



FAG



Bearing Arrangements for Tillage and Harvesting

Example products

SCHAEFFLER

Foreword

Competence in agricultural engineering

Robust and reliable bearing arrangements are absolutely necessary in order to achieve long term operation of agricultural machinery and rapid, problem-free working in the fields. The environmental conditions place high requirements on bearing manufacturers. Contamination, shocks, stone impacts, aridity and moisture, together with ever-increasing performance levels, require machine parts that are adequately protected against these environmental influences.

The experts at Schaeffler have decades of experience in the development of bearing arrangements for difficult operating conditions. For our customers in agricultural engineering, we offer a highly developed product range including suitable bearing arrangements for a very wide variety of applications.

Competence in agricultural engineering: we define this as products matched to the applications and the appropriate service.

Technical and economic leadership

For applications in agricultural engineering, Schaeffler has solutions giving major customer benefits, such as:

- flanged housing units with anti-corrosion protection
- maintenance-free plough disc bearing arrangements (system solutions)
- insert bearing units protected against shocks and contamination
- four point contact bearings with particularly high tilting rigidity for seed discs.

In addition, there are a large number of special solutions to fulfil a very wide range of requirements.

Service portfolio for agricultural machinery

The experts at Schaeffler offer competent advice in all phases of the product life cycle. The product selection and advice system *medias*[®] for rolling bearings, plain bearings and linear guidance systems makes it possible to call up technical data on the products, carry out calculations according to catalogue standards and load CAD data directly into the design.

As a calculation service, Schaeffler offers FEM analyses, dynamic simulations and shaft calculation using BEARINX.

In addition, we offer competent advice on lubrication technology when it comes to identifying the correct lubrication for rolling bearings. With the demand for agricultural machinery with increasing energy efficiency, friction in bearing arrangements plays an important role. Our service function Tribology devotes itself to finding ways of minimising this friction and thereby minimising wear.

The extensive service portfolio from Schaeffler is rounded off by special materials and surface coatings.

Bearing arrangements for tillage and harvesting

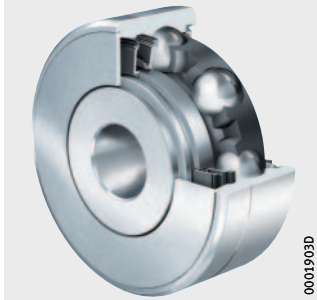
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Product overview

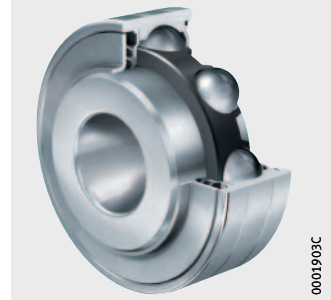
Bearing arrangements for tillage and harvesting

Four point contact bearings and angular contact ball bearings for seed discs

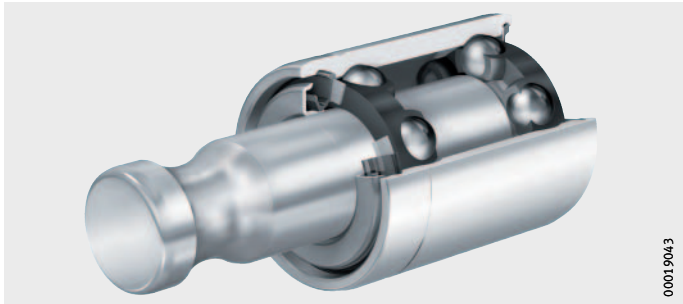
KLX..-IA01



KLX..-IA01

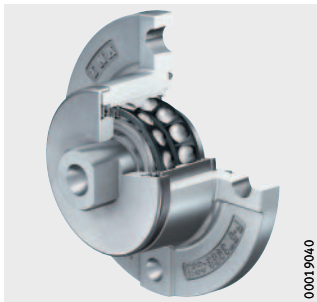


WBO

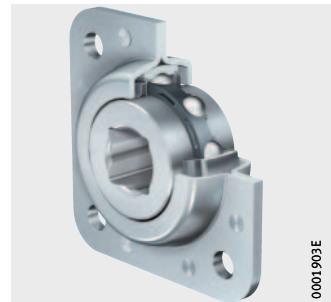


Flanged housing units for plough discs

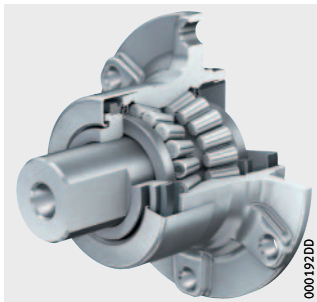
TILL



TRV..-IA02

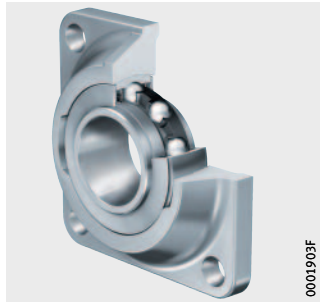


TILL

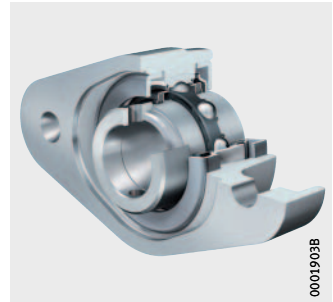


**Flanged housing units
for drums**

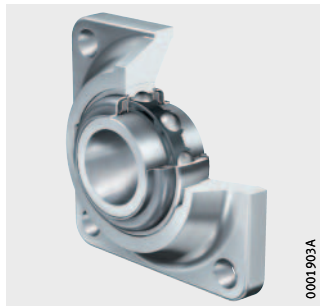
IBBU..-IA03



RCJT..-IA03

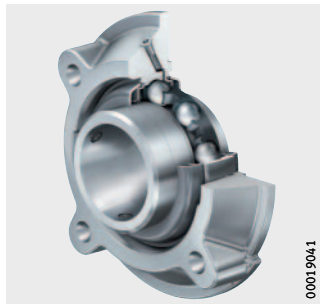


RCJ..-IA03

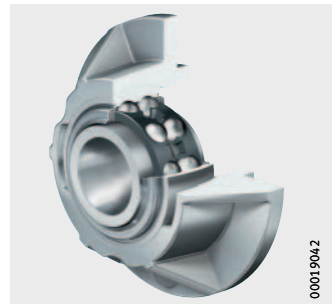


**Flanged housing units
for harvesters**

RMEY..-IA04

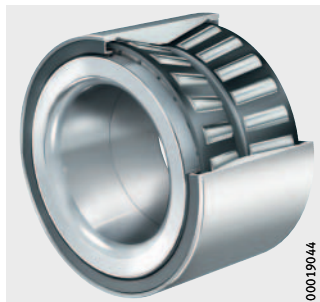


TME..-IA04



**Tapered roller bearings and
angular contact ball bearings**
For universal application

Z-578396.TR2U1



F-803775



Bearing arrangements for tillage and harvesting

Features

The following sections describe selected bearing arrangements for use in machinery for tillage and harvesting. Bearing arrangements for seed discs, plough discs, drums and harvesters require seals, see page 13, that give complete protection of the rolling elements against the environmental conditions in agricultural operations.

