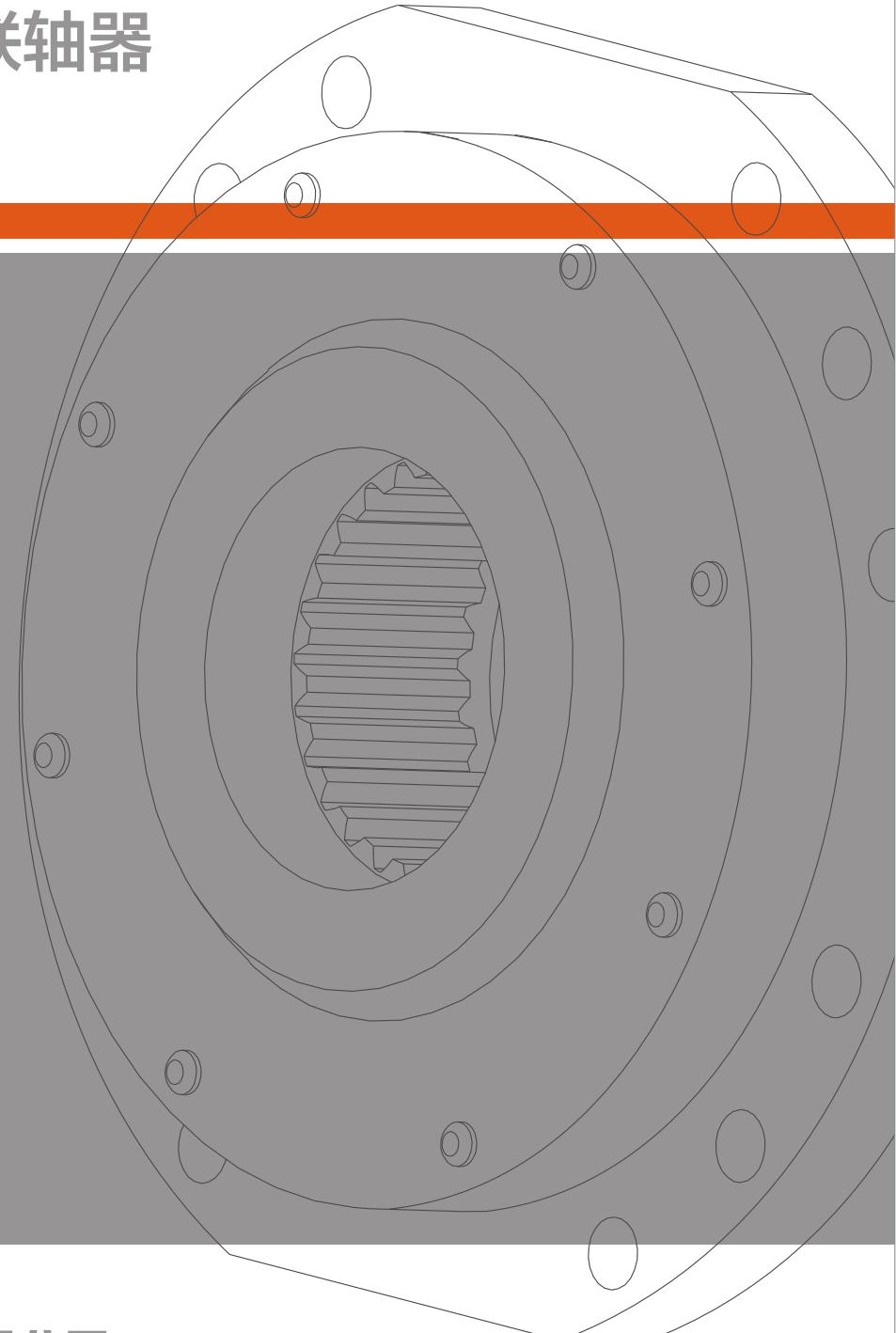




ISO9001:2008 质量体系认证

## WZL型卷筒联轴器 Drum Coupling

► WZL



乐清市三丰传动有限公司

YUEQING SANFENG TRANSMISSION CO.,LTD

(乐清市三丰传动件厂)

