

苏州海德工程材料科技有限公司

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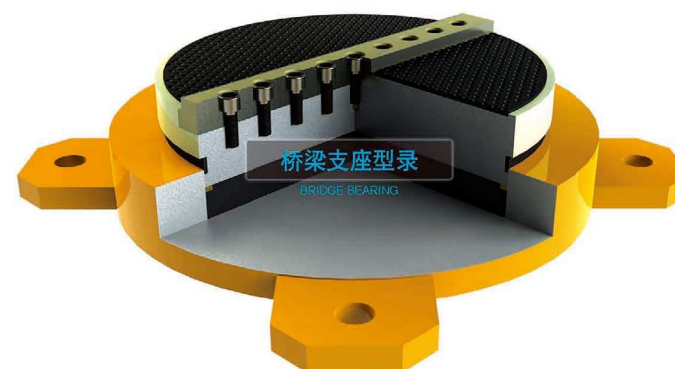
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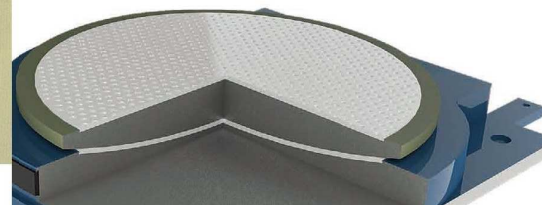
苏州海德工程材料科技有限公司生产车间透视图



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海德公司生产各类公路铁路桥梁支座，TB/T《铁路桥梁盆式橡胶支座》、GB/T17955《球型支座技术条件》、TB/T1853《铁路桥梁铸钢支座》等国家及行业有关标准的要求，拥有国家技术监督局在公路桥梁支座行业颁发的《工业产品生产许可证》，铁路

桥梁支座通过了铁道部CRCC认证，产品荣获“全国用户满意产品”称号。

海德公司还为海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

## RAILWAY BRIDGE ELASTOMERIC POT BEARING 铁路桥梁 盆式橡胶支座

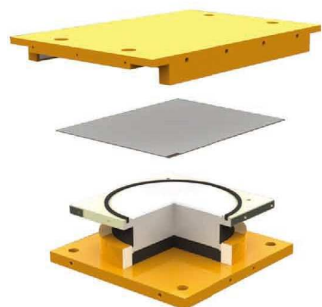
HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T《Elastomeric Pot Bearing for Railway》, GB/T17955《Technical Specification for Spherical Bearing》, TB/T1853《Technical Specification of Steel Bearings for Railway Bridge》, etc. Company is with the production license issued

by State Bureau of Technical Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.







KTPZ

## KTPZ SERIES POT BEARING

### KTPZ系列盆式橡胶支座

KTPZ系列盆式橡胶支座是按照铁道行业标准TB/T 2331-2004《铁路桥梁盆式橡胶支座》和《客运专线桥梁盆式橡胶支座暂行技术条件》设计的，其常用跨度简支T梁与简支箱梁安装尺寸满足铁道部发布的通桥(2007)8360统一的安装图，该系列支座适用于350km/h以下各类客运专线。

KTPZ series pot bearing is designed in accordance with the standard of ministry of railway TB/T 2331-2004《Elastomeric Pot Bearings for Railway》,《Temporary Technical Conditions for Passenger Expressway Bridge Elastomeric Pot Bearing》. Installation dimensions of this series applied on common span T-beam and box-beam meet with Ministry of Railway (2007)8360 Bearing Drawing Requirements. This series of product is applied in various passenger express way with speed less than 350m/h.

## CKPZ-P(T) SERIES POT BEARING (HEIGHT ADJUSTABLE)

### CKPZ-P(T)系列盆式(调高)橡胶支座



CKPZ

CKPZ-P(T)系列盆式(调高)橡胶支座是根据《客运专线桥梁盆式橡胶支座暂行技术条件》、《客运专线桥梁盆式橡胶支座补充规定》及相关规范，并参照欧洲支座标准EN1337联合设计的，该系列支座采用中间导轨导向和改性超高分子量聚乙烯滑板作为耐磨板，适用于设计时速为350km/h及以下客运专线与设计时速为200km/h及以下客货共线铁路桥梁。

CKPZ-P(T) series pot bearings (height adjustable) is designed in accordance with the standard of《Temporary Technical Conditions of Passenger Expressway Bridge Elastomeric Pot Bearing》and《Supplementary Regulations for Passenger Expressway Bridge Elastomeric Pot Bearing》. During design the Europe Standard EN1337 is also taken into consideration. This kind of product takes UHMW PE as material for slider plate and the guide is located in the middle part. This series of bearing applied in passenger expressway with design speed no more than 350km/h and passenger and freight railway with design speed no more than 200km/h.

海德公司生产各类公路铁路桥梁支座，TB/T《铁路桥梁盆式橡胶支座》、GB/T17955《球型支座技术条件》、TB/T1853《铁路桥梁转钢支座》等国家及行业有关标准的要求，拥有国家质量监督局在公路桥梁支座行业颁发的《工业产品生产许可证》，铁路桥梁支座通过了铁道部CRCC认证，产品荣获“全国用户满意产品”称号。

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Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.



● 高速铁路桥梁支座  
● High-speed railway bridge bearing

## TGPZ-P(T) SERIES ELASTOMERIC POT BEARING

### TGPZ-P(T)系列盆式橡胶支座

TGPZ-P(T)系列盆式橡胶支座是按照铁道行业标准TB/T2331-2004《铁路桥梁盆式橡胶支座》和《客运专线桥梁调高盆式橡胶支座暂行技术条件》而设计的支座。TGPZ-P是不带油腔的机械式调高盆式橡胶支座，TGPZ-T是自带油腔的调高盆式橡胶支座，适用于设计时速为350Km/h及以下客运专线与设计时速为200Km/h及以下客货共线铁路桥梁。

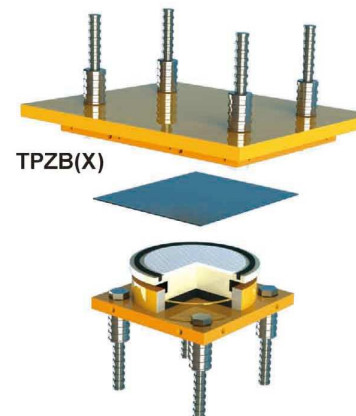
TGPZ-P(T) series pot bearings is designed in accordance with the standard of ministry of railway TB/T2331-2004《Elastomeric Pot Bearing for Railway》and《Supplementary Regulations for Passenger Expressway Bridge Elastomeric Pot Bearing》. TGPZ-P is mechanical height adjustable pot bearing without a oil chamber while TGPZ-T is height adjustable pot bearing with a oil chamber. This series of bearing applied in passenger expressway with design speed no more than 350km/h and passenger and freight railway with design speed no more than 200km/h.



TGPZ-P(T)

## TPZB(X) SERIES ELASTOMERIC POT BEARING

### TPZB(X)系列盆式橡胶支座



TPZB(X)

TPZB(X)系列盆式橡胶支座是根据铁道部《新建时速200公里客货共线铁路设计暂行规定》及相关铁路设计规范设计，适应新建时速200公里及以下客货共线和客运专线铁路桥梁，也可用于轻轨桥梁。

TPZB(X) elastomeric pot bearing is designed in accordance with standard of ministry of railway《Temporary Technical Conditions for 200km/h Passenger and Freight Railway》. It widely applies in passenger and freight railway with speed no more than 200 km/h, passenger expressway and light rail.



## TECHNICAL PERFORMANCE

### 技术性能

#### ■ 竖向承载力:

1500 2000 3000 3500 4000 4500 5000 5500 6000 7000 8000 9000  
10000 12500 15000 17500 20000 22500 25000 27500 30000 32500  
35000 37500 40000 45000kN.

