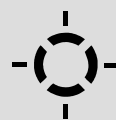




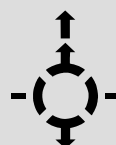
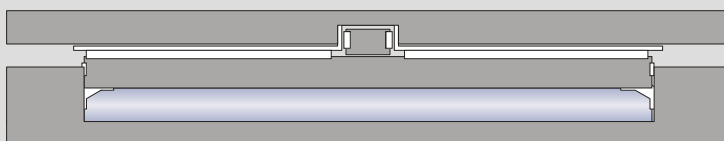
## RESTON®POT

The pot bearing with POM-Sealing, developed to satisfy the highest quality requirements and certified in accordance with the new European standard EN 1337-5.

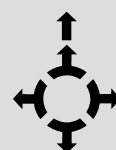
TF



TE



TA

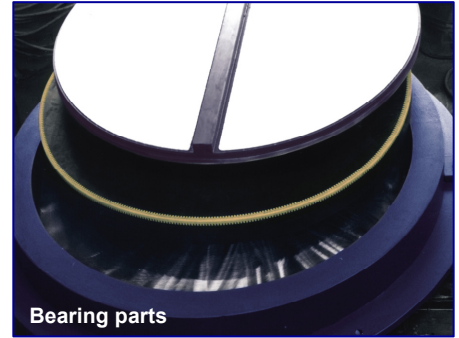


- Certified with CE-label.  
- Design in accordance  
with EN 1337-5.

### Contents

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### Principle

A natural rubber pad is placed in a steel pot, and a steel plate (piston) is placed on top. Under high pressure the pad loses its stiffness: its elasticity enables tilting movements of the piston about any horizontal axis.

Depending on whether it is a fixed, guided sliding or free sliding bearing, it can accommodate horizontal forces and movements (longitudinal or transverse) as well as vertical loads.

### Quality

mageba pot bearings have been used successfully more than 50,000 times over a period of over four decades throughout the world.

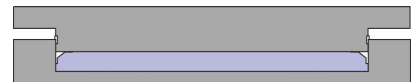
Quality and durability of bearings are ensured by:

- Qualified and experienced personnel
- Cleverly designed and reliable components (e.g. POM-sealing)
- High-quality materials (PTFE-disc with a minimum thickness of 5 mm, DU-strips with bronze pieces, well controlled silicone oil, etc.)
- High quality standard (certified to ISO9001:2000 & EN729-2)
- External supervision by a recognised building supervision institute (MPA Stuttgart, Germany)
- Licences and QA certified working and manufacturing practice

RESTON®POT bearings are manufactured in accordance with European Standard EN1337-5. They are marked with the CE label, which confirms that they fulfil every requirement of this standard.

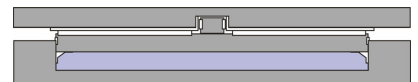
The quality and conformity is regularly inspected by the independent inspection institute MPA Stuttgart in Germany.

#### TF (fixed)



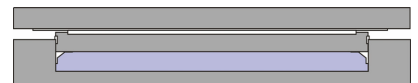
The fixed bearing is immovable and can accommodate horizontal forces from any direction.

#### TE (guided sliding)



The guided sliding bearing is movable in one direction and can accommodate horizontal forces perpendicular to this direction.

#### TA (free sliding)



The free sliding bearing is movable in all directions and therefore can not accommodate any horizontal forces.

### Design according to Eurocode 1

The load combinations on pages 6, 8 and 10 conform to the „new design concept“ according to Eurocode 1 (EN 1991-2:2003. Actions on structures. Traffic loads on bridges). Should the input loads not conform to the Eurocode, the design proof is to be carried out in accordance with the appropriate standard (DIN, AASHTO, BS, SIA, etc). The constructive details according to EN 1337-5 will not be affected by this.

### Special requirements of EN 1337-5/2

mageba pot bearings satisfy all requirements of the European bearing standard EN 1337-5/2. This standard places special demands on bearing suppliers, such as:

(1) Requirement of EN 1337: “Provision against contamination of the sliding surface shall be made by suitable devices. Such protection devices shall be easily removable for the purpose of inspection.”: mageba satisfies this by providing rubber skirts around the bearing to keep dust out. These skirts are connected by velcro-type fasteners, allowing them to be easily removed without tools for inspections etc.

(2) Requirement of EN 1337: “In order to ensure bearing alignment in accordance with EN 1337-11 a reference surface or other suitable device shall be installed on the sliding element. The deviation from parallel of the reference surface with respect to the plane sliding surface shall not exceed 1 ‰”. mageba pot bearings are therefore fitted with two spirit levels per bearing (one each in the x- and y-directions, accuracy of reading 0.6 ‰). These permanent spirit levels can be used to check levelness both during bearing installation, and when in service.

#### Additional options:

mageba bearings according to EN 1337 can additionally be provided with the following components (acc. to German Approval):

- Three-point measuring level for a more accurate levelling of the bearing
- Folding sheet for dust protection of the sliding plate

#### Coefficient of friction:

$$\mu = \frac{1,2}{\delta_{PTFE} + 10} \text{ where } 0,03 \leq \mu \leq 0,08$$

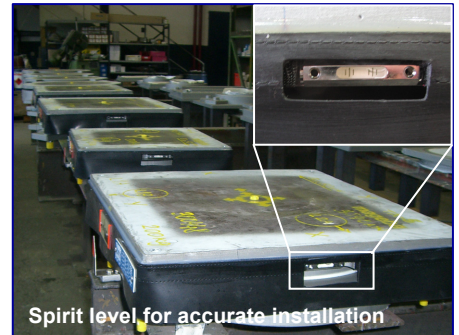
$\delta_{PTFE}$  = average PTFE-stress

#### Horizontal friction force:

$$TA\text{-bearing: } V_{xSd} = N_{Sd} \cdot \mu$$

$$TE\text{-bearing: } V_{xSd} = N_{Sd} \cdot \mu + V_y \cdot 0,2$$

$V_{xSd}$ : Horizontal friction force  
 $N_{Sd}$ : Vertical force on bearing  
 $V_y$ : Transverse force on bearing



### Design criteria

**Movements:** The dimension sheets on pages 9 and 11 give the main dimensions of the bearings. They apply the following movements :

TE **longitudinal:** 100 mm total **transverse:** -  
 TA **longitudinal:** 100 mm total **transverse:** 40 mm total  
 Larger longitudinal and transverse movements are also possible. In such cases, the top anchoring and the dimensions of the sliding plate are to be adapted.

