



橡胶护舷

RUBBER FENDER

芜湖平安橡胶有限责任公司
WuHu PingAn Rubber Co., Ltd.



企业简介

芜湖平安橡胶有限公司位于安徽省芜湖市，成立于1987年。我司是一家专业生产船用橡胶制品的厂家，主要生产各种规格橡胶护舷，包括国标件、非标件以及工程用橡胶件。

我司与包括武昌造船集团公司、广东文冲船厂以及黄埔船厂在内的多家国内大型船厂有着长期合作关系。由于我司产品质量优秀，多次被中国军用船只选用。此外，我司产品远销东南亚、澳大利亚等多个国家。

我司提供免费售前技术支持，可根据船舶总长、吨位、型线图，设计出合理、实用的护舷方案。我司售后服务周到，有一支独立的安装团队，可到现场给予安装指导。同时，我司拥有单独的研发部门，设计地两款专利产品：防轮胎护舷和灰色护舷，受到客户一致好评。我司产品均可提供CCS证书。

Wuhu Ping'an Rubber Co.,Ltd., located in Wuhu, Anhui, China, was established in 2002. We are a professional marine rubber products manufacturer, mainly produces different kinds of rubber fenders, including national standard and non-standard fenders.

We kept long-term cooperation with many major domestic shipyards. For example, Wuchang Shipbuilding Industry Group Co.,Ltd, CSSC Guangzhou Wenchong shipyard, Guangzhou Huangpu Shipyard and etc. Due to the excellent quality of our products, our rubber fenders have been selected by PLA navy ship repeatedly. Moreover, our products are exported to overseas markets.

We provide pre-sale technical support, we can design fender drawing as long as known the length, tonnage and Line Plan of some ship. We have set up a perfect after-sale service. Our installation team can provide site instruction. We have two patented products – bionic tire fender and grey fender.

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拖轮橡胶

TUG Fender

● 特点

拖轮橡胶护舷特别适用于各种港作拖轮，芜湖平安橡胶有限公司生产的拖轮橡胶护舷结构设计合理，生产工艺先进，能满足不同结构，不同型号拖轮的要求。芜湖平安橡胶有限公司生产的超长型拖轮护舷已被列为国家级新产品。

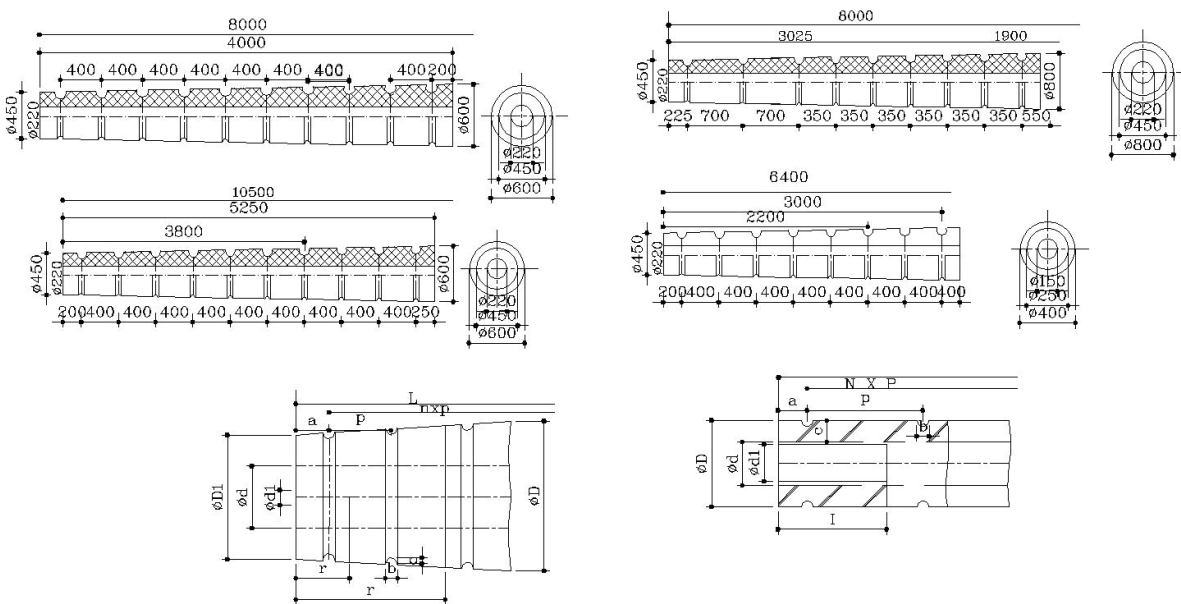
Features

Tug Boat fender is especially applicable for various port operation tugs. The tug fender manufactured by WuHu PingAn Rubber Co, Ltd. is reasonable in structure design and advanced in production procedure which can satisfy the requirement of tugs in different structure and different type. The extra long tug fender was graded as National New product.

● 圆筒型系列规格尺寸

Cylindrical Fender Specifications and Dimensions

单位 unit:mm



A-B 型系列规格尺寸

A-B Type series Specifications and Dimensions

单位 Unit:mm

规格尺寸 Specifications and Dimensions	a	p	n	b	c	ϕD	ϕD^1	ϕd	ϕd^1	L	l	l ¹
$\phi 500 \times \phi 400 \times \phi 250 \times \phi 100 \times 16000L$	500	1000	15	60	40	500	400	250	100	16000	450	1000
$\phi 700 \times \phi 600 \times \phi 350 \times \phi 100 \times 14000L$	370	780	17	60	40	700	600	350	100	14000	450	1500

注：其它A-B型规格的护舷可根据用户实际要求生产。

Notice: Other specifications is available upon request.



B 型系列规格尺寸

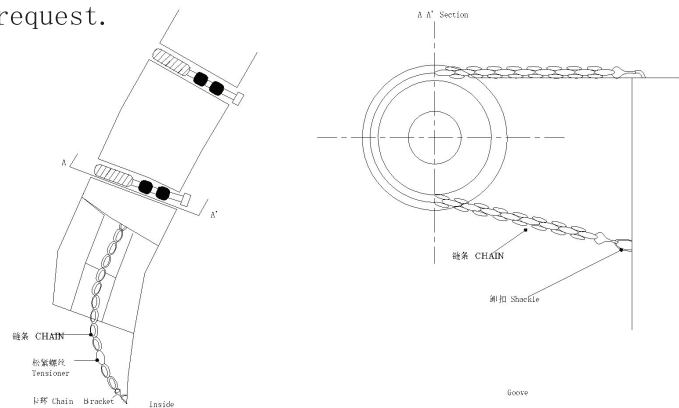
B Type series Specifications and Dimensions

单位 unit: mm

规格尺寸 Specifications and Dimensions	b	c	ØD	Ød	Ød1	l
Ø200×Ø50×L			200	50		
Ø200×Ø100×L			200	100		
Ø300×Ø100×L			300	100		
Ø300×Ø150×L			300	150		
Ø400×Ø100×L			400	100		
Ø400×Ø200×L			400	200		300
Ø400×Ø150×L			400	150	100	
Ø500×Ø250×L			500	250		350
Ø500×Ø220×L			500	220	100	350
Ø500×Ø200×L			500	200	100	350
Ø500×Ø150×L			500	150	100	
Ø500×Ø100×L			500	100		
Ø600×Ø300×L			600	300		400
Ø600×Ø250×L			600	250	100	400
Ø600×Ø220×L			600	220	100	400
Ø600×Ø200×L			600	200	100	400
Ø600×Ø150×L			600	150	100	
Ø600×Ø100×L			600	100		
Ø700×Ø350×L			700	350		450
Ø700×Ø300×L			700	300	100	400
Ø700×Ø250×L			700	250	100	400
Ø700×Ø220×L			700	220	100	400
Ø700×Ø200×L			700	200	100	400
Ø700×Ø150×L			700	150	100	
Ø800×Ø400×L			800	400		450
Ø800×Ø350×L			800	350	100	450
Ø800×Ø300×L			800	300	100	450
Ø800×Ø250×L			800	250	100	450
Ø800×Ø220×L			800	220	100	400
Ø800×Ø200×L			800	200	100	400
Ø800×Ø150×L			800	150	100	
Ø900×Ø450×L			900	450		500
Ø900×Ø400×L			900	400	100	500
Ø900×Ø350×L			900	350	100	500
Ø900×Ø220×L			900	220	100	

注：其他规格型号可根据用户要求加工生产。

Other specification is available upon request.





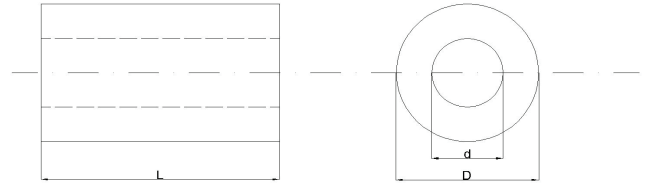
圆筒型橡胶护舷
Cylindrical Type Rubber Fender

●特点

1. 圆筒型橡胶护舷是中空的圆筒型橡胶制品，用链条和钢棒悬挂在码头上，安装维修方便、
2. 圆筒型橡胶护舷反力低，面压小，吸能量合理。
3. 圆筒型橡胶护舷对船舶靠泊时的纵横和横摇适应性强。
4. 圆筒型橡胶护舷特别适用于重力式码头和整体式码头的上部。
5. 圆筒型橡胶护舷适用于各种大小的船舶。
6. 安装形式多样，可采用垂直，水平，对角线等形式。

Features

1. Cylindrical fender is applicable for longitudinal and crosswise sway of ships when berth at the dock.
2. Cylindrical rubber fender has low reaction forces, little surface pressure, and reasonable energy absorption.
3. Cylindrical fender is applicable for longitudinal and crosswise sway of ships when berth at the docks.
4. Cylindrical fender is especially applicable for upper part of integral docks and heavy style docks.
5. Cylindrical fender is applicable for ships with different sizes.
6. Various installations styles such as horizontal, vertical and diagonal etc.



型号 Types	设计压缩量 (%) Rated Compression Deflection	性能 Performances				
		反力 (KN)			吸能量 (KN-M)	
		标准型 Standard type	高反力型 High reaction force	标准型 Standard type	高反力型 High reaction force	性能公差 (%) Tolerance
Y150×1000	50	44	73	1.5	2.3	±10
Y200×1000		60	95	2.6	4.2	
Y250×1000		75	120	4	6.5	
Y300×1000		89	143	6	9	
Y350×1000		104	167	8	13	
Y400×1000		119	191	10	17	
Y500×1000		148	239	16	26	
Y600×1000		179	286	24	37	
Y700×1000		208	334	31	50	
Y800×1000		237	383	41	66	
Y900×1000		268	430	52	84	
Y1000×1000		297	479	64	103	
Y1100×1000		331	528	77	129	
Y1200×1000		363	574	95	152	
Y1300×1000		392	623	108	179	
Y1400×1000		422	670	128	208	
Y1500×1000		451	718	147	238	
Y1600×1000		481	776	176	282	
Y1700×1000		511	824	206	338	
Y1800×1000		541	872	247	406	
Y1900×1000	570	920	288	487		
Y2000×1000	653	1054	321	584		



一、D型橡胶护舷

D Type Rubbers

●特点

1. 反力适中，吸能量较圆筒型橡胶护舷高
2. 安装较方便
3. 由于底部宽度尺寸较小，适用于框架式码头和船舷的安装和使用

●Features

1. Suitable reaction force, with higher energy absorption than cylindrical rubber fenders
2. Easy for installation
3. Applicable for frame dock and ships due to the smaller bottom width.

D型 D Type

规格表:

Specifications



规格 Specifications	性能 Performance			
	设计压缩量 (%) Rated compression deflection	反力 (KN) Reaction Force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
D200×200×850	50	176	7	±10
D200×200×900		187	8	
D200×200×1000		207	9	
D200×200×1500		311	13	
D300×300×850		255	10	
D300×360×850		281	12	
D300×300×900		270	11	
D300×300×1000		294	12	
D300×360×1000		324	14	
D300×300×1500		442	17	
D300×360×1500		481	20	
D400×400×850		325	17	
D400×400×1000		383	20	
D400×400×1500		574	29	
D500×500×850		384	27	
D500×500×1000		451	31	
D500×500×1500		687	47	



二、D型橡胶护舷的性能

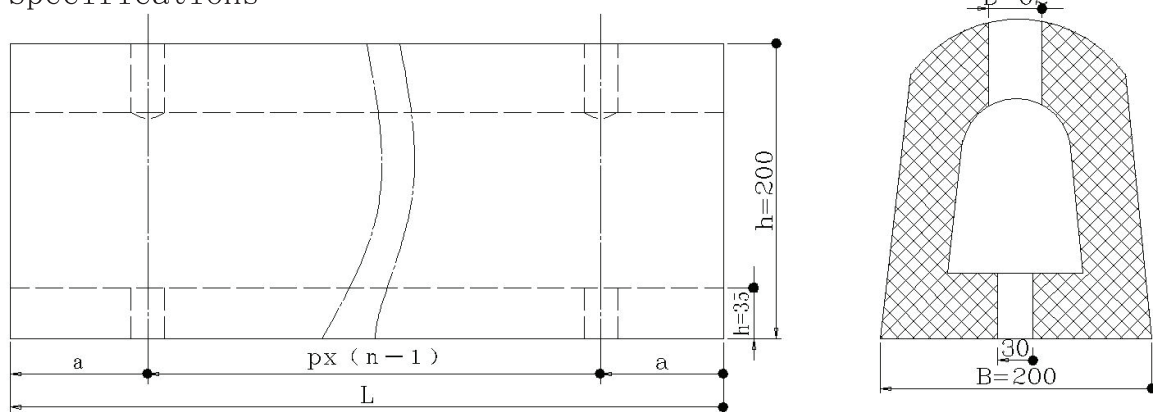
Performance of D Type Rubber Fenders

D200H橡胶护舷

D200H Rubber Fender

● 规格

Specifications



● 安装孔距

Installation holes pitch

单位Unit:mm

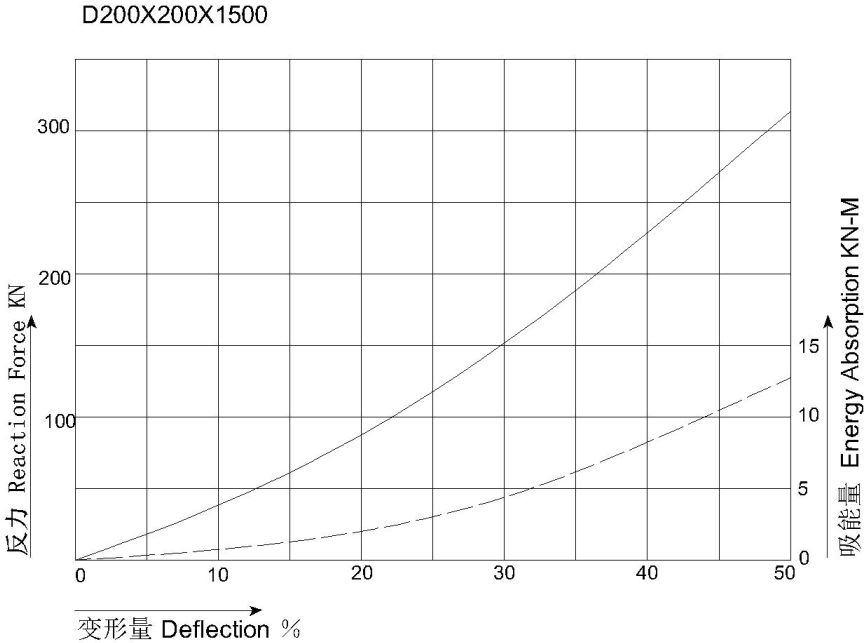
规格 Specifications H × B × L	端距 End distance (a)	孔距 Hole pitch (p)	全长 Total length (L)	孔数 Holes (n)
D200×200×850	100	325	850	3
D200×200×900	150	600	900	2
D200×200×1000	150	350	1000	3
D200×200×1500	150	600	1500	3
D200×200×1500	150	400	1500	4
D200×200×1500	150	325	1500	5



● 性能
Performance

规格 Specifications	设计压缩量 (%) Rated compression deflection	反力 (KN) Reaction Force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
D200×200×850	50	176	7	±10
D200×200×900		187	8	
D200×200×1000		207	9	
D200×200×1500		311	13	

● 性能曲线
Performance Curve

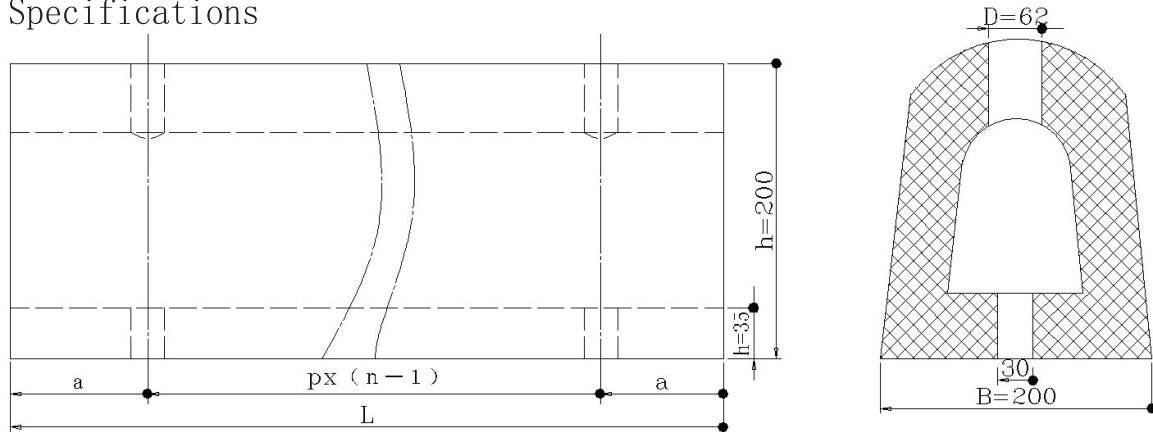




D300H橡胶护舷
D300H Rubber Fender

● 规格

Specifications

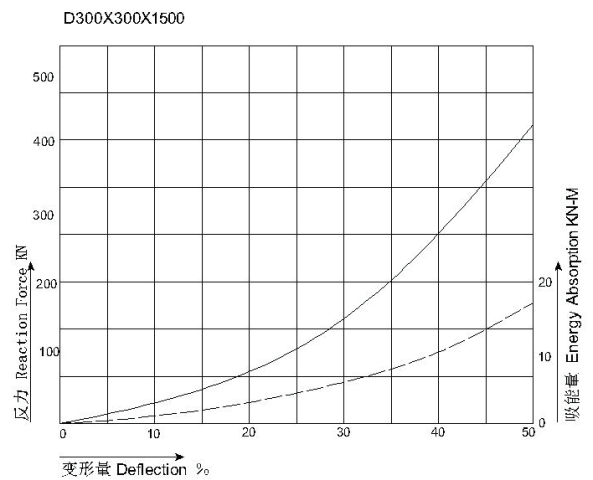
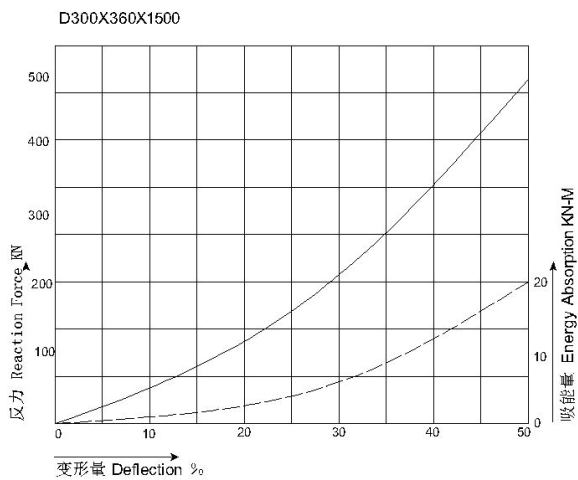




● 性能
Performance

规格 Specifications	设计压缩量 (%) Rated compression deflection	反力 (KN) Reaction Force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
D300×300×850	50	255	10	±10
D300×360×850		281	12	
D300×300×900		270	11	
D300×360×900		296	12	
D300×300×1000		294	12	
D300×360×1000		324	14	
D300×300×1500		442	17	
D300×360×1500		481	20	

● 性能曲线
Performance Curve

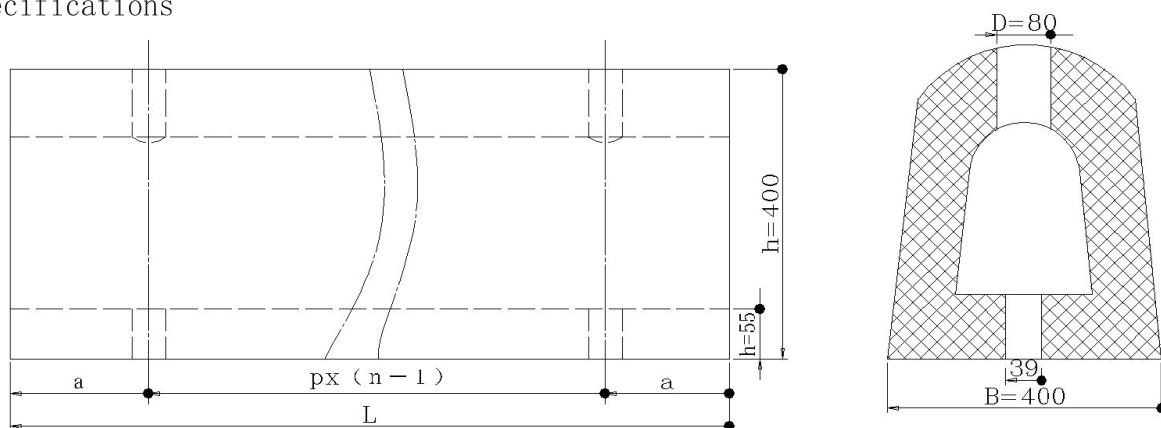




D400H 橡胶护舷
D400H Rubber Fenders

● 规格

Specifications



● 安装孔距

Installation holes pitch

单位Unit:mm

规格 Specifications H × B × L	端距 End distance (a)	孔距 Hole pitch (p)	全长 Total length (L)	孔数 Holes (n)
D400 × 400 × 850	100	325	850	3
D400 × 400 × 900	150	600	900	2
D400 × 400 × 1000	150	350	1000	3
D400 × 400 × 1500	150	600	1500	3
D400 × 400 × 1500	150	400	1500	4
D400 × 400 × 1500	100	325	1500	5



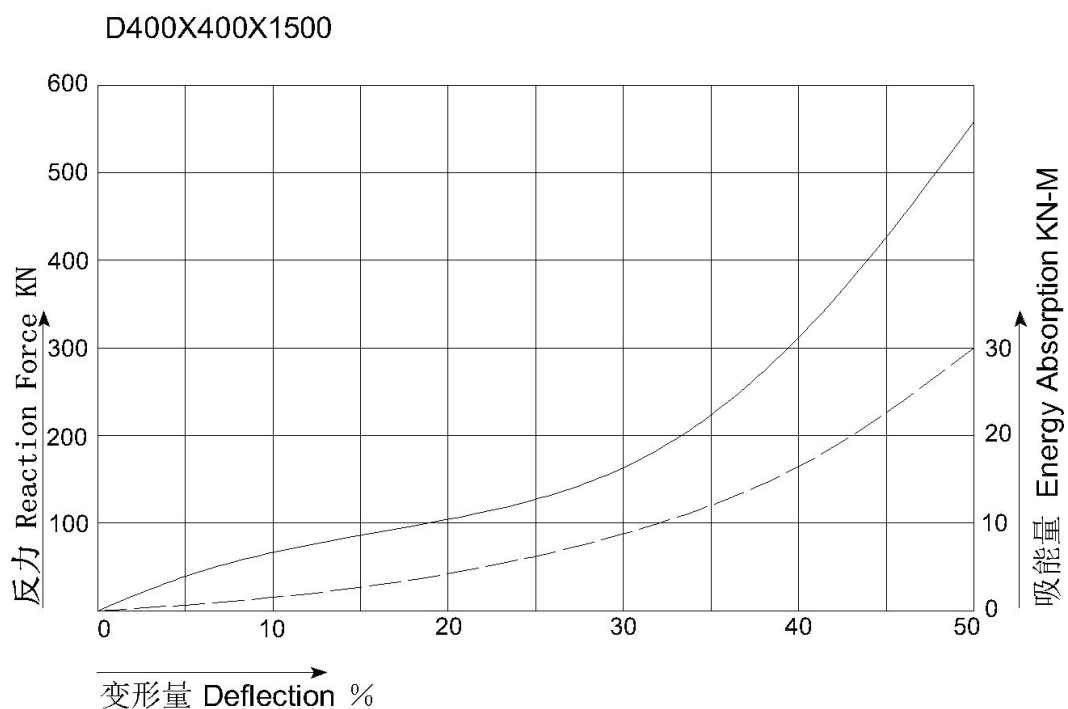
● 性能

Performance

规格 Specifications	设计压缩量 (%) Rated compression deflection	反力 (KN) Reaction Force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
D400×400×850	50	326	17	±10
D400×400×900		344	18	
D400×400×1000		383	20	
D400×400×1500		574	29	

