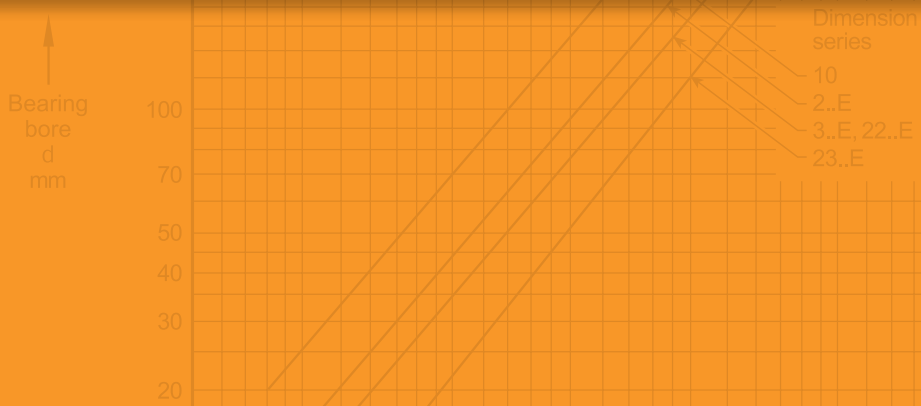


TIMKEN



TIMKEN SPHERICAL ROLLER BEARING CATALOG



SPHERICAL ROLLER BEARINGS

- Shaft and housing fits, internal clearances, tolerances and other technical data for these bearings are found in the engineering section of this catalog and the Timken Engineering Manual (order no. 10424).
- Bearings are available with a tapered bore for adapter-type mounting. To order, add the suffix "K" to bearing number (e.g., 23120K).
- Consult your Timken sales engineer for up-to-date information about the availability of the bearings you have selected.

Bearing Part Number	Bearing Dimensions			Load Ratings		Cage Type	Mounting Data			Equivalent Radial Load Factors ⁽²⁾				Geometry Factor ⁽³⁾ C _g	Speed Reference			Weight
	Bore d	O.D. D	Width B	Dynamic C	Static C _o		Fillet ⁽¹⁾ (Max.) R	Backing Diameter		Dynamic		Static	Thermal Reference Speed ⁽⁴⁾		Limiting Speed ⁽⁵⁾			
								Shaft d _a	Housing D _a	e	F _a ≤ e F _r X = 1 Y	F _a > e F _r X = 0.67 Y				In All Cases Y ₀		
											Oil	Grease						
	mm in.	mm in.	mm in.	kN lbf.	kN lbf.		mm in.	mm in.	mm in.						RPM	RPM	RPM	kg lbs.
22205	25 0.9843	52 2.0472	18 0.7087	50.6 11400	43.1 9690	EJ	1 0.04	30 1.2	47 1.9	0.34	2.00	2.98	1.96	0.033	11500	9200	17220	0.2 0.4
21305	25 0.9843	62 2.4409	17 0.6693	55.5 12500	44.3 9970	EJ	1 0.04	35 1.4	55 2.1	0.27	2.48	3.70	2.43	0.037	10100	8100	13720	0.3 0.6
22206	30 1.1811	62 2.4409	20 0.7874	67.4 15200	60.8 13700	EJ	1 0.04	38 1.5	56 2.2	0.31	2.15	3.20	2.10	0.037	9700	7800	13360	0.3 0.6
22206	30 1.1811	62 2.4409	20 0.7874	64.3 14400	56.8 12800	EM	1 0.04	38 1.5	56 2.2	0.31	2.15	3.20	2.10	0.036	9900	7900	14030	0.3 0.6
21306	30 1.1811	72 2.8346	19 0.7480	70.3 15800	56.5 12700	EJ	1 0.04	41 1.6	64 2.5	0.26	2.60	3.87	2.54	0.041	8900	7200	11590	0.4 0.9
22207	35 1.3780	72 2.8346	23 0.9055	90.5 20300	88 19700	EJ	1 0.04	45 1.8	65 2.6	0.31	2.21	3.29	2.16	0.041	8600	6900	11900	0.4 1.0
22207	35 1.3780	72 2.8346	23 0.9055	86.5 19400	82 18500	EM	1 0.04	45 1.8	65 2.6	0.31	2.21	3.29	2.16	0.041	8700	7000	13290	0.4 1.0
21307	35 1.3780	80 3.1496	21 0.8268	90.2 20300	77.8 17500	EJ	1.5 0.06	47 1.9	71 2.8	0.26	2.56	3.81	2.50	0.044	7900	6400	10580	0.5 1.1
22208	40 1.5748	80 3.1496	23 0.9055	104 23400	99.7 22400	EJ	1 0.04	50 2.0	73 2.9	0.27	2.47	3.67	2.41	0.044	7500	6000	10980	0.5 1.2
22208	40 1.5748	80 3.1496	23 0.9055	99.6 22400	93.4 21000	EM	1 0.04	50 2.0	73 2.9	0.27	2.47	3.67	2.41	0.044	7600	6100	9990	0.5 1.2
21308	40 1.5748	90 3.5433	23 0.9055	113 25400	102 22900	EJ	1.5 0.06	54 2.1	80 3.2	0.26	2.64	3.93	2.58	0.048	7100	5800	9240	0.7 1.5
22308	40 1.5748	90 3.5433	33 1.2992	155 34900	147 33100	EJ	1.5 0.06	53 2.1	81 3.2	0.36	1.87	2.79	1.83	0.046	6700	5600	7560	1.0 2.2
22308	40 1.5748	90 3.5433	33 1.2992	147 33100	137 30800	EM	1.5 0.06	53 2.1	81 3.2	0.36	1.87	2.79	1.83	0.045	6700	5600	8040	1.1 2.3
22209	45 1.7717	85 3.3465	23 0.9055	109 24500	108 24200	EJ	1 0.04	55 2.2	77 3.0	0.26	2.64	3.93	2.58	0.046	6800	5500	10400	0.6 1.3
22209	45 1.7717	85 3.3465	23 0.9055	104 23500	101 22800	EM	1 0.04	55 2.2	77 3.0	0.26	2.64	3.93	2.58	0.046	6900	5600	9400	0.6 1.3
21309	45 1.7717	100 3.9370	25 0.9843	138 31000	125 28200	EJ	1.5 0.06	60 2.4	90 3.5	0.25	2.75	4.09	2.69	0.052	6500	5300	8510	1.0 2.2
22309	45 1.7717	100 3.9370	36 1.4173	190 42700	182 40800	EJ	1.5 0.06	58 2.3	90 3.5	0.36	1.90	2.83	1.86	0.049	6100	5100	7090	1.3 3.0
22309	45 1.7717	100 3.9370	36 1.4173	180 40500	169 37900	EM	1.5 0.06	58 2.3	90 3.5	0.36	1.90	2.83	1.86	0.048	6100	5100	7020	1.4 3.1