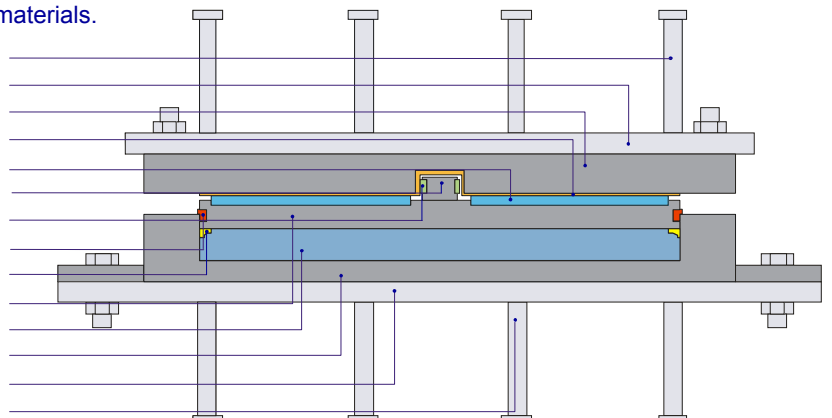
**Rotations:** The standard rotation about any axis is 0,013 radians. For bigger rotations, we adapt the bearings individually.

**Friction:** Sliding resistance is calculated on the basis of the PTFE-stress with relevant loading as well as horizontal load (see adjacent).

### Pot bearing cross section

The design of the bearing may vary slightly, depending on the bearing type. However, mageba pot bearings are made exclusively from high-quality materials.

- Upper shear bolt– optional
- Top anchor plate– optional
- Sliding plate (S355 J2G3)
- Stainless steel sliding plate (X5CrNiMo 17 12 2)
- Sliding partner (PTFE, bordered)
- Guide bar (S355 J2G3)
- Sliding elements DUB (PTFE, bronze, lead)
- Dust seal (silicone rubber)
- Seal (POM Seal chain)
- Cover (S355 J2G3)
- Elastomeric pad (natural rubber)
- Pot (S355 J2G3)
- Bottom anchor plate – optional
- Bottom shear bolt - optional





### Clever seal design (POM sealing)

A key element of the pot bearing is the elastomeric pressure pad which acts like a viscous fluid under pressure, permitting the bearing's piston to rotate. There must be a reliable seal between the pot and the cover to permit and ensure the correct functioning of this pressure pad. mageba has developed a POM seal to fulfil this purpose. It has the following advantages:

- Secure anchoring in the pressure pad
- Especially abrasion-proof hard plastic (POM)
- Numerous individual components that adapt easily to all deformations
- No noise emissions during sudden tilts

Experts worldwide consider mageba's POM seal to be the best in terms of durability, long service life and reliability. Upon request we can provide test certificates proving the outstanding performance of the POM Seal.



### Sliding plates

For sliding bearings, mageba uses exclusively PTFE-plates which are quality controlled for use in bridge bearings. The thickness varies in accordance with the bearing size, however, the minimum thickness is 5 mm. The sliding surfaces are provided with lubrication pockets for lubricant storage. Quality-controlled silicone oil is used as a lubricant; it maintains its consistency for a very long time and remains effective even at -35°C.

The side guides consist of DUB composite material. The DUB material has a thickness of 2.5 mm and is connected to the guide bar of the bearing so that shear forces can be accommodated.

For the sliding partner, quality controlled stainless steel sheeting (X2CrNiMo 17-12-2, material No. 1.4404) with a minimum thickness of 1.5 mm is used.

### Corrosion protection

Steel components exposed to the elements are corrosion protected. mageba adjusts the corrosion protection to suit exposure conditions or customer requirements.

Standard corrosion protection is as follows:

- Sandblasting SA3
- Zinc metal spray galvanizing
- Two top coatings with 2-part micaceous iron ore paint



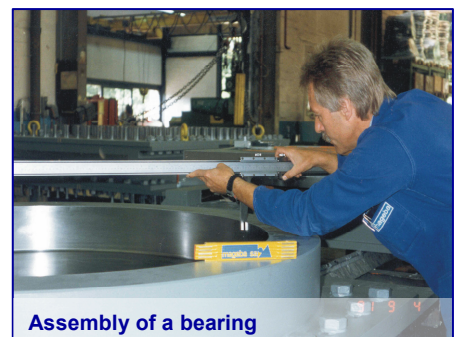
### Guaranteed quality

Many thousands of mageba pot bearings have been functioning reliably under heavy traffic conditions for more than 40 years and continue to do so. Quality and durability are guaranteed by the following factors:

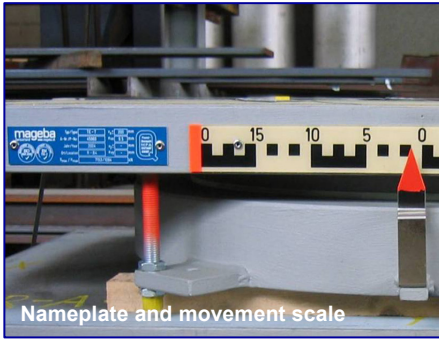
- Qualified staff with many years of experience
- Process-orientated Quality Assurance (ISO 9001 / EN 29001)
- Welding certificate according to EN 729-2
- Professional installation on the bridge

### External quality control

In addition to internal supervision, mageba has its production facilities regularly controlled by the recognised independent building supervision institute, MPA Stuttgart. This institute controls mageba's internal supervision and adherence to norms and approvals. This external quality control corresponds to the provisions of European norm (pr) EN 1337, and is another guarantee of the consistently high quality of mageba products.







### Comprehensive labelling

All bearings are provided with a label which supports professional installation of the bearing.

The typeface on the cover or sliding plate gives information on the type, size and number of a bearing. Moreover, arrows indicate the movement axis and the presetting direction as follows:

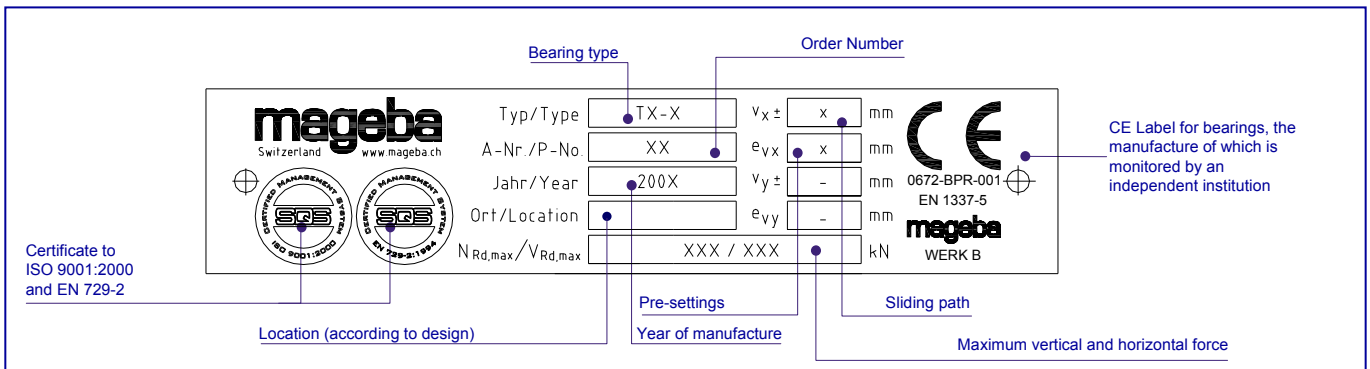
- **Arrows**  
Arrows indicate the main movement directions of movable bearings
- **Double Arrows**  
Double arrows on the sliding bearings indicate the presetting direction
- **Note**  
Temporary fixings are specially marked. They should be checked carefully in accordance with the bearing layout plan.