In addition, Schaeffler develops and manufactures further products for agricultural engineering use in consultation with the customer.

Further information

■ Further information can be found at www.schaeffler.de/agricultural_engineering.

Four point contact bearings for seed discs

Four point contact bearings belong to the family of single row angular contact ball bearings and therefore require significantly less space in an axial direction than double row designs.

Seed disc bearings are of a compact design and have a special sealing concept that protects the rolling bearing system against contamination and moisture, *Figure 1*.

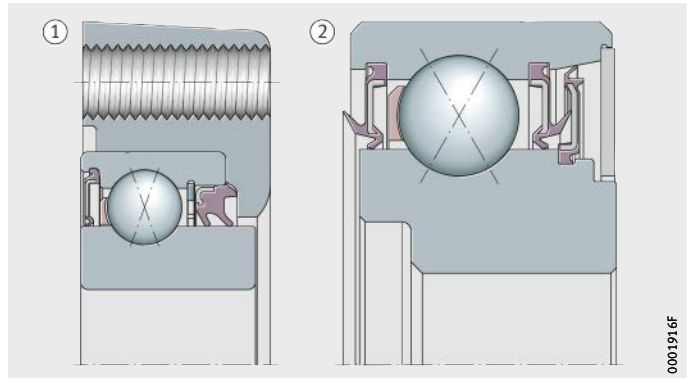
The rolling elements are guided by plastic cages.

IBBU...IA01
KLX...IA01

- ① Double lip seal
- ② Inner ring with increased capacity possible

Figure 1

Four point contact bearing with multiple lip seal



Axial load capacity in both directions

In the case of four point contact bearings, the raceways of the inner and outer rings are ground to a gothic arch profile. They are therefore suitable for supporting axial forces, radial forces and tilting moments.

Preload

The radial internal clearance of these bearings is limited. In general, these bearings are axially clamped against the seed disc and run almost free from clearance in operation. Tight press fits in the housing and on the shaft should therefore be avoided.

Lubrication

Four point contact bearings for seed discs are supplied from the factory already filled with the maximum possible grease quantity. No provision is made for relubrication.

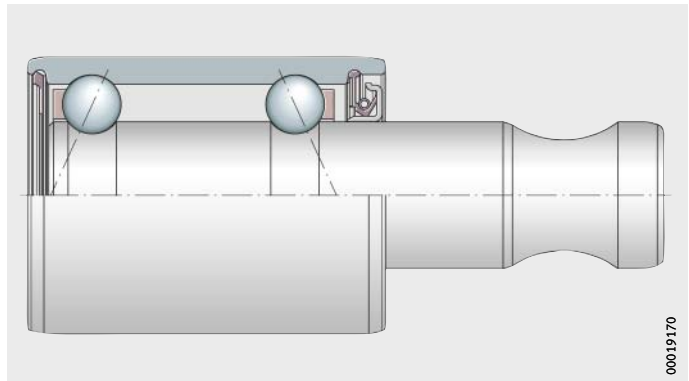
Angular contact ball bearing units for seed discs

The ready-to-fit bearing unit WB0...IA01 for the trailing wheel of a seed drill belongs to the family of double row angular contact ball bearings. It has effective protection against contamination by means of a cover and a spring-preloaded cartridge seal, *Figure 2*.

The design of the bearing unit facilitates an economical adjacent construction, short mounting times, freedom from maintenance due to the large grease cavity and a long operating life.

WB0

Figure 2
Bearing unit in the trailing wheel
of a seed drill



Bearing arrangements for tillage and harvesting

Flanged housing units for plough discs

The machined flanged housing units for plough discs constitute a system solution with high load capacity and tilting rigidity that requires only simple screw mounting on the machine frame and the plough disc, *Figure 3*. The plough disc can be easily changed at the operating location within a few minutes.

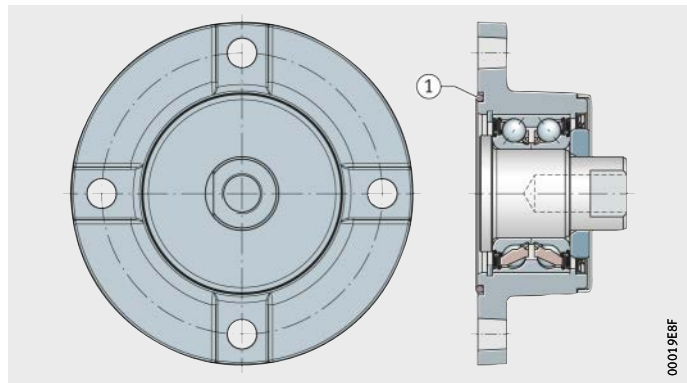
Due to the split inner rings, a larger number of rolling elements can have an effect than in the case of conventional angular contact ball bearings. In combination with the large contact angle, the working forces and moments involved in operation can be reliably supported. The rolling elements are guided by plastic cages.

The unit comprises the following components:

- machined housing
- integrated screw mounting stud including stop face for location in the adjacent construction
- double row angular contact ball bearing with split inner ring
- protective shield
- ring for location of the seal
- separate seal.

① O ring

Figure 3
Flanged housing units
for plough discs

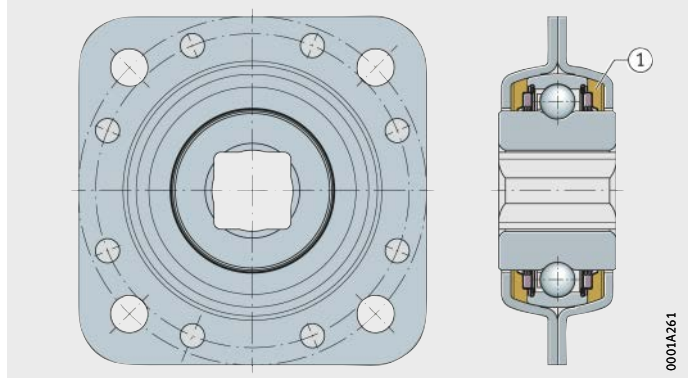


Flanged housing units with sheet steel housing

The two sheet steel halves are riveted together, *Figure 4*. The unit is positioned on a square section shaft by means of spacers. The sheet steel halves protect the seal system against mechanical damage and, in addition, form a prechamber for grease.

① Prechamber greased

Figure 4
Four-bolt flanged housing unit with sheet steel housing and square bore



Preload

Once the bearing system is mounted, it operates almost free from clearance.

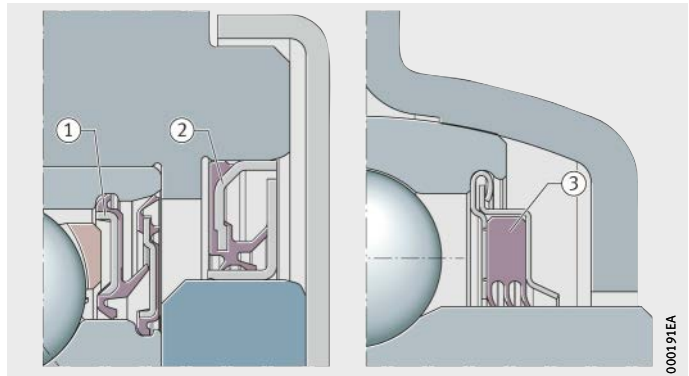
Sealing

Housing units for plough discs are sealed on both sides by means of a triple lip seal. In the case of flanged housing units with a machined housing, the side facing contamination is additionally protected by means of a highly effective, triple lip cartridge seal, *Figure 5*.

