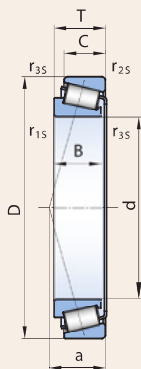




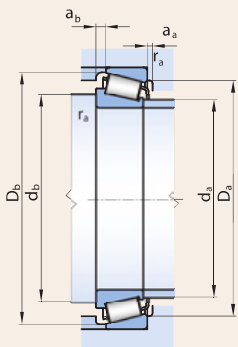
TAPERED ROLLER BEARINGS

single row



Dimensions									Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation		Weight	Factors		
d	D	B	C	T	r _{1s}	r _{2s}	r _{3s}	a	C _r	C _{0r}	with		PSL	ISO		e	Y	Y ₀
					min	min	min		dyn.	stat.	grease	oil		ANSI/ABMA 19.2.1)				
[mm]									[kN]		[min ⁻¹]				[kg]			
120	170	25	19.5	27	3	3	0.6	34	153	248	1900	2600		T4CB120	1.7	0.47	1.27	0.7
120	180	38	29	38	2.5	2	0.6	40	260	445	2400	3200	32024AX	T4DC120	3.32	0.46	1.3	0.7
120	180	48	38	48	2.5	2	0.6	36	311	565	1780	2540	33024A	T2DE120	4.1	0.31	1.97	1.08
120	215	40	34	43.5	3	2.5	1	43.6	347	473	1550	2220	30224A	T4FB120	6.2	0.44	1.38	0.76
120	215	58	50	61.5	3	2.5	1	52	484	727	1900	3000	32224A	T4FD120	9.45	0.44	1.38	0.76
127	182.562	38.1	33.338	39.688	3.5	3.3	0.6	33.8	282	492	1710	2440	PSL69-306	48290/48220	3.2	0.31	1.97	1.08
130	185	27	21	29	3	3	0.6	38	186	292	1800	2400		T4CB130	2.3	0.47	1.27	0.7
130	185	27	21	29	6	3	0.6	38	185	290	1800	2400		T4CB130X.	2.3	0.47	1.27	0.7
130	200	45	34	45	2.5	2	0.6	43	338	578	2100	2800	32026AX	T4EC130	5.05	0.44	1.4	0.8
130	230	64	54	67.75	4	3	1	56.9	545	879	1430	2040	32226	T4FD130	11.6	0.44	1.38	0.76
130	230	40	34	43.75	4	3	1	45.7	375	506	1430	2040	30226A	T4FB130	6.9	0.44	1.38	0.76
140	195	27	21	29	3	3	0.6	41	206	343	1700	2200		T4CB140	2.5	0.5	1.19	0.65
140	195	27	21	29	6	3	0.6	41	206	343	1700	2200		T4CB140X.	2.5	0.5	1.19	0.65
140	210	45	34	45	2.5	2	0.6	46	353	621	1700	2200	32028AX	T4DC140	5.26	0.46	1.3	0.7
146.05	193.675	28.575	23.02	28.575	4.8	1.5	0.6	34	181	390	1700	2200	PSL69-301	36691/36620	2.31	0.37	1.63	0.9
150	225	48	36	48	3	2.5	1	49	371	644	1370	1960	32030AX	T4EC150	6.3	0.46	1.31	0.72
150	225	59	46	59	3	2.5	1	48	482	876	1370	1960	33030A	T2EE150	8	0.36	1.65	0.9
158.75	205.583	23.812	18.258	23.812	4.8	1.5	0.6	33.2	144	272	1410	2020	PSL610-300	L432349/L432310	1.9	0.37	1.6	0.88
160	220	30	23	32	3	3	0.6	44.8	237	400	1350	1920		T4DB160	3.2	0.49	1.23	0.68
160	240	51	36	51	3	2.5	1	51.4	425	770	1270	1820	32032X	T4EC160	7.4	0.46	1.31	0.72
160	290	80	67	84	4	3	1	70.4	890	1420	1110	1590	32232A	T4GD160	23.4	0.44	1.38	0.76
160	375.05	79.37	60.3	87.3	6	6	1.5	79	805	1014	950	1400	PSL611-6		41.2	0.76	0.8	0.4
170	220	25	19.5	27	3	3	0.6	42.5	174	317	1310	1870	PSL610-305		2.3	0.47	1.27	0.7
170	230	30	23	32	3	3	1	45	245	428	1400	1900		T4DB170	3.5	0.46	1.3	0.72
170	230	30	23	32	6	3	1	45	245	428	1400	1900		T4DB170X	3.5	0.46	1.3	0.72
170	310	52	43	57	5	4	1.5	61.4	690	995	1020	1450	30234	T4GB170	17.4	0.44	1.38	0.76
180	250	45	34	45	2.5	2	0.6	54	351	761	1160	1660	32936	T4DC180	6.7	0.48	1.25	0.69
180	280	64	48	64	3	2.5	1	59.7	631	1110	1080	1540	32036AX	T3FD180	14	0.42	1.42	0.78
190	260	44	36.5	46	3	2.5	0.6	56.6	371	799	1110	1580	PSL610-312	JM738249-JM738210	7	0.48	1.26	0.69
190	260	45	34	45	2.5	2	0.6	55	371	799	1110	1580	32938	T4DC190	7	0.48	1.26	0.69
195	250	33	28	34	2	2	0.6	41.8	267	560	1120	1600	PSL610-313		4	0.35	1.69	0.93
196.85	241.3	23.017	17.462	23.812	1.5	1.5	0.6	40.8	161	333	1140	1630	PSL610-303-2	LL639249/LL639210	2.1	0.42	1.44	0.79
196.85	249.5	23.017	17.462	23.812	1.5	1.5	0.6	40.8	161	333	1140	1630	PSL610-303-7	LL639249/LL639210 modif.	2.1	0.42	1.44	0.79
196.85	254	27.783	21.433	28.575	1.5	1.5	0.6	42.6	198	413	1100	1570	PSL610-308	L540049/L540010	3.5	0.4	1.51	0.83