YUEQING SANFENG TRANSMISSION PARTS FACTORY

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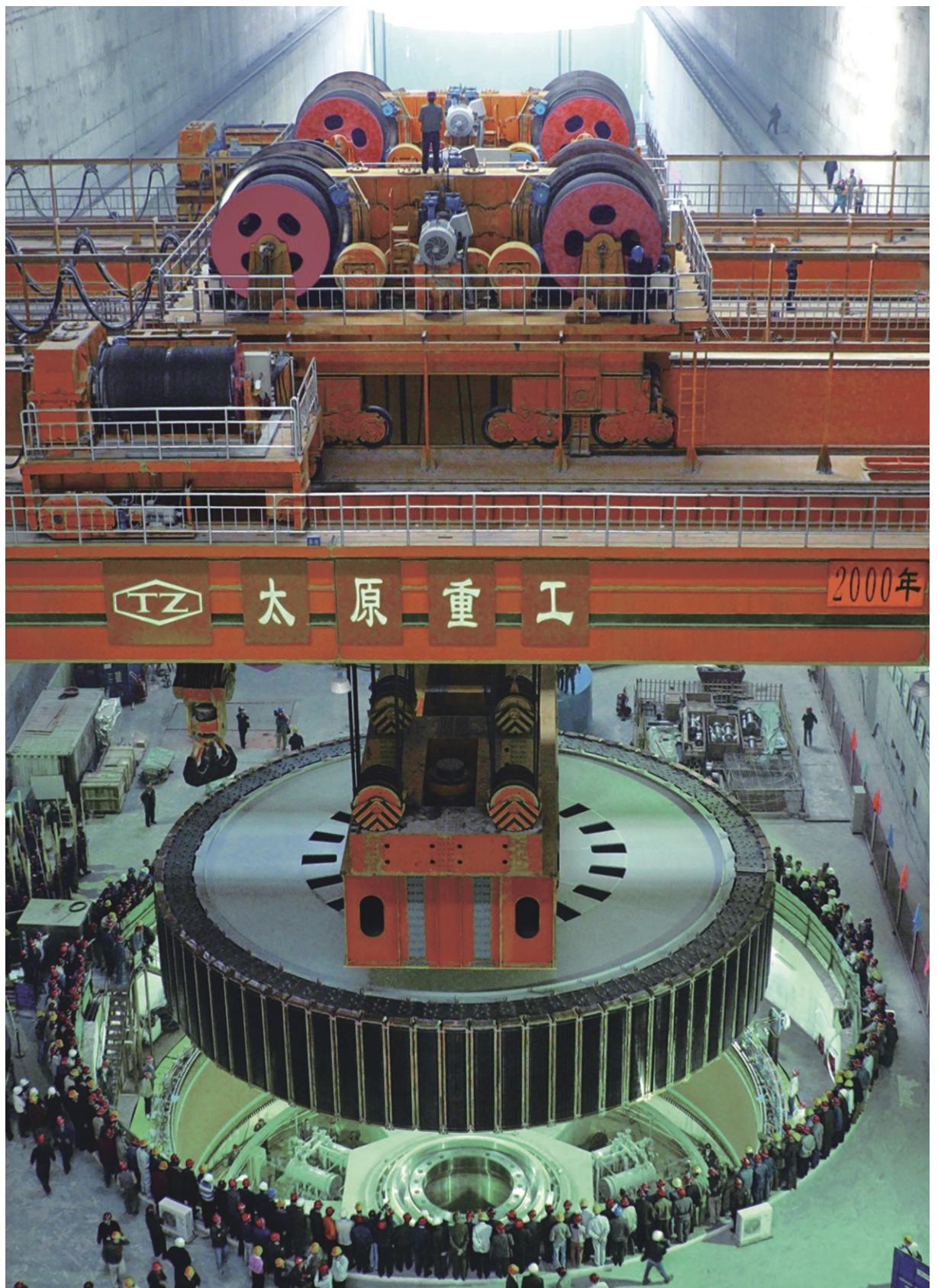
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乐清市三丰传动有限公司

YUEQING SANFENG TRANSMISSION CO.,LTD

(乐清市三丰传动件厂)

YUEQING SANFENG TRANSMISSION PARTS FACTORY



中国各领域大批规格最大、技术含量最高的起重机均由“三丰”提供的WZL卷筒联轴器与SWF万向联轴器。  
Sanfeng supplied their WZL drum couplings and SWF universal joint shafts for the largest and highest quality cranes in all areas of China .