The seals are additionally protected by a steel plate against mechanical damage and high pressure cleaning equipment.

① Multiple seal
② Cartridge seal
③ T seal

Figure 5
Integrated multiple seal with additional cartridge seal



Lubrication

Grease prechambers provide lubrication of the seal lips and thus prevent dry running.

Bearing arrangements for tillage and harvesting

Flanged housing units for drums

Flanged housing units for drums comprise a machined cast housing and a self-aligning bearing as well as additional flinger shields, *Figure 6*.

In general, the housings are made from spheroidal graphite cast iron. They are designed for the high requirements present at the operating location. They can securely support shock loads.

Due to the spherical shape of the outer ring, the bearing can align itself during mounting of the unit. As a result, small misalignments can be compensated.

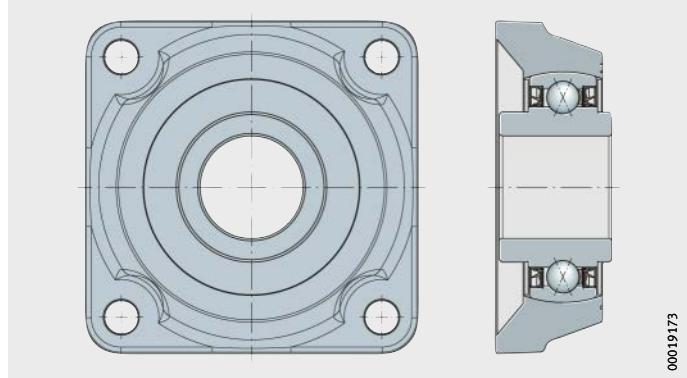


Figure 6
Flanged housing unit for drums

Corrotect coating

In order that the seal can remain effective in the long term, the inner ring has a Corrotect coating. This prevents penetration of rust under the seal due to corrosion of the inner ring.

Sealing

Housing units for drums are sealed on both sides by means of a triple lip seal. In addition, the seals are protected by flinger shields against mechanical damage and high pressure cleaning equipment, which means that it is possible to operate these units without maintenance.

Lubrication

The flinger shields are either pressed onto the inner ring or are staked with the inner ring or housing. They are fitted such that there is a narrow gap and a prechamber of a labyrinth design for the grease. The seal is lubricated by the grease and the friction is reduced at the same time.

Flanged housing units for harvesters

Flanged housing units for harvesting generally comprise a machined cast housing and a self-aligning bearing, *Figure 7*.

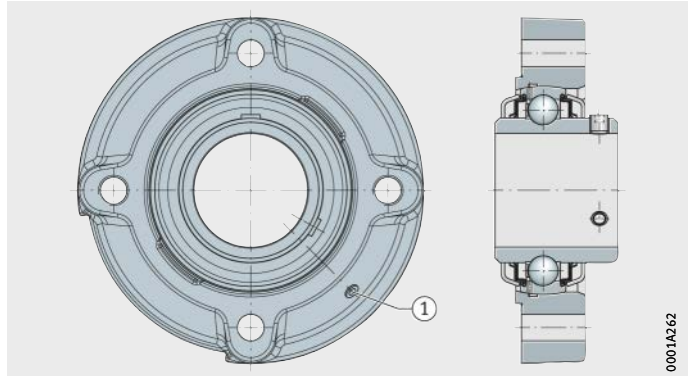
The housings are normally made from spheroidal graphite cast iron. They are designed for the high requirements present at the operating location. They can securely support shock loads.

Due to the spherical shape of the outer ring, the bearing can align itself during mounting of the unit. Slight misalignments can thus be compensated.

① Threaded hole in housing

Figure 7

Flanged housing unit for harvesting



Corrotect coating

In order that the seal can remain effective in the long term, the inner ring has a Corrotect coating. This prevents penetration of rust under the seal due to corrosion of the inner ring.

Sealing

Housing units for harvesters are normally sealed on both sides by means of a triple lip seal. In addition, the seals are normally protected by flinger shields against mechanical damage and high pressure cleaning equipment.

Lubrication

Most units are designed with a threaded hole in the housing and can thus be relubricated by means of an appropriate lubrication nipple. Relubrication of the bearing is facilitated where necessary by means of two lubrication holes offset by 180° in the outer ring.

Bearing arrangements for tillage and harvesting

Tapered roller bearings and angular contact ball bearings for universal application

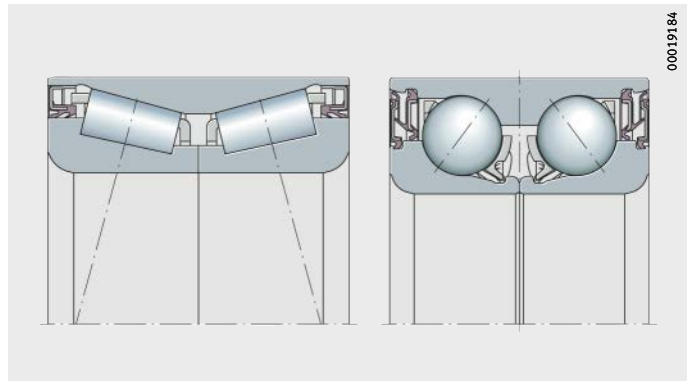
Double row tapered roller bearings or angular contact ball bearings with high load capacity are available with or without seals, *Figure 8*. The bearings are intended for universal application, for example in mowers, in rotary harrows or as fan bearings.

The individual parts of the sealed bearings are as follows:

- outer ring
- split inner ring
- rolling elements (ball or tapered roller)
- cage made from plastic or steel
- efficient seals
- grease filling.

Z-578396
F-803775

Figure 8
Tapered roller bearing and angular contact ball bearing



Axial load capacity in both directions

Due to the design of the rolling element raceways with their high raceway shoulders, the large contact angle and the increased number of rolling elements, these bearings have a higher load capacity than angular contact ball bearings of the standard series with a single piece inner ring.

The large contact angles ensure high tilting rigidity in operation. These facilitate the support of high moment loads.

Preload

The inner rings of the bearings must be axially clamped so that the almost clearance-free running required in operation is achieved.

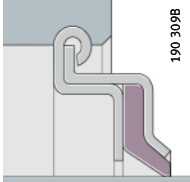
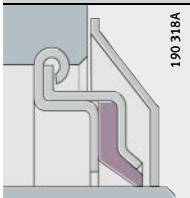
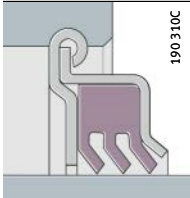
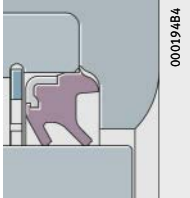
Sealing

The open bearings are particularly suitable for applications with oil lubrication such as those in bearing arrangements in plough discs with slip ring seals.

The sealed bearings have reliable, multiple lip seals.