#### ■ 水平承载力:

- 固定支垫各向
- 纵向活动支垫
- 横向活动支垫

约束向设计水平力为支垫竖向设计承载力的:  
15% 设计地震峰值加速度 $A_g=0.1g$ 地区;  
20% 设计地震峰值加速度 $0.1g < A_g \leq 0.15g$ 地区;  
30% 设计地震峰值加速度 $0.15g < A_g \leq 0.2g$ 地区;

- 多向活动支垫
- 纵向活动支垫
- 横向活动支垫

滑动方向水平力为支垫竖向设计承载力的5%。

#### ■ DESIGN VERTICAL LOAD

1500 2000 3000 3500 4000 4500 5000 5500 6000 7000 8000 9000  
10000 12500 15000 17500 20000 22500 25000 27500 30000 32500  
35000 37500 40000 45000kN.

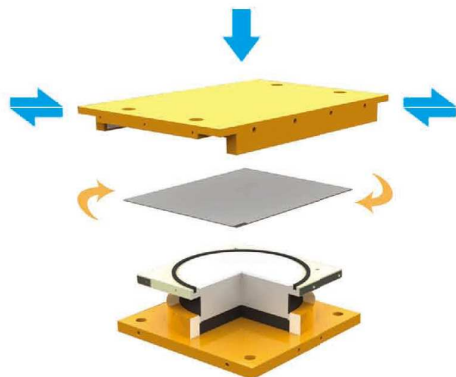
#### ■ DESIGN HORIZONTAL LOAD

- For free direction of fixed bearing.
- For longitude movement bearing.
- For transverse movement bearing.

The design horizontal load of non-movement direction is:  
15% of design vertical load: for areas where earthquake dynamic peak acceleration:  $A_g=0.1g$   
20% of design vertical load: for areas where earthquake dynamic peak acceleration:  $0.1g < A_g \leq 0.15g$   
30% of design vertical load: for areas where earthquake dynamic peak acceleration:  $0.15g < A_g \leq 0.2g$

- For free movement bearing
- For longitude movement bearing
- For transverse movement bearing

The design horizontal load of movement direction is 5% of the design vertical load.



海德公司生产各类公路铁路桥梁支垫。TB/T《铁路桥梁盆式橡胶支垫》、GB/T17955《球型支垫技术条件》、TB/T1853《铁路桥梁橡胶支垫》等国家标准及行业有关标准的要求。拥有国家技术监督局在公路桥梁支垫行业颁发的《工业产品生产许可证》。铁路桥梁支垫通过了铁道部CRCC认证。产品荣获“全国用户满意产品”称号。

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#### ■ 支垫转角

支垫转角为0.02rad

#### ■ 支垫位移

DX多向活动支垫和ZX纵向活动支垫顺桥向设计位

简支梁部分: 1000~1500KN  $\pm 30mm$   
2000~3000KN  $\pm 50mm$   
3500~7000KN  $\pm 60mm$   
连续梁部分: 4000~45000KN  $\pm 100mm$

#### ■ 摩擦系数

常温型为0.03 耐寒型为0.05

#### ■ 高度调节范围

可采用在盆腔底面填充聚氨酯或支垫顶面加垫钢板进行调高, 支垫调高量不小于20mm。

#### ■ 温度适用范围

常温型氯丁橡胶和天然橡胶  $-25^{\circ}\text{C} \sim 60^{\circ}\text{C}$   
耐寒型三元乙丙橡胶和天然橡胶  $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

#### ■ 支垫坡度

支垫坡度适用范围0~20%

#### ■ THE DESIGN ROTATION ANGLE IS 0.02RAD

#### ■ THE DESIGN DISPLACEMENT OF A BEARING

Design longitude direction displacement for free movement bearing (DX) and transverse movement bearing (ZX):  
In the part of simple beam: 1000~1500KN  $\pm 30mm$   
2000~3000KN  $\pm 50mm$   
3500~7000KN  $\pm 60mm$   
In the part of continuous beam: 4000~45000KN  $\pm 100mm$

#### ■ THE DESIGN FRICTION COEFFICIENT OF BEARING

Normal temperature:  $\mu=0.03$  Low temperature:  $\mu=0.05$

#### ■ THE DESIGN HEIGHT ADJUSTMENT RANGE OF BEARING

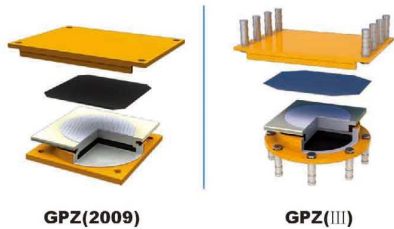
Adjust the height with polyurethane in bottom or add steel plate on top of the bearing. The adjustment range  $\geq 20mm$

#### ■ TEMPERATURE RANGE

Normal temperature type: chloroprene rubber and natural rubber:  $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
Low temperature type: EPDM and natural rubber:  $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$

#### ■ THE DESIGN SLOPE RANGE

The slope range is 0~20%.



GPZ(2009)

GPZ(III)

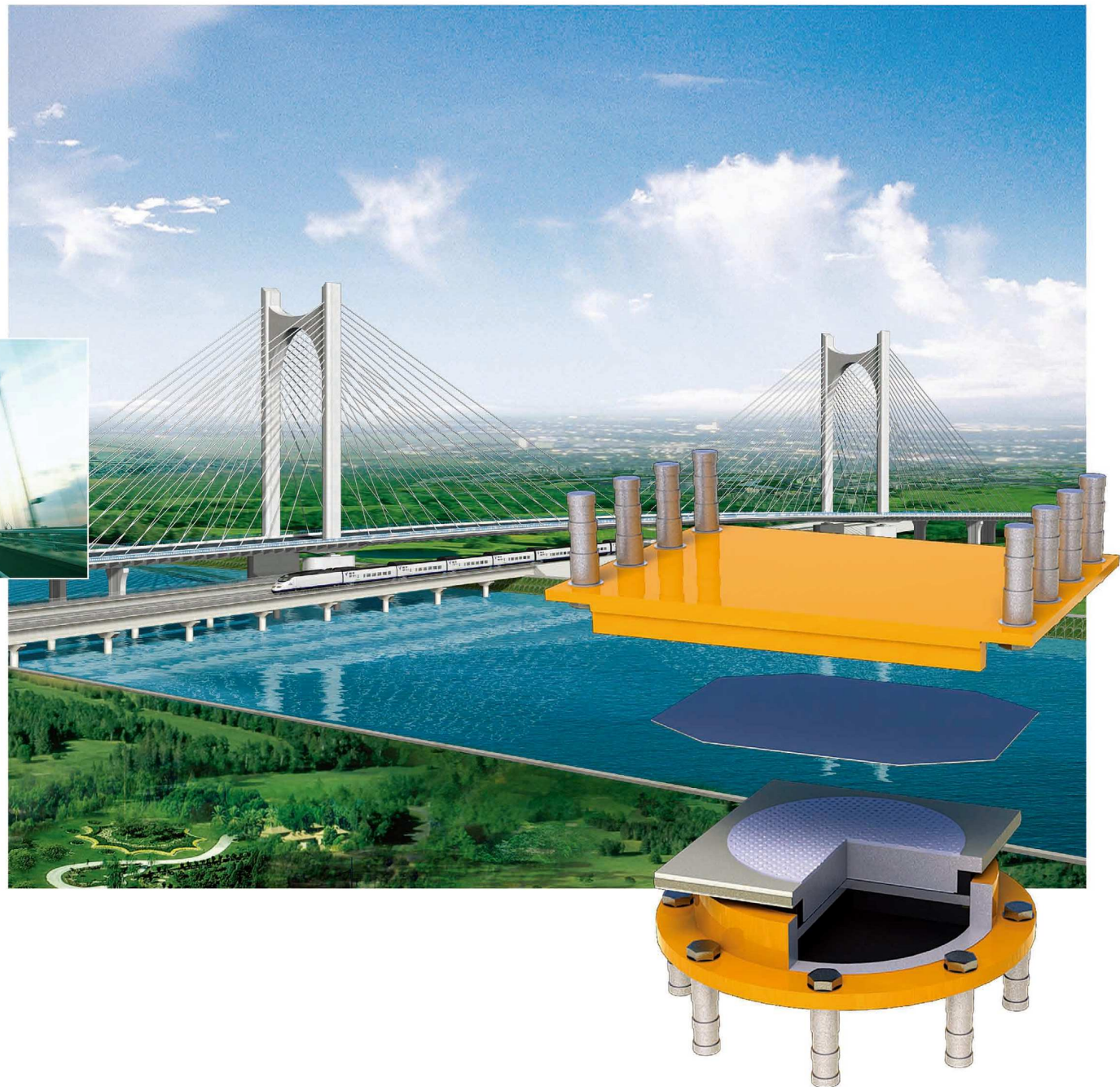
盆式橡胶支座是交通部“七五”期间重点科研项目。该项目由我厂与交通部公路规划设计院、铁道部科学研究院共同完成，并通过交通部鉴定。通过二十多年的不断改进创新，现已开发形成 GPZ(2009)、GKZ(III) 等系列盆式橡胶支座，上百种规格。该系列产品均具有结构紧凑、承载能力大、摩擦系数小、滑移自如、转动灵活等特点。



