



www.alphascopelift.com

首域利达（北京）传动科技有限公司
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境内客户联系人

柔性传动柱装置

Flexible Transmission Column Lift

专注成就专业 精细铸就经久



首域科技



公司简介

Company Profile

首域利达（北京）传动科技有限公司是一家集设计、研发、制造、服务为一体的工程装备方案服务商（下设全资子公司石家庄首域传动科技有限公司），其专利产品柔性传动柱装置最初应用于浅基坑、大行程、大载荷的机械化舞台，由我司自主研发，2011年获国家发明专利（专利号：ZL201010218464.1），产品规格从轻巧便携的07A至超大载荷的77A一应俱全。柔性柱已在国内许多大中型艺术中心、剧院和商业演出中广泛应用，因其安全稳定、高效便捷的卓越性能，获得了工业和国防领域客户的认可，拓展应用于汽车自动化生产线、物流仓储、医疗器械、雷达车升降系统等工业和军用系统解决方案，项目业绩遍布国内及港澳台、东南亚、韩国、俄罗斯等地区和国家。

公司成立至今，始终致力于柔性传动柱装置的系列化设计，重视收集市场反馈信息和行业专家建议，不断优化升级产品性能及生产工艺，提高可靠性和先进性，目前投放市场的是第四代柔性传动柱装置。2022北京冬奥会和冬残奥会开闭幕式上，柔性传动柱装置运用于地面中央舞台系统盖板升降核心驱动，安全可靠地完成对开车台的升降补偿盖板升降，确保主火炬“大雪花”上升惊艳亮相的同时完成盖板和地坪的无缝对接，助力冬奥会科技与艺术的完美融合。

公司研发技术团队拥有一批具备多年非标机械设计和加工经验的行业领军型专家和高学历技术工程师，专注研发大行程、大载荷、浅基坑的传动装置及衍生设备的解决方案。新落成的生产园区总建筑面积达万余平方米，配备有龙门加工中心、立式加工中心、机器人焊机、数控车床、数控锯床和三坐标检测设备等高精智能生产设备和试验中心。公司实施ISO9001:2008质量管理体系，从点到面、从细节到全局，从产品到管理，始终坚持勇于超越自我，稳步提升首域品牌价值。

作为机械传动行业的创新者，公司秉承“专注成就专业，精益铸就经久”的企业精神，整合资源优势，建立多种战略性合作方式，以打造中国装备制造业的响亮名片为己任。公司将技术创新融入发展血脉，先后荣获河北省科技型中小企业、河北省高新技术企业和河北省专精特新中小企业等称号。2019年，柔性传动柱装置荣获中国演艺设备技术协会评选的“舞台机械装置名优名品”荣誉称号。

公司创立十余年来，首域人走出了一条自主摸索、自主创新的产业技术发展之路，不断拓展新型领域。展望未来十年，公司将顺应《河北省制造业高质量发展“十四五”规划》中提出的装备智能化、集成化、绿色化、服务化的产业发展大势，更加注重科技创新及成套化服务的高质量发展，用熠熠生辉的产品和服务奔赴山海，开启建设卓越的工程装备方案服务商的新征程！

Alphascope (Beijing) Transmission Technology Co., Ltd is an engineering equipment solution service provider engaged in design, R&D, manufacturing and service (with a wholly owned subsidiary Shijiazhuang Alphascope Transmission Technology Co., Ltd). Its patented product Flexible Transmission Column Lift (hereinafter referred to as Column Lift) was initially applied to the mechanized stage of shallow foundation pits, large stroke and large load. Column Lift was independently developed by our company and was awarded the national invention patent in 2011 (Patent No. ZL201010218464.1), with specifications ranging from the lightweight and portable 07A to the super-large load 77A. It has been widely used in many large and medium-sized art centers, theatres and commercial live shows in China. It has also won the favor of customers in industrial and defense fields for its safety, stability, efficiency and convenience. It is widely used in industrial and military system solutions such as automotive automation production lines, logistics, warehousing, medical equipment and radar vehicle lifting systems. The accomplished projects are widely located at home and abroad, such as Hong Kong, Macao and Taiwan, Southeast Asia, Korea, Russia and other regions and countries.