### CE Conformity

All mageba RESTON®POT bearings, which are manufactured in accordance with European Standard EN 1337-5, are clearly marked with the CE label. This label confirms that the pot bearing satisfies all requirements of the new European standard, without exception.

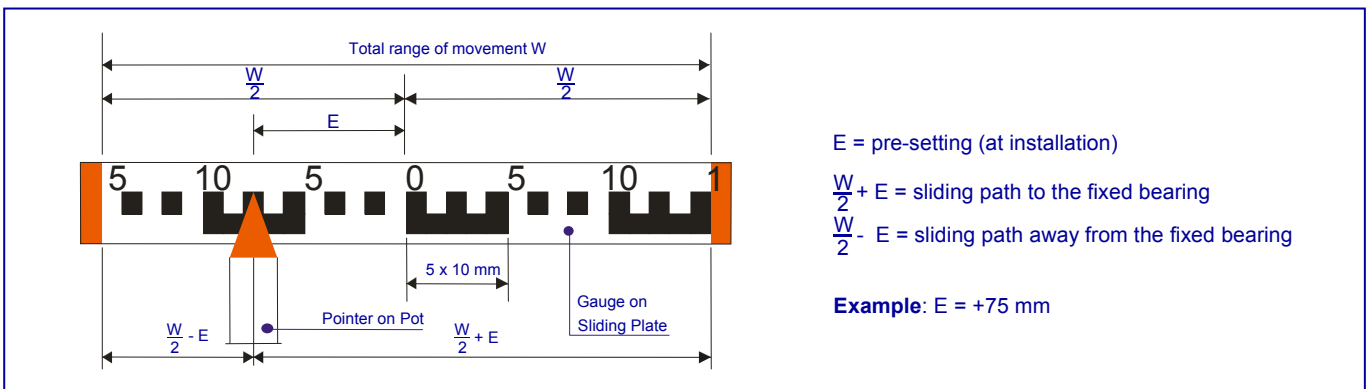
### Information label

All the important bearing information is presented on the nameplate:



### Movement gauge

The movement gauge indicates horizontal movement and pre-settings of the bearing:





Function

The TF bearings are immovable and can accommodate horizontal forces from any direction.

Movement in any direction is practically zero with fixed bearings. However, in practice there is 1mm clearance between pot and cover.

Load combination

All standard bearings are designed to withstand maximum concurrent vertical and horizontal loads.

Maximum horizontal loads are based on a concurrent minimum vertical load of about 0.4 times the maximum vertical load (friction impact). The following table shows these minimum loads.

Concrete stress

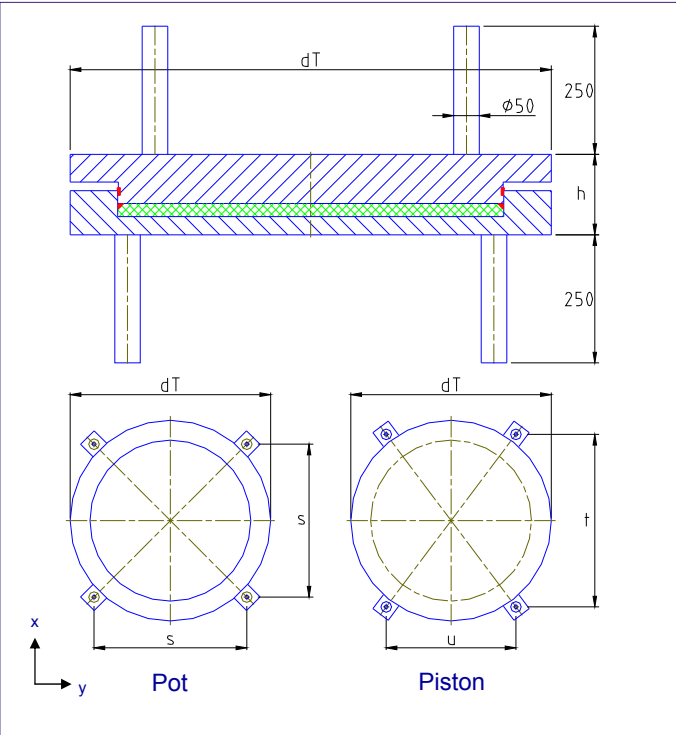
Concrete stress is calculated in accordance with European Standard EC 2 (partial area stress). Structural requirements are normally satisfied when concrete of grade C30/37 or greater is used and the spread area is about 1.6 times the pot diameter at the column and superstructure.

Loads

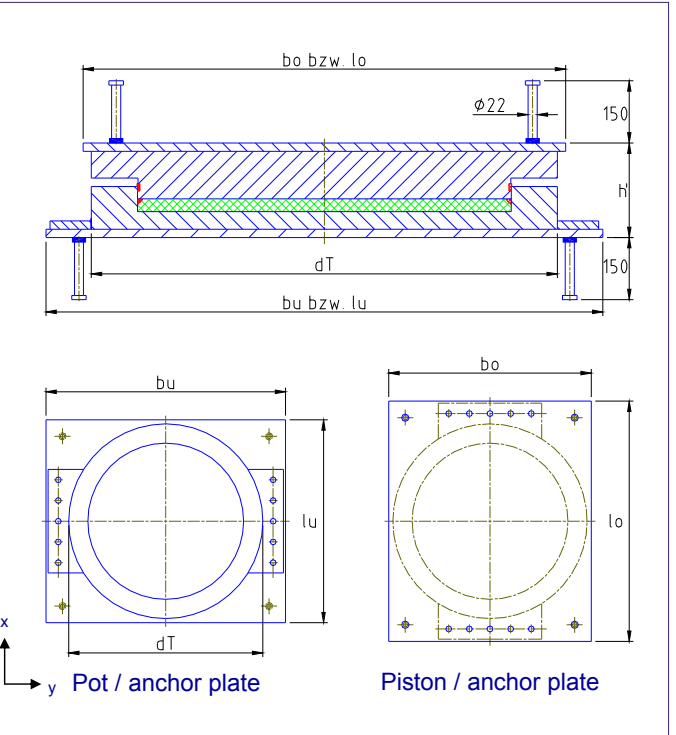
Type & Size	Bearing with anchor bolts			Bearings with anchor plates		
	Loads [kN]			Loads [kN]		
	Vertical		Horizontal	Vertical		Horizontal
	N <sub>Rd, max</sub>	N <sub>Rd, min</sub>	V <sub>xyRd, max</sub>	N <sub>Rd, max</sub>	N <sub>Rd, min</sub>	V <sub>xyRd, max</sub>
TF 1	852	323	280	852	315	280
TF 2	1'706	683	460	1'706	672	460
TF 3	2'935	976	705	2'935	630	705
TF 4	4'496	1'634	1'034	4'496	1'310	1'034
TF 5	6'388	2'060	1'247	6'388	1'711	1'247
TF 6	8'647	2'678	1'556	8'647	2'232	1'556
TF 7	11'207	3'376	1'905	11'207	3'012	1'905
TF 8	14'143	3'878	2'263	14'143	3'775	2'263
TF9	17'422	4'404	2'526	17'422	4'172	2'526
TF 10	20'986	5'228	2'938	20'986	4'996	2'938
TF 11	24'942	6'086	3'367	24'942	5'854	3'367
TF 12	29'239	6'952	3'800	29'239	6'720	3'800
TF 13	33'807	8'142	4'395	33'807	7'910	4'395
TF 14	38'782	8'660	4'654	38'782	8'612	4'654
TF 15	44'098	9'052	4'850	44'098	8'820	4'850
TF 16	49'671	9'286	4'967	49'671	9'054	4'967
TF 17	55'665	9'372	5'010	55'665	9'140	5'010
TF 18	62'000	9'892	5'270	62'000	9'660	5'270
TF 19	68'577	10'324	5'486	68'577	10'092	5'486
TF 20	75'590	10'692	5'670	75'590	10'460	5'670