● 性能曲线

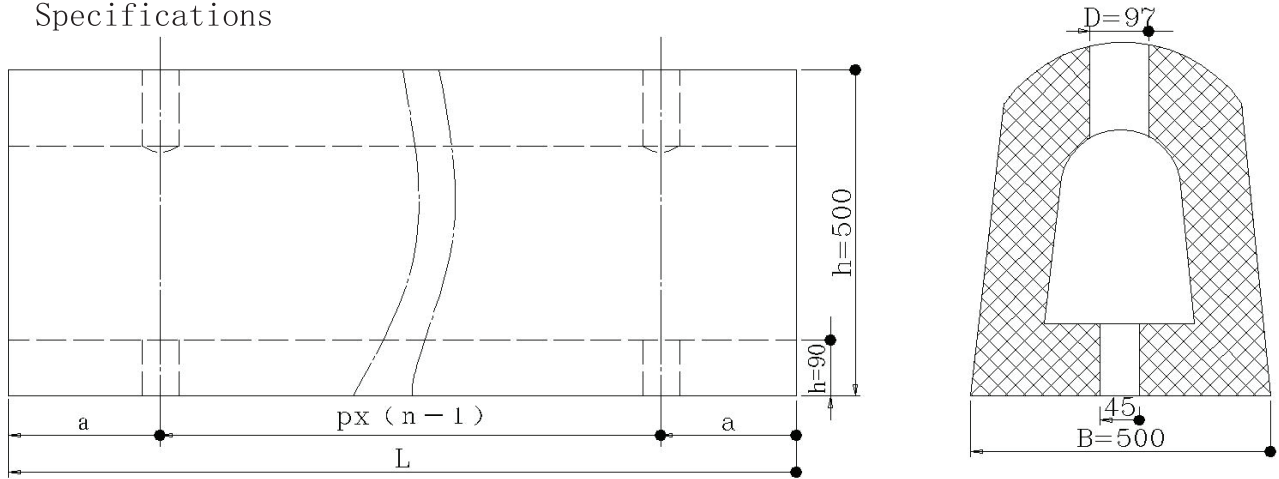
Performance Curve





D500H 橡胶护舷
D500H Rubber Fenders

● 规格
Specifications



● 安装孔距
Installation holes pitch

单位Unit:mm

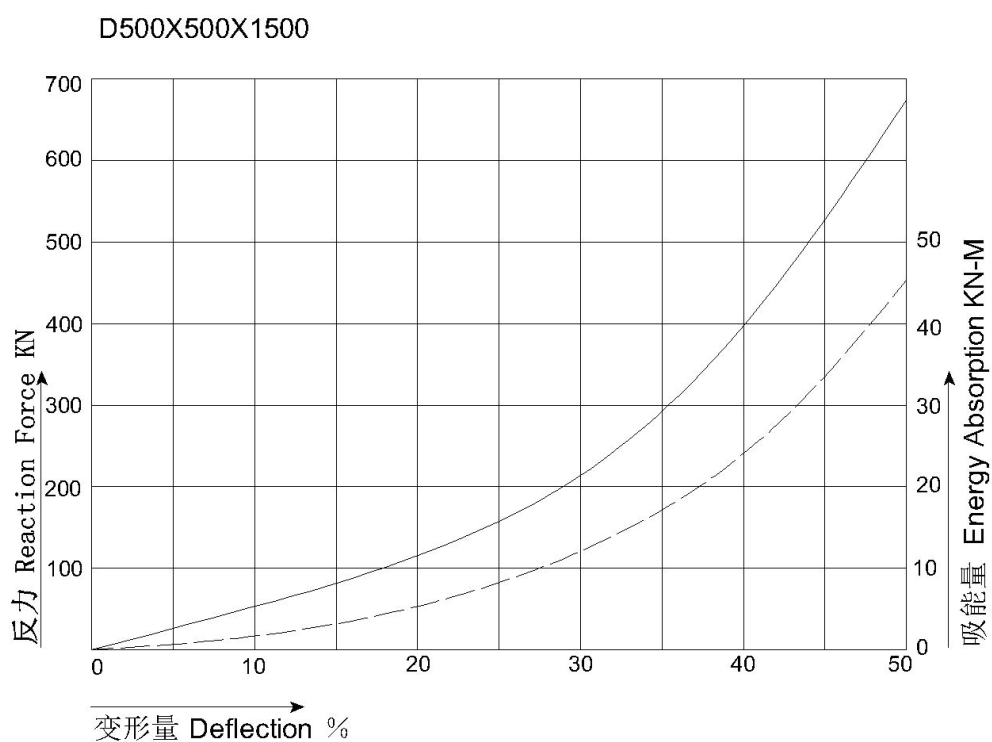
规格 Specifications H × B × L	端距 End distance (a)	孔距 Hole pitch (p)	全长 Total length (L)	孔数 Holes (n)
D500×500×850	100	325	850	3
D500×500×1000	150	350	1000	3
D500×500×1500	150	600	1500	3
D500×500×1500	150	400	1500	4
D500×500×1500	100	325	1500	5



● 性能
Performance

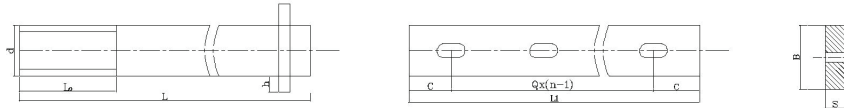
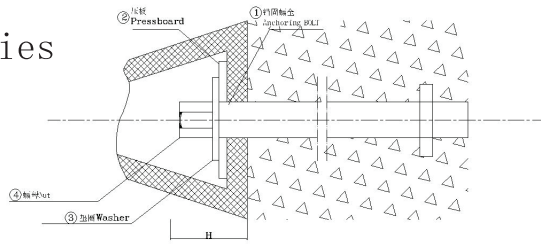
规格 Specifications H × B × L	设计压缩量 (%) Rated compression deflection	反力 (KN) Reaction Force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
D500 × 500 × 850	50	384	27	±10
D500 × 500 × 1000		451	31	
D500 × 500 × 1500		686	47	

● 性能曲线
Performance Curve





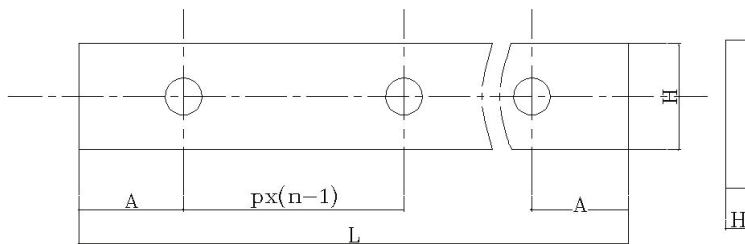
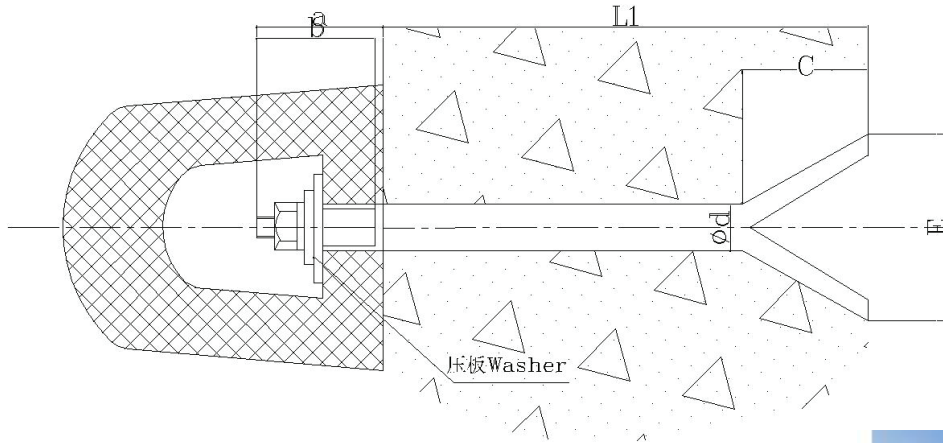
三、金属配件 (一)
Metal Accessories



配件尺寸 Size 弧线规格 Specification	锚固螺栓 Anchoring bolt					压板 Pressboard								垫圈 Washer	螺母 Nut	
	d	L	L ₀	h	H	B	S	b	R	e	c	Q	L ₁			n
D200×200×850	M26	350	60	70	75	60	14	28	14	22	90	325	830	3	26	M26
D200×200×900	M26	350	60	70	75	60	14	28	14	22	140	600	880	2	26	M26
D200×200×1000	M26	350	60	70	75	60	14	28	14	22	140	350	980	3	26	M26
D200×200×1500	M26	350	60	70	75	60	14	28	14	22	140	400	1480	4	26	M26
D300×300×850	M30	400	80	90	95	100	16	34	17	28	90	325	830	3	30	M30
D300×360×850	M30	400	80	90	95	100	16	34	17	28	90	325	830	3	30	M30
D300×300×900	M30	400	80	90	95	100	16	34	17	28	140	600	880	2	30	M30
D300×360×900	M30	400	80	90	95	100	16	34	17	28	140	600	880	2	30	M30
D300×300×1000	M30	400	80	90	95	100	16	34	17	28	140	350	980	3	30	M30
D300×360×1000	M30	400	80	90	95	100	16	34	17	28	140	350	980	3	30	M30
D300×300×1500	M30	400	80	90	95	100	16	34	17	28	140	600	1480	3	30	M30
D300×360×1500	M30	400	80	90	100	110	16	34	17	28	140	600	1480	3	30	M30
D300×300×1500	M30	400	80	90	100	110	16	34	17	28	140	400	1480	4	30	M30
D300×360×1500	M30	400	80	90	100	110	16	34	17	28	140	400	1480	4	30	M30
D300×300×1500	M30	400	80	90	100	110	16	34	17	28	90	325	1480	5	30	M30
D300×360×1500	M30	400	80	90	100	110	16	34	17	28	90	325	1480	5	30	M30
D400×400×850	M36	500	110	116	150	135	18	40	20	32	90	325	830	3	36	M36
D400×400×1000	M36	500	110	116	150	135	18	40	20	32	140	350	980	3	36	M36
D400×400×1500	M36	500	110	116	150	135	18	40	20	32	140	600	1480	3	36	M36
D400×400×1500	M36	500	110	116	150	135	18	40	20	32	140	400	1480	4	36	M36
D400×400×1500	M36	500	110	116	150	135	18	40	20	32	90	325	1480	5	36	M36
D500×500×850	M42	600	130	126	165	160	20	46	23	36	90	325	830	3	42	M42
D500×500×1000	M42	600	130	126	165	160	20	46	23	36	140	350	980	3	42	M42
D500×500×1500	M42	600	130	126	165	160	20	46	23	36	140	600	1480	3	42	M42
D500×500×1500	M42	600	130	126	165	160	20	46	23	36	140	400	1480	4	42	M42
D500×500×1500	M42	600	130	126	165	160	20	46	23	36	90	325	1480	5	42	M42



金属配件 (二)
Metal Accessories



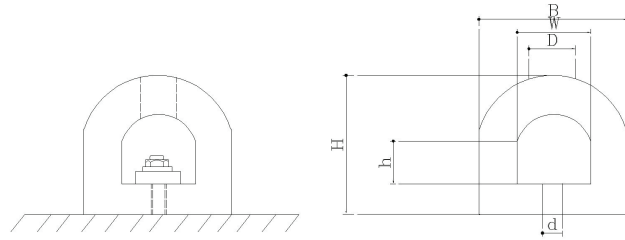
规格 Specification	a	b	L ₁	C	E	d	A	n	P	H	h	D	L	螺母 Nut
D300×300×1000	100	80	350	100	90	27	130	2	350	100	16	34	960	M27
D300×300×1500	100	80	350	100	90	27	130	2	600	100	16	34	1460	M27
D300×300×1500	100	80	350	100	90	27	130	3	400	100	16	34	1460	M27
D300×300×1500	100	80	350	100	90	27	80	4	325	100	16	34	1460	M27
D300×360×1000	100	80	350	100	90	27	130	2	350	110	16	34	1460	M27
D300×360×1500	100	80	350	100	90	27	130	2	600	110	16	34	1460	M27
D300×360×1500	100	80	350	100	90	27	130	3	400	110	16	34	1460	M27
D300×360×1500	100	80	350	100	90	27	80	4	325	110	16	34	1460	M27
D500×500×1000	150	100	350	100	120	36	130	2	350	160	20	45	960	M36
D500×500×1500	150	100	350	100	120	36	130	2	600	160	20	45	1460	M36
D500×500×1500	150	100	350	100	120	36	130	2	600	160	20	45	1460	M36
D500×500×1500	150	100	350	100	120	36	80	4	325	160	20	45	1460	M36

注：每支预埋螺栓配相应的螺母，垫圈，弹簧垫。

Note: Every Pre-built-in bolts is outfitted with corresponding nuts, washer and spring washer.



DD 型橡胶护舷
DD Type Rubber Fender



项目 Item	DD100	DD150	DD200	DD250	DD300	DD350	DD400	DD500
H	90	150	300	250	300	350	400	500
B	100	150	300	250	300	350	400	500
D(φ)	45	55	55	65	65	85	85	97
d	25	27	30	32	36	40	42	45
h	30	50	35	62.5	75	87.5	100	125
w	50	80	100	125	150	175	200	250
螺栓尺寸 Bolt Size	M22	M24	M26	M27	M30	M36	M38	M42
端距 End distance	100_150	100_150	100_150	100_150	100_150	100_150	100_150	100_150
螺栓间距 Bolt Pitch	350-440	350-440	325-600	325-600	325-600	325-600	350-600	400-620
最大长度 Max. length(mm)	2000	2000	2000	3000	3000	3000	3000	3000
反力KN/m Energy Force	54~91	83~2	105~7	132~2	158~4	184~8	211~2	316~8
吸能量 KN-M/m Energy Absorption	0.91	3.5	4.61	0.64	0.95	1.12	1.61	3.6
变形量 Deflection	40%							
参考重量 Reference Weight(kg/m)	10	22	38	59	84	115	150	234

注: 1. 此种护舷还可按下图安装, 如图1所示。

2. 圆型孔也可生产, 如图2、图3所示。

3. 所用螺栓直径相同。

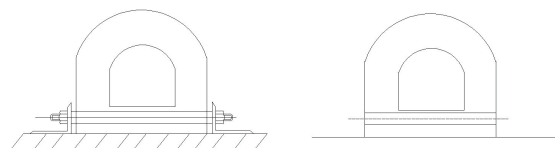
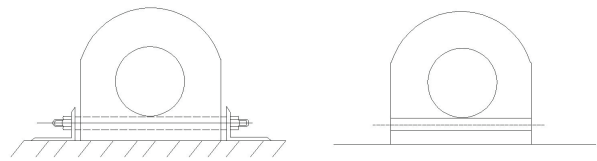
4. 按照标准性能和尺寸公差生产。

1. This type of fender also can be installed as shown in figure 1

2. The round holes is also available, as shown in figure 2 & figure 3

3. All the bolts in the same diameter

4. Production in accordance with standard performance and size tolerance





一、DG型橡胶护舷的特点 Feature of DG Type Rubber Fender

DG型橡胶护舷是D型护舷的改造产品，护舷可双排锚固，安装强度大大增加，可以与其它护舷体系并用，从而保护船与码头。

DG Type fender is the improved generation of D Type fender, it can be fixed with double line anchors which greatly increase the installation stability, it also can be integrated into other fender system to reach the purpose of protecting the ship and docks

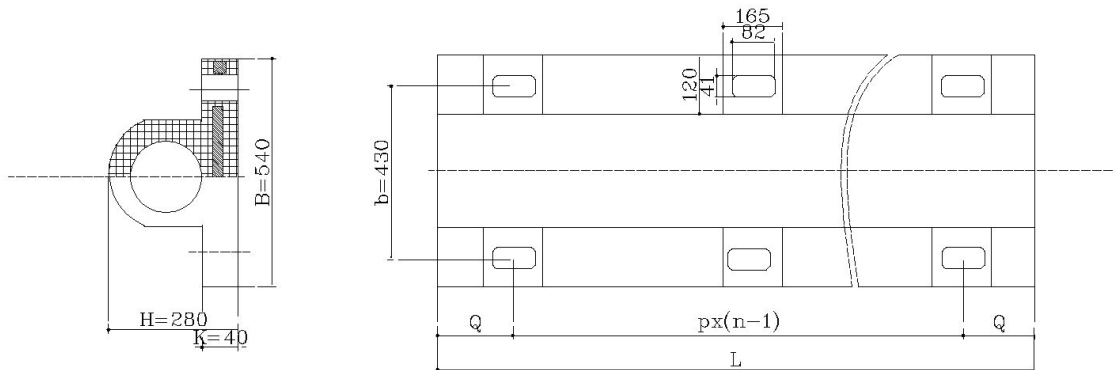


二、规格性能

Specification and Performance of DG Type Rubber Fender

● 规格

Specifications



● 安装孔距

Installation holes pitch

规格 Specifications H×B×L	L	Q	P	n 螺栓孔 Bolt holes
DG280×540×1000	1000	150	700	2
DG280×540×1500	1500	150	600	3
DG280×540×2000	2000	145	570	4
DG280×540×2500	2500	150	550	5
DG 280×540×3000	3000	150	540	6

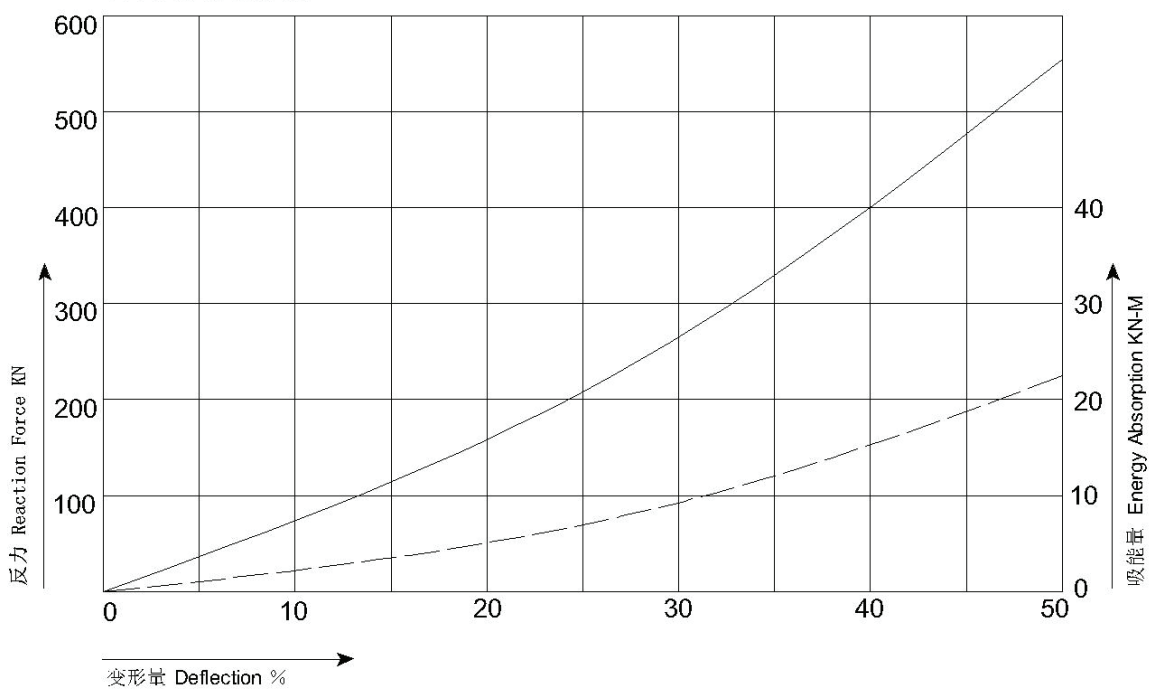
单位 Unit: mm



● 性能
Performance

规格 Performance H×B×L	设计压缩量 (%) Rated Compression Deflection (%)	反力 (KN) Reaction force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
DG280×1000	50	375	14	±10
DG280×1500		565	21	
DG280×2000		750	28	
DG280×2500		940	35	
DG280×3000		1130	42	

● 性能曲线:
Performance Curve



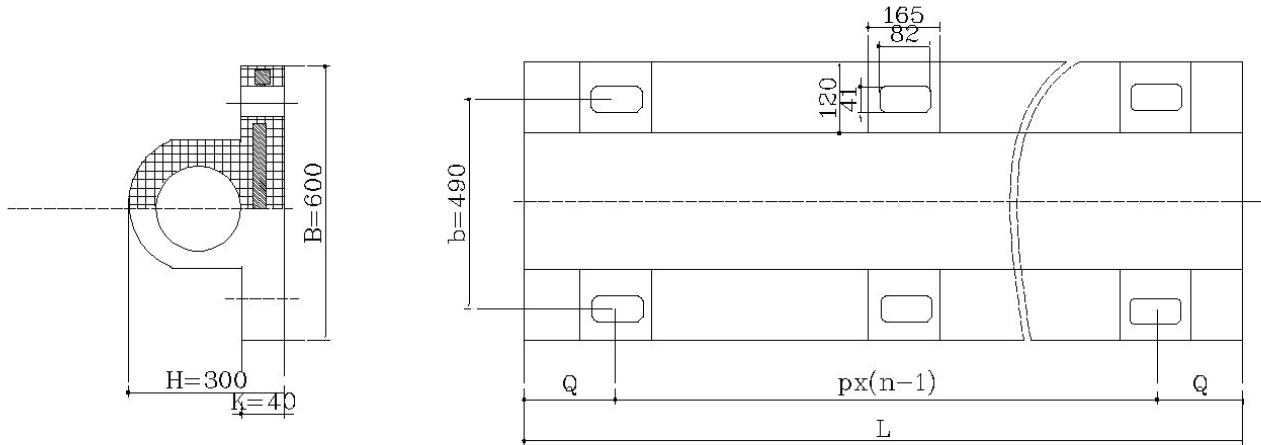


DG300 橡胶护舷
DG300 Rubber Fender

(一) DG300×600

● 规格

Specifications



安装孔距

Installation holes pitch

单位 Unit: mm

规格 Specifications H×B×L	L	Q	P	n 螺栓孔 Bolt holes
DG300×600×1000	1000	150	700	2
DG300×600×1500	1500	150	600	3
DG300×600×2000	2000	145	570	4
DG300×600×2500	2500	150	550	5
DG300×600×3000	2500	150	540	6



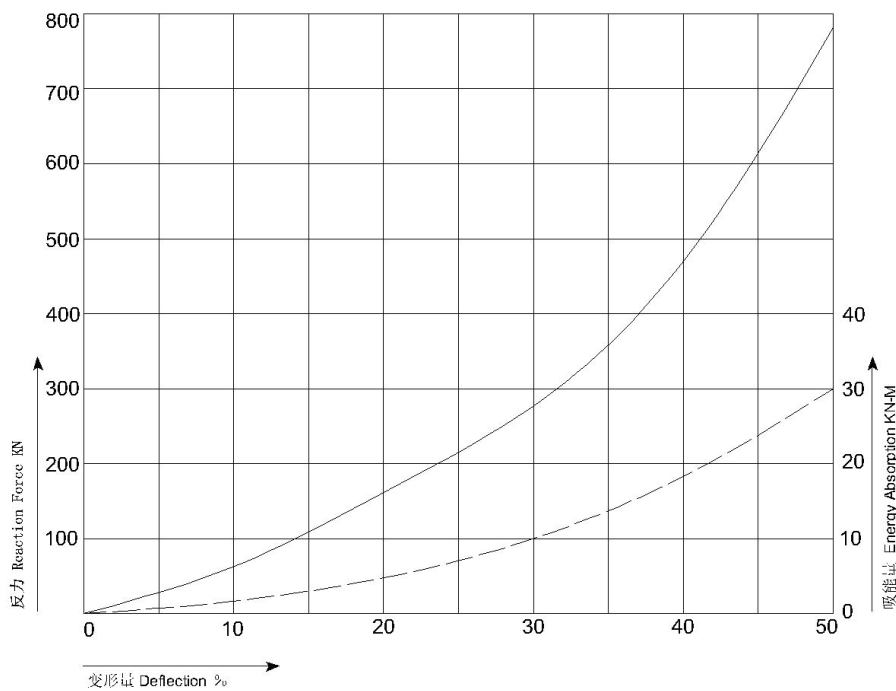
● 性能

Performance

规格 Performance H×B×L	设计压缩量 (%) Rated Compression Deflection (%)	反力 (KN) Reaction force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
DG300×600×1000	50	495	20	±10
DG300×600×1500		765	30	
DG300×600×2000		989	39	
DG300×600×2500		1237	49	
DG300×600×3000		1484	59	

