	365.125	6.4	3.3	6,200	23,200	630,000	2,360,000
<b>670</b>	960	700	700	7.5	7.5	16,700	51,500	1,700,000	5,300,000
	1,090	710	710	7.5	7.5	19,100	50,000	1,950,000	5,100,000
	1,090	710	710	7.5	7.5	17,400	47,500	1,780,000	4,850,000
<b>679.450</b>	901.700	552.450	552.450	6.4	3.3	11,200	38,000	1,140,000	3,900,000
<b>680</b>	870	460	460	6	3	7,500	27,400	765,000	2,790,000
<b>682.625</b>	965.200	701.675	701.675	6.4	3.3	16,100	50,500	1,640,000	5,150,000
<b>685.800</b>	876.300	352.425	355.600	6.4	3.3	6,050	21,800	615,000	2,220,000
<b>710</b>	900	410	410	5	2.5	7,650	26,900	780,000	2,740,000
<b>711.200</b>	914.400	317.500	317.500	6.4	3.3	5,350	17,900	545,000	1,820,000
	914.400	317.500	317.500	6.4	16	5,350	17,900	545,000	1,820,000
<b>730</b>	1,070	642	642	7.5	7.5	15,400	46,500	1,570,000	4,750,000

① Minimum allowable dimension for chamfer dimension *r* or *r*<sub>s</sub>.



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

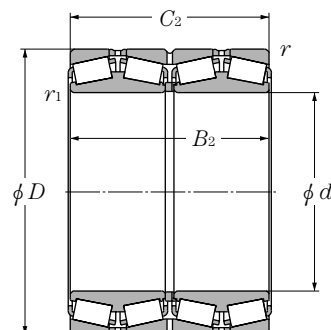
### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{1as}$ max		$e$	$Y_1$	$Y_2$	$Y_o$
☆CRO-11701	628	718	9.5	6.4	3.3	0.35	1.95	2.90	1.91	610
☆CRO-11913	654	781	7	6.4	3.3	0.33	2.03	3.02	1.98	1,135
☆ * M280049D/M280010/M280010DG2	633	786	11	6.4	3.3	0.33	2.03	3.02	1.98	1,160
☆ * EE649241D/649310/649311DG2	636	747	9.5	6.4	3.3	0.33	2.03	3.02	1.98	458
☆ * M280349D/M280310/M280310DG2	659	796	13.5	6.4	3.3	0.33	2.03	3.02	1.98	1,250
☆CRO-12202	660	776	11.5	6.4	3.3	0.33	2.03	3.02	1.98	960
☆CRO-12604	702	848	7.5	6	6	0.33	2.03	3.02	1.98	1,390
☆CRO-13001	765	947	8.5	6	10	0.32	2.12	3.15	2.07	1,760
☆ * M281649D/M281610/M281610DG2	699	870	11	6.4	3.3	0.33	2.03	3.02	1.98	1,630
☆CRO-13202	760	991	9	6	6	0.32	2.12	3.15	2.07	1,950
☆ * L281149D/L281110/L281110DG2	682.8	777	9	6.4	3.3	0.33	2.03	3.02	1.98	448
☆CRO-13401	719	901	8	6	6	0.33	2.03	3.02	1.98	1,600
☆CRO-13404	782	997	13.5	6	6	0.29	2.32	3.45	2.26	2,690
☆CRO-13402	799	995	13.5	6	6	0.32	2.12	3.15	2.07	2,600
☆ * LM281849D/LM281810/LM281810DG2	714	852	11	6.4	3.3	0.33	2.03	3.02	1.98	1,040
CRO-13602	713	824	8	5	2.5	0.43	1.57	2.34	1.53	582
☆M282249D/M282210/M282210DG2	723	900	13	6.4	3.3	0.33	2.03	3.02	1.98	1,770
☆ * EE655271D/655345/655346DG2 (CRO-13708)	717	831	8	6.4	3.3	0.42	1.61	2.40	1.57	539
☆CRO-14208	745	850	10	4	2	0.33	2.03	3.02	1.98	620
☆ * EE755281D/755360/755361DG2	744	873	9.5	2.5	5	0.38	1.77	2.64	1.73	527
☆ * EE755280D/755360/755361DG2	762	873	8	6.4	3.3	0.38	1.77	2.64	1.73	527
☆CRO-14601	780	1,020	7	6	6	0.33	2.03	3.02	1.98	1,900