⁽¹⁾Maximum shaft or housing fillet radius that bearing corners will clear.

⁽²⁾These factors apply for both inch and metric calculations. See engineering section for instructions on use.

⁽³⁾Geometry constant for Lubrication Life Factor a31 is found in the Bearing Ratings section of the Engineering Manual (order no. 10424).

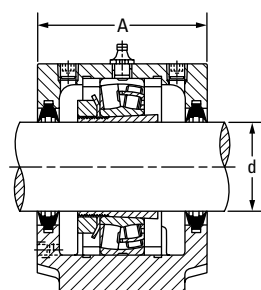
⁽⁴⁾See thermal reference speed in the Engineering Manual (order no. 10424) and on page 61.

⁽⁵⁾See limiting speed on page 61.

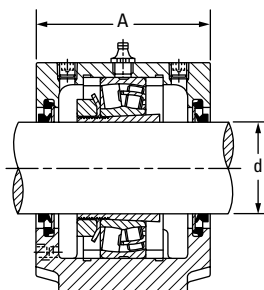
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TWO-BOLT SNT HOUSINGS FOR TAPERED BORE BEARINGS

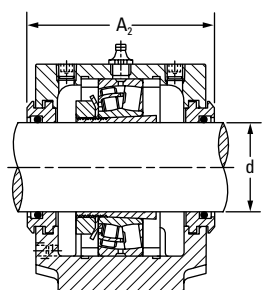
- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Housings shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., SNTS 518). If ductile iron is desired, add the letter D to the alpha prefix (e.g., SNTD 505).