● 性能曲线:

Performance Curve

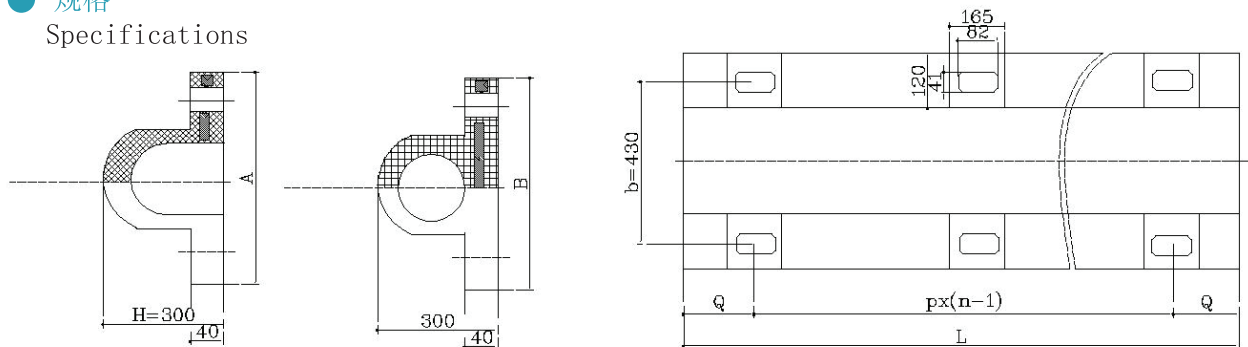




(二) DG300×540

● 规格

Specifications



● 安装孔距

Installation holes pitch

单位 Unit: mm

规格 Specifications H×B×L	L	Q	P	n 螺栓孔 Bolt holes
DG300×540×1000	1000	150	700	2
DG300×540×1500	1500	150	600	3
DG300×540×2000	2000	145	570	4
DG300×540×2500	2500	150	550	5
DG300×540×3000	3000	150	540	6



● 性能

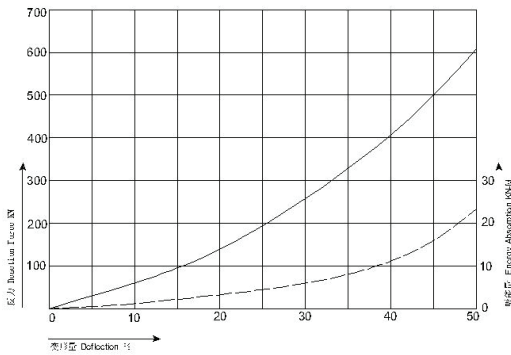
Performance

规格 Serformance H×B×L	设计压缩量 (%) Rated Compression Deflection (%)	反力 (KN) Reaction force	吸能量 (KN-M) Energy Absorption	性能公差 (%) Tolerance
DG300×540×1000 (I)	50	450	18	±10
DG300×540×1000 (II)		375	17	
DG300×540×1500 (I)		696	27	
DG300×540×1500 (II)		605	24	
DG300×540×2000 (I)		898	38	
DG300×540×2000 (II)		780	33	
DG300×540×2500 (I)		1120	45	
DG300×540×2500 (II)		974	39	
DG300×540×3000 (I)		1341	54	
DG300×540×3000 (II)		1166	47	

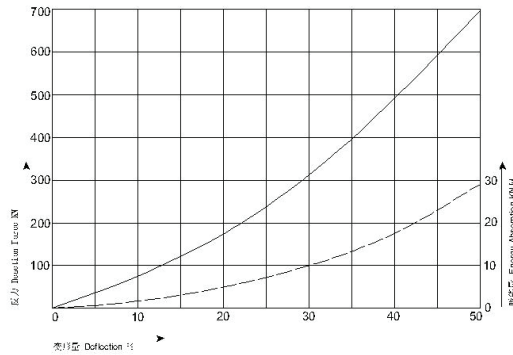
● 性能曲线:

Performance Curve

性能曲线
Performance Curve

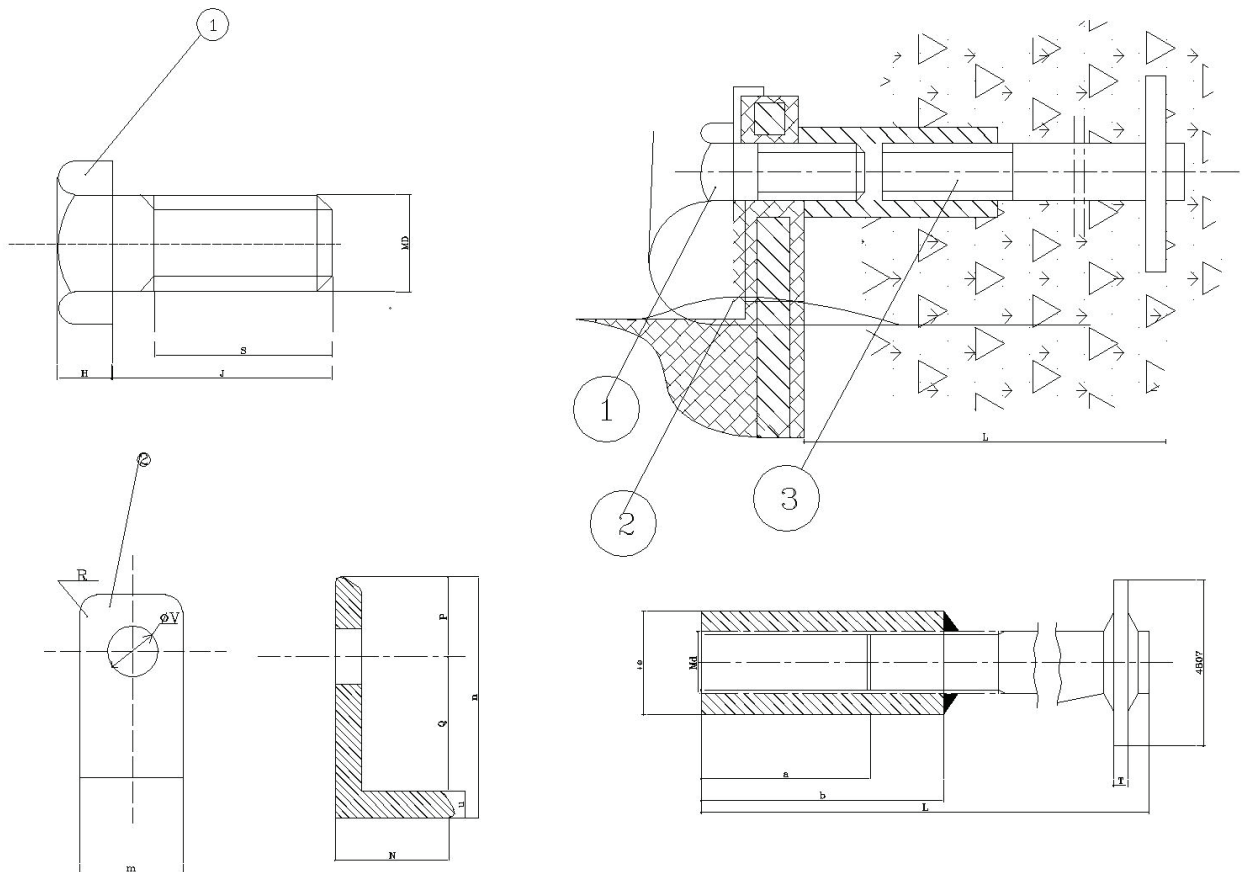


性能曲线
Performance Curve





● DG型橡胶护舷的安装
Installation



☐ 螺栓 Bolt				☐ 垫片 Washer									☐ 预埋螺母 Pre-built in nut					
D	J	S	H	m	n	N	u	v	Q	P	R	d	e	a	b	L	T	G
M36	95	80	23	119	126	22	6	43	58	62	25	M36	49	85	125	360	10~16	85
Q235 热镀锌, Q235 Hot-galv 1Cr13(2Cr13)1Cr18Ni9Ti, 0Cr17Ni12MO ₂				Q235 镀锌 Q235 Hot-galv									1Cr13(2Cr13),1Cr18Ni9Ti,0Cr17Ni12MO ₂					



D型90° 橡胶护舷 D 90°Type Rubber Fender

● 特点

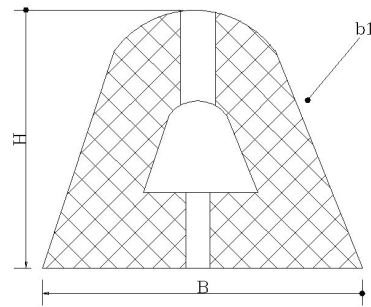
- 1. 反力低、面压小、吸能量合理。
- 2. 对船舶靠船时的适应性好；
- 3. 结构简单，维护安装方便，适用于船舶弯曲的尾部。

● Features

- 1. Low reaction force, low surface pressure, reasonable energy absorption
- 2. On the ship by ship the good adaptability;
- 3. Has the advantages of simple structure, convenient maintenance and installation, applicable to the ship curved tail.

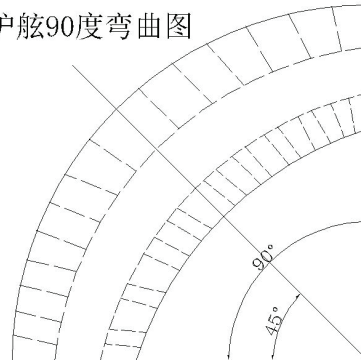
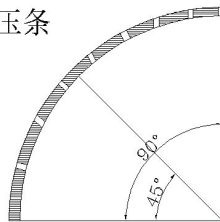
● 规格

Specifications



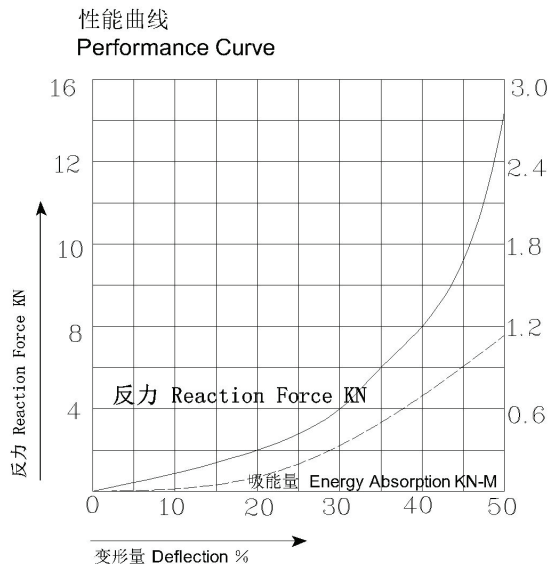
橡胶护舷90度弯曲图

铁板压条



● 性能曲线:

Performance Curve





一、DO型橡胶护舷的特点 Feature of DO Type Rubber Fender

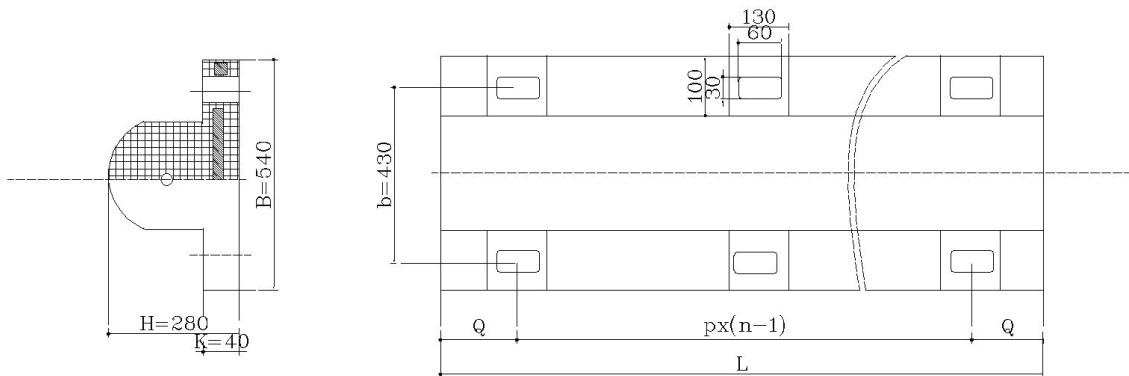
DO型橡胶护舷是D型护舷的改造产品，护舷可双排锚固，安装强度大大增加，可以与其它护舷体系并用，从而保护船与码头。

DO Type fender is the improved generation of D Type fender, it can be fixed with double line anchors which greatly increase the installation stability, it also can be integrated into other fender system to reach the purpose of protecting the ship and docks



二、规格性能 Specification and Performance of DO Type Rubber Fender

● 规格 Specifications



● 安装孔距 Installation holes pitch

规格 Specifications H×B×L	L	Q	P	n 螺栓孔 Bolt holes
DO300×540×1000	1000	150	700	2
DO300×540×1500	1500	150	600	3
DO300×540×2000	2000	145	570	4
DO300×540×2500	2500	150	550	5
DO300×540×3000	3000	150	540	6



一、SD-A型护舷的特点：

Features of SD-A Type Fenders

- 制品具有高吸能，低反力的特点。

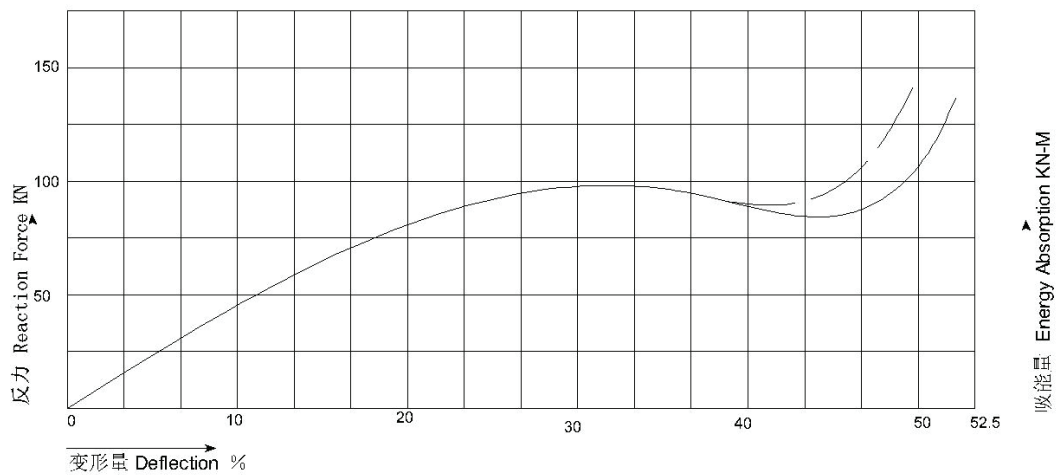
High energy absorption and low reaction force.

- SD-A型护舷是芜湖平安橡胶有限公司推出的V型护舷的换代产品，它比V型护舷吸能量提高3-3.5%。
即：使用SD-A型超级拱形护舷，可以减少产品高度，节约工程费用，下边是两种护舷性能比较



SD-A fenders are new generation of V fenders produced by Yantai Rubber Co.,Ltd, with 3-3.5% increased energy absorption. That is; Application of the SD-A super arch fender can reduce product height and save project cost. The following is the performance comparison of these two kinds of fenders.

- 性能曲线
Performance Curve



型号 Type	E.R/H
DGH	0.42
V	0.34

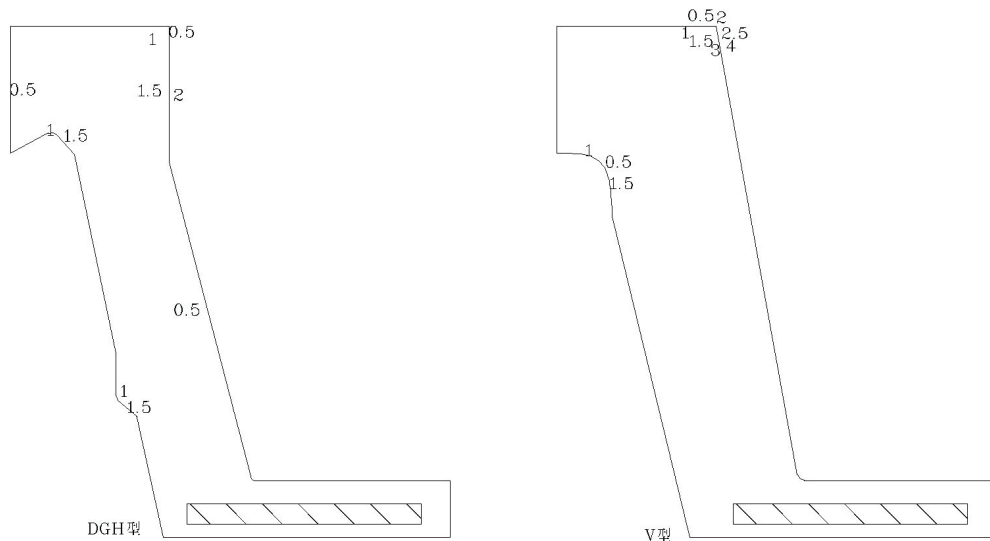


2. 制品结构合理，使用寿命长

Reasonable Structure and long service time

- 由于SD-A型护舷特有的结构设计，使其在压缩变形中，应力集中现象大为改进，大大提高了其使用寿命。

The special structure design of the SD-A fender greatly improved the stress concentration under compression deflection which prolong its service time a lot.



3. 前方设置防冲板，保护护舷，降低面压。

Front panel was set on the top protect the fender and reduce the surface pressure

- 顶端加防冲板，故大大降低了面压，并由于使用贴面板使其与船舶磨擦系数降低，从而增加了对船舶停靠时剪切的适应力，SD-A 护舷使用实例；

With front panel set on the top, the surface pressure is greatly reduced, and also the use of the face pad reduce the friction coefficient with ships, therefore increase the adaptability for shearing force at ship berthing. Example of SD-A fender application;

(1) 无头部内设钢板和顶板

No pre-built-in steel plate and face pad on the top.

(2) 适用小型船舶码头和船型异常的船

Applicable for small dock and ships in abnormal shapes.

(3) 通常用于小泊船和渔船

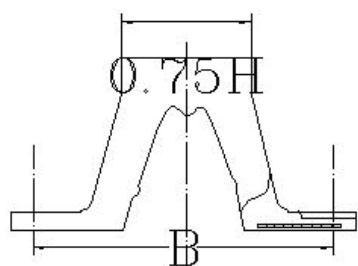
Normally applied for small barges and fishing vessel.



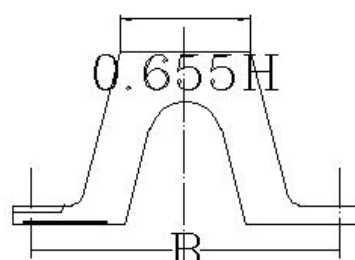
4. 更换方便

Easy for replacement

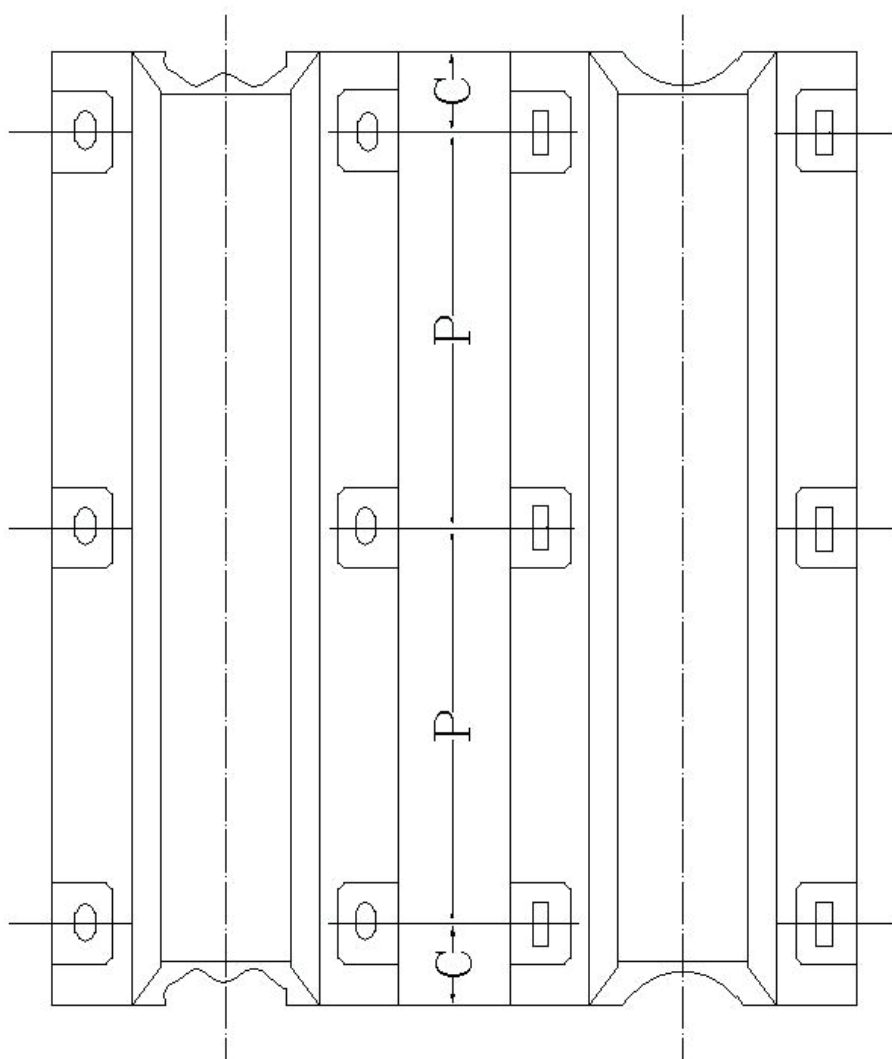
- 因为SD-A型护舷与V型护舷具有相同的螺栓孔距，所以它可以很方便地替换V型护舷，从而获得更高的性能
- Because the SD-A has the same bolt pitch as the V type, it can be easily used to replace the V type Fender so as to obtain higher performance.