1) Boundary dimensions comply with the standard ANSI/ABMA 19.2.
Different internal design.



Abutment and Fillet Dimensions								
d	d _a max	d _b min	D _a min	D _a max	D _b min	a _a min	a _b min	r _a max
[mm]								
120	129	139	158	161	165	6	7	2.5
120	130	130	162	170	173	6	9	2
120	131	130	158	170	172	4.8	9.6	2
120	140	132	188	203	203	5.5	8	2
120	136	132	181	203	204	7	11.5	2
127	137	141	165	167	177	4	7	3.3
130	140	143	171	172	178	6	8	2.5
130	140	143	171	172	178	6	8	2.5
130	140	140	178	190	192	8	11	2
130	151	144	194	216	221	4	13	2.5
130	152	144	203	216	217	7	9.5	2.5
140	150	153	180	181	189	6	8	2.5
140	150	153	180	181	189	6	8	2.5
140	150	150	186	200	202	8	11	2
146.05	155	162	176	182	187	6	6.5	1.5
150	164	162	200	213	218	8	12	2
150	162	162	201	213	219	9.2	12.7	2
158.75	166	168	189	195	199	4	6	1.5
160	171	174	204	206	213	5	9	2.5
160	175	172	213	228	231	8	13	2
160	171	174	244	276	277	10.8	19.4	2.5
160	206	190	292	345	350	6	8.5	5
170	179	184	206	208	216	4.8	9.5	2.5
170	182	185	214	216	223	6	9	2.5
170	182	185	214	216	223	6	9	2.5
170	202	188	272	292	288	8	14	3
180	194	190	225	240	241	8	11	2
180	200	192	243	268	268	11	17	2
190	204	204	235	243	252	7	9.5	2
190	204	200	235	250	251	8	11	2
195	206	204	236	239	245	6	7.5	2
196.85	206	205	229	232	236	3.5	7	1.5
196.85	206	205	229	232	236	3.5	7	1.5
196.85	212	205.85	239	245	246	5.1	10	1.5