N<sub>Rd, max</sub>: Maximum bearing capacity of the bearing under compression force  
N<sub>Rd, min</sub>: Minimum bearing capacity of the bearing under compression force with simultaneous shear force V<sub>xyRd, max</sub>  
V<sub>xyRd, max</sub>: Maximum bearing capacity of the bearing under shear force

Bearing with anchor bolts



Bearing with anchor plates



## Dimensions

Type & size	Bearing with anchor bolts						Bearing with anchor plates						
	Dimensions					Weight [kg]	Dimensions						Weight [kg]
	[mm]						[mm]						
	dT	s	t	u	h		dT	lu	bu	lo	bo	h'	
TF 1	200	177	217	125	76	30	200	220	310	310	220	112	45
TF 2	280	233	286	165	79	50	280	300	390	390	300	112	75
TF 3	365	301	348	244	87	90	365	390	510	510	390	119	130
TF 4	455	364	422	295	95	130	455	480	600	600	480	128	200
TF 5	540	424	491	344	100	180	540	560	700	700	560	136	290
TF 6	625	484	561	393	111	250	625	650	790	790	650	149	410
TF 7	710	544	631	442	122	345	710	730	910	910	730	160	555
TF 8	795	612	709	496	126	445	795	820	960	960	620	164	680
TF 9	875	668	774	542	136	570	875	900	1'080	1'080	900	174	865
TF 10	975	739	801	672	151	775	975	1'000	1'180	1'180	1'000	193	1'180
TF 11	1'060	799	866	726	151	890	1'060	1'080	1'280	1'280	1'080	193	1'375
TF 12	1'145	859	931	781	159	1'080	1'145	1'170	1'370	1'370	1'170	201	1'650
TF 13	1'225	916	992	832	174	1'345	1'225	1'250	1'510	1'510	1'250	222	2'120
TF 14	1'300	969	1'049	881	188	1'625	1'300	1'320	1'580	1'580	1'320	236	2'475
TF 15	1'380	1'025	1'111	932	188	1'800	1'380	1'400	1'660	1'660	1'400	237	2'770
TF 16	1'455	1'078	1'168	980	202	2'140	1'455	1'480	1'740	1'740	1'480	250	3'205
TF 17	1'530	1'131	1'226	1'028	216	2'525	1'530	1'550	1'810	1'810	1'550	262	3'715
TF 18	1'600	1'181	1'279	1'073	222	2'800	1'600	1'620	1'880	1'880	1'620	272	4'090
TF 19	1'680	1'237	1'341	1'125	223	3'055	1'680	1'700	1'960	1'960	1'700	273	4'460
TF 20	1'760	1'294	1'402	1'176	242	3'660	1'760	1'780	2'040	2'040	1'780	292	5'190

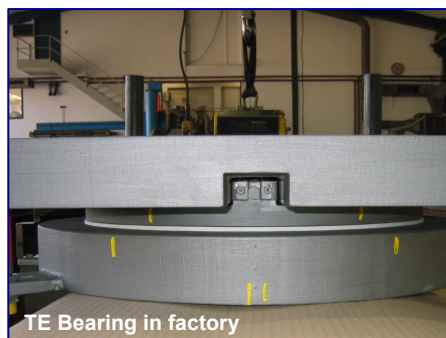
Note: Due to production tolerances the bearing height h or h' may be greater than indicated in the table above by up to 10 mm.

**Position of the guide:**

Small TE bearings (up to type 4) are fitted with an external guide for static reasons.

Medium TE bearings (type 5 to 8) are fitted with an external or central guide depending on the size of the horizontal force relative to the vertical force.

Large TE bearings (starting from type 9) are usually fitted with a central guide.



TE Bearing in factory

**Function**

TE bearings allow movement in one direction and can accommodate horizontal forces perpendicular to this direction.

TE bearings can be fitted with either one central guide (indicated by "i" in bearing type) or two external guides (indicated by "a").

Movement perpendicular to the guides is theoretically zero. In practice, there is up to 2 mm clearance. A DUB / stainless steel sliding system ensures smooth sliding in the guide.

**Load combination**

All standard bearings are designed so that they can accommodate maximum horizontal and vertical forces simultaneously.

Maximum allowed horizontal forces are based on a concurrent minimum vertical load of 0.4 times the maximum load. The following table indicates these loads.

**Concrete stress**

Concrete stress is calculated according to European Standard EC 2 (partial area stress). Structural requirements are normally satisfied when concrete of grade C30/37 or greater is used and the spread area is about 1.6 times the pot diameter at the column and superstructure.

**Loads**

Type & size	Bearing with anchor bolts			Bearing with anchor plates		
	Vertical		Horizontal	Vertical		Horizontal
	Loads [kN]		Loads [kN]	Loads [kN]		Loads [kN]
	$N_{Rd,max}$	$N_{Rd,min}$	$V_{yRd,max}$	$N_{Rd,max}$	$N_{Rd,min}$	$V_{yRd,max}$
TE 1a	620	356	192	620	356	192
TE 2a	1'486	488	329	1'486	488	329
TE 3a	2'772	887	542	2'772	881	542
TE 4a	4'395	1'425	897	4'395	1'034	897
TE 5a	6'388	1'792	1'071	6'388	1'341	1'071
TE 6a	8'647	2'166	1'248	8'647	1'714	1'248
TE 7a	11'207	2'536	1'422	11'207	2'083	1'422
TE 8a	14'143	2'695	1'599	14'143	2'458	1'599
TE 5i	4'780	1'785	1'071	4'780	1'425	1'071
TE 6i	7'011	2'158	1'248	7'011	1'708	1'248
TE 7i	9'627	2'527	1'422	9'627	2'076	1'422
TE 8i	12'678	2'687	1'599	12'678	2'451	1'599
TE 9i	16'128	3'062	1'775	16'128	2'825	1'775
TE 10i	19'917	3'435	1'950	19'917	3'199	1'950
TE 11i	24'169	3'812	2'126	24'169	3'575	2'126
TE 12i	28'820	4'192	2'303	28'820	3'954	2'303
TE 13i	33'771	4'566	2'477	33'771	4'335	2'477
TE 14i	38'782	4'947	2'654	38'782	4'708	2'654
TE 15i	44'098	5'329	2'831	44'098	5'090	2'831
TE 16i	49'671	5'706	3'008	49'671	5'463	3'008
TE 17i	55'665	6'087	3'185	55'665	5'836	3'185
TE 18i	62'000	6'468	3'362	62'000	6'209	3'362
TE 19i	68'577	6'849	3'539	68'577	6'582	3'539
TE 20i	75'590	7'230	3'716	75'590	6'955	3'716

