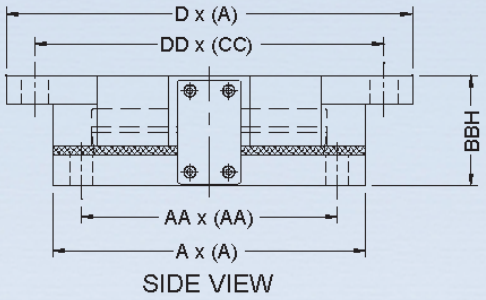
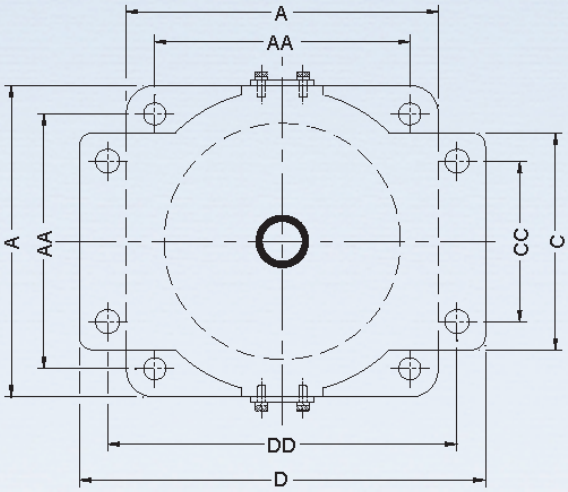
Granor® Potstay® – Fixed

GRANOR® POT TYPE STRUCTURAL BEARINGS	SERVICEABILITY LIMIT STATE (SLS)		ULTIMATE LIMIT STATE (ULS)		ROT'N	POT BEARING – BOTTOM PLATE OVERALL DIMENSIONS & BOLT CENTRES				POT BEARING – TOP PLATE OVERALL DIMENSIONS & BOLT CENTRES					ATTACH'T BOLTS DETAIL	POT BRG HEIGHT	POT BRG WEIGHT
POTSTAY® FIXED Series (15)	Vmax kN	Hmax kN	V*max kN	H*max kN	Rads	Bottom Plate Square A x A mm		Bottom Bolt Centres Square AA x AA mm		Top Plate Width A mm	Top Plate Length D mm	Bolt Ctrs Width CC mm	Bolt Ctrs Length DD mm	Pot Flange Width C	Attach't Bolts Gr.10.9	No Att. Plates BBH mm	No Att. Plates kg
GPFX(15)-300-0/0	300	45	450	68	0.020	155	155	120	120	155	220	55	185	90	M12	56	11
GPFX(15)-500-0/0	500	75	750	113	0.020	180	180	145	145	180	245	80	210	115	M12	59	14
GPFX(15)-750-0/0	750	113	1,125	169	0.020	220	220	185	185	220	285	120	250	155	M12	62	20
GPFX(15)-1000-0/0	1,000	150	1,500	225	0.020	250	250	205	205	250	340	115	290	165	M16	76	36
GPFX(15)-1250-0/0	1,250	188	1,875	281	0.020	280	280	230	230	280	370	140	320	190	M16	78	45
GPFX(15)-1500-0/0	1,500	225	2,250	338	0.020	310	310	250	250	310	420	145	360	205	M20	88	67
GPFX(15)-1750-0/0	1,750	263	2,625	394	0.020	335	335	275	275	335	445	165	385	225	M20	95	81
GPFX(15)-2000-0/0	2,000	300	3,000	450	0.020	355	355	295	295	355	465	185	405	245	M20	97	88
GPFX(15)-2250-0/0	2,250	338	3,375	506	0.020	380	380	320	320	380	490	210	430	270	M20	96	99
GPFX(15)-2500-0/0	2,500	375	3,750	563	0.020	400	400	330	330	400	530	200	460	270	M24	110	141
GPFX(15)-2750-0/0	2,750	413	4,125	619	0.020	420	420	350	350	420	555	220	480	290	M24	113	156
GPFX(15)-3000-0/0	3,000	450	4,500	675	0.020	435	435	365	365	435	565	235	495	305	M24	113	163
GPFX(15)-3500-0/0	3,500	525	5,250	788	0.020	470	470	380	380	470	635	225	545	315	M30	122	218
GPFX(15)-4000-0/0	4,000	600	6,000	900	0.020	505	505	415	415	505	670	260	580	350	M30	133	270
GPFX(15)-4500-0/0	4,500	675	6,750	1,013	0.020	535	535	445	445	535	700	290	610	380	M30	139	306
GPFX(15)-5000-0/0	5,000	750	7,500	1,125	0.020	565	565	475	475	565	730	320	640	410	M30	142	350
GPFX(15)-5500-0/0	5,500	825	8,250	1,238	0.020	590	590	480	480	590	790	290	680	400	M36	154	442
GPFX(15)-6000-0/0	6,000	900	9,000	1,350	0.020	620	620	510	510	620	820	320	710	430	M36	157	484
GPFX(15)-6500-0/0	6,500	975	9,750	1,463	0.015	640	640	530	530	640	840	340	730	450	M36	150	501
GPFX(15)-7000-0/0	7,000	1,050	10,500	1,575	0.015	670	670	560	560	670	870	370	760	480	M36	157	549
GPFX(15)-7500-0/0	7,500	1,125	11,250	1,688	0.015	690	690	580	580	690	890	390	780	500	M36	160	591
GPFX(15)-8000-0/0	8,000	1,200	12,000	1,800	0.015	715	715	600	600	715	935	385	815	500	M39	168	685
GPFX(15)-8500-0/0	8,500	1,275	12,750	1,913	0.015	735	735	620	620	735	955	410	835	525	M39	175	732
GPFX(15)-9000-0/0	9,000	1,350	13,500	2,025	0.015	760	760	645	645	760	970	415	855	530	M39	188	838
GPFX(15)-9500-0/0	9,500	1,425	14,250	2,138	0.015	790	790	665	665	790	1,020	435	895	560	M42	194	962
GPFX(15)-10000-0/0	10,000	1,500	15,000	2,250	0.015	800	800	675	675	800	1,035	435	905	560	M42	192	951



SIDE VIEW



PLAN VIEW

GRANOR® POTSTAY® – FIXED POT TYPE BEARINGS

Series GPFX(15)

The dimensions tabulated above have been calculated in accordance with the requirements of Australian BDC-1996, Section 4, BS-5400 Sections 9.1 & 9.2, and AS-5100 Section 4, as appropriate.

Details offered are representative. They are seen as adequate to provide the designer with basic dimensional and performance data.