Single row tapered roller bearings are finding a wide application in many industrial branches, especially in the production of cars, tractors, machine-tools, etc. They are able to accommodate both radial and axial forces. The axial load capacity depends on the contact angle size. Single row tapered roller bearings are able to accommodate the axial load in only one direction and that is why the arrangements are assembled in pairs. The axial clearance or preload in the pairs of tapered roller bearings is to be adjusted during assembling. The size of the axial clearance or the preload is selected according to the operating conditions, as well as the size and the type of the bearings and according to the requirements on the arrangement rigidity. The boundary dimensions of these bearings comply with the international standards ISO 355 or ANSI/ABMA 19.2.

Cages
The tapered roller bearings have pressed steel cages. Selected bearings are produced with pin type cages.

Equivalent load calculation
The following formulas are used to calculate the axial load acting on an individual single row tapered roller bearing:

Radial equivalent load:

- dynamic:

$$P_r = F_r$$
$$P_r = 0,4F_r + YF_a$$

if $F_a/F_r \leq e$

if $F_a/F_r > e$

- static:

$$P_{0r} = 0,5F_r + Y_0F_a$$

$(P_{0r} > F_r)$

[kN]

[kN]

[kN]

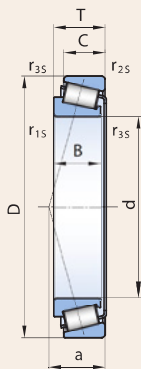
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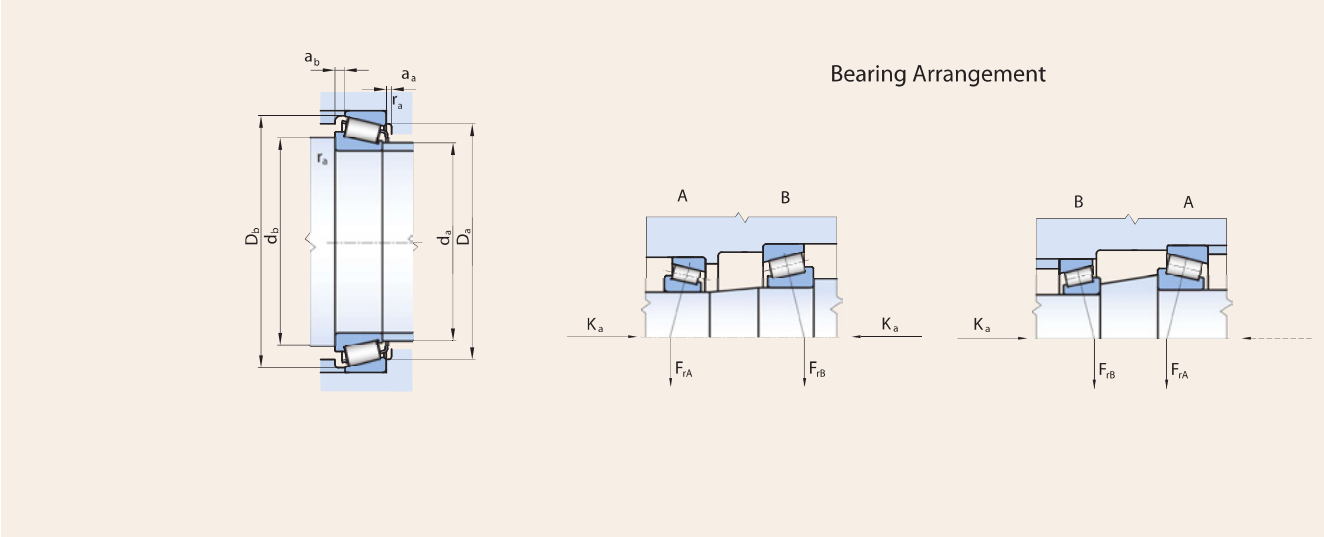
TAPERED ROLLER BEARINGS