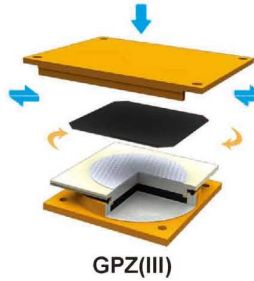
## HIGHWAY BRIDGE 公路桥梁盆式橡胶支座 POT BEARING

For Ministry of Communications pot bearing is an important scientific research project of the Seventh Five-Year Plan. This project is designed by CCCC Highway Consultants Co., Ltd, China Academy of Railway Sciences and HAIDER. This project has been qualified by Ministry of Communications.

After more than 20 years of effort now we have GPZ(II) and GKZ(KZ) series pot bearing which include more than 100 kinds of products. These kinds of product have characters of compact conformation, big design load, small friction coefficient, and free movement etc.







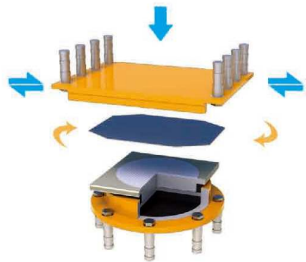
GPZ(III)系列抗震盆式橡胶支座  
适用于基本烈度为8级（及以下）地区的桥梁结构。

GPZ(III)

## INTRODUCTION OF GPZ(2009) / GPZ(III) GPZ(2009) / GPZ(III) 支座说明

GPZ(2009) / GPZ(III)系列盆式橡胶支座是按照交通行业标准JT391《公路桥梁盆式橡胶支座》，并参考英国标准BS5400和欧洲标准EN1337的规定进行设计。

GPZ(2009) / GPZ(III) series pot bearings is designed in accordance with the standard of JT391《Highway Bridge Elastomeric Pot Bearing》. During design the British Standard BS5400 and the Europe Standard EN1337 are also taken into consideration.



GPZ(2009)

- **THE DESIGN ROTATION ANGLE IS 0.02RAD**
- **THE DESIGN DISPLACEMENT OF A BEARING**  
Design longitude direction displacement for free movement
- **THE DESIGN HEIGHT ADJUSTMENT RANGE OF BEARING**  
Adjust the height with polyurethane in bottom or add steel plate on to top of the bearing. The adjustment range  $\geq 20\text{mm}$
- **THE DESIGN FRICTION COEFFICIENT OF BEARING**  
Normal temperature:  $\mu=0.03$  Low temperature:  $\mu=0.05$
- **TEMPERATURE RANGE**  
Normal temperature type: chloroprene rubber and natural rubber:  $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
Low temperature type: EPDM and natural rubber:  $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$

## TECHNICAL PERFORMANCE 技术性能

- **支座转角**  
支座转角为0.02rad
- **水平承载力:**  
GPZ(2009):GD固定支座各向、DX单向活动支座水平承载力为竖向承载力的10%  
GPZ(III):GD固定支座各向、DX单向活动支座水平承载力为竖向承载力的20%
- **支座设计承载力**  
GPZ(2009):0.4MN ~ 60MN分33个等级  
GPZ(III):0.8MN ~ 60MN分31个等级
- **摩擦系数**  
常温型  $\mu < 0.03$   
耐寒型  $\mu < 0.06$
- **适用温度范围:**  
GPZ(2009):常温型 氯丁橡胶和天然橡胶  $-25^{\circ}\text{C} \sim 60^{\circ}\text{C}$   
耐寒型 三元乙丙橡胶和天然橡胶  $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$   
GPZ(III):常温型 氯丁橡胶和天然橡胶  $-25^{\circ}\text{C} \sim 60^{\circ}\text{C}$

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● The biggest tonnage bearing for highway in the world 160MN Spherical Bearing for Guangfu River Bridge, Jinming, Shandong Province, China

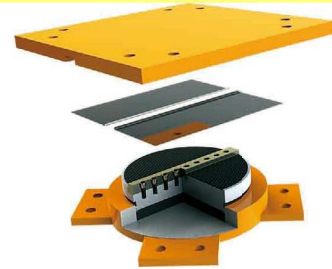
● 世界最大吨位公路桥梁支座 济宁龙河河大桥160MN球型支座

## G1,M1

## INTRODUCTION OF JPZ JPZ支座说明

JPZ系列盆式橡胶支座是按照行业标准，同时参照并满足欧洲标准进行设计，适用于各类公路、市政道路及轨道交通桥梁。

JPZ series pot bearings are designed in accordance with industry standard and Europe Standard. They are to be used on various kinds of highway, town road and light-rail.

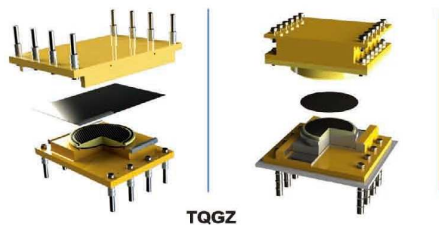


JPZ

## TECHNICAL PERFORMANCE 技术性能

- **竖向承载:**  
0.4MN~60MN
- **水平承载力:**  
固定支座各向、单向活动型支座非活动方向  
10% —— 设计地震动峰值加速度  $A_g < 0.05g$  地区;  
15% —— 设计地震动峰值加速度  $0.05g < A_g < 0.1g$  地区;  
22.5% —— 设计地震动峰值加速度  $0.1g < A_g < 0.15g$  地区;  
双向活动型支座各向、单向活动型支座活动方向的水平承载力不大于支座竖向承载力的5%。
- **支座转角**  
设计转角不小于  $\pm 0.02\text{rad}$
- **位移**  
单向活动型支座活动方向横向放置时横桥向的位移量和双向活动型支座横桥向的位移量为  $\pm 50\text{mm}$ ; 单向活动型支座的纵向和双向活动型支座的顺桥向位移量为  $\pm 50\text{mm}$ 、 $\pm 100\text{mm}$ 、 $\pm 150\text{mm}$ 、 $\pm 200\text{mm}$ 、 $\pm 250\text{mm}$ 。
- **摩擦系数**  
摩擦系数不大于0.03
- **适用温度范围:**  $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

