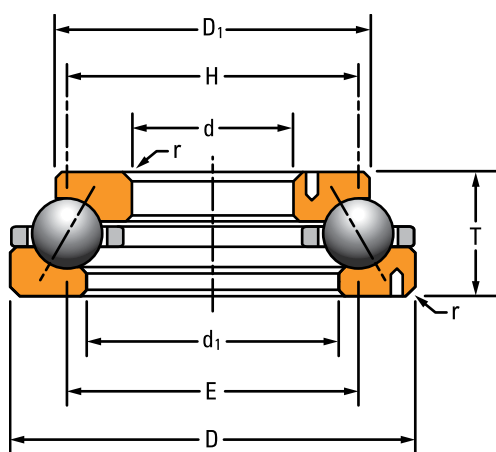


ANGULAR CONTACT THRUST BALL BEARINGS TYPE TVL

- Single-row angular contact construction.
- Provides exceptionally low friction, cool running and quiet operation when operated at high speeds.
- Accommodates axial loads as well as moderate radial loads.



Fig. 58. Type TVL angular contact thrust ball bearing.



OVERALL DIMENSIONS:

- d – Bore diameter
- D – Bearing O.D.
- T – Bearing width
- d₁ – Large ring I.D.
- D₁ – Small ring O.D.
- E – Housing shoulder diameter
- H – Shaft shoulder diameter
- r – Shaft/housing maximum fillet radius

Fig. 59. Type TVL angular contact thrust ball bearing assembly.

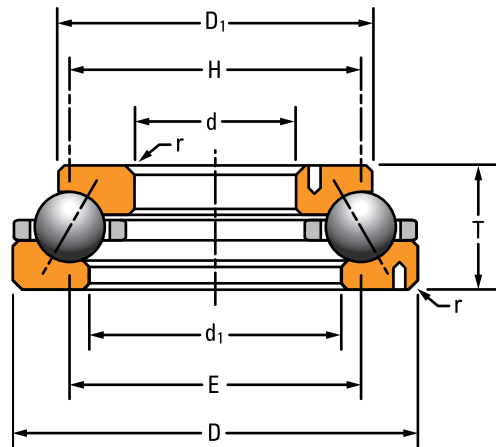
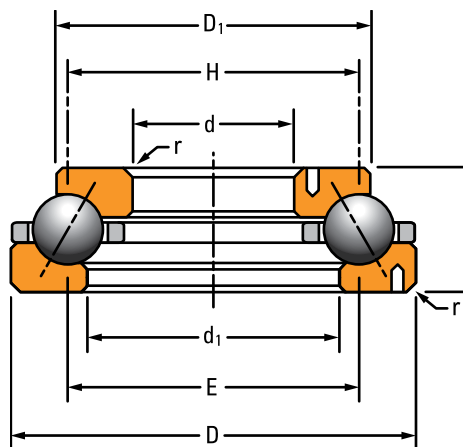