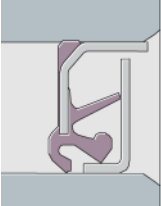
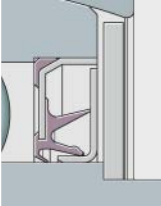
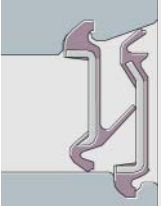
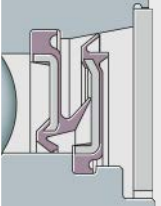
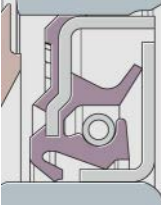
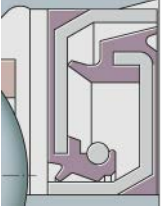
Sealing Some seals for agricultural engineering are of a multi-piece design, see table. This concept offers, due to the rigidly rolled-in sheet steel washer, optimum seating in the bearing as well as concentric alignment of the seal lip to the inner ring.

Seal types

R seal	
 <p>190 309B</p>	<p>Two zinc-coated sheet steel washers extended outwards and angled downwards with intermediate NBR part and radially preloaded seal lip. Better protection against mechanical damage.</p> <p>Substantial grease reservoir due to the space between the extended and angled sheet steel washers. Used in radial insert ball bearings with inner ring extended on both sides.</p>
R seal with flinger shield	
 <p>190 318A</p>	<p>As R seal, but with outer flinger shield with anti-corrosion protection.</p> <p>Additional sealing action without restriction on speed and with additional protection against mechanical damage and high pressure cleaning equipment.</p>
T seal	
 <p>190 310C</p>	<p>Two zinc-plated sheet steel washers with intermediate NBR part and three intermediate radially preloaded seal lips for protection against extreme contamination. For better protection of the seal lip against mechanical damage, the outer sheet steel washer is extended outwards and angled downwards.</p> <p>Lower speeds due to higher friction.</p>
Double lip seal	
 <p>00019484</p>	<p>Two radially preloaded seal lips to give protection against coarse contaminants. Better protection of the seal lips against mechanical damage by means of housing collar.</p>

Bearing arrangements for tillage and harvesting

Seal types
(continued)

Sealing cartridge	
	00019185 Cartridge seal with two L-section rings made from corrosion-resistant steel and moulded, triple seal lip. L-section rings are located on the inner ring and outer ring. The inner seal lip, main seal lip and axial seal lip are preloaded. Between the three seal lips, grease ensures lubrication and additional protection against contamination.
Sealing cartridge with protective shield	
	000194C1 Design as normal cartridge seal but supplemented by a protective shield to protect the bearing against high pressure cleaning equipment and mechanical damage.
Combined sealing washer and flinger shield	
	00019186 Composite unit comprising two seals. The outer seal is anchored in the inner ring, the inner seal is anchored in the outer ring. A preloaded axial seal lip connects the two individual radial seals. This combined seal has low friction.
Combined sealing washer and flinger shield with protective shield	
	000194B5 Design as normal sealing washer and flinger shield but supplemented by a protective shield to protect the bearing against high pressure cleaning equipment and mechanical damage.
Sealing cartridge with annular spring	
	000194C7 Design as cartridge seal. In addition, the inner seal lip is subject to constant preload by an annular spring.
Sealing cartridge with annular spring	
	000194E3 Cartridge seal with three contact seal lips and a gap seal. In addition, the inner seal lip is subject to constant preload by an annular spring.

Lubrication

In general, bearing arrangements in the tillage sector cannot be relubricated. However, relubrication of the bearings in the harvesting sector may be necessary. A suitable solution is a lithium soap grease with a base oil viscosity ISO VG 68 or higher, for example the rolling bearing grease MULTITOP or MULTI2.

Relubrication should be carried out with the bearing rotating and still warm from operation in order to achieve good replacement and distribution of grease.

Operating temperature

Open bearings can be used at operating temperatures from $-20\text{ }^{\circ}\text{C}$ to $+120\text{ }^{\circ}\text{C}$.



Sealed bearings are suitable for operating temperatures from $-20\text{ }^{\circ}\text{C}$ to $+100\text{ }^{\circ}\text{C}$, restricted by the grease and seal material.

Suffixes

Suffixes for available designs, see table.

Available designs

Suffix	Description	Design
IA01	Four point contact bearings and angular contact ball bearings for seed discs	Standard
IA02	Flanged housing units for plough discs	
IA03	Flanged housing units for drums	
IA04	Flanged housing units for harvesters	

Bearing arrangements for tillage and harvesting

Design and safety guidelines Compensation of static misalignments

Bearings with a spherical outside surface of the bearing outer ring, fitted in housings with a concave bore, can compensate for static misalignment of the shaft or housing, *Figure 9* and *Figure 10*:

For units with a lubrication groove in the housing and a lubrication hole in the radial insert ball bearing, the following applies:

- Up to $\pm 2,5^\circ$, the units can be relubricated.
- Between $\pm 2,5^\circ$ and $\pm 5^\circ$, the facility for relubrication is dependent on the specific unit. Please contact us in this case.
- Above $\pm 5^\circ$, relubrication is no longer possible.



The units must not be used to support swivelling or tumbling motion in dynamic operation.

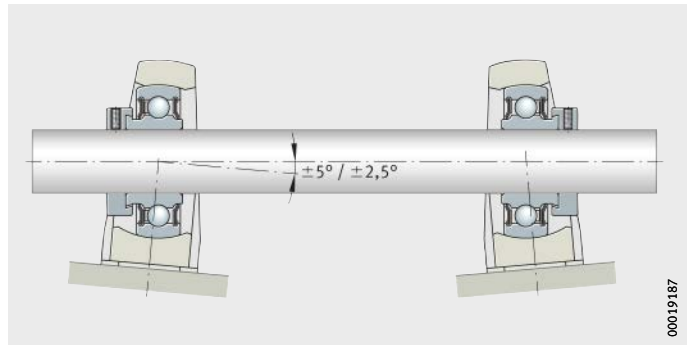


Figure 9
Compensation of static housing misalignment

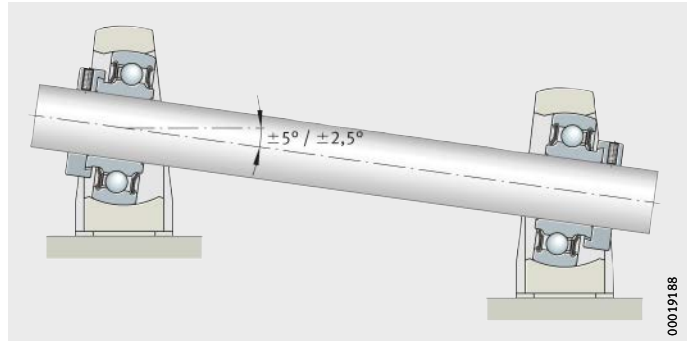
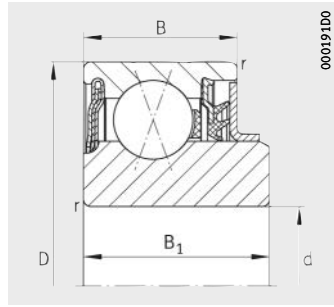
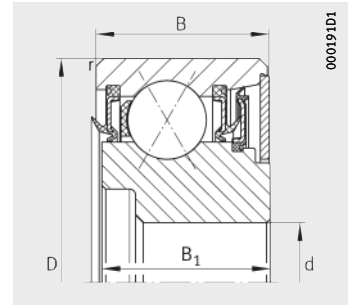