In practice, almost our entire production requires individual design input to satisfy project specific requirements. Under such circumstances, specification & dimensions might vary

NOTE: Granor® Pot Bearings are designed in accordance with appropriate national and international standards. Such designs may or may not comply with local State Road Authorities in house specifiications. Please check with Granor®.

Fixed Bearing – GPFX(48)-6125-0/0
High Lateral Load capacity

Pot Type Structural Bearings

SOCKET DETAIL STANDARD (Top & Bottom)		BOTTOM ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWELL DETAIL				TOP ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWELL DETAIL						BEARING TOTAL HEIGHT	BEARING TOTAL WEIGHT	STANDARD GROUT BOLT DETAIL USED WITH ATT PLATES C/W Nut/Washer (Refer Note 5)	GRANOR® POT TYPE STRUCTURAL BEARINGS
Diam mm	Length mm	Bot Att Plate Square mmxmm	Bot Att Plate T'kness mm	Bot Att. Plate Weight Kg	Dowell Centres Square mmxmm	Top Att. Plate Width mm	Top Att. Plate Length mm	Top Att. Plate Thick mm	Top Att. Plate Weight kg	Centres Width mm	Centres Length mm	Includes Att. Plates mm	Includes Att. Plates Kg	Bolt Thread Diameter Length & Quantity	POTSTAY® FIXED FLOAT Series (15)
20	125	165	16	3	70	165	230	16	5	105	170	88	20	16 150 4	GPFX(15)-300-0/0
20	125	190	16	5	95	190	255	16	6	130	195	91	25	16 150 4	GPFX(15)-500-0/0
20	125	230	16	7	135	230	295	16	9	170	235	94	36	16 150 4	GPFX(15)-750-0/0
33	150	260	20	11	155	260	350	20	15	190	280	116	62	20 175 4	GPFX(15)-1000-0/0
33	150	290	20	13	155	290	380	20	18	220	310	118	76	20 175 4	GPFX(15)-1250-0/0
36	200	320	25	20	175	320	430	25	29	255	350	138	115	24 250 4	GPFX(15)-1500-0/0
36	200	345	25	24	200	345	455	25	31	265	375	145	136	24 250 4	GPFX(15)-1750-0/0
36	200	365	25	27	210	365	475	25	35	285	395	147	150	24 250 4	GPFX(15)-2000-0/0
36	200	390	25	30	235	390	500	25	39	310	420	146	168	24 250 6	GPFX(15)-2250-0/0
50	225	410	25	34	245	410	540	25	44	330	460	160	219	24 250 6	GPFX(15)-2500-0/0
50	225	430	25	37	240	430	565	25	49	350	485	163	242	24 250 6	GPFX(15)-2750-0/0
50	225	445	25	40	255	445	575	25	51	365	495	163	254	24 250 6	GPFX(15)-3000-0/0
60	275	480	32	59	270	480	645	32	79	360	525	186	356	36 250 6	GPFX(15)-3500-0/0
60	275	515	32	68	305	515	680	32	90	395	560	197	428	36 250 6	GPFX(15)-4000-0/0
60	275	545	32	76	295	545	710	32	99	425	590	203	481	36 250 6	GPFX(15)-4500-0/0
60	275	575	32	85	325	575	740	32	109	455	620	206	544	36 250 6	GPFX(15)-5000-0/0
75	300	600	40	115	330	600	800	40	154	475	675	234	711	39 300 6	GPFX(15)-5500-0/0
75	300	630	40	127	360	630	830	40	167	505	705	237	778	39 300 6	GPFX(15)-6000-0/0
75	300	650	40	135	355	650	850	40	177	525	725	230	813	39 350 6	GPFX(15)-6500-0/0
75	300	680	40	148	385	680	880	40	191	555	755	237	888	39 350 6	GPFX(15)-7000-0/0
75	300	700	40	157	405	700	900	40	202	545	745	240	950	48 350 6	GPFX(15)-7500-0/0
80	325	725	40	168	425	725	945	40	219	570	790	248	1,072	48 350 6	GPFX(15)-8000-0/0
80	325	745	40	178	445	745	965	40	230	590	810	255	1,140	48 350 6	GPFX(15)-8500-0/0
80	325	770	40	190	470	770	980	40	241	615	825	268	1,269	48 350 6	GPFX(15)-9000-0/0
90	350	800	45	230	490	800	1,030	45	297	630	860	284	1,489	54 350 6	GPFX(15)-9500-0/0
90	350	810	45	236	500	810	1,045	45	305	640	875	282	1,492	54 350 6	GPFX(15)-10000-0/0

POTSTAY® STANDARD PERFORMANCE CHARACTERISTICS

Movement –

Fixed Pot Bearings are fully fixed in the horizontal direction.
Horizontal movement = Zero.

Rotation –

Standard rotational capacity is –

300 kN to 6000 kN (SLS) inclusive	0.02 radians.
Above 6,000 kN (SLS)	0.015 radians.

Stress to Concrete –

All Granor® Pot Type Structural Bearings are designed to give a uniform stress to the concrete of = ~~< 20MPa~~.

The stress is disbursed from the Elastomeric Pad, at an angle of 2 : 1.

Horizontal Loads –

Fixed Pot Bearings are 'locked' in the horizontal plane.

Friction – Bearing to Structure –

Contribution by friction to the retention of the bearing in the structure, is not considered in standard designs.

FIXED TYPE POT BEARINGS – DESIGNATION –

GP — FX — (15) — 1000 — 0 — 0

- GP — Granor Pot
- FX — Fixed Type Bearing
- (15) — Ratio - Horizontal / Vertical Load
- 1000 — Rated Vertical Load (SLS)
- 0 — Design Transverse Slide Movement
- 0 — Design Longitudinal Slide Movement

NOTE 1: Dimensions tabulated above are for guidance only. Actual dimensions may vary based on the project specific specification particularly the ratio between Hmax and Vmax.

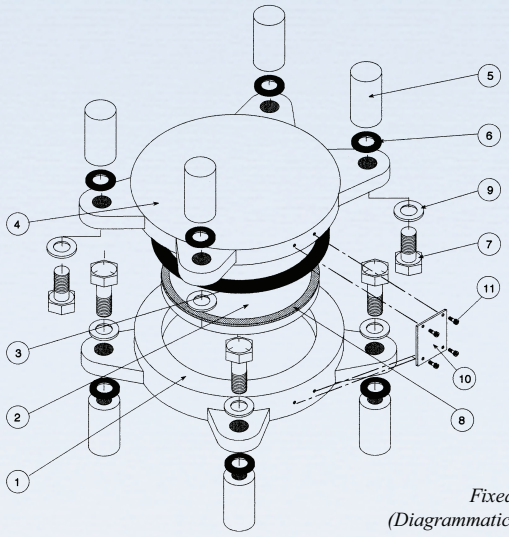
NOTE 2: Top & Bottom Attachment Plates are typically 10mm larger in plan than the respective bearing plates.