Since its establishment, the company has always been committed to the series design of Column Lift, valuing market feedback and industry experts' suggestions, and constantly optimized and upgraded the product performance and production process to improve reliability and advancement. The current product is the fourth generation of Column Lift. At the opening and closing ceremonies of the 2022 Beijing Winter Olympic and Paralympic Games, Column Lift was used as the core drive for the cover lift of the ground central stage system, safely and reliably completing lifting of the driving platform to compensate for the cover lift. This ensured the "Big Snowflake" of the main torch to rise and make a stunning appearance, flooring is seamlessly aligned, contributing to the perfect integration of technology and art in the Winter Olympics.

The company's R&D team has a group of industry-leading experts and highly educated engineers with many years of experience in non-standard mechanical design and processing, focusing on the development of solutions for transmission devices and derivative equipment with large stroke, large load, and shallow foundation pits. The newly completed production base has a total construction area of over 10,000 square meters and is equipped with high precision intelligent production equipment and test centers such as gantry machining centers, vertical machining centers, robot welding machines, CNC lathes, CNC sawing machines and three coordinate testing equipment. The company has implemented the ISO9001: 2008 quality management system, from point to surface, from details to the overall situation, from products to management, and always adheres to the courage to surpass oneself, steadily enhancing the brand value of Alphascope.

As an innovator in mechanical transmission industry, the company adheres to the corporate spirit of "Focusing on achieving professionalism and striving for excellence to create durability", integrates resource advantages, establishes various strategic cooperation, and takes it as its responsibility to create a bright business card for China's equipment manufacturing industry. The company has integrated technological innovation into its development bloodline and has been awarded titles such as Hebei Province Science and Technology Small and Medium sized Enterprise, Hebei Province High-tech Enterprise, and Hebei Province Specialized, Refined, and New Small and Medium sized Enterprise. In 2019, Column Lift was awarded the honorary title of "Famous and High-quality Stage Machinery" by China Performing Arts Technology Association.

Over the past decade since the establishment of the company, Alphascope staff has embarked on a path of independent exploration and innovation in industrial technology development, continuously expanding into new fields. Looking ahead to the next decade, the company will comply with the industrial development trend of equipment intelligence, integration, greening, and service-oriented proposed in the "14th Five Year Plan for High Quality Development of Hebei Province's Manufacturing Industry", pay more attention to technological innovation and high-quality development of complete sets of services, starting a new journey of building an excellent engineering equipment solution service provider!

大事记

变革奋进 2009

第一代柔性传动柱装置研发完成
The development of the first generation Column Lift was completed.

2011

柔性传动柱装置成功运用于国内知名艺术中心舞台
Column Lift was successfully applied to the stage of a well-known art center in China.

2013

柔性传动柱装置获国家发明专利
Column Lift was granted a national invention patent.

创新探索 2014

柔性传动柱装置获马来西亚客户青睐，首次走出国门
Column Lift won the favor of Malaysian customers and was applied to the project abroad for the first time.

2015

柔性传动柱装置运用于国内汽车自动化生产线
Column Lift was applied to a domestic automotive automation production line.

柔性传动柱装置运用于国防军工领域
Column Lift was applied to the field of national defense and military.

2019

柔性传动柱装置运用于世界知名工业巨头自动化生产线
Column Lift was applied to the automation production line of a world-renowned industrial giant.

转型升级 2021

首域新厂区建设项目开工奠基
Groundbreaking of the construction project of Alphascope new factory.

2022

柔性传动柱装置运用于北京冬奥会和冬残奥会开闭幕式
The application of Column Lift in the opening and closing ceremonies of the Beijing Winter Olympics and Winter Paralympics.

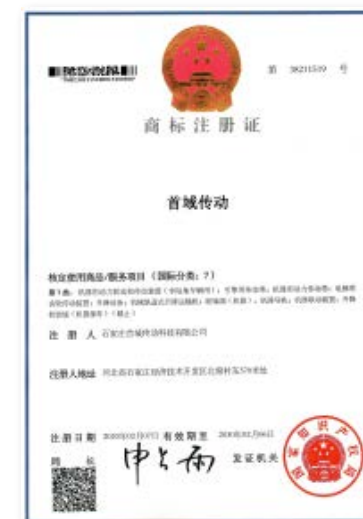
2023

新厂区建设完成并投入运行，开启“首域装备，装备世界”新篇章。
The construction of the new factory is completed and put into operation, marking the beginning of a new chapter of "Alphascope Equipment, Equip World".