# YUEQING SANFENG TRANSMISSION CO.,LTD COMPANY INTRODUCTION

## 乐清市三丰传动有限公司 简介

乐清市三丰传动创建于上世纪八十年代中期，是专业开发及生产WZL型卷筒联轴器和SWF十字轴式万向联轴器的厂家。乐清三丰拥有一批高素质的专业团队和完善的生产检测程序，目前乐清三丰在人均产值和亩产值的指标上均排在全国同行最前列，其中96年开发生产的WZL型卷筒联轴器，经过多年不断的技术和工艺改进与升级，已拥有WZL型卷筒联轴器的多项知识产权。企业早已通过ISO9001质量管理体系认证，与国内多家重点起重机制造厂家及用户建立了长期稳定的合作关系。中国大批规格最大、技术含量最高的起重机均由乐清三丰提供WZL型卷筒联轴器，获得了专家和用户的一致好评。目前乐清三丰生产的WZL型卷筒联轴器是国际上最理想的卷筒联轴器，希望更好、更多的为新老客户服务，期待您来乐清三丰作技术及业务洽谈。

诚信务实，是我们生存的基石；  
卓越品质，是我们获得市场的基本保证；  
开拓创新，是我们不断发展的动力。

“三丰”的成功也得益于广大专家和用户的真诚支持，在此深表谢意。一段时间以来一些人竟不负责任的仿冒“三丰”的产品，把一些劣质产品销往市场，已造成多起安全质量事故，给用户造成严重损失，同时影响损害了“三丰”的声誉，敬请您认真的甄别。

Yueqing Sanfeng Transmission Co.,Ltd. was founded in the middle of 1980s , It specialize in producing WZL Series drum coupling and SWF Series universal joint shaft . It has a professional team and perfect production testing procedures .At present, the output values per mu and per person is the highest among the same industries in China. We began to produce WZL Series drum coupling in the year of 1996, through many years of reach & development, innovation and improvement, the company has owned many independent intellectual property rights of this product. In addition, it has smoothly passed ISO9001 quality system certification, and also has established long-term cooperation relationship with many customers and important domestic crane manufacturers. We supply our drum couplings to cranes of the largest sizes and highest quality in China. They gained highly commended by customers and experts for their excellent performance and quality.Now WZL Series drum coupling is the most ideal drum coupling at home and abroad. In order to service you more and better, we welcome new & old customers to our company for technical communication and business negotiations .

Good faith and practice are the foundation for us to survive;  
First-rank quality is our essential guarantee to win the market;  
Exploitation and innovation are our continuous development power.

Sanfeng is indebted concern and sustain by many customers and experts. We thank you for your sincere support and trust! By the way, there are some counterfeit products on the market, they imitate ours, but their products are of bad quality, so please identify it very carefully.





## 安装使用维护说明

WZL型卷筒联轴器在安装过程夹角可达 $3^{\circ}$ ，但在使用中夹角不得过大（建议应小于 $30'$ ），安装精度越高，使用效果越好，使用寿命则大幅延长。

WZL型卷筒联轴器与有关部件的配合精度将直接反映其使用效果，如：D2、D3、D4、K（见图）须满足F8（f8）以上精度要求，卷筒联轴器法兰与卷筒接触的平面是否符合精度要求，卷筒法兰螺栓孔与螺栓要有合理的间隙，应选用10.9级螺栓，并按规定预紧，经常检查其可靠性。

减速机出轴端部应有足够大规格和数量的高强度螺栓，按规定预紧并作好有效的防松措施，保证卷筒联轴器与轴不得有轴向串动。如需采用热装时，要求卷筒联轴器整体用气体作加热介质（如整体放入电热箱中加热），加热温度应不超过130度，冷后请及时注油（请不要将卷筒联轴器拆开，否则将无法保证其品质）。

WZL型卷筒联轴器不能补偿轴向位移，所以在工作时的各种因素造成微量轴向长度变化要靠后轴承支座解除轴向约束来补偿，一般情况下左、右有3mm低阻力移动量即可。

WZL卷筒联轴器出厂时已注油脂，牌号为7407合成润滑脂；用户可用其它牌号润滑脂代用，正常运行时每月注油一次；四个注油孔均设在卷筒联轴器法兰根部，连接螺纹M10×1，注油时需连接油管，上紧螺纹，转至下方，依次对每个加油孔注油，直至油脂从球面充分溢出。

WZL卷筒联轴器在正常使用和维护下寿命很长，没特殊情况，建议在起重机或减速机大修时对其进行检修和更换。

## 卷筒联轴器概述

WZL型卷筒联轴器是目前国际上最理想的卷筒联轴器，主要是为起重机配套所需而开发的，当然也适用于其它类似机械设备，是替代鼓形齿和鼓形滚子卷筒联轴器的理想产品。它具有以下几大特点：

- ★能承受大的径向载荷和传递较大的转矩，可靠性与安全性很高；
- ★各部位磨损小，结构厚实，无安全失效之忧。所以无需像老式产品那样使用寿命需靠指针对照；
- ★包裹在球面之间的特殊键转动灵活且转动幅度大，便于安装调试。