NOTE 3: Top plate can be installed in either orientation.

NOTE 4: Granor's standard socket configuration, when attachment plates are not used, is to bolt the sockets directly to the bearing using the attachment bolts.

NOTE 5: Standard grout bolt / dowel configuration for use with attachment plates is 4 No. or 6 No. galvanised H.S.S. Gr. 8.8 Bolt/Nut/Washer, to detail shown on page 10, per attachment plate.

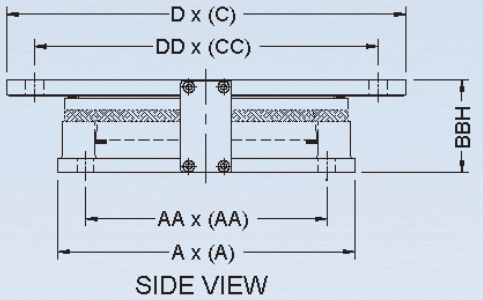
Rectangular attachment plates would have a 2 x 3 configuration, with the '3' arranged along the long side.



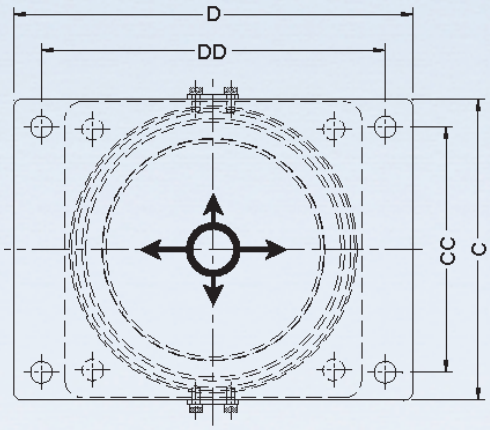
Fixed Type
(Diagrammatic only)

Granor® Potfloat® – Free Float

GRANOR® POT TYPE STRUCTURAL BEARINGS	SERVICEABILITY LIMIT STATE (SLS)		ULTIMATE LIMIT STATE (ULS)		ROT'N	SLIDE MOVEMENT (Standard) L = +/- 50 mm T = +/- 15 mm		POT BEARING – BOTTOM PLATE OVERALL DIMENSIONS & BOLT CENTRES				POT BEARING – TOP PLATE OVERALL DIMENSIONS & BOLT CENTRES				ATTACH'T BOLTS DETAIL	POT BRG HEIGHT	POT BRG WEIGHT
POTFLOAT® FREE FLOAT Series (10)	Vmax SLS kN	Hmax SLS kN	V*max ULS kN	H*max ULS kN	Rads	Long't +/- mm From Neutral	T'verse +/- mm From Neutral	Pot Bottom Plate Square A x A mm		Pot Bottom Plate Bolt Centres Square AA x AA mm		Slide Plate Width C mm	Slide Plate Length D mm	Bolt Ctrs Width CC mm	Bolt Ctrs Length DD mm	Attach't Bolts Gr.10.9	No Att. Plates BBH mm	No Att. Plates kg
GPFF(10)-300-15/50	300	30	450	45	0.020	50	15	160	160	125	125	175	255	140	220	M12	74	16
GPFF(10)-500-15/50	500	50	750	75	0.020	50	15	180	180	145	145	205	285	170	250	M12	74	21
GPFF(10)-750-15/50	750	75	1,125	113	0.020	50	15	220	220	185	185	235	315	200	280	M12	78	29
GPFF(10)-1000-15/50	1,000	100	1,500	150	0.020	50	15	250	250	215	215	255	335	220	300	M12	91	43
GPFF(10)-1250-15/50	1,250	125	1,875	188	0.020	50	15	280	280	230	230	280	360	230	310	M16	96	61
GPFF(10)-1500-15/50	1,500	150	2,250	225	0.020	50	15	310	310	260	260	310	380	260	330	M16	98	71
GPFF(10)-1750-15/50	1,750	175	2,625	263	0.020	50	15	335	335	285	285	335	400	285	350	M16	106	88
GPFF(10)-2000-15/50	2,000	200	3,000	300	0.020	50	15	355	355	305	305	355	415	305	365	M16	115	104
GPFF(10)-2250-15/50	2,250	225	3,375	338	0.020	50	15	380	380	320	320	380	430	320	370	M20	115	120
GPFF(10)-2500-15/50	2,500	250	3,750	375	0.020	50	15	400	400	340	340	400	450	340	390	M20	119	136
GPFF(10)-2750-15/50	2,750	275	4,125	413	0.020	50	15	420	420	360	360	420	460	360	400	M20	125	156
GPFF(10)-3000-15/50	3,000	300	4,500	450	0.020	50	15	440	440	380	380	440	490	380	430	M20	126	172
GPFF(10)-3500-15/50	3,500	350	5,250	525	0.020	50	15	470	470	400	400	470	505	400	435	M24	138	225
GPFF(10)-4000-15/50	4,000	400	6,000	600	0.020	50	15	505	505	435	435	505	530	435	460	M24	139	256
GPFF(10)-4500-15/50	4,500	450	6,750	675	0.020	50	15	535	535	465	465	535	555	465	485	M24	150	303
GPFF(10)-5000-15/50	5,000	500	7,500	750	0.020	50	15	565	565	475	475	565	575	475	485	M30	159	371
GPFF(10)-5500-15/50	5,500	550	8,250	825	0.020	50	15	590	590	500	500	590	595	500	505	M30	161	406
GPFF(10)-6000-15/50	6,000	600	9,000	900	0.020	50	15	620	620	530	530	620	620	530	530	M30	162	437
GPFF(10)-6500-15/50	6,500	650	9,750	975	0.015	50	15	645	645	555	555	645	645	555	555	M30	159	480
GPFF(10)-7000-15/50	7,000	700	10,500	1,050	0.015	50	15	665	665	575	575	665	665	575	575	M30	171	543
GPFF(10)-7500-15/50	7,500	750	11,250	1,125	0.015	50	15	695	695	605	605	695	695	605	605	M30	177	600
GPFF(10)-8000-15/50	8,000	800	12,000	1,200	0.015	50	15	715	715	605	605	715	715	605	605	M36	178	673
GPFF(10)-8500-15/50	8,500	850	12,750	1,275	0.015	50	15	735	735	625	625	735	735	625	625	M36	182	721
GPFF(10)-9000-15/50	9,000	900	13,500	1,350	0.015	50	15	755	755	645	645	755	755	645	645	M36	186	773
GPFF(10)-9500-15/50	9,500	950	14,250	1,425	0.015	50	15	780	780	670	670	780	780	670	670	M36	195	848
GPFF(10)-10000-15/50	10,000	1,000	15,000	1,500	0.015	50	15	800	800	690	690	800	800	690	690	M36	201	918