Figure 10
Compensation of static shaft misalignment

Four point contact bearings and angular contact ball bearing units for seed discs



KLX16,027X45,225X18,67

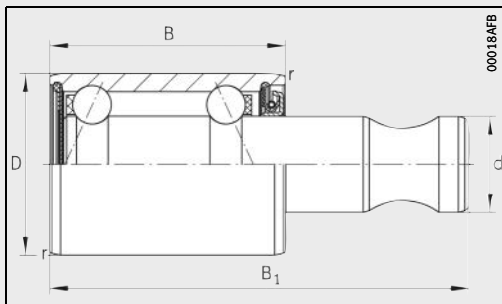


KLX16,027X60X23

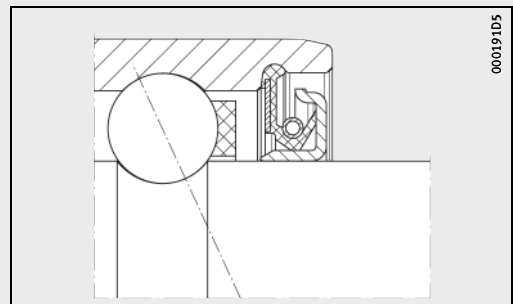
Dimension table · Dimensions in mm

Designation	Mass m kg	Dimensions		
		d	D	B
KLX13X40X18,3-IA01	0,09	13	40	12
WB01750	0,184	15,88	30	38,8
KLX16,027X45,225X18,67-IA01	0,134	16,027	45,225	15,454
KLX16,027X60X23-IA01	0,334	16,027	60	23
IBBU-16,027X73X20-IA01 ¹⁾	0,267	16,027	73	20
SKL-16,3X40X44-IA01 ¹⁾	0,225	16,3	40	39

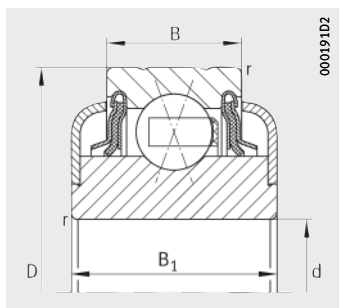
¹⁾ Available by agreement.



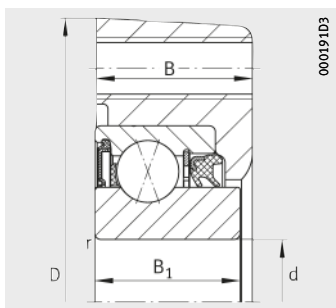
WB01750



WB01750, seal

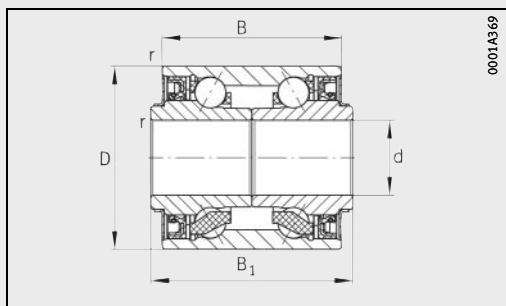


KLX13X40X18,3

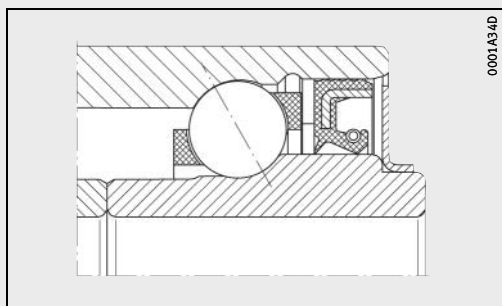


IBBU-16,027X73X20

B ₁	r min.	Basic load ratings	
		dyn. C _r N	stat. C _{0r} N
18,3	0,6	15 000	9 200
69	1,8×12°	6 300	2 600
18,67	0,8	20 000	12 700
22,5	1,1	31 500	20 200
18,61	0,8	20 000	12 700
44	0,6	15 900	11 300



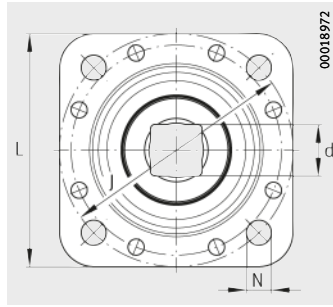
SKL-16,3X40X44



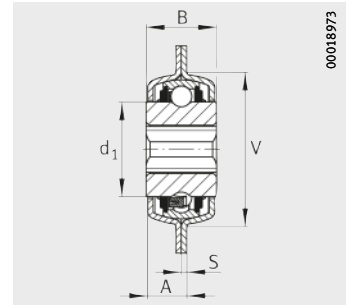
SKL-16,3X40X44, seal

Flanged housing units for plough discs

Sheet steel housing and square bore



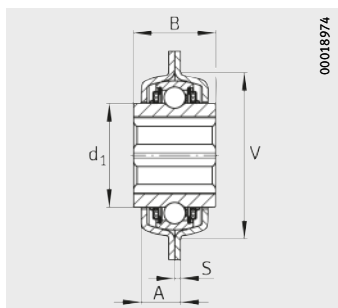
TRV



TRV-28X127X42,9

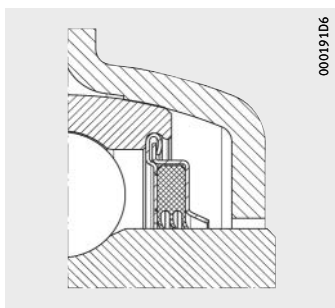
Dimension table · Dimensions in mm

Designation	Mass m ≈kg	Dimensions					
		d	L	J	N	S	B
TRV-28X127X42,9-IA02	1,28	28	127	127	13,5	3,4	42,9
TRV-38X140X55,2-IA02	2,5	38	140	140	13,6	4	55,2



00018974

TRV-38X140X55,2



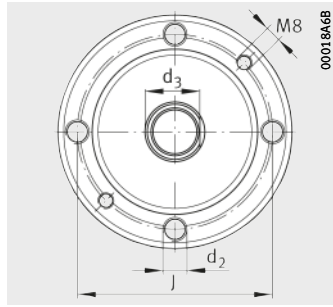
00019106

With T seal

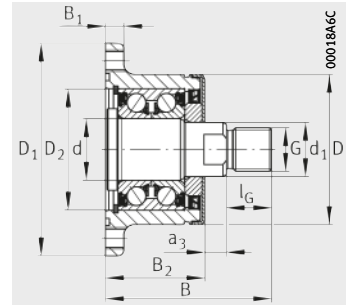
			Load carrying capacity of housing C_{0rG} N	Basic load ratings	
V	A	d_1		dyn. C_r N	stat. C_{0r} N
95	23,8	57,9	7 700	32 500	20 400
113	26,4	69,77	9 800	43 500	29 000