## 选用说明

根据起重机工作级别，计算和确定卷筒传递转矩（应考虑试车时的过载系数和其它因素），选择合适型号的卷筒联轴器（理论转矩≤卷筒联轴器的许用转矩），无特殊情况，卷筒联轴器一般不需另作径向载荷计算。

无特殊要求时，需方注明所订型号即可（如WZL12卷筒联轴器）。有其它特殊非标要求时，订货前请需方先提供相关图纸，经我方技术认可后再订货。

## Summarization on Drum Coupling

WZL Series drum coupling is the most ideal drum coupling at home and abroad. It is suitable for crane and other machines. And it is the ideal successor of gear drum coupling and drum-shaped roller coupling. Its features are as follow:

- ★ It is able to withstand heavy radial loads and transmit larger torsion moment.
- ★ Little wear, strong structure, no need worrying about security or working failure. So it does not need the pointer like the drum coupling of old fashion style.
- ★ The special key in the sphere surface enables it to turn flexibly; big range of movement is convenient for installing and adjustment.

## Selection of Drum Coupling

Please select suitable drum coupling according to the working class, working static torque (please consider the overload factor during test run). Generally speaking, the value of radial load needn't checking calculation.

If there is no special requirement, users could only indicate the model when placing an order, for example: WZL12 drum coupling. If any special requirement, please supply your drawings accordingly for our technical reference.

## Maintenance of Drum Coupling

The max angle of drum coupling can reach  $3^{\circ}$  during installing. But the working angle should not be large (less than  $30'$  is better). Higher installation accuracy is advantageous to the service life and working efficiency.

The matching precision between drum coupling and relevant parts will reflect in using effect, for instance : D2、D3、D4、K (please check the drawing) should meet the accuracy requirement of F8 at least. There should be some reasonable clearance between the bolt holes and bolts of the flange. Please select the high strength bolts (recommend class 10.9) for connecting flanges, and tighten them with a stipulated pretightening force moment. Please give them routine examinations to ensure their reliability .

Output shaft end of speed reducer should be equipped with high strength bolts, tighten them with a stipulated pretightening force moment to avoid loosing. If the thermal outfit is needed, gas heating for the whole drum coupling is suitable, and the temperature should not exceed 130 degrees.(please don't take apart it, or the quality should not be promised)

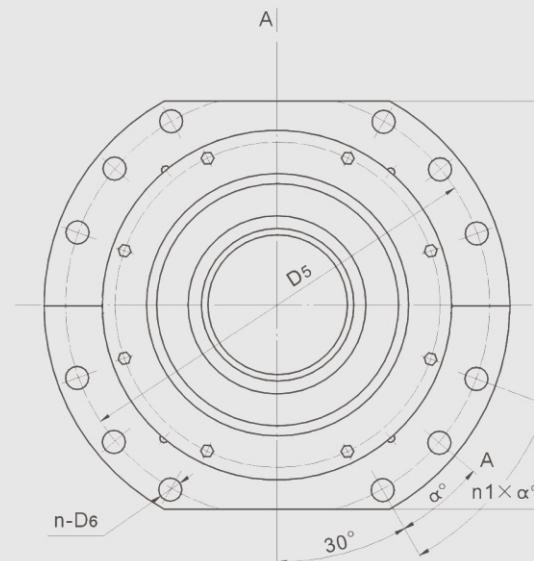
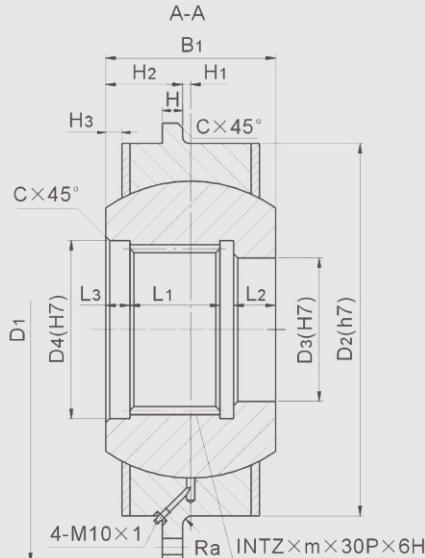
It is unable to compensate axial displacement, so the axial constraint of the bearing base must be released, it is suggested that both ends of bearing base should give a gap >3mm.

It has been already injected by synthetic grease Grade 7407. Users can use other grease for replacement. As a rule, it should be injected once a month. Four lubricating holes (connecting thread M10\*1) are set at the bottom of flanges, please fill grease one by one in turn, the lubricating holes must be lower during oiling until the oil grease overflows from the sphere surface.

Our drum coupling has a long service life under normal use and regularly maintenance. We suggest that it should be overhauled and changed at the time of overhaul maintenance for your cranes or reducers .