single row



Dimensions									Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation		Weight	Factors		
d	D	B	C	T	r1s	r2s	r3s	a	C _r	C _{0r}	with		PSL	ISO		e	Y	Y ₀
					min	min	min		dyn.	stat.	grease	oil	ANSI/ABMA 19.2. ¹⁾					
[mm]									[kN]		[min ⁻¹]				[kg]			
200	254	27.783	21.433	28.575	1.5	1.5	0.4	42.2	213	453	1100	1570	PSL610-309	564534A	3.3	0.4	1.51	0.83
200	270	34	27	37	3	3	1	54	319	589	950	1400		T4DB200	5.2	0.47	1.27	0.7
200	310	70	53	70	3	2.5	1	66.8	755	1360	950	1360	32040AX	T4FD200	18.7	0.43	1.39	0.77
200	310	70	53	70	3	2.5	1	66.8	755	1360	1190	1700	32040AX P5	T4FD200P5	18.7	0.43	1.39	0.77
200.025	276.225	46.038	34.133	42.862	3.5	3.3	1	44.4	391	772	1030	1470	PSL611-317	LM241147-LM241110	7.6	0.32	1.88	1.04
203.2	261.142	27.783	21.433	28.575	1.5	1.5	0.6	44.1	207	441	1060	1520	PSL 610-307	LL641149/LL641110	3.7	0.41	1.47	0.81
203.2	360.05	88.09	63.5	92.1	3	6	1.5	43	863	1364	900	1300	PSL611-3		34.5	0.41	1.5	0.8
210	285	40	33	41	4	3	0.6	45.2	364	732	960	1380	PSL611-315-2		7.3	0.32	1.88	1.04
213	285	40	33	41	4	3	0.6	45.2	364	732	960	1380	PSL611-315-1		7	0.32	1.88	1.04
215.9	285.75	46.038	34.925	46.038	3.6	3.3	0.4	60	362	795	980	1390	PSL611-316	LM742749-LM742710	7.8	0.48	1.25	0.69
216.5	285	40	33	41	4	3	0.6	45.2	364	732	960	1380	PSL611-315		6.6	0.32	1.88	1.04
220	265	25	19	25	2.5	1	0.4	45.6	170	425	1010	1450	PSL610-304		2.7	0.43	1.39	0.77
220	285	40	33	41	4	3	0.6	45.2	391	807	960	1380		T2DC220	6.3	0.32	1.88	1.04
220	285	40	33	41	4	3	0.6	45.2	364	732	960	1380	PSL611-315-3		7	0.32	1.88	1.04
220	300	51	39	51	3	2.5	1	59	498	1016	930	1330	32944	T3EC220	10.5	0.43	1.41	0.78
220	340	76	57	76	4	3	1	72.5	875	1587	850	1220	32044AX	T4FD220	24.1	0.43	1.39	0.77
228.6	295.275	31.75	23.813	33.338	3.6	3.3	0.6	49	258	495	930	1320	PSL611-312	AK544090/AK544116	5	0.4	1.49	0.82
228.6	355.6	66.675	47.625	68.262	7.1	3.3	1	87.1	761	1250	810	1160	PSL611-318	96900-96140	22.9	0.59	1.02	0.56
228.6	355.6	66.675	47.625	68.262	7.1	3.3	1.5	87	748	1290	810	1160	PSL611-318-1	96900-96140	22.9	0.59	1.02	0.56
231.775	317.5	52.388	36.512	47.625	3.2	3.2	1.5	49.9	500	980	870	1250	PSL611-302	LM245848/LM245810	11	0.32	1.87	1.03
234.95	314.325	49.212	36.512	49.212	3.6	3.3	1	57.1	479	959	880	1250	PSL611-313	LM545849/LM545810	9.9	0.4	1.51	0.83
240	320	55	47.5	62.5	3.5	3.5	1.2	43	408	814	900	1300	PSL611-9		12.1	0.43	1.4	0.8
240	323.5	51	39	51	3	2.5	1	64.9	492	1030	850	1220	32948X1		11.5	0.46	1.31	0.72
240	345	60	46	60	6.4	3.3	0.4	60.1	755	1339	810	1160	PSL611-304		16.5	0.35	1.73	0.95
240	360	76	57	76	4	3	1	77.9	929	1620	790	1130	32048AX	T4FD240	25.8	0.46	1.31	0.72
247.65	304.8	22.225	15.875	22.225	1.5	1.5	1	39.3	182	356	870	1240	PSL611-306-2	28880/28820	3.2	0.32	2.09	3.11
247.65	346.075	63.5	50.8	63.5	6.4	6.4	1.2 (2,3)	62	783	1557	800	1140	PSL611-305	M348449/M348410	17.3	0.34	1.76	0.97
253.975	325.438	36.5	27.998	39	4.8	3.3	0.6	71.2	343	698	820	1170	PSL610-315		7.1	0.56	1.07	0.59
266.7	325.438	28.575	25.4	28.575	1.5	1.5	0.8	48	219	505	800	1140	PSL611-300-1	38885/38820 class 2	5.1	0.37	1.64	0.9
266.7	355.6	57.15	44.45	57.15	8	3.3	1	62.2	665	1380	750	1070	PSL611-314-1	LM451349/LM451310-modif.	15	0.36	1.67	0.92
276.225	352.425	34.925	23.812	36.512	3.6	2	1	69	340	715	740	1060	PSL611-301	L 853049/L 853010	7.8	0.52	1.15	0.63
280	380	63.5	48	63.5	3	2.5	1	75	763	1624	700	1000	32956	T4EC280	20.3	0.43	1.39	0.76
280	420	87	65	87	5	4	1.5	90.6	1200	2300	650	930	32056AX	T4FC280	40.1	0.46	1.31	0.72
292.1	374.65	47.625	34.925	47.625	3.3	3.3	1	65	525	1118	690	990	PSL611-205	L 555249/L 555210	12.3	0.4	1.49	0.82