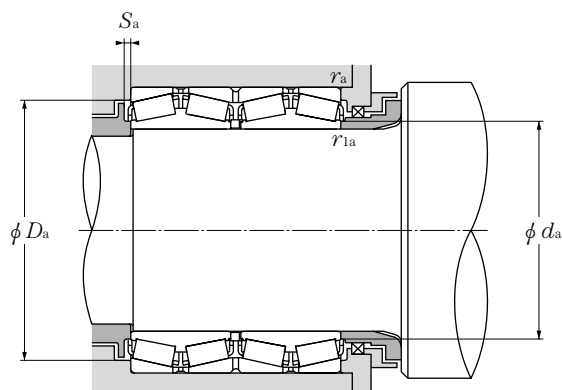
Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



## $d$ 730.250~1,200.150mm

Boundary dimensions						Basic load ratings			
mm						dynamic	static	dynamic	static
						kN		kgf	
$d$	$D$	$B_2$	$C_2$	$r_{s \min}^{\text{①}}$	$r_{is \min}^{\text{①}}$	$C_r$	$C_{or}$	$C_r$	$C_{or}$
730.250	1,035.050	755.650	755.650	6.4	3.3	18,100	59,500	1,850,000	6,050,000
749.300	990.600	605.000	605.000	6.4	3.3	12,600	45,500	1,290,000	4,650,000
762.000	1,066.800	723.900	736.600	12.7	4.3	17,700	58,500	1,800,000	5,950,000
	1,079.500	787.400	787.400	12.7	4.8	19,200	65,000	1,960,000	6,600,000
800	1,120	820	820	7.5	7	21,000	72,500	2,140,000	7,400,000
825.500	1,168.400	844.550	844.550	12.7	4.8	22,300	76,500	2,270,000	7,800,000
840	1,170	840	840	6	6	21,900	76,500	2,230,000	7,800,000
863.600	1,130.300	669.925	669.925	12.7	4.8	15,800	59,500	1,610,000	6,050,000
	1,219.200	876.300	889.000	12.7	4.8	24,100	83,000	2,450,000	8,450,000
938.212	1,270.000	825.500	825.500	12.7	4.8	22,500	80,000	2,300,000	8,150,000
950	1,360	880	880	7.5	4	27,000	89,000	2,750,000	9,050,000
1,200.150	1,593.850	990.600	990.600	12.7	4.8	33,500	132,000	3,400,000	13,500,000

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .



## Equivalent bearing load

### dynamic

$$P_r = XF_r + YF_a$$

$\frac{F_a}{F_r} \leq e$		$\frac{F_a}{F_r} > e$	
$X$	$Y$	$X$	$Y$
1	$Y_1$	0.67	$Y_2$

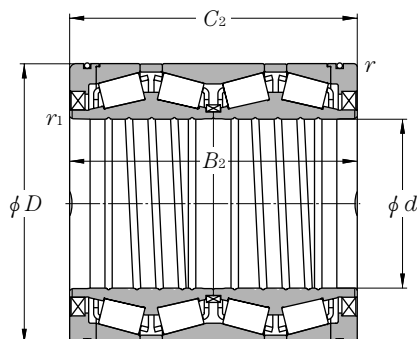
### static

$$P_{or} = F_r + Y_o F_a$$

For values of  $e$ ,  $Y_2$  and  $Y_o$  see the table below.

