

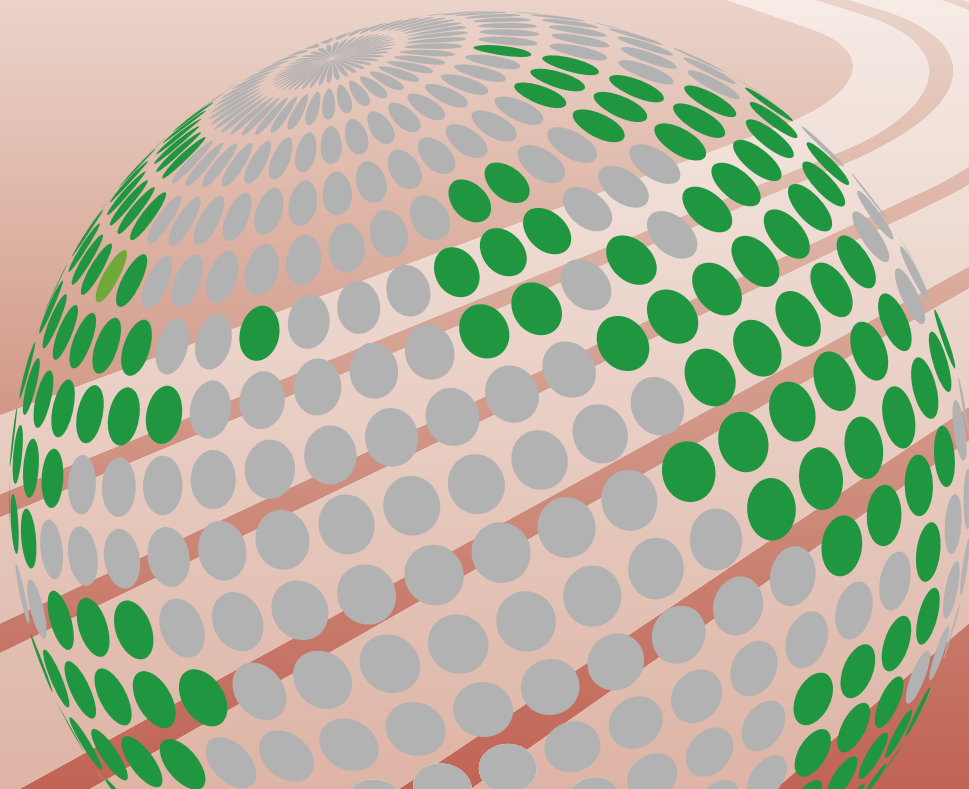
SPEN BEARINGS

Bearing and Oilseal Specialists
Power Transmission Engineers



The Engineer's Tool Kit

BEARINGS



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GENERATION C

SETTING A NEW STANDARD FOR DEEP GROOVE BALL BEARINGS

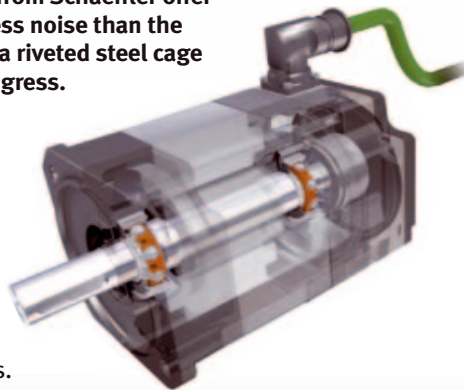


'Generation C' deep groove ball bearings from Schaeffler offer 35 per cent less friction and 50 per cent less noise than the existing designs. The novel HRS seal and a riveted steel cage deliver smoother running and less dust ingress.

Improved Energy Efficiency

35% less friction means less heat, so higher running speeds are possible along with greater stability provided by the new steel cage.

'Generation C' is ideal for applications in which low noise and smooth running are critical - such as ventilators, washing machines, electric motors and power tools.



Direct benefits include a reduction in operating costs, extended maintenance intervals, longer grease life and increased protection against dust contamination.

The dimensions of the new bearings correspond to the previous bearing types, enabling easy replacement.

BENEFITS

- 50% NOISE REDUCTION
- 35% LESS FRICTION
- HIGHER SPEEDS
- REDUCED ENERGY CONSUMPTION
- LONGER OPERATING LIFE
- LOWER OPERATING COSTS

DESIGN IMPROVEMENTS

- OPTIMISED OSCULATION
- IMPROVED RACEWAY SURFACES
- NEW HRS SEAL
- OPTIMISED DUST SHIELD
- LABYRINTH-TYPE SEAL FUNCTION
- NEW RIVETED STEEL CAGE
- -30°C to +120°C OPERATING RANGE

FAG

BEARINGS



Deep groove design for radial & radial / axial loads
 Available with metal shields (2Z) or rubber seals (2HRS)
 Available with radial internal clearance CN, C3, C2 (etc)
 Available in corrosion resistant material (prefix S...)
 Available in bore size 3mm up to 2000mm
 Available with steel, brass (M / Y) or plastic (TV) cages

6000 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
6000	10	26	8
6001	12	28	8
6002	15	32	9
6003	17	35	10
6004	20	42	12
6005	25	47	12
6006	30	55	13
6007	35	62	14
6008	40	68	15
6009	45	75	16
6010	50	80	16
6011	55	90	18
6012	60	95	18
6013	65	100	18
6014	70	110	20
6015	75	115	20
6016	80	125	22
6017	85	130	22
6018	90	140	24
6019	95	145	24
6020	100	150	24
6021	105	160	26
6022	110	170	28
6024	120	180	28
6026	130	200	33
6028	140	210	33
6030	150	225	35
6032	160	240	38
6034	170	260	42
6036	180	280	46
6038	190	290	46

6200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
6200	10	30	9
6201	12	32	10
6202	15	35	11
6203	17	40	12
6204	20	47	14
6205	25	52	15
6206	30	62	16
6207	35	72	17
6208	40	80	18
6209	45	85	19
6210	50	90	20
6211	55	100	21
6212	60	110	22
6213	65	120	23
6214	70	125	24
6215	75	130	25
6216	80	140	26
6217	85	150	28
6218	90	160	30
6219	95	170	32
6220	100	180	34
6222	110	200	38
6224	120	215	40
6226	130	230	40
6228	140	250	42
6230	150	270	45
6232	160	290	48
6234	170	310	52
6236	180	320	52
6238	190	340	55



FAG

BEARINGS



Heavy series deep groove design for radial & radial / axial loads
Available with radial internal clearance CN, C3,

6300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
6300	10	35	11
6301	12	37	12
6302	15	42	13
6303	17	47	14
6304	20	52	15
6305	25	62	17
6306	30	75	19
6307	35	80	21
6308	40	90	23
6309	45	100	25
6310	50	110	27
6311	55	120	29
6312	60	130	31
6313	65	140	33
6314	70	150	35
6315	75	160	37
6316	80	170	39
6317	85	180	41
6318	90	190	43
6319	95	200	45
6320	100	215	47
6322	110	240	50
6324	120	260	55
6326	130	280	58
6328	140	300	62
6330	150	320	65
6332	160	340	68
6334	170	360	72
6336	180	380	75
6338	190	400	78

6400 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
6403	17	62	17
6404	20	72	19
6405	25	80	21
6406	30	90	23
6407	35	100	25
6408	40	110	27
6409	45	120	29
6410	50	130	31
6411	55	140	33
6412	60	150	35
6413	65	160	37
6414	70	180	42
6415	75	190	45
6416	80	200	48
6417	85	210	52
6418	90	225	54



FAG SmartCheck

takes intelligent machine monitoring to a new level: compact, easy to operate and at a unique price/performance ratio. Thus, makes the online monitoring of small, non process critical systems like electric motors, pumps, compressors, ventilators, fans and gearboxes cost-efficient.

The innovative real time monitoring system employs a number of novel technologies and trend-setting functions. These include the combination of information provided by the measurement of classic parameters and vibration based process parameters. The measuring system detects potential damage to machines early and reliably and helps to avoid unplanned shutdowns and costly secondary damage. Thus, the FAG SmartCheck already offers numerous options that future machine monitoring schemes cannot be imagined without.



FAG



Narrow series deep groove design for radial & radial / axial loads
 Available with metal shields (2Z) or rubber seals (2HRS)
 Available in corrosion resistant material (prefix S...)

61800 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
61800	10	19	5
61801	12	21	5
61802	15	24	5
61803	17	26	5
61804	20	32	7
61805	25	37	7
61806	30	42	7
61807	35	47	7
61808	40	52	7
61809	45	58	7
61810	50	65	7
61811	55	72	9
61812	60	78	10

61900 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
61900	10	22	6
61901	12	24	6
61902	15	28	7
61903	17	30	7
61904	20	37	9
61905	25	42	9
61906	30	47	9
61907	35	55	10
61908	40	62	12
61909	45	68	12
61910	50	72	12
61911	55	80	13
61912	60	85	13



Wide series deep groove design for radial & radial / axial loads
 Available with rubber seals (2RSR)

62200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
62200-A-2RSR	10	30	14
62201-A-2RSR	12	32	14
62202-A-2RSR	15	35	14
62203-A-2RSR	17	40	16
62204-A-2RSR	20	47	18
62205-A-2RSR	25	52	18
62206-A-2RSR	30	62	20
62207-A-2RSR	35	72	23
62208-A-2RSR	40	80	23
62210-A-2RSR	50	90	23
62211-A-2RSR	55	100	25
62212-A-2RSR	60	110	28

62300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
62301-A-2RSR	12	37	17
62302-A-2RSR	15	42	17
62303-A-2RSR	17	47	19
62304-A-2RSR	20	52	21
62305-A-2RSR	25	62	24
62306-A-2RSR	30	72	27
62307-A-2RSR	35	80	31
62308-A-2RSR	40	90	33
62309-A-2RSR	45	100	36
62310-A-2RSR	50	110	40



FAG

Single row angular contact ball bearings

Many sizes of angular contact ball bearings are supplied in X-life design

Available as matched pairs (UO & UA) for mounting together

7200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
7200	10	30	9
7201	12	32	10
7202	15	35	11
7203	17	40	12
7204	20	47	14
7205	25	52	15
7206	30	62	16
7207	35	72	17
7208	40	80	18
7209	45	85	19
7210	50	90	20
7211	55	100	21
7212	60	110	22

7300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
7301	12	37	12
7302	15	42	13
7303	17	47	14
7304	20	52	15
7305	25	62	17
7306	30	72	19
7307	35	80	21
7308	40	90	23
7309	45	100	25
7310	50	110	27
7311	55	120	29
7312	60	130	31



Double row angular contact ball bearings are units with solid inner and outer rings and ball and cage assemblies with polyamide, sheet steel or brass cages.

Their construction is similar to a pair of single row angular contact ball bearings in an O arrangement but they are narrower to a certain extent.

They differ in the size of the contact angle and the design of the bearing rings.



3200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
3200	10	30	14
3201	12	32	15.9
3202	15	35	15.9
3203	17	40	17.5
3204	20	47	20.6
3205	25	52	20.6
3206	30	62	23.8
3207	35	72	27
3208	40	80	30.2
3209	45	85	30.2
3210	50	90	30.2
3211	55	100	33.3
3212	60	110	36.5





3300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
3302	15	42	19
3303	17	47	22.2
3304	20	52	22.2
3305	25	62	25.4
3306	30	72	30.2
3307	35	80	34.9
3308	40	90	36.5
3309	45	100	39.7
3310	50	110	44.4
3311	55	120	49.2
3312	60	130	54

2200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
2200	10	30	14
2201	12	32	14
2202	15	35	14
2203	17	40	16
2204	20	47	18
2205	25	52	18
2206	30	62	20
2207	35	72	23
2208	40	80	23
2209	45	85	23
2210	50	90	23
2211	55	100	25
2212	60	110	28



Self-aligning ball bearings are double row, self-retaining units comprising outer rings with a concave raceway, inner rings with a cylindrical or tapered bore and ball and cage assemblies.

The bearings are available in open and sealed designs.



1200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
1200	10	30	9
1201	12	32	10
1202	15	35	11
1203	17	40	12
1204	20	47	14
1205	25	52	15
1206	30	62	16
1207	35	72	17
1208	40	80	18
1209	45	85	19
1210	50	90	20
1211	55	100	21
1212	60	110	22



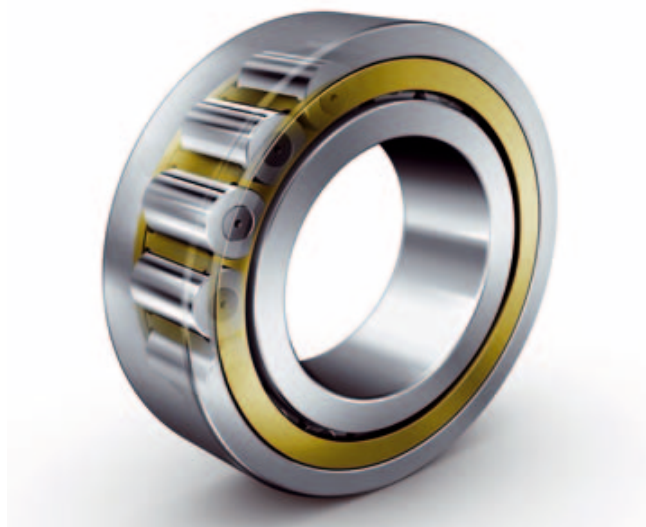
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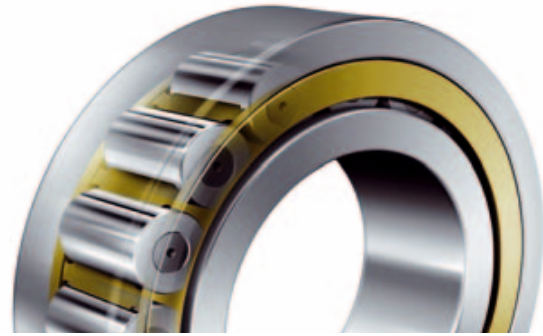


FAG X-life cylindrical roller bearing, single row
 Cage guided with plastic, brass or steel cages
 Bearing with higher load capacity, longer operating life and higher static safety factor
 Reduced friction and lower temperatures due to higher quality rollers and raceways
 Available in other dimension series
 Available in reduced or enlarged radial internal clearance classes
 Bearings with O/D over 120mm heat stabilized to +200°C

N200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
N202	15	35	11
N203	17	40	12
N204	20	47	14
N205	25	52	15
N206	30	62	16
N207	35	72	17
N208	40	80	18
N209	45	85	19
N210	50	90	20
N211	55	100	21
N212	60	110	22
N215	75	130	25
N217	85	150	28
N218	90	160	30
N219	95	170	32
N220	100	180	34
N222	110	200	38
N224	120	215	40
N226	130	230	40
N228	140	250	42
N230	150	270	45
N236	180	320	52

NU200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
NU202	15	35	11
NU203	17	40	12
NU204	20	47	14
NU205	25	52	15
NU206	30	62	16
NU207	35	72	17
NU208	40	80	18
NU209	45	85	19
NU210	50	90	20
NU211	55	100	21
NU212	60	110	22
NU215	75	130	25
NU217	85	150	28
NU218	90	160	30
NU219	95	170	32
NU220	100	180	34
NU222	110	200	38
NU224	120	215	40
NU226	130	230	40
NU228	140	250	42
NU230	150	270	45
NU236	180	320	52





N300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
N303	17	47	14
N304	20	52	15
N305	25	62	17
N306	30	72	19
N307	35	80	21
N308	40	90	23
N309	45	100	25
N310	50	110	27
N311	55	120	29
N312	60	130	31
N313	65	140	33
N314	70	150	35
N315	75	160	37
N316	80	170	39
N317	85	180	41
N318	90	190	43
N319	95	200	45
N320	100	215	47
N322	110	240	50
N324	120	260	55
N326	130	280	58
N328	140	300	62

NU300 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
NU303	17	47	14
NU304	20	52	15
NU305	25	62	17
NU306	30	72	19
NU307	35	80	21
NU308	40	90	23
NU309	45	100	25
NU310	50	110	27
NU311	55	120	29
NU312	60	130	31
NU313	65	140	33
NU314	70	150	35
NU315	75	160	37
NU316	80	170	39
NU317	85	180	41
NU318	90	190	43
NU319	95	200	45
NU320	100	215	47
NU322	110	240	50
NU324	120	260	55
NU326	130	280	58
NU328	140	300	62

FAG cylindrical roller bearings are also available in NJ, NUP & NJ+HJ

Special bearings are made for traction motor and wind turbine applications along with many other specialist applications

Electrically insulated bearings are available in most sizes





SCHAEFFLER

Together we move the World...

Innovative technology partner for automotive, industrial and precision engineering applications

Increased energy efficiency, lower costs, strict low carbon objectives and improved operational safety are just some of the challenges presented to us by our customers. As a development partner, Schaeffler delivers the reliability, the quality and the innovation you need to move your world.

Our award-winning engineers excel at creative engineering that often involves an unconventional approach. We question established conventions, find unusual paths and dare to apply different perspectives to enable us to realise new and remarkable ideas.

Let us work together to realise your new and remarkable ideas. Together we move the world.

www.schaeffler.co.uk



FAG



Axial deep groove ball bearings comprise shaft locating washers, housing locating washers and ball and cage assemblies. The bearings are not self-retaining; the ball and cage assembly and bearing washers can therefore be fitted separately.

In addition to the series with flat washers, series are also available with spherical housing locating washers for the compensation of static angular misalignment. These designs are normally used in conjunction with seating washers.

Axial deep groove ball bearings are available in single and double direction designs. Both designs can support high axial forces but cannot be subjected to radial loads.

51200 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
51200	10	26	11
51201	12	28	11
51202	15	32	12
51203	17	35	12
51204	20	40	14
51205	25	47	15
51206	30	52	16
51207	35	62	18
51208	40	68	19
51209	45	73	20
51210	50	78	22
51211	55	90	25
51212	60	95	26



51100 Series			
Product	Shaft	Outside Dia	Width
	(mm)		
51100	10	24	9
51101	12	26	9
51102	15	28	9
51103	17	30	9
51104	20	35	10
51105	25	42	11
51106	30	47	11
51107	35	52	12
51108	40	60	13
51109	45	65	14
51110	50	70	14
51111	55	78	16
51112	60	85	17

Training

Schaeffler UK offers a broad mix of training courses at basic and advanced levels to suit all delegates.

Courses include:

- introduction to rolling bearings
- rolling bearing technology
- introduction to bearing lubrication
- bearing failure analysis
- mounting of bearings; bearings for electric motors
- condition monitoring
- vibration analysis (Levels 1 and 2)
- and FAG Detector III (Schaeffler's handheld vibration monitoring device).

Please contact us for more details.





FAG



The lubricants available from the Schaeffler Group are designed and tested for bearing arrangement engineering.

The Arcanol rolling bearing greases offer very good preconditions for favourable running behaviour of bearings and a long operating life and high operational security of the bearing arrangement.

The lubricant range is graduated such that almost all areas of application are covered.