1) Boundary dimensions comply with the standard ANSI/ABMA 19.2.
Different internal design.



Abutment and Fillet Dimensions								
d	da max	db min	Da min	Da max	Db min	da min	db min	ra max
[mm]								
200	212	209	238	245	246	5	9	1.5
200	214	218	251	254	262	7	10	2.5
200	222	212	273	298	299	9.2	15.7	2
200	222	212	273	298	299	9.2	15.7	2
200.025	219	216	257	259	265	6	8.5	2.5
203.2	218	213	245	252	253	5.8	9.7	1.5
203.2	240	230	301	328	335	10	29	2.5
210	233	236	269	270	277	8	8	2.5
213	233	236	269	270	277	8	8	2.5
215.9	227	233	260	266	279	5	8.5	2.5
216.5	233	236	269	270	277	8	8	2.5
220	228	230	252	259	259	4	6.5	1
220	233	236	269	270	277	8	8	2.5
213	233	236	269	270	277	8	8	2.5
220	235	232	277	288	293	9	14	2
220	243	234	302	326	329	12	18	2.5
228.6	243	242.6	280	281	287	4.7	9.8	2.5
228.6	252	242.6	314	341.6	345	11	22.7	2.5
228.6	254	242.6	312	341.6	344	7.6	20	2.5
231.775	245	248	288	299	306	10	14	2.5
234.95	250	248.95	290	300.325	305	7.8	13.2	2.5
240	253	269	286	299	311	8	15	2.5
240	255	252	296	309	314	9	14	2
240	255	265	317	330	355	8	13	2.5
240	263	254	320	346	349	12	18	2.5
247.65	260	258	293	296	296	8	11	1.5
247.65	263	275	318	321	336	8	13	5
253.975	267	267.975	305	311.438	320	2.1	10.3	2.5
266.7	281	276	311	316	317	3	8	1.5
266.7	284	294	329	336	347	10	14	2.5
276.225	294	293	332	342	343	7	13	2
280	299	292	349	368	371	8	15	2
280	306	298	371	402	405	9.2	18.9	3
292.1	308	306	353	360	366	9	14	2.5