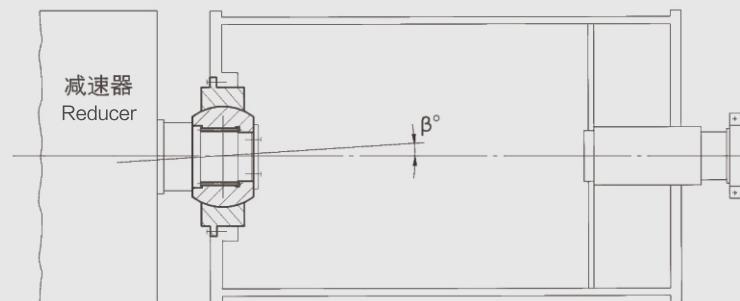
### 卷筒联轴器结构

#### Structure of drum coupling



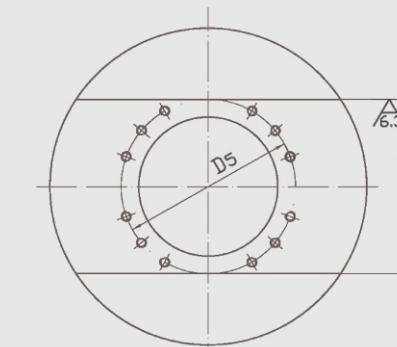
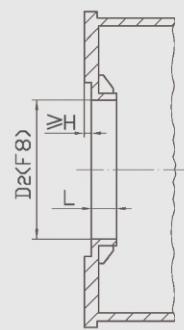
### 卷筒与减速器的联接

#### Connection between drum coupling and reducer



### 卷筒联接形式

#### Connection form of drum coupling



**注:** 建议L不小于D<sub>2</sub>圆柱面长度的45%。  
**Note:** We suggest L is not less than D<sub>2</sub>45% of the length of cylindrical surface.