SIDE VIEW



PLAN VIEW

GRANOR® POTFLOAT® – FREE FLOAT POT TYPE BEARINGS

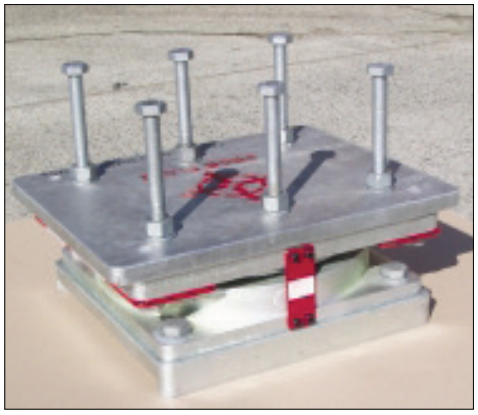
Series GPFF(10)

The dimensions tabulated above have been calculated in accordance with the requirements of Australian BDC-1996, BS-5400 and AS-5100 Section 4, as appropriate.

Details offered are representative. They are seen as adequate to provide the designer with basic dimensional and performance data.

In practice, almost our entire production requires individual design input to satisfy project specific requirements. Under such circumstances, specification & dimensions might vary.

NOTE: Granor® Pot Bearings are designed in accordance with appropriate national and international standards. Such designs may or may not comply with local State Road Authorities in house specifications. Please check with Granor®.



Free Float Bearing – GPFF(10)-5000-0/50
'Locked Off' to act as a 'Fixed' Bearing during construction.

Pot Type Structural Bearings

STANDARD SOCKET DETAIL – (GAL.) (Refer Note 4)		BOTTOM ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWEL DETAIL				TOP ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWEL DETAIL						BEARING TOTAL HEIGHT	BEARING TOTAL WEIGHT	STANDARD GROUT BOLT DETAIL USED WITH ATT PLATES C/W Nut/Washer (Refer Note 5)	GRANOR® POT TYPE STRUCTURAL BEARINGS
Diam mm	Length mm	Bot Att Plate Square mmxmm	Bot Att Plate T'kness mm	Bot Att. Plate Weight Kg	Bot Att. Plate Ctrs Sq. mmxmm	Top Att. Plate Width	Top Att. Plate Length	Top Att. Plate Thick mm	Top Att. Plate Weight kg	Centres Width mm	Centres Length mm	Includes Att. Plates mm	Includes Att. Plates Total Weight Kg	Bolt Thread Diameter Length & Quantity	POTFLOAT® FREE FLOAT Series (10)
20	125	170	16	4	60	185	265	16	6	120	120	106	26	16 150 4	GPFF(10)-300-15/50
20	125	190	16	5	85	215	295	16	8	140	140	106	34	16 150 4	GPFF(10)-500-15/50
20	125	230	16	7	120	245	325	16	10	170	170	110	46	16 150 4	GPFF(10)-750-15/50
20	125	260	16	10	150	265	345	16	12	190	190	123	65	16 150 4	GPFF(10)-1000-15/50
33	150	290	20	12	150	290	370	20	17	200	200	136	90	20 200 4	GPFF(10)-1250-15/50
33	150	320	20	16	180	320	390	20	19	230	230	138	106	20 200 4	GPFF(10)-1500-15/50
33	150	345	20	19	205	345	410	20	23	255	255	146	130	20 200 4	GPFF(10)-1750-15/50
33	150	365	20	21	225	365	425	20	25	275	275	155	150	20 200 4	GPFF(10)-2000-15/50
36	200	390	25	30	225	390	440	25	34	275	275	165	185	24 250 4	GPFF(10)-2250-15/50
36	200	410	25	34	245	410	460	25	38	295	295	169	207	24 250 4	GPFF(10)-2500-15/50
36	200	430	25	37	265	430	470	25	40	305	305	175	233	24 250 4	GPFF(10)-2750-15/50
36	200	450	25	40	280	450	500	25	45	325	325	176	257	24 250 4	GPFF(10)-3000-15/50
50	225	480	28	52	280	480	515	28	55	315	315	194	332	30 250 4	GPFF(10)-3500-15/50
50	225	515	28	59	315	515	540	28	62	340	340	194	377	30 250 4	GPFF(10)-4000-15/50
50	225	545	28	67	320	545	565	28	69	340	340	206	439	36 300 4	GPFF(10)-4500-15/50
60	275	575	32	85	330	575	585	32	86	340	340	223	542	36 300 4	GPFF(10)-5000-15/50
60	275	600	32	92	355	600	605	32	93	360	360	225	591	36 300 4	GPFF(10)-5500-15/50
60	275	630	32	102	385	630	630	32	102	385	385	226	641	36 300 4	GPFF(10)-6000-15/50
60	275	655	32	110	410	655	655	32	110	410	410	223	700	36 300 6	GPFF(10)-6500-15/50
60	275	675	32	117	430	675	675	32	117	430	430	235	777	36 300 6	GPFF(10)-7000-15/50
60	275	705	32	127	455	705	705	32	127	455	455	241	855	36 300 6	GPFF(10)-7500-15/50
75	300	725	40	168	435	725	725	40	168	435	435	258	1,009	42 300 6	GPFF(10)-8000-15/50
75	300	745	40	178	455	745	745	40	178	455	455	262	1,077	42 300 6	GPFF(10)-8500-15/50
75	300	765	40	187	475	765	765	40	187	475	475	266	1,147	42 300 6	GPFF(10)-9000-15/50
75	300	790	40	200	500	790	790	40	200	500	500	275	1,248	42 300 6	GPFF(10)-9500-15/50
75	300	810	40	210	520	810	810	40	210	520	520	281	1,338	42 300 6	GPFF(10)-10000-15/50

POTFLOAT® STANDARD PERFORMANCE CHARACTERISTICS

Movement –

Standard configurations provide a minimum of –

Transverse Slide Movement = >+/- 15 mm

Longitudinal Slide Movement = >+/- 50mm

Alternative slide movement capacities can be provided. If required movement is substantially greater than standard, then the bearing height may need to increase.

Rotation –

Standard rotational capacity is –

300 kN to 6000 kN (SLS) inclusive 0.02 radians.

Above 6,000 kN (SLS) 0.015 radians.

Stress to Concrete –

All Granor® Pot Type Structural Bearings are designed to give a uniform stress to the concrete of = ~~< 20MPa~~. The stress is dispersed from the Elastomeric Pad, or the PTFE, at an angle of 2 : 1.