$V_{xyRd,max}$ : Maximum bearing capacity of the bearing under shear force

$N_{Rd,max}$ : Maximum bearing capacity of the bearing under compressive force

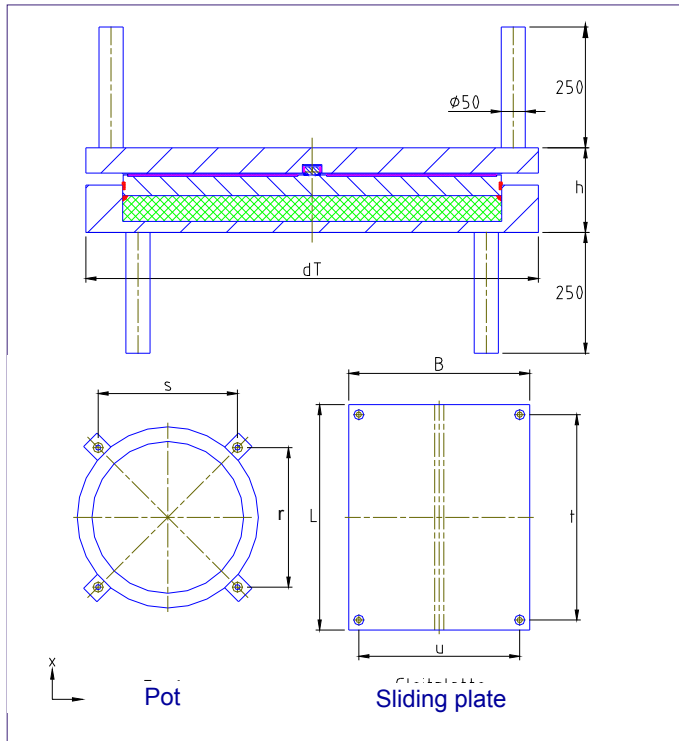
$N_{Rd,min}$ : Minimum bearing capacity of the bearing under compressive force with a simultaneous shear force  $V_{xyRd,max}$

a: External guides

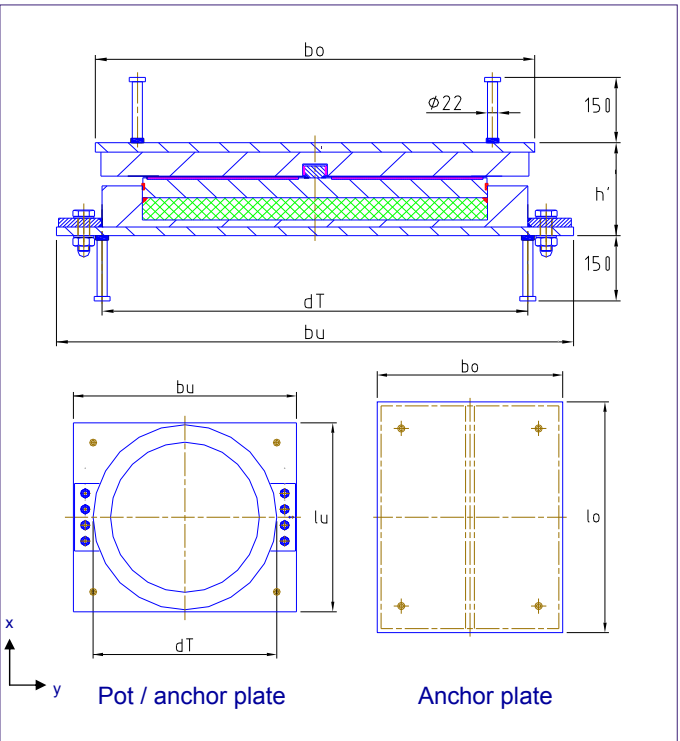
i: Central (or internal) guides



### Bearing with anchor bolts



### Bearing with anchor plates



## Dimensions

Type & size	Bearing with anchor bolts									Bearing with anchor plates						
	Bearing dimensions								Weight	Bearing dimensions						Weight
	[mm]									[mm]						
	dT	B	L	r	s	t	u	h		[kg]	dT	bu	lu	bo	lo	
TE 1a	200	270	390	144	204	346	214	92	50	200	330	220	290	410	125	70
TE 2a	270	330	450	184	262	406	274	102	80	270	420	290	350	470	135	115
TE 3a	360	420	520	236	335	476	364	114	135	360	510	380	440	540	148	195
TE 4a	450	510	590	285	423	536	430	140	245	450	600	470	530	610	172	320
TE 5a	535	580	660	341	487	606	480	144	320	535	700	560	600	700	182	445
TE 6a	620	650	730	390	557	676	560	158	440	620	790	640	670	760	195	595
TE 7a	690	710	810	430	614	754	614	165	545	690	860	710	730	840	202	730
TE 8a	780	780	880	500	688	814	690	174	715	780	950	800	800	900	212	935
TE 5i	525	530	630	336	479	576	450	144	290	525	700	550	550	670	181	395
TE 6i	610	615	710	384	548	654	526	154	390	610	780	630	640	740	191	530
TE 7i	685	690	790	428	610	734	620	160	500	685	860	710	710	810	197	675
TE 8i	770	775	870	482	688	804	684	164	645	770	940	790	800	890	201	840
TE 9i	850	855	950	528	754	884	764	168	780	850	1050	870	880	970	205	1'030
TE 10i	930	935	1'030	573	819	964	869	175	950	930	1130	950	960	1'050	214	1'260
TE 11i	1'025	1'030	1'130	628	897	1'064	964	188	1'230	1'025	1'230	1'050	1'050	1'150	228	1'620
TE 12i	1'105	1'110	1'210	674	963	1'144	1'044	202	1'520	1'105	1'310	1'130	1'130	1'230	242	1'970
TE 13i	1'175	1'180	1'280	714	1'019	1'214	1'114	216	1'830	1'175	1'380	1'200	1'200	1'300	262	2'410
TE 14i	1'255	1'260	1'360	760	1'085	1'294	1'194	225	2'140	1'255	1'460	1'280	1'280	1'380	271	2810
TE 15i	1'340	1'345	1'440	809	1'155	1'374	1'279	238	2'570	1'340	1'540	1'360	1'370	1'460	285	3'340
TE 16i	1'450	1'455	1'550	872	1'245	1'484	1'389	250	3'180	1'450	1'670	1'470	1'480	1'570	302	4'180
TE 17i	1'525	1'530	1'630	915	1'307	1'564	1'464	266	3'730	1'525	1'750	1'550	1'550	1'650	318	4'780
TE 18i	1'600	1'605	1'700	958	1'368	1'634	1'539	280	4'300	1'600	1'890	1'620	1'630	1'720	335	5'620
TE 19i	1'680	1'685	1'780	1'003	1'433	1'714	1'619	294	4'980	1'680	1'970	1'700	1'710	1'800	349	6'420
TE 20i	1'755	1'760	1'860	1'046	1'494	1'794	1'694	302	5'540	1'755	2'050	1'780	1'780	1'880	357	7'120

The catalogue dimensions L, t, and lo are designed for a total longitudinal movement (W) of 100 mm. For greater movements, the dimensions have to be adapted respectively (e.g. for W= 350 mm: L, t and lo must be increased by 250 mm).