Chronicles of Events

荣誉资质

Honors & Qualifications

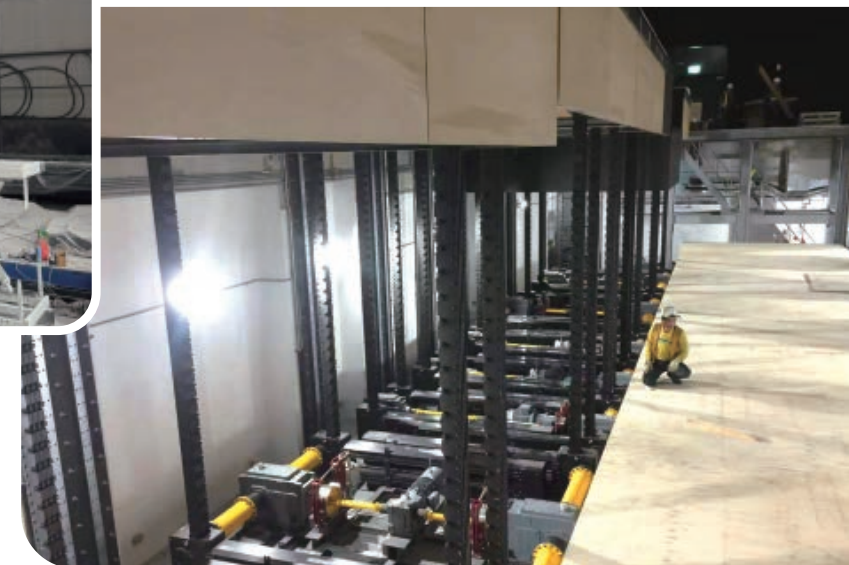




主要业绩

剧院 & 演艺中心

- ◎ 北 京 2022 北京冬奥会和冬残奥会开闭幕式, 东城文化中心, 中国环球电影开幕式, 央视 2022 年跨年音乐会, 国家体育场《鸟巢·吸引》秀, 北京大学百年讲堂, 2019 北京世园会开幕式, 顺义区文化中心影剧院, 探戈坞音乐谷室外剧场, 中国大戏院, 中央歌剧院
- ◎ 上 海 浦东青少年活动中心, 浦东日上国际剧场, 上海国际金融中心剧院, 证大喜马拉雅大观舞台, 上海马城剧院 (改造), 保利大剧院, 杨浦大剧院, 上海普陀剧院, 上海群艺馆, 上音歌剧院, 环球电影剧院, 虹口体育馆
- ◎ 河 北 怀特艺术中心, 崇礼文化中心, 武义文化中心, 河北会堂, 西柏坡红秀剧场, 承德福成国际马戏乐园, 秦皇岛碧螺塔
- ◎ 天 津 平津战役纪念馆, 2013 东亚运动会开幕式, 海河剧院, 天津文化艺术中心, 天津华侨城欢乐谷
- ◎ 山 东 山东艺术中心, 临沂大剧院, 烟台五彩文化广场, 胜利油田, 即墨科创中心, 即墨蓝色会展中心
- ◎ 内蒙古 鄂尔多斯草原大舞台, 呼和浩特广电局演播厅, 鄂托克旗电视台演播厅, 呼和浩特单于帐剧场
- ◎ 吉 林 延边工人文化艺术中心, 长白山万达剧院
- ◎ 辽 宁 辽宁大剧院, 沈阳文化艺术中心大剧院, 大连理工大学文化中心
- ◎ 黑龙江 集贤大剧院, 哈尔滨万达剧院
- ◎ 江 苏 东台市西溪旅游文化景区董永七仙女文化园, 2022 年江苏卫视跨年晚会, 苏州艺术中心, 盐城艺术中心, 南京报恩寺, 苏州金鸡湖大剧院, 无锡国际会议中心, 雨花影剧院
- ◎ 浙 江 2022 年浙江卫视跨年晚会, 西湖大学剧场, 杭州宋城千古情大剧院, 横店百老汇剧场, 杭州萧山大剧院, 杭州工人文化宫