### 主要性能及尺寸 The main performance and sizes

| 型号 style  |                | WZL01          | WZL02          | WZL03          | WZL04          | WZL05          | WZL06          | WZL07          | WZL08          | WZL09          | WZL10          | WZL11          | WZL12          | WZL13          | WZL14          | WZL15           | WZL16           | WZL17           | WZL18 |    |        |    |  |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-------|----|--------|----|--|
| 公称转矩kN·m<br>Normal torque kN.M                                |                | 6.3            | 9              | 13.3           | 17             | 21             | 26             | 42             | 65             | 85             | 131            | 203            | 318            | 403            | 510            | 641             | 815             | 1136            | 1518  |    |        |    |  |
| 工作级别<br>Working class   | M3             | 6.3            | 9              | 13.3           | 17             | 21             | 26             | 42             | 65             | 85             | 131            | 203            | 318            | 403            | 510            | 641             | 815             | 1136            | 1518  |    |        |    |  |
| 允许转矩 kN·m   | M4             | 5.6            | 8              | 11.9           | 15             | 19             | 23             | 37             | 57.8           | 75.4           | 117.4          | 183            | 283            | 358            | 459            | 570             | 728             | 1016            | 1398  |    |        |    |  |
|   | M5             | 5              | 7.1            | 10.6           | 13             | 17             | 21             | 33             | 51.6           | 67             | 104.8          | 162.4          | 252            | 317            | 408            | 509             | 645             | 914             | 1267  |    |        |    |  |
|   | M6             | 4.5            | 6.3            | 9.5            | 12             | 15             | 19             | 30             | 46.4           | 59.5           | 94.3           | 142            | 226            | 282            | 362            | 458             | 574             | 813             | 1135  |    |        |    |  |
|   | M7             | 4              | 5.6            | 8.6            | 10.6           | 13             | 17             | 27             | 41.3           | 53             | 83.8           | 126.8          | 202            | 252            | 321            | 407             | 513             | 721             | 1013  |    |        |    |  |
|   | M8             | 3.55           | 5              | 7.6            | 9.5            | 12             | 15             | 24             | 36.6           | 47.8           | 74.4           | 113.6          | 182            | 226            | 286            | 361             | 461             | 640             | 912   |    |        |    |  |
| GB/T3478.1<br>花键(spline)<br>INT Zxmx30Px6H                    | 15Z<br>x<br>3m | 18Z<br>x<br>3m | 22Z<br>x<br>3m | 27Z<br>x<br>3m | 18Z<br>x<br>5m | 22Z<br>x<br>5m | 26Z<br>x<br>5m | 30Z<br>x<br>5m | 34Z<br>x<br>5m | 38Z<br>x<br>5m | 26Z<br>x<br>8m | 30Z<br>x<br>8m | 34Z<br>x<br>8m | 38Z<br>x<br>8m | 44Z<br>x<br>8m | 50Z<br>x<br>10m | 44Z<br>x<br>10m | 56Z<br>x<br>10m |       |    |        |    |  |
| K (h9)  | 250            | 280            | 300            | 320            | 340            | 360            | 400            | 450            | 500            | 530            | 580            | 600            | 640            | 700            | 760            | 860             | 1020            | 1100            |       |    |        |    |  |
| B1  | 80             | 84             | 92             | 97             | 127            | 137            | 157            | 167            | 182            | 192            | 207            | 222            | 237            | 262            | 287            | 352             | 410             | 430             |       |    |        |    |  |
| D1  | 300            | 320            | 340            | 360            | 380            | 400            | 450            | 500            | 550            | 580            | 650            | 680            | 710            | 780            | 850            | 950             | 1120            | 1200            |       |    |        |    |  |
| D2 (h7)   | 190            | 200            | 220            | 240            | 260            | 280            | 340            | 380            | 420            | 450            | 530            | 560            | 600            | 670            | 730            | 840             | 975             | 1055            |       |    |        |    |  |
| D3 (h7)   | 40             | 50             | 60             | 70             | 80             | 100            | 120            | 140            | 160            | 180            | 190            | 220            | 250            | 280            | 320            | 360             | 400             | 540             |       |    |        |    |  |
| D4 (h7)   | 50             | 60             | 70             | 85             | 100            | 120            | 140            | 160            | 180            | 200            | 222            | 254            | 286            | 318            | 366            | 420             | 460             | 580             |       |    |        |    |  |
| D5  | 260            | 280            | 300            | 320            | 340            | 360            | 400            | 450            | 500            | 530            | 600            | 630            | 660            | 730            | 800            | 900             | 1055            | 1135            |       |    |        |    |  |
| H   | 12             | 20             |                |                |                |                | 25             |                |                |                |                | 30             |                |                |                |                 | 40              | 55              | 60    | 70 |        |    |  |
| H1  | 3              |                |                | 4              |                |                | 5              |                |                | 6              |                |                | 7              |                |                | 8               |                 |                 | 9     | 10 | 15     | 25 |  |
| H2  | 37             | 39             | 43             | 44.5           | 59.5           | 63.5           | 73.5           | 77.5           | 85             | 90             | 96.5           | 104            | 110.5          | 123            | 134.5          | 166             | 190             | 190             |       |    |        |    |  |
| H3  | 2              | 2.5            |                |                | 3.5            |                |                | 4.5            | 5.5            | 6              | 7              | 7.5            | 8              | 9.5            | 11             | 12              | 13              | 17              | 18    |    |        |    |  |
| L1  | 30             | 30             | 35             | 40             | 50             | 55             | 70             | 75             | 85             | 95             | 105            | 120            | 135            | 150            | 170            | 220             | 260             | 270             |       |    |        |    |  |
| L2  | 18             | 22             | 25             |                |                | 30             | 35             | 40             | 45             |                |                |                |                | 55             | 60             |                 |                 |                 |       |    |        |    |  |
| L3  | 22             |                |                |                | 37             |                |                |                |                |                |                |                | 52             |                |                |                 |                 | 65              | 70    |    |        |    |  |
| n-D6  | 8-Φ14          | 8-Φ18.5        |                |                |                |                | 12-Φ23         |                |                |                |                | 24-Φ23         |                |                |                |                 | 24-Φ27.5        |                 |       |    | 24-Φ31 |    |  |
| 螺栓 bolt   | M12            | M16            |                |                |                |                | M20            |                |                |                |                | M24            |                |                |                |                 | M27             |                 |       |    |        |    |  |
| n1×α°   | 1×40           |                |                |                |                |                |                | 2×20           |                |                |                |                | 5×10           |                |                |                 |                 |                 |       |    |        |    |  |
| Ra  | 1.6            | 2              |                |                | 2.5            |                |                | 3              |                |                | 4              |                |                | 4.5            |                |                 | 5.5             |                 |       |    |        |    |  |
| C   | 1              |                |                |                |                | 1.5            |                |                |                |                | 2              |                |                |                |                | 2.5             |                 |                 |       |    |        |    |  |
| 转动惯量 kg·m <sup>2</sup><br>moment of inertia Kg.m <sup>2</sup> | 0.13           | 0.19           | 0.27           | 0.37           | 0.56           | 0.76           | 1.65           | 2.86           | 4.49           | 6.18           | 12.50          | 16.40          | 23.13          | 39.18          | 59.25          | 114.5           | 260.4           | 337.8           |       |    |        |    |  |
| 重量 kg<br>Weight kg  | 23             | 27             | 33             | 39             | 55             | 66             | 106            | 140            | 185            | 213            | 330            | 379            | 453            | 616            | 775            | 1375            | 2145            | 2475            |       |    |        |    |  |