- **DESIGN VERTICAL LOAD**  
0.4MN~60MN
- **DESIGN HORIZONTAL LOAD**  
For free direction of fixed bearing and un-movement direction of guided bearing  
10%: for areas where earthquake dynamic peak acceleration:  $A_g \leq 0.05g$   
15%: for areas where earthquake dynamic peak acceleration:  $0.05g < A_g \leq 0.1g$   
22.5%: for areas where earthquake dynamic peak acceleration:  $0.1g < A_g \leq 0.15g$   
For free direction of two-way movement bearing and movement direction of guided bearing the design horizontal load is no more than 5% of design vertical load.
- **THE DESIGN ROTATION ANGLE**  
The design rotation angle is not less than  $\pm 0.02\text{rad}$ .
- **THE DESIGN DISPLACEMENT**  
When the guided bearing's movement direction is transverse direction the transverse direction design displacement is  $\pm 50\text{mm}$ . The transverse direction design displacement of two-way movement bearing is  $\pm 50\text{mm}$ .  
The movement direction design displacement of guided bearing and the longitude direction design displacement of two-way movement bearing is  $\pm 50\text{mm}$ ,  $\pm 100\text{mm}$ ,  $\pm 150\text{mm}$ ,  $\pm 200\text{mm}$  and  $\pm 250\text{mm}$ .
- **THE DESIGN FRICTION COEFFICIENT OF A BEARING**  
The design friction coefficient of a bearing is no more than 0.03.
- **TEMPERATURE RANGE**  
 $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$



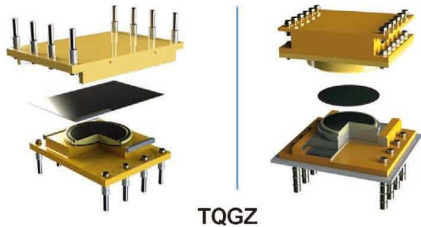
## 球型支座 SPHERICAL BEARING 铁路 / 公路 RAILWAY / HIGHWAY

球型支座是铁道部科学研究院与我厂共同研制成功。填补国内空白的新型桥梁支座。该产品具有承载能力大、转动灵活、转动力矩小、容许转角大、适应温度范围广、养护工作量小等特点，特别适用于曲线桥、宽桥、坡度桥和大跨度桥梁。

Spherical bearing is a new kind of bearing in China which is developed by our company together with China Academy of Railway Sciences. With characters of large load ability, rotation flexibility, small rotation moment, large permitted rotation angle, large temperature range and small workload for maintenance this kind of bearing is suitable for curved bridge, wide bridge, slope bridge and long span bridge.







TQGZ

## SPHERICAL BEARING 铁路球型支座 FOR RAILWAY

### DESIGN VERTICAL LOAD

Design vertical load for a bearing to be used on a simple beam:

1000 ~ 20000kN

Design vertical load for a bearing to be used on a continuous beam:

1000 ~ 10000kN

Design vertical load for a bearing to be used on a steel construction bridge:

22000kN

### DESIGN HORIZONTAL LOAD

- For free direction of fixed bearing,
- For longitude movement bearing,
- For transverse movement bearing,

The design horizontal load is:

15%: for areas where earthquake dynamic peak acceleration:

$A_g \leq 0.1g$

22.5%: for areas where earthquake dynamic peak acceleration:

$0.1g < A_g \leq 0.15g$

30%: for areas where earthquake dynamic peak acceleration:

$0.15g < A_g \leq 0.2g$

45%: for areas where earthquake dynamic peak acceleration:

$0.2g < A_g \leq 0.3g$

The design horizontal load for longitude direction of longitude movement bearing, transverse direction of transverse movement bearing and free direction of free movement bearing is 5% of design vertical load.

### THE DESIGN ROTATION ANGLE

The design rotation angle is 0.02rad

### THE DESIGN DISPLACEMENT OF A BEARING

Simple beam: design displacement for longitude direction of a free movement bearing and a longitude movement bearing:  $\pm 50mm$  for bearings with design vertical load lower than 3000kN,  $\pm 60mm$  for others; design displacement for transverse direction of free movement bearing and transverse movement bearing is  $\pm 10mm$ . Continuous beam: design displacement for longitude direction of a free movement bearing and a longitude movement bearing is in 4 level:  $\pm 50$ ,  $\pm 100$ ,  $\pm 150$  and  $\pm 200mm$ ; design displacement for transverse direction of free movement bearing and transverse movement bearing is  $\pm 10mm$ .

## INSTRUCTION FOR TQGZ BEARING

### TQGZ支座说明

TQGZ球型钢支座是中铁第一勘察设计院集团有限公司与成都市新筑路桥机械股份有限公司根据西部地区地质、地理、气候及环境要求设计而成的一种高耐候支座。适用于时速 $< 350km/h$ 的客运专线、时速 $< 200km/h$ 的客货共线以及地震动峰值加速度 $A_g \leq 0.3g$ 的铁路桥梁。

TQGZ is designed by China Railway First Survey and Design Institute Group Ltd. and Chengdu Xinshu Road & Bridge Machinery Co., LTD. According to geology, geography, weather and environment condition in west area of China this product is designed with high weatherability. This bearing applied in passenger expressway with design speed no more than 350km/h, passenger and freight railway with design speed no more than 200km/h and railway with earthquake dynamic peak acceleration  $A_g \leq 0.3g$ .

## TECHNICAL PERFORMANCE

### 技术性能

- 竖向承载力: 简支梁用支座设计竖向承载力: 1000 ~ 20000kN  
连续梁用支座设计竖向承载力: 1000 ~ 100000kN  
钢结构桥梁支座设计竖向承载力: 22000kN

- 水平承载力: ● 固定支座各向  
● 纵向活动支座  
● 横向活动支座

15% --设计地震动峰值加速度 $A_g \leq 0.1g$ 地区;

22.5% --设计地震动峰值加速度 $0.1g < A_g \leq 0.15g$ 地区;

30% --设计地震动峰值加速度 $0.15g < A_g \leq 0.2g$ 地区;

45% --设计地震动峰值加速度 $0.2g < A_g \leq 0.3g$ 地区;

纵向活动支座顺桥向、横向活动支座横桥向和多向活动支座各向的设计水平力为支座设计竖向承载力的5%。

### ■ 支座转角

支座转角为0.02rad

### ■ 支座位移

简支梁: 多向活动支座和纵向活动支座顺桥向设计位移: 竖向设计承载力3000kN以下为 $\pm 50mm$ , 其余为 $\pm 60mm$ ; 多向活动支座和横向活动支座横桥向设计位移为 $\pm 10mm$ 。

连续梁: 多向活动支座和纵向活动支座顺桥向设计位移分为 $\pm 50$ ,  $\pm 100$ ,  $\pm 150$ 和 $\pm 200mm$ 四级; 多向活动支座和横向活动支座横桥向设计位移为 $\pm 10mm$ 。

海德公司生产各类公路铁路桥梁支座, TB/T《铁路桥梁盆式橡胶支座》, GB/T17955《球型支座技术条件》, TB/T1853《铁路桥梁铸钢支座》等国家及行业有关标准的要求, 拥有国家技术监督局在公路桥梁支座行业颁发的《工业产品生产许可证》, 铁路桥梁支座通过了铁道部CRCC认证, 产品荣获“全国用户满意产品”称号。

海德公司还为海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T (Elastomeric Pot Bearing for Railway), GB/T17955 (Technical Specification for Spherical Bearing), TB/T 1853 (Technical Specification of Steel Bearings for Railway Bridge), etc. Company is with the production license issued by State Bureau of Technical

Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.