Key Project Achievement

Theatres & Performing Arts Centers

- ◎ Beijing 2022 Beijing Winter Olympic and Paralympic Games Opening and Closing Ceremonies, Dongcheng Cultural Centre, China Universal Film Opening Ceremony, CCTV 2022 New Year's Eve Concert, National Stadium 'Bird's Nest Attraction' Show, Peking University Centennial Lecture Hall, 2019 Beijing World Garden Festival Opening Ceremony, Shunyi District Cultural Centre Cinema, Tango Wood Music Valley Outdoor Theatre, China Grand Opera House, Central Opera House
- ◎ Shanghai Pudong Youth Activity Centre, Pudong Rishang International Theatre, Shanghai IFC Theatre, Zendai Himalayan Grand View Center, Shanghai Circus City Theatre (renovated), Shanghai Jiading Poly Theatre, Yangpu Grand Theatre, Shanghai Putuo Theatre, Shanghai Qunyi Hall, SSE Opera House, Universal Film Theatre, Hongkou Stadium
- ◎ Hebei Huaite Art Centre, Chongli Cultural Centre, Wuyi Cultural Centre, Hebei Hall, Xibaipo Red Show Theatre, Chengde Fucheng International Circus Park, Qinhuangdao Biluo Pagoda
- ◎ Tianjin Pingjin Battle Memorial Hall, 2013 East Asian Games Opening Ceremony, Haihe Theatre, Tianjin Cultural Arts Centre, Tianjin OCT Happy Valley
- ◎ Shandong Shandong Art Centre, Linyi Grand Theatre, Yantai Cultural Center, Shengli Oilfield, Jimo Science and Technology Centre, Jimo Blue Exhibition Centre
- ◎ Inner Mongolia Erdos Grassland Stage, Hohhot Radio & Television Bureau Studio, Ertok Banner TV Studio, Hohhot Shan Yu Tent Theatre, Bayannur TheatreJilin Yanbian Workers' Cultural Arts Centre, Liaoyuan Theatre, Changbai-Mountain Wanda Theatre
- ◎ Liaoning Liaoning Grand Theatre, Shenyang Cultural Arts Centre Grand Theatre, Dalian University of Technology Cultural Centre
- ◎ Heilongjiang Jixian Grand Theatre, Harbin Wanda Theatre
- ◎ Jiangsu Dong Yong and Seven Fairies Cultural Park, Dongtai Xixi Tourism and Cultural Scenic Area, 2022 Jiangsu TV New Year's Eve Gala, Suzhou Arts Centre, Yancheng Arts Centre, Nanjing Baoen Temple, Suzhou Jinji Lake Grand Theatre, Wuxi International Convention Center , Yuhua Theatre
- ◎ Zhejiang 2022 Zhejiang TV New Year's Eve Gala, West Lake University Theatre, Hangzhou Songcheng Eternal Love Theatre, Hengdian Broadway Theatre, Hangzhou Xiaoshan Grand Theatre, Hangzhou Workers' Cultural Palace

◎江西 江西文化艺术中心，临川文化中心，景德镇项目，新余仙女湖剧院，奉新项目，赣州大剧院，宜春明月千古情大剧院，三清山剧场，湘东滨河新区文化中心，高安采茶剧院

◎安徽 肥东大剧院，阜阳电视台，宿州大剧院

◎陕西 西安音乐学院，陕西艺术馆，西安事变影画剧院，长安乐演艺中心，榆林大剧院，榆林广播电视台演播厅，曲江海事博物馆，渭南文化中心，阎良市群众文化活动中心

◎河南 河南香玉剧院，郑州千古情大剧院，新乡市新星奥斯卡影城，河南文化大厦，郑州大剧院，洛阳牡丹节开幕式，开封中原明珠广场

◎广东 深圳国际会展中心，深圳福田文化中心，深圳交响乐团，深圳少年宫，佛山西樵岭南千古情，广州粤剧院，珠海金湾，长隆乐园剧场，广州万达城主题乐园儿童剧场，珠海歌剧院，刘老根大舞台，深圳天际音乐厅，深圳国际会展中心，坝光文化中心