**注:** 如需更大规格的卷筒联轴器我公司亦可设计制造。

**Note:** We can design and produce larger drum coupling if needed.



马钢500t 铸造起重机  
Magang 500t Ladle Crane



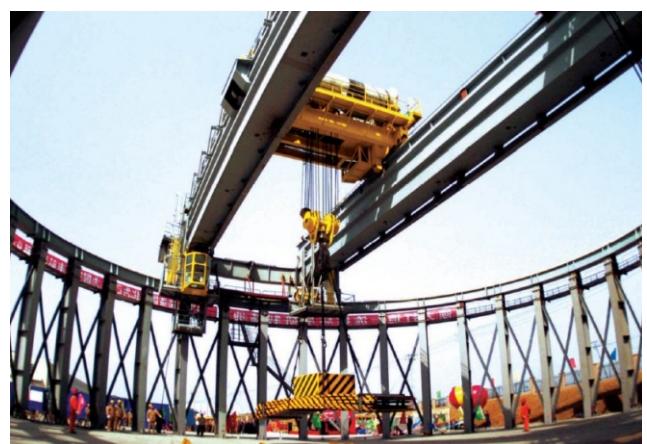
武钢450t 铸造起重机  
Wugang 450t Ladle Crane



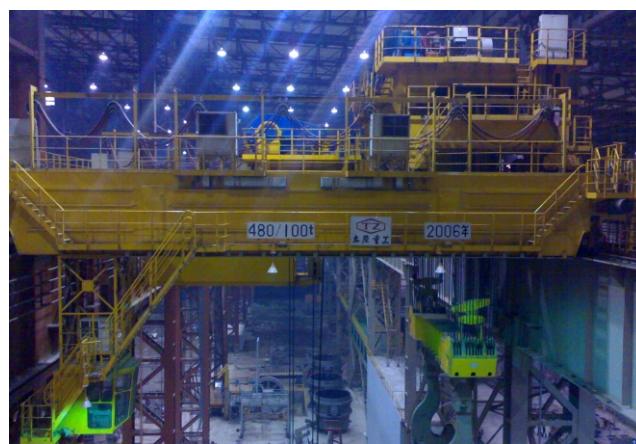
宝钢280t 铸造起重机  
Baosteel 280t Ladle Crane