Bearing numbers	Abutment and fillet dimensions					Constant	Axial load factors			Mass
	$d_a$	$D_a$	$S_a$ mm min	$r_{as}$ max	$r_{las}$ max		$e$	$Y_1$	$Y_2$	$Y_o$
☆ * M283449D/M283410/M283410D	774	966	13	6.4	3.3	0.33	2.03	3.02	1.98	2,210
☆ * LM283649D/LM283610/LM283610DG2	786	936	10.5	6.4	3.3	0.33	2.03	3.02	1.98	1,250
☆ * M284148D/M284111/M284110DG2	840	985	3.5	12.7	4.3	0.33	2.03	3.02	1.98	2,220
☆ * M284249D/M284210/M284210DG2	810	1,005	13	12.7	4.8	0.33	2.03	3.02	1.98	2,480
☆CRO-16001	858	1,052	10	6	6	0.33	2.03	3.02	1.98	3,960
☆ * M285848D/M285810/M285810DG2	879	1,085	13	12.7	4.8	0.33	2.03	3.02	1.98	3,010
☆CRO-16803	897	1,099	12	5	5	0.33	2.03	3.02	1.98	3,970
☆ * LM286249D/LM286210/LM286210DG2	906	1,065	11	12.7	4.8	0.33	2.03	3.02	1.98	1,950
☆ * EE547341D/547480/547481DG2 (CRO-17301)	918	1,135	6.5	12.7	4.8	0.33	2.03	3.02	1.98	3,640
☆ * LM287649D/LM287610/LM287610DG2	990	1,190	10	12.7	4.8	0.33	2.03	3.02	1.98	4,100
☆CRO-19001	1,030	1,278	12	6	3	0.35	1.95	2.90	1.91	4,100
☆ * LM288949D/LM288910/LM288910DG2	1,260	1,500	13	12.7	4.8	0.33	2.03	3.02	1.98	6,130

Remarks: 1. Bearing numbers marked "\*" designate inch system bearings. 2. Bearing numbers marked "☆" designate bearing with hollow rollers and pin type cages. 3. The bearing where parentheses adhered abolished inner ring spacer.



d 140~711.200mm

d	Boundary dimensions					Basic load ratings				Bearing numbers
	mm					dynamic kN	static kN	dynamic kgf	static kgf	
	D	B <sub>2</sub>	C <sub>2</sub>	r <sub>s min</sub> ①	r <sub>ls min</sub> ①	C <sub>r</sub>	C <sub>or</sub>	C <sub>r</sub>	C <sub>or</sub>	
140	198	174	174	2	1.5	595	1,470	60,500	150,000	CRO-2810LL
	198	174	174	2	1.5	615	1,510	63,000	154,000	CRO-2812LL
200	282	206	206	2.5	2.5	950	2,450	97,000	250,000	CRO-4022LL
216.103	330.2	263.525	269.875	3.3	1.5	1,770	4,000	180,000	405,000	*CRO-4303LL
220	295	315	315	2.5	1	1,270	3,850	130,000	395,000	CRO-4424LL
	310	280	280	2.5	1	1,590	4,100	162,000	420,000	CRO-4427LL
	320	290	290	3	2.7	1,780	4,850	181,000	495,000	CRO-4436LL
240	338	248	248	3	3	1,590	4,200	162,000	430,000	CRO-4811LL
	338	340	340	2.5	1	2,040	6,000	208,000	610,000	CRO-4817LL
245	345	310	310	3	1	2,070	5,950	211,000	610,000	CRO-4906LL
250	365	270	270	3	2.5	1,920	4,750	196,000	485,000	CRO-5015LL
254	358.775	269.875	269.875	3.3	1.5	1,940	4,900	198,000	500,000	*CRO-5117LL
	358.775	269.875	269.875	3.3	3.3	1,850	4,750	188,000	485,000	*CRO-5116LL
260	365	339	339	4	1	2,250	5,950	229,000	610,000	CRO-5224LL
260.35	422.275	314.325	317.5	3.3	4.8	2,680	5,950	274,000	606,000	*CRO-5227LL
279.4	393.7	269.875	269.875	6.4	1.5	2,000	4,950	204,000	505,000	*CRO-5652LL
280	380	290	290	3	1	2,060	5,750	210,000	585,000	CRO-5660LL
	395	290	290	4	1.5	2,120	5,450	216,000	560,000	CRO-5665LL
	395	340	340	2.5	3.2	2,590	7,150	264,000	730,000	CRO-5664LL
	410	268	268	6.4	2.2	2,140	5,000	219,000	505,000	CRO-5639LL
285	400	340	340	4	1	2,560	7,650	261,000	780,000	CRO-5709LL
290	400	346	346	4	3.1	2,560	7,650	261,000	780,000	CRO-5814LL
300	400	254	254	4	5	1,920	5,300	196,000	540,000	CRO-6038LL
	420	310	310	4	3.2	2,510	6,850	256,000	695,000	CRO-6042LL
	430	295	305	5	1	2,150	5,550	219,000	565,000	CRO-6031LL
304.648	438.048	280.99	279.4	3.7	2.8	2,250	5,450	229,000	555,000	*CRO-6143LL
310	430	310	310	4	1.5	2,340	6,600	239,000	670,000	CRO-6220LL
	430	350	350	2.5	3.2	2,820	7,950	288,000	815,000	CRO-6222LL
320	480	360	360	4	2	3,600	8,850	370,000	900,000	CRO-6426LL
343.052	457.098	254	254	3.3	1.5	2,060	5,500	210,000	560,000	*CRO-6930LL
	457.098	254	254	3.3	0.6	1,900	5,050	194,000	515,000	*CRO-6920LL
	457.098	299	299	3.3	1.5	2,470	7,100	252,000	725,000	*CRO-6936LL
355	490	316	316	4	2.3	2,520	6,600	257,000	675,000	CRO-7109LL
360	480	375	375	3	2.8	3,400	10,200	345,000	1,040,000	CRO-7226LL
410	546	400	400	5	1.5	3,850	11,900	390,000	1,210,000	CRO-8204LL
420	620	395	320	6	6	4,550	11,800	465,000	1,200,000	CRO-8412LL
440	590	480	480	6	1.5	4,550	13,900	465,000	1,420,000	CRO-8830LL
	620	454	454	6	1.5	5,800	16,600	595,000	1,700,000	CRO-8832LL
457.2	596.9	276.225	279.4	3.3	1.5	2,540	6,800	259,000	695,000	*CRO-9107LL
479.425	679.45	495.3	495.3	6.4	0.6	6,450	18,400	660,000	1,870,000	*CRO-9610LL
482.6	615.95	330.2	330.2	6.4	3.3	3,200	9,650	330,000	985,000	*CRO-9725LL
530	715	590	590	6	4	8,200	26,900	835,000	2,740,000	CRO-10607LL
595.312	844.55	615.95	615.95	6.4	3.0	10,600	32,000	1,080,000	3,250,000	*CRO-11919LL
711.2	914.4	387.35	387.35	6.4	3.3	6,300	19,600	645,000	2,000,000	*CRO-14214LL
	914.4	410	410	5	2.5	6,400	20,700	655,000	2,110,000	*CRO-14209LL