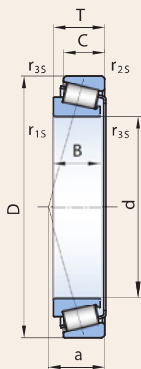
Bearing Axial Load			
Loading conditions	for $\rightarrow K_a$	Loading conditions	for $\leftarrow K_a$
$\frac{F_{rA}}{Y_A} \leq \frac{F_{rB}}{Y_B}$ $K_a \geq 0$	$F_{aA} = F_{aB} + K_a$ $F_{aB} = 0,5 \frac{F_{rB}}{Y_B}$	$\frac{F_{rA}}{Y_A} \geq \frac{F_{rB}}{Y_B}$ $K_a \geq 0$	$F_{aA} = 0,5 \frac{F_{rA}}{Y_A}$ $F_{aB} = F_{aA} + K_a$
$\frac{F_{rA}}{Y_A} > \frac{F_{rB}}{Y_B}$ $K_a \geq 0,5 \left[\frac{F_{rA}}{Y_A} - \frac{F_{rB}}{Y_B} \right]$	$F_{aA} = F_{aB} + K_a$ $F_{aB} = 0,5 \frac{F_{rB}}{Y_B}$	$\frac{F_{rA}}{Y_A} < \frac{F_{rB}}{Y_B}$ $K_a \geq 0,5 \left[\frac{F_{rB}}{Y_B} - \frac{F_{rA}}{Y_A} \right]$	$F_{aA} = 0,5 \frac{F_{rA}}{Y_A}$ $F_{aB} = F_{aA} + K_a$
$\frac{F_{rA}}{Y_A} > \frac{F_{rB}}{Y_B}$ 1) $K_a < 0,5 \left[\frac{F_{rA}}{Y_A} - \frac{F_{rB}}{Y_B} \right]$	$F_{aA} = 0,5 \frac{F_{rA}}{Y_A}$ $F_{aB} = F_{aA} - K_a$	$\frac{F_{rA}}{Y_A} < \frac{F_{rB}}{Y_B}$ 1) $K_a < 0,5 \left[\frac{F_{rB}}{Y_B} - \frac{F_{rA}}{Y_A} \right]$	$F_{aA} = F_{aB} - K_a$ $F_{aB} = 0,5 \frac{F_{rB}}{Y_B}$