Horizontal Loads – Co-Efficient of Friction –

The static Co-Efficient of Friction between the sliding members of a GRANOR GPFF Free Float Pot Bearing, at the design stress typically 30MPa, is less than 4%.

Friction – Bearing to Structure –

Whilst friction alone can retain Free Float Bearings in place, all Granor Free Float designs include positive retention by means of HSS Bolts and sockets.

FREE FLOAT TYPE POT BEARINGS – DESIGNATION –

GP — FF — (10) — 1000 — 15 — 50

- GP — Granor Pot
- FF — Free Float Type Bearing
- (10) — Ratio - Horizontal/Vertical Load
- 1000 — Rated Vertical Load (SLS)
- 15 — Design Transverse Slide Movement +/-
- 50 — Design Longitudinal Slide Movement +/-

NOTE 1: Dimensions tabulated above are for guidance only. Actual dimensions may vary based on the project specific requirements of slide movement required.

NOTE 2: Top & Bottom Attachment Plates are typically 10mm larger in plan than the respective bearing plates.

NOTE 3: Standard Slide Movement – Longitudinal +/- 50mm. Transverse +/- 15mm – For increased slide movement, modify part number as explained in Part Number Identification.

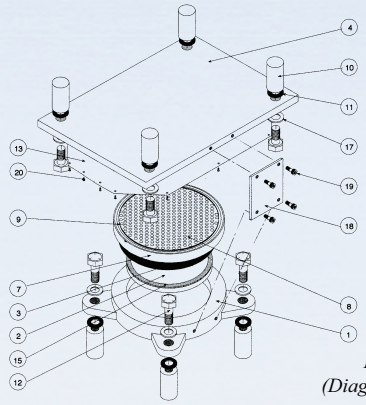
Where movement(s) greater than standard is required, increase dimension(s) of top plate and attachment plate, to accommodate increased requirements.

NOTE 4: Granor's standard socket configuration, when attachment plates are not used, is to bolt the sockets directly to the bearing using the attachment bolts.

NOTE 5: Standard grout bolt / dowel configuration for use with attachment plates is 4 No. or 6 No. galvanised H.S.S. Gr. 8.8 Bolt/Nut/Washer, to detail shown on page 10, per attachment plate.

Rectangular attachment plates would have a 2 x 3 configuration, with the '3' arranged along the long side.

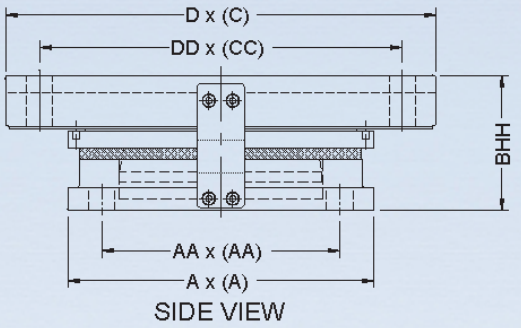
NOTE 6: Free Float Bearings are sometimes installed without a mechanical retention device – ie; Friction only to restrain bearing.



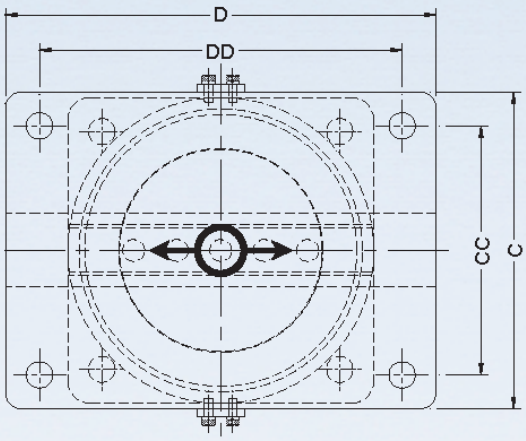
Free Float Type (Diagrammatic only)

Granor® Potglide® – Guide / Slide

GRANOR® POT TYPE STRUCTURAL BEARINGS	SERVICEABILITY LIMIT STATE (SLS)		ULTIMATE LIMIT STATE (ULS)		ROT'N	SLIDE MOVEMENT (Standard) L = +/- 50 mm T = 0 mm		POT BEARING – BOTTOM PLATE OVERALL DIMENSIONS & BOLT CENTRES				POT BEARING – TOP SLIDE PLATE OVERALL DIMENSIONS & BOLT CENTRES				ATTACH'T BOLT DETAIL	BRG HEIGHT	BRG WEIGHT
POTGLIDE® GUIDE SLIDE Series (10)	Vmax kN	Hmax kN	V*max kN	H*max kN	Rads	Long't +/- mm From Neutral	T'verse +/- mm From Neutral	Bottom Plate Square A x A mm		Bottom Plate Bolt Centres Square AA x AA mm		Slide Plate Width C mm	Slide Plate Length D mm	Top Bolt Ctrs Width CC mm	Top Bolt Ctrs Length DD mm	Attach't Bolts Gr.10.9	No Att. Plates BBH mm	No Att. Plates kg
GPGS(10)-300-0/50	300	30	450	45	0.02	50	0	160	160	125	125	160	270	125	235	M12	91	21
GPGS(10)-500-0/50	500	50	750	75	0.02	50	0	180	180	145	145	190	300	155	265	M12	95	30
GPGS(10)-750-0/50	750	75	1,125	113	0.02	50	0	220	220	185	185	230	340	195	305	M12	99	43
GPGS(10)-1000-0/50	1,000	100	1,500	150	0.02	50	0	250	250	215	215	250	360	215	325	M12	104	50
GPGS(10)-1250-0/50	1,250	125	1,875	188	0.02	50	0	280	280	230	230	280	385	230	335	M16	113	77
GPGS(10)-1500-0/50	1,500	150	2,250	225	0.02	50	0	310	310	260	260	310	405	260	355	M16	115	87
GPGS(10)-1750-0/50	1,750	175	2,625	263	0.02	50	0	335	335	285	285	335	430	285	380	M16	126	111
GPGS(10)-2000-0/50	2,000	200	3,000	300	0.02	50	0	355	355	305	305	355	455	305	405	M16	131	124
GPGS(10)-2250-0/50	2,250	225	3,375	338	0.02	50	0	380	380	320	320	380	465	320	405	M20	131	147
GPGS(10)-2500-0/50	2,500	250	3,750	375	0.02	50	0	400	400	340	340	400	480	340	420	M20	140	173
GPGS(10)-2750-0/50	2,750	275	4,125	413	0.02	50	0	420	420	360	360	420	495	360	435	M20	148	196
GPGS(10)-3000-0/50	3,000	300	4,500	450	0.02	50	0	440	440	380	380	440	510	380	450	M20	144	205
GPGS(10)-3500-0/50	3,500	350	5,250	525	0.02	50	0	470	470	400	400	470	540	400	470	M24	152	258
GPGS(10)-4000-0/50	4,000	400	6,000	600	0.02	50	0	505	505	435	435	505	565	435	495	M24	163	305
GPGS(10)-4500-0/50	4,500	450	6,750	675	0.02	50	0	535	535	465	465	535	590	465	520	M24	165	347
GPGS(10)-5000-0/50	5,000	500	7,500	750	0.02	50	0	565	565	475	475	565	615	475	525	M30	179	436
GPGS(10)-5500-0/50	5,500	550	8,250	825	0.02	50	0	590	590	500	500	590	640	500	550	M30	182	480
GPGS(10)-6000-0/50	6,000	600	9,000	900	0.02	50	0	620	620	530	530	620	660	530	570	M30	185	518
GPGS(10)-6500-0/50	6,500	650	9,750	975	0.015	50	0	645	645	555	555	645	680	555	590	M30	185	572
GPGS(10)-7000-0/50	7,000	700	10,500	1,050	0.015	50	0	665	665	575	575	665	705	575	615	M30	187	614
GPGS(10)-7500-0/50	7,500	750	11,250	1,125	0.015	50	0	695	695	605	605	695	720	605	630	M30	194	678
GPGS(10)-8000-0/50	8,000	800	12,000	1,200	0.015	50	0	715	715	605	605	715	740	605	630	M36	194	746
GPGS(10)-8500-0/50	8,500	850	12,750	1,275	0.015	50	0	735	735	625	625	735	755	625	645	M36	196	795
GPGS(10)-9000-0/50	9,000	900	13,500	1,350	0.015	50	0	755	755	645	645	755	770	645	660	M36	209	881
GPGS(10)-9500-0/50	9,500	950	14,250	1,425	0.015	50	0	780	780	670	670	780	790	670	670	M36	211	929
GPGS(10)-10000-0/50	10,000	1,000	15,000	1,500	0.015	50	0	800	800	690	690	800	820	690	710	M36	222	1,028