- The biggest tonnage bearing for highway in the world 160MN Spherical Bridge Bearing for Guanglu River Bridge, Jinan, Shandong Province, China
- 郑州市中心区铁路跨线桥150MN球型支座及80MN拉压球型支座

### ■ THE DESIGN FRICTION COEFFICIENT OF BEARING

Normal temperature:  $\mu=0.03$  Low temperature:  $\mu=0.05$

### ■ SLOPE RANGE 0 ~ 25‰

### ■ TEMPERATURE RANGE -50℃ ~ 60℃

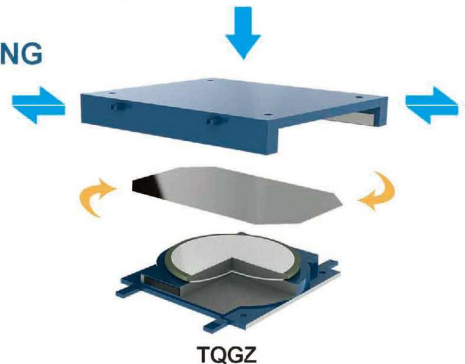
### ■ 摩擦系数 常温型为0.03 耐寒型为0.05

### ■ 坡度范围 0 ~ 25‰

### ■ 温度适用范围 -50℃ ~ 60℃

SPHERICAL BEARING

## SPHERICAL BEARING 公路球型支座 FOR HIGHWAY



TQGZ

## INTRODUCTION FOR QZ BEARING

### QZ支座说明

QZ系列球型支座严格执行国家标准GB/17955-2009《球型支座技术条件》, 同时还参照欧洲标准化委员会编制的EN1337《结构支座标准》、英国标准BS5400《钢桥、混凝土桥及结合梁》的规定, 适用于各型公路桥梁。

The design of QZ series bearing is in accordance with National Standard GB/T 17955-2009 (Technical Requirements for Spherical Bearings), EN1337 (Structural Bearing) composed by European Committee for Standardization and British Standard BS5400 (Steel, Concrete and Composite Bridges). This series of bearing is suitable for all kinds of highway bridge.

## TECHNICAL PERFORMANCE

### 技术性能

- 竖向承载力: 1500~60000 kN

- 水平承载力: ● 固定支座各向  
● 纵向活动支座  
● 横向活动支座

设计水平力为支座竖向设计承载力的: 10%

### ■ DESIGN VERTICAL LOAD

Design vertical load for a bearing to be used on a simple beam:

1000 ~ 20000kN

Design vertical load for a bearing to be used on a continuous beam:

1000 ~ 10000kN

Design vertical load for a bearing to be used on a steel construction bridge:

22000kN

### ■ DESIGN HORIZONTAL LOAD

- For free direction of fixed bearing,
- For longitude movement bearing,
- For transverse movement bearing,

The design horizontal load is 10% of design vertical load

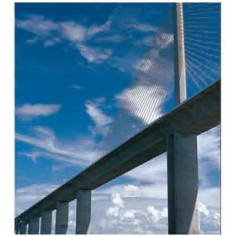
海德公司生产各类公路铁路桥梁支座, TB/T《铁路桥梁盆式橡胶支座》、GB/T17955《球型支座技术条件》、TB/T1853《铁路桥梁铸钢支座》等商家及行业有关标准的要求, 拥有国家技术质量监督局在公路桥梁支座行业颁发的《工业产品生产许可证》, 铁路桥梁支座通过了铁道部CRCC认证, 产品荣获“全国用户满意产品”称号。

海德公司还力海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T《Elastomeric Pot Bearing for Railway》, GB/T17955《Technical Specification for Spherical Bearing》, TB/T 1853《Technical Specification of Steel Bearings for Railway Bridge》, etc. Company is with the production license issued by State Bureau of Technical

Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.



## ■ 支座转角

支座转角为0.02rad

## ■ 支座位移

DX多向活动支座和纵向活动支座顺桥向设计位移分为 $\pm 50\text{mm}$ ,  $\pm 100\text{mm}$ ,  $\pm 150\text{mm}$ 和 $\pm 200\text{mm}$  4级;  
DX多向活动支座横桥向设计位移为 $\pm 40\text{mm}$ 。

## ■ 摩擦系数

常温型为0.03 耐寒型为0.05

## ■ 温度适用范围

常温型氯丁橡胶和天然橡胶  $-25^{\circ}\text{C} \sim 60^{\circ}\text{C}$   
耐寒型三元乙丙橡胶和天然橡胶  $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

## ■ THE DESIGN ROTATION ANGLE

The design rotation angle is 0.02rad

## ■ THE DESIGN DISPLACEMENT OF A BEARING

The design longitude displacement of a free movement bearing (DX) and a longitude movement bearing is in 4 levels  $\pm 50$ ,  $\pm 100$ ,  $\pm 150$  and  $\pm 200\text{mm}$ .

Design transverse displacement of a free movement bearing (DX) is  $\pm 40\text{mm}$ .

## ■ THE DESIGN FRICTION COEFFICIENT OF A BEARING

Normal temperature:  $\mu=0.03$  Low temperature:  $\mu=0.05$

## ■ TEMPERATURE RANGE

Normal temperature type: chloroprene rubber and natural rubber:  $-25^{\circ}\text{C} \sim +60^{\circ}\text{C}$   
Low temperature type: EPDM and natural rubber:  $-40^{\circ}\text{C} \sim +60^{\circ}\text{C}$

## TECHNICAL PERFORMANCE

### 技术性能

#### ■ 竖向承载力:

1.0MN~70.0MN

#### ■ 水平承载力:

固定支座各向、单向活动型支座非活动方向  
10% 一设计地震动峰值加速度 $A_g < 0.05g$ 地区;  
15% 一设计地震动峰值加速度 $0.05g < A_g < 0.1g$ 地区;  
22.5% 一设计地震动峰值加速度 $0.1g < A_g < 0.15g$ 地区;  
双向活动型支座各向、单向活动型支座活动方向的水平承载力不大于支座竖向承载力的5%。

#### ■ 支座转角

支座转角为0.02rad

#### ■ 支座位移

单向活动型支座活动方向横向放置时横桥向的位移量和双向活动型支座横桥向的位移量为 $\pm 40\text{mm}$ ;  
单向活动型支座的的活动方向和双向活动型支座的顺桥向位移量分为 $\pm 50\text{mm}$ ,  $\pm 100\text{mm}$ ,  $\pm 150\text{mm}$ ,  $\pm 200\text{mm}$ ,  $\pm 250\text{mm}$ ,  $\pm 200\text{mm}$ 。

#### ■ 摩擦系数

摩擦系数不大于0.03

#### ■ 温度适用范围

$-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

## ■ DESIGN VERTICAL LOAD

1.0MN~70.0MN

## ■ DESIGN HORIZONTAL LOAD

For free direction of fixed bearing and un-movement direction of guided bearing  
10%: for areas where earthquake dynamic peak acceleration:  $A_g < 0.05g$   
15%: for areas where earthquake dynamic peak acceleration:  $0.05g < A_g < 0.1g$   
22.5%: for areas where earthquake dynamic peak acceleration:  $0.1g < A_g < 0.15g$   
For free direction of two-way movement bearing and movement direction of guided bearing the design horizontal load is no more than 5% of design vertical load.

## ■ THE DESIGN ROTATION ANGLE

The design rotation angle is 0.02rad

## ■ THE DESIGN DISPLACEMENT OF A BEARING

When the guided bearing's movement direction is transverse direction the design transverse direction movement is  $\pm 40\text{mm}$ . The design transverse direction displacement of two-way movement bearing is  $\pm 40\text{mm}$ .  
The movement direction design displacement of guided bearing and the longitude direction design displacement of two-way movement bearing is  $\pm 50\text{mm}$ ,  $\pm 100\text{mm}$ ,  $\pm 150\text{mm}$ ,  $\pm 200\text{mm}$  and  $\pm 250\text{mm}$ .