拉西瓦水电站800/150/15t 吊钩桥式起重机  
Laxiwa Hydropower Station 800/150/15t Bridge Crane



岭澳核电站217/10+190+5t 环形起重机  
Lin Ao Nuclear Power Station 217/10+190+5t Ring crane



首钢480/80t 铸造起重机  
Shougang 480/80t Ladle Crane



鞍钢450t 铸造起重机  
Ansteel 450t Ladle Crane



邯钢110+110t 加料起重机  
Hangang 110+110t Charging Crane



大连船舶重工600t 造船门式起重机  
Dalian Ship Heavy Industry Group 600t Portal Crane

## 部份客户列表 List of Some Customers

|        |             |                            |                                 |
|--------|-------------|----------------------------|---------------------------------|
| 山峡工程   | 1200t 桥吊8台  | Three Gorges Project       | 1200t Travelling Bridges 8 Sets |
| 向家坝工程  | 1200t 桥吊4台  | Xiangjiaba Engineering     | 1200t Travelling Bridges 4 Sets |
| 宝钢梅山   | 420t 铸造吊4台  | Baosteel Meishan           | 420t Ladle Crane 4 Sets         |
| 马钢     | 500t 铸造吊2台  | Magang                     | 500t Ladle Crane 2 Sets         |
| 马钢     | 480t 铸造吊5台  | Magang                     | 480t Ladle Crane 5 Sets         |
| 首钢京唐   | 480t 铸造吊9台  | Shougang Jingtang          | 480t Ladle Crane 9 Sets         |
| 首钢迁安   | 360t 铸造吊5台  | Shougang Qianan            | 360t Ladle Crane 5 Sets         |
| 首钢迁安   | 350t 铸造吊5台  | Shougang Qianan            | 350t Ladle Crane 5 Sets         |
| 河北邯钢   | 450t 铸造吊4台  | Hebei Han Steel            | 450t Ladle Crane 4 Sets         |
| 鞍钢股份   | 450t 铸造吊9台  | Angang Steel Company       | 450t Ladle Crane 9 Sets         |
| 武钢股份   | 450t 铸造吊3台  | Wuhan Iron and Steel       | 450t Ladle Crane 3 Sets         |
| 武钢股份   | 350t 铸造吊5台  | Wuhan Iron and Steel       | 350t Ladle Crane 5 Sets         |
| 包钢股份   | 450t 铸造吊7台  | Baogang                    | 450t Ladle Crane 7 Sets         |
| 济钢股份   | 380t 铸造吊2台  | Jigang                     | 380t Ladle Crane 2 Sets         |
| 太钢股份   | 320t 铸造吊9台  | Taiyuan Iron and Steel     | 360t Ladle Crane 9 Sets         |
| 攀钢西昌   | 360t 铸造吊10台 | Pangang Xichang            | 360t Ladle Crane 10 Sets        |
| 新余钢铁   | 360t 铸造吊6台  | Xinyu Iron & Steel         | 360t Ladle Crane 6 Sets         |
| 河北宣钢   | 320t 铸造吊4台  | Hebei Xuangang             | 320t Ladle Crane 4 Sets         |
| 宝钢股份   | 280t 铸造吊6台  | Baosteel                   | 280t Ladle Crane 6 Sets         |
| 一重集团   | 550t 锻造吊1台  | China First Heavy Industry | 550t Forging Crane 1 Set        |
| 一重集团   | 250t 铸造吊1台  | China First Heavy Industry | 250t Forging crane 1 Set        |
| 太重集团   | 450t 锻造吊1台  | TYHI Group                 | 450t Forging Crane 1 Set        |
| 苏南重工   | 550t 锻造吊1台  | Sunan Heavy Industry       | 550t Forging Crane 1 Set        |
| 山东通裕   | 550t 铸造吊1台  | Shandong Tongyu Group      | 550t Ladle Crane 1 Set          |
| 上重集团   | 550t 桥吊2台   | Shanghai Heavy Industry    | 550t Travelling Bridges 1 Set   |
| 北方锻钢   | 300t 锻造吊1台  | Beifang Forging Steel      | 300t Forging Crane 2 Sets       |
| 中信重工   | 350t 淬火吊2台  | Citic Heavy Industry       | 350t Quenching Crane 2 Sets     |
| 印度     | 350t 铸造吊5台  | India project              | 350t Ladle Crane 5 Sets         |
| 墨西哥    | 260t 铸造吊3台  | Mexico project             | 260t Ladle Crane 3 Sets         |
| 俄罗斯    | 200t 铸造吊2台  | Russia project             | 200t Ladle Crane 2 Sets         |
| 巴基斯坦   | 250t 环形吊1台  | Pakistan project           | 250t Ring Crane 1 Set           |
| 三门核电   | 240t 桥吊1台   | Sanmen nuclear power       | 240t Travelling Bridges 1 Set   |
| 海马努尔核电 | 200t 桥吊2台   | Haimanuer nuclear power    | 200t Travelling Bridges 2 Sets  |
| 福建宁德核电 | 130t 核燃料吊4台 | Ningde nuclear power       | 130t Nuclear Fuel Crane 4 Sets  |
| 红沿河核电  | 130t 核燃料吊4台 | Red river nuclear power    | 130t Nuclear Fuel Crane 4 Sets  |

## 螺纹紧固件预紧力矩推荐值

Recommended value of preloaded torque of thread fasteners

| 螺纹规格 dxP<br>Thread Specification | 8.8级<br>8.8 class | 10.9级<br>10.9 class | 12.9级<br>12.9 class |
|----------------------------------|-------------------|---------------------|---------------------|
| M6                               | 6                 | 8                   | 10                  |
| M8x1                             | 14                | 20                  | 25                  |
| M10x1                            | 45                | 65                  | 80                  |
| M12x1.5                          | 80                | 110                 | 130                 |
| M14x1.5                          | 130               | 180                 | 220                 |
| M16x1.5                          | 195               | 275                 | 330                 |
| M18x1.5                          | 280               | 400                 | 480                 |
| M20x1.5                          | 400               | 570                 | 680                 |
| M22x1.5                          | 520               | 735                 | 880                 |
| M24x2                            | 650               | 920                 | 1100                |
| M27x2                            | 940               | 1340                | 1600                |
| M30x2                            | 1350              | 1900                | 2280                |
| M33x2                            | 1700              | 2440                | 2930                |
| M36x2                            | 2200              | 3150                | 3800                |

注：螺栓的机械性能应符合GB/T5785的规定，螺母的机械性能应符合GB/T6176的规定。

Note: The mechanical capacity of bolts should be accorded with GB/T5785 and the mechanical capacity of nuts should be accorded with GB/T6176.