Flanged housing units for plough discs

Machined housing and shaft stud
Ready-to-fit system



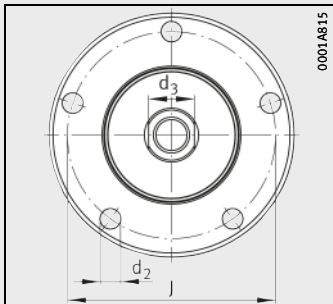
TILL-28X117X97



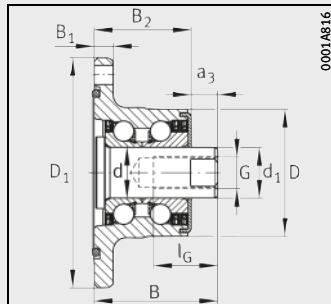
TILL-28X117X97

Dimension table · Dimensions in mm

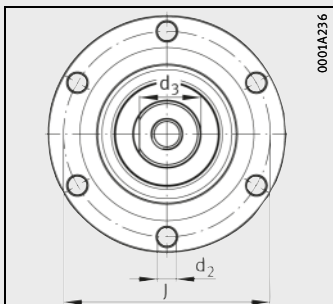
Designation	Mass m ≈kg	Dimensions							
		d	D	D ₁	D ₂	J	d ₁	d ₂	d ₃
TILL-28X117X97	2,44	34	82	117	67	98	28	M12×1,25	25,5
TILL-32X145X77,2	2,88	32	80	145	–	123	32	12,1	29,5
TILL-34,9X169X82	4,12	42	91	169	75	133,35	34,9	13,5	31
TILL-45X161X134	5,2	45	94	161	96,3	139,7	45	12,7	41



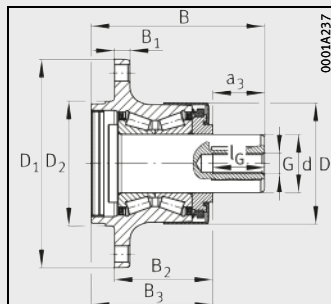
TILL-32X145X77,2



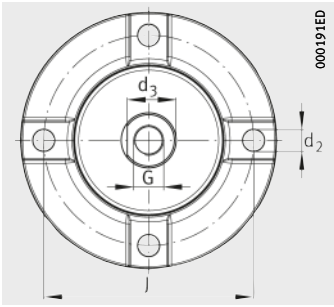
TILL-32X145X77,2



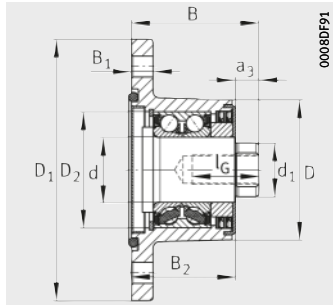
TILL-45X161X134



TILL-45X161X134

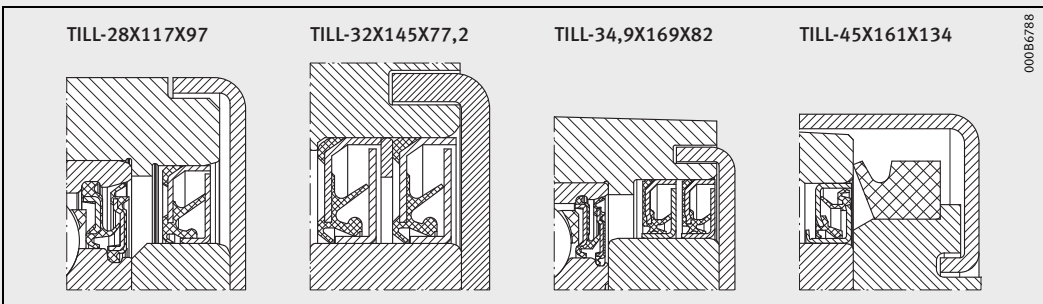


TILL-34,9X169X82



TILL-34,9X169X82

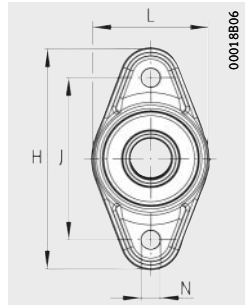
							Basic load ratings	
B	B ₁	B ₂	B ₃	G	l _G	a ₃	dyn. C _r N	stat. C _{0r} N
97	10,5	55	–	M22×1,5	25	17	42 500	36 000
77,2	12	60,7	–	M20×1,5	40	16,5	56 000	44 000
82	14	67	–	3/4"-16 UNF	40	15	51 000	45 500
134	12	79	97	M24×2	40	37	144 000	219 000



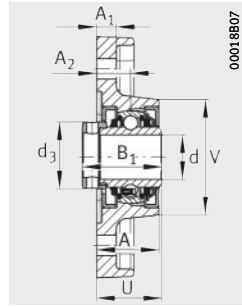
Selection of sealing concepts

Flanged housing units for drums

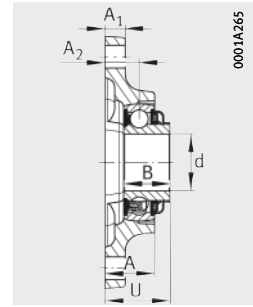
Two-bolt and four-bolt flanged housing units



RCJT-25X134X44,6
RCJT-35X155X39,9



RCJT-25X134X44,6

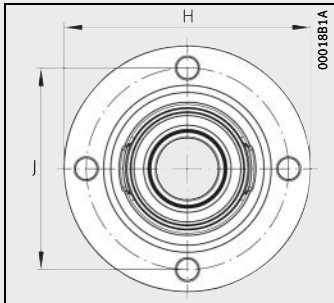


RCJT-35X155X39,9

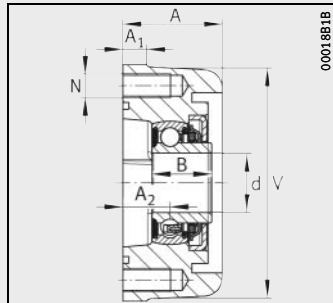
Dimension table · Dimensions in mm

Designation	Mass m ≈ kg	Dimensions						
		d	L	H	A ₁	N	B	U
IBBU-25X100X42-IA03	1,6	25	–	100	10	M10	25	–
RCJT-25X134X44,6-IA03	0,89	25	70	134	11	11,5	–	36,5
IBBU-35X125X40-IA03	1,83	35	–	125	20	M12	28,4	–
RCJT-35X155X39,9-IA03	1,05	35	92	155	12,5	14	28,4	39,9
RCJ-35X118X39,1-IA03	1,45	35	118	–	12,5	14	37,7	39,9
IBBU-40X143X38,4-IA03	2,91	40	143	–	13	17	38,4	38,4
IBBU-50X143X38,4-IA03	2,5	50	143	–	13	17	38,4	–
TCJY-60X175X73,8-IA03	4	60	175	–	16	18	65,1	73,7
IBBU-60X175X73,8-IA03 ¹⁾	4,1	60	175	–	16	18	65,1	73,7

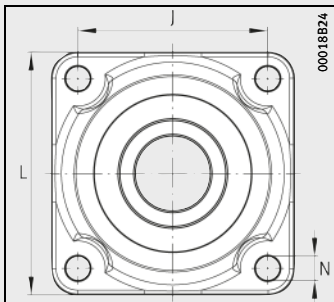
1) Available by agreement only.