TABLE 39. ANGULAR CONTACT THRUST BALL BEARING PRODUCT DATA – TYPE TVL

Bearing Number	Bearing Dimensions			Rings		Shoulder Diameter		Dowel Pin (One Per Ring)			Fillet ⁽¹⁾ Radius (Max.)	Load Rating		Bearing Weight
	Bore	O.D.	Width	Small Diameter O.D.	Large Bore I.D.	Shaft (Min.)	Housing (Max.)	Pin Dia.	Hole Location from Centerline			Static Load Rating	Dynamic Load Rating	
	d	D	T	D ₁	d ₁	H	E		Small Bore Ring	Large Bore Ring		r	C _{a0}	
	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kN lbf.	kN lbf.	kg lbs.
90TVL710	228.600 9.0000	295.275 11.6250	38.100 1.5000	277.81 10.938	246.06 9.688	261.9 10.31	261.9 10.31	— —	— —	— —	3.2 0.12	480 108260	140 32070	6.2 13.6
120TVL700	304.800 12.0000	406.400 16.0000	57.150 2.2500	368.30 14.500	342.90 13.500	355.6 14.00	355.6 14.00	9.5 0.38	165.1 6.50	190.5 7.50	3.2 0.12	1370 306810	350 78660	18.5 40.8
150TVL701	381.000 15.0000	520.700 20.5000	84.125 3.3120	482.60 19.000	419.10 16.500	450.8 17.75	450.8 17.75	12.7 0.50	206.4 8.12	244.5 9.62	4.8 0.19	2300 517800	510 114270	50.2 110.7
170TVL500	431.800 17.0000	635.000 25.0000	88.900 3.5000	565.15 22.250	488.95 19.250	533.4 21.00	533.4 21.00	12.7 0.50	235.0 9.25	298.4 11.75	7.9 0.31	3250 729730	660 149160	89.6 197.5
180TVL605	457.200 18.0000	625.475 24.6250	92.075 3.6250	549.28 21.625	508.00 20.000	541.3 21.31	541.3 21.31	15.9 0.63	247.6 9.75	285.8 11.25	3.2 0.12	3510 788300	730 163720	78.4 172.9
195TVL470	495.300 19.5000	584.200 23.0000	57.150 2.2500	571.50 22.500	508.00 20.000	539.8 21.25	539.8 21.25	9.5 0.38	258.8 10.19	281.0 11.06	3.2 0.12	1990 446550	400 89490	28.4 62.7
200TVL850	508.000 20.0000	704.850 27.7500	117.475 4.6250	628.68 24.750	565.15 22.250	606.4 23.88	606.4 23.88	15.9 0.63	276.2 10.88	330.2 13.00	6.4 0.25	3830 859870	750 167720	127.3 280.7
201TVL615	511.175 20.1250	628.650 24.7500	66.675 2.6250	590.55 23.250	549.28 21.625	569.9 22.44	569.9 22.44	12.7 0.50	268.3 10.56	300.0 11.81	3.2 0.12	2520 566060	490 110380	41.9 92.3
202TVL620	514.350 20.5000	704.850 27.7500	114.300 4.5000	622.30 24.500	571.50 22.500	609.6 24.00	609.6 24.00	20.6 0.81	279.4 11.00	327.0 12.88	6.4 0.25	4340 974600	840 189020	122.3 269.7
227TVL302	577.850 22.7500	774.700 30.5000	117.475 4.6250	704.85 27.750	622.30 24.500	676.3 26.62	676.3 26.62	20.6 0.81	311.2 12.25	365.1 14.38	6.4 0.25	4900 1102440	880 198370	149.8 330.2
233TVL303	593.725 23.3750	790.575 31.1250	117.475 4.6250	720.72 28.375	650.88 25.625	692.2 27.25	692.2 27.25	22.2 0.88	320.7 12.62	369.9 14.56	6.4 0.25	5090 1143430	900 202060	150.7 332.2
238TVL304	606.425 23.8750	847.725 35.3950	133.350 5.2500	739.78 29.125	688.98 27.125	727.1 28.62	727.1 28.62	22.2 0.88	327.0 12.88	396.9 15.62	6.4 0.25	6240 1403430	1090 243980	212.6 468.7
245TVL716	622.300 24.5000	768.350 30.2500	82.550 3.2500	733.42 28.875	680.47 26.790	695.3 27.38	695.3 27.38	12.7 0.50	323.8 12.75	371.5 14.62	3.2 0.12	2940 660340	510 114390	76.2 168.0
245TVL612	622.300 24.5000	831.850 32.7500	117.475 4.6250	742.95 29.250	679.45 26.750	727.1 28.62	727.1 28.62	15.9 0.63	330.2 13.00	396.9 15.62	6.4 0.25	5280 1187860	910 203680	164.5 362.7

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

Continued on next page.



Continued from previous page.