SIDE VIEW



PLAN VIEW

GRANOR® POTGLIDE® – GUIDE / SLIDE POT BEARINGS

Series GPGS (10)

The dimensions tabulated above have been calculated in accordance with the requirements of Australian BDC-19962, BS-5400 and AS-5100 Section 4, as appropriate.

Details offered are representative and are seen as adequate to provide the designer with basic dimensional and performance data.

In practice, almost our entire production requires individual design input to satisfy project specific performance requirements. Under such circumstances, specification & dimensions might vary.

NOTE: Granor® Pot Bearings are designed in accordance with appropriate national and international standards. Such designs may or may not comply with local State Road Authorities in house specifiications. Please check with Granor®.

Guide Slide Bearing GPGS(10)-2500-0/50 complete with tapered 'Launch Over Plate' faced with polished stainless steel.

Pot Type Structural Bearings

STANDARD SOCKET DETAIL Gr.300 STEEL (Refer Note 4)		BOTTOM ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWEL DETAIL				TOP ATTACHMENT / DISTRIBUTION PLATE / GROUT BOLT / DOWEL DETAIL						BEARING TOTAL HEIGHT	BEARING TOTAL WEIGHT	STANDARD GROUT BOLT DETAIL USED WITH ATT PLATES C/W Nut/Washer (Refer Note 5)			GRANOR® POT TYPE STRUCTURAL BEARINGS
Diam mm	Length mm	Bot Att. Plate Square mmxmm	Bot Att. Plate T'kness mm	Bot Att. Plate Weight Kg	Bot Att. Plate Ctrs Sq. mmxmm	Top Att. Plate Width mm	Top Att. Plate Length mm	Top Att. Plate Thick mm	Top Att. Plate Weight kg	Centres Width mm	Centres Length mm	Includes Att. Plates mm	Total Includes Att. Plates Kg	Bolt Thread Diameter Length & Quantity			POTGLIDE® GUIDE SLIDE Series (10)
20	125	170	16	4	60	170	280	16	6	120	120	123	31	16	150	4	GPGS(10)-300-0/50
20	125	190	16	5	85	200	310	16	8	140	140	127	43	16	150	4	GPGS(10)-500-0/50
20	125	230	16	7	120	240	350	16	11	170	170	131	61	16	150	4	GPGS(10)-750-0/50
20	125	260	16	9	150	260	370	16	12	190	190	136	71	16	150	4	GPGS(10)-1000-0/50
33	150	290	20	13	150	290	395	20	18	200	200	153	108	20	200	4	GPGS(10)-1250-0/50
33	150	320	20	16	180	320	415	20	21	230	230	155	124	20	200	4	GPGS(10)-1500-0/50
33	150	345	20	19	205	345	440	20	24	255	255	166	154	20	200	4	GPGS(10)-1750-0/50
33	150	365	20	21	225	365	465	20	26	275	275	171	171	20	200	4	GPGS(10)-2000-0/50
36	200	390	25	30	225	390	475	25	37	275	275	181	214	24	250	4	GPGS(10)-2250-0/50
36	200	410	25	34	245	410	490	25	40	295	295	190	247	24	250	4	GPGS(10)-2500-0/50
36	200	430	25	37	265	430	505	25	43	305	305	198	276	24	250	4	GPGS(10)-2750-0/50
36	200	450	25	41	285	450	520	25	47	325	325	194	292	24	250	4	GPGS(10)-3000-0/50
50	225	480	28	52	280	480	550	28	59	315	315	208	369	30	250	4	GPGS(10)-3500-0/50
50	225	515	28	59	315	515	575	28	67	340	340	219	431	30	250	4	GPGS(10)-4000-0/50
50	225	545	28	67	320	545	600	28	73	340	340	221	487	36	300	4	GPGS(10)-4500-0/50
60	275	575	32	85	330	575	625	32	92	340	340	243	613	36	300	4	GPGS(10)-5000-0/50
60	275	600	32	92	355	600	650	32	100	360	360	246	672	36	300	4	GPGS(10)-5500-0/50
60	275	630	32	102	385	630	670	32	108	385	385	249	728	36	300	4	GPGS(10)-6000-0/50
60	275	655	32	110	405	655	690	32	116	410	410	185	798	36	300	6	GPGS(10)-6500-0/50
60	275	675	32	117	430	675	715	32	124	430	430	251	855	36	300	6	GPGS(10)-7000-0/50
60	275	705	36	143	455	705	730	36	148	455	455	266	969	36	300	6	GPGS(10)-7500-0/50
75	300	725	40	168	435	725	750	40	174	455	455	274	1,088	42	300	6	GPGS(10)-8000-0/50
75	300	745	40	178	500	745	765	40	182	455	455	276	1,155	42	300	6	GPGS(10)-8500-0/50
75	300	765	40	187	520	765	780	40	191	475	475	289	1,259	42	300	6	GPGS(10)-9000-0/50
75	300	790	40	200	545	790	800	40	200	500	500	291	1,329	42	300	6	GPGS(10)-9500-0/50
75	300	810	40	210	565	810	830	40	215	520	520	302	1,453	42	300	6	GPGS(10)-10000-0/50

POTGLIDE® STANDARD PERFORMANCE CHARACTERISTICS

Movement –

Standard configurations provide a minimum of –

Transverse Slide Movement = >+/- 0 mm

Longitudinal Slide Mmovement = >+/- 50mm

Alternative slide movement capacities can be provided.