Grease	Thickener	Operating temp °c	Tube			Cartridge	Can	Bucket		Hobcock	Drum
			20g	70g	250g			400g	1Kg		
MULTOP	Lithium soap with EP additives	-40 to +150			•	•	•	•	•	•	•
MULTI2	Lithium soap	-30 to +140	•		•	•	•	•	•	•	•
MULTI3	Lithium soap	-30 to +140			•	•	•	•	•	•	•
LOAD220	Lithium/calcium soap with EP additives	-20 to +140					•		•	•	•
LOAD400	Lithium/calcium soap with EP additives	-25 to +140				•	•	•	•	•	•
LOAD1000	Lithium/calcium soap with EP additives	-20 to +140						•		•	•
TEMP90	Calcium polycarbamide with EP additives	-40 to +160	•			•	•	•		•	•
TEMP110	Lithium complex soap	-40 to +160				•	•				
TEMP120	Polycarbamide with EP additives	-35 to +180					•	•		•	
TEMP200	PTFE	-40 to +260		•			•				
SPEED2,6	Polycarbamide	-50 to +120			•		•			•	
VIB3	Lithium complex soap with EP additives	-30 to +150				•	•	•		•	
BIO2	Lithium/calcium soap	-30 to +150				•	•		•	•	•
FOOD2	Aluminium complex soap	-30 to +120				•	•		•	•	•



+ Health Check

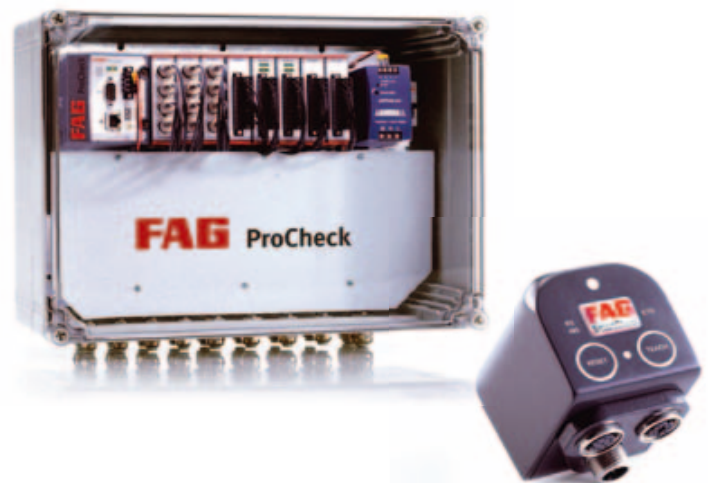
Prevention is Better than Cure



Keeping a healthy check on the condition of your plant and machinery means that the major financial headaches associated with unplanned downtime can be easily avoided.

Condition monitoring systems from Schaeffler UK are a cost-effective way of preventing problems before they arise. They enable engineers to keep control of their plant, minimise the risk of breakdown and reduce their maintenance costs.

So rather than waiting until things start to go wrong, why not make an appointment with an experienced Schaeffler engineer today and prevent those unforeseen problems from becoming a real headache.





The expertise of a manufacturer, the scale of a leader

NTN-SNR ROULEMENTS, part of the 3rd largest bearing manufacturing group in the world, is a major force as a designer, developer and manufacturer. Thanks to its strong brands, NTN-SNR is highly active in the automobile, industrial and aeronautics sectors. Each division meets the expectations of a global market and focuses on the business segments of its customers.



NTN-SNR offers top quality technical products and can provide specialist solutions.



With the widest range on the market, our teams work towards other requirements. Innovation is a decisive factor in our development: anticipating new solutions, enriching bearing functionalities, etc. More compact, lighter, more economical, more reliable, more effective, better for the environment... we are constantly innovating for and with our customers.

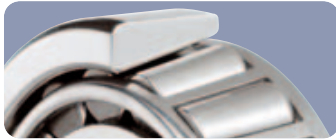
NTN-SNR is clearly focused on ecological solutions and is recognised as the partner and by developer of the companies of the future, ready to take up all market opportunities.



TAPERED ROLLER BEARINGS

These accept high radial loads and axial loads in one direction. They are generally fitted opposite a bearing of the same type. Load capacity depends on contact angle.

1 ROW OF TAPERED BEARINGS



Metric dimensions: ISO 355 and JIS B 1512 standards

Available with contact angles, spread from 10° to 30° and a large contact angle 40° (suffix D by NTN)

Inch dimensions: ABMA standard (including J metric series)

Can be equipped with flanges

2 ROWS OF TAPERED BEARINGS



Appears in the same form as two single-row bearings

Fitted face-to-face or back-to-back, with metric or inch dimensions

One-piece outer or inner rings

Single-row assemblies with spacers also exist

4 ROWS OF TAPERED BEARINGS



Composed of two double cones, two single flanges and one double flange

Extended life cycle thanks to the use of case hardened steel, hollow rollers and pin-type cages

Very high load capacities, adapted to rolling type applications

Available in sealed version (-LL)

ECO-TOP RANGE

Series meeting the need to protect the environment

Optimised design, enhanced life cycle, more compact bearing and reduced energy consumption



NTN BOWER RANGE

Wide range of tapered roller bearings with inner diameters up to 16 inches

Steel

Through hardened bearing steel (ECO-H)

Vacuum degassed case hardened steel (4T, ET) and special heat treatment for a longer life cycle (ETA / ECO)

Cage

Generally equipped with a cage in pressed sheets

Solid or steel pin-type cages for large bearings

Fibre glass reinforced polyamide cage possible depending on the application for smaller bearings

Contact torque



Bearing identified with the suffix -ST:

- Reduced drag torque
- Reduced heating
- Improved seizure resistance
- Simplified adjustments at assembly

Sealing

Possible variant: sealing at the large shoulder (suffixe -LX)





METRIC

Part n°	Inside Diameter (mm)	Outside Diameter (mm)	Width (mm)	Part n°	Inside Diameter (mm)	Outside Diameter (mm)	Width (mm)	Part n°	Inside Diameter (mm)	Outside Diameter (mm)	Width (mm)
30202	15	35	11,75	30218	90	160	32,5	32004	20	42	15
30203	17	40	13,25	30302	15	42	14,25	32005	25	47	15
30204	20	47	15,25	30303	17	47	15,25	32006	30	55	17
30205	25	52	16,25	30304	20	52	16,25	32007	35	62	18
30206	30	62	17,25	30305	25	62	18,25	32008	40	68	19
30207	35	72	18,25	30306	30	72	20,75	32009	45	75	20
30208	40	80	19,75	30307	35	80	22,75	32010	50	80	20
30209	45	85	20,75	30308	40	90	25,25	32011	55	90	23
30210	50	90	21,75	31305	25	62	18,25	32012	60	95	23
30211	55	100	22,75	31308	40	90	25,25	32013	65	100	23
30212	60	110	23,75	31310	50	110	29,25	32014	70	110	25
30213	65	120	24,75	31311	55	120	31,5	32024	120	180	38
30214	70	125	26,25	31313	65	140	36				

IMPERIAL

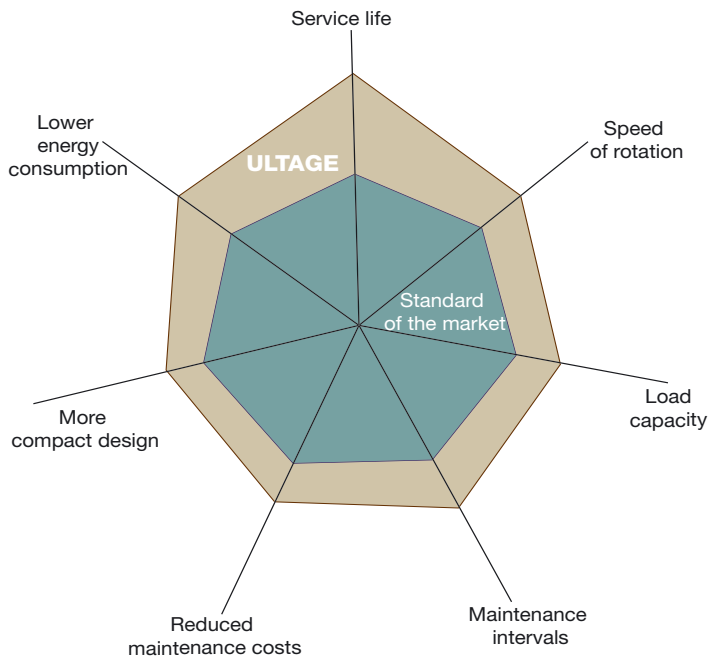
Part n°	Part n°	Part n°	Part n°	Part n°
4T-03062/03162	4T-3578/3525	4T-29585/29520	4T-559/552A	4T-JM205149/JM205110
4T-05079/05185S	4T-368A/362A	4T-29675/29620	4T-56418/56650	4T-JH211749/JH211710
4T-07087X/07210X	4T-3780/3720	4T-29685/29620	4T-M12648/M12610	4T-HM212047/HM212011
4T-07100S/07205	4T-387/382	4T-LM29749/LM29710	4T-M12649/M12610	4T-42690/42620
4T-07100S/07210X	4T-3877/3820	4T-JH307748/JH307710	4T-15123/15245	4T-44150/44348
4T-09067/09195	4T-387A/382	4T-3490/3420	4T-15590/15520	4T-L44643/L44610
4T-09074/09196	4T-387A/382A	4T-529/522	4T-16150/16283	4T-L44649/L44610
4T-LM102949/LM102910	4T-39590/39520	4T-529X/522	4T-18590/18520	4T-L45449/L45410
4T-JLM104948/JLM104948	4T-395A/394A	4T-535/532A	4T-18690/18620	4T-462/453X
4T-11590/11520	4T-3982/3920	4T-55175C/55437	4T-18790/18720	4T-46780/46720
4T-LM11749/LM11710	4T-3984/3920	4T-55200/55437	4T-19150/19268	4T-46790/46720
4T-LM11949/LM11910	4T-JH415647/JH415610	4T-5584/5535	4T-1986/1931	4T-47487/47420

Part n°	Part n°	Part n°	Part n°
4T-47686/47620	4T-LM603049/LM603011	4T-25590/25520	4T-64450/64700
4T-47896/47820	4T-A6075/A6162	4T-25877/25821	4T-645/632
4T-LM48548/LM48510	4T-L610549/L610510	4T-27687/27620	4T-65237/65500
4T-495/493	4T-JM612949/JM612910	4T-2788/2720	4T-LM67048/LM67010
4T-495A/493	4T-623/612	4T-28980/28921	4T-67388/67322
4T-56425/46650	4T-6379/6320	4T-LM501349/LM501310	4T-67390/67322
4T-566/563	4T-H212749/H212710	4T-JLM506849/JLM506810	4T-67790/67720
4T-567/563	4T-HM218248/HM218210	4T-JLM508748/JLM508710	4T-L68149/L68111
4T-575/572	4T-L225849/L225810	4T-JM511946/JM511910	4T-683/672
4T-593/592A	4T-M231649/M231610	4T-JM515649/JM515610	4T-JLM710949/JLM710910
4T-594/592A	4T-24780/24720	4T-JHM522649/JHM522610	
4T-594A/592A	4T-25580/25520	4T-52400/52618	

NTN-SNR ULTAGE : better performance for your applications

The ULTAGE name comes from a combination of the terms "ULTIMATE" and "STAGE". It is a name that provides you with optimised performance as standard, with respect to several technical criteria

PERFORMANCE COMPARISON

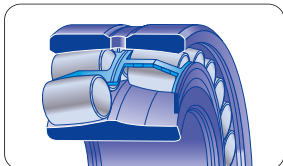


FROM 25 MM BORE UP TO 2180 MM EXTERNAL DIAMETER

NTN-SNR offers the widest range of spherical roller bearings on the market. They are available in a range of cage versions.

PRESSED STEEL CAGE (EA)

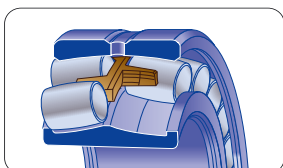
In two parts, centred on the inner ring



- > Reduced wear and friction
- > Optimum lubrication and high speeds

MACHINED SOLID BRASS CAGE (EM, L1)

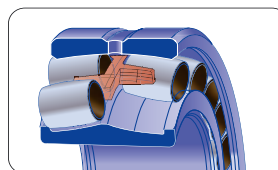
Single-piece cage, centred on the bearing housing or the inner ring



- > Extrem robustness for longer life in the most demanding environments.

SPECIAL CAGE FOR «VIBRATION APPLICATIONS» (EF800)

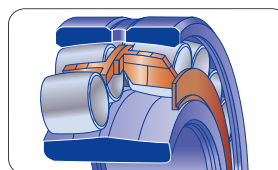
Single-piece cage with reduced bore, external diameter and radial clearance tolerances



- > Extremely accurate roller guides for longer service life.

POLYAMIDE CAGE (EG15)

Two-part, centred on the inner ring.



- > Performance and economy : elasticity and wrap-around profile for perfect guiding and reduced friction. (Max. running temperature 150°C)





Overall dimensions mm			Ultage	Part n°
d	D	B		
40	80	23	*	22208EAW33
40	80	23	*	22208EG15W33
40	80	23	*	22208EMW33
40	90	23		21308V
40	90	33	*	22308EAW33
40	90	33	*	22308EG15W33
40	90	33	*	22308EMW33
40	90	33	*	22308EF800
45	85	23	*	22209EAW33
45	85	23	*	22209EG15W33
45	85	23	*	22209EMW33
45	100	25		21309V
45	100	36	*	22309EAW33
45	100	36	*	22309EG15W33
45	100	36	*	22309EMW33
45	100	36	*	22309EF800
50	90	23	*	22210EAW33
50	90	23	*	22210EG15W33
50	90	23	*	22210EMW33
50	110	27		21310V
50	110	40	*	22310EAW33
50	110	40	*	22310EG15W33
50	110	40	*	22310EMW33
50	110	40	*	22310EF800
55	100	25	*	22211EAW33
55	100	25	*	22211EG15W33
55	100	25	*	22211EMW33
55	120	29		21311V
55	120	43	*	22311EAW33
55	120	43	*	22311EG15W33
55	120	43	*	22311EMW33
55	120	43	*	22311EF800
60	110	28	*	22212EAW33
60	110	28	*	22212EG15W33
60	110	28	*	22212EMW33
60	130	31		21312V
60	130	46	*	22312EAW33
60	130	46	*	22312EG15W33
60	130	46	*	22312EMW33
60	130	46	*	22312EF800
240	320	60	*	23948EMD1
240	360	92	*	23024EMW33
240	360	118	*	24048EMW33
240	400	128	*	23148EMW33
240	400	160		24148VMW33
240	440	120	*	22248EMW33
240	440	160	*	23248EMW33
240	500	155		22348VMW33
260	360	75	*	23952EMD1
260	400	104	*	23052EMW33
260	400	140		24052VMW33
260	440	144	*	23152EMW33
260	440	180		24152VMW33
260	480	130		22252VMW33
260	480	174		23252VMW33
260	540	164		22352VMW33
300	420	90		23960
300	420	90		23960L1
300	460	118	*	23060EMW33
300	460	160	*	24060EMW33
300	500	160	*	23160EMW33
300	500	200		24160VMW33
300	540	140		22260B
300	540	140		22260BL1
300	540	192		23260VMW33
300	620	185		22360B



Bearings available with cylindrical or tapered bore (EAK,EMK,EG15K,BK and K30 for 240xx and 241xx series). Bearing with tapered bore are generally fitted with adaptor or withdrawal sleeves. All types of clearances are available on stock or on request. Special clearances and special precisions are available on request.

*NTN-SNR ULTAGE Bearing.



NEEDLE BEARINGS

These bearings are mainly selected for constructions requiring reduced radial dimensions and maximum rigidity and load capacity. They have little resistance for axial forces (except thrusts and combined bearings).

NEEDLE ROLLER AND CAGE ASSEMBLIES



A needle cage comprises an inseparable cage and needles and can be used to design very compact, light, constructions with maximum capacity. The shaft and housing act as a raceway and must be machined in compliance with hardness, geometry and roughness characteristics. The needles are guided precisely, therefore the needle cage can absorb much higher speeds of rotation than contact needles.

Depending on the application, different types of materials and cages are available:

Types	Characteristics	Suffixes
K	Fibre glass reinforced polyamide	-T2
K or KJ	Welded pressed steel cage	-S
GK / GPK	In two parts	
K	Two rows	-ZW
KBK	For piston pins application	
KV	For piston pins application	-S
PK / GPK	For crank pins application	
KMJ	For crank pins application	-S

Inch solutions are also available (PCJ).

DRAWN CUP NEEDLE ROLLER BEARINGS



Compact and light, mainly used in applications with low loads, needle sockets represent a low-cost bearing solution; the outer ring is not machined, but is obtained using precision pressing processes. It must be noted that the geometry of the raceway depends on the geometry of the housing (the low thickness of the outer ring only provides the hardness and roughness necessary for the raceway).

Standard (HK) and heavy (HMK) series, available with or without sealing, with open or closed ends (BK, BMK)

Some dimensions are delivered with 2 rows of needles (-ZW)

Inches versions with cage (DCL, SCE) and contact needle versions (HCK).

NTN drawn cup needle roller bearing offer:

- simplified adapting thanks to an ideal geometry
- an improved life cycle: specific treatment of the cage and needles

NEEDLE ROLLER BEARINGS WITH SOLID RINGS



Needle roller bearings with solid rings are mainly used in applications with high loads.

- **Inseparable versions:** with or without an inner ring
 - Series 48, 49, 59 and 69. (Series 49 is also available with simple or double sealing)
 - NK series: also deliverable with the inner ring (NK+IR designation)
- If the bearing is used without an inner ring, the shaft will act as a raceway and must be machined appropriately



Separable versions: RNAO and NAO

With these versions, the inner and outer rings and the cage can be separated, opening up more assembly options.

The inner rings are delivered separately.

Versions with plunge grinding for seal support surfaces are also available.

These solid rings and needle bearings are also available in inch dimensions. (MR,MI)

NEEDLE AND ROLLER THRUST BEARINGS



Needle or roller thrust bearings are designed to absorb axial forces in one direction only. Support surfaces used as raceways must be ground and hardened.

- Needle thrust bearings: type AXK11
- Roller thrust bearings: series 811, 812, 874 and 893
Available with Polyamide cage (-T2), Aluminium alloy cage (-: lightness and enhanced performance when lack of lubricant) or pressed steel cage.

Washers:

- type **AS11** washers are thin (1 mm), therefore their support surfaces must be flat and rigid enough
- types **WS** (centered on the shaft) and **GS** (centered on the housing) are more rigid

COMBINED BEARINGS



When the application requires resistance to forces combined with substantial rigidity or minimum room, the use of combined bearings can lead to benefits. Depending on the type of bearings, axial forces may be absorbed in one or two directions.