Note: Due to production tolerances, the bearing height h or h' may be greater than indicated in the table above, by up to 10 mm.



### Function

The TA bearing allows movement in all directions and therefore does not accommodate any horizontal forces.

Lateral displacement of TA Bearings is normally limited to +/- 20 mm. Bearings which allow larger lateral displacement can be designed on request.

### Concrete stress

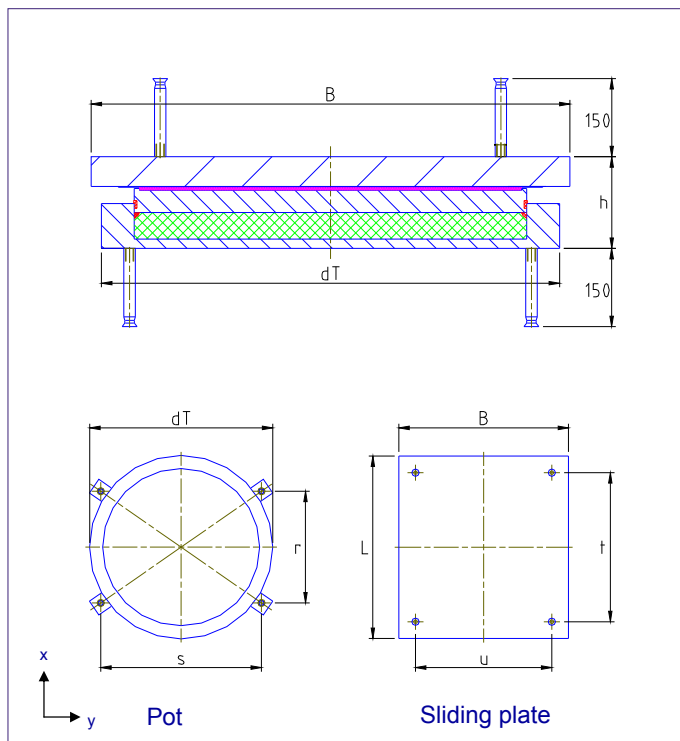
Concrete stress is calculated according to European Standard EC 2 (partial area stress). Structural requirements are normally satisfied when concrete of grade C30/37 or greater is used and the spread area is about 1.6 times the pot diameter at the column and superstructure.

### Loads

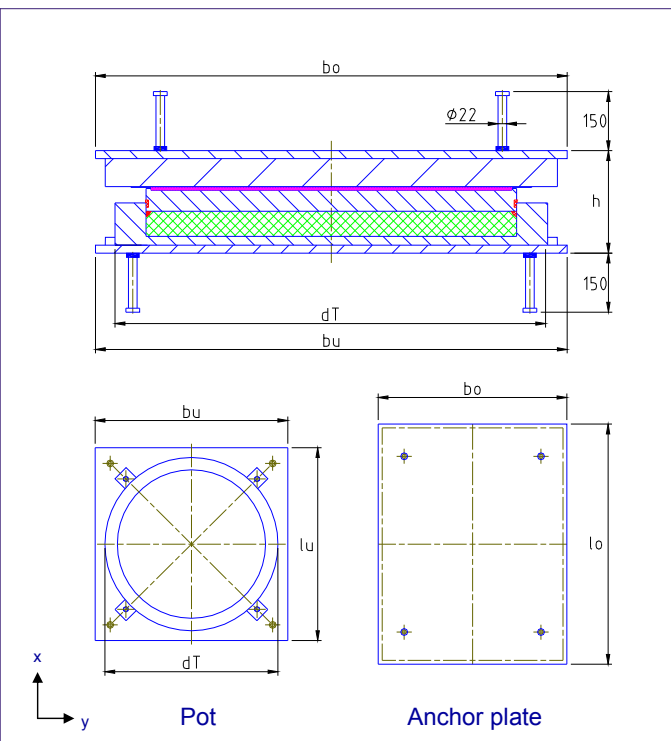
Type & Size	Loads [kN]
	Vertical
	$N_{Rd,max}$
TA 1	714
TA 2	1'595
TA 3	2'913
TA 4	4'496
TA 5	6'388
TA 6	8'647
TA 7	11'207
TA 8	14'143
TA 9	17'422
TA 10	20'986
TA 11	24'942
TA 12	29'239
TA 13	33'807
TA 14	38'782
TA 15	44'098
TA 16	49'671
TA 17	55'665
TA 18	62'000
TA 19	68'577
TA 20	75'590