1) Valid also for $K_a=0$



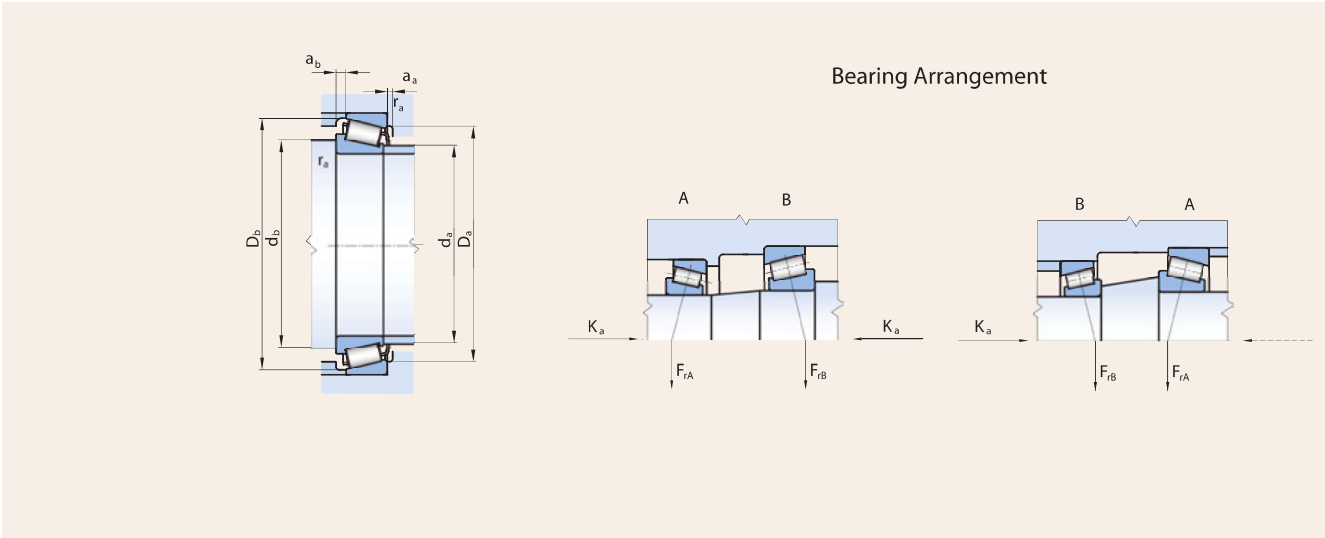
TAPERED ROLLER BEARINGS

single row



Dimensions									Basic Load Ratings		Limited Speed for Lubrication		Bearing Designation		Weight	Factors		
d	D	B	C	T	r1s	r2s	r3s	a	C _r	C _{0r}	with		PSL	ISO		e	Y	Y ₀
					min	min	min		dyn.	stat.	grease	oil		ANSI/ABMA 19.2.1)				
[mm]									[kN]		[min ⁻¹]				[kg]			
300	420	76	57	76	4	3	1	80.4	976	2008	620	890	32960A		31	0.39	1.52	0.84
319.98	400.015	38	38	38	2	0.6	1.1x20°	115.4	328	762	630	900	PSL612-324	GFV89X	10.2	0.83	0.72	0.4
320	480	100	74	100	5	4	1.5	104	1570	3090	550	780	32064AX	T4GD320	61	0.46	1.31	0.72
330.2	422.5	47.625	34.925	47.625	3.6	3.3	1	82.3	489	1200	600	860	PSL612-371	L860049/L860010	15.3	0.5	1.2	0.66
340	460	76	57	76	4	3	1	90.5	1064	2332	550	780	32968	T4FD340	35.6	0.44	1.37	0.75
342.9	450.85	66.675	52.388	66.675	8.4	3.6	1.5	75.5	929	2050	550	790	PSL612-355	LM361649-LM361610	27	0.35	1.7	0.94
342.9	457.098	63.5	47.625	68.262	3.3	3.3	1	124.3	807	1810	550	780	PSL612-365	LM961548-LM961511	28.9	0.71	0.84	0.46
360	480	76	57	76	4	3	1	96.7	1060	2370	520	740	32972A	T4FD360	36.2	0.46	1.31	0.72
360	680	150	125	165	7.5	7.5	1.5	178	3660	6110	390	560	PSL612-345	332302	254.2	0.60	1.00	0.55
384.175	441.325	28.575	20.638	28.575	3.6	3.3	0.6	58.4	245	651	530	750	PSL612-306	LL365348/LL365310	5.8	0.34	1.77	0.97
406.4	546.1	61.12	55.562	76.2	6.4	6.4	1.5	111.7	1030	2110	440	630	PSL612-353	EE234160-234215	42	0.48	1.26	0.69
406.4	574.675	67.9	50.8	76.2	6.8	3.2	2	86	848	1765	470	630	PSL612-27		53.8	0.5	1.2	0.7
409.575	546.1	87.312	68.262	87.312	6.4	6.4	1.5	104	1425	3255	430	620	PSL612-321	M667948/M667911	53.8	0.42	1.44	0.79
409.575	546.1	87.312	68.262	87.312	6.4	6.4	0.6	109.4	1360	3230	440	620	PSL612-329	831499	54.6	0.45	1.34	0.73
430.213	603.25	73	50.8	76.2	6.4	6.4	2	95	852	1813	450	600	PSL612-26		58.9	0.52	1.1	0.6
440	540	40	29	46	2.5	2.5	1.1x20°	161.9	489	1103	420	600	PSL612-323	GFV119X/129X	19.3	0.87	0.69	0.38
447.675	635	120.65	95.25	120.65	6.4	6.4	1.5	112.8	2810	6070	370	530	PSL612-340	M270749-M270710	117	0.33	1.80	0.99
482.6	634.873	80.962	63.5	80.962	6.4	3.3	1.5	98.5	1473	3452	500	350	PSL612-320	EE243190/243250	65.2	0.34	0	1.76
498.653	634.873	80.962	63.5	80.962	6.4	3.3	1.5	98.5	1473	3452	500	350	PSL612-320-1	EE243196AS/243250	57.3	0.34	0	1.76
536.575	820	146	112	152	6	5	1.5	163	3920	7820	270	380	PSL612-330	830238	269.9	0.43	1.39	0.77
635	933.45	177.8	141.288	179.388	11.9	6.4	5.1	165.6	5100	11650	210	300	PSL612-328	830851	419	0.33	1.80	0.99
660.4	939.8	127	98.425	136.525	6.4	6.4	1.5	166.2	3770	8040	210	300	PSL612-349	FAG 537536	280.5	0.40	1.50	0.82
682.625	965.2	185.81	142.95	185.738	6.4	6.4	1.5	170.4	5410	12830	200	280	PSL612-367	SKF332283	421.7	0.33	1.8	0.99
682.625	1080	195	142	200	12	12	1.5	211	6970	12760	180	260	PSL612-336		1318	0.43	1.40	0.77
749.3	990.6	160.338	123	159.5	6.4	6.4	1.5	165	5100	11305	180	260	PSL612-312	LM283649/LM283610	325	0.33	1.80	0.99
759.925	889	88.9	72	88.9	3.3	3.3	1.5	123.2	2010	6240	200	280	PSL612-334	L183448-L183410	92.3	0.31	1.97	1.08
815	1124	178	130	178	6.4	6.4	1.5	207.3	6780	13350	150	220	PSL612-311		504	0.41	1.48	0.81
925	1465	300	230	300	12	12	2.5	298.3	13080	28830	100	140	PSL612-369		1939	0.42	1.44	0.79
1095.375	1276.35	133.35	114.3	133.35	6.4	6.4	1.5	169.6	4260	14645	100	150	PSL612-308	NP407078/NP630637	292	0.28	2.17	1.19
1098.55	1276.35	133.35	114.3	133.35	6.4	6.4	1.5	169.6	4260	14645	100	150	PSL612-307	NP761119/NP630637	281	0.28	2.17	1.19