- **Uni-directional axial forces**
The thrust part may comprise, either:
 - a radial contact (NKX) or angular contact (NKIA) ball bearing
 - rollers for high axial loads (NKXR)
 If the unit must be inseparable, a flange (-Z) is proposed

Two-way axial forces

Depending on the intensity of the forces, the thrust part will consist of needles (AXN) or rollers (ARN)

CAM FOLLOWERS



Cam followers are used for applications requiring guidance with minimum contact with cam and the linear guidance systems. Cam followers applications are very different to bearing applications. The cam followers is not fitted in a housing and its thicker outer ring rolls directly over a surface to provide guidance.

With or without a seal, with an outer ring with a convex or cylindrical profile, all cam followers are proposed:

- contact needle version (KRV-NATV) to accept significant loads
 - cage version (KR-NATR) to accept higher speeds
- Versions with two 2 rows of contact bearings also exist to increase capacity (NUTR, NUTW et NUKR)
- Stud Type: threaded shaft has a slot head or hex head screwdriver tightening system to simplify the attachment of the roller on the support surface. These rollers may be regreased by the shaft.
 - Yoke Type: with or without lateral guidance





NEEDLE ROLLER CAGE ASSEMBLIES

K8X11X8T2	K9X12X10T2	K10X14X13	K12X15X20
K8X11X10T2	K9X12X13T2	K10X16X12	K12X16X13
K8X11X13	K10X13X10T2	K11X14X10	K12X17X13
K8X12X10T2	K10X13X13	K12X15X9	K12X18X12
K8X12X12	K10X14X8	K12X15X10	
K8X12X13	K10X14X10	K12X15X13	

DRAWN CUP NEEDLE ROLLER BEARINGS

Shaft Diameter	Part n° open end design	Part n° closed end design	Shaft Diameter	Part n° open end design	Part n° closed end design
8	HK0810C		9	HMK0916	
8		BK0810C	10	HK1010	
8	HMK0810		10		BK1010
8	HMK0815		10	HK1012	
8	HMK0820T2		10		BK1012
9	HK0910		10	HK1015	
9		BK0910	10		BK1015
9	HK0912		10	HMK1010	
9		BK0912	10	HMK1012	
9	HMK0912		10	HMK1015	
			10	HMK1020	

MACHINED RING NEEDLE ROLLER BEARINGS (WITHOUT INNER RING).

Shaft mm	Part n°	Shaft mm	Part n°	Shaft mm	Part n°
10	NK10/12T2	16	RNA4901R	20	NK20/16R
10	NK10/16	16	NK16/16R	20	RNA5902
10	RNA498	16	NK16/20R	20	NK20/20R
12	NK12/12	16	RNA4901R	20	RNA6902R
12	NK12/16	17	NK17/16R	21	NK21/16R
12	RNA499	17	NK17/20R	21	NK21/20R
14	RNA4900R	18	NK18/16R	22	NK22/16R
14	NK14/16R	18	NK18/20R	22	NK22/20R
14	NK14/20R	19	NK19/16R	22	RNA4903R
15	NK15/16R	19	NK19/20R	22	RNA5903
15	NK15/20R	20	RNA4902R	22	RNA6903R

THRUST NEEDLE ROLLER BEARINGS

Shaft mm	Thrust needle roller and cage assembly	washer	inner ring	outer ring
10	AXK1100	AS1100	WS81100	GS81100
12	AXK1101	AS1101	WS81101	GS81101
15	AXK1102	AS1102	WS81102	GS81102
17	AXK1103	AS1103	WS81103	GS81103
20	AXK1104	AS1104	WS81104	GS81104
25	AXK1105	AS1105	WS81105	GS81105
30	AXK1106	AS1106	WS81106	GS81106
35	AXK1107	AS1107	WS81107	GS81107
40	AXK1108	AS1108	WS81108	GS81108
45	AXK1109	AS1109	WS81109	GS81109
50	AXK1110	AS1110	WS81110	GS81110

CAM FOLLOWERS STUD TYPE TRUCK ROLLERS

with cage	sealed type with cage	cylindrical outer	sealed type with cylindrical outer	full compliment type	full compliment with seal	outside diameter
KR16	KR16LL	KR16X	KR16XLL	KRV16	KRV16LL	16mm
KR19	KR19LL	KR19X	KR19XLL	KRV19	KRV19LL	19mm
KR22	KR22LL	KR22X	KR22XLL	KRV22	KRV22LL	22mm
KR26	KR26LL	KR26X	KR26XLL	KRV26	KRV26LL	26mm
KR30	KR30LL	KR30X	KR30XLL	KRV30	KRV30LL	30mm
KR32	KR32LL	KR32X	KR32XLL	KRV32	KRV32LL	32mm
KR35	KR35LL	KR35X	KR35XLL	KRV35	KRV35LL	35mm
KR40	KR40LL	KR40X	KR40XLL	KRV40	KRV40LL	40mm



SELF-ALIGNING BEARING UNITS



Standard range with more than 25 000 solutions



- The most extensive range on the market
- Materials: grey cast iron, sheet steel, stainless steel and thermoplastic
- Forged inner and outer rings, steel cages
- Efficient protection against corrosion by chemical passivation (grey cast housings)
- Efficient dust protection by stainless steel covers (stainless steel / grey cast range) or in plastic (thermoplastic range)
- Compact and efficient bearing systems
- Different bearing inserts for high and low temperature applications
- Bearing inserts available with cylindrical outer diameter
- Bearing inserts available with common inch bore diameter

Bearings with solid grease (Spot Pack)



- Reduce lubricant leakage because the base oil is retained in a solid mixture
- Prevents contamination of the surrounding environment
- Ensures a constant flow of lubricant at the bearing / raceway contact point
- Low running torque characteristics
- Solid grease protects a bearing against ingress of foreign matters

Bearing units with EN-GJS grey cast housings (ductile)



- More economical, energy saving through weight reduction
- 40% lighter and more compact than standard grey cast units
- Approximately 30% stronger in comparison with standard grey cast housings
- Shock resistant material even at low temperature
- Available as relubricatable or non-relubricatable
- Flange and pillow block versions available
- Interchangeable with standard self-aligning bearing units

Bearing units with rolled steel housings

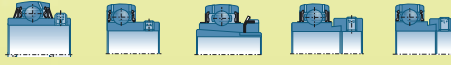


- Superior housing strength: more resistant than cast iron or steel sheets
- Reducing the risk of housing fracture, including under severe conditions
- Housing load 5 times higher than bearing insert dynamic capacity
- Suited for extreme applications: impact, high loads, vibrations
- Suited for steel and iron applications, extraction machines and equipment in contaminated environments





• Paliers auto-aligneurs en fonte grise • Grey cast iron self-aligning bearing units • Grauguss Gehäuselager
 • Soportes auto-alineantes en fundición gris • Supporti autoallineanti in ghisa • Mancais auto-alinháveis em ferro fundido cinzento



SNR	UCPE	USPE	UKPE..H	EXPE	ESPE
INA	RASEY	PASEY	-	RASE..N	PASE..N
SKF	SY..TF	-	SYJ..KF	SY..WF	SY..FM
RHP	NP	NP..A	NP10...K	NP..DEC	NP..EC
NTN	UCPL	USPL	UKPL..H	EXPL	ESPL
RHP	SL	-	-	-	SL..EC
NTN	UCP..D1*	ASP	UKP..D1,H23..X*	UEL..D1W3**	AEL..D1
SNR	UCP**	USP	UKP..H**	EXP**	ESP
NSK	UCP	-	UKP..+H23..	EWP	ENP
ASAHI	UCP	-	UKP..+H23..	-	-
INA	RASEY - JIS	-	-	-	-
KOYO/TEK	UCP	-	UKP	NAP..M	SAP..M
NTN	UCHP..D1	-	-	UELHP..D1W3	-
SNR	UCPH	USPH	UKPH..H	EXPH	ESPH
NSK	UCPH	-	UKPH..+H23..	-	-
ASAHI	UCPH	-	-	-	-
KOYO/TEK	UCPH	-	-	-	-
SNR	UCPAE	USPAE	UKPAE..H	EXPAE	ESPAE
INA	RSHEY	PSHEY	-	RSHE..N	PSHE..N
SKF	SYF..TF	-	-	SYF..FM	-
RHP	SNP	SNP..A	-	SNP..DEC	SNP..EC
NTN	UCUP..D1	ASUP..	UKUP..D1,H23..X	UELUP..D1W3	AELUP..D1
SNR	UCPA/UCPG	USPA/USPG	UKPA..H/UKPG..H	EXPA/EXPG	ESPA/ESPG
NSK	UCPA	UBPA	-	EWPA	-
ASAHI	UCPA	-	-	-	-
KOYO/TEK	UCPA	-	-	-	-
SNR	UCFE	USFE	UKFE..H	EXFE	ESFE
INA	RCJY	PCJY	-	RCJ..N	PCJ..N
SKF	FY..TF	-	FYJ..KF	FY..WF	FY..FM
RHP	SF	SF..A	MSF..K	SF..DEC	SF..EC
NTN	UCF..D1*	ASF..D1	UKF..D1,H23..X*	UELF..D1W3**	AELF..D1
SNR	UCF**	USF	UKF..H**	EXF**	ESF
NSK	UCF	-	UKF..H23..	EWF	-
ASAHI	UCF	-	UKF..H23..	-	-
INA	RCJY.. JIS	-	-	-	-
KOYO/TEK	UCF	-	UKF	-	SAF..FM
NTN	UCFS..D1	-	UKFS..D1,H23..X	UELFS..D1W3	-
SNR	UCFS	-	UKFS..H	EXFS	-
NSK	UCFS	-	UKFS..H23..	-	-
ASAHI	UCFS	-	-	-	-
KOYO/TEK	UCFS	-	UKFS	-	-
SNR	UCFCE	USFCE	UKFCE..H	EXFCE	ESFCE
INA	RMEY	PMEY	-	RME	PME
RHP	FC	FC..A	-	FC..DEC	FC..EC
NTN	UCFC..D1***	ASFC..D1	UKFC..D1,H23..X***	UELFC..D1W3	AELFC..D1
SNR	UCFC	USFC	UKFC..H	EXFC	ESFC
SKF	FYC..TF	-	-	FYC..WF	FYC..FM
NSK	UCFC	-	UKFC..+H23..	EWFC	-
ASAHI	UCFC	-	UKFC..+H	-	KHFC
KOYO/TEK	UCFC	-	UKFC	-	-
SNR	-	USFEE	-	-	ESFEE
INA	-	-	-	RFE	-
SNR	-	USFTE	-	-	ESFTE
INA	-	-	-	-	PCFTR

SNR	UCFLE	USFLE	UKFLE..H	EXFLE	ESFLE
INA	RCJTY	PCJTY	-	RCJT..N	PCJT..N
SKF	FYTB..TF	-	FYTJ..KF	FYTB..WF	FYTJ..FM
RHP	SFT	SFT..A	MSFT..K	SFT..DEC	SFT..EC
NTN	UCFL..D1*	ASFL..D1	UKFL..D1,H23..X*	UEFL..D1W3**	AELFL..D1
SNR	UCFL**	USFL	UKFL..H**	EXFL**	ESFL
NSK	UCFL	UBFL	UKFL..+H23..	EWFL	-
INA	RCJTY.. JIS	-	-	-	-
ASAHI	UCFL	BFL	UKFL..+H	-	KHFL
KOYO/TEK	UCFL	-	UKFL	-	SAFL..FM
SNR	UCFLZ	USFLZ	UKFLZ..H	EXFLZ	ESFLZ
INA	-	-	-	RCJTZ	-
NTN	-	ASFD..D1	-	-	AELFD..D1
SNR	-	USFD	-	-	ESFD
INA	-	FLCTEY	-	-	GLCTE
NSK	-	UBFD	-	-	ENFD
ASAHI	-	BLCTE	-	-	ENFD
RHP	-	LFTC..A	-	-	LFTC..EC
SNR	-	USFAE	-	-	ESFAE
INA	-	-	-	-	PSFT
NTN	UCFA..D1	-	UKFA..;H23..X	-	AELFA..D1
SNR	UCFA	USFA	UKFA..H	EXFA	ESFA
NSK	UCFA	-	-	-	-
ASAHI	UCFA	-	-	-	-
KOYO/TEK	UCFA	-	-	-	-
NTN	UCT..D1*	AST..D1	UKT..D1,H23..X*	UELT..D1W3**	AELT..D1
SNR	UCT**	UST	UKT..H**	EXT**	EST
INA	RTUEY	PTUEY	-	RTUE	PTUE
SKF	TUJ..TF	-	-	TU..FM	-
RHP	ST	ST..A	MST..K	ST..DEC	ST..EC
NSK	UCT	-	UKT..+H23..	EWT	-
ASAHI	UCT	-	UKT..+H	-	KHT
KOYO/TEK	UCT	-	UKT	-	-
NTN	UCT+WB	UST+WB	UKT..H+WB	EXT+WB	EST+WB
NSK	UCT..+WB	-	-	-	-
ASAHI	UCT..+WB	-	-	-	-
NTN	-	ASPT2..-10	-	-	AELPT2..-10
SNR	UCSP	USPP	UKSP..H	EXSP	ESPP
RHP	BT	BT..A	-	-	BT..EC
SNR	SPR 1	SPR 11 & 21	SPR 12 & 22	SPR 14 & 24	-
INA	-	HUSE..	-	-	-
RHP	BT	-	-	-	-
NTN	UCHB..D1	-	-	-	-
SNR	UCEHE	USEHE	UKEHE..H	EXEHE	ESEHE
RHP	SCH	-	-	-	-
INA	-	PHEY	-	RHE	PHE
NSK	UCEH	-	-	-	-
ASAHI	UCECH	-	-	-	-
NTN	UCC..D1	ASC..	UKC..D1,H23..X*	UELC..D1W3*	AELC..D1
SNR	UCC	USC	UKC..H**	EXC**	ESC
NSK	UCC	-	UKC..+H23..	-	-
ASAHI	UCC	-	-	-	-
KOYO/TEK	UCC	-	UKC	-	-

* Egalement disponible en Série 300 et X (taille moyenne) / ** Egalement disponible en Série 300 / *** Egalement disponible en Série X (taille moyenne)
 * Also available in 300 and X-Series (medium size) / ** Also available in 300-Series / *** Also available in X-Series (medium size)

(1) Pour SP, 4 versions de boîtier disponibles / For SP, 4 available boxes / Für SP, 4 verschiedene Einbaurahmen erhältlich / Para SP, 4 versiones de envoltorios disponibles / Per prodotti speciali, 4 versioni di corpi disponibili / Para SP, 4 versões de embalagens disponíveis

• Roulements spécifiques: alésage carré, cylindrique et hexagonal / Special bearings: square, cylindrical and hexagonal bore



NTN	1AS... (1)	3AS... (1)
NBCA	DC..	DS..
NSK-BSC	W2..PPB../GW2..PPB..	W2..PPB../GW2..PPB..
INA	GVK...KTT-B / VK...KTT-B (AH..)	-
Fafnir	W2..PPB../GW2..PPB..	W2..PPB../GW2..PPB..

NTN	1AH... (1)	2AH... (1)
NBCA	HPC	HPS
NSK-BSC	..KRR..	..KRRB..
INA	-	SK...KRR-B
Fafnir	..KRR..	..KRRB..

NTN	1AC... (1)	3AC... (1)
NBCA	DC2..	DS2..
NSK-BSC	W2..PPB../GW2..PPB..	W2..PPB../GW2..PPB..
Fafnir	W2..PPB../GW2..PPB..	W2..PPB../GW2..PPB..

(1) Autres designs sur demande / Other designs on request

• Roulement insert avec bague extérieure cylindrique / Bearing insert with cylindrical outer ring



NTN	UCS2..D1**	UCS2..D1N	UELS2..D1**	UELS2..D1N	AELS2..NW3	AELS2..D1NW3	ASS2..N	ASS2..D1N
SNR	-	CUC2..	-	CEX2..	CES2..	-	CUS2..	-
NSK-RHP	-	UR2..	ENR2..	-	13...EC	13...ECG	13...EC	-
RHP	11...CG	11...CG	11...DEC	11...DECG	-	-	-	-
KOYO/TEK	RB..	ER..	-	-	-	-	-	-
ASAHI	-	SER2..	-	-	KHR2..	-	-	-
INA	-	-	E..KRR	-	RAE..NPP NR	-	-	-

** également disponible en Série 300 / also available in 300-Series

• Temperature



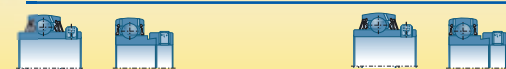
NTN	..HT2	..CT1
SNR	..T20	..T04
INA	..FA164.1	..FA101T
SKF	..VA201	..VA201
ASAHI	..HR 5	..CR 2A
RHP	-	..T1
NSK	..HT2	..CT1

• Etanchéités / Seals




NTN	..LLJ	-
SNR	..L3	..L4
INA	..KPP(B)-3	-
SKF	-	..2RF
ASAHI	-	-
RHP	T...-	-
NSK	..LLJ	-
KOYO/TEK	..L3	-

• Paliers auto-aligneurs en acier inoxydable • Stainless steel self-aligning bearing units • Nichtrostende Gehäuselager • Soportes auto-alineantes en acero inoxidable • Supporti autoallineanti in acciaio inox • Mancais auto-alinháveis em aço inoxidável



NTN	F-UCPM../LP03	-	SNR	SUCF	SESF
SNR	SUCP	SESP	ASAHI	MUCF	-
ASAHI	MUCP	-	DODGE	F4B-SCEZ	-
DODGE	P2B-SCEZ	-	SNR	SUCT	SEST
NTN	F-UCFM../LP03	-	ASAHI	MUCT	-
SNR	SUCFL	SESFL			
ASAHI	MUCFL	-			
DODGE	F2B-SCEZ	-			
SNR	SUCPA	SESPA			
ASAHI	MUCPA	-			


• Paliers auto-aligneurs thermoplastique • Thermoplastic self-aligning bearing units • Thermoplastik Gehäuselager • Soportes autoalinea termoplásticos • Supporti autoallineanti termoplastici • Mancais auto-alinháveis termoplásticos



NTN	F-UCPR2../LP03**	NTN	F-UCFLR2../LP03**
SNR	GNP	SNR	GSFT
SKF	SYK..TH/GFA	SKF	FYTBK..TH/GFA
INA	RASEY..TN VA	INA	RCJTY..TN VA
NSK - RHP	PNP..CR	NSK - RHP	PSFT..CR
NTN	F-UCFR2../LP03*		
SNR	GSF		
SKF	FYK..TH/GFA		
INA	RCJY..TN VA		
NSK - RHP	PSF..CR		

*: noir / black - **: blanc ou noir / white or black

• Paliers auto-aligneurs en tôle d'acier • Stamped steel self-aligning bearing units • Stahlblech Gehäuselager • Soportes auto-alineantes de chapa • Supporti autoallineanti in lamiera d'acciaio • Mancais auto-alinháveis em chapa de aço