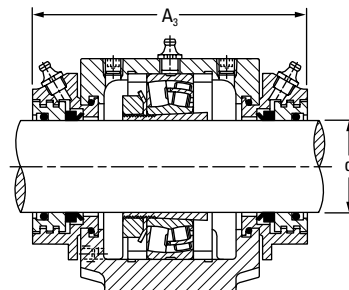
Double-Lip Seal



V-Ring Seal



Labyrinth Seal



Taconite Seal

Shaft Dia. d	Housing	Bearing	Locating Rings ⁽¹⁾ O.D. x Width	Adapter Sleeve ⁽²⁾	Locknut ⁽³⁾	Lockwasher ⁽³⁾	Double-Lip Seal ⁽⁴⁾	V-Ring Seal ⁽⁴⁾	Labyrinth Seal ⁽³⁾	Taconite Seal ⁽³⁾	End Cover ⁽³⁾
mm											
20	SNT 505 SNT 506-605	22205K 21305K	SR52X3.5 SR62X7.5	H305 H305	KM5 KM5	MB5 MB5	– TSNG605	VR505 VR605	LO505 LO605	TA505 TA605	EC505 EC506-605
25	SNT 506-605 SNT 507-606	22206K 21306K	SR62X6 SR72X7.5	H306 H306	KM6 KM6	MB6 MB6	– TSNG606	VR506 VR606	LO506 LO606	TA506 TA606	EC506-605 EC507-606
30	SNT 507-606 SNT 508-607	22207K 21307K	SR72X5.5 SR80X9	H307 H307	KM7 KM7	MB7 MB7	TSNG507 TSNG607	VR507 VR607	LO507 LO607	TA507 TA607	EC507-606 EC508-607
35	SNT 508-607 SNT 510-608 SNT 510-608	22208K 21308K 22308K	SR80X8 SR90X9 SR90X4	H308 H308 H2308	KM8 KM8 KM8	MB8 MB8 MB8	TSNG508 TSNG608 TSNG608	VR508 VR608 VR608	LO508 LO608 LO608	TA508 TA608 TA608	EC508-607 EC510-608 EC510-608
40	SNT 509 SNT 511-609 SNT 511-609	22209K 21309K 22309K	SR85X3.5 SR100X9.5 SR100X4	H309 H309 H2309	KM9 KM9 KM9	MB9 MB9 MB9	TSNG509 TSNG609 TSNG609	VR509 VR609 VR609	LO509 LO609 LO609	TA509 TA609 TA609	EC509 EC511-609 EC511-609
45	SNT 510-608 SNT 512-610 SNT 512-610	22210K 21310K 22310K	SR90X9 SR110X10.5 SR110X4	H310 H310 H2310	KM10 KM10 KM10	MB10 MB10 MB10	TSNG510 TSNG610 TSNG610	VR510 VR610 VR610	LO510 LO610 LO610	TA510 TA610 TA610	EC510-608 EC512-610 EC512-610
50	SNT 511-609 SNT 513-611 SNT 513-611	22211K 21311K 22311K	SR100X9.5 SR120X11 SR120X4	H311 H311 H2311	KM11 KM11 KM11	MB11 MB11 MB11	TSNG511 TSNG611 TSNG611	VR511 VR611 VR611	LO511 LO611 LO611	TA511 TA611 TA611	EC511-609 EC513-611 EC513-611

⁽¹⁾Locating rings = minimum two required for fixed position, sold one piece per box.

⁽²⁾Adapter sleeve assembly includes one sleeve, one locknut and one lockwasher.

⁽³⁾Labyrinth, taconite seal, end cover, locknut, lockwasher, sold one piece per box.

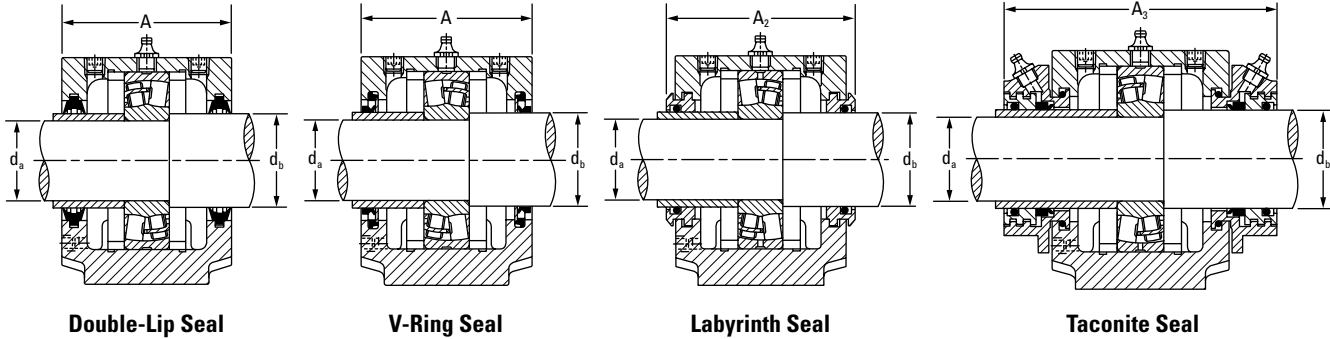
⁽⁴⁾Double-lip and V-ring seals sold two pieces per box.