SD-A型护舷
DGH Type
Fender



V型护舷
V Type Fender

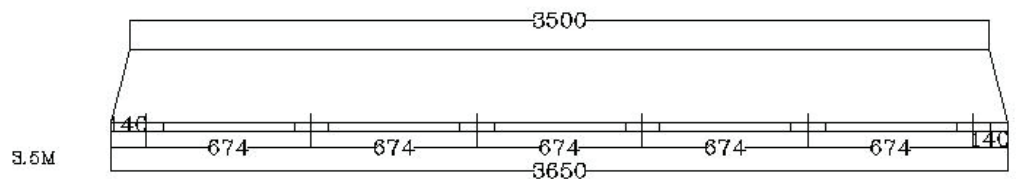
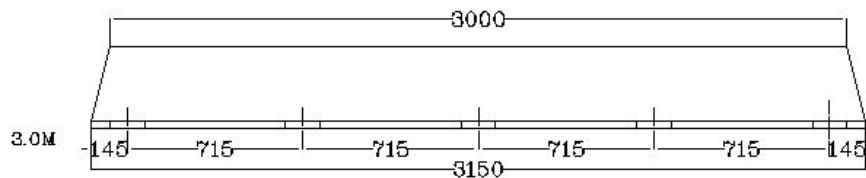
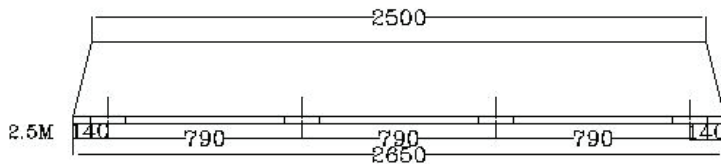
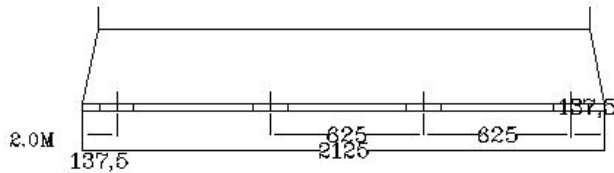
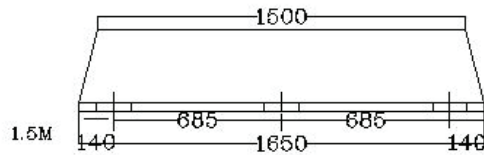
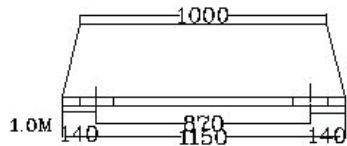
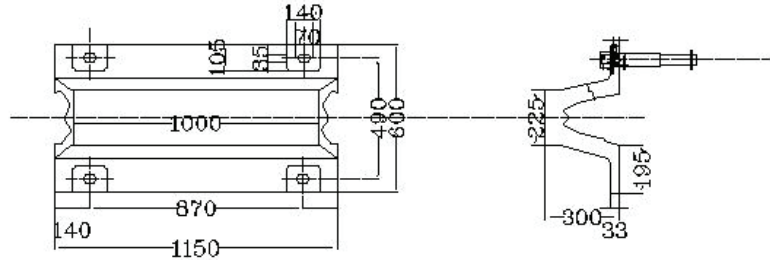




SD-A300

1. 标准尺寸和螺栓孔距

Standard sizes and bolts pitch



参考重量

Reference Weight

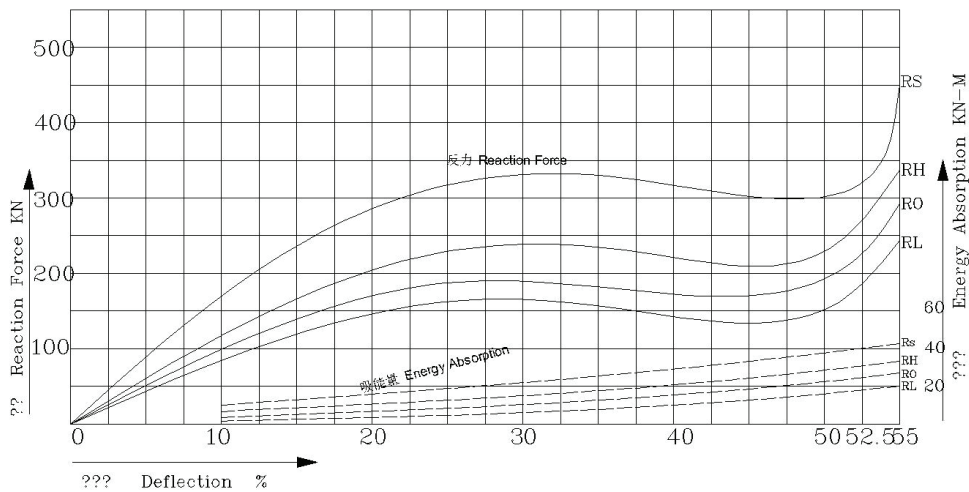
规格型号 Specifications	单位 Unit	重量 (kg) Weight
300×1000	个	125
300×1500	个	178
300×2000	个	233
300×2500	个	308
300×3000	个	370
300×3500	个	435



配方 Formulation	超高反力型 Rs Super High Reaction Force Rs				高反力型 RH High Reaction Force RH				标准反力型 RO Standard Reaction Force RO				低反力型 RL Low Reaction Force RL			
	52.5%		55%		52.5%		55%		52.5%		55%		52.5%		55%	
变形 Deflection	52.5%		55%		52.5%		55%		52.5%		55%		52.5%		55%	
	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption	反力 Reaction Force	吸能 Energy Absorption
1.0	324	41	450	44	249	31	346	33	206	26	286	28	177	22	246	24
1.5	486	62	675	66	374	47	519	50	309	39	429	42	266	33	369	36
2.0	648	82	900	88	498	62	692	66	412	52	572	56	354	44	492	48
2.5	810	103	1125	110	623	78	865	83	515	65	715	70	443	55	615	60
3.0	972	123	1350	132	747	93	1038	99	618	78	858	84	531	66	738	72
3.5	1134	144	1575	154	872	109	1211	116	721	91	1001	98	620	77	861	84

备注 Note: (1) 性能公差 Tolerance: $\pm 10\%$
 (2) 设计压缩变形 Rated Compression deflection: 52.5%
 (3) 最大压缩变形 Max.Compression deflection: 55%

Performance Curve

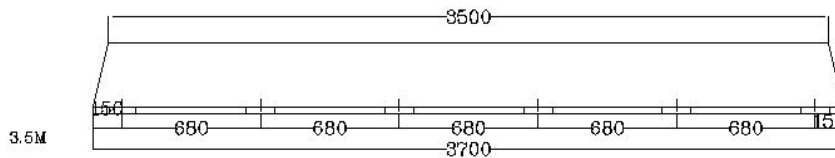
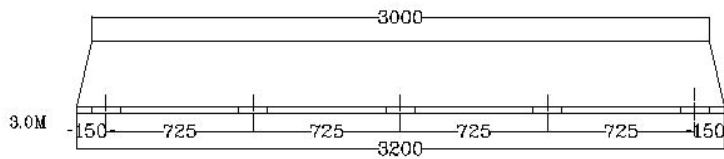
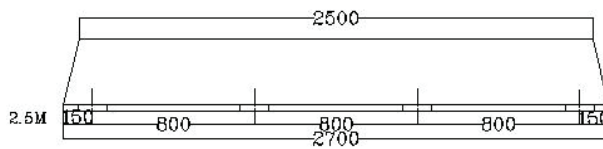
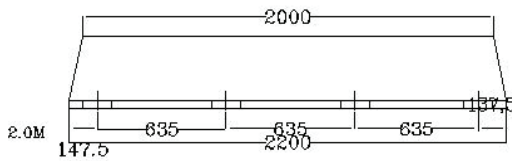
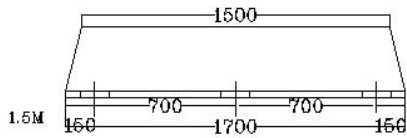
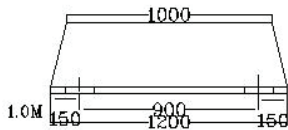
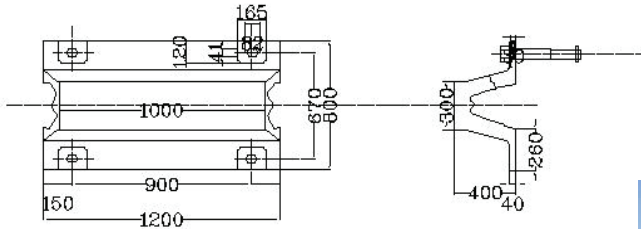




SD-A400

1. 标准尺寸和螺栓孔距

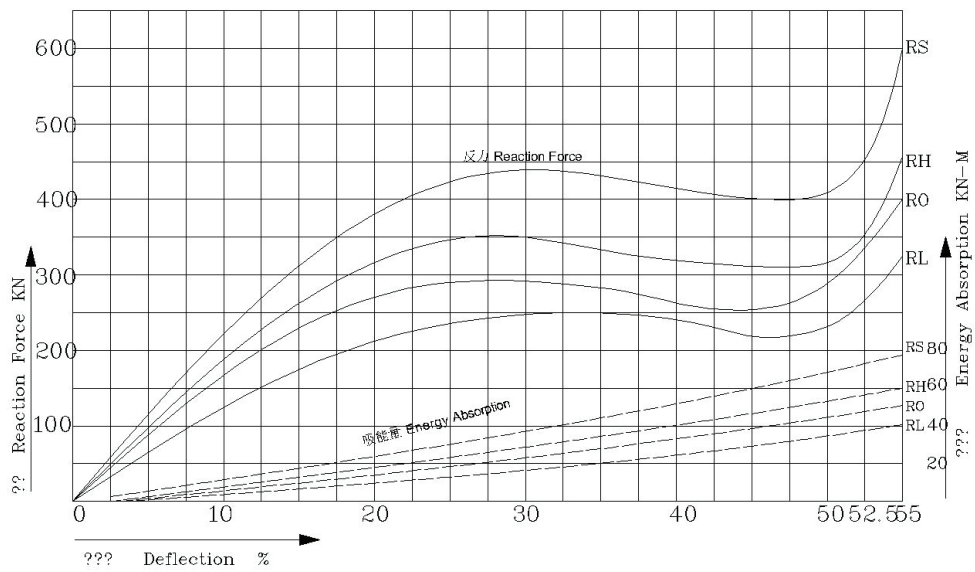
Standard sizes and bolts pitch



规格型号 Specifications	单位 Unit	重量 (kg) Weight
400×1000	个	205
400×1500	个	300
400×2000	个	391
400×2500	个	430
400×3000	个	635
400×3500	个	738



● 性能
Performance

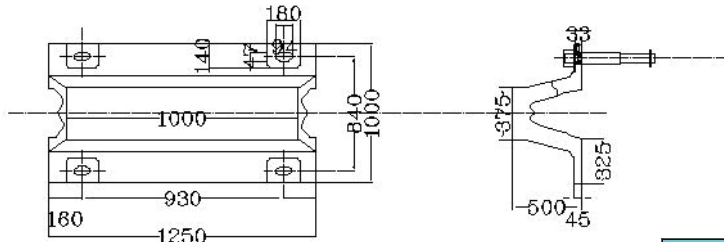




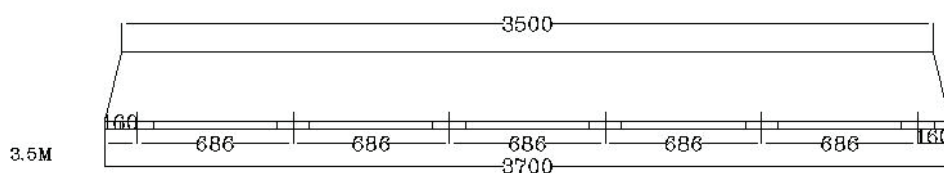
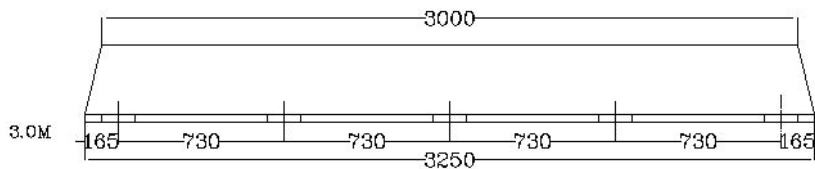
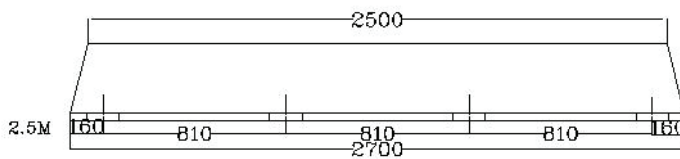
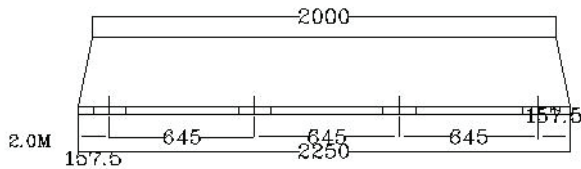
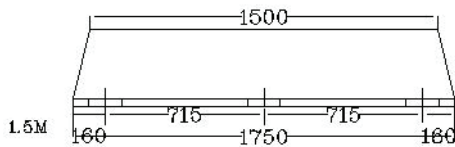
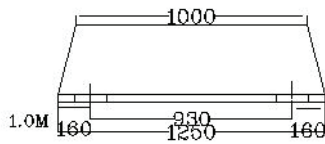
SD-A500

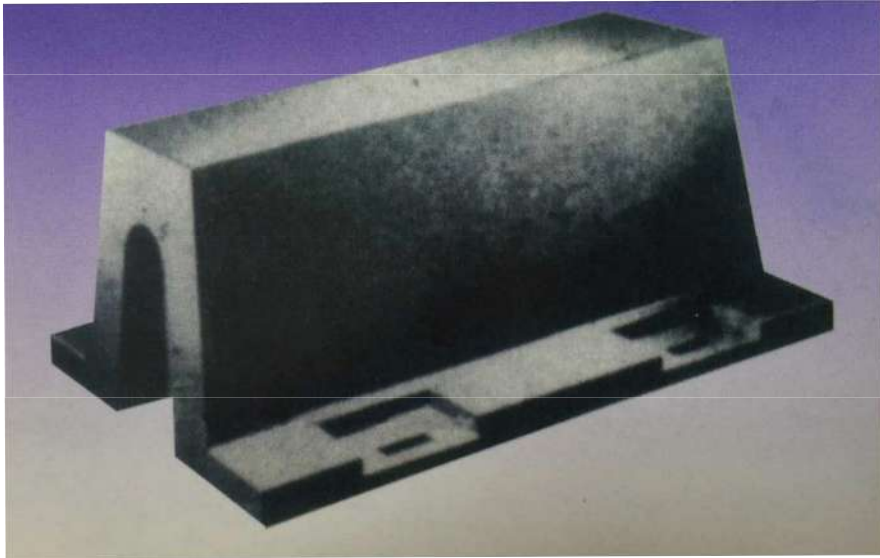
1. 标准尺寸和螺栓孔距

Standard sizes and bolts pitch

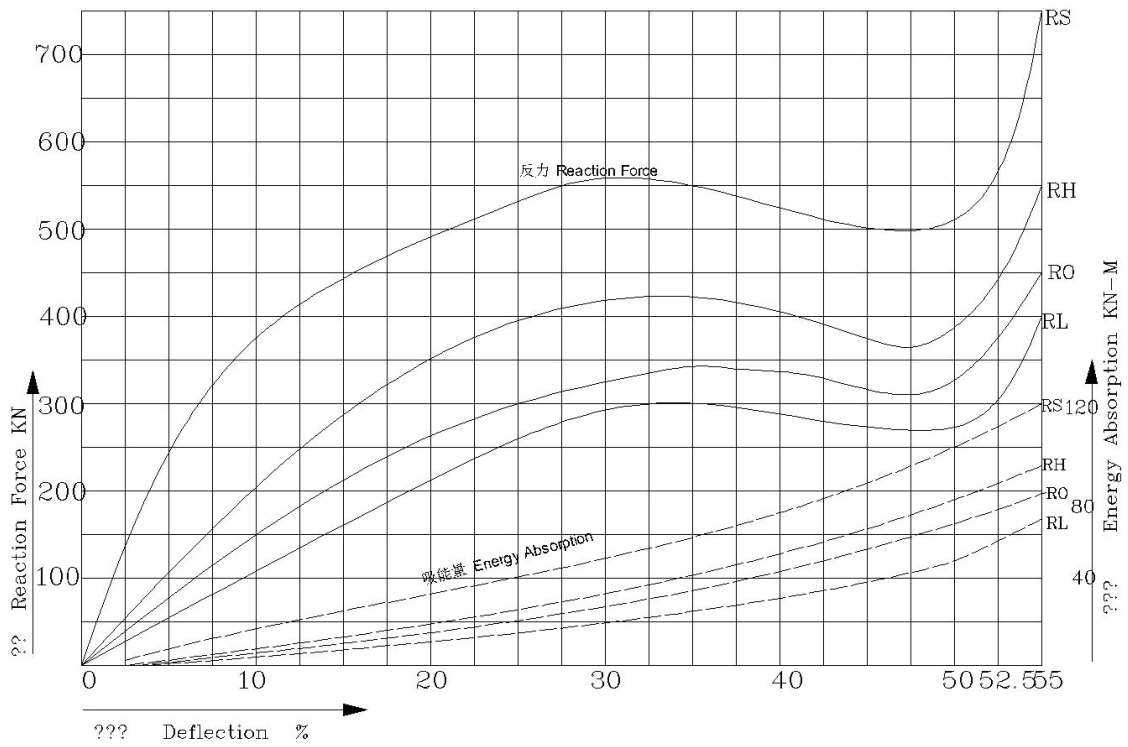


规格型号 Specifications	单位 Unit	重量 (kg) Weight
500×1000	个	325
500×1500	个	460
500×2000	个	600
500×2500	个	805
500×3000	个	953
500×3500	个	1110





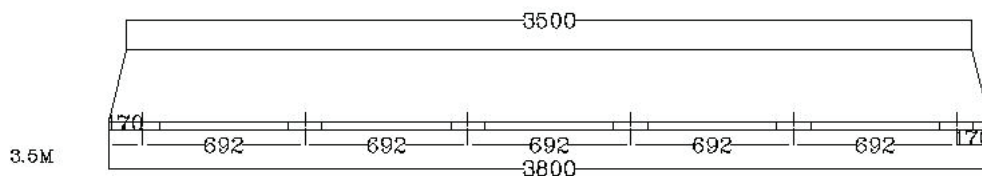
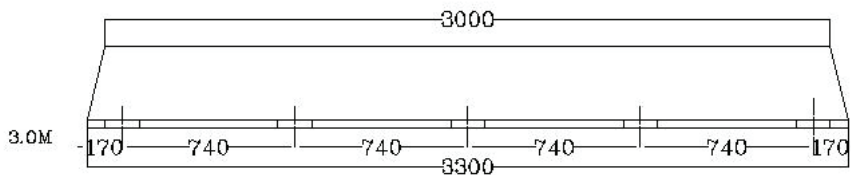
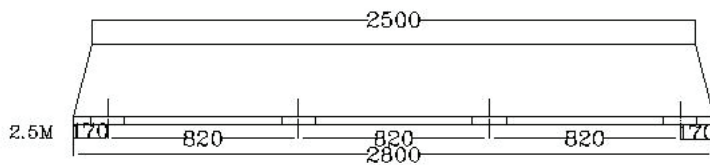
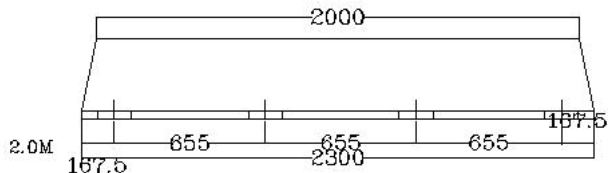
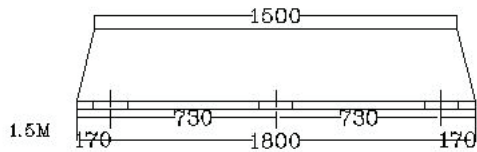
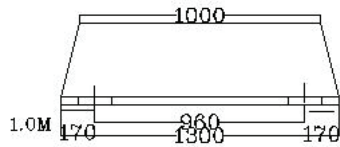
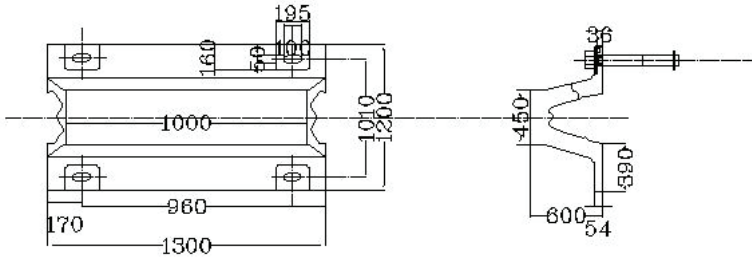
● 性能
Performance





SD-A600

1. 标准尺寸和螺栓孔距
Standard sizes and bolts pitch

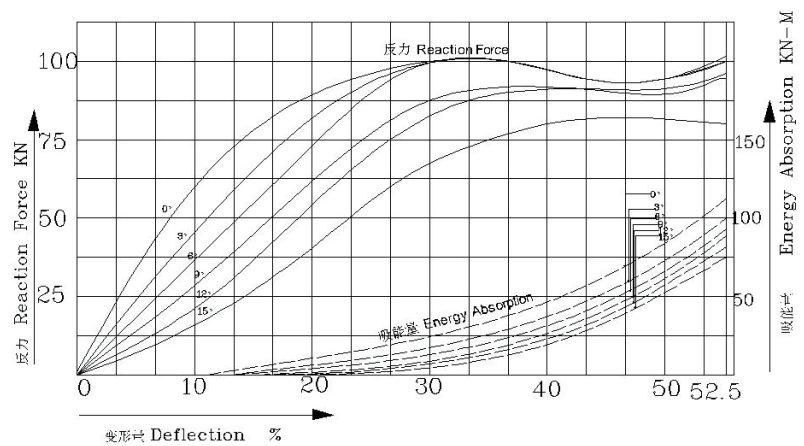
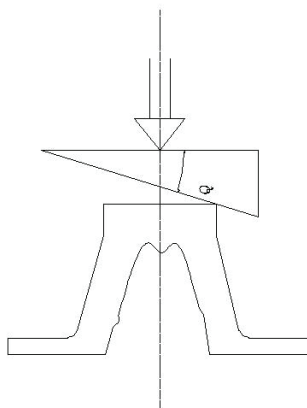


规格型号 Specifications	单位 Unit	重量 (kg) Weight
600×1000	个	480
600×1500	个	680
600×2000	个	882
600×2500	个	1100
600×3000	个	1341
600×3500	个	1581



三、SD-A 型护舷倾斜压缩性能 Slant Compression Performance of SD-A Type Fenders

1. SD-A护舷单位宽度的倾斜压缩变形 SD-A Fender Unit Width Slant Compression deflection



注：上述曲线表示在52.5%变形不同角度的反力，吸能量的修正系数
Note: The above curve shows recorection coefficient of reaction force and energy absorption in different angles at 52.5% deflection

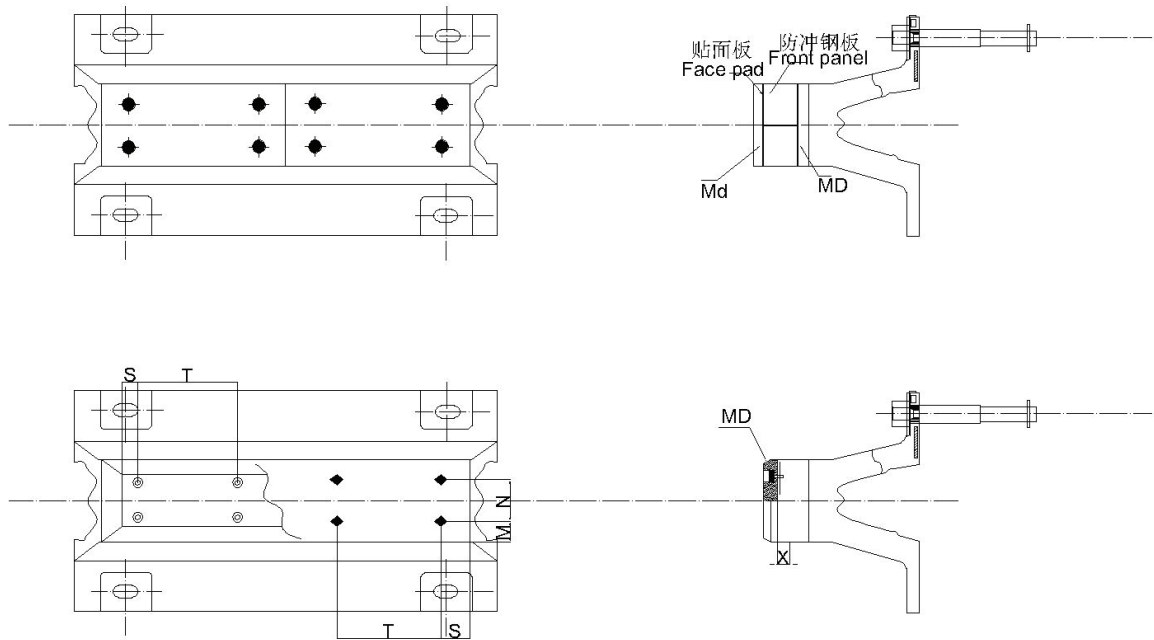




SD-B型护舷

SD-B型橡胶护舷是采用先进的材料和工艺，把20-30mm厚的UHMW面板直接黏结在护舷上，使SD-B型护舷性能保持不变，从而大大降低了护舷对船舶的磨擦系数，降低工程造价。规格尺寸配件同SD-B。

SD-B Type fender is produced by adoption of advanced material and procedure to cohere 20-30 thickness UHMW pad directly to the fender whcih maintain SD-B fender performance so as to reduce the frictioncoefficient of fender against ships and also reduce project cost.



规格 Specifications	联结 UHMW 贴面板 Connect with UHMW face pad				联结防冲钢板 Conner with front panel		MD	Md	X	长度 Length
	M	N	S	T	S	T				
SD-B150	49	0	60	300~400	125	250~300	M22	M16	35	1000~3500
SD-B200	65.5	0	60	300~400	125	250~300	M24	M16	35	1000~3500
SD-B250	50	64	60~85	300~400	125	250~300	M27	M16	35	1000~3500
SD-B300	60	105	60~85	300~400	125	250~300	M30	M16	40	1000~3500
SD-B400	60	180	60~85	300~400	125	250~300	M36	M16	45~50	1000~3500
SD-B500	65	245	60~85	300~400	125	250~300	M42	M16	50~55	1000~3500
SD-B600	70	310	60~85	300~400	125	250~300	M48	M16	50~55	1000~3500
SD-B800	80	440	65~85	300~400	125	250~300	M64	M16	55~60	1000~3000
SD-B1000	90	570	65~85	300~400	125	250~300	M64	M16	60~70	1000~2000

注：其它未注尺寸参照SD-A护舷规格。

Note: Please refer to SD-A fender specifications for other unmentioned sizes.