① Minimum allowable dimension for chamfer dimension  $r$  or  $r_1$ .  
Remarks: 1. The marked "\*" bearings are inch system sizes.



Constant	Axial load factors			Mass
$e$	$Y_1$	$Y_2$	$Y_o$	kg (approx.)
0.40	1.68	2.50	1.64	16
0.47	1.43	2.12	1.40	15.5
0.33	2.03	3.02	1.98	39
0.55	1.23	1.82	1.20	78.2
0.37	1.80	2.69	1.76	57.5
0.33	2.03	3.02	1.98	63.5
0.39	1.74	2.59	1.70	77
0.43	1.57	2.34	1.53	67.8
0.40	1.68	2.50	1.64	94.4
0.40	1.68	2.50	1.64	90.5
0.40	1.68	2.50	1.64	90
0.40	1.68	2.50	1.64	83
0.55	1.24	1.84	1.21	81.7
0.40	1.68	2.50	1.64	103
0.55	1.24	1.84	1.21	177
0.47	1.43	2.12	1.40	96.4
0.33	2.03	3.02	1.98	90
0.33	2.07	3.09	2.03	108
0.40	1.68	2.50	1.64	126
0.33	2.07	3.09	2.03	116
0.40	1.68	2.50	1.64	134
0.40	1.68	2.50	1.64	129
0.28	2.43	3.61	2.37	84.6
0.40	1.68	2.50	1.64	128
0.33	2.03	3.02	1.98	136
0.47	1.43	2.12	1.40	136
0.40	1.68	2.50	1.64	133
0.40	1.68	2.50	1.64	150
0.47	1.43	2.12	1.40	228
0.47	1.43	2.12	1.40	105
0.33	2.03	3.02	1.98	107
0.43	1.57	2.34	1.53	130
0.33	2.03	3.02	1.98	159
0.33	2.03	3.02	1.98	180
0.33	2.03	3.02	1.98	253
0.37	1.80	2.69	1.76	384
0.33	2.03	3.02	1.98	358
0.33	2.03	3.02	1.98	426
0.47	1.43	2.12	1.40	192
0.33	2.03	3.02	1.98	565
0.33	2.03	3.02	1.98	225
0.32	2.12	3.15	2.07	700
0.33	2.03	3.02	1.98	1130
0.38	1.78	2.65	1.74	616
0.38	1.77	2.64	1.73	596