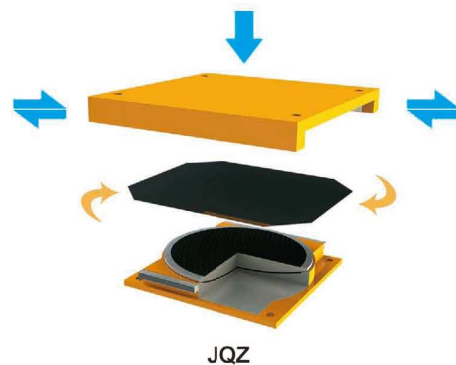
## ■ THE DESIGN FRICTION COEFFICIENT OF A BEARING

The design friction coefficient of a bearing is no more than 0.03.

## ■ TEMPERATURE RANGE

$-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

QZ SERIES BEARING



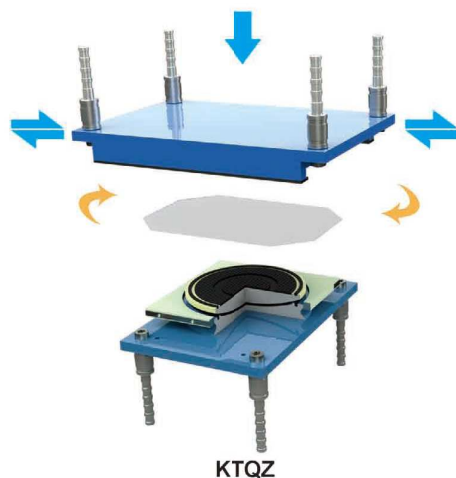
## INTRODUCTION OF JQZ BEARING

### JQZ支座说明

JQZ系列球型钢支座是按照国家标准, 同时参照并满足欧洲标准进行设计, 适用于各类公路、市政道路及轨道交通桥梁。

JQZ series spherical bearings are designed in accordance with National Standard and Europe Standard. They are to be used on various kinds of highway, town road and light-rail.





### THE ADVANTAGE OF KTQZ SERIES BEARING:

- Materials: High wear-resistant, high-resistance, low-friction, anti-aging super-modified polymer polyethylene plate
- Injection hole for silicon grease in order to further improve the wear performance of modified UHMWPE plate
- Bearing bolt given full consideration to the handing of space, using vertical and horizontal layout.
- In the outside of spherical surface and plane sliding plate set up the polyurethane rubber seals in order to improve the working environment of bearings sliding plate.
- In the vertical (ZX) and horizontal (HX) movement bearings set up a rotation bushing, can significantly reduce the movement resistance and wear performance of bearing at the time of displacement.

## KTQZ SERIES SPHERICAL STEEL BEARING

### KTQZ系列球型钢支座

KTQZ系列球型钢支座是根据国家标准GB/T17955《球型支座技术条件》、《客运专线桥梁盆式橡胶支座暂行技术条件》和欧洲支座设计标准EN1337《结构支座》设计的适用于客运专线连续梁桥、铁路连续梁桥及其它大跨度公路铁路桥梁的新型钢支座。

The design of KTQZ series bearing is in accordance with National Standard GB/T17955《Technical Conditions for Spherical Bearing》,《Temporary Technical Conditions for Passenger Expressway Bridge Elastomeric Pot Bearing》and Europe Standard EN 1337 Part 7《Spherical and Cylindrical PTFE Bearings》. This series of bearing is suitable to be used on passenger expressway continuous beam bridge, railway continuous beam bridge and other big span highway bridge.

## MAIN CHARACTERS OF KTQZ SERIES BEARINGS

### 支座特点

KTQZ系列球型钢支座除具有常规球型支座的特点外，还具有以下性能特点：

- 采用高耐磨、高抗压、低摩擦、耐老化的改性超高分子聚乙烯板。
- 在球冠衬板上设有硅脂注脂孔，以进一步改善改性超高分子聚乙烯板的耐磨性能。
- 充分考虑了支座锚栓的装卸空间，锚栓采用纵向和横向交错布置。
- 在球面和平面滑板外侧设置了聚氨酯橡胶密封圈，改善支座滑板的工作环境。
- 纵向(ZX)和横向(HX)滑动支座上设置了转动衬套，可显著减小支座位移时的位移阻力和磨损。



海德公司生产各类公路铁路桥梁支座，TB/T《铁路桥梁盆式橡胶支座》、GB/T17955《球型支座技术条件》、TB/T1853《铁路桥梁钢制支座》等国家及行业有关标准的要求，拥有国家技术质量监督局在公路桥梁支座行业颁发的《工业产品生产许可证》，铁路桥梁支座通过了铁道部CRCC认证，产品荣获“全国用户满意产品”称号。

海德公司还为海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T《Elastomeric Pot Bearing for Railway》, GB/T17955《Technical Specification for Spherical Bearing》, TB/T 1853《Technical Specification of Steel Bearings for Railway Bridge》, etc. Company is with the production license issued by State Bureau of Technical

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HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400



- The biggest tonnage bearing for highway in the world 180MN Spherical Bridge Bearing for Guanglu River Bridge, Jinan, Shandong Province, China.
- 世界最大吨位公路桥梁支座 济宁洸河大桥180MN球型支座

## TECHNICAL PERFORMANCE

### 技术性能

#### ■ 竖向承载力:

3000 ~ 100000 kN

#### ■ 水平承载力:

- 固定支座各向
- 纵向活动支座
- 横向活动支座

约束向设计水平承载力为支座设计反力的:

- 15%设计地震动峰值加速度0.1g地区( $Ag < 0.1g$ )
- 22.5%设计地震动峰值加速度0.15g地区( $0.1g < Ag < 0.15g$ )
- 30%设计地震动峰值加速度0.2g地区( $0.15g < Ag < 0.2g$ )
- 45%设计地震动峰值加速度0.3g地区( $0.2g < Ag < 0.3g$ )

- 多向活动支座
- 纵向活动支座
- 横向活动支座

滑动方向水平力为为支座设计反力的5%。

#### ■ 支座转角

支座转角为0.02rad

#### ■ 支座位移

多向活动支座和纵向活动支座顺桥向设计位移为 $\pm 50$ 、 $\pm 100$ 、 $\pm 150$ 和 $\pm 200$ mm 4级; DX多向活动支座和HX横向活动支座横桥向设计位移为 $\pm 10$ mm,  $\pm 40$ mm,  $\pm 50$ mm。

#### ■ 摩擦系数

常温型为0.03 耐寒型为0.05

#### ■ 温度适用范围

-50℃ ~ 60℃

#### ■ DESIGN VERTICAL LOAD

3000 ~ 100000 kN

#### ■ DESIGN HORIZONTAL LOAD

- For free direction of fixed bearing,
- For longitude movement bearing,
- For transverse movement bearing.

The design horizontal load of un-movement direction is 15% of design vertical load; for areas where earthquake dynamic peak acceleration is 0.1g ( $Ag < 0.1g$ )  
22.5% of design vertical load; for areas where earthquake dynamic peak acceleration is 0.15g ( $0.1g < Ag < 0.15g$ )  
30% of design vertical load; for areas where earthquake dynamic peak acceleration is 0.2g ( $0.15g < Ag < 0.2g$ )  
45% of design vertical load; for areas where earthquake dynamic peak acceleration is 0.3g ( $0.2g < Ag < 0.3g$ )

- Free movement bearing
- Longitude movement bearing
- Transverse movement bearing

The design horizontal load on movement direction is 5% of design vertical load

#### ■ THE DESIGN ROTATION ANGLE

The design rotation angle is 0.02rad

#### ■ THE DESIGN DISPLACEMENT OF A BEARING

Design longitude displacement of a free movement bearing and a longitude movement bearing is in 4 levels  $\pm 50$ ,  $\pm 100$ ,  $\pm 150$  and  $\pm 200$ mm.  
Design transverse displacement of a free movement bearing and a transverse movement bearing is  $\pm 10$ mm,  $\pm 40$ mm and  $\pm 50$ mm.