If the required movement is substantially larger than standard, then the bearing height may need to increase.

Rotation –

Standard rotational capacity is –

300 kN to 6000 kN (SLS) inclusive 0.02 radians.

Above 6,000 kN (SLS) 0.015 radians.

Stress to Concrete –

All Granor® Pot Type Structural Bearings are designed to give a uniform stress to the concrete of = ~~< 20MPa~~. The stress is disbursed from the Elastomeric Pad, or the PTFE, at an angle of 2 : 1.

Horizontal Loads – Co-Efficient of Friction –

The static Co-Efficient of Friction between the sliding members of a GRANOR GPGS Guide / Slide Pot Bearing, at the design stress typically > 30MPa, is less than 4%.

Friction – Bearing to Structure –

No allowance has been made in the standard designs for contribution from frictional to assist in retention of the bearing. Retention is positive via a Bolt / Dowel system.

GUIDE / SLIDE TYPE POT BEARINGS – DESIGNATION –

GP—GS—(10)—1000—15—50

GP: Granor Pot

GS: Guide / Slide Type Bearing

(10): Ratio - Horizontal/Vertical Load

1000: Rated Vertical Load (SLS)

15: Design Transverse Slide Movement +/-

50: Design Longitudinal Slide Movement +/-

NOTE 1: Dimensions tabulated above are for guidance only. Actual dimensions may vary based on the project specification of ratio of Hmax and Vmax and/or slide movement required.

NOTE 2: Top & Bottom Attachment Plates are typically 10mm larger in plan than the respective bearing plates.

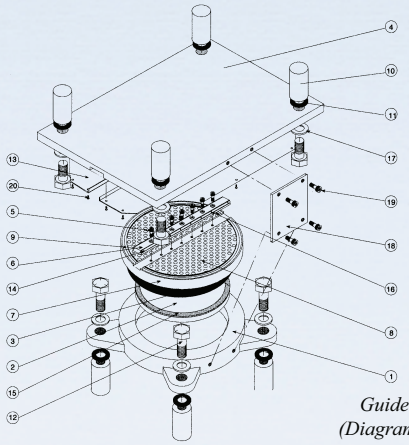
NOTE 3: Standard Slide Movement – Longitudinal +/- 50mm. For increased slide movement, modify part number as explained in Part Number Identification.

Where movement greater than standard is required, increase dimension of top plate and attachment plate, to accommodate increased requirements.

NOTE 4: Granor's standard socket configuration, when attachment plates are not used, is to bolt the sockets directly to the bearing using the attachment bolts.

NOTE 5: Standard grout bolt / dowel configuration for use with attachment plates is 4 No. or 6 No. galvanised H.S.S. Gr. 8.8 Bolt/Nut/Washer, to detail shown on page 10, per attachment plate.

Rectangular attachment plates would have a 2 x 3 configuration, with the '3' arranged along the long side.



Guide / Slide Type (Diagrammatic only)

INSTALLATION TECHNIQUES (Typical)

COMPONENT SPECIFICATION

Bolts	AS-1252	Gr.10.9 Galvanised
Nuts	AS-1252	Galvanised
F/Washers	AS-1252	Galvanised
Sockets	AS- 3679	Galvanised
Elastomeric	Washers	3mm Neoprene

(Galvanising to ASNZS-4680 / AS-1214 or Mechanically Galvanised, as appropriate)

SHEAR STRENGTH OF BOLT – Gr.10.9

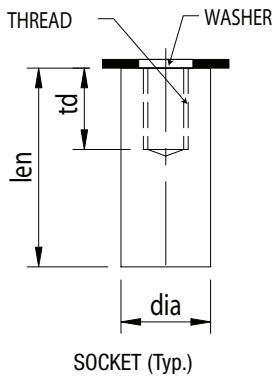
SIZE	kN (ULS)
M12	43
M16	81
M20	125
M24	182
M30	289
M36	422
M39	504
M42	578
M48	759
M56	1,047
M64	1,383
M72	1,785

Ready for shipment – 5,000kN Fixed, Free Float and Guide/Slide Pot Bearings.

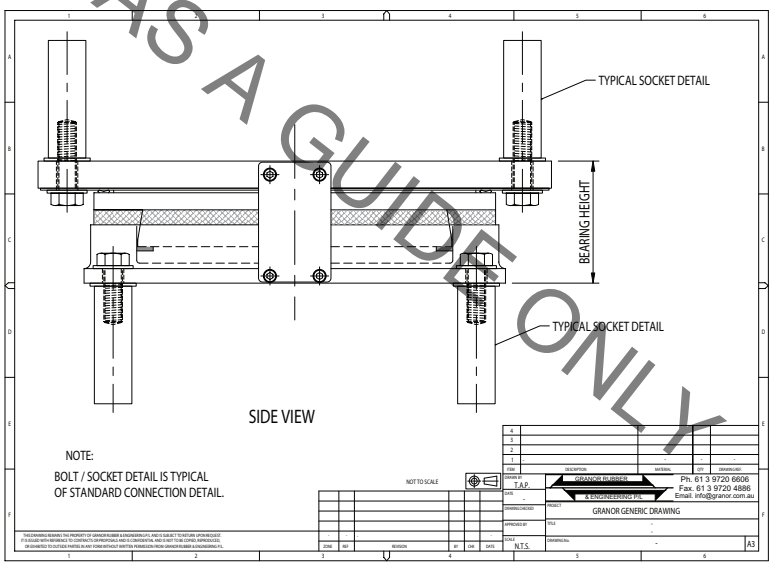
GRANOR RUBBER & ENGINEERING P/L

Standard Bolt / Socket Configuration

BOLT SIZE	SOCKET DIA. (dia)	SOCKET LENGTH (len)	THREAD DEPTH (td)
M12	20mm	125mm	25mm
M16	33mm	150mm	25mm
M20	36mm	200mm	30mm
M24	50mm	225mm	35mm
M30	60mm	275mm	45mm
M36	75mm	300mm	50mm
M39	80mm	325mm	60mm
M42	90mm	350mm	60mm