NTN	ASPP	AELPP..W3	NTN	ASPFL	AELPFL
SNR	USPP	ESPP	SNR	USPFL	ESPFL
INA	PBY	PB	INA	RATY	RAT
SKF	P..RM	P..FM	SKF	PFT..RM	PFT..FM
RHP	-	LPB..EC	RHP	SLFL..A	SLFL..EC
ASAHI	BPP..Z2	KHPP..Z2	NSK	UBPFL	ENPFL
KOYO/JTEKT	SBPP	SAPP..FM	ASAHI	BPFL	KHPFL
NTN	USPFT	ESPFT	KOYO/JTEKT	SBPFL	SAPP..FM
INA	RATRY	RATR	SNR	USPFE	ESPFE
SKF	PF..RM	PF..FM	INA	-	MSTU
RHP	SLFT..A	SLFT..EC	NTN	ASPF	AELPF..W3
ASAHI	BPFT	-	SNR	USPF	ESPF
			INA	RAY	RA
			SKF	PF..RM	PF..FM
			RHP	SLFE..A	SLFE..EC
			NSK	UBPF	ENPF
			ASAHI	PBF	KHPF
			KOYO/JTEKT	SBPF	SAPP..FM

• Couvertres / Covers

Cover material		NTN	SNR	KOYO/JTEKT	ASAHI	RHP	INA	SKF
Couvercle acier (inox) / Stainless steel cover	fermé/closed / ouvert/open	SM- / S-	SCC../SCDE..	D.. / C	E / C	- / -	- / -	- / -
Couvercle fonte / Cast iron cover	fermé/closed / ouvert/open	CM- / C-	- / -	FD / FC	C / CE	- / -	- / -	- / -
Couvercle tôle / Protector cover (sheet metal)	fermé/closed / ouvert/open	- / -	PCC../ PCO..	- / -	- / -	..P / -	KASK / ECL..	ECY.. / ECYB..
Couvercle thermoplastique / Thermoplastic cover	fermé/closed / ouvert/open	- / -	CF.. / CV..	- / -	- / -	- / -	ECL.. / -	ECYB.. / -

Couvertres à utiliser pour palier en : / Covers suitable for units from:
A : fonte - inox / cast iron - stainless steel B : fonte / cast iron C : fonte / cast iron D : thermoplastique / thermoplastic

• Roulements-inserts • Bearing inserts • Lagereinsätze • Rodamientos insertos • Cuscinetti "inserti" • Rolamentos insertos

	Series 200	Series 300	X-Series
NTN	UC2..D1	UC3..D1	UCX..D1
SNR	UC2..G2	UC3..G2	-
INA	GYE..KRFB / GYE..KRFB-FA107	-	-
SKF	YAR2..2F	-	-
RHP	10..G	-	10...G
NSK	UC2	UC3	UCX
ASAHI	UC2	UC3	UCX
KOYO/JTEKT	UC2	UC3	UCX
NTN	UEL2..D1W3	UEL3..D1W3	-
SNR	EX2..G2	EX3..G2	-
INA	GE..KRFB	-	-
SKF	YEL2..2F	-	-
RHP	10..DECG	-	-
NSK	EW2	-	-
ASAHI	UG2..+ER	-	-
KOYO/JTEKT	NA2	-	-
NTN	UK2..D1, H23..X	UK3..D1, H23..X	UKX.., H23..X
SNR	UK2..G2H	UK3..G2H	-
SKF	YSA2..2FK, H23	-	-
RHP	10..KG, H3	-	-
NSK	UK2..+H23	UK3..H23	UKX..H23
ASAHI	UK2..+H23	UK3	UKX
KOYO/JTEKT	UK2... H23..X	UK3... H23..X	UKX... H23X
NTN	AS2	-	-
SNR	US2..G2	-	-
INA	GAY..NPPB	-	-
SKF	YAT2	-	-
RHP	12..G	-	-
NSK	UB2	-	-
ASAHI	B	-	-
KOYO/JTEKT	SB2	-	-
NTN	AEL2..W3D1	-	-
SNR	ES2..G2	-	-
INA	GRAE..NPPB	-	-
SKF	YET2	-	-
RHP	12..ECG	-	-
NSK	EN2	-	-
ASAHI	KH2..AE	-	-
KOYO/JTEKT	SA2	-	-
NTN	F-UC2..D1/LP03	-	-
SNR	SUC2	-	-
DODGE	SCEZ	-	-
ASAHI	MUC2	-	-
KOYO/JTEKT	UC2..S6	-	-
NTN	-	-	-
SNR	SES2	-	-
ASAHI	-	-	-
DODGE	-	-	-
NTN	F-UC2..D1/LP03	-	-
SNR	MUC2..FD	-	-
SKF	YAR2..2RF/HVGA	-	-
INA	GYE..KRFB VA	-	-
NSK-RHP	J10...GCR	-	-
NTN	CS2..LLU	-	-
SNR	62..SEE	-	-
INA	2..NPPB	-	-
SKF	17262..2RS1	-	-
RHP	17262..2RS1	-	-
NSK	CS2..DDU	-	-
KOYO/JTEKT	CB2	-	-
FAG	762..2RSR	-	-
	Roulement insert bague caoutchouc / insert bearing with rubber liner	Roulement insert / Bearing insert	Bague caoutchouc / Rubber ring
SNR	ESR2..B	ES2..SRS	SRBB2
INA	RABR-B	RAE..NPPB	RABR
SKF	-	YET	RIS
NSK	-	AEL	T2066
SNR	CESR2..A	CE2..SRS	SRCA2
INA	RCSM-B	RAE..NPP	RCSM

Adapté au corps en acier inoxydable / Suitable for stainless steel housings
Adapté au corps en fonte / Suitable for grey cast housings
Adapté au corps en tôle / Suitable for sheet metal housings
Adapté au corps en thermoplastique / Suitable for thermoplastic housings

Le tableau donne des informations sur des formes comparables. Il ne garantit pas l'interchangeabilité exacte sur le plan dimensionnel. / The tables give only information on comparable designs, review the critical dimensions for more precise interchanging or contact SNR customer service. / Die Tabelle gibt lediglich Auskunft über vergleichbare Bauformen, nicht jedoch über die exakte metrische Austauschbarkeit. / La tabla da información únicamente sobre formas comparables, no garantiza una intercambiabilidad exacta en el aspecto dimensional. / La tabella fornisce unicamente informazioni sulle forme costruttive paragonabili, non sull'eventuale intercambiabilità dimensionale. / A tabela dá informações exclusivamente sobre desenhos funcionalmente equivalentes e não dimensionalmente idênticos.

LINEAR GUIDANCE

Complete systems (shafts, systems)



- Modular design system (connection possibilities for AXC, AXDL, AXS, AXLT)
- Drive adaptations
- Power and cable tracks, gantry support legs
- Ready for installation as an integrated package

Ball rail systems



- Size: 15 to 55
- Conventional design with patented ball cage technology
- Wide range of bearing carriage styles
- Dimensions in accordance with DIN/ISO
- Miniature types. Sizes 9 to 15, available in small and wide rail versions

Ball screws



- Ground and rolled types (T7 available from stock)
- Diameter 6-80 mm, lead 1-50 mm (rolled type accuracy T7)
- Wide range of nuts (DIN/ISO, cylindrical, screw nut, with big lead)

Bearing units for ball screws



- Fixed bearing unit
- Floating bearing unit

Linear bushings



- Ball bushings
- Ball sleeve
- Top ball
- Linear Sets with ball bushings and top balls
- Shaft support rails, shaft support blocks, solid and hollow shafts



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Christophe Quarry Operator

Need reliability and performance in your applications?

«In our business, daily production is measured in thousands of tonnes. The installations are large and are subjected to harsh treatment. As a quarry operator, my objectives are clear: to increase the active working time and improve the performance of my machines, whilst also reducing maintenance costs and improving productivity. Crushers, screens and conveyors... bearings play a key role in keeping machinery running smoothly from a mechanical point of view. Choosing NTN-SNR guarantees maximum productivity.»

NTN-SNR presents ULTAGE spherical roller bearings, the result of the latest technological breakthroughs. With the special EF800 series for screens and crushers, peace of mind is assured.



ULTAGE®



www.ntn-snr.com

With You



National Power Local Strength

Supplying industrial products, services and solutions since 1998



Barden UK is a world leader in the design and manufacture of super precision ball and roller bearings for a wide range of industries. Our success has been built on a solid foundation of manufacturing and engineering design expertise.

Our bearings are produced using advanced technology to the highest standard available. Our bearings are used in virtually every sector of industry where there is a need to meet critical tolerances, high speeds and reliable performance under the most demanding conditions

Our product range covers thousands of bearing variations ranging in size from 5mm to over 700mm outside diameter. Our bearings can meet and will usually exceed ISO P2 (ABEC 9) standards.



Products available include:

Angular Contact Ball Bearings –

Available in P4, P4S and P2 precision grade with 15° and 25° contact angles. Steel balls as standard.

Universally ground for interchangeable mounting arrangements or in dedicated matched bearing sets.



Series available: **7000, 71800, 71900, 7200, 7300**

Also available in optional versions as detailed below :

a) Sealed Bearings –

Sealed and grease using non-contact seals these bearings offer optimum performance in challenging applications. Eliminating contamination and cost effective due to pre-greasing, leading to time saved in preparation.

b) Direct Lubrication Version –

Designed for maximum speed where radial oil lubrication systems are featured. As a rule the use of DLR (Direct Lube) bearings results in a reduction of running costs and proves more reliable than systems using axial oil supply.

c) Ceramic Ball (Hybrid) Bearings -

Designed for high-speed, high rigidity applications. As ceramic balls are considerably lighter and harder than steel balls, they can run at higher speeds and lower temperatures. This leads to less heat generation, less energy and longer lubricant life.

Ceramic Ball Features

60% lighter than steel balls

- Centrifugal forces reduced
- Lower vibration levels
- Less heat generation
- Reduced ball skidding

50% higher modulus of elasticity

- Improved bearing rigidity
- Naturally fracture resistant

Tribochemically inert

- Low adhesive wear
- Improved Lubricant life
- Superior corrosion resistance

Which gives the following benefits of Ceramic Hybrid Bearings

- Depending on application service life can be 5 years longer
- Running speeds up to 50% higher
- Overall accuracy and quality improves
- Lower operating costs
- High temperature capability
- Electrically non-conductive

d) X-Life Ultra -

These are Hybrid bearings using ceramic balls and Cronidur (High Nitrogen Steel) rings designed for maximum demands on speed and load. Because of the finer structure of the Cronidur steel the bearings ensure cooler running, higher contact pressures and superior corrosion resistance. This increases the material fatigue life and gives extended service life.

Single and Double Row Cylindrical Roller Bearings –

Available in 3 designs -

- N10 series, single row
- NN30 series, double row
- NNU49 series, double row



Manufactured to SP and UP precision class, with brass and PEEK cages in tapered and parallel bore versions.

This range of bearings are particularly suitable for high load, high rigidity and high speed applications. For efficient lubrication these bearings are available with an annular groove and lubrication holes in the outer ring. Ceramic rollers are available for ultra high speed applications.



Ballscrew Support Bearings –

Manufactured to P4 precision grade and suitable for all screw drive and screw drive support applications.

a) Metric and Imperial Support Bearings –

Available as single direction, universally matchable design as standard. Dedicated matched bearing sets and narrow series BSB designs are also available.

Metric series available, BSB, 7602 and 7603.

Also available in sealed versions - Sealed and grease using non-contact seals these bearings offer optimum performance in challenging applications. Eliminating contamination and cost effective due to pre-greasing, leading to time saved in preparation.

Double Directional Angular Contact Thrust Ball Bearings –

Designed to axially locate spindles in both directions

and typically used in conjunction with cylindrical roller bearings (N and NN series) particularly suitable for heavy axial load applications.

Manufactured to SP and UP precision class with Brass cage.



2344 and 2347 series -

Available with 60° contact angle and large number of balls provides high axial stiffness for reasonably high speed applications.

Floating Displacement Bearings -

Series available FD10.

Designed for use in maximum speed and low load carrying capability applications. Using a combination of a ball bearing outer ring and a cylindrical roller bearing inner ring this ensures a free displacement of the outer ring relative to the inner ring during operation. Using ceramic balls and Cronidur (High Nitrogen Steel) inner rings as standard this enables high speed and adequate low carrying capacity.

Sealed and DLR (Direct Lube), Tapered and Parallel bore versions are also available.

Instrument and Miniature Bearings -

A wide range of very small metric and imperial ball bearings for use in a wide range of applications, from medical equipment, gyroscopes, measuring instruments and dental equipment.

Available with various cage materials, seals and shields and manufactured to P4 precision grade.

Typical Applications and Industries for Super Precision Bearings

- Machine Tools :
 - a) Grinding
 - b) Milling
 - c) Turning
 - d) Machining Centres
 - e) Ball Screw Supports
- Aerospace & Defence Industries
- Satellite Positioning Applications
- Automotive - Including Component Manufacture and Turbochargers
- Vacuum Pumps
- Textile Equipment
- Food Processing
- Robotics
- Medical & Dental Equipment
- High Speed Electric Motors
- Gas Turbines
- Spindle Repairers and Rebuilders
- Machine Tool Repairers and Rebuilders
- Specialist Applications

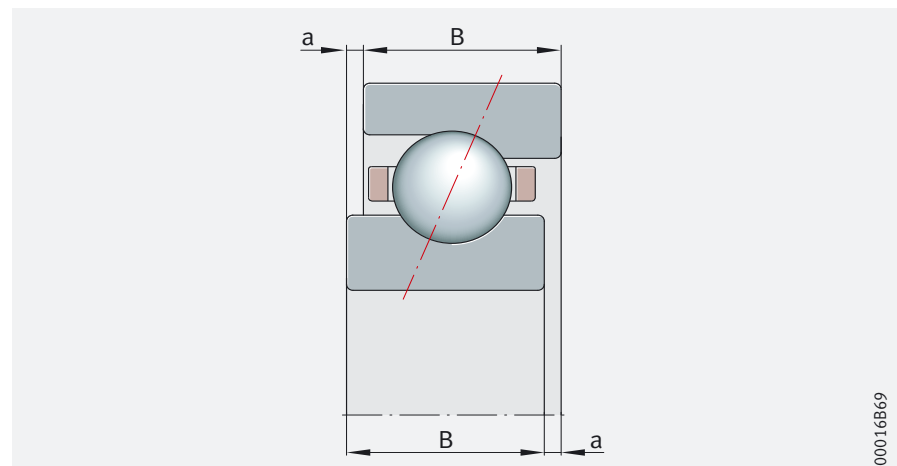


Spindle bearings

Universal bearings

FAG spindle bearings are always designed as universal bearings, which means that:

- the bearing rings are of the same width
- the projection on both sides of the bearing is of the same size, *Figure 2*.



B = bearing width
a = projection

Figure 2
Universal preload system

Advantages

Single bearings can be fitted in any arrangement required, such as a rigid X, O or tandem arrangement or with spring preloading, or can be combined in different sets.

In order to ensure uniform load-bearing in the tandem arrangement, the bearings used should have the same deviation in the inner ring bore and the outside diameter.

In an O arrangement and with rigid adjustment, sorting through checking of the interference between the shaft and bearing bore or the housing and bearing outside diameter can help to control the variations in the actual preload after mounting.

Arrangement of the bearings can be carried out in accordance with the arrow on the cylindrical surface of the outer ring. This provides logistical advantages for the customer, especially in spare parts procurement and stockholding of bearings.

Universal bearing sets

Bearing sets comprise universal bearings with the same deviation in the inner ring bore and the same deviation in the outside diameter. The deviation stands, starting from the actual value code, for the inner ring bore or the outside diameter on the bearing ring. The sets are of identical technical quality to single bearings with the same deviation in the inner ring bore and the outside diameter.

Marking of bearing sets

The first letter indicates the number of bearings in the set:

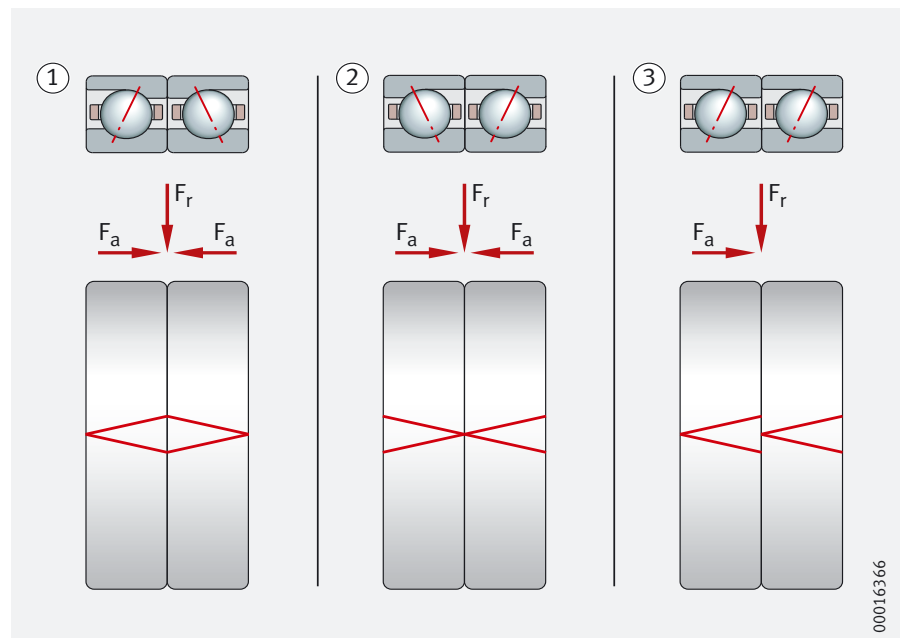
- D = 2 bearings (duplex)
- T = 3 bearings (triplex)
- Q = 4 bearings (quadruplex).

A "U" stands for "Universal", for example in DU. After these letters, the preload class is then indicated, for example "L" for light preload, in this case DUL.

Universal bearing sets can be fitted in any arrangement required. Possible bearing arrangements are shown in *Figure 3*.

- F_r = radial load
 F_a = axial load
- ① DU becomes DB, 2 bearing set in an O arrangement
 - ② DU becomes DF, 2 bearing set in an X arrangement
 - ③ DU becomes DT, 2 bearing set in a tandem arrangement

Figure 3
Bearing arrangements for a DU set



Ready-to-fit bearing sets

Ready-to-fit bearing sets are also available by agreement. In this case, the fitting sequence is indicated by a large arrow.

Ready-to-fit bearing sets correspond in technical terms to the universal bearing sets. However, the latter offer significant logistical advantages over the ready-to-fit sets, especially in spare parts procurement and stockholding.

Mounting and Handling of Super Precision bearings is essential for the full performance capacity to be achieved.

Common mistakes made when fitting any super precision bearings.

- Contamination of the bearing prior to fitting
- Assembling the bearing set in the wrong configuration
- Failing to correctly lubricate the bearings before mounting
- General fitting problems such as misalignment and incorrect pre-loading.

Mounting Procedure

- In preparation for mounting the bearing arrangement should be checked against a drawing or manual preferably, and the bearings must be arranged accordingly.
- The bearings are marked with the highest point of eccentricity and these marks should be aligned when mounting.
- Angular contact ball bearings may only be loaded in one axial direction, strict attention should

be paid to their direction while mounting.