#### ■ THE DESIGN FRICTION COEFFICIENT OF A BEARING

Normal temperature:  $\mu=0.03$  Low temperature:  $\mu=0.05$

#### ■ TEMPERATURE RANGE

-50℃ ~ 60℃



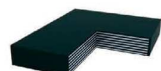
TBZ



GYZF4



GJZF4



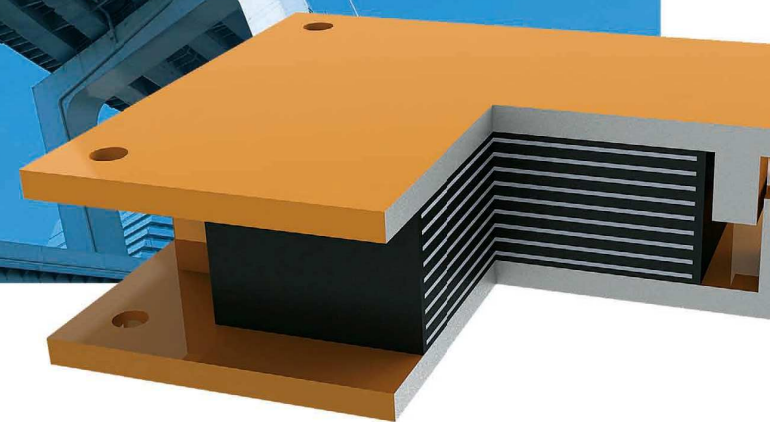
GJZ



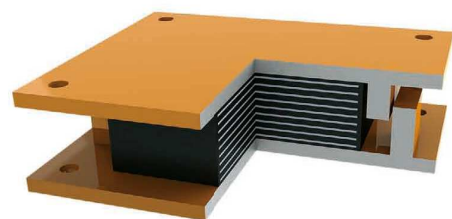
## ELASTOMERIC BEARING 铁路 / 公路 板式支座

板式橡胶支座具有构造简单、安装方便、价格低廉;易于更换的优点。它可将桥梁上部构造的作用力可靠地传递给墩台,并具有良好的弹性以适应梁端的转动。又具有较大的剪切变形和较低的摩擦阻力来适应桥梁上部构造的水平变位。

A elastomeric bearing is simple in structure, easy for installation, low in price and easy to be changed. It transmit load of upper structure of a bridge to piers and abutments. Good elasticity enabled it to suit for rotation of a beam. The large shearing deformation and low friction coefficient of a elastomeric bearing makes it able to adapt horizontal displacement of upper structure of a bridge.







TBZ

## INTRODUCTION FOR TBZ BEARING

### TBZ支座说明

铁路桥梁板式橡胶支座按照行业标准TB/T893《铁路桥梁板式橡胶支座》设计，适用于跨度20米及以下的铁路桥梁。也可用于其他轨道交通桥梁。

TBZ series bearing is designed in accordance with the standard of China ministry of railway TB/T893 《Elastomeric Pad Bearing for Railway Bridge》 for the span  $\leq 20\text{m}$  railway bridge and other light rail.

## TECHNICAL PERFORMANCE

### 技术性能

- 按支座结构型式：  
普通板式橡胶支座和四氟滑板式橡胶支座
- 竖向承载力：  
300,400,500,600,750,875,1 000,1 250,1 500,1750,2000,2250,2500,2750,3000(kN)
- 水平承载力：  
固定支座各向、纵向活动支座横桥向、横向活动支座顺桥向水平力为竖桥向承载力的15%或30%
- 支座位移：  
活动支座主位移动方向的位移分三级： $\pm 20\text{mm}$ 、 $\pm 30\text{mm}$ 、 $\pm 40\text{mm}$   
固定支座和单向活动支座(纵向活动和横向活动)在限位方向允许位移 $\leq 1\text{mm}$

### 力学性能： PHYSICAL AND MECHANICAL PERFORMANCE

极限抗压强度Ru (Mpa) Ultimate Compressive Strength Ru (Mpa)	60
实测抗压弹性模量E <sub>c</sub> (MPa) Compressive elasticity modulus E <sub>c</sub> (MPa)	E $\pm$ EX20%
实测抗剪弹性模量G <sub>c</sub> (MPa) Shear elasticity modulus G <sub>c</sub> (MPa)	G $\pm$ GX15%
实测老化后抗剪弹性模量G <sub>c</sub> (MPa) Shear elasticity modulus after aging G <sub>c</sub> (MPa)	(G <sub>c</sub> $\pm$ 0.5MPa)
实测四氟板与不锈钢摩擦系数 $\mu$ (加硅脂时) Friction coefficient between PTFE and stainless steel $\mu$ (with silicone grease)	无橡胶开裂和脱胶现象 Rubber is not torn or separated

海德公司生产各类公路铁路桥梁支座，TB/T《铁路桥梁板式橡胶支座》、GB/T17955《球形支座技术条件》、TB/T1853《铁路桥梁钢支座》等国家及行业有关标准的要求，拥有国家技术质量监督局在公路桥梁支座行业颁发的《工业产品生产许可证》，铁路桥梁支座通过了铁道部CRCC认证产品荣获“全国用户满意产品”称号。

海德公司还为海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T《Elastomeric Pad Bearing for Railway》、GB/T17955《Technical Specification for Spherical Bearing》、TB/T 1853《Technical Specification of Steel Bearings for Railway Bridge》, etc. Company is with the production license issued by State Bureau of Technical

Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.



## INTRODUCTION FOR GJZ/GJZF4/GYZ/GYZF4 BEARING

### GJZ GJZF4支座说明

### GYZ GYZF4

公路桥梁板式橡胶支座严格按照中华人民共和国交通运输部标准JT/T4—2004《公路桥梁板式橡胶支座》和交通部最新行业标准JT/T663—2006《公路桥梁板式橡胶支座规格系列》的规定进行生产。

TBZ series bearing is designed in accordance with the standard of China ministry of railway TB/T893 《Elastomeric Pad Bearing for Railway Bridge》 for the span  $\leq 20\text{m}$  railway bridge and other light rail.



GJZ  
GJZF4  
GYZ  
GYZF4



## TECHNICAL PERFORMANCE

### 技术性能

- 按支座结构型式：  
普通板式橡胶支座和四氟滑板式橡胶支座
- 按支座材料和适用温度：为常温型和耐寒型。  
常温型采用氯丁橡胶(CR)生产，适用温度-25℃~60℃；  
耐寒型采用天然橡胶(NR)生产，适用温度-40℃~60℃；

### 力学性能： PHYSICAL AND MECHANICAL PERFORMANCE

极限抗压强度Ru (Mpa) PHYSICAL AND MECHANICAL PERFORMANCE: Ultimate Compressive Strength Ru (Mpa)	60
实测抗压弹性模量E <sub>c</sub> (MPa) Compressive elasticity modulus E <sub>c</sub> (MPa)	E $\pm$ EX20%
实测抗剪弹性模量G <sub>c</sub> (MPa) Shear elasticity modulus G <sub>c</sub> (MPa)	G $\pm$ GX15%
实测老化后抗剪弹性模量G <sub>c</sub> (MPa) Shear elasticity modulus after aging G <sub>c</sub> (MPa)	(G <sub>c</sub> $\pm$ 0.5MPa)
实测四氟板与不锈钢摩擦系数 $\mu$ (加硅脂时) Friction coefficient between PTFE and stainless steel $\mu$ (with silicone grease)	0.03
实测转角正切值 Tangent value of rotation	1/300
	1/500

### STRUCTURE TYPE Normal elastomeric pad bearing and PTFE elastomeric sliding pad bearing

### MATERIAL TYPE: NORMAL TEMPERATURE TYPE AND LOW TEMPERATURE TYPE Normal temperature type: chloroprene rubber: -25℃~60℃ Low temperature type: natural rubber: -40℃~60℃



固定型高阻尼橡胶支座

速度锁定支座

滑动型高阻尼橡胶支座

## ANTI-SEISMIC BEARING 减隔震支座

传统结构抗震方法是通过增加结构本身的抗震性能(强度、刚度、延性)来抵御地震作用的。由于地震具有不确定性,人们尚不能准确估计未来地震灾害作用的强度和特性。按照传统抗震方法设计的结构不具备自我调节的功能。

减隔震支座则是合理有效的采用减隔震技术,即在结构的某些部位设置减隔震装置,通过减隔震装置来耗散或吸收地震输入结构中的能量,减小主体结构的地震反应,从而达到结构保护的目的。

Traditionally we improve anti-seismic performance (such as strength, stiffness and ductility) of a structure to resist seismic action. For the uncertainty of seismic action, the structure designed in traditional way does not have the ability of self adjustment.