TWO-BOLT SNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS

- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518).

If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).

- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b .



Shaft Dia.		Housing	Bearing	Locating Rings ⁽¹⁾ O.D. x Width	Double-Lip Seal ⁽²⁾	V-Ring Seal ⁽²⁾	Labyrinth Seal ⁽³⁾	Taconite Seal ⁽³⁾	End Cover ⁽³⁾
d _a	d _b								
mm	mm								
25	30	SNT 205 SNT 206-305	22205 21305	SR52X3.5 SR62X7.5	TSNG205 TSNG305	— VR305	L0205 L0305	TA205 TA305	EC506-605 EC507-606
30	35	SNT 206-305 SNT 507-606	22206 21306	SR62X6 SR72X7.5	TSNG206 TSNG306	VR206 VR306	L0206 L0306	TA206 TA306	EC507-606 EC507-606
35	45	SNT 207 SNT 208-307	22207 21307	SR72X5.5 SR80X9	TSNG207 TSNG307	VR207 VR307	L0207 L0307	TA207 TA307	EC509 EC510-608
40	50	SNT 208-307 SNT 510-608 SNT 510-608	22208 21308 22308	SR80X8 SR90X9 SR90X4	TSNG208 TSNG308 TSNG308	VR208 VR308 VR308	L0208 L0308 L0308	TA208 TA308 TA308	EC510-608 EC510-608 EC510-608
45	55	SNT 209 SNT 511-609 SNT 511-609	22209 21309 22309	SR85X3.5 SR100X9.5 SR100X4	TSNG209 TSNG309 TSNG309	VR209 VR309 VR309	L0209 L0309 L0309	TA209 TA309 TA309	EC511-609 EC511-609 EC511-609
50	60	SNT 210 SNT 512-610 SNT 512-610	22210 21310 22310	SR90X9 SR110X10.5 SR110X4	TSNG210 TSNG310 TSNG310	VR210 VR310 VR310	L0210 L0310 L0310	TA210 TA310 TA310	EC512-610 EC512-610 EC512-610
55	65	SNT 211 SNT 513-611 SNT 513-611	22211 21311 22311	SR100X9.5 SR120X11 SR120X4	TSNG211 TSNG311 TSNG311	VR211 VR311 VR311	L0211 L0311 L0311	TA211 TA311 TA311	EC513-611 EC513-611 EC513-611
60	70	SNT 212 SNT 515-612 SNT 515-612	22212 21312 22312	SR110X10 SR130X12.5 SR130X5	TSNG212 TSNG312 TSNG312	VR212 VR312 VR312	L0212 L0312 L0312	TA212 TA312 TA312	EC515-612 EC515-612 EC515-612
65	75	SNT 213 SNT 516-613 SNT 516-613	22213 21313 22313	SR120X10 SR140X12.5 SR140X5	TSNG213 TSNG313 TSNG313	VR213 VR313 VR313	L0213 L0313 L0313	TA213 TA313 TA313	EC516-613 EC516-613 EC516-613
70	80	SNT 517 SNT 517	22314 21314	SR150X5 SR150X13	TSNG314 TSNG314	VR314 VR314	L0314 L0314	TA314 TA314	EC517 EC517

⁽¹⁾Locating rings = minimum two required for fixed position, sold one piece per box.

⁽²⁾Double-lip and V-ring seals sold two pieces per box. Consult your Timken sales engineer for double-lip seal availability.

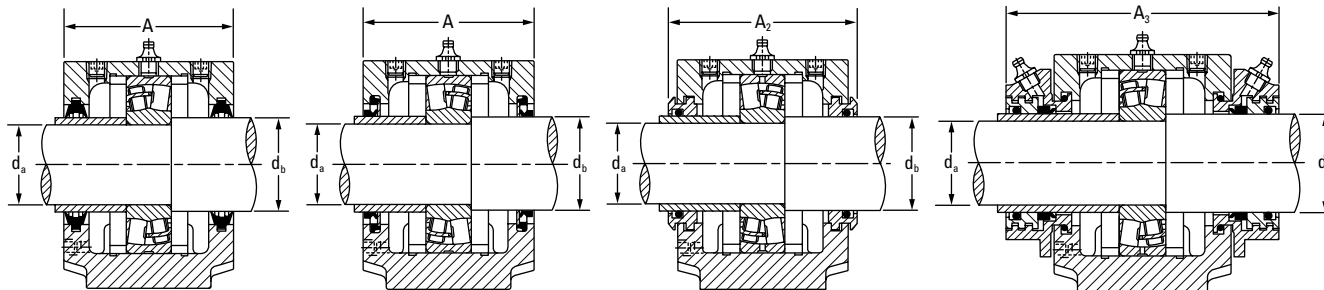
⁽³⁾Labyrinth, taconite seal and end cover, sold one piece per box.