●金属配件

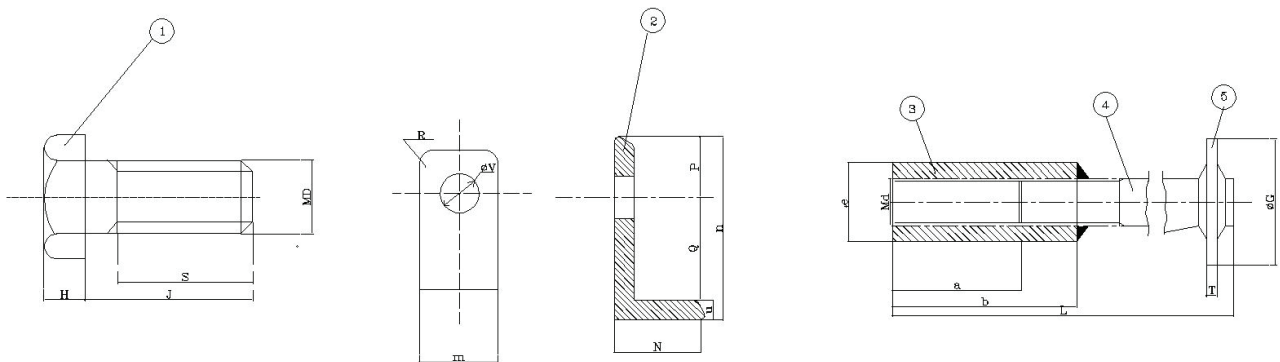
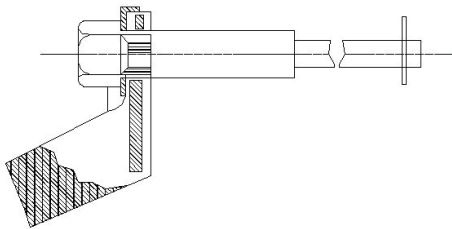
Metal accessories

1. 预埋螺母用不锈钢材料制成，耐腐蚀力强，联接强度大。

Pre built-in nut is made of stainless steel, which is of strong corrosion resistance and connection force.

2. 螺栓更换方便

Easy for bolt replacing





W型橡胶护舷

● 特点

1. 船用护舷。
2. 接触面积大，面压小。
3. 安装、维修方便。

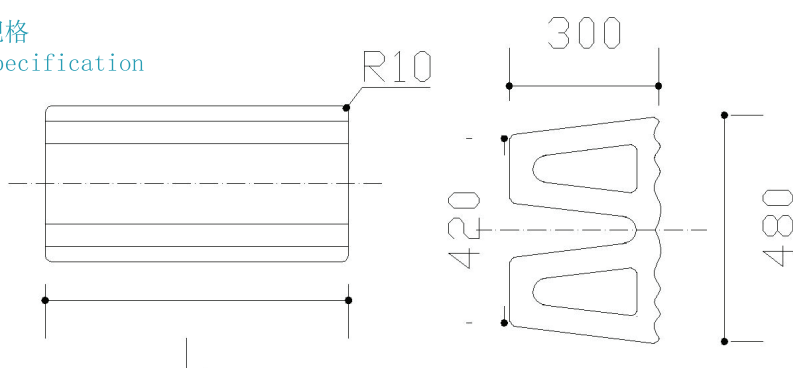
● Feature

1. Special for ships.
2. Large contact and low surface pressure
3. Easy to be installed and maintained.



● 规格

Specification



注：1. 护舷长度可根据用户需要选择

2. 其它规格可根据用户需求制造

Note:1. Fender Length is subject to customer's requirement.

2. Fender in other specifications are available upon request.





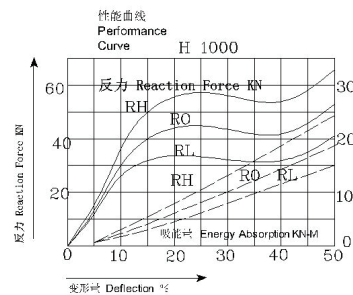
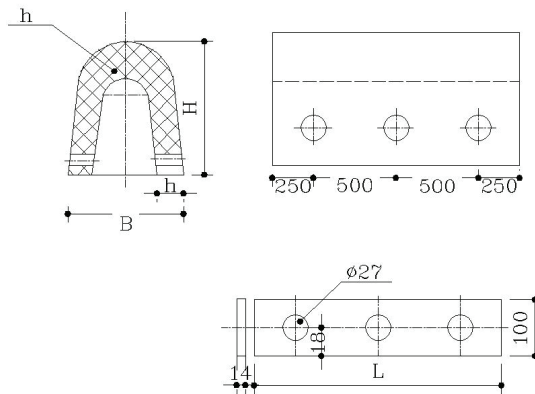
U型橡胶护舷

● 特点

1. u型橡胶护舷适用于液化气吨船，油船及各种旧船改造。
2. 反弹力强，吸能量高。安装方便，牢固可靠，使用年限长。

Feature

1. U rubber fender. Suitable for the liquefied gas tanker ship tons, transformation and all kinds of old ship.
2. The rebound strength, high energy absorption. Easy installation, firm and reliable, the service life is long.



● 规格 Specification

规格 型号	H	B	h	H1	L	l
3000×1500~3000	350	300	80	130	1500	100
400×1500	450	400	100	150	1500	100
400×2000	450	400	100	150	2000	100
500×1500	550	500	120	170	1500	100
500×2000	550	500	120	170	2000	100



G型橡胶护舷

● 特点

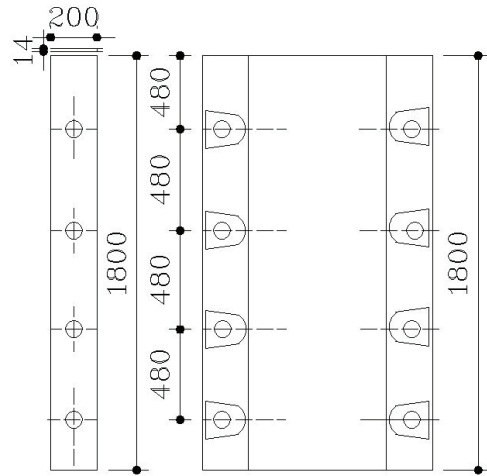
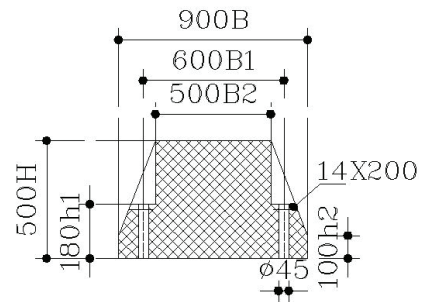
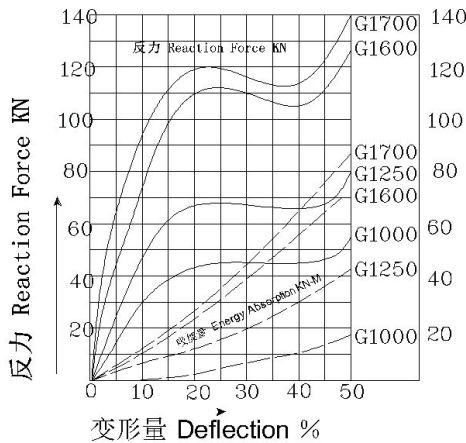
1. 适用与港口码头，船舶安装使用。
2. 反力适中，吸能量大，安装方便，使用寿命长。

Feature

1. Application and port, the ship installation.
2. At suitable reaction force, energy absorption, easy installation, long service life.



性能曲线
Performance Curve



● 规格

Specification

规格 \ 尺寸	B	B1	B2	H	h1	h2	L	螺孔直径
480×300×230	480	280	230	300	130	80	1500	33
580×400×300	580	360	300	400	160	90	2000	40
680	680	420	350	450	170	95	2500	42
900	900	600	500	500	180	100	3000	44



M型橡胶护舷

- 特点

吸能量高、反力低、结构合理、安装、维修方便。用于各种码头。

Feature

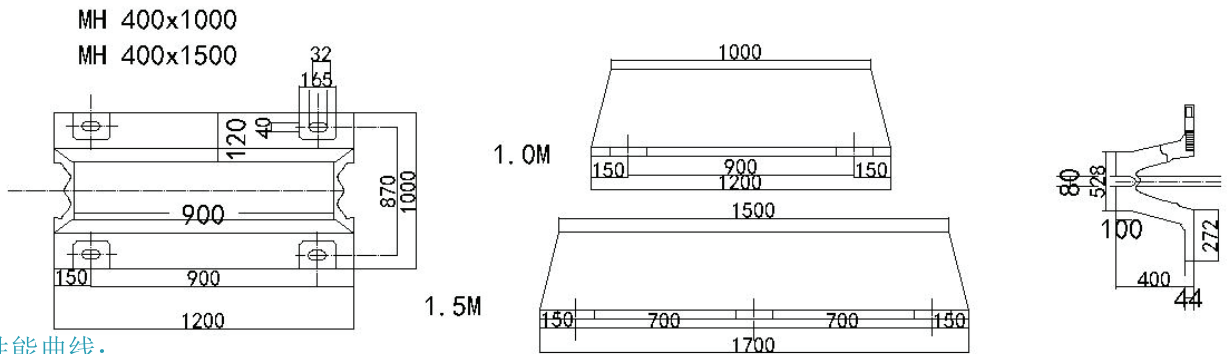
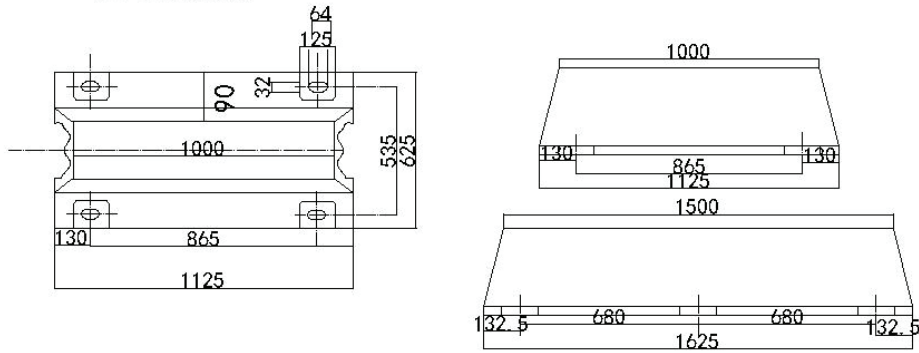
High energy absorption, low reaction force, reasonable structure, installation. Convenient repair. Used for a variety of terminal.

- 规格

Specification

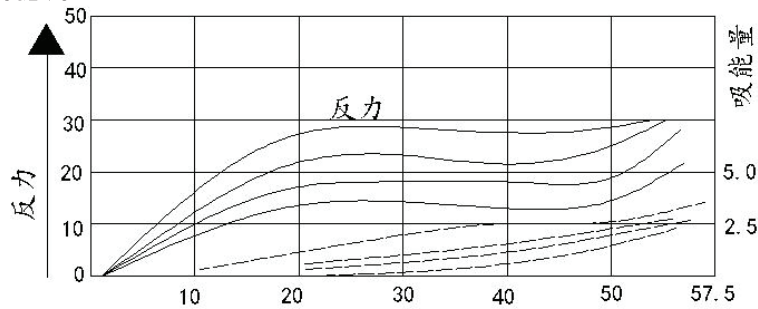
MH 250x1000

MH 250x1500



- 性能曲线:

Performance Curve





H型橡胶护舷

● 特点

吸收船舶冲击能量，结构合理，安装方便，适用于码头，石油，液化气等万吨级船舶。

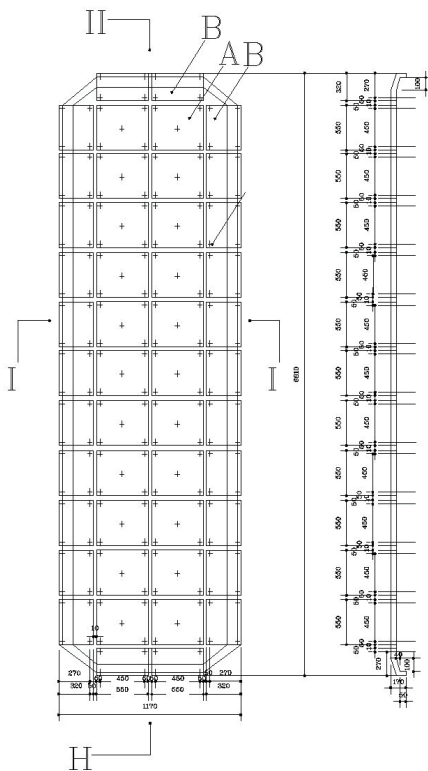
Feature

The ship impact energy absorption, reasonable structure, convenient installation, docks, oil, gas and other million ton ship.

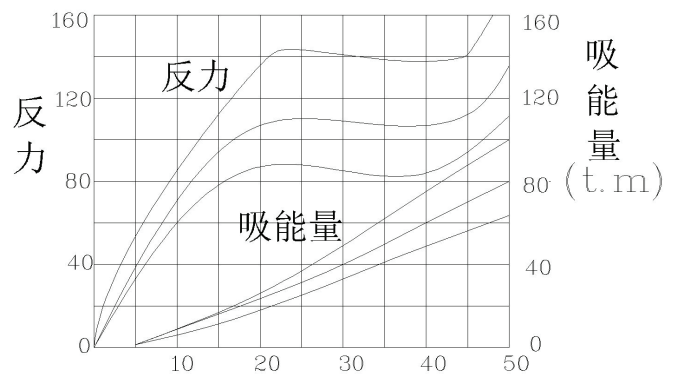
● 性能曲线:

Performance Curve

500X500X40 方形贴面



H 1600



● 规格

Specification

型号	规格			
	H	B	L	直径 Ø
1000×300×300~500	1000	300	300~500	Ø34
1500×300×500~1000	1500	300	500~1000	Ø34
2000×300×1000~1500	2000	300	1000~1500	Ø45
3000×400×1000~2000	3000	400	1000~2000	Ø45



方型橡胶护舷

● 特点

1. 反力适中，吸能量高，防缓冲性能好，保护船舶安全。
2. 结构简单，安装方便，适用于各港口、码头。

Feature

1. Suitable reaction force, high energy absorption, and good cushioning performance, protect the safety of the ship.
2. Has the advantages of simple structure, convenient installation, applicable to all ports, docks.

● 规格

Specification

规格 Specification	B	B1	d	D1	L
200×200	200	80	51	20	2000
250×250	250	85	54	22	2500
300×300	300	85	54	22	2500
400×400	400	100	56	24	3000





Π型橡胶护舷

特点

1. Π型橡胶护舷特别适用于1万-25万吨的码头。
2. 与船体接触面积大，接触压力低；吸能量高，反力低，倾斜压缩性能下降小。
3. 可垂直式水平安装，不需锚链固定；支撑臂之间的距离可按需要调节。

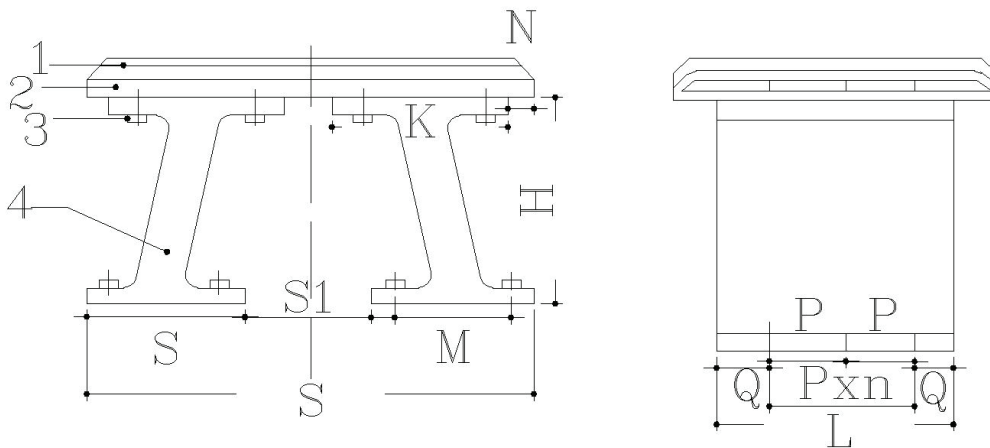
Feature

1. Π type rubber fender is especially suitable for 10000 -250000 tons pier.
2. With the large contact area, the contact pressure is low; high energy absorption, low reaction force, compression wise performance of small inclination.
3. Fenders can be installed in vertical , without anchor chain fixed; The distance between supporting arms can be adjusted according to request.

● 产品图
Product drawing



● 规格 (A)
Specification





● 断面尺寸 Section sizes

单位 Unit:mm

规格 Specifications	H	K	M	N	S	S ₁
π 600	600	500	370	65	1500	500
π 800	800	600	460	70	1700	500
π 1000	1000	700	550	75	2000	600
π 1250	1250	800	650	75	2450	850
π 1400	1400	900	730	85	2700	900
π 1700	1700	1050	860	95	3250	1050
π 2000	2000	1200	1000	100	3700	1300
π 2250	2250	1350	1150	100	4000	1300
π 2500	2500	1400	1200	100	4400	1600

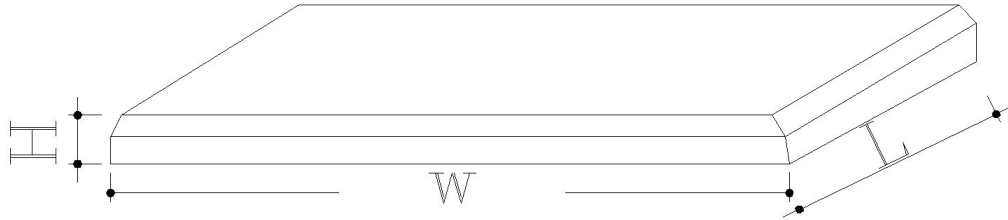
● 长度尺寸 Length

单位 Unit:mm

规格 Specifications	L=1000			L=1500			L=2000			L=2500		
	P	n	Q	P	n	Q	P	n	Q	P	n	Q
π 600. π 800 π 1000. π 1250 π 1400. π 1700 π 2000	700	1	150	600	2	150	850	2	150	700	3	200
π 2250	600	1	200	550	2	200	800	2	200	700	3	200
π 2500	600	1	200	550	2	200	800	2	200	-	-	-



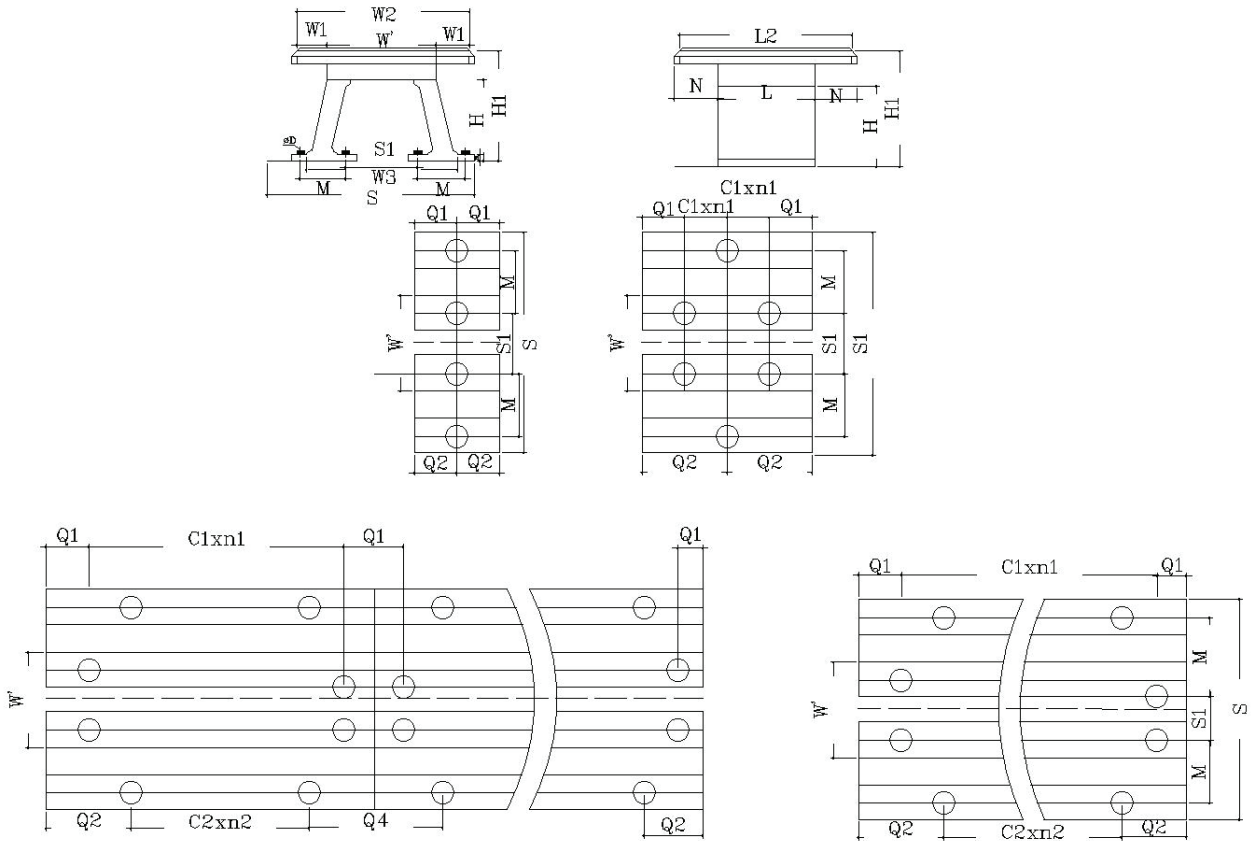
●防冲板规格尺寸 Specification of Front Panel



规格 Specification	性能 Performance	H	W	L
π 600	P1	160	1500	护舷长度 +500 Fender length +500
	P2	160		
	P3	180		
π 800	P1	180	1500	
	P2	180		
	P3	180		
π 1000	P1	180	2000	
	P2	210		
	P3	210		
π 1250	P1	235	2500	
	P2	235		
	P3	260		
π 1400	P1	260	2500	
	P2	310		
	P3	310		
π 1700	P1	310	3000	
	P2	310		
	P3	310		
π 2000	P1	310	3500	
	P2	310		
	P3	310		
π 2250	P1	310	4000	
	P2	310		
	P3	370		
π 2500	P1	310	4500	
	P2	370		
	P3	370		



● 规格 Specification (B)



规格 Specification	H	h	w3	D
π 600	600	50	375+W'	M52
π 800	800	60	500+W'	M64
π 1000	1000	65	625+W'	M64
π 1150	1150	65	718+W'	M64
π 1300	1300	65	810+W'	M64
π 1450	1450	80	908+W'	M76
π 1600	1600	100	1000+W'	M76
π 1800	1800	110	1126+W'	M76
π 2000	2000	120	1250+W'	M76
π 2250	2250	130	1390+W'	M76
π 2500	2500	140	1560+W'	M76



● 长度尺寸 Length sizes

规格 Specification	型号 Type	π 600 π 800 π 1000	π 1150 π 1300 π 1450	π 1600 π 1800 π 2000	π 2250 π 2500
L=500	Q1	250	-	-	-
	Q2	250			
	C1	0			
	C2	0			
	n1	0			
	n2	0			
L=1000	Q1	200	200	200	200
	Q2	500	500	500	500
	C1	600	600	600	600
	C2	0	0	0	0
	n1	1	1	1	1
	n2	0	0	0	0
L=1500	Q1	200	200	200	150
	Q2	750	300	300	300
	C1	1100	1100	550	600
	C2	0	900	900	900
	n1	1	1	2	2
	n2	0	1	1	1
L=2000	Q1	250	200	200	200
	Q2	500	550	200	500
	Q3	-	-	-	400
	Q4	-	-	-	1000
	C1	1500	800	800	600
	C2	1000	900	800	0
	n1	1	2	2	2
	n2	1	1	2	0
L=3000	Q1	200	200	200	150
	Q2	750	300	300	300
	Q3	400	400	400	300
	Q4	1500	600	600	600
	C1	1100	1100	550	600
	C2	0	900	900	900
	n1	2	2	4	4
	n2	0	2	2	2
L=3500	Q1	-	-	-	150
	Q2	-	-	-	150
	Q3	-	-	-	300
	Q4	-	-	-	300
	C1	-	-	-	725
	C2	-	-	-	725