- When mounting Tapered bore cylindrical roller bearings the clearance or preload fit depends how far the bearing is driven up the tapered seat. The best method is to use ring gauges to set the clearance/preload quickly and accurately.
- Induction heating is advisable for the mounting of precision bearings via the inner ring as this expands making mounting much easier. When fitting the bearing rings you should ensure that these are fitted tightly to the contact surface to avoid settling or misalignment. Premature failure could occur if this is not the case as the bearings would be operating without any preload.

Once mounted a correct running in procedure should always be used which ensures even distribution of lubricant and stabilises bearing temperature.

Barden Recommended Running-in Procedure is as follows:

Running-in process

Grease distribution is completed once a stable bearing temperature has been achieved.

Recommendations for the grease distribution cycle of super precision bearings, *Figure 4*.

The running-in process comprises several cycles of start/stop operation at different speeds and for different running times, while the stationary times after each cycle are very important. The number of cycles required may vary according to the bearing size, the number of bearings, the maximum speed and the bearing environment.

Further cycles should be carried out for an increased running time and with a shortened stationary time until the equilibrium temperature is achieved.



- ① Speed
- ② Running and stationary times
- ③ Running time
- ④ Stationary time
- ⑤ Time 11 min, 40 s
- ⑥ Time 56 min, 40 s

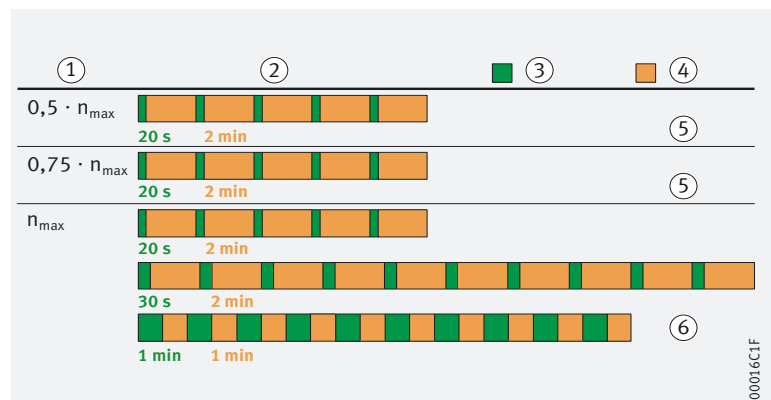


Figure 4
Grease distribution cycle for open and sealed spindle bearings



The industry standard

Oilite® has been acknowledged as the undisputed market leader in self-lubricating bearings for more than 80 years, and today sets the standard for other products with its quality and reliability.

The extensive technical knowledge and manufacturing resources behind Oilite® have resulted in a vast array of sophisticated, high quality components that are supplied to a wide range of industries, throughout the world.

Widest range in Europe

As well as being the UK's number one choice, Oilite® bearings are also produced for other EU markets and offer the widest choice of self-lubricating bearings anywhere in Europe. Standard stock ranges are available in metric and inch. To ensure that customers have the benefit of fast delivery, a large range of European sizes are always stocked.

- 1000 European standard sizes
- Stock holding for fast delivery

There are now five standard stock ranges, ISO Metric, Inch, DIN 1850, French Metric and Scandinavian Metric.

Bespoke products

Where customer requirements are not met by stock items, our bespoke service enables us to produce both bronze and iron bearings and customer specified structural parts that are specifically designed to meet individual requirements.

Manufacturing quality and efficiency

Our manufacturing facilities are highly automated for maximum efficiency and competitiveness. Rigorous quality control procedures are adopted at all stages of manufacture.

Custom Machining

We also specialise in machining Oilite® self-lubricating bearings and plates to meet individual specifications and tolerances. This service provides, for example, one-off requirements in machine maintenance or limited production runs in the OEM design field or for prototype testing before committing to tooling. Specialist tools and machining techniques are employed. This maintains the performance characteristics and physical properties which are the prerequisite of these components.

Certification

The company is certified to the Quality Management Systems requirement of ISO 9001:2008 by LRQA Certificate No. LRQ0960929 and is approved for use by:

- Augusta Westland
- Messier Dowty
- Hawker Beechcraft Corporation

Certificates of conformity & Certificates of material analysis are supplied by request.

Special Lubricants & Additives

The standard stock range of Oilite® bearings is impregnated with a mineral oil SAE 30 viscosity; all machined Oilite® bearings and plates are supplied fully impregnated after machining. A wide range of lubricants with varying temperature ranges are available to meet specific requirements. Lubricant additives are also available to impart anti-wear properties in marginal lubrication conditions such as stainless steel shaft applications.

Technical Advice

Extensive technical resources are available to resolve bearing problems. Engineers are always available to discuss projects in detail, without obligation.

Oilite® conforms to DIN 1850/ISO 2795

Oilite® metric bearings are manufactured to the tolerances set out in ISO 2795 - Plain Bearings from Sintered Material. The German stock range of bearings conform to DIN 1850.

Material Choice

Standard Oilite® - oil retaining tin bronze is the generally specified material. It gives a good balance between strength, wear resistance, conformability and durability in operation. Ideal in a wide variety of applications where "self lubricating" properties are required over a long period of time.

Super Oilite® - an iron copper material suited to high static loads and slow oscillatory motion.

Iron Oilite® - 100% iron oil-retaining bearings provide an ideal solution in high stress low revolution applications.

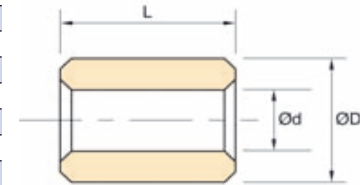


oilite® BEARINGS

PLAIN
BEARINGS

Metric plain bearings to ISO 2795

Part Code	Inner Diameter			Outer Diameter			Basic L (js13)	Tolerances	
	Basic	Min.	Max.	Basic	Min.	Max.		ID	OD
AS 0204*	2	2.014	2.024	4	4.015	4.027	4	E7	r7
AM 0205	2	2.002	2.012	5	5.019	5.031	2 4 3	G7	s7
AM 0305	3	3.002	3.012	5	5.019	5.031	3 4 6	G7	s7
AM 0306	3	3.002	3.012	6	6.019	6.031	3 4 6	G7	s7
AS 0308*	3	3.014	3.024	8	8.019	8.034	4	E7	r7
AM 0407	4	4.004	4.016	7	7.023	7.038	3 4 6	G7	s7
AM 0408	4	4.004	4.016	8	8.023	8.038	4 6 8 12	G7	s7
AS 0410*	4	4.020	4.032	10	10.019	10.034	8	E7	r7
AM 0508	5	5.004	5.016	8	8.023	8.038	4 5 8 10 12 16	G7	s7
AM 0509	5	5.004	5.016	9	9.023	9.038	4 5 8	G7	s7
AS 0510*	5	5.020	5.032	10	10.019	10.034	6 8 10	E7	r7
AS 0512*	5	5.020	5.032	12	12.023	12.041	10	E7	r7
AM 0609	6	6.004	6.016	9	9.023	9.038	4 6 10 12 16	G7	s7
AM 0610	6	6.004	6.016	10	10.023	10.038	4 6 10 12 16	G7	s7
AS 0612*	6	6.020	6.032	12	12.023	12.041	6 8 12	E7	r7
AS 0614*	6	6.020	6.032	14	14.023	14.041	12	E7	r7
AM 0710	7	7.005	7.020	10	10.023	10.038	5 8 10	G7	s7
AM 0711	7	7.005	7.020	11	11.028	11.046	8 10	G7	s7
AM 0811	8	8.005	8.020	11	11.028	11.046	6 8 12	G7	s7
AM 0812	8	8.005	8.020	12	12.028	12.046	6 8 12 16 20	G7	s7
AM 0814	8	8.005	8.020	14	14.028	14.046	8 12 16 20	G7	s7
AS 0818*	8	8.025	8.040	18	18.023	18.041	16	E7	r7
AM 0912	9	9.005	9.020	12	12.028	12.046	6 10 14	G7	s7
AM 0914	9	9.005	9.020	14	14.028	14.046	6 10 14	G7	s7
AM 1013	10	10.005	10.020	13	13.028	13.046	10 16	G7	s7
AM 1014	10	10.005	10.020	14	14.028	14.046	8 10 16 20 25	G7	s7
AM 1015	10	10.005	10.020	15	15.028	15.046	10 16 20 25	G7	s7
AM 1016	10	10.005	10.020	16	16.028	16.046	8 10 16 20 25	G7	s7
AS 1022*	10	10.025	10.040	22	22.028	22.046	20	E7	r7
AM 1215	12	12.006	12.024	15	15.028	15.046	12 16 20 25	G7	s7
AM 1216	12	12.006	12.024	16	16.028	16.046	8 12 16 20 25	G7	s7
AM 1218	12	12.006	12.024	18	18.028	18.046	8 12 16 20 25	G7	s7
AS 1225*	12	12.032	12.050	25	25.028	25.049	25	E7	r7
AM 1418	14	14.006	14.024	18	18.028	18.046	10 14 20	G7	s7
AM 1420	14	14.006	14.024	20	20.035	20.056	10 14 20 30	G7	s7
AS 1428*	14	14.032	14.050	28	28.028	28.049	30	E7	r7
AM 1519	15	15.006	15.024	19	19.035	19.056	10 15 20 25 30	G7	s7
AS 1520*	15	15.032	15.050	20	20.028	20.049	10 15 20 25 30	E7	r7
AM 1521	15	15.006	15.024	21	21.035	21.056	10 15 20 25	G7	s7
AM 1522	15	15.006	15.024	22	22.035	22.056	16 20 30	G7	s7
AS 1530*	15	15.032	15.050	30	30.028	30.049	30	E7	r7
AM 1620	16	16.006	16.024	20	20.035	20.056	10 12 16 20 25 30	G7	s7
AM 1622	16	16.006	16.024	22	22.035	22.056	12 16 20 25 30	G7	s7
AS 1632*	16	16.032	16.050	32	32.034	32.059	30	E7	r7
AM 1822	18	18.006	18.024	22	22.035	22.056	12 18 20 30	G7	s7
AM 1824	18	18.006	18.024	24	24.035	24.056	12 18 30	G7	s7
AM 1825	18	18.006	18.024	25	25.035	25.056	12 16 20 22 30	G7	s7
AS 1835*	18	18.032	18.050	35	35.034	35.059	30	E7	r7
AM 2024	20	20.007	20.028	24	24.035	24.056	16 20 25 32	G7	s7
AM 2025	20	20.007	20.028	25	25.035	25.056	15 20 25 30	G7	s7
AM 2026	20	20.007	20.028	26	26.035	26.056	15 20 25 30	G7	s7
AM 2028	20	20.007	20.028	28	28.035	28.056	20 25 30 40 50	G7	s7
AS 2040*	20	20.040	20.061	40	40.034	40.059	40	E7	r7
AM 2227	22	22.007	22.028	27	27.035	27.056	15 20 25 35	G7	s7
AM 2228	22	22.007	22.028	28	28.035	28.056	15 20 25 28 30	G7	s7
AM 2232	22	22.007	22.028	32	32.043	32.068	20 30 50	G7	s7
AM 2530	25	25.007	25.028	30	30.035	30.056	20 25 30 50	G7	s7



Concentricity
≤ 50 = IT9
> 50 = IT10

Bearings marked * are not included in ISO 2795.

For ordering see following part code examples.

4 ID x 7 OD x 4 long = AM040704 or 12 ID x 15 OD x 25 long = AM121525.

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

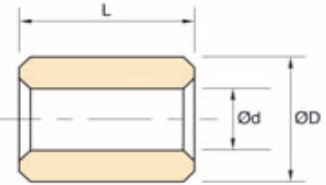


Metric plain bearings to ISO 2795 – continued

Part Code	Inner Diameter			Outer Diameter			Basic L (js13)				Tolerances					
	Basic	Min.	Max.	Basic	Min.	Max.					ID	OD				
AM 2532	25	25.007	25.028	32	32.043	32.068	20	25	30	35	40	G7	s7			
AM 2535	25	25.007	25.028	35	35.043	35.068	25	35	50			G7	s7			
AM 2545*	25	25.040	25.061	45	45.034	45.059	35					E7	r7			
AM 2833	28	28.007	28.028	33	33.043	33.068	20	30				G7	s7			
AM 2836	28	28.007	28.028	36	36.043	36.068	20	25	30	40		G7	s7			
AM 3035	30	30.007	30.028	35	35.043	35.068	20	25	30			G7	s7			
AM 3038	30	30.007	30.028	38	38.043	38.068	20	25	30	40		G7	s7			
AM 3040	30	30.007	30.028	40	40.043	40.068	25	35	40	45	50	60	G7	s7		
AM 3050*	30	30.05	30.075	50	50.034	50.059	60					E7	r7			
AM 3238	32	32.009	32.034	38	38.043	38.068	20	25	30	40		G7	s7			
AM 3240	32	32.009	32.034	40	40.043	40.068	20	25	30	40	50		G7	s7		
AM 3541	35	35.009	35.034	41	41.043	41.068	25	35	40			G7	s7			
AM 3544	35	35.009	35.034	44	44.043	44.068	22	28	35			G7	s7			
AM 3545	35	35.009	35.034	45	45.043	45.068	25	35	40	50	70		G7	s7		
AM 3642	36	36.009	36.034	42	42.043	42.068	22	28	36	45		G7	s7			
AM 3645	36	36.009	36.034	45	45.043	45.068	22	28	36	45		G7	s7			
AM 3844	38	38.009	38.034	44	44.043	44.068	25	35	45			G7	s7			
AM 3848	38	38.009	38.034	48	48.043	48.068	35	45	55			G7	s7			
AM 4046	40	40.009	40.034	46	46.043	46.068	30	40	50			G7	s7			
AM 4050	40	40.009	40.034	50	50.043	50.068	25	30	32	35	40	50	60	80	G7	s7
AM 4248	42	42.009	42.034	48	48.043	48.068	40	50				G7	s7			
AM 4252	42	42.009	42.048	52	52.053	52.099	40	50	60			G8	s8			
AM 4551	45	45.009	45.048	51	51.053	51.099	35	45	55			G8	s8			
AM 4555	45	45.009	45.048	55	55.053	55.099	35	45	55	65	75	80		G8	s8	
AM 4556	45	45.009	45.048	56	56.053	56.099	28	36	45	56		G8	s8			
AM 4565*	45	45.050	45.075	65	65.041	65.071	80					E7	r7			
AM 4855	48	48.009	48.048	55	55.053	55.099	50					G8	s8			
AM 4858	48	48.009	48.048	58	58.053	58.099	50					G8	s8			
AM 5058	50	50.009	50.048	58	58.053	58.099	35	50				G8	s8			
AM 5060	50	50.009	50.048	60	60.053	60.099	30	35	40	50	63	70	75	100	G8	s8
AM 5070*	50	50.050	50.089	70	70.043	70.089	70					E8	r8			
AM 5563	55	55.010	55.056	63	63.053	63.099	40	55				G8	s8			
AM 5570*	55	55.060	55.106	70	70.043	70.089	70					E8	r8			
AM 5565	55	55.060	55.106	65	65.041	65.087	40	55	70			E8	r8			
AM 6068	60	60.010	60.056	68	68.059	68.105	50	60	70			G8	s8			
AM 6070	60	60.010	60.056	70	70.059	70.105	50	60	120			G8	s8			
AM 6072	60	60.010	60.056	72	72.059	72.105	50	60	70			G8	s8			
AM 6075*	60	60.060	60.106	75	75.043	75.089	60	90				E8	r8			
AM 6080*	60	60.060	60.106	80	80.043	80.089	120					E8	r8			
AM 6085*	60	60.060	60.106	85	85.051	85.105	90					E8	r8			
AM 6370	63	63.010	63.056	70	70.059	70.105	40	50				G8	s8			
AM 6575*	65	65.060	65.106	75	75.043	75.089	60	90				E8	r8			
AM 6580*	65	65.060	65.106	80	75.043	75.089	60	90				E8	r8			
AM 7080*	70	70.060	70.106	80	75.043	75.089	60	90	120			E8	r8			
AM 7085*	70	70.060	70.106	85	85.051	85.105	60	90				E8	r8			
AM 7585*	75	75.060	75.106	85	85.051	85.105	70	100				E8	r8			
AM 7590*	75	75.060	75.106	90	90.051	90.105	70	100				E8	r8			
AM 75100*	75	75.060	75.106	100	100.051	100.105	100					E8	r8			
AM 8090*	80	80.060	80.106	90	90.051	90.105	70	100				E8	r8			
AM 8095*	80	80.060	80.106	95	95.051	95.105	70	100				E8	r8			
AM 80100*	80	80.060	80.106	100	100.051	100.105	120					E8	r8			
AM 80105*	80	80.060	80.106	105	105.054	105.108	100					E8	r8			
AM 8595*	85	85.072	85.125	95	95.051	95.105	100					E8	r8			
AM 85100*	85	85.072	85.125	100	100.051	100.105	100					E8	r8			
AM 90105*	90	90.072	90.125	105	105.054	105.089	80					E8	r8			
AM 90110*	90	90.072	90.125	110	110.054	110.108	80					E8	r8			
AM 100120*	100	100.072	100.125	120	120.054	120.108	80	100	120			E8	r8			

oilite®
BEARINGS

Note
ISO Metric Bearing Standard is G7 s7



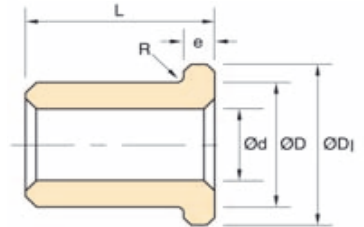
Concentricity
≤ 50 = IT9
> 50 = IT10

Bearings marked * are not included in ISO 2795.