Appendix table 10: Inch-millimetre conversion table

inch		0"	1"	2"	3"	4"	5"	6"	7"	8"	9"
fraction	decimal										
1/64	0.015625	0.397	25.400	50.800	76.200	101.600	127.000	152.400	177.800	203.200	228.600
1/32	0.031250	0.794	25.797	51.197	76.597	101.997	127.397	152.797	178.197	203.597	228.997
3/64	0.046875	1.191	26.194	51.594	76.994	102.394	127.794	153.194	178.594	203.994	229.394
1/16	0.062500	1.588	26.591	51.991	77.391	102.791	128.191	153.591	178.991	204.391	229.791
5/64	0.078125	1.984	26.988	52.388	77.788	103.188	128.588	153.988	179.388	204.788	230.188
3/32	0.093750	2.381	27.384	52.784	78.184	103.584	128.984	154.384	179.784	205.184	230.584
7/64	0.109375	2.778	27.781	53.181	78.581	103.981	129.381	154.781	180.181	205.581	230.981
1/ 8	0.125000	3.175	28.178	53.578	78.978	104.378	129.778	155.178	180.578	205.978	231.378
9/64	0.140625	3.572	28.575	53.975	79.375	104.775	130.175	155.575	180.975	206.375	231.775
5/32	0.156250	3.969	28.972	54.372	79.772	105.172	130.572	155.972	181.372	206.772	232.172
11/64	0.171875	4.366	29.369	54.769	80.169	105.569	130.969	156.369	181.769	207.169	232.569
3/16	0.187500	4.762	29.766	55.166	80.566	105.966	131.366	156.766	182.166	207.566	232.966
13/64	0.203125	5.159	30.162	55.562	80.962	106.362	131.762	157.162	182.562	207.962	233.362
7/32	0.218750	5.556	30.559	55.959	81.359	106.759	132.159	157.559	182.959	208.359	233.759
15/64	0.234375	5.953	30.956	56.356	81.756	107.156	132.556	157.956	183.356	208.756	234.156
1/ 4	0.250000	6.350	31.353	56.753	82.153	107.553	132.953	158.353	183.753	209.153	234.553
17/64	0.265625	6.747	31.750	57.150	82.550	107.950	133.350	158.750	184.150	209.550	234.950
9/32	0.281250	7.144	32.147	57.547	82.947	108.347	133.747	159.147	184.547	209.947	235.347
19/64	0.296875	7.541	32.544	57.944	83.344	108.744	134.144	159.544	184.944	210.344	235.744
5/16	0.312500	7.938	32.941	58.341	83.741	109.141	134.541	159.941	185.341	210.741	236.141
21/64	0.328125	8.334	33.338	58.738	84.138	109.538	134.938	160.338	185.738	211.138	236.538
11/32	0.343750	8.731	33.734	59.134	84.534	109.934	135.334	160.734	186.134	211.534	236.934
23/64	0.359375	9.128	34.131	59.531	84.931	110.331	135.731	161.131	186.531	211.931	237.331
3/ 8	0.375000	9.525	34.528	59.928	85.328	110.728	136.128	161.528	186.928	212.328	237.728
25/64	0.390625	9.922	34.925	60.325	85.725	111.125	136.525	161.925	187.325	212.725	238.125
13/32	0.406250	10.319	35.322	60.722	86.122	111.522	136.922	162.322	187.722	213.122	238.522
27/64	0.421875	10.716	35.719	61.119	86.519	111.919	137.319	162.719	188.119	213.519	238.919
7/16	0.437500	11.112	36.116	61.516	86.916	112.316	137.716	163.116	188.516	213.916	239.316
29/64	0.453125	11.509	61.912	61.912	87.312	112.721	138.112	163.512	188.912	214.312	239.712
15/32	0.468750	11.906	62.309	62.309	87.709	113.109	138.509	163.909	189.309	214.709	240.109
31/64	0.484375	12.303	62.706	62.706	88.106	113.506	138.906	164.306	189.706	215.106	240.506