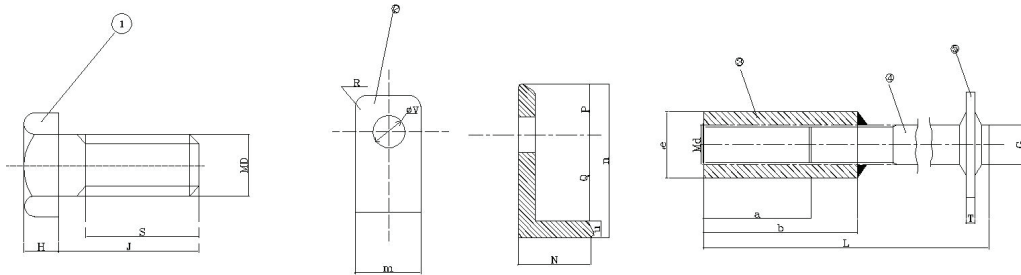
● 防冲板规格尺寸
Specification of Front Panel

单位 unit:mm

规格 Specification	性能 Performance	H'	W'	L2
π 600	P1	240	2000	护舷长度 +500 Fender length +500
	P2	240		
	P3	260		
π 800	P1	300	2000	
	P2	300		
	P3	300		
π 1000	P1	300	2500	
	P2	320		
	P3	320		
π 1150	P1	330	2500	
	P2	330		
	P3	350		
π 1250	P1	340	3000	
	P2	340		
	P3	340		
π 1300	P1	350	3000	
	P2	350		
	P3	350		
π 1400	P1	360	3500	
	P2	360		
	P3	360		
π 1450	P1	360	3500	
	P2	360		
	P3	360		
π 1600	P1	360	4000	
	P2	400		
	P3	400		
π 1700	P1	400	4000	
	P2	400		
	P3	400		
π 1800	P1	400	4500	
	P2	400		
	P3	400		
π 2000	P1	400	4500	
	P2	400		
	P3	400		
π 2250	P1	400	5000	
	P2	400		
	P3	400		
π 2500	P1	420	5500	



● 护舷配件 Rubber fender Accessories



型号 Type	螺栓 Bolt				垫片 Washer								预埋螺母 地角杆 地角板 Pre-built-in nut Foot rod Foot board					
	D	H	J	S	M	N	n	P	Q	U	V	R	a	b	e	T	L	G
π 600	M52	35	120	95	100	34	158	85	67	6	56	30	100	150	68	12~16	570	135
π 800	M64	40	150	125	116	39	168	88	72	8	70	40	125	190	78	16~20	700	150
π 1000	M64	40	150	125	120	43	170	85	77	8	70	40	125	190	78	16~20	700	150
π 1150	M64	40	150	125	120	43	170	85	77	8	70	40	125	190	78	16~20	700	150
π 1250	M64	40	150	125	125	43	177	90	77	10	70	40	125	190	78	16~20	700	150
π 1300	M64	40	150	125	125	43	177	90	77	10	70	40	125	190	78	16~20	700	150
π 1400	M64	40	150	125	130	43	187	90	87	10	70	40	125	190	78	16~20	700	160
π 1450	M64	40	150	125	130	43	187	90	87	10	70	40	125	190	78	16~20	700	160
π 1600	M76	50	190	145	135	55	197	90	97	10	84	50	135	210	95	20~24	800	175
π 1700	M76	50	190	145	135	55	197	90	97	10	84	50	135	210	95	20~24	800	175
π 1800	M76	50	190	145	140	55	197	90	97	10	84	50	135	210	95	20~24	800	175
π 2000	M76	50	190	145	140	58	212	100	102	10	84	50	135	210	95	20~24	800	175
π 2250	M76	50	190	145	145	60	212	100	102	10	84	50	135	210	95	20~24	800	180
π 2500	M76	50	190	145	145	60	212	100	102	10	84	50	135	210	95	20~24	800	180

序号 NO.	名称 Name	材质 Material
1	螺栓 Bolt	Q235 热镀锌, Q235 Hot-galv 1Cr13(2Cr13), 1Cr18Ni9Ti, 0Cr17Ni12MO ₂
2	垫片 Washer	Q235 热镀锌, Q235 Hot-galv
3	预埋螺母 Pre-built-in nut	1Cr13(2Cr13), 1Cr18Ni9Ti, 0Cr17Ni12MO ₂
4	地角杆 Foot rod	Q235
5	地角板 Foot board	Q235

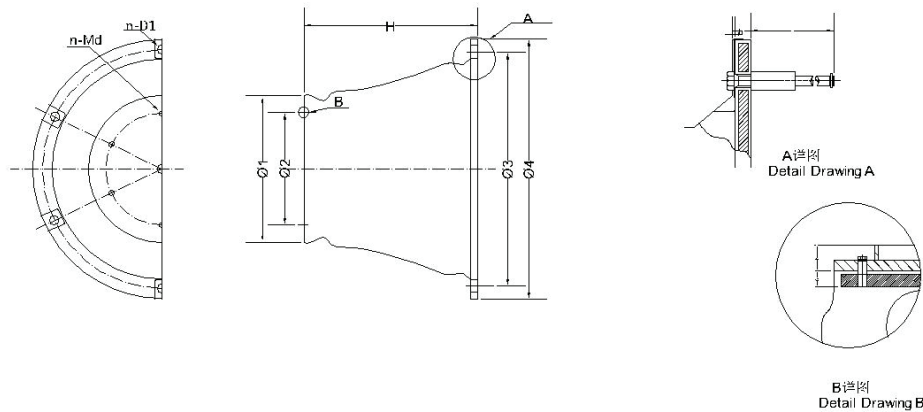


一、锥形护舷的特点

1. 鼓型护舷的第三代产品，结构更加合理，变形量增大，吸能量高，使用寿命更长。
2. 倾斜压缩性能更好，10度以下性能几乎不降低。
3. 规格全，可满足多种设计需要。
4. 通过调整配方可以获得多种性能。
5. 前端可放置防冲板，贴面板，护舷所受的剪切力大大降低。
6. 安装简单快捷。

Features of Cone Fender

1. The third generation product of cell with more reasonable structure with increased deflection, high energy absorption and longer service time.
2. Better performance in slant compression which will not reduce below 10 loading.
3. Versatile specifications meet numerous design requirements.
4. Versatile performance are available by adjusting compound formulation.
5. Front Panel and face pad pad can be installed in the front to reduce the shear loading a lot.
6. Easy and fast for installation.



规格表 Specifications

型号 Types	主要尺寸 Main dimensions(mm)											
	H	h	Ø1	Ø2	Ø3	Ø4	n	D1	Md	a	b	S
500	500	25	425	325	675	750	4	30	M24	4	75~95	36
600	600	27	510	390	810	900	6	30	M24	5	90~110	40
Cone700	700	32	595	455	945	1050	6	38	M30	6	105~125	40
Cone800	800	36	680	520	1080	1200	6	44	M36	7	120~140	52
Cone900	900	41	765	585	1215	1350	6	44	M36	8	135~155	55
Cone1000	1000	45	850	650	1350	1500	6	56	M42	8	150~170	65
Cone1100	1100	50	935	715	1485	1650	6	50	M42	8	165~185	65
Cone1150	1150	52	998	750	1550	1725	6	56	M42	10	170~195	70
Cone1200	1200	54	1020	780	1620	1800	8	50	M42	10	180~210	75
Cone1300	1300	59	1105	845	1755	1950	8	60	M48	11	195~225	75
Cone1400	1400	66	1190	930	1890	2100	8	60	M48	12	210~235	70~80
Cone1600	1600	72	1360	1060	2160	2400	8	70	M48	14	280~270	70~80
Cone1800	1800	78	1530	1190	2430	2700	10	76	M56	16	270~290	75~90



二、规格、尺寸和性能曲线

Specifications, Dimensions and Performance Curve

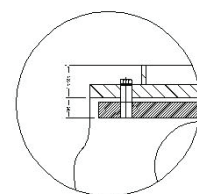
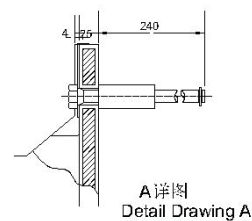
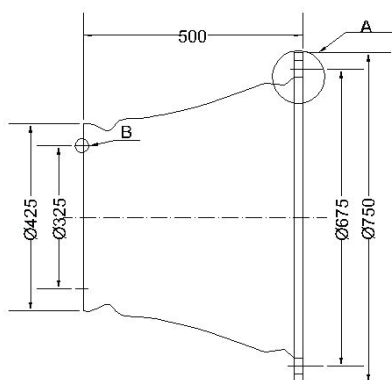
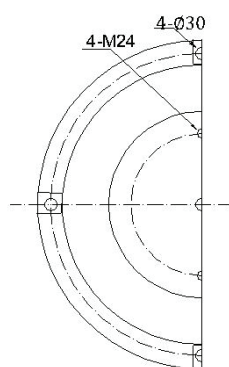


规格、尺寸

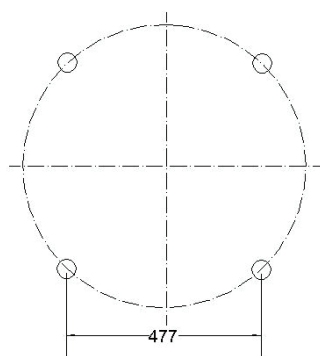
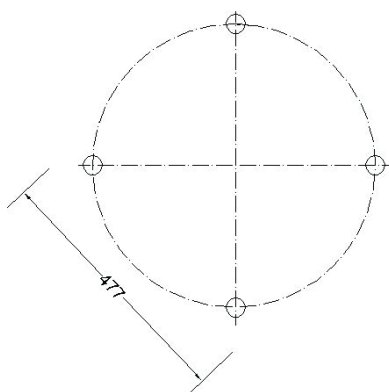
Specifications & Dimensions

锥形 500H

CONE 500H



参考重量: 140kg
Reference Weight: 140kg



单位 unit:mm

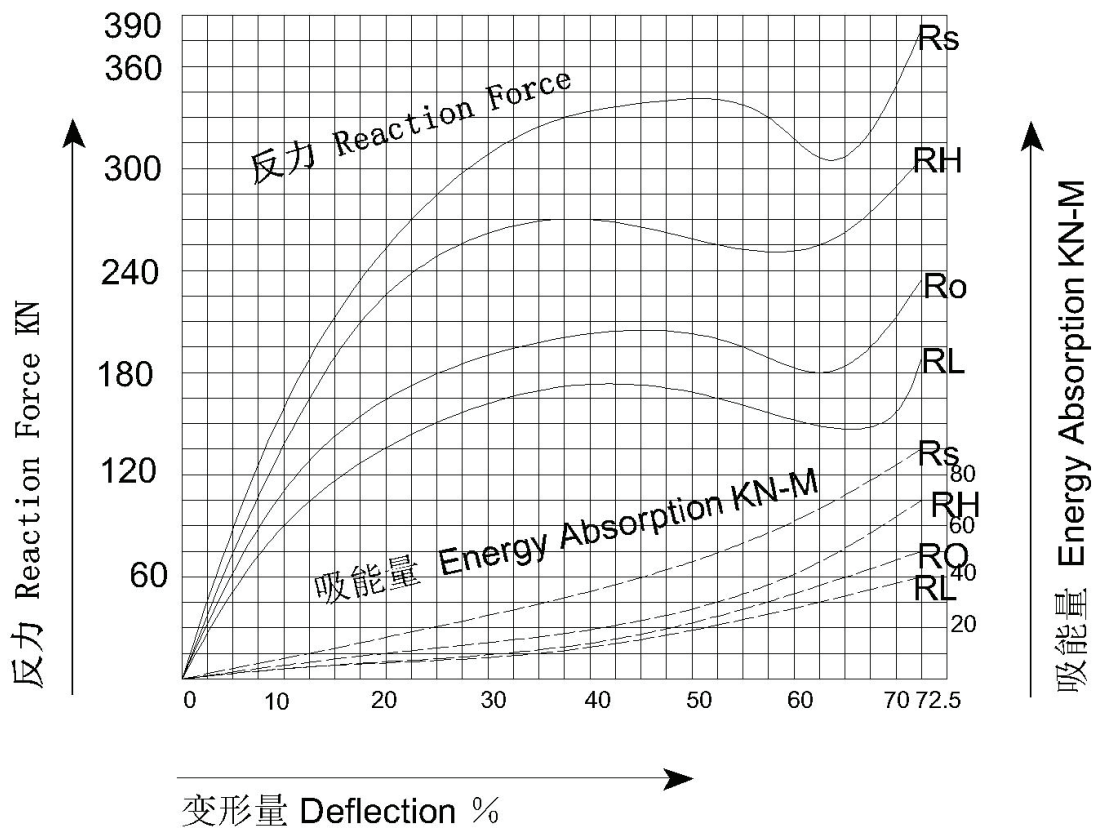


●性能

Performance

型号 Type	设计压缩变形 70% Rated Compression Deflection 70%		最大压缩变形 72.5% Max.Compression Deflection 72.5%	
	反力 KN Reaction Force	吸能 KN-M Energy Absorption	反力 KN Reaction Force	吸能 KN-M Energy Absorption
超高反力型 RS Super High Reaction Force	335	79	380	90
高反力型 RH High Reaction Force	268	63	311	70
标准反力型 RO Standard Reaction Force	200	47	232	50
低反力型 RL Low Reaction Force	165	37	193	41

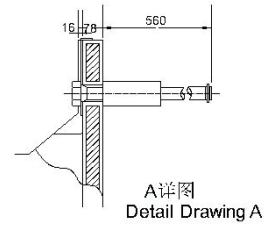
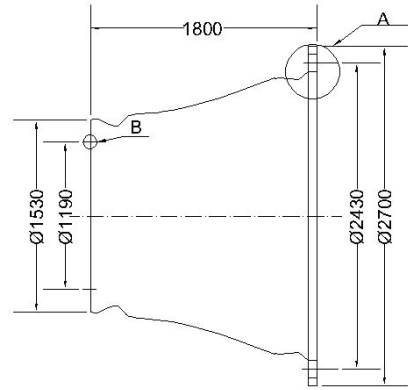
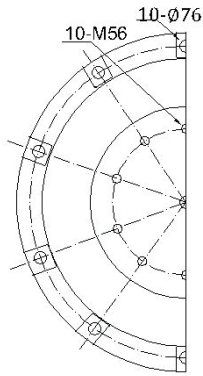
●性能曲线 Performance Curve



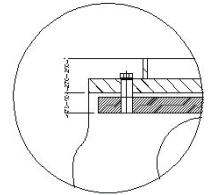


● 规格、尺寸
Specifications&Dimensions

锥形 500H
CONE 500H

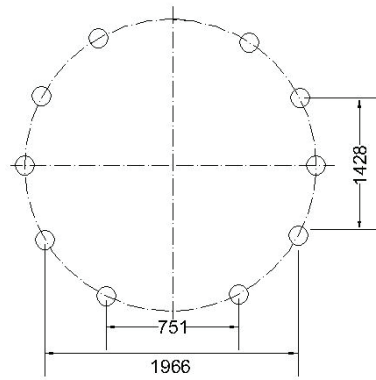
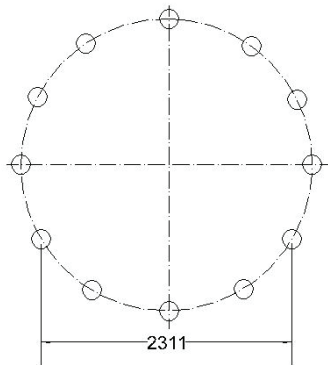


A详图
Detail Drawing A



B详图
Detail Drawing B

参考重量: 6600kg
ReferenceWeight: 6600kg



单位 unit:mm

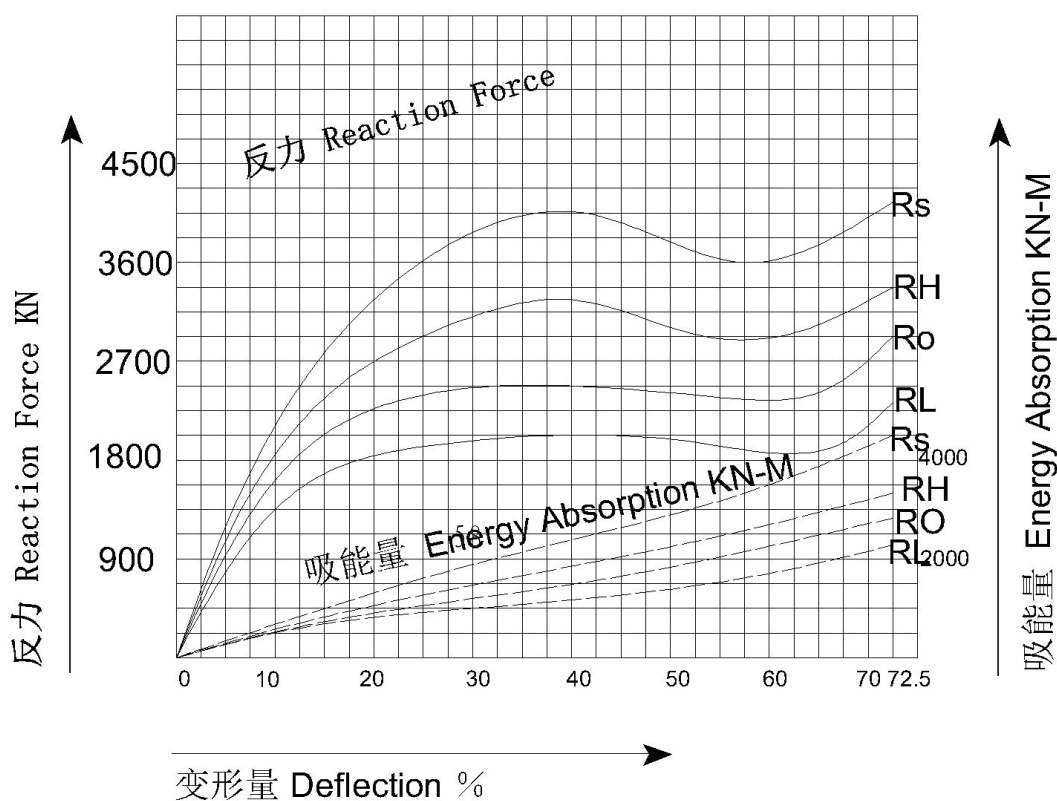


● 性能

Performance

型号 Type	设计压缩变形 70% Rated Compression Deflection 70%		最大压缩变形 72.5% Max.Compression Deflection 72.5%	
	反力 KN Reaction Force	吸能 KN-M Energy Absorption	反力 KN Reaction Force	吸能 KN-M Energy Absorption
超高反力型 RS Super High Reaction Force	3350	3538	4166	3686
高反力型 RH High Reaction Force	3000	2830	3333	2948
标准反力型 RO Standard Reaction Force	2401	2264	2667	2359
低反力型 RL Low Reaction Force	1912	1804	2125	1880

● 性能曲线 Performance Curve





三、倾斜压缩性能表 Slant Compression Performance List

吸能和反力倾斜压缩校正系数

Slant Compression Correction Coefficient of Energy Absorption & Reaction Force

角度 (°) Angle	0 °	1 °	3 °	5 °	7 °	9 °	10 °	11 °	13 °	15 °	20 °	30 °
E(%)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.98	0.97	0.93	0.87	0.63
R(%)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.82

四、预埋件 Prebuilt Parts

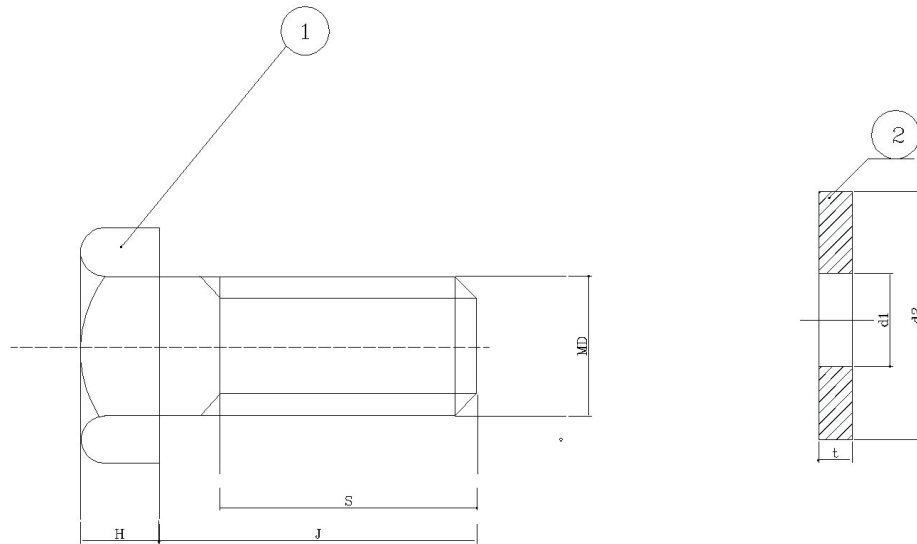
主要配件及用途 Main Accessories and Applications

序号 NO.	名称 Description	用途 Applications	材质 Material
1	预埋 U 型环 Pre built in U ring	吊挂链条用 Holding chains	Q235 涂漆、Q235 热镀锌 Q235Painted,Q235 Hot-galv.
2	预埋螺母螺栓 Anchor Bolt & Nut	用于固定护舷于码头上 Fasten fenders onto dock	不锈钢、Q235 热镀锌 Stainless steel,Q235 Hot-galv.
3	链条（包括拉伸链、 承重链、剪切链） Chains(Including tensile chain,weight chain & shear chain	1、当护舷局部受力时限制护舷拉伸 2、承受防冲板的重量、防止护舷下垂 3、防止护舷系统剪切变形 1. Limit fender deflection while fender local part under strain 2. Support the front panel in avoid of sagging 3. Prevent fender system from shear deflection	Q235 热镀锌 15Mn 或 20Mn 热镀锌，橡胶 Q235 hot-galv. 15Mn or 20Mn hot-galv.Rubber
4	防冲钢板 Front Panel	降低面压、防止护舷码头和船舶损坏 Reduce surface pressure in avoid of Damage of the fender & vessels	Q235 涂漆 Q235paited
5	贴面板 Face pad	降低摩擦系数保护船体 Reduce friction coefficient to protect hull	超高分子量聚乙烯板 UHMW-PE
6	钢架 Steel Mount	增加护舷性能 Increase fender performance	Q235paited
7	联接件 Connector	用于护舷与防冲板联接 Conner the fender & Front panel	不锈钢、Q235 热镀锌 Stainless steel,Q235 Hot-galv.
8	护舷本体 Buffer	吸收船舶冲击能量保护码头与船舶 Absorb ship berthing energy to protect dock and vessels	橡胶，Q235 Rubber,Q235