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oilite® BEARINGS

PLAIN
BEARINGS



Metric flanged bearings to ISO 2795

Part Code	Inner Diameter			Outer Diameter			ØD1	e	Basic L	Tolerances	
	Basic	Min.	Max.	Basic	Min.	Max.				ID	OD
AL 0205	2	2.002	2.012	5	5.019	5.031	8	1.5	3	G7	s7
AT 0305*	3	3.020	3.032	5	5.015	5.027	8	1.5	4	E7	r7
AL 0306	3	3.004	3.016	6	6.019	6.031	9	1.5	3 4	G7	s7
AL 0408	4	4.004	4.016	8	8.023	8.038	12	2	4 6 8 12	G7	s7
AT 0408	4	4.020	4.032	8	8.019	8.034	10	1.5	6	E7	r7
AL 0509	5	5.004	5.016	9	9.023	9.038	13	2	4 5 8	G7	s7
AT 0510*	5	5.020	5.032	10	10.019	10.034	12	2	6	E7	r7
AL 0610	6	6.004	6.016	10	10.023	10.038	14	2	4 6 8 10 16	G7	s7
AT 0612*	6	6.020	6.032	12	12.023	12.041	14	2	6	E7	r7
AL 0711	7	7.005	7.020	11	11.028	11.046	15	2	5 8	G7	s7
AL 0812	8	8.005	8.020	12	12.028	12.046	16	2	6 8 12 16	G7	s7
AT 0814*	8	8.025	8.040	14	14.023	14.041	18	3	8	E7	r7
AT 0914*	9	9.025	9.040	14	14.023	14.041	19	2.5	6 10 14	E7	r7
AL 1013	10	10.005	10.020	13	13.028	13.046	17	2.5	8 10 16 20	G7	s7
AT 1014*	10	10.025	10.040	14	14.023	14.041	18	2	12	E7	r7
AL 1015	10	10.005	10.020	15	15.028	15.046	21	3	8 10 16 20	G7	s7
AL 1016	10	10.005	10.020	16	16.028	16.046	22	3	8 10 12 16	G7	s7
AT 1016*	10	10.025	10.040	16	16.023	16.041	20	3	8 10	E7	r7
AL 1215	12	12.006	12.024	15	15.028	15.046	21	3	12 16 20	G7	s7
AL 1217	12	12.006	12.024	17	17.028	17.046	23	3	12 16 20 25	G7	s7
AL 1218	12	12.006	12.024	18	18.023	18.041	24	3	8 12 20	G7	s7
AT 1218*	12	12.032	12.050	18	18.023	18.041	22	3	10 12	E7	r7
AL 1420	14	14.006	14.024	20	20.035	20.056	26	3	10 14 20	G7	s7
AL 1519	15	15.006	15.024	19	19.035	19.056	25	3	16 20 25	G7	s7
AL 1521	15	15.006	15.024	21	21.035	21.056	27	3	10 15 20 25	G7	s7
AT 1522*	15	15.032	15.050	22	22.028	22.049	28	3	12 16	E7	r7
AL 1620	16	16.006	16.024	20	20.035	20.056	27	3	16 20 25	G7	s7
AT 1620*	16	16.032	16.050	20	20.028	20.049	24	2	12	E7	r7
AL 1622	16	16.006	16.024	22	22.035	22.056	28	3	12 16 20 25	G7	s7
AT 1622*	16	16.032	16.050	22	22.028	22.049	28	4	12 16	E7	r7
AL 1824	18	18.006	18.024	24	24.035	24.056	30	3	12 18 22 30	G7	s7
AT 1825*	18	18.032	18.050	25	25.028	25.049	32	4	12 16	E7	r7
AL 2024	20	20.007	20.028	24	24.035	24.056	30	3	16 20 25	G7	s7
AL 2026	20	20.007	20.028	26	26.035	26.056	32	3	15 20 25 30	G7	s7
AT 2028*	20	20.040	20.061	28	28.028	28.049	35	4	16 20	E7	r7
AL 2228	22	22.007	22.028	28	28.035	28.056	34	3	15 20 25 30	G7	s7
AL 2530	25	25.007	25.028	30	30.035	30.056	39	3.5	20 25 32	G7	s7
AL 2532	25	25.007	25.028	32	32.043	32.068	39	3.5	20 25 30	G7	s7
AT 2535*	25	25.040	25.061	35	35.034	35.059	45	5	16 25	E7	r7
AL 2836	28	28.007	28.028	36	36.043	36.068	44	4	20 25 30	G7	s7
AL 3038	30	30.007	30.028	38	38.043	38.068	46	4	20 25 30	G7	s7
AT 3040*	30	30.040	30.061	40	40.034	40.059	50	5	20 30	E7	r7
AL 3238	32	32.009	32.034	38	38.043	38.068	46	4	20 25 32	G7	s7
AL 3240	32	32.009	32.034	40	40.043	40.068	48	4	20 25 30	G7	s7
AL 3545	35	35.009	35.034	45	45.043	45.068	55	5	20 25 35 40	G7	s7
AL 3848	38	38.009	38.034	48	48.043	48.068	58	5	25 35	G7	s7
AL 4046	40	40.009	40.034	46	46.043	46.068	56	5	25 32 40	G7	s7
AL 4050	40	40.009	40.034	50	50.043	50.068	60	5	25 30 40 50	G7	s7
AT 4050*	40	40.050	40.075	50	50.034	50.059	60	6	25 40	E7	r7
AL 4252	42	42.009	42.048	52	52.053	52.099	62	5	40 50	G8	s8
AL 4555	45	45.009	45.048	55	55.053	55.099	65	5	35 45 55	G8	s8
AT 4555*	45	45.050	45.075	55	55.041	55.071	65	6	30 45	E7	r7
AL 5060	50	50.009	50.048	60	60.053	60.099	70	5	32 35 40 50	G8	s8
AT 5060*	50	50.050	50.075	60	60.041	60.071	70	6	30 50	E7	r7
AT 6072	60	60.060	60.106	72	72.043	72.089	84	6	50 60	E8	r8
AT 6075	60	60.060	60.106	75	75.043	75.089	85	8	60	E8	r8
AT 7085	70	70.060	70.106	85	85.051	85.105	95	8	60	E8	r8
AT 8095	80	80.060	80.106	95	95.051	95.105	105	8	70	E8	r8
AT 90110	90	90.072	90.125	110	110.054	110.108	120	8	50	E8	r8
AT 100120	100	100.072	100.125	120	120.054	120.108	130	8	80	E8	r8

Bearings marked * are not included in ISO 2795.

For ordering see following part code examples. 4 ID x 8 OD x 6 long = AL040806 or 12 ID x 15 OD x 20 long = AL121520.

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

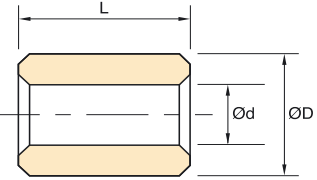




Inch plain bearings

Part Code	Inner Diameter Ød			Outer Diameter ØD			Basic L														
	Basic	Min.	Max.	Basic	Min.	Max.															
AI 0203	1/8	0.1255	0.1285	3/16	0.1885	0.1895	1/8														
AI 0204	1/8	0.1270	0.1280	1/4	0.2520	0.2530	1/4														
AI 0304	3/16	0.1865	0.1875	1/4	0.2510	0.2520	1/4	5/16	3/8	1/2											
AI 0305	3/16	0.1883	0.1888	5/16	0.3137	0.3142	3/8	1/4	5/16	3/8	1/2	5/8	3/4								
AI 0306	3/16	0.1885	0.1875	3/8	0.3770	0.3780	3/8														
AI 0405	1/4	0.2495	0.2505	5/16	0.3135	0.3145	1/2														
AI 0406	1/4	0.2508	0.2513	3/8	0.3767	0.3772	3/8	1/4	5/16	3/8	7/16	1/2	5/8	3/4	1						
AI 0407	1/4	0.2501	0.2506	7/16	0.4385	0.4390	1/4	5/16	3/8	7/16	1/2	5/8	3/4								
AI 0408	1/4	0.2507	0.2512	1/2	0.5020	0.5025	3/8	1/2	5/8	3/4	1										
AI 0506	5/16	0.3125	0.3135	3/8	0.3760	0.3770	1/2	5/8													
AI 0507	5/16	0.3132	0.3137	7/16	0.4390	0.4395	1/4	5/16	3/8	1/2	5/8	3/4	1	1 1/4	1 3/4						
AI 0508	5/16	0.3132	0.3137	1/2	0.5017	0.5022	1/4	5/16	3/8	1/2	5/8	3/4	1								
AI 0607	3/8	0.3755	0.3765	7/16	0.4390	0.4400	3/8	1/2	3/4												
AI 0608	3/8	0.3757	0.3762	1/2	0.5020	0.5025	5/16	3/8	7/16	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4					
AI 0609	3/8	0.3755	0.3765	5/8	0.5645	0.5655	3/8	1													
AI 0610	3/8	0.3754	0.3759	3/4	0.6260	0.6270	3/8	1/2	5/8	3/4	7/8	1	1 1/8								
AI 0612	3/8	0.3760	0.3770	3/4	0.7520	0.7530	1/2	1													
AI 0709	7/16	0.4382	0.4387	5/8	0.5637	0.5647	5/8	1	1 1/8												
AI 0710	7/16	0.4380	0.4390	3/4	0.6260	0.6270	3/4	1													
AI 0711	7/16	0.4383	0.4388	13/16	0.6890	0.6900	3/8	1/2	3/4	1	1 1/4										
AI 0810	1/2	0.5008	0.5013	3/4	0.6265	0.6275	1/4	5/8	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2						
AI 0811	1/2	0.5015	0.5020	13/16	0.6895	0.6905	3/8	1/2	3/4	7/8	1	1 1/4									
AI 0812	1/2	0.5015	0.5020	3/4	0.7525	0.7535	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	2						
AI 0814	1/2	0.5020	0.5030	7/8	0.8780	0.8790	1/2	1 1/2													
AI 0816	1/2	0.5010	0.5020	1	1.0030	1.0040	1														
AI 0911	5/8	0.5628	0.5638	13/16	0.6890	0.6900	1/2	5/8	3/4	1	1 1/4										
AI 0912	5/8	0.5640	0.5650	3/4	0.7520	0.7530	1														
AI 0913	5/8	0.5620	0.5630	13/16	0.8140	0.8150	3/4	1													
AI 1012	3/4	0.6255	0.6265	7/8	0.7515	0.7525	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2							
AI 1013	3/4	0.6265	0.6275	13/16	0.8145	0.8155	1/2	3/4	1	1 1/4	1 1/2										
AI 1014	3/4	0.6255	0.6265	7/8	0.8770	0.8780	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2							
AI 1016	3/4	0.6270	0.6280	1	1.0025	1.0035	1														
AI 1113	13/16	0.6875	0.6885	13/16	0.8140	0.8150	1														
AI 1115	13/16	0.6881	0.6891	13/16	0.9393	0.9403	5/8	1	1 1/4												
AI 1214	3/4	0.7505	0.7515	7/8	0.8765	0.8775	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2							
AI 1215	3/4	0.7535	0.7545	15/16	0.9405	0.9415	3/4	1													
AI 1216	3/4	0.7508	0.7518	1	1.0020	1.0030	1/2	5/8	3/4	7/8	1	1 1/8	1 1/4	1 1/2	2	2 1/2	2 3/4				
UI 1216	3/4	0.7522	0.7532	1	1.0025	1.0035	1 1/2	1 3/4	2												
AI 1218	3/4	0.7525	0.7535	1 1/8	1.1280	1.1290	3/4	1	1 1/4												
AI 1220	3/4	0.7525	0.7535	1 1/4	1.2535	1.2545	1 1/8	1 1/4	1 1/2	2											
AI 1416	7/8	0.8755	0.8765	1	1.0017	1.0027	3/4	7/8	1	1 1/8	1 1/4	1 1/2									
AI 1418	7/8	0.8757	0.8767	1 1/8	1.1270	1.1280	3/4	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2							
AI 1618	1	1.0008	1.0018	1 1/8	1.1270	1.1280	1/2	3/4	1	1 1/8	1 1/4	1 1/2									
AI 1619	1	1.0010	1.0020	1 3/8	1.1885	1.1895	3/4	1 1/2													
AI 1620	1	1.0010	1.0020	1 1/4	1.2526	1.2536	5/8	7/8	1	1 1/8	1 1/4	1 1/2	1 3/4	2							
AI 1622	1	1.0020	1.0030	1 3/8	1.3780	1.3790	1														
AI 1624	1	1.0025	1.0035	1 1/2	1.5040	1.5050	1	1 1/8	1 1/2	1 3/4	2										
AI 1820	1 1/8	1.1235	1.1245	1 1/4	1.2525	1.2535	1	1 1/4													
AI 1822	1 1/8	1.1258	1.1268	1 3/8	1.3770	1.3780	3/4	7/8	1	1 1/4	1 1/2	1 3/4	2	2 1/2							
AI 2024	1 1/4	1.2515	1.2525	1 1/2	1.5030	1.5040	5/8	1	1 1/4	1 1/2	1 3/4	1 3/4	2	2 1/2							
AI 2026	1 1/4	1.2525	1.2535	1 5/8	1.6287	1.6302	1	1 1/4	1 1/2	1 3/4	2	2 1/2									
AI 2226	1 3/8	1.3762	1.3772	1 5/8	1.6275	1.6290	1	1 1/4	1 1/2	1 3/4	2										
AI 2228	1 3/8	1.3775	1.3785	1 3/4	1.7545	1.7560	1 1/2	2	2 1/2												
AI 2428	1 1/2	1.5013	1.5023	1 3/4	1.7527	1.7542	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2	3							
AI 2430	1 1/2	1.5025	1.5035	1 7/8	1.8790	1.8805	1	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2								
AI 2432	1 1/2	1.5025	1.5035	2	2.0030	2.0045	1 1/2	2	2 1/2	3	3 1/2										
AI 2633	1 5/8	1.6285	1.6300	2 1/8	2.0675	2.0690	1 3/4	2	2 1/2												
AI 2832	1 3/4	1.7510	1.7525	2	2.0030	2.0045	1 1/4	1 1/2	1 3/4	2	2 1/4	2 1/2									
AI 2836	1 3/4	1.7510	1.7525	2 1/4	2.2530	2.2550	1 1/2	1 3/4	2	2 1/4	2 1/2										
AI 3236	2	2.0010	2.0025	2 1/2	2.2530	2.2550	1 1/2	1	1 1/2	1 3/4	2	2 1/2									
AI 3238	2	2.0015	2.0030	2 5/8	2.3775	2.3790	1 1/2	2 1/2	3												
AI 3240	2	2.0010	2.0025	2 1/2	2.5035	2.5055	1 1/2	1 3/4	2	2 1/4	2 1/2	3									
AI 3642	2 1/4	2.2530	2.2550	2 5/8	2.6285	2.6305	2 1/2	3													
AI 3644	2 1/4	2.2510	2.2530	2 3/4	2.7540	2.7560	1 1/2	2	2 1/4	2 1/2	3										
AI 4046	2 1/2	2.5030	2.5050	2 7/8	2.8795	2.8815	2 1/2	3													
AI 4048	2 1/2	2.5015	2.5035	3	3.0045	3.0065	1 1/2	2	2 1/2	3											
AI 4856*	3	2.9880	3.0000	3 1/2	3.5020	3.5040	2 1/2	3													
AI 5664	3 1/2	3.5015	3.5035	4	4.0015	4.0040	3														
AI 6472	4	4.001	4.0035	4 1/2	4.5015	4.5040	4														

oilite® BEARINGS



Please use the following table for conversion from the fraction (length) to the two digit suffix of the part code. Example: AI030504 (1/4 length)

03 = 3/16	04 = 1/4	05 = 5/16
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10 = 5/8	12 = 3/4	14 = 7/8
16 = 1	18 = 1 1/8	20 = 1 1/4
22 = 1 1/8	24 = 1 1/2	26 = 1 3/4
28 = 1 3/4	30 = 2	32 = 2 1/2
36 = 2 1/4	40 = 3	48 = 4

Some of the imperial sizes listed above can be supplied with different tolerance ranges. Before finalising designs or when ordering imperial bearings for repairs, please check with our sales department, the tolerance bands available, either from stock or for special orders.

* Non standard chamfer (details on request).

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.



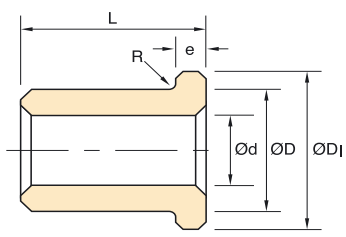


oilite® BEARINGS

PLAIN
BEARINGS

Inch flanged bearings

Part Code	Inner Diameter Ød			Outer Diameter ØD			ØD1	e	Basic L					
	Basic	Min.	Max.	Basic	Min.	Max.			Basic	Min.	Max.	Basic		
AJ 0305	3/16	0.1880	0.1885	3/16	0.3137	0.3142	0.3750	0.062	3/16	1/4	3/8	1/2		
AJ 0406	1/4	0.2505	0.2510	3/8	0.3767	0.3772	0.5000	0.062	3/16	1/4	3/8	1/2	3/4	
UJ0406	1/4	0.2510	0.2520	3/8	0.3765	0.3775	0.4688	0.062	3/16	1/4	3/8	1/2	3/4	
AJ 0508	5/16	0.3130	0.3135	1/2	0.5020	0.5025	0.6250	0.062	1/4	3/8	1/2	3/4		
AJ 0509	5/16	0.3120	0.3125	5/16	0.5640	0.5650	0.6562	0.125	3/8	1/2	3/4	1		
AJ 0608	3/8	0.3755	0.3760	1/2	0.5015	0.5020	0.6250	0.062	1/4	3/8	1/2	3/4	3/8	7/8
UJ 0608	3/8	0.3755	0.3760	1/2	0.5020	0.5025	0.6250	0.140	1/2	3/4	1	1 1/4		
AJ 0609	3/8	0.3747	0.3752	5/16	0.5640	0.5650	0.7500	0.062	1/2	3/4	1	1 1/4		
UJ0609	3/8	0.3750	0.3760	5/16	0.5630	0.5640	0.7400	0.062	1/2	3/4	1	1 1/4		
AJ 0610	3/8	0.3757	0.3762	3/8	0.6265	0.6275	0.7500	0.125	3/8	1/2	3/4	1		
AJ 0709	7/16	0.4401	0.4406	5/16	0.5641	0.5651	0.7500	0.062	1/2	3/4	1	1 1/4		
AJ 0810	1/2	0.5000	0.5005	3/8	0.6265	0.6275	0.7500	0.098	1/2	3/4	1	1 1/4		
AJ 0812	1/2	0.5008	0.5013	3/4	0.7517	0.7527	1.0000	0.125	1/2	3/4	1	1 1/4	1 1/2	
AJ 1012	5/8	0.6275	0.6285	3/4	0.7525	0.7535	1.1250	0.094	1/2	3/4	1	1 1/4	1 1/2	
AJ 1014	5/8	0.6255	0.6265	7/8	0.8770	0.8780	1.2500	0.125	1/2	3/4	1	1 1/4	1 1/2	1 3/4
AJ 1216	3/4	0.7508	0.7518	1	1.0020	1.0030	1.3750	0.125	3/4	1	1 1/4	1 1/2		
UJ1216	3/4	0.7495	0.7505	1	1.0010	1.0020	1.4375	0.125	1/2	3/4	1	1 1/4	1 1/2	
AJ 1416	7/8	0.8755	0.8765	1	1.0017	1.0027	1.2500	0.125	1	1 1/4	1 1/2	1 3/4		
AJ 1418	7/8	0.8757	0.8767	1 1/8	1.1270	1.1280	1.6250	0.125	3/4	1	1 1/4	1 1/2	1 3/4	
AJ 1620	1	1.0010	1.0020	1 1/4	1.2526	1.2536	1.7500	0.125	1	1 1/4	1 1/2	1 3/4	2	
UJ 1620	1	1.0010	1.0020	1 1/4	1.2520	1.2530	1.5000	0.125	3/4	1	1 1/4	1 1/2	1 3/4	
AJ 1822	1 1/8	1.1260	1.1270	1 1/4	1.3776	1.3786	1.8750	0.125	1	1 1/4	1 1/2	1 3/4	2	
AJ 2024	1 1/4	1.2510	1.2520	1 1/2	1.5030	1.5040	1.8750	0.125	3/4	1	1 1/4	1 1/2	1 3/4	
AJ 2026	1 1/4	1.2516	1.2526	1 3/4	1.6280	1.6295	2.0000	0.125	1	1 1/4	1 1/2	1 3/4		
AJ 2226	1 3/8	1.3745	1.3755	1 3/4	1.6270	1.6285	1.8750	0.125	3/4	1	1 1/4	1 1/2	1 3/4	
AJ 2428	1 1/2	1.5016	1.5026	1 3/4	1.7510	1.7525	1.8700	0.120	1 1/2	1 3/4	2			
UJ2428	1 1/2	1.5020	1.5030	1 3/4	1.7505	1.7520	2.0000	0.094	1/2	3/4	1	1 1/4	1 1/2	
AJ 2430	1 1/2	1.5016	1.5026	1 3/4	1.8780	1.8795	2.5000	0.188	1	1 1/4	1 1/2	1 3/4	2	
AJ3236	2	2.0015	2.0030	2 1/4	2.2535	2.2540	2.5000	0.125	3/4	1	1 1/4	1 1/2	1 3/4	
AJ3240	2	2.0005	2.0020	2 1/2	2.4995	2.5010	3.0000	0.375	2 3/4					
AJ4452	2 3/4	2.7500	2.7520	3 1/4	3.2480	3.2500	4.0000	0.188	1 1/2	1 3/4	2			
AJ4856	3	3.0000	3.0020	3 1/2	3.5000	3.5020	4.0000	0.375	2 3/4					