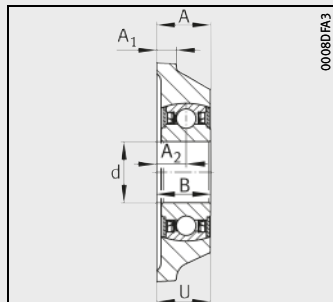
IBBU-25X100X42



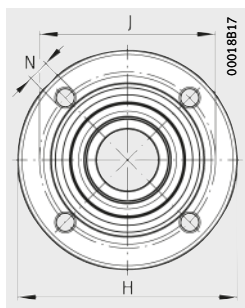
IBBU-25X100X42



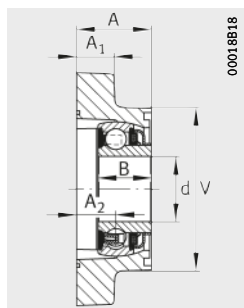
IBBU-40X143X38,4
IBBU-50X143X38,4



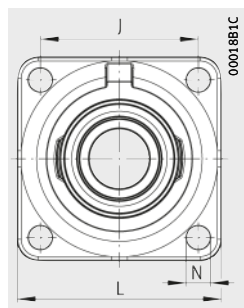
IBBU-40X143X38,4
IBBU-50X143X38,4



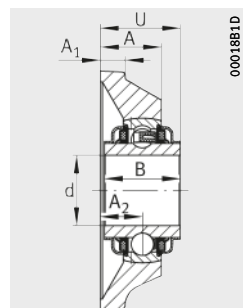
IBBU-35X125X40



IBBU-35X125X40

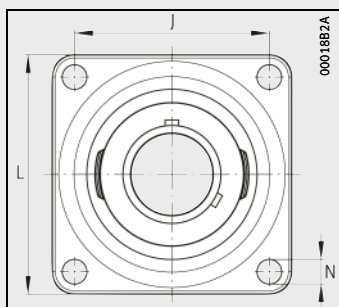


TCJY-60X175X73,8
RCJ-35X118X39,1

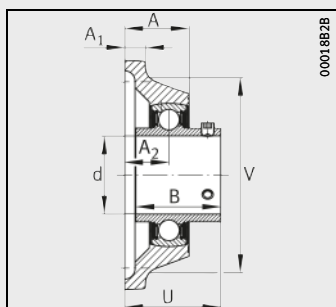


TCJY-60X175X73,8
RCJ-35X118X39,1

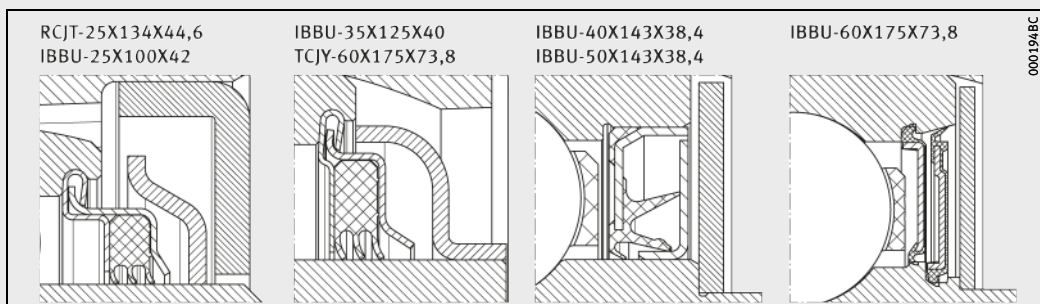
B ₁	J	A ₂	d ₃	A	V	Basic load ratings	
						dyn. C _r N	stat. C _{0r} N
-	82	19,8	-	42	98	14 000	7 800
44,5	99	19	37,5	35	65	14 000	7 800
-	100	21	-	40	88	25 500	15 300
-	130	21	-	30,5	-	25 500	15 300
-	92	21	-	30,5	-	25 500	15 300
-	111	19,2	-	35	-	56 000	45 500
-	111	19,2	-	35	-	56 000	45 500
-	143	34	-	46	150	52 000	36 000
-	143	34	-	49,5	150	79 000	67 000



IBBU-60X175X73,8

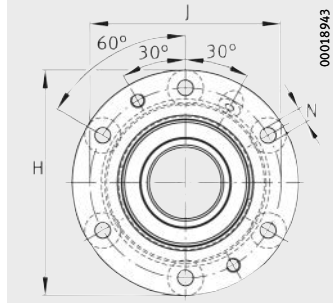


IBBU-60X175X73,8

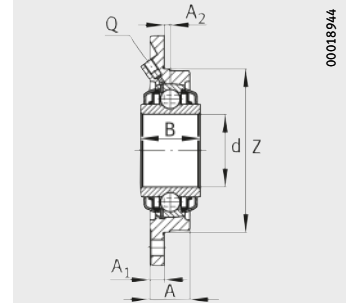


Selection of sealing concepts

Flanged housing units for harvesters



RME, RMEO



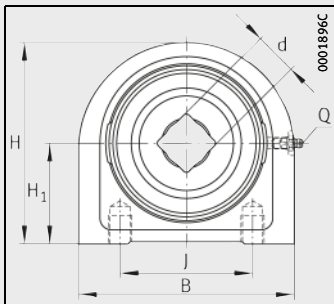
RME, RMEO

Dimension table · Dimensions in mm

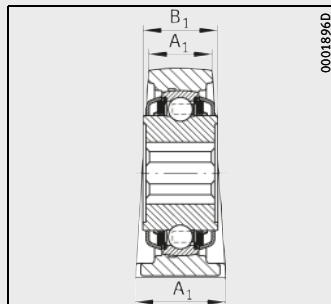
Designation	Mass m ≈ kg	Dimensions				
		d	H	H ₁	A ₁	N
TSHEV-30X150X140-IA04	4	30	140	69,9	60 / 42 ¹⁾	–
TME-40X150X60-IA04	2,64	40	150	–	10	13
IBBU-42X124X48-IA04	0,71	42	124	–	–	–
RMEO-50X190X49,3-IA04	3,59	50	190	–	12	13
RMEO-55X200X49,2-IA04	4,5	55	200	–	13	13
RMEY-60X173X65,2-IA04	4,1	60	183	–	34	14 / M16 ²⁾
RME-60X190X49,3-IA04	3,46	60	190	–	12	13
RMEO-60X217X98,6-IA04	10,12	60	217	–	18	13

1) Base width = 60, head width = 42.

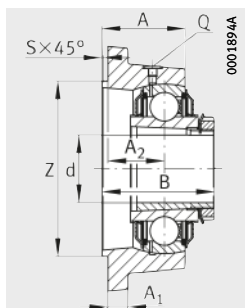
2) Fixing holes: 2×∅14 and 2×M16.