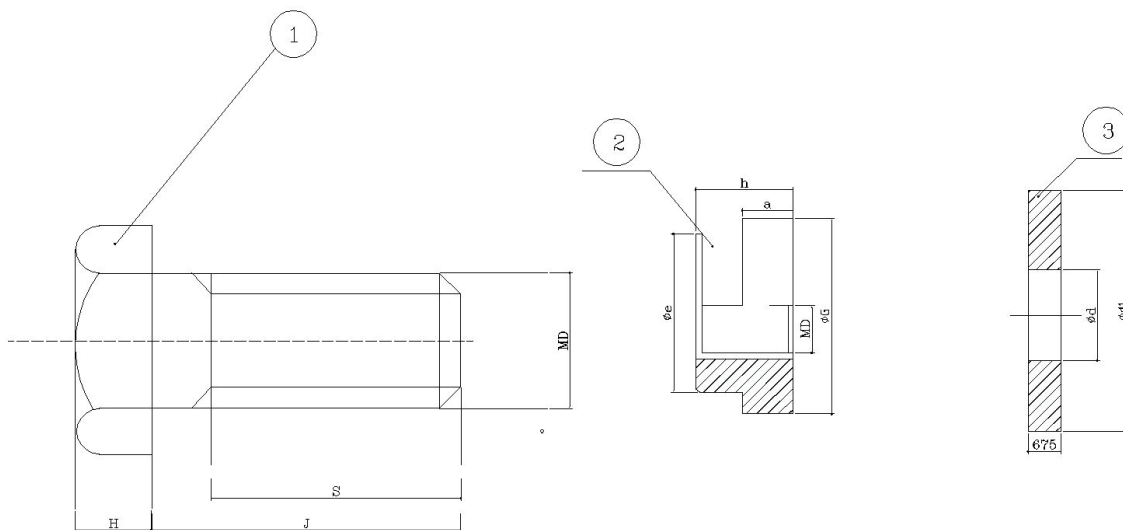
五、护舷与防冲板联接配件

Connection parts between fender & front panel



六、防冲板与贴面板联接配件

Connection parts between front panel & face pad





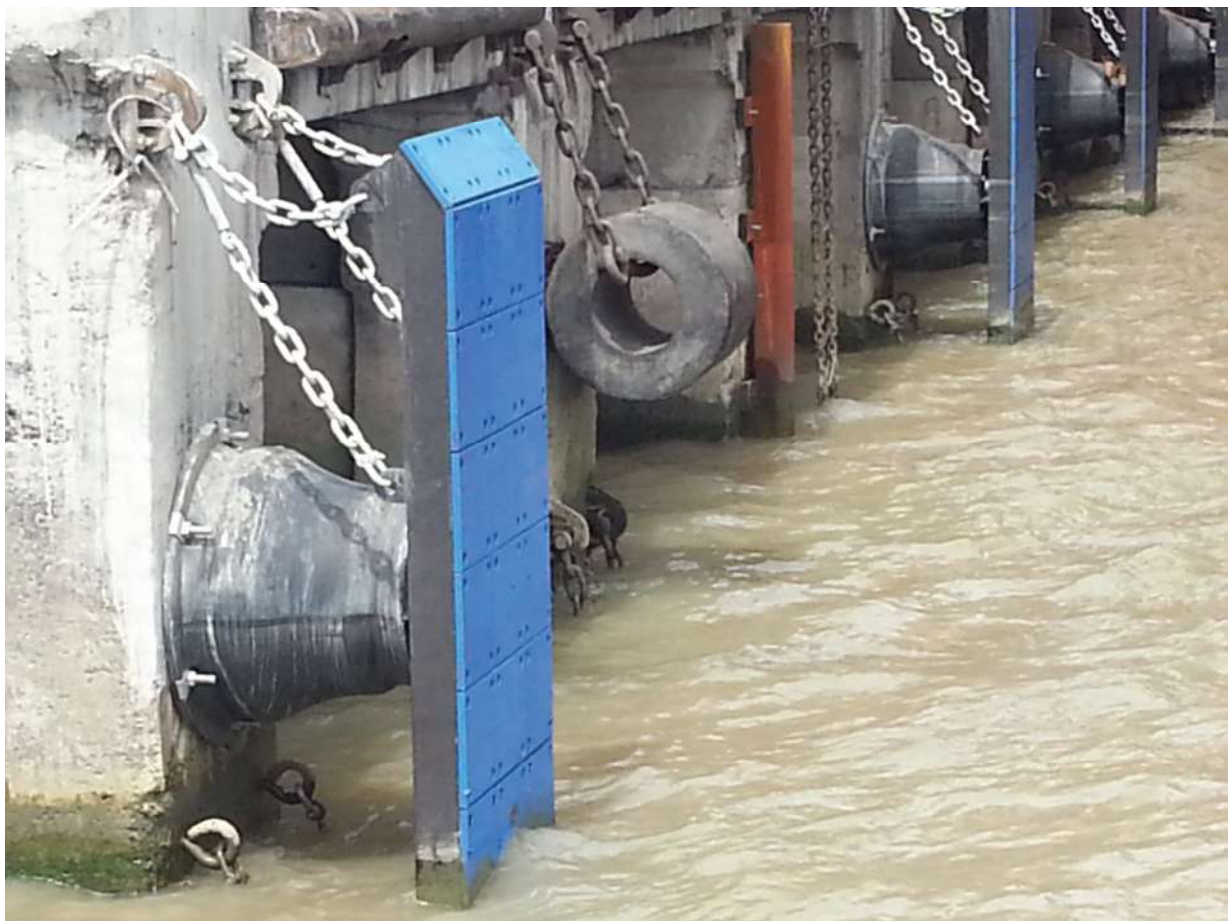
八、护舷安装最小间距和水泥构件边缘的最小间距

Min. spacing of fenders installation & Min. spacing between fender and concrete structure

护舷在压缩变形时，筒体部分将膨胀。因此，护舷在安装时需要留有一定的问题，以免护舷相互碰撞。另外，由于护舷受力变形，预埋螺栓将对水泥构件产生拉力与剪切力，将对水泥构件产生损害。因此，预埋螺栓与水泥构件边缘必须保证一定的距离。

The fender burffer part will bulge under compression, therefore a certain space must be left in fender installation in avoid of buffer contacting each other. the pre-cast in bolt will generate tensile strength and shear strength upon the concrete structure due to fender deflection which will damage the concrete structure. Therefore a certain space between pre-cast in bolts and concrete structure must be left.

规格 Specifications	Con e 500	Con e 600	Con e 700	Con e 800	Con e 900	Con e 100 0	Con e 110 0	Con e 115 0	Con e 120 0	Con e 130 0	Con e 140 0	Con e 160 0	Con e 180 0
H	240	240	300	360	360	420	420	420	420	480	480	480	430
P	850	102 0	119 0	136 0	153 0	170 0	187 0	195 5	204 0	222 0	242 0	282 0	322 0



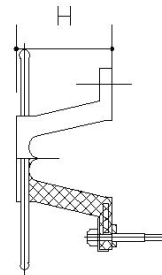
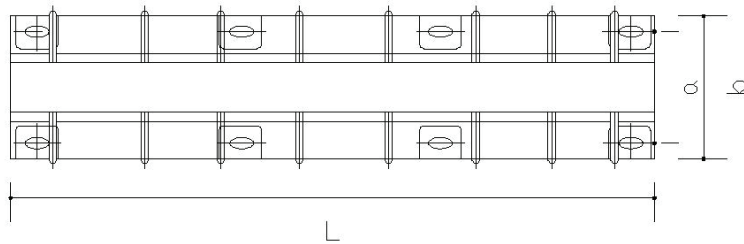


● 特点

1. 具有护舷和爬梯两种功能
2. 与DG护舷具有相同的安装孔距，具有互换性。
3. 安装、维修方便，使用寿命长。

Feature

1. Can be functioned as ladder and ladder.
2. Same installation holes pitch with DG fender and can be replaced with each other
3. Easy for installation and maintenance with long service life.



● 规格 Specification

规格 Specification	H	a	b	L							
				900	1200	1500	1800	2100	2400	2700	3000
H200	200	300	400	900	1200	1500	1800	2100	2400	2700	3000
H250	250	410	500								
H300	300	490	600								
H400	400	670	800								
H500	500	840	1000								

注：其它类型的舷梯可根据用户要求生产。

Note: Other type rubber ladder is available upon request.



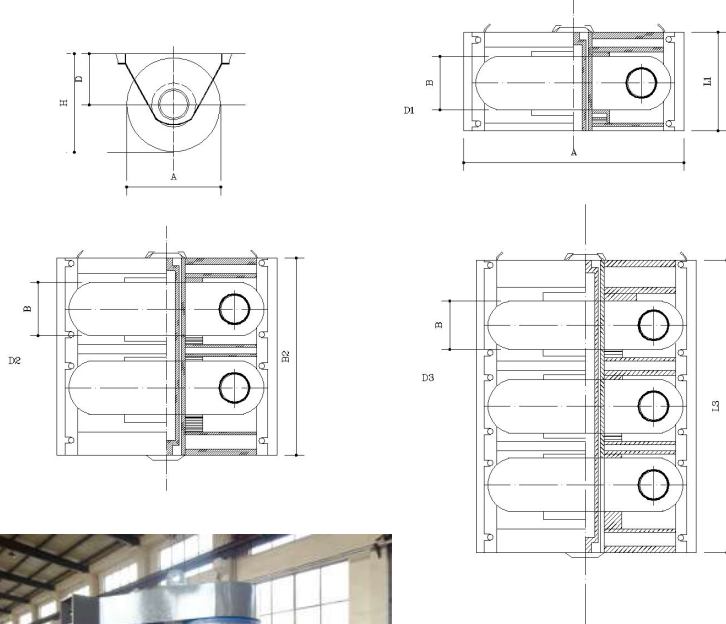
● 特点

1. 反力低, 吸能量高。
2. 护舷性能不受船舶倾斜、靠泊影响。
3. 适用于船坞及各限制水道。

Feature

1. Low reaction force and high energy absorption.
2. The fender performance is free from the influence of ship inclining and berthing.
3. Applicable for dry docks and other restricted channels.

规格 Specification



D型 Type D

特点:

D型转鼓护舷是护舷安装在由轴架支撑的一个固定轴上, 从而使护舷随着轴而转动。

Feature:

Type D roller fenders is mounted on a fixe daxle supported by a special frame, which will rotate following with the axle.



型号 Types A×B(MM)	D1							D2		D3		备注 Notes
	A	B	C	D	L1	H	重量 weight	L2	重量 weight	L3	重量 weight	
600×200	600	200	695	320	420	620	127	770	245	1120	365	其它非系列规格可根据用户需要制造 Products of other sizes can be manufactured upon user's request
750×250	750	250	870	400	510	775	249	935	501	1360	735	
900×300	900	300	1040	480	610	930	465	1120	878	1630	1291	
1200×400	1200	400	1380	640	820	1240	1045	1500	2041	2180	3005	
1500×500	1500	500	1740	800	1010	1550	2011	1850	3915	2690	5784	
1800×600	1800	600	2080	960	1210	1860	3441	2215	6701	3220	9891	
2100×700	2100	700	2440	1155	1410	2205	5610	2590	10925	3770	15895	
2400×800	2400	800	2770	1280	1610	2480	8115	2950	15701	4290	23300	
2700×900	2700	900	3130	1440	1810	2790	11596	-	-	-	-	
3000×1000	3000	1000	3480	1600	2010	3100	16010	-	-	-	-	



●性能 Performance

型号 Types A×B(mm)	最大变形量 Max.deflectio	D1		D2		D3		性能公差 Tolerance(%)
		反力 R (KN)	吸能 量 E (KJ)	反力 R (KN)	吸能 量 E (KJ)	反力 R (KN)	吸能 量 E (KJ)	
600×200	125	65	2	134	5	202	7	±10
750×250	159	105	5	210	9	315	14	
900×300	185	151	8	302	16	453	24	
1200×400	260	269	19	539	39	814	58	
1500×500	325	419	38	843	76	1264	113	
1800×600	390	608	65	1215	130	1823	196	
2100×700	455	823	102	1647	204	2470	306	
2400×800	510	1108	140	2156	280	3234	420	
2700×900	578	1362	220	2724	439	4087	659	
3000×1000	640	1676	302	3352	604	5027	906	

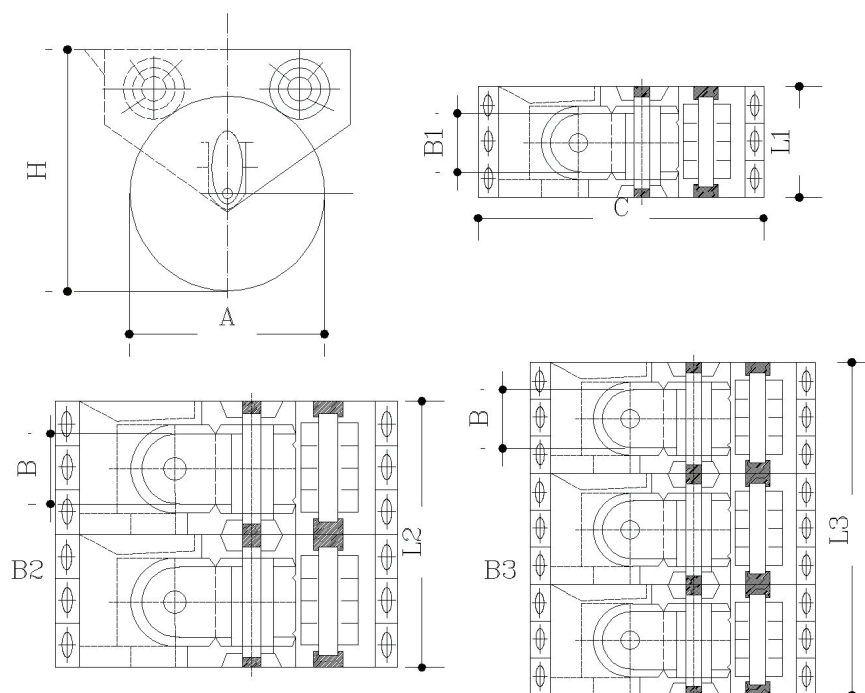
B型 Type B

特点:

B型转鼓护舷是护舷在三轴上转动，使护舷变形量增加一倍，从而性能大大提高。

Feature:

Type B roller fenders i body rotates on three axlees which double the fender deflections therefore greatly improve the performance.





一、YGH超级鼓型橡胶护舷特点 YGH Super Cell Rubber Fender Features

1. 吸能量/反力值提高

YGH 超级鼓型橡胶护舷与普通鼓型橡胶护舷相比，E/R.H值约提高15%，普通鼓型橡胶护舷的E/R.H值一般为0.375-0.385，而YGH超级鼓型橡胶护舷的E/R.H值一般为0.43-0.44。

- (1) E/R.H(energy absorption/reaction force)enhance.
Compare with general cell rubber fenders,YGH super cell rubber fenders have 15% higher E/R.H value.The general cell rubber fender has 0.375-0.385 E/R.H.while super one has 0.43-0.4 normally.



2. 结构更加合理

YGH 超级鼓型橡胶护舷，与普通橡胶护舷相比，结构更加合理，护舷筒体与法兰连接部，采用了圆滑过度，减少了护舷根部在压缩变形时的应力集中现象，护舷受力更加合理，并且提高了护舷的压缩量，由普通型的47.5%增加到52.5%。

- (2) More Reasonable Structure

Compare with normal rubber fender,YGH super cell rubber is more reasonable in the structure design.A smooth joint is adopted between the fender buffer and flange to reduce the stress concentration on fender bottom during the deflection,which result in more reasonable force dispersion,furthermore the deflection value of the fender is increased from 47.5% to 52.5%.

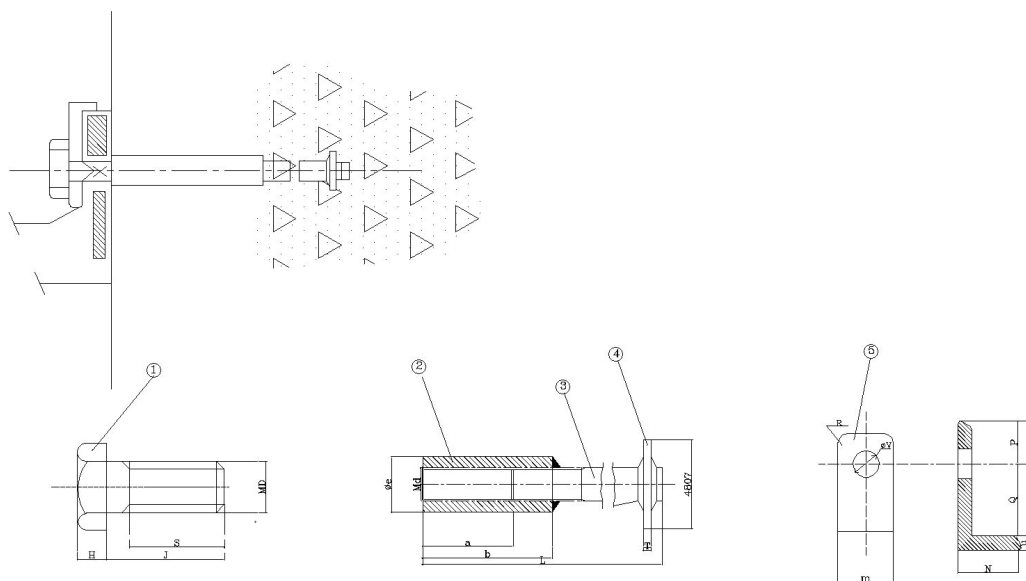
3. YGH 超级鼓型橡胶护舷与普通型橡胶护舷具有相同的安装螺栓孔距和螺栓孔。

- (3) YGH super cell rubber fender has the same installation bolt and bolt pitch with the general rubber fender.

4. 具有倾斜靠泊影响小的特点。

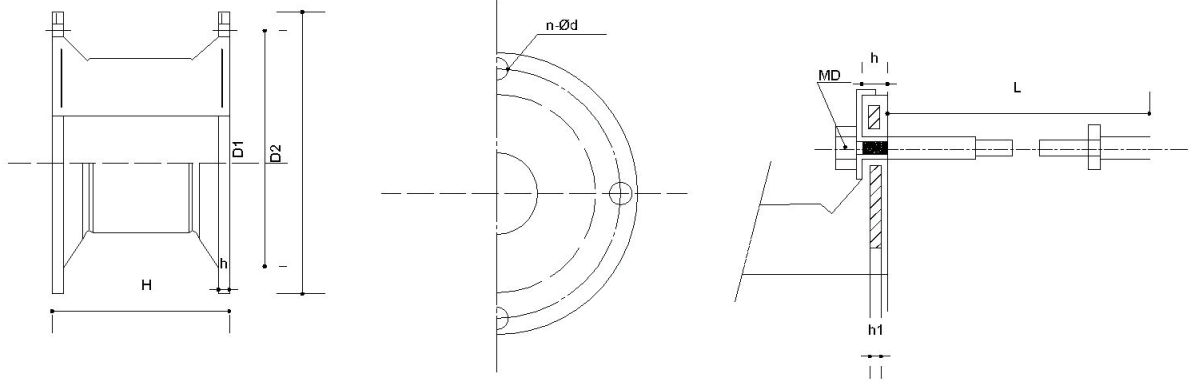
- (4) Minor affection in angular berthing.

● 预埋件 Prebuilt-in Parts





● 规格
Specifications

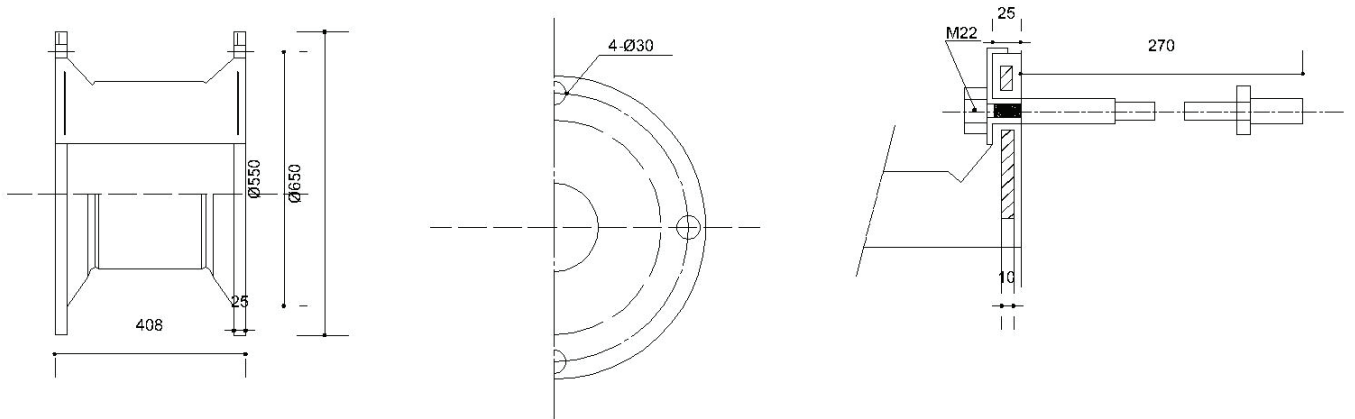


规格 (mm) Specifications	H	h	D	D	n-Ød	MD	h	L
YGH400	400	25	550	650	4-Ø30	22	10	270
YGH500	500	25	550	650	4-Ø32	24	12	300
YGH630	630	30	700	840	4-Ø39	30	14	330
YGH800	800	30	900	1050	6-Ø40	32	14	360
YGH1000	1000	35	1100	1300	6-Ø47	39	18	430
YGH1150	1150	40	1300	1500	6-Ø50	42	22	500
YGH1250	1250	45	1450	1650	6-Ø53	45	22	500
YGH1450	1450	47	1650	1850	6-Ø61	52	26	570
YGH1600	1600	50	1800	2000	8-Ø61	52	28	570
YGH1700	1700	55	1900	2100	8-Ø66	56	30	620
YGH2000	2000	55	2000	2200	8-Ø74	64	32	700
YGH2250	2250	60	2300	2550	10-Ø74	64	36	700
YGH2500	2500	70	2700	2950	10-Ø74	64	38	700
YGH3000	3000	75	3150	3350	12-Ø90	76	40	800

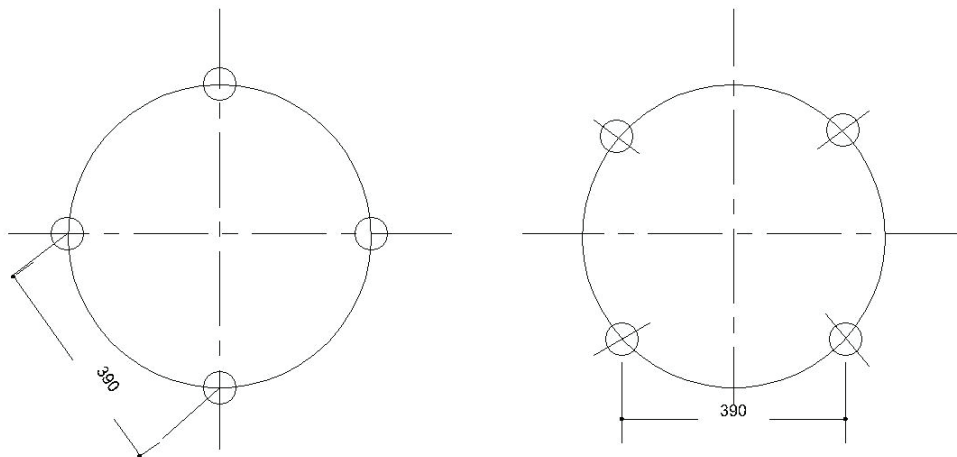


1. YGH400 橡胶护舷
YGH400 Rubber Fender

● 规格 Specifications



● 螺栓孔位置 Location of bolt holes

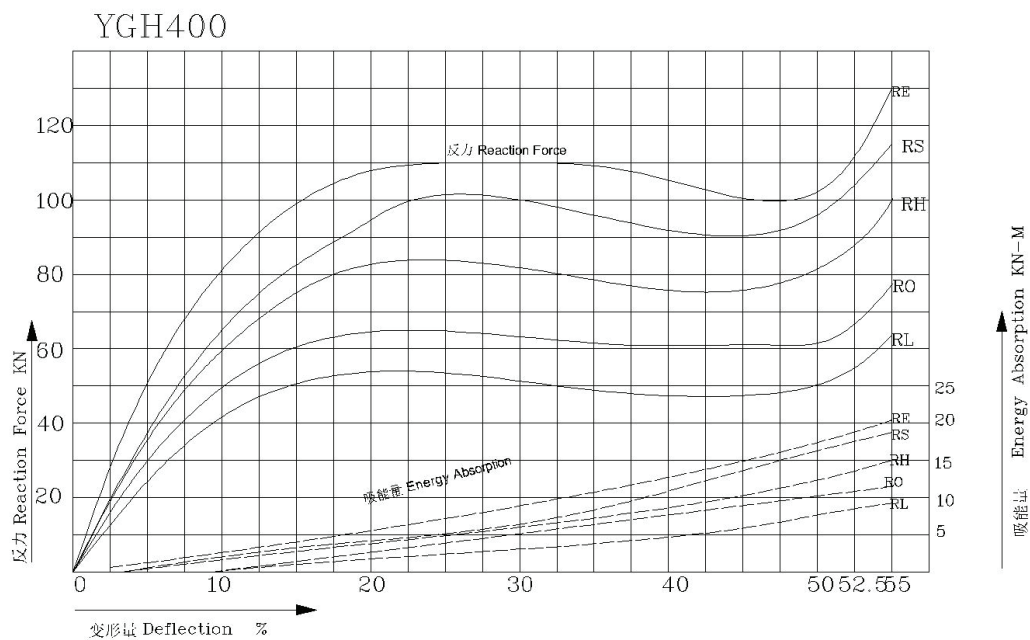




●性能 Performance

型号 Type	设计压缩变形 52.5% Rated Compression Deflection 52.5%		最大压缩变形 55% Max.Compression Deflection 55%	
	反力 KN Reaction Force	吸能量 KN-M Energy Absorption	反力 KN Reaction Force	吸能量 KN-M Energy Absorption
超高反力型 RE Super high Reaction Force (RE)	110	19	125	21
超高反力型 RS Super high Reaction Force(RS)	96	17	112	18
高反力型 RH High Reaction Force (RH)	83	14	97	15
标准反力型 RO Standard Reaction Force (RO)	64	11	75	12
低反力型 RL Low Reaction Force(RL)	51	9	59	9.5