Please use the following table for conversion from the fraction (length) to the two digit suffix of the part code. Example: AI030504 (1/4 length)

03 = 3/16	04 = 1/4	05 = 5/16
06 = 3/8	08 = 1/2	09 = 9/16
10 = 3/4	12 = 3/4	14 = 7/8
16 = 1	18 = 1 1/8	20 = 1 1/4
22 = 1 1/8	24 = 1 1/2	26 = 1 3/4
28 = 1 3/4	30 = 1 3/4	32 = 2
36 = 2 1/4	40 = 2 1/2	48 = 3

Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

Inch thrust washers

Part Code	Inner Diameter Ød			Outer Diameter ØD			Basic	Length e	
	Basic	Min.	Max.	Basic	Min.	Max.		Basic	Min.
AW 061002	3/8	0.3750	0.3800	3/8	0.6230	0.6280	3/8	0.122	0.1280
AW 081402	1/2	0.5050	0.5100	7/8	0.8750	0.8800	7/8	0.122	0.1280
AW 091801	17/32	0.5312	0.5412	1	1.1200	1.1250	7/16	0.059	0.0655
AW 112002	21/32	0.6562	0.6662	1 1/4	1.2450	1.2500	3/16	0.090	0.0968
AW 132402	25/32	0.7812	0.7912	1 1/2	1.4950	1.5000	3/8	0.122	0.1280
AW 142402	3/4	0.8750	0.8800	1 1/2	1.4950	1.5000	3/8	0.122	0.1280
AW 143002	7/8	0.8780	0.8830	1 5/8	1.8660	1.8710	3/8	0.122	0.1280
AW 162802	1	1.0100	1.0150	1 29/32	1.7710	1.7810	3/8	0.122	0.1280
AW 163202	1 1/32	1.0320	1.0420	2	1.9950	2.0000	3/8	0.120	0.1300
AW 203002	1 1/4	1.2490	1.2540	1 3/8	1.8750	1.8800	3/8	0.120	0.1300
AW 204802	1 1/4	1.2490	1.2540	3	2.9980	3.0030	3/8	0.120	0.1300
AW 204804	1 1/4	1.2490	1.2540	3	2.9980	3.0030	3/4	0.245	0.2550
AW 234002	1 13/32	1.4062	1.4162	2 1/2	2.4950	2.5000	5/16	0.151	0.1613
AW 263802	1 1/8	1.6240	1.6260	2 3/8	2.3740	2.3790	3/8	0.120	0.1300
AW 365602	2 1/4	2.2480	2.2520	3 1/2	3.4980	3.5030	3/8	0.120	0.1300



Non-standard lengths can be supplied. If the size you require is not listed please contact our sales dept. We also offer a specialised machining service for low volume non-standard sizes and tolerances.

Applications:

Provides self-lubricating thrust surfaces especially in applications where assembly does not lend itself to the use of a flanged bearing. Alternatively can provide a second thrust surface at the non-flanged end of a bearing.

In thrust applications PV should not exceed 0.36 N/mm2 x m/s. Surface velocity (m/s) calculated on mean diameter of thrust face and pressure (N/mm2) on total thrust area.

We also offer specialised machining service for special sizes of bearings according to customers specific requirements.





and W/MLF Self Lubricated Bearings



(Dimensions and tolerances to ISO 3547)

Stock range includes

- Metric plain
- Metric flanged
- Metric washers
- Metric strip
- Imperial plain
- Imperial washers
- Imperial strip*



Externally Lubricated Bearings



(Dimensions and tolerances to ISO 3547)

Stock range includes

- Metric plain
- Metric washers
- Metric strip
- Imperial plain*
- Imperial washers*
- Imperial strip*

Structure	Steel support strip S.A.E 1010. Sintered Bronze layer. PTFE.
Static load	250 N/mm ²
Dynamic load	140 N/mm ²
Maximum sliding speed	2.5 m/s dry 5.0 m/s with oil
Operating temperature	-200°C to +280°C
Thermal conductivity	46 W/mK
Coefficient of friction	
W/MU Dry	0.02 to 0.20
W/MU Oiled	0.02 to 0.15
W/MLF Dry	0.04 to 0.30
W/MLF Oiled	0.02 to 0.10
Recommended housing tolerance	4.5mm/5.5mm H6 7.0mm/305mm H7
Recommended shaft tolerance	3.0mm/4.0mm h6 5.0mm/75mm f7 80mm/300mm h8
Recommended shaft finish	Ra ≤ 0.4um (N5)
Recommended shaft hardness	HB > 200

Structure	Steel support strip S.A.E 1010. Sintered Bronze layer. Co-Acetal polymer.
Static load	140 N/mm ²
Dynamic load	70 N/mm ²
Maximum sliding speed	2.5 m/s with grease
Operating temperature	-40°C to +110°C
Intermittent maximum temperature	130°C
Thermal conductivity	2W/mK
Coefficient of friction	0.05 to 0.12 with grease
Recommended housing tolerance	H7
Recommended shaft tolerance	h8
Recommended shaft finish	HB > 200
Recommended shaft hardness	HB > 200

W/MUB Bronze Support Strip instead of Steel

Has greater resistance to corrosion than standard W/MU product.
Range, dimensions and tolerances are as standard W/MU product.

Fitting Guidelines

1. Always use a fitting pin and fitting collar. See our fitting data sheet.
2. Lubricate back of bearing prior to assembly.
3. Chamfer lead in on housing to assist with assembly.





Wrapped Metric Plain Bearings. PTFE U Type

Reference	I.D.	O.D.	Recommended Tolerances						Standard Length Options (L)							
			Housing			Shaft			Bore		Tolerance +/- 0.25 mm					
	(mm)	(mm)						(mm)	(mm)							
TFP03 x L	3	4.5	H6	0	+0.006	h6	0	-0.008	3.000	3.048	3	4	5	6		
TFP04 x L	4	5.5	H6	0	+0.008	h6	0	-0.008	4.000	4.048	3	4	6	10		
TFP05 x L	5	7	H7	0	+0.015	f7	-0.010	-0.022	4.990	5.055	5	8	10			
TFP06 x L	6	8	H7	0	+0.015	f7	-0.010	-0.022	5.990	6.055	6	8	10			
TFP07 x L	7	9	H7	0	+0.015	f7	-0.013	-0.028	6.990	7.055	10					
TFP08 x L	8	10	H7	0	+0.015	f7	-0.013	-0.028	7.990	8.055	8	12				
TFP10 x L	10	12	H7	0	+0.018	f7	-0.013	-0.028	9.990	10.058	8	10	12	15	20	
TFP12 x L	12	14	H7	0	+0.018	f7	-0.016	-0.034	11.990	12.058	12	15	20	25		
TFP13 x L	13	15	H7	0	+0.018	f7	-0.016	-0.034	12.990	13.058	10	20				
TFP14 x L	14	16	H7	0	+0.018	f7	-0.016	-0.034	13.990	14.058	10	12	15	20	25	
TFP15 x L	15	17	H7	0	+0.018	f7	-0.016	-0.034	14.990	15.058	10	12	15	20	20	25
TFP16 x L	16	18	H7	0	+0.018	f7	-0.016	-0.034	15.990	16.058	10	12	15	20	25	
TFP17 x L	17	19	H7	0	+0.018	f7	-0.016	-0.034	16.990	17.061	15	20				
TFP18 x L	18	20	H7	0	+0.018	f7	-0.016	-0.034	17.990	18.061	15	20	25			
TFP20 x L	20	22	H7	0	+0.021	f7	-0.025	-0.046	19.990	20.061	10					
TFP20 x L	20	23	H7	0	+0.021	f7	-0.025	-0.046	19.990	20.071	10	15	20	25	30	
TFP22 x L	22	25	H7	0	+0.021	f7	-0.025	-0.046	21.990	22.071	15	20	25	30		
TFP24 x L	24	27	H7	0	+0.021	f7	-0.025	-0.046	23.990	24.071	20	25	30			
TFP25 x L	25	28	H7	0	+0.021	f7	-0.025	-0.046	24.990	25.071	12	15	20	25	30	50
TFP28 x L	28	32	H7	0	+0.025	f7	-0.025	-0.050	27.990	28.085	20	25	30			
TFP30 x L	30	34	H7	0	+0.025	f7	-0.025	-0.050	29.990	30.085	15	20	25	30	40	
TFP32 x L	32	36	H7	0	+0.025	f7	-0.025	-0.050	31.990	32.085	20	30	40			
TFP35 x L	35	39	H7	0	+0.025	f7	-0.025	-0.050	34.990	35.085	20	30	35	40	50	
TFP36 x L	36	40	H7	0	+0.025	f7	-0.025	-0.050	35.990	36.085	15	35				
TFP40 x L	40	44	H7	0	+0.025	f7	-0.025	-0.050	39.990	40.085	20	30	40	50		
TFP45 x L	45	50	H7	0	+0.025	f7	-0.025	-0.050	44.990	45.105	20	30	40	45	50	
TFP50 x L	50	55	H7	0	+0.030	f7	-0.025	-0.050	49.990	50.110	20	30	40	50	60	
TFP55 x L	55	60	H7	0	+0.030	f7	-0.030	-0.060	54.990	55.110	20	25	30	40	50	60
TFP60 x L	60	65	H7	0	+0.030	f7	-0.030	-0.060	59.990	60.110	20	30	40	60	70	
TFP65 x L	65	70	H7	0	+0.030	f7	-0.030	-0.060	64.990	65.110	30	50	60	70		
TFP70 x L	70	75	H7	0	+0.030	f7	-0.030	-0.060	69.990	70.110	70					
TFP75 x L	75	80	H7	0	+0.030	f7	-0.030	-0.060	74.990	75.110	40	50	60	80		
TFP80 x L	80	85	H7	0	+0.035	h8	-0.030	-0.060	80.020	80.155	60	100				
TFP85 x L	85	90	H7	0	+0.035	h8	-0.036	-0.071	85.020	85.155	60	100				
TFP90 x L	90	95	H7	0	+0.035	h8	-0.036	-0.071	90.020	90.155	60	100				
TFP95 x L	95	100	H7	0	+0.035	h8	-0.036	-0.071	95.020	95.155	60	100				
TFP100 x L	100	105	H7	0	+0.035	h8	-0.036	-0.071	100.020	100.155	60	70	80	115		
TFP105 x L	105	110	H7	0	+0.035	h8	-0.036	-0.071	105.020	105.155	60	115				
TFP110 x L	110	115	H7	0	+0.035	h8	-0.036	-0.071	110.020	110.155	60	115				
TFP115 x L	115	120	H7	0	+0.035	h8	-0.036	-0.071	115.020	115.155	50	60	70			
TFP120 x L	120	125	H7	0	+0.040	h8	-0.036	-0.071	120.070	120.210	60	100				
TFP125 x L	125	130	H7	0	+0.040	h8	-0.043	-0.083	125.070	125.210	60	100				
TFP130 x L	130	135	H7	0	+0.040	h8	-0.043	-0.083	130.070	130.210	60	100				
TFP135 x L	135	140	H7	0	+0.040	h8	-0.043	-0.083	135.070	135.210	60	100				
TFP140 x L	140	145	H7	0	+0.040	h8	-0.043	-0.083	140.070	140.210	60	100				
TFP145 x L	145	150	H7	0	+0.040	h8	-0.043	-0.083	145.070	145.210	60	100				
TFP150 x L	150	155	H7	0	+0.040	h8	-0.043	-0.083	150.070	150.210	100					
TFP155 x L	155	160	H7	0	+0.040	h8	-0.043	-0.083	155.070	155.210	60	100				
TFP160 x L	160	165	H7	0	+0.040	h8	-0.043	-0.083	160.070	160.210	60	100				
TFP165 x L	165	170	H7	0	+0.040	h8	-0.043	-0.083	165.070	165.210	60	100				
TFP170 x L	170	175	H7	0	+0.040	h8	-0.043	-0.083	170.070	170.210	60	100				
TFP175 x L	175	180	H7	0	+0.040	h8	-0.043	-0.083	175.070	175.210	60	100				
TFP180 x L	180	185	H7	0	+0.046	h8	-0.043	-0.083	180.070	180.216	60	100				
TFP200 x L	200	205	H7	0	+0.046	h8	-0.050	-0.096	200.070	200.216	100					
TFP220 x L	220	225	H7	0	+0.046	h8	-0.050	-0.096	220.070	220.216	60	100				
TFP250 x L	250	255	H7	0	+0.052	h8	-0.050	-0.096	250.070	250.222	60	100				
TFP280 x L	280	285	H7	0	+0.052	h8	-0.056	-0.108	280.070	280.222	60	100				
TFP300 x L	300	305	H7	0	+0.052	h8	-0.056	-0.108	300.070	300.222	60	100				

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Wrapped Metric Flanged Bearings. PTFE U Type

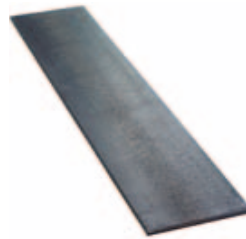
Reference	I.D. (mm)	O.D. (mm)	Recommended Tolerances			Bearing Size when fitted		Flange		Standard Length Options (L)				
			Housing		Shaft	Bore		Diameter		Tolerance +/- 0.25mm				
TFF06 x L	6	8	0	+0.015	-0.010	-0.022	5.990	6.055	11.5	12.5	4	7	8	
TFF08 x L	8	10	0	+0.015	-0.013	-0.028	7.990	8.055	14.5	15.5	5.5	7.5	9.5	
TFF10 x L	10	12	0	+0.018	-0.013	-0.028	9.990	10.058	17.5	18.5	7	9	12	17
TFF12 x L	12	14	0	+0.018	-0.016	-0.034	11.990	12.058	19.5	20.5	7	9	12	17
TFF14 x L	14	16	0	+0.018	-0.016	-0.034	13.990	14.058	21.5	22.5	12	17		
TFF15 x L	15	17	0	+0.018	-0.016	-0.034	14.990	15.058	22.5	23.5	9	12	17	
TFF16 x L	16	18	0	+0.018	-0.016	-0.034	15.990	16.058	23.5	24.5	12	17		
TFF18 x L	18	20	0	+0.021	-0.016	-0.034	17.990	18.061	25.5	26.5	12	17	22	
TFF20 x L	20	23	0	+0.021	-0.020	-0.041	19.990	20.071	29.5	30.5	11.5	16.5	21.5	
TFF25 x L	25	28	0	+0.021	-0.020	-0.041	24.990	25.071	34.5	35.5	11.5	16.5	21.5	
TFF30 x L	30	34	0	+0.025	-0.020	-0.041	29.990	30.085	41.5	42.5	16	26		
TFF35 x L	35	39	0	+0.025	-0.025	-0.050	34.990	35.085	46.5	47.5	16	26		
TFF40 x L	40	44	0	+0.025	-0.025	-0.050	39.990	40.085	52.5	53.5	16	26		
TFF45 x L	45	50	0	+0.025	-0.025	-0.050	44.990	45.105	57.5	58.5	16	26		

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Strip. PTFE U Type

Reference	Strip Sizes			
	Length	Width	Thickness	
TFS07150	500	150	0.704	0.744
TFS10200	500	215	0.950	0.990
TFS15240	500	245	1.470	1.510
TFS20240	500	245	1.960	2.000
TFS25240	500	245	2.460	2.500
TFS30240	500	245	3.020	3.060



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Washers. Metric. PTFE U Type

Reference	I.D. (mm)	O.D. (mm)	Washer Sizes				Dowell hole		Dowell hole			
			Bore		O.D.	Thickness	Diameter		PCD			
TFW10	10	20	10.00	10.25	19.75	20.00	1.45	1.50	no hole	17.88	18.12	
TFW12	12	24	12.00	12.25	23.75	24.00	1.45	1.50	1.625	1.875	17.88	18.12
TFW14	14	26	14.00	14.25	25.75	26.00	1.45	1.50	2.125	2.375	19.88	20.12
TFW16	16	30	16.00	16.25	29.75	30.00	1.45	1.50	2.125	2.375	21.88	22.12
TFW18	18	32	18.00	18.25	31.75	32.00	1.45	1.50	2.125	2.375	24.88	25.12
TFW20	20	36	20.00	20.25	35.75	36.00	1.45	1.50	3.125	3.375	27.88	28.12
TFW22	22	38	22.00	22.25	37.75	38.00	1.45	1.50	3.125	3.375	29.88	30.12
TFW24	24	42	24.00	24.25	41.75	42.00	1.45	1.50	3.125	3.375	32.88	33.12
TFW26	26	44	26.00	26.25	43.75	44.00	1.45	1.50	3.125	3.375	34.88	35.12
TFW28	28	48	28.00	28.25	47.75	48.00	1.45	1.50	4.125	4.375	37.88	38.12
TFW32	32	54	32.00	32.25	53.75	54.00	1.45	1.50	4.125	4.375	42.88	43.12
TFW38	38	62	38.00	38.25	61.75	62.00	1.45	1.50	4.125	4.375	49.88	50.12
TFW42	42	66	42.00	42.25	65.75	66.00	1.45	1.50	4.125	4.375	53.88	54.12
TFW48	48	74	48.00	48.25	73.75	74.00	1.95	2.00	4.125	4.375	60.88	61.12
TFW52	52	78	52.00	52.25	77.75	78.00	1.95	2.00	4.125	4.375	64.88	65.12
TFW62	62	90	62.00	62.25	90.75	90.00	1.95	2.00	4.125	4.375	64.88	65.12
TFW95	95	115	95.00	95.25	115.00	114.75	1.95	2.00	4.125	4.375	105.87	106.12