FOUR-BOLT FSNT HOUSINGS FOR CYLINDRICAL BORE BEARINGS

- The basic numbers for ordering plummer block housings and components are listed in the table below.
- Each housing includes the housing cap, base and cap bolts.
- Assemblies shown are furnished in cast iron. If cast steel is desired, add the letter S to the alpha prefix (e.g., FSNTS 518).

If ductile iron is desired, add the letter D to the alpha prefix (e.g., FSNTD 505).

- Seal sleeve for d_a shaft to be supplied by customer and should have same O.D. as d_b .



Double-Lip Seal

V-Ring Seal

Labyrinth Seal

Taconite Seal

Shaft Dia.		Housing	Bearing	Locating Rings ⁽¹⁾ O.D. x Width	Double-Lip Seal ⁽²⁾	V-Ring Seal ⁽²⁾	Labyrinth Seal ⁽³⁾	Taconite Seal ⁽³⁾	End Cover ⁽³⁾
d_a	d_b								
mm	mm								
35	45	FSNT 208-307	21307	SR80X9	TSNG307	VR307	LO307	TA307	EC510-608
40	50	FSNT 208-307	22208	SR80X8	TSNG208	VR208	LO208	TA208	EC510-608
		FSNT 510-608	21308	SR90X9	TSNG308	VR308	LO308	TA308	EC510-608
		FSNT 510-608	22308	SR90X4	TSNG308	VR308	LO308	TA308	EC510-608
45	55	FSNT 209	22209	SR85X3.5	TSNG209	VR209	LO209	TA209	EC511-609
		FSNT 511-609	21309	SR100X9.5	TSNG309	VR309	LO309	TA309	EC511-609
		FSNT 511-609	22309	SR100X4	TSNG309	VR309	LO309	TA309	EC511-609
50	60	FSNT 210	22210	SR90X9	TSNG210	VR210	LO210	TA210	EC512-610
		FSNT 512-610	21310	SR110X10.5	TSNG310	VR310	LO310	TA310	EC512-610
		FSNT 512-610	22310	SR110X 4	TSNG310	VR310	LO310	TA310	EC512-610
55	65	FSNT 211	22211	SR100X9.5	TSNG211	VR211	LO211	TA211	EC513-611
		FSNT 513-611	21311	SR120X11	TSNG311	VR311	LO311	TA311	EC513-611
		FSNT 513-611	22311	SR120X4	TSNG311	VR311	LO311	TA311	EC513-611
60	70	FSNT 212	22212	SR110X10	TSNG212	VR212	LO212	TA212	EC515-612
		FSNT 515-612	21312	SR130X12.5	TSNG312	VR312	LO312	TA312	EC515-612
		FSNT 515-612	22312	SR130X5	TSNG312	VR312	LO312	TA312	EC515-612
65	75	FSNT 213	22213	SR120X10	TSNG213	VR213	LO213	TA213	EC516-613
		FSNT 516-613	21313	SR140X12.5	TSNG313	VR313	LO313	TA313	EC516-613
		FSNT 516-613	22313	SR140X5	TSNG313	VR313	LO313	TA313	EC516-613
70	80	FSNT 517	22314	SR150X5	TSNG314	VR314	LO314	TA314	EC517
		FSNT 517	21314	SR150X13	TSNG314	VR314	LO314	TA314	EC517
75	85	FSNT 215	22215	SR130X12.5	TSNG215	VR215	LO215	TA215	EC518-615
		FSNT 518-615	21315	SR160X14	TSNG315	VR315	LO315	TA315	EC518-615
		FSNT 518-615	22315	SR160X5	TSNG315	VR315	LO315	TA315	EC518-615
80	90	FSNT 216	22216	SR140X10	TSNG216	VR216	LO216	TA216	EC216
		FSNT 519-616	21316	SR170X14.5	TSNG316	VR316	LO316	TA316	EC519-616
		FSNT 519-616	22316	SR170X5	TSNG316	VR316	LO316	TA316	EC519-616

⁽¹⁾Locating rings = minimum two required for fixed position, sold one piece per box.

⁽²⁾Double-lip and V-ring seal sold two pieces per box. Consult with your Timken sales engineer for double-lip seal availability.

⁽³⁾Labyrinth, taconite seal and end cover, sold one piece per box.