1) Boundary dimensions comply with the standard ANSI/ABMA 19.2.
Different internal design.



Abutment and Fillet Dimensions								
d	da max	db min	Da min	Da max	Db min	aa min	ab min	ra max
[mm]								
300	327	314	381	406	407	9	19	2.5
319.98	333	330	364	390	392	3.2	6.5	0.6
320	350	342	424	460	461	15	26	3
330.2	348	344	387	409	404	3.2	10.2	2.5
340	363	354	422	446	449	15	21	2.5
342.9	365	361	421	433	440	12	16	3
342.9	362	357	410	443	450	3.6	16.3	2.5
360	383	374	440	466	469	10.1	17.6	2.5
360	428	396	548	644	642	8	31	6
384.175	398	400	426	429	432	4	8	2.5
406.4	431	434	493	518	523	13.2	22.1	5
406.4	452	459	505	533	540	10	25.5	2.5
409.575	437	440	502	516	534	10	15	5
409.575	431	440	496	518	528	10	14	5
430.213	476	452	530	556	565	10	25.5	5
440	459	452	503	528	531	5	16	2
447.675	487	476	576	607	613	16.2	25.4	5
482.6	520	499	590	619	613	9.5	13.5	2.5
498.653	520	515	590	619	613	9.5	13.5	2.5
536.575	578	616	724	798	777	12	36	4
635	702	710	860	880	898	15	30	5
660.4	723	688	853	912	898	22.7	44.6	5
682.625	744	713	873	935	929	31.4	42.2	5
682.625	762	727	951	1036	1026	20	45	10
749.3	799	780	910	960	957	16	35	5
759.925	786	774	855	875	876	12	19	2.5
815	872	845	1023	1094	1086	16	40	5
925	1041	969	1276	1421	1392	46.2	79.2	10
1095.375	1130	1135	1225	1240	1255	15	25	5
1098.55	1130	1135	1225	1240	1255	15	25	5