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Wrapped Imperial Plain Bearings. PTFE U Type

Reference	Bore		Recommended Tolerances				Bearing Size when fitted		Standard Length Options (L)			
			Housing		Shaft		Bore		Tolerance +/- 0.010"			
	(inch)		(inch)				(inch)		(inch)			
TFPI03TH x L	3/16	1/4	0.2497	0.2503	0.1858	0.1865	0.1867	0.1893	3/16	1/4	3/8	
TFPI04TH x L	1/4	5/16	0.3122	0.3128	0.2481	0.2490	0.2492	0.2518	1/4	3/8		
TFPI05TH x L	5/16	3/8	0.3747	0.3753	0.3106	0.3115	0.3117	0.3143	3/8	1/2		
TFPI06TH x L	3/8	15/32	0.4684	0.4691	0.3731	0.3740	0.3742	0.3769	3/8	1/2	5/8	3/4
TFPI07TH x L	7/16	17/32	0.5309	0.5316	0.4355	0.4365	0.4367	0.4394	1/2	3/4		
TFPI08TH x L	1/2	19/32	0.5934	0.5941	0.4980	0.4990	0.4992	0.5019	3/8	1/2	5/8	7/8
TFPI09TH x L	9/16	21/32	0.6559	0.6566	0.5605	0.5615	0.5617	0.5644	1/2	3/4		
TFPI10TH x L	5/8	23/32	0.7184	0.7192	0.6230	0.6240	0.6242	0.6270	1/2	5/8	3/4	7/8
TFPI11TH x L	11/16	25/32	0.7809	0.7817	0.6855	0.6865	0.6867	0.6895	7/8			
TFPI12TH x L	3/4	7/8	0.8747	0.8755	0.7479	0.7491	0.7493	0.7525	1/2	3/4	1	
TFPI14TH x L	7/8	1	0.9997	1.0005	0.8729	0.8741	0.8743	0.8775	3/4	7/8	1	
TFPI16TH x L	1	1 1/8	1.1246	1.1256	0.9979	0.9991	0.9992	1.0026	3/4	1	1 1/4	1 1/2
TFPI18TH x L	1 1/8	1 9/32	1.2808	1.2818	1.1226	1.1238	1.1240	1.1278	3/4	1		
TFPI20TH x L	1 1/4	1 13/32	1.4058	1.4068	1.2472	1.2488	1.2490	1.2528	3/4	1	1 1/4	1 3/4
TFPI22TH x L	1 3/8	1 17/32	1.5308	1.5318	1.3722	1.3738	1.3740	1.3778	1	1 3/8	1 3/4	
TFPI24TH x L	1 1/2	1 21/32	1.6558	1.6568	1.4972	1.4988	1.4990	1.5028	1	1 1/4	1 1/2	2
TFPI26TH x L	1 5/8	1 25/32	1.7808	1.7818	1.6222	1.6238	1.6240	1.6278	1	1 1/2		
TFPI28TH x L	1 3/4	1 15/16	1.9371	1.9381	1.7471	1.7487	1.7489	1.7535	1	1 1/2	1 3/4	2
TFPI30TH x L	1 7/8	2 1/16	2.0621	2.0633	1.8721	1.8737	1.8739	1.8787	1	1 7/8	2 1/4	
TFPI32TH x L	2	2 3/16	2.1871	2.1883	1.9969	1.9987	1.9989	2.0037	1	1 1/2	2	2 1/2
TFPI36TH x L	2 1/4	2 7/16	2.4365	2.4377	2.2489	2.2507	2.2509	2.2573	2	2 1/4	2 1/2	3
TFPI40TH x L	2 1/2	2 11/16	2.6869	2.6881	2.4993	2.5011	2.5013	2.5077	2	2 1/2	3	3 1/2
TFPI44TH x L	2 3/4	2 15/16	2.9358	2.9370	2.7482	2.7500	2.7502	2.7566	2	2 1/2	3	3 1/2
TFPI48TH x L	3	3 3/16	3.1858	3.1872	2.9982	3.0000	3.0002	3.0068	2	3	3 3/4	
TFPI56TH x L	3 1/2	3 11/16	3.6858	3.6872	3.4978	3.5000	3.5002	3.5068	2 1/2	3	3 3/4	
TFPI64TH x L	4	4 3/16	4.1858	4.1872	3.9978	4.0000	4.0002	4.0068	3	3 3/4	4 3/4	
TFPI80TH x L	5	5 3/16	5.1844	5.1860	4.9961	4.9986	4.9988	5.0056	3	3 3/4		
TFPI96TH x L	6	6 3/16	6.1858	6.1874	5.9975	6.0000	6.0002	6.0070	3	3 3/4		
TFPI112TH x L	7	7 3/16	7.1812	7.1830	6.9929	6.9954	6.9956	7.0026	3 3/4			

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Washers. Imperial. PTFE U Type

Reference	I.D.	O.D.	Washer Sizes					Dowell hole		Dowell hole		
			Bore		O.D.		Thickness		Diameter		PCD	
	(inch)		(inch)		(inch)		(inch)		(inch)		(inch)	
TFWTH06	0.500	0.875	0.500	0.510	0.865	0.875	0.061	0.063	0.067	0.077	0.682	0.692
TFWTH07	0.562	1.000	0.562	0.572	0.990	1.000	0.061	0.063	0.067	0.077	0.776	0.786
TFWTH08	0.625	1.125	0.625	0.635	1.115	1.125	0.061	0.063	0.099	0.109	0.870	0.880
TFWTH09	0.687	1.187	0.687	0.697	1.177	1.187	0.061	0.063	0.099	0.109	0.932	0.942
TFWTH10	0.750	1.250	0.750	0.760	1.240	1.250	0.061	0.063	0.099	0.109	0.995	1.005
TFWTH11	0.812	1.375	0.812	0.822	1.365	1.375	0.061	0.063	0.099	0.109	1.089	1.099
TFWTH12	0.875	1.500	0.875	0.885	1.490	1.500	0.061	0.063	0.130	0.140	1.182	1.192
TFWTH14	1.000	1.750	1.000	1.010	1.740	1.750	0.061	0.063	0.130	0.140	1.370	1.380
TFWTH16	1.125	2.000	1.125	1.135	1.990	2.000	0.061	0.063	0.161	0.171	1.557	1.567
TFWTH18	1.250	2.125	1.250	1.260	2.115	2.125	0.061	0.063	0.161	0.171	1.682	1.692
TFWTH20	1.375	2.250	1.375	1.385	2.240	2.250	0.061	0.063	0.161	0.171	1.807	1.817
TFWTH22	1.500	2.500	1.500	1.510	2.490	2.500	0.061	0.063	0.192	0.202	1.995	2.005
TFWTH24	1.625	2.625	1.625	1.635	2.615	2.625	0.061	0.063	0.192	0.202	2.120	2.130
TFWTH26	1.750	2.750	1.750	1.760	2.740	2.750	0.061	0.063	0.192	0.202	2.245	2.255
TFWTH28	2.000	3.000	2.000	2.010	2.990	3.000	0.091	0.093	0.192	0.202	2.495	2.505
TFWTH30	2.125	3.125	2.125	2.135	3.115	3.125	0.091	0.093	0.192	0.202	2.620	2.630
TFWTH32	2.250	3.250	2.250	2.260	3.240	3.250	0.091	0.093	0.192	0.202	2.745	2.755

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Wrapped Metric Plain Bearings. Acetal X Type

Reference	I.D. (mm)	O.D. (mm)	Recommended Tolerances				Bearing Size when fitted		Oil hole Diameter (mm)	Standard Length Options (L) Tolerance +/- 0.25mm					
			Housing		Shaft		Bore			(mm)					
TPX08 x L	8	10	0	+0.015	0	-0.022	8.040	8.107	no hole	8	10	12			
TPX10 x L	10	12	0	+0.018	0	-0.022	10.040	10.110	4	10	12	15	20		
TPX12 x L	12	14	0	+0.018	0	-0.027	12.040	12.110	4	10	12	15	20	25	
TPX14 x L	14	16	0	+0.018	0	-0.027	14.040	14.110	4	15	20	25			
TPX15 x L	15	17	0	+0.018	0	-0.027	15.040	15.108	4	10	12	15	25		
TPX16 x L	16	18	0	+0.018	0	-0.027	16.040	16.110	4	15	20	25			
TPX18 x L	18	20	0	+0.021	0	-0.027	18.040	18.111	4	15	20	25			
TPX20 x L	20	23	0	+0.021	0	-0.033	20.050	20.131	4	10	15	20	25	30	
TPX22 x L	22	25	0	+0.021	0	-0.033	22.050	22.131	6	15	20	25	30		
TPX24 x L	24	27	0	+0.021	0	-0.033	24.050	24.131	6	15	20	25	30		
TPX25 x L	25	28	0	+0.021	0	-0.033	25.050	25.131	6	15	20	25	30		
TPX28 x L	28	32	0	+0.025	0	-0.033	28.060	28.155	6	20	25	30			
TPX30 x L	30	34	0	+0.025	0	-0.033	30.060	30.155	6	20	30	40			
TPX32 x L	32	36	0	+0.025	0	-0.039	32.060	32.155	6	20	30	35	40		
TPX35 x L	35	39	0	+0.025	0	-0.039	35.060	35.155	6	20	30	35	50		
TPX40 x L	40	44	0	+0.025	0	-0.039	40.060	40.155	8	20	30	40	50		
TPX45 x L	45	50	0	+0.025	0	-0.039	45.080	45.195	8	20	30	40	45	50	
TPX50 x L	50	55	0	+0.030	0	-0.039	50.080	50.200	8	40	50	60			
TPX55 x L	55	60	0	+0.030	0	-0.046	55.080	55.200	8	20	25	30	40	50	60
TPX60 x L	60	65	0	+0.030	0	-0.046	60.080	60.200	8	30	40	60	70		
TPX65 x L	65	70	0	+0.030	0	-0.046	65.100	65.262	8	40	50	60	70		
TPX70 x L	70	75	0	+0.030	0	-0.046	70.100	70.262	8	25	40	50	65	70	80
TPX75 x L	75	80	0	+0.030	0	-0.046	75.100	75.262	9.5	40	60	80			
TPX80 x L	80	85	0	+0.035	0	-0.046	80.100	80.267	9.5	40	60	80	100		
TPX85 x L	85	90	0	+0.035	0	-0.054	85.100	85.267	9.5	30	40	60	80	100	
TPX90 x L	90	95	0	+0.035	0	-0.054	90.100	90.267	9.5	25	40	60	80	90	100
TPX95 x L	95	100	0	+0.035	0	-0.054	95.100	95.267	9.5	60	100				
TPX100 x L	100	105	0	+0.035	0	-0.054	100.100	100.267	9.5	50	60	80	95	115	
TPX105 x L	105	110	0	+0.035	0	-0.054	105.100	105.267	9.5	60	115				
TPX110 x L	110	115	0	+0.035	0	-0.054	110.100	110.267	9.5	60	110	115			
TPX115 x L	115	120	0	+0.035	0	-0.054	115.100	115.267	9.5	50	70				
TPX120 x L	120	125	0	+0.040	0	-0.054	120.100	120.272	9.5	60	100	110			
TPX125 x L	125	130	0	+0.040	0	-0.063	125.100	125.272	9.5	60	100	110			
TPX130 x L	130	135	0	+0.040	0	-0.063	130.130	130.280	no hole	50	60	80	100		
TPX135 x L	135	140	0	+0.040	0	-0.063	135.130	135.280	no hole	60	80				
TPX140 x L	140	145	0	+0.040	0	-0.063	140.130	140.280	no hole	50	60	80	100		
TPX145 x L	145	150	0	+0.040	0	-0.063	145.130	145.280	no hole	100					
TPX150 x L	150	155	0	+0.040	0	-0.063	150.130	150.280	no hole	50	60	80	100		
TPX160 x L	160	165	0	+0.040	0	-0.063	160.130	160.280	no hole	50	60	80	100		
TPX170 x L	170	175	0	+0.040	0	-0.063	170.130	170.280	no hole	50	60	80	100		
TPX180 x L	180	185	0	+0.046	0	-0.063	180.130	180.286	no hole	50	60	80	100		
TPX190 x L	190	195	0	+0.046	0	-0.072	190.130	190.286	no hole	50	60	80	100	120	
TPX200 x L	200	205	0	+0.046	0	-0.072	200.130	200.286	no hole	50	60	80	100	120	
TPX220 x L	220	225	0	+0.046	0	-0.072	220.130	220.286	no hole	50	60	80	100	120	
TPX240 x L	240	245	0	+0.046	0	-0.072	240.130	240.286	no hole	50	60	80	100	120	
TPX250 x L	250	255	0	+0.052	0	-0.072	250.130	250.292	no hole	50	60	80	100	120	
TPX260 x L	260	265	0	+0.052	0	-0.081	260.130	260.292	no hole	50	60	80	100	120	
TPX280 x L	280	285	0	+0.052	0	-0.081	280.130	280.292	no hole	50	60	80	100	120	
TPX300 x L	300	305	0	+0.052	0	-0.081	300.130	300.292	no hole	60	80	100	120		

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Wrapped Imperial Plain. Acetal X Type

Reference	I.D.		O.D.		Recommended Tolerances				Bearing Size when fitted		Oil hole	Standard Length Options (L)			
	Nominal		Housing		Shaft		Bore		Diameter	Tolerance +/- 0.010"					
	(inch)		(inch)				(inch)			(inch)	(inch)				
TFPI06TX x L	3/8	15/32	0.4694	0.4687	0.3648	0.3639	0.3694	0.3667	5/32	3/8	1/2	3/4			
TFPI07TX x L	7/16	17/32	0.5319	0.5312	0.4273	0.4263	0.4319	0.4292	5/32	1/2	3/4				
TFPI08TX x L	1/2	19/32	0.5944	0.5937	0.4897	0.4887	0.4944	0.4917	5/32	3/8	1/2	5/8	7/8		
TFPI09TX x L	9/16	21/32	0.6569	0.6562	0.5522	0.5512	0.5569	0.5542	5/32	1/2	3/4				
TFPI10TX x L	5/8	23/32	0.7195	0.7187	0.6146	0.6136	0.6195	0.6167	5/32	1/2	5/8	3/4	7/8		
TFPI11TX x L	11/16	25/32	0.7820	0.7812	0.6770	0.6760	0.6820	0.6792	5/32	7/8					
TFPI12TX x L	3/4	7/8	0.8758	0.8750	0.7390	0.7378	0.7444	0.7412	5/32	1/2	3/4	1			
TFPI14TX x L	7/8	1	1.0008	1.0000	0.8639	0.8627	0.8694	0.8662	1/4	3/4	7/8	1			
TFPI16TX x L	1	1 1/8	1.1258	1.1250	0.9888	0.9876	0.9944	0.9912	1/4	3/4	1	1 1/2			
TFPI18TX x L	1 1/8	1 9/32	1.2822	1.2812	1.1138	1.1126	1.1202	1.1164	1/4	3/4	1				
TFPI20TX x L	1 1/4	1 13/32	1.4072	1.4062	1.2387	1.2371	1.2452	1.2414	1/4	3/4	1	1 1/4	1 3/4		
TFPI22TX x L	1 3/8	1 17/32	1.5322	1.5312	1.3635	1.3619	1.3702	1.3664	1/4	1	1 3/8	1 3/4			
TFPI24TX x L	1 1/2	1 21/32	1.6572	1.6562	1.4884	1.4868	1.4952	1.4914	5/16	1	1 1/4	1 1/2	2		
TFPI26TX x L	1 5/8	1 25/32	1.7822	1.7812	1.6133	1.6117	1.6202	1.6164	5/16	1	1 1/2				
TFPI28TX x L	1 3/4	1 15/16	1.9385	1.9375	1.7393	1.7367	1.7461	1.7415	5/16	1	1 1/2	1 3/4	2		
TFPI30TX x L	1 7/8	2 1/16	2.0637	2.0625	1.8632	1.8616	1.8713	1.8665	5/16	1	1 1/2	2 1/4			
TFPI32TX x L	2	2 3/16	2.1887	2.1875	1.9881	1.9863	1.9963	1.9915	5/16	1	1 1/2	2	2 1/2		
TFPI36TX x L	2 1/4	2 7/16	2.4387	2.4375	2.2378	2.2360	2.2463	2.2415	5/16	2	2 1/4	2 1/2			
TFPI40TX x L	2 1/2	2 11/16	2.6887	2.6875	2.4875	2.4857	2.4963	2.4915	5/16	2	2 1/2				
TFPI44TX x L	2 3/4	2 15/16	2.9387	2.9395	2.7351	2.7333	2.7457	2.7393	5/16	2	2 1/2	3	3 1/2		
TFPI48TX x L	3	3 3/16	3.1889	3.1875	3.9849	3.9831	2.9959	2.9893	3/8	2	3	3 3/4			
TFPI56TX x L	3 1/2	3 11/16	3.6889	3.6875	3.4844	3.4822	3.4959	3.4893	3/8	2 1/2	3	3 3/4			
TFPI64TX x L	4	4 3/16	4.1889	4.1872	4.9839	4.9817	3.9959	3.9893	3/8	3	3 3/4	4 3/4			

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Lubricated Sliding Bearings



Oil or grease lubricated bearings. Carbon steel shell with sintered bronze layer with a co- acetal polymer layer. Available in metric and imperial sizes from stock.



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Self lubricated plain & flanged bearings & strip. Carbon steel shell with sintered bronze layer filled with PTFE. Available in metric and imperial sizes from stock. Also bronze shell versions can be supplied to order.

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White metal bearings can be manufactured to order in various material grades.

Plastic Bearings Moulded & Machined



Available in metric sizes from stock. Can also be manufactured in many different types of plastic material to suit various applications. Machined for small quantities and moulded for large quantities.

Standard Wrapped Bearings



Oil or grease lubricated bearings. Carbon Steel shell with sintered bronze lining. Various metric and imperial sizes available from stock.



Ball Bearings



Ball bearings in chrome or stainless steel. ABEC 1, 3 or 5. With or without seals. Various ranges available from stock.

Machined Parts



Standard bearings modified. Custom shafts and bearings manufactured in cast bronze, plastic and other materials.

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The inventor of the split to the shaft roller bearing, Cooper has unrivalled expertise gained in over 100 years manufacturing both the bearing and the housing at their site in King's Lynn (UK)



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Cooper's position as a leader in the field has been recently re-affirmed with the introduction of the 01E/02E series. Equipped with a robust brass cage and larger rollers the new series ensures significant improvements in radial and axial capacity confirming Cooper as the highest capacity split bearing on the market.

WIDEST RANGE

With 4 series of split cylindrical roller bearings: 100 (light), 01 (medium), 02 (heavy) and 03 (extra heavy) as well as a range of split taper roller bearings, Cooper has a range unmatched by any manufacturer.



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