Bearing Number	Bearing Dimensions			Rings		Shoulder Diameter		Dowel Pin (One Per Ring)			Fillet ⁽¹⁾ Radius (Max.)	Load Rating		Bearing Weight
	Bore	O.D.	Width	Small Diameter O.D.	Large Bore I.D.	Shaft (Min.)	Housing (Max.)	Pin Dia.	Hole Location from Centerline			Static Load Rating	Dynamic Load Rating	
	d	D	T	D ₁	d ₁	H	E		Small Bore Ring	Large Bore Ring		r	C _{a0}	
	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	mm in.	kN lbf.	kN lbf.	kg lbs.
252TVL505	341.350 25.2500	793.750 31.2500	88.900 3.5000	746.12 29.375	708.02 27.875	717.6 28.25	717.6 28.25	12.7 0.50	342.9 13.50	376.2 14.81	6.4 0.25	4120 925070	710 159440	89.3 197.0
260TVL635	660.400 26.0000	893.350 35.2500	133.350 5.2500	790.58 31.125	727.08 28.625	777.9 30.62	777.9 30.62	20.6 0.81	355.6 14.00	422.3 16.62	6.4 0.25	7030 1580800	1150 259090	226.9 500.4
302TVL510	768.350 30.2500	920.750 36.2500	88.900 3.5000	873.12 34.375	835.02 32.875	844.6 33.25	844.6 33.25	12.7 0.50	408.0 16.06	439.7 17.31	6.4 0.25	4850 1089700	750 168910	105.2 231.9
302TVL624	768.350 30.2500	1006.475 39.6250	139.700 5.5000	901.70 35.500	838.20 33.000	887.4 34.94	887.4 34.94	22.2 0.88	409.6 16.12	476.2 18.75	6.4 0.25	7870 1770010	1190 267400	271.1 597.8
303TVL706	771.525 30.3750	898.525 35.3750	63.500 2.5000	860.42 33.875	809.62 31.875	835.0 32.88	835.0 32.88	12.7 0.50	403.2 15.88	431.8 17.00	6.4 0.25	3040 682650	460 102250	58.0 128.0
309TVL707	785.812 30.9375	952.500 37.5000	95.250 3.7500	882.65 34.750	857.25 33.750	870.0 34.25	870.0 34.25	15.9 0.63	415.9 16.38	454.0 17.88	6.4 0.25	3240 727460	570 127850	117.9 260.0
310TVL625	787.400 31.0000	1025.525 40.3750	139.700 5.5000	917.58 36.125	893.76 35.188	906.5 35.69	906.5 35.69	22.2 0.88	422.3 16.62	485.8 19.12	6.4 0.25	8140 1829670	1210 271790	263.5 581.0
317TVL307	806.450 31.7500	1025.525 40.3750	127.000 5.0000	933.45 36.750	873.12 34.375	914.4 36.00	914.4 36.00	22.2 0.88	427.0 16.81	476.2 18.75	6.4 0.25	8140 1829670	1210 271790	240.6 530.6
402TVL717	1022.350 40.2500	1181.100 46.5000	88.900 3.5000	1133.48 44.625	1069.98 42.125	1101.7 43.38	1101.7 43.38	19.1 0.75	530.2 20.88	571.5 22.50	6.4 0.25	6310 1418330	820 185160	147.8 326.0
410TVL718	1041.400 41.0000	1260.475 49.6250	127.000 5.0000	1189.04 46.812	1112.84 43.812	1150.9 45.31	1150.9 45.31	19.1 0.75	544.5 21.44	606.4 23.88	6.4 0.25	10590 2380340	1340 301160	308.8 681.0
420TVL721	1066.800 42.0000	1285.875 50.6250	127.000 5.0000	1214.44 47.812	1138.24 44.812	1176.3 46.31	1176.3 46.31	22.2 0.88	560.4 22.06	616.0 24.25	6.4 0.25	10600 2383620	1330 299290	315.2 695.0
530TVL719	1346.200 53.0000	1517.650 59.7500	104.775 4.1250	1457.32 57.375	1406.52 55.375	1431.9 56.38	1431.9 56.38	22.2 0.88	695.3 27.38	733.4 28.88	6.4 0.25	7080 1590850	810 183060	230.0 506.0
540TVL720	1371.600 54.0000	1619.250 63.7500	139.700 5.5000	1533.52 60.375	1457.32 57.375	1495.4 58.88	1495.4 58.88	22.2 0.88	714.4 28.12	781.0 30.75	6.4 0.25	13880 3119420	1470 331050	480.3 1059.0

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