1/ 2	0.500000	12.700	63.103	63.103	88.503	113.903	139.303	164.703	190.103	215.503	240.903
33/64	0.515625	13.097	63.500	63.500	88.900	114.300	139.700	165.100	190.500	215.900	241.300
17/32	0.531250	13.494	63.897	63.897	89.297	114.697	140.097	165.497	190.897	216.297	241.697
35/64	0.546875	13.891	64.294	64.294	89.694	115.094	140.494	165.894	191.294	216.694	242.094
9/16	0.562500	14.288	64.691	64.691	90.091	115.491	140.891	166.291	191.691	217.091	242.491
37/64	0.578125	14.684	90.488	90.488	90.488	115.888	141.283	166.688	192.088	217.488	242.888
19/32	0.593750	15.081	65.088	65.088	90.884	116.284	141.684	167.084	192.484	217.884	243.284
39/64	0.609375	15.478	65.481	65.481	91.281	116.681	142.081	167.481	192.881	218.281	243.681
5/ 8	0.625000	15.875	65.878	65.878	91.678	117.078	142.478	167.878	193.278	218.678	244.078
41/64	0.640625	16.272	66.275	66.275	92.075	117.475	142.875	168.275	193.675	219.075	244.475
21/32	0.656250	16.669	66.672	66.672	92.472	117.872	143.272	168.672	194.072	219.472	244.872
43/64	0.671875	17.066	66.869	66.869	92.869	118.269	143.669	169.069	194.469	219.869	245.269
11/16	0.687500	17.462	67.266	67.266	93.266	118.666	144.066	169.466	194.866	220.266	245.666
45/64	0.703125	17.859	67.662	67.662	93.662	119.062	144.462	169.862	195.262	220.662	246.062
23/32	0.718750	18.256	68.059	68.059	94.059	119.459	144.859	170.259	195.659	221.056	246.459
47/64	0.734375	18.653	68.456	68.456	94.456	119.856	145.256	170.656	196.056	221.456	246.856
3/ 4	0.750000	19.050	68.853	68.853	94.853	120.253	145.653	171.053	196.453	221.853	247.253
49/64	0.765625	19.447	69.250	69.250	95.250	120.650	146.050	171.450	196.850	222.250	247.650
25/32	0.781250	19.844	70.247	70.247	95.647	121.047	146.447	171.847	197.247	222.647	248.047
51/64	0.796875	20.241	96.044	96.044	96.044	121.444	146.844	172.244	197.644	223.044	248.444
13/16	0.812500	20.638	96.441	96.441	96.441	121.841	147.241	172.641	198.041	223.441	248.841
53/64	0.828125	21.034	96.838	96.838	96.838	122.238	147.638	173.038	198.438	223.838	249.238
27/32	0.843750	21.431	71.438	71.438	97.234	122.634	148.034	173.434	198.834	224.234	249.634
55/64	0.859375	21.828	72.231	72.231	97.631	123.031	148.431	173.831	199.231	224.631	250.031
7/ 8	0.875000	22.225	72.628	72.628	98.028	123.428	148.828	174.228	199.628	225.028	250.428
57/64	0.890625	22.622	73.025	73.025	98.425	123.825	149.225	174.625	200.025	225.425	250.825
39/32	0.906250	23.019	73.422	73.422	98.822	124.222	149.622	175.022	200.422	225.822	251.222
59/64	0.921875	23.416	73.819	73.819	99.219	124.619	150.019	175.419	200.819	226.219	251.619
15/16	0.937500	23.812	74.216	74.216	99.616	125.016	150.416	175.816	201.216	226.616	252.016
61/64	0.953125	24.209	74.612	74.612	100.012	125.412	150.812	176.212	201.612	227.012	252.412
31/32	0.968750	24.606	75.009	75.009	100.409	125.809	151.209	176.609	202.009	227.409	252.809
63/64	0.984375	25.003	75.406	75.406	100.806	126.206	151.606	177.006	202.406	227.806	253.206
			75.803	75.803	101.203	126.603	152.003	177.403	202.803	228.203	253.603