海德公司生产各类公路铁路桥梁支座, TB/T《铁路桥梁盆式橡胶支座》、GB/T17955《球型支座技术条件》、TB/T1853《铁路桥梁铸钢支座》等国家及行业有关标准的要求, 拥有国家技术监督局在公路桥梁支座行业颁发的《工业产品生产许可证》, 铁路桥梁支座通过了铁道部CRCC认证, 产品荣获“全国用户满意产品”称号。

海德公司还为海外工程按照EN-1337和BS5400等国际标准要求生产各类桥梁支座。

HAIDER produces various highway and railway bridge bearings, which conform to the requirements of national standards, such as TB/T (Elastomeric Pot Bearing for Railway), GB/T17955 (Technical Specification for Spherical Bearing), TB/T 1853 (Technical Specification of Steel Bearings for Railway Bridge), etc. Company is with the production license issued by State Bureau of Technical

Supervision. Railway bridge bearing have been certified CRCC by Ministry of Railway. The products have awarded "Satisfactory Product of National Client".

HAIDER also produce various bridge bearings for overseas projects according to EN-1337 and BS5400.



- Anti-seismic bearing on Algeria East and West Express Way and Zhuhai Airport Express Way.
- 阿尔及利亚东西高速公路及珠海机场高速公路等减隔震支座



固定型高阻尼橡胶支座  
FIXED HIGH DAMPING ELASTOMERIC PAD BEARING



滑动型高阻尼橡胶支座  
SLIDING HIGH DAMPING ELASTOMERIC PAD BEARING

## HDR-II SERIES HIGH DAMPING ANTI-SEISMIC ELASTOMERIC PAD BEARING

### HDR-II系列高阻尼隔震橡胶支座

HDR-II系列高阻尼隔震橡胶支座是按照国家及行业相关标准, 同时参考欧洲标准研制开发的桥梁标准构件产品。适用于8度及8度以下地震区各类公路及市政桥梁。

HDR-II series high damping anti-seismic elastomeric pad bearing is designed according to China bearing standard. During design it also takes Europe Standard into consideration. This kind of bearing is suitable for all kinds of highway and urban bridges where the seismic level is no more than 8.

## TECHNICAL PERFORMANCE 技术性能

■ IN THIS SERIES THERE ARE FOUR TYPES OF BEARINGS: FIXED RECTANGLE TYPE, SLIDING RECTANGLE TYPE, FIXED CIRCULAR TYPE AND SLIDING CIRCULAR TYPE.

■ DESIGN VERTICAL LOAD  
204 ~ 21206KN

■ DESIGN HORIZONTAL LOAD  
The bearable horizontal anti-slip load for sliding bearing is 3% of design vertical load

■ THE DESIGN ROTATION ANGLE  
0.006rad and 0.008rad

■ 本系列支座分为矩形固定型、矩形滑动型、圆形固定型、圆形滑动型四种类型。

■ 竖向承载:  
204 ~ 21206KN

■ 水平承载力  
滑动型支座可承受的防滑移水平力为支座设计反力的3%。

■ 支座转角  
0.006rad和0.008rad

## THE DESIGN DISPLACEMENT OF A BEARING

For sliding bearing the design longitude displacement is in 2 levels:  $\pm 100\text{mm}$  and  $\pm 150\text{mm}$ , and the design horizontal displacement is  $\pm 50\text{mm}$ .

For a fixed bearing the normal design shear strain is 1.0 and the shear strain of seismic action is 2.5.

## THE DESIGN FRICTION COEFFICIENT OF A BEARING

The design friction coefficient of a bearing is 0.03.

## TEMPERATURE RANGE

$-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

## 位移

滑动型支座顺桥向设计位移为  $\pm 100\text{mm}$  和  $\pm 150\text{mm}$  两种, 横桥向设计位移为  $\pm 50\text{mm}$ ;

固定型支座正常设计剪应变为1.0, 地震时为2.5;

## 摩擦系数 摩擦系数0.03

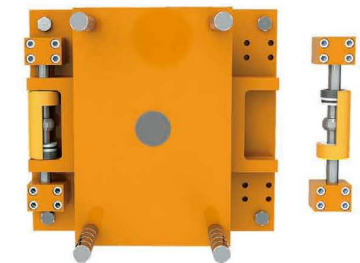
## 适用温度范围 $-40^{\circ}\text{C} \sim 60^{\circ}\text{C}$

## LUB-SPEED-LOCK BEARING

### LUB-速度锁定支座

LUB-系列速度锁定支座是按照国家及行业相关标准, 同时参考欧洲标准研制开发的桥梁标准构件产品。适用于8度及8度以下地震区各类铁路公路及市政桥梁。

LUB-series speed lock bearing is designed according to China bearing standard. During design it also takes Europe Standard into consideration. This kind of bearing is suitable for all kinds of railway, highway and urban bridges where the seismic level is no more than 8.



LUB



特殊功能支座随着科学技术的不断进步,现代斜拉桥、悬索桥、大跨度拱桥、跨海桥以及大型建筑、引水工程等得到了迅速发展,这对新型桥梁支座的开发和应用无疑提供了更广阔的空间。我厂技术人员不断采用新材料、新工艺、新技术,并加强与科研院所的合作,开发设计出桥梁支座

除满足普通支座所具备的功用外,更具备了抗拉、抗剪、抗震、抗风、抗腐蚀等特点,日前已广泛应用于嘉绍大桥、武汉天兴洲大桥、郑州黄河公铁两用大桥、郑州中心区铁路跨线桥、山东济宁洸府河大桥、浙江灵江大桥、柳州维义大桥等桥梁建设、市政基础设施、大型场馆、高层建筑和大型水利工程中。

## SPECIAL 特殊支座 TYPE BEARING

Nowadays cable stayed bridge, suspension bridge, long-span arch bridge, sea channel bridge, huge building and diversion works are developing quickly. This brings big chances for development of new type bridge bearings. Cooperating with research institutions, our technicians developed new type bearings with new material, new workmanship and new technology. These new type bearings have characters of

stronger tensile strength, bigger shear strength, anti-seismic, wind resistance and anticorrosion. These special type bearings have been applied on Jiashao Bridge, Wuhan Tianxingzhou Bridge, Zhengzhou Yellow River Road/Railway Bridge, Bridge Across Railway in Zhengzhou, Jining Guangfu River Bridge, Zhejiang Lingjiang Bridge, and Liuzhou Weiyl Bridge etc.



## ROLLING SLIDING BRIDGE BEARING

铰轴滑板支座



SPECIAL TYPE BEARING



QZ160000KN

SPECIAL TYPE BEARING

## VERTICAL UP-LIFT LOAD SPHERICAL BEARING

竖向拉压球型支座



LYQZ