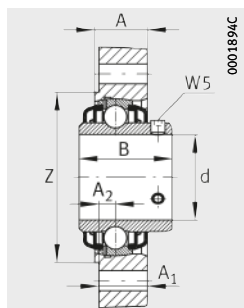
Cast iron housing TSHEV with short base



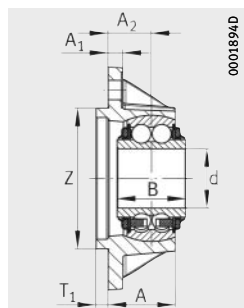
TSHEV



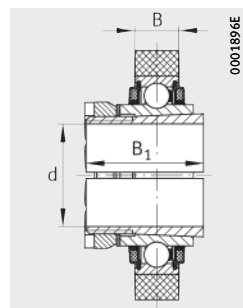
RMEO-60X217X98,6



RMEY-60X173X65,2

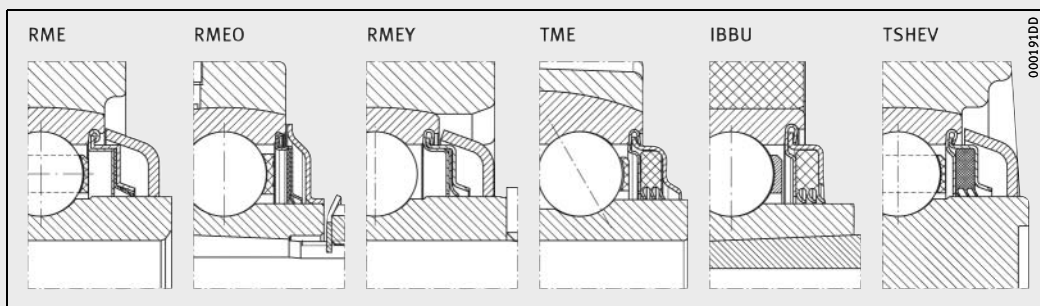


TME-40X150X60



IBBU-42X124X48

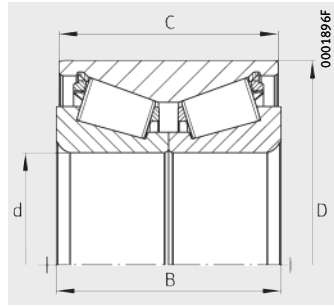
								Basic load ratings	
B	B ₁	J	A ₂	Q	A	T ₁	Z	dyn. C _r N	stat. C _{0r} N
150	49,2	92	–	M8×1	–	–	–	52 000	36 000
46	–	119	29	–	45,25	8	94,7	50 000	37 500
18	48	–	–	–	–	–	–	43 000	37 000
49,2	–	160	5	M8×1	33	–	135	62 000	38 000
49,2	–	170	5	M8×1	36	–	145	72 000	44 500
65,1	–	145	11,5	–	37	–	119,5	52 000	36 000
49,2	–	160	5	M8×1	33	–	135	52 000	36 000
100	–	186	50	M8×1	73,5	–	155,5	104 000	68 000



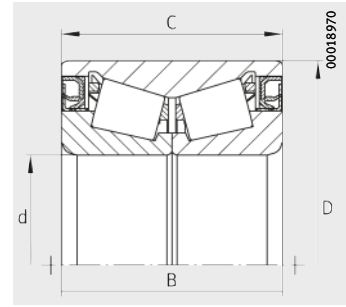
Selection of sealing concepts

Tapered roller bearings

Open or sealed



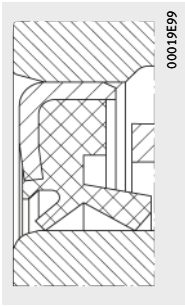
Open



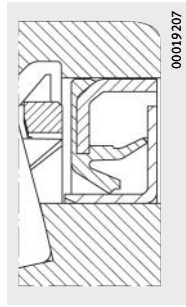
With seals

Dimension table · Dimensions in mm

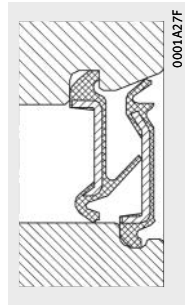
Designation	Mass m ≈ kg	Dimensions			
		d	D	B	C
F-848264	0,4	25	52	37	37
F-570871	0,51	35	65	35	35
Z-540360.06	0,56	39	68	37	37
F-848266	0,7	40	73	40	39
F-586741	0,97	40	80	45	44
F-848243	1,1	45	84	48	48
Z-559431.03	1,1	47	85	45	45
Z-578396	1,29	55	90	55	55



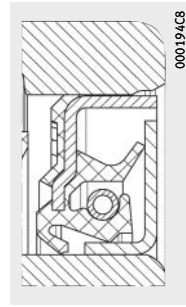
F-848264



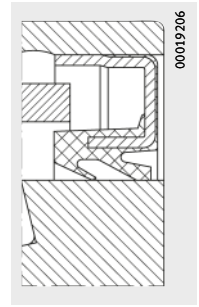
F-570871



Z-540360



Z-559431

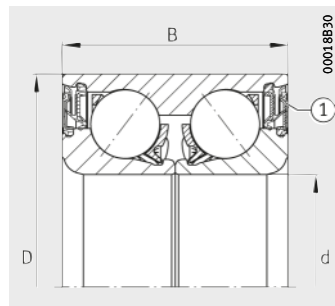


Z-578396

Basic load ratings		Sealing
dyn. C_r N	stat. C_{or} N	
54 900	70 000	Single piece seal with two lips
67 000	86 500	Sealing cartridge with two lips
62 000	91 500	Double seal with three seal lips
90 000	130 000	–
110 000	160 000	–
110 000	171 000	–
106 000	156 000	Sealing cartridge with three lips
129 000	236 000	Single piece seal with two lips

Angular contact ball bearings

Sealed

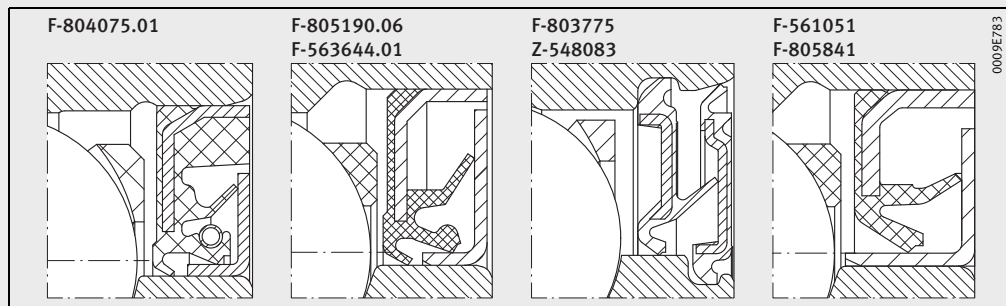


With seals

① Various designs

Dimension table · Dimensions in mm

Designation	Mass m ≈kg	Dimensions			Basic load ratings		Sealing
		d	D	B	dyn. C_r N	stat. C_{0r} N	
F-803775	0,53	34	67	37	42 500	36 000	Double seal
Z-548083	0,6	35	72	33	40 000	31 500	Double seal
F-805841	0,63	38,1	70	37	44 000	39 000	Sealing cartridge
F-563644.01	0,76	40	78	40	55 000	48 000	Sealing cartridge
F-561051	0,84	45	82	42	57 000	52 000	Sealing cartridge
F-805190.06	1,25	50	92	50	75 000	68 000	Sealing cartridge
F-804075.01	1,49	51	96	50	85 000	76 500	Sealing cartridge



Selection of sealing concepts

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