$N_{Rd,max}$ : Maximum bearing capacity of the bearing under compressive force

### Bearing with threaded sleeve anchorages



### Bearing with anchor plates



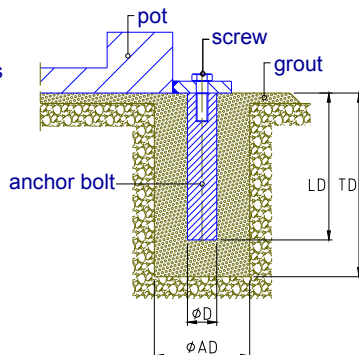
## Dimensions

Type & Size	Bearing without anchor plate									Bearing with anchor plates						
	Dimensions [mm]								Weight [kg]	Dimensions						Weight [kg]
										[mm]						
	dT	B	L	r	s	t	u	h		dT	bu	lu	bo	lo	h'	
TA 1	200	250	300	171	182	272	208	86	30	200	270	270	270	320	120	55
TA 2	270	310	370	209	243	328	268	86	45	270	320	320	330	390	120	80
TA 3	350	390	450	257	306	408	348	95	80	350	380	380	410	470	128	130
TA 4	420	460	520	279	378	478	418	105	125	420	450	450	480	540	138	190
TA 5	500	540	600	319	448	558	498	119	195	500	520	520	560	620	155	290
TA 6	570	610	670	382	501	616	556	123	255	570	600	600	630	690	161	380
TA 7	650	690	750	421	571	696	636	137	360	650	670	670	710	770	175	515
TA 8	720	760	820	451	637	766	706	147	470	720	740	740	780	840	184	650
TA 9	800	840	900	490	707	846	786	162	630	800	820	820	860	920	199	855
TA 10	880	920	980	536	772	926	866	176	820	880	900	900	940	1'000	215	1'105
TA 11	960	1'000	1'060	576	842	1'006	946	183	1'010	960	980	980	1'020	1'080	223	1'355
TA 12	1'040	1'080	1'140	660	892	1'074	1'014	192	1'235	1'040	1'060	1'060	1'100	1'160	233	1'645
TA 13	1'130	1'170	1'230	717	962	1'164	1'104	211	1'595	1'130	1'150	1'150	1'190	1'250	257	2'130
TA 14	1'210	1'250	1'310	763	1'028	1'244	1'184	226	1'950	1'210	1'230	1'230	1'270	1'330	272	2'560
TA 15	1'300	1'340	1'400	821	1'097	1'334	1'274	235	2'325	1'300	1'320	1'320	1'360	1'420	281	3'025
TA 16	1'380	1'420	1'480	867	1'163	1'414	1'354	249	2'775	1'380	1'400	1'400	1'440	1'500	300	3'650
TA 17	1'460	1'500	1'560	906	1'233	1'494	1'434	262	3'270	1'460	1'480	1'480	1'520	1'580	314	4'260
TA 18	1'540	1'580	1'640	946	1'303	1'574	1'514	271	3'730	1'540	1'560	1'560	1'600	1'660	326	4'885
TA 19	1'620	1'660	1'720	993	1'367	1'654	1'594	281	4'245	1'620	1'640	1'640	1'680	1'740	336	5'520
TA 20	1'710	1'750	1'810	1'049	1'438	1'744	1'684	300	5'105	1'710	1'730	1'730	1'770	1'830	355	6'520

The catalogue dimensions B, L, u, t, bo and lo are designed for total longitudinal movement (W) of 100 mm and lateral movement (W') of 40 mm. For greater movements, the dimensions must be adapted respectively (e.g. for W=350 mm and W'=100 mm: L, t, and lo must be increased by 250 and B, u, and bo by 60 mm).

## Anchor bolts

- Suitable for TE & TF bearings without anchor plate
- For resistance of horizontal forces
- Can be omitted if sufficient vertical force acts



Pot bearing with anchor bolts

### Note:

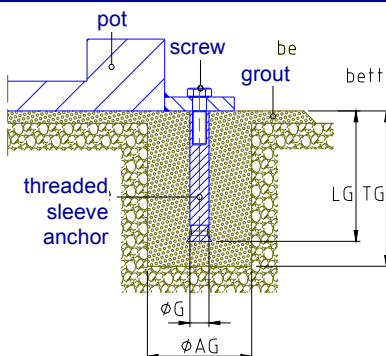
If there is sufficient friction between the bearing and the sub- or superstructure to accommodate horizontal forces the anchor bolts or threaded sleeve anchors can be omitted.

### Recess:

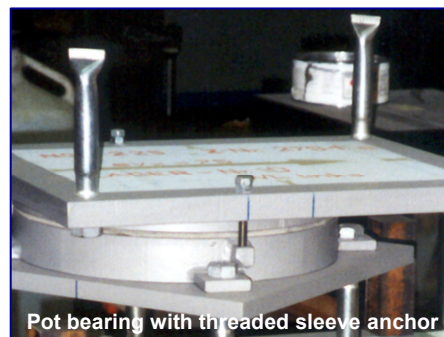
Static requirements determine the anchor size. Suitable recesses ( $\phi A$ ,  $T$ ) are presented in the adjacent tables.

## Threaded sleeve anchors

- Suitable for TA Bearings without anchor plate
- Structural connection to the bearing socket
- Can be left out if necessary



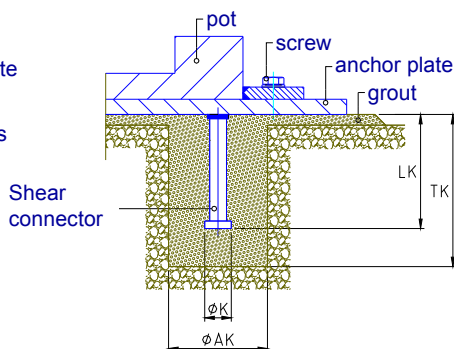
Screw	Threaded sleeve anchors		Recess	
	ØG	LG	ØAG	TG
M 12	17	100	150	150
M 16	22	150	150	200
M 20	26	150	150	200



Pot bearing with threaded sleeve anchor

## Anchor plates

- Anchoring of the anchor plate with shear connectors
- Number of shear connectors depends on the static circumstances

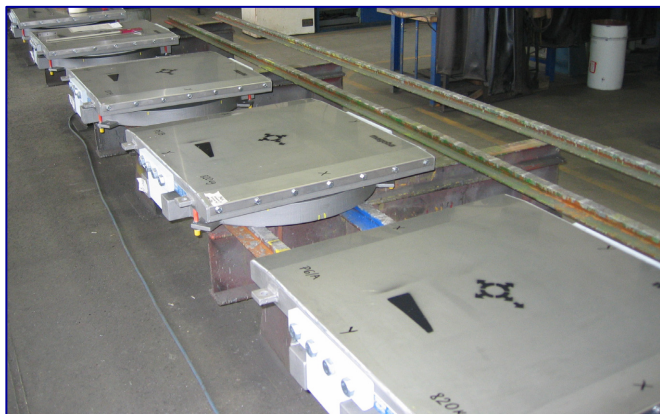


Ø	Shear connector		Recess	
	ØK	LK	ØAK	TK
22	35	150	150	200



Pot bearing with anchor plates





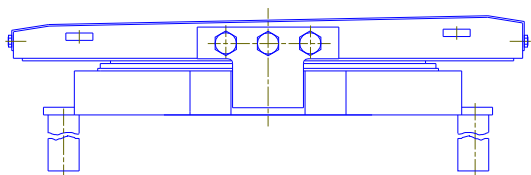
### RESTON®POT ILM Incremental launching bearing

The same bearing can be used for both the installation of the bridge and as a permanent bearing.

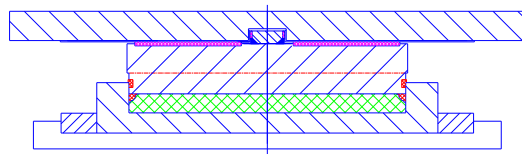


### RESTON®POT CONTROL Lift & measurement bearings

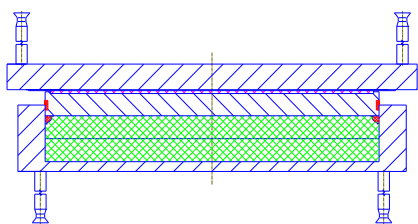
The loads acting on the bearing can be constantly electronically monitored. This bearing can also be used to lift the bridge.