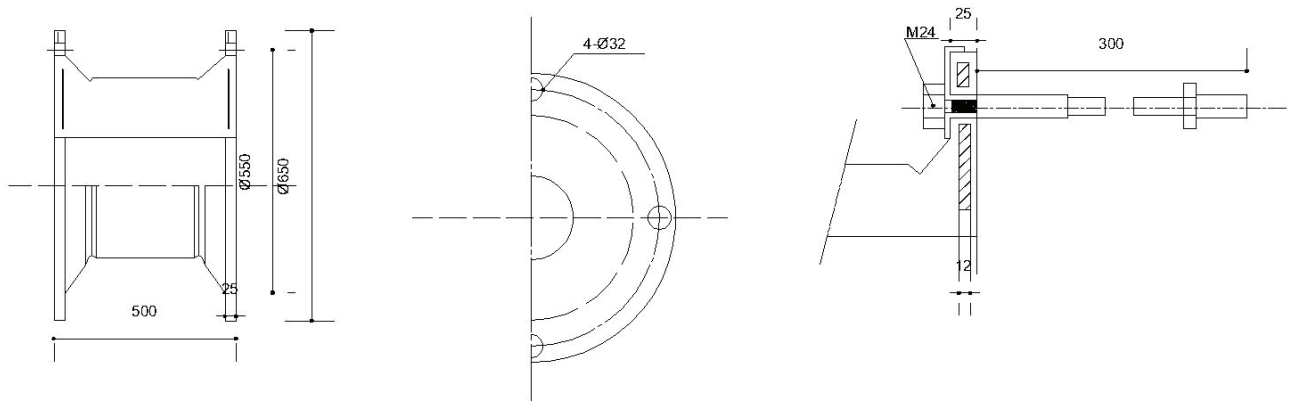
Performance Curve



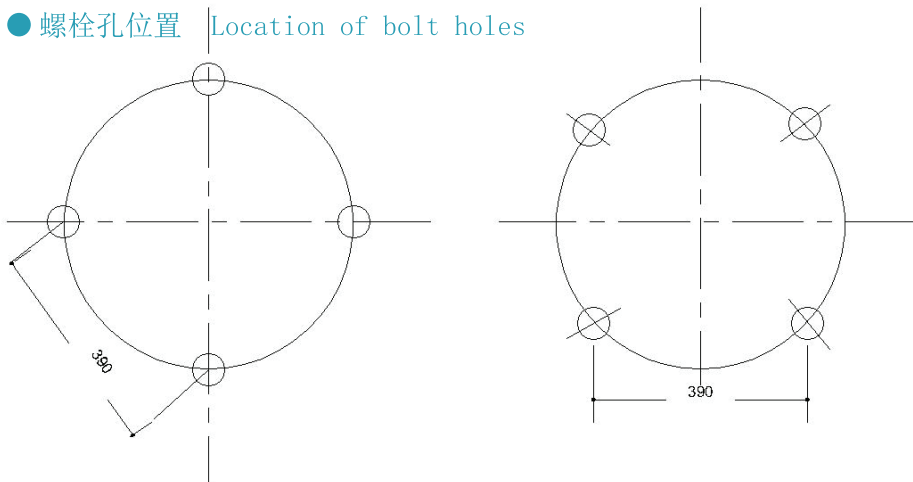


YGH500 橡胶护舷
YGH500 Rubber Fender

●规格 Specifications



●螺栓孔位置 Location of bolt holes

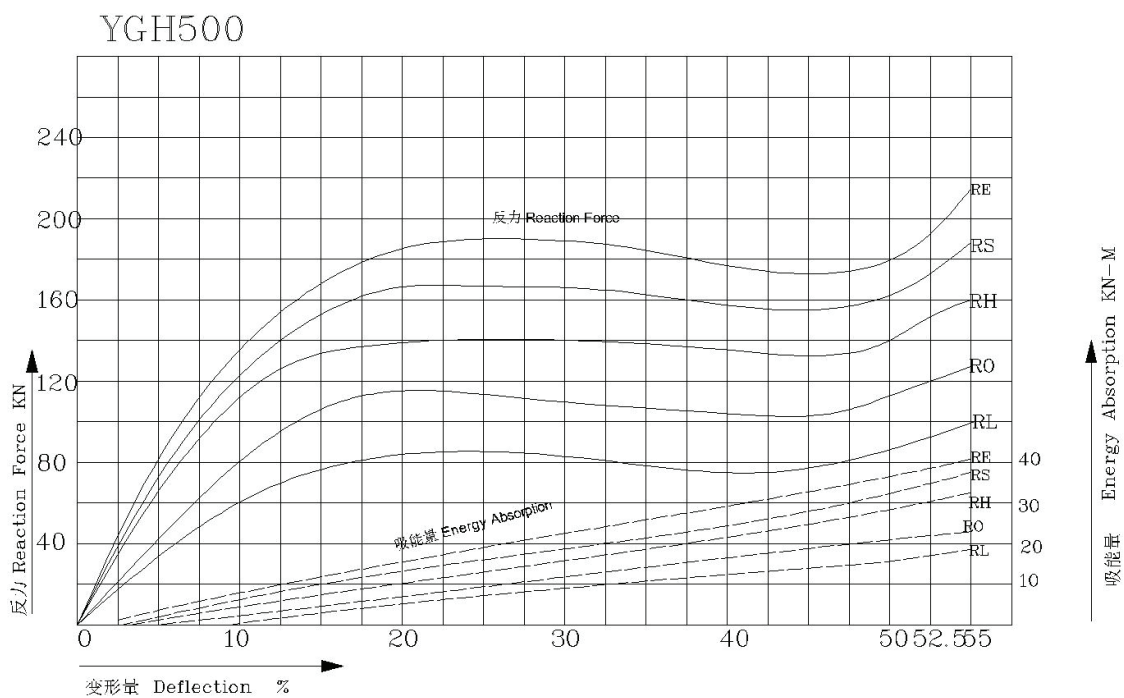




● 性能 Performance

型号 Type	设计压缩变形 52.5% Rated Compression Deflection 52.5%		最大压缩变形 55% Max.Compression Deflection 55%	
	反力 KN Reaction Force	吸能量 KN-M Energy Absorption	反力 KN Reaction Force	吸能量 KN-M Energy Absorption
超高反力型 RE Super high Reaction Force (RE)	182	40	210	43
超高反力型 RS Super high Reaction Force(RS)	162	36	187	38
高反力型 RH High Reaction Force (RH)	140	30	160	32
标准反力型 RO Standard Reaction Force (RO)	108	23	125	25
低反力型 RL Low Reaction Force(RL)	86	18	99	19

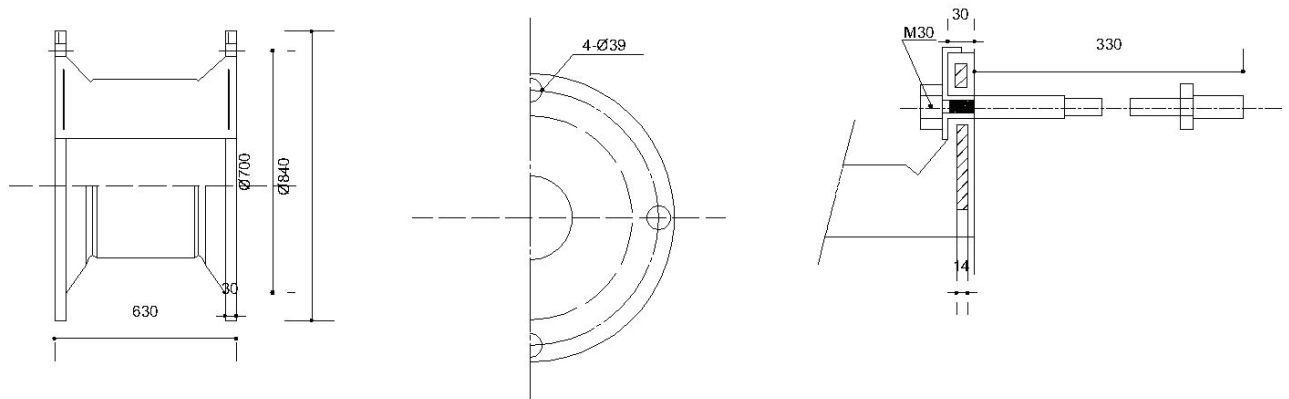
Performance Curve



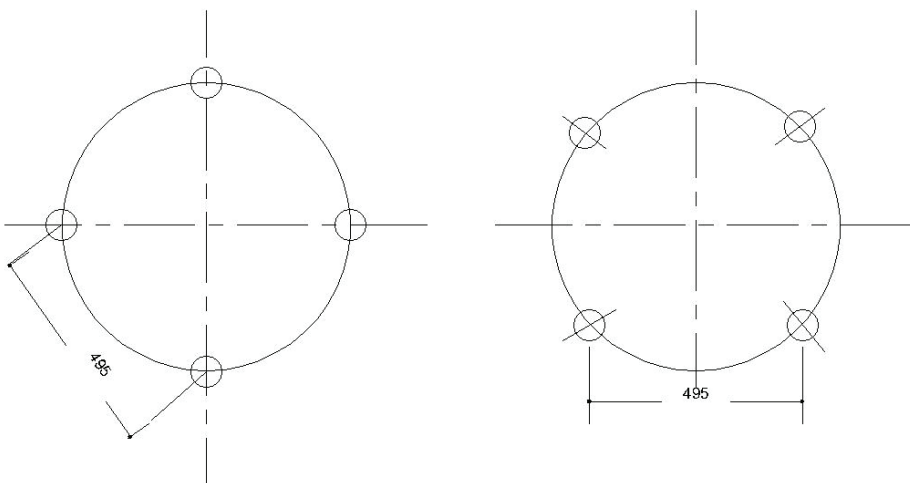


YGH630 橡胶护舷
YGH630 Rubber Fender

● 规格 Specifications



● 螺栓孔位置 Location of bolt holes

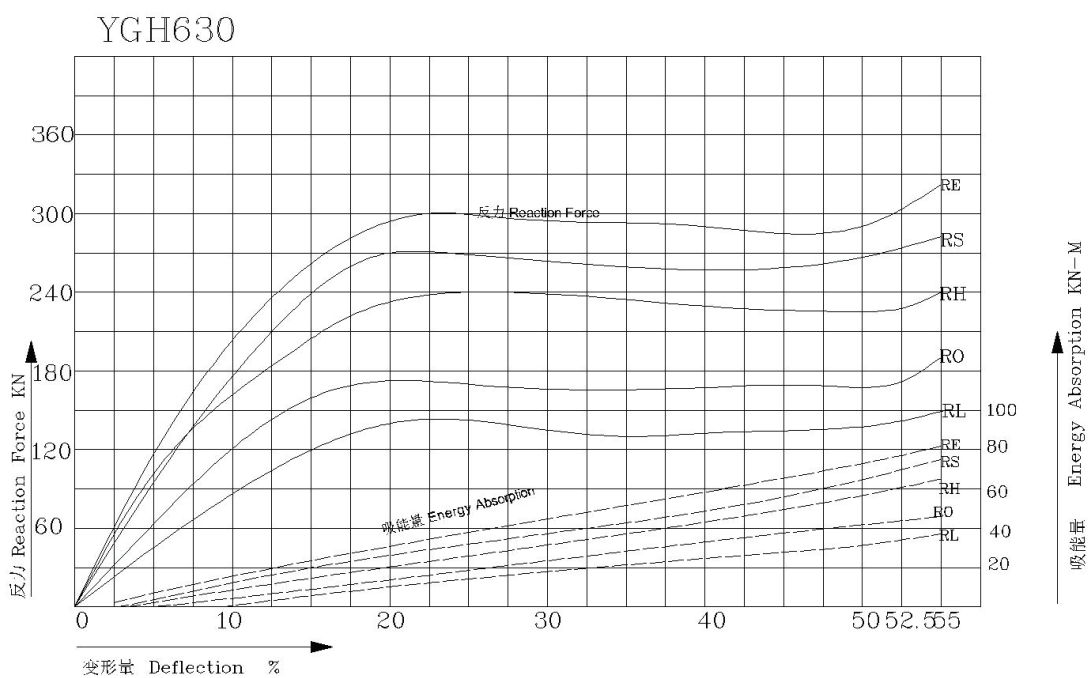




● 性能 Performance

型号 Type	设计压缩变形 52.5% Rated Compression Deflection 52.5%		最大压缩变形 55% Max.Compression Deflection 55%	
	反力 KN Reaction Force	吸能量 KN-M Energy Absorption	反力 KN Reaction Force	吸能量 KN-M Energy Absorption
超高反力型 RE Super high Reaction Force (RE)	290	80	309	85
超高反力型 RS Super high Reaction Force(RS)	258	72	274	76
高反力型 RH High Reaction Force (RH)	224	62	237	67
标准反力型 RO Standard Reaction Force (RO)	172	47	182	50
低反力型 RL Low Reaction Force(RL)	138	38	147	40

Performance Curve





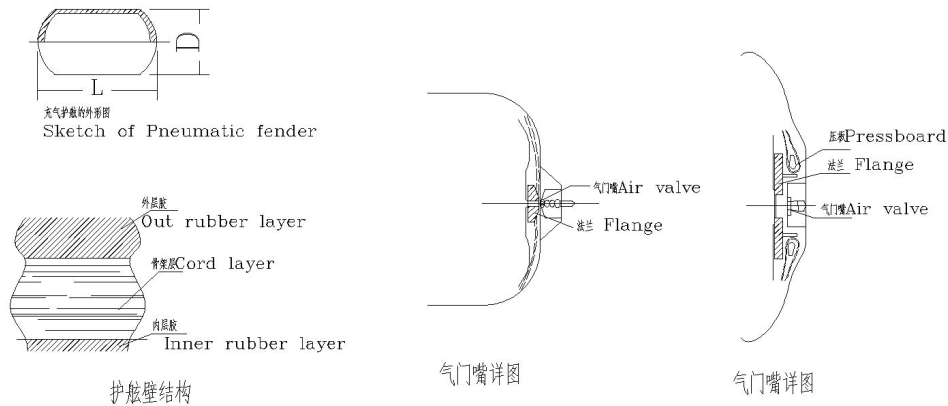
一、特点

1. 吸能量高、反力低、面积小;
2. 任何接触面, 不论是斜压或是正常情况, 还是均匀面压其吸能率都不会降低;
3. 低反力使船壳、码头、栈桥、锚链避免因反复撞击而受损;
4. 可漂浮, 能随潮水涨落及船的运动而起落;
5. 安装简单;
6. 质量稳定水准高, 橡胶部会在压缩操作中磨损变形;
7. 耐寒性能好。

Features

1. High energy absorption, low reaction force and surface pressure;
2. No decline in the rate of energy absorption under any types of loading at any contact area;
3. Low reaction force prevent hull, quay jetty and anchor chain from damage caused by repeated collision;
4. Floatable, suitable for areas with large or small tides;
5. Easy to deploy;
6. High standard quality stability, the extra layer on the surface protect the body against abrasion;
7. Proper cold-resistant performance.

二、护舷本体图 Fender body Figure



三、规格性能表 Table of specifications and performance

规格 Specifications Ø×L	压缩 60% Deflection 60%		安全 阀设置 Safety Valve setting	试验压 力 Test pressure	护舷参考重量 Reference Weight				吊索 型 (B 型) 护舷 参考 重量 Weight of sling type(B type)
	反力 Reaction force	吸能 Energy absorption			本体 参考 重量 Fender buffer weight	网重 Weight of net			
						链条 Chain	钢丝 Wire	合成纤 维 Synthetic fiber	
mm	KN	KN-m	Kpa	kg	kg	kg	kg	kg	kg
300×500	14	1	-	-	8	-	-	-	-
400×800	30	3	-	-	20	-	-	-	-
500×1000	54	5	-	145	25	-	30	20	32
500×1000	65	7	-	145	28	-	30	22	36
700×1500	115	14	-	145	64	150	40	37	55
000×1500	156	28	-	145	125	190	80	51	105
000×2000	217	38	-	145	175	230	140	68	120
200×2000	253	54	-	145	208	300	190	-	140
200×2400	303	64	-	145	248	320	198	-	-
350×2500	410	104	-	145	270	330	200	-	210
500×3000	486	128	-	145	225	490	350	-	265
700×3000	542	163	-	145	365	580	440	-	290
000×3500	743	263	-	145	585	980	640	-	450
200×4500	1078	417	-	145	1080	1090	820	-	-
500×4000	1049	464	175.0	195	1560	1260	910	-	1080
300×6500	2981	1795	175.0	240	2585	2680	1910	-	-
500×9000	5688	4688	175.0	240	4575	4810	3520	-	-

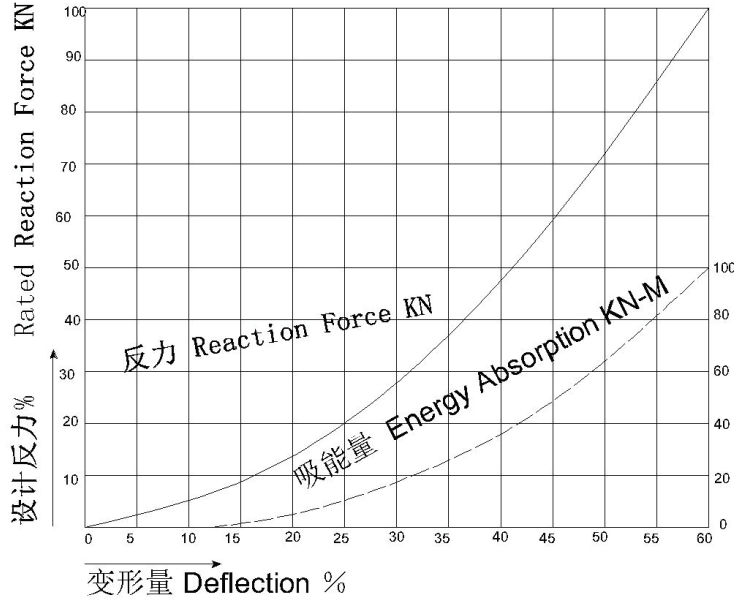


注: 1. 性能随着内部压力、温度不同而变化。
2. 其它规格性能可根据要求加工生产。
3. 性能公差±10%。

Note: 1. The performance is subject to the different interior pressure and temperature.
2. Other specification is available upon request.
3. Performance tolerance: ±10%.



● 性能曲线
Performance Curve



Rated Energy Absorption KN-M
设计吸能量 %



● 金属配件和材质
Metal Accessories & Material

名称 Name (直径×长度) Dimension (Diameter × Length)	预埋 U 型环直径 Pre built-in U ring diameter mm	吊挂链条直径 Suspending chain diameter mm	卸扣 Shackle	材质 Material
Ø300×500L	-	-	-	预埋 U 型环: Q235 热镀锌或 Q235 涂漆; 链条: Q235 热镀锌或 Q235 涂漆; 20Mn 或 15Mn 热镀锌或涂漆。 Pre built in U ring: Q235 hot Dipped or Q235 painted Chain Q235 hot dipped or Q235 painted, 20Mn or 15Mn hot dipped or painted
Ø400×800L	-	-	-	
Ø500×1000L	Ø25	14	M14	
Ø600×1000L	Ø25	14	M14	
Ø700×1500L	Ø30	20	M20	
Ø1000×1500L	Ø40	22	M22	
Ø1000×2000L	Ø40	22	M22	
Ø1200×2400L	Ø45	25	M25	
Ø1350×2500L	Ø45	25	M25	
Ø1500×3000L	Ø50	25	M25	
Ø1700×3000L	Ø50	28	M28	
Ø2000×3500L	Ø50	28	M28	
Ø2200×4500L	Ø55	32	M32	
Ø2500×4000L	Ø55	32	M32	
Ø3300×5000L	Ø60	34	M34	
Ø3300×6500L	Ø70	38	M38	
Ø4300×6000L	Ø75	40	M40	
Ø4500×9000L	Ø80	48	M48	



四、产品图
Product drawing



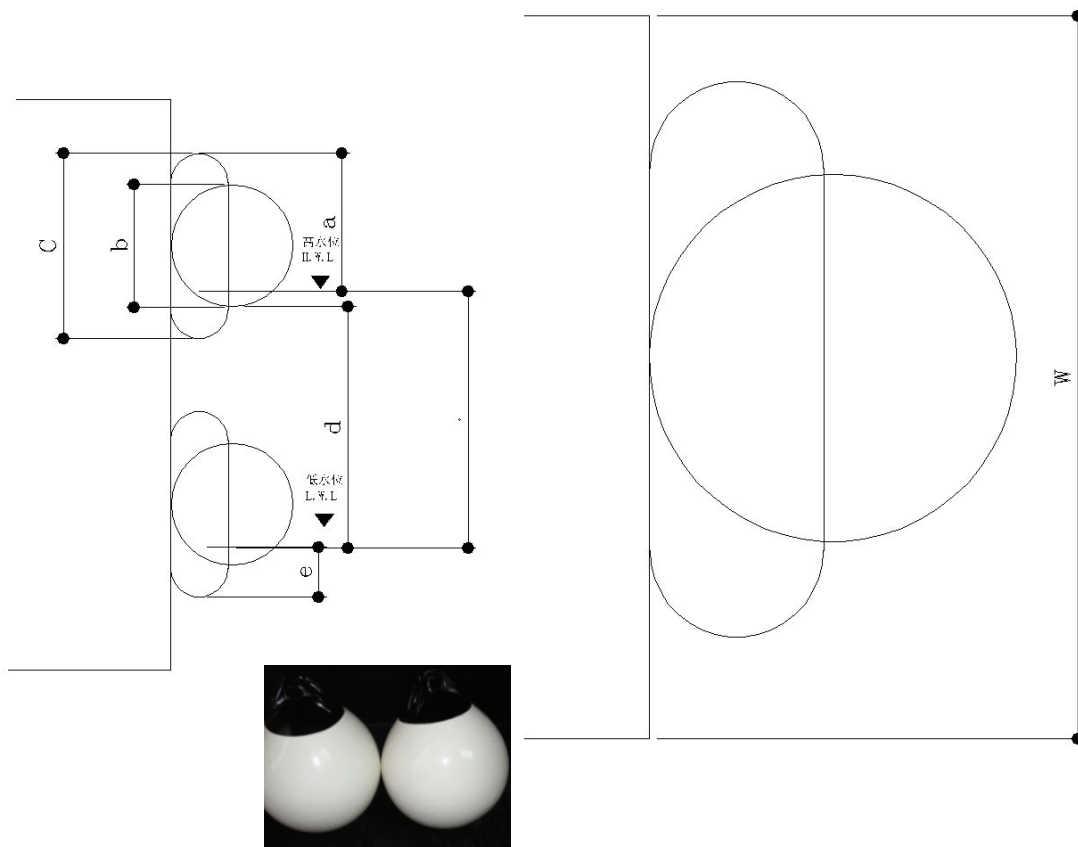


五、安装尺寸

漂浮护舷应须安装在坚固的结构或安装板上。

The foam fender shall be installed onto a solid structure or mounting panel.

安装图 Installation Figure



型号 Type	D (mm)	L (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	w (mm)
1000×1500	1000	1500	965	950	1350	210	385	2000
1200×2000	1200	2000	1190	1140	1620	230	440	2600
1500×2500	1500	2500	1515	1420	2050	260	535	3250
2000×3500	2000	3500	2030	1900	2700	320	670	4500
2500×4000	2500	4000	2470	2380	3380	470	910	5200
3300×6500	3300	6500	3350	3140	4460	530	1110	8500



一、特点:

Characteristic

1. 可替代旧飞机轮胎的产品，使用寿命长。
 2. 吸能量高。
 3. 可满足各种船型的设计需要。
 4. 安装简单快捷。
1. Can replace the old aircraft tire products, long service life.
 2. High energy absorption.
 3. Can meet the design needs of various types of ships.
 4. Easy and fast for installation.



二、产品图

Product picture





一、特点： Characteristic

1. 各方面性能优于普通橡胶护舷。
 2. 含胶量高。
 3. 颜色美观，与船舶碰擦后，擦痕不明显。
 4. 安装简单快捷。
1. Performance is higher than normal rubber fender.
 2. Rubber content is high.
 3. Looks beautiful. The trail is not obvious when bump against other ship.
 4. Easy for installation.

二、产品图 Product picture



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