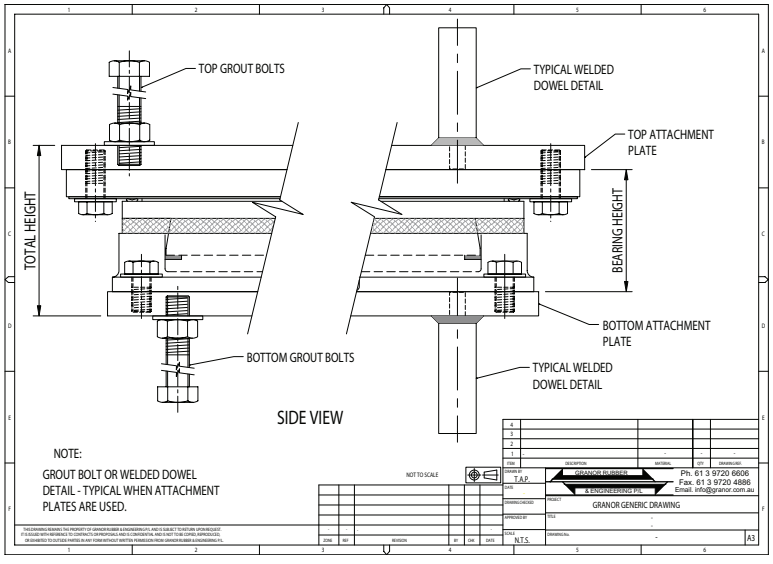


SOCKET (Typ.)



Bolt / Socket Retention –

Granor's standard arrangement illustrated – Bolted connection to steel socket.



Top & / or bottom Attachment Plates –

Two Options – LHS – Grout Bolts screwed into attachment plate.

RHS – Galvanised Dowels – Recessed & welded to attachment plate

DELIVERY / INSTALLATION –

Delivery to site –

- All Granor bearings are delivered to site, held together with temporary fixings, designed to eliminate separation of components at site. Separation of components at site must be avoided. The entry of grit and dirt to the sliding interface, or into the internal components of the bearing will adversely affect not only the performance, but also the life of the bearing.
- Most malfunctions of Pot Bearings can be traced back to incorrect installation. Most damage to Pot Bearings occurs after arrival at site, by such avoidable aspects as incorrect or careless handling and / or inappropriate storage.
- The Transport Brackets, or temporary fixings are designed to prevent accidental relative displacement of the components prior to installation, however, they must be removed before the bearings are required to translate or rotate.
- It is important to note that these Transport Brackets are not designed to be used as lifting brackets.
- As much preparatory work as possible should be carried out prior to the bearings being moved to the final location. Care must be exercised to avoid contamination of the slide surfaces by dirt, slurry and general construction activities.
- Consideration must at all times be given to the practicality of the removal and replacement of these bearings with minimal lifting of the structure.

Installation – Different types of bearings –

Illustrated on this page are four typical methods of attaching the bearings to the structure. In each case the techniques illustrated are for the lower member. Types 1, 2 & 3 are equally applicable to the superstructure. Whilst Type 1 is considered by Granor as 'standard' the other types each have their particular features, and are utilised to satisfy project specific requirements. One feature of the Type 1 system is that the addition of the Neoprene Washer under the bearing ensures that the dowels to not carry a vertical load. In all cases, the attachment bolts should be set to "snug tight" after the concrete or grout has achieved adequate strength.

Fixed –

The basic function of the FIXED type is to accept the bulk of the horizontal loads – thus typically a high capacity attachment system is required. This can be achieved by the use of a bolt / socket system or by being directly bolted to cast in attachment plates.

Free Float –

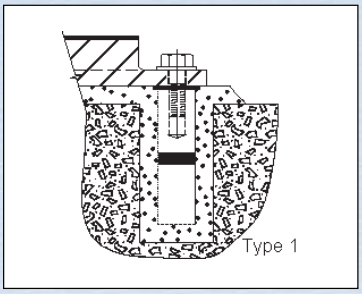
Typically, the FREE FLOAT type requires only minimal retention to the structure. Friction, a grooved recess into the top and bottom of the bearing, subsequently filled with grout, placement into a shallow recess, or similar simple techniques is often sufficient to locate and restrain this type of bearing. Traditionally though, and particularly in seismic areas, it is prudent to install Free Float Bearings using the same / similar mechanical attachment detail as that used for the Guide / Slide and Fixed types.

Guide / Slide –

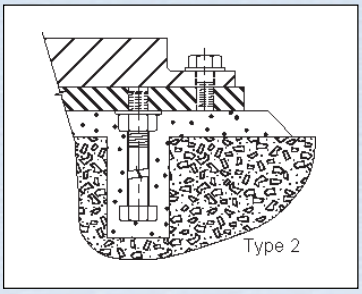
The GUIDE / SLIDE type requires positive retention, typically by means of a bolt / socket system, or by bolting to a cast in attachment plate. Such attachment plate can be for either or both, substructure and superstructure.

Shipping Weight –

Weights shown in bearing tabulations are the net weight including dowels.

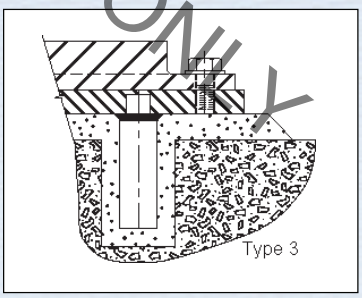


Standard configuration / most popular – Top & Bottom of bearing, bolted connection through flange of bearing, to a steel socket. Economical, easy to transport.



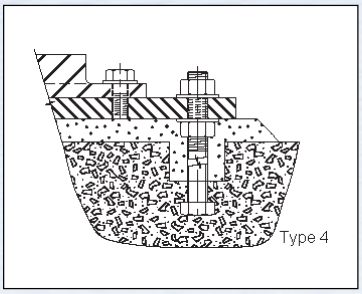
Top & Bottom Attachment / Distribution Plates with HSS galvanised bolts C/W nut and H/D flat washer, screwed into them.

Easy to set to level, simple / economical to transport, highly suitable for low /medium horizontal loads.



More expensive than Type 2, but more versatile / adaptable to accept relatively high horizontal loads.

More expensive, difficult to transport, but typically required where high horizontal loads are to be accommodated.



Applicable to bottom of bearing only – Use Types 1, 2 or 3 for top of bearing.

The addition of an elongated base plate permits the use of bolts such that accurate setting to elevation of the bearing can be achieved.

GRANOR RUBBER & ENGINEERING P/L