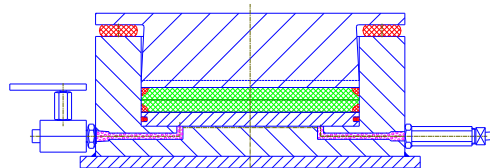
ILM - bearing



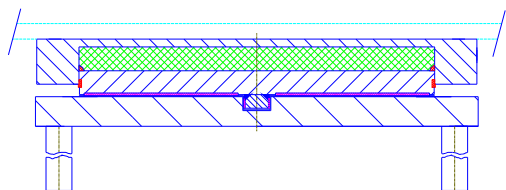
Lateral catch with block



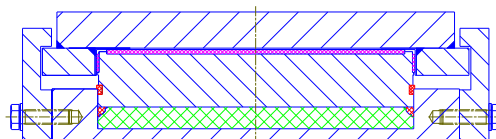
Pot bearing for large tilts



Measuring and lifting bearing



Bearing installed reversed for steel superstructure



TE- bearing with uplift protection



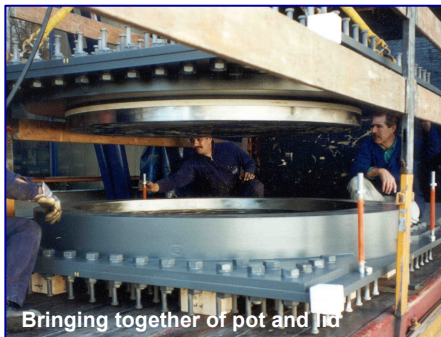
Formation of a steel ring



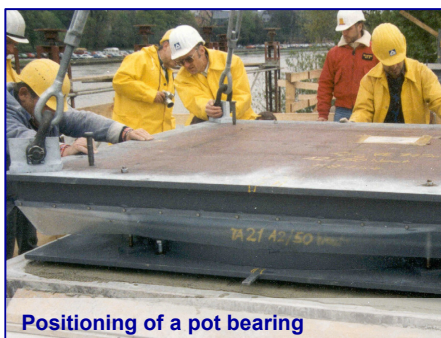
Lid of the pot bearing



Greasing of a sliding plate



Bringing together of pot and lid



Positioning of a pot bearing

## General

mageba pot bearings are high quality engineering components which must be handled with care during transport, assembly and installation.

Sliding surfaces, seals, movement scales and corrosion protection are sensitive to damage and require particular protection.

## Assembly

We assemble the bearings in the factory. Pot and piston, or sliding plate, are clamped together with four bolts for safe transportation.

## Presetting

If the presetting of bearings is required, please submit the exact presetting value *E* *before* start of the manufacturing. Presetting is always done in the factory and only trained employees may adjust the presetting value later.

## Calibration

The bearing location plan is essential for a correct installation of the bearing. Pay particular attention to all markings and indications.

The structural axes are indicated with notches in the lower section of the pot ring to enable the bearing to be positioned in precisely the correct location.

The height and the horizontal position are adjusted by setscrews. The reference point for installation height is the centre of the top plate or sliding plate.

The reference plane for the horizontal position is the upper edge of the pot ring or the sliding surface for sliding bearings. The margin of error for the inclination must not exceed 3‰.

## Placing

After positioning and before placing the grout layer, the recess spaces at the anchor bolts (if any) are concreted. Local shrinkage is thus avoided in this area. The mortar bed should not be thicker than 50mm. Most recognised fluid mortars or grouts that are poured into surrounding raised formwork are suitable for the mortar bed.

Sliding plates which project beyond the pot bearing must be rigidly supported at their corners before concreting the superstructure.

## Commissioning

The pot bearing should be capable of moving freely as soon as the substructure and superstructure have been connected. To permit this, the four transportation bolts between the pot and the top plate or sliding plate must be cut through and removed.

## Inspection and maintenance

The condition and position of the pot bearing should be inspected at regular intervals.



### Your enquiry

When requesting a quotation, please provide the design criteria if possible, to enable us to give you the best quotation.

We process quotes immediately and make them available as soon as possible.

### Our quotation

We can send you an indicative offer on the basis of classification and number of bearings. For a binding offer we need the following information:

- Maximum, minimum and permanent vertical loads
- Longitudinal and transverse forces
- Most unsuitable load combination with the maximum horizontal force and the minimum vertical load
- Movements in longitudinal and transverse directions of the bridge
- Rotations in longitudinal and transverse directions of the bridge
- Concrete strength
- General data on the structure (concrete or steel bridge, fixing details of the bridge bearings, etc.)

A more detailed list of the necessary information has been defined in European norm EN 1337, part 1, pages 26 – 27 (this can be downloaded from [www.mageba.ch](http://www.mageba.ch)).



Staff of our technical department

### Placing of orders

In addition to the information already supplied, the following documents are also necessary when placing an order:

- Layout drawing of the structure
- Details of all movements to be facilitated
- Pre-setting values

Work begins once the customer has approved and returned the documents, with pre-setting values indicated.

Delivery time is kept to a minimum thanks to an efficient order processing system and modern manufacturing methods.

### The most important features of the mageba pot bearing to EN 1337

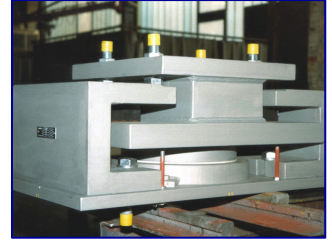
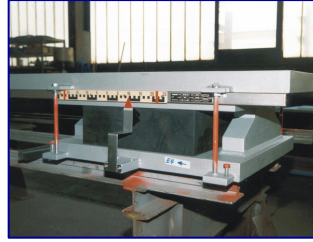
- mageba has been producing pot bearings since 1963
- Pot Bearings are approved in many countries, including Germany, Austria, Sweden and Finland
- Quality control in accordance with ISO 9001:2000 and certified in accordance with EN 729-2
- External quality control conducted by an independent building supervision institute
- Certificate for welding works in accordance with DIN 18800-7
- Design according to EC 3, BS 5400, DIN 18800, SIA 161 etc.
- Construction strictly according to EN 1337

**Øresund Bridge, Denmark - Sweden**  
Equipped with mageba pot bearings for vertical loads up to 90'000 kN and horizontal loads up to 40'000 kN.



## Bridge Bearings

- Pot Bearings
- Elastomeric Bearings
- Earthquake Bearings
- Spherical Bearings
- Incremental Launch Bearings
- Special Bearings
- Rocker Bearings



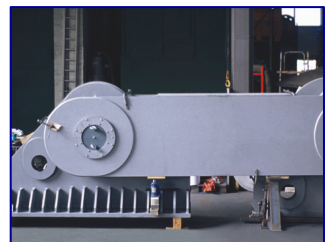
## Expansion Joints

- Single Gap Joints
- Modular Expansion Joints
- Sliding Finger Joints
- Cantilever Finger Joints
- Matt Joints
- Railway Joints
- Architectural Joints



## Shock Absorbers

- Hydraulic Shock Absorbers
- Spring Dampers



## Services

- Inspections
- Tests
- Installations
- Refurbishments
- Cleaning
- Remote monitoring



More information on mageba and its products can be found on [www.mageba.ch](http://www.mageba.ch).

## Worldwide references



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