◎广西 桂林万达文化旅游城，南宁艺术基地，崇左花山实景演出

◎福建 八闽古城剧场，闽侯文化中心，福州工人文化宫，泉州大剧院，福州泰禾广场

◎海南 海南智慧生态新城，海南艺术学校礼堂，海花岛大剧院，恒大太阳之子剧场，海口人民剧场

◎西藏 西藏文化广电艺术中心，日喀则大剧院，金城公主剧场

◎甘肃 天下雄关大剧院，武威擂台，红古文体中心

◎新疆 新疆兵团文化中心，《昆仑之约》实景演出，新疆百年

◎青海 乐都项目，互助县文化项目

◎贵州 毕节大剧院（改造），西江剧院，九都大剧院，贵秀实景演出

◎云南 丽江千古情大剧院

◎湖北 秘境神龙架情景山里剧，荆门艺术中心

◎湖南 安化茶叶文化中心，雨花影剧院，炭河千古情大剧院，张家界云顶文化中心，张家界千古情大剧院，张家界大庸古城，长沙铜官窑，株洲神农城，2022 年湖南卫视跨年晚会，长沙芙蓉馆

◎重庆 大足文化艺术中心

◎四川 丝路神灯奇幻实景演出，自贡市文化中心，成都高新区文化中心，九寨千古情大剧院，雅安文化艺术中心

◎澳门 澳门金沙城剧院

◎台湾 台北流行音乐中心

◎Jiangxi Jiangxi Culture and Arts Centre, Linchuan Culture Centre, Jingdezhen Project, Xinyu Xiannihu Theatre, Fengxin Project, Ganzhou Grand Theatre, Yichun Mingyue Eternal Love Theatre, Sanqingshan Theatre, Cultural Center of Xiangdong Binhe New Area, Gao'an Tea Picking Theater

◎Anhui Feidong Grand Theatre, Fuyang TV Station, Suzhou Grand Theatre

◎Shaanxi Xi'an Conservatory of Music, Xi'an Incident Picture Theatre, Yulin Grand Theatre, Yulin Radio and Television Studio, Qujiang Maritime Museum, Weinan Cultural Centre, Shaanxi Art Museum, Chang'an Le Performing Arts Center, Yanliang People's Cultural Activity Center

◎Henan Henan Xiangyu Theatre, Zhengzhou Songcheng Eternal Love Theatre, Xinxiang New Star Oscar Cinema, Henan Culture Building, Zhengzhou Grand Theatre, Luoyang Peony Festival Opening Ceremony, Kaifeng Zhongyuan Pearl Square

◎Guangdong Shenzhen International Convention and Exhibition Centre, Shenzhen Futian Cultural Centre, Shenzhen Symphony Orchestra, Foshan Xiqiao Lingnan Eternal Love Theatre, Guangzhou Cantonese Opera Theatre, Zhuhai Jinwan, Changlong Paradise Theatre, Guangzhou Wanda City Theme Park Children's Theatre, Zhuhai Opera House, Liu Lao Gen Grand Stage, Shenzhen Sky Concert Hall, Shenzhen International Convention and Exhibition Centre, Baguang Cultural Centre, Shenzhen Youth Palace

◎Guangxi Guilin Wanda Cultural Tourism City, Nanning Art Base, Chongzuo Huashan Live Performance Fujian Bamin Ancient City Theatre, Minhou Cultural Centre, Fuzhou Workers' Cultural Palace, Quanzhou Grand Theatre, Fuzhou Taihe Plaza, Gu Wenchang Cadre College Theater

◎Hainan Hainan Wisdom Ecological New City, Hainan Arts School Auditorium, Haihua Island Grand Theatre, Evergrande Sunchild Theatre, Haikou People's Theatre

◎Tibet Tibetan Culture, Radio & Television Arts Centre, Rikaze Grand Theatre, Golden City Princess Theatre

◎Gansu Tianxia Xiongguan Grand Theatre, Wuwei Arena, Honggu Cultural and Sports Centre

◎Xinjiang Xinjiang Corps Cultural Centre, The Covenant of Kunlun live performance, Centennial of Xinjiang Qinghai Ledu Project, Mutual County Cultural Project

◎Guizhou Bijie Grand Theatre (renovated), Xijiang Theatre, Jiudu Grand Theatre, Guixiu Live Performance

◎Yunnan Lijiang Songcheng Eternal Love Theatre

◎Hubei Secret Shen Longjia Scenario Mountain Drama, Jingmen Arts Centre

◎Hunan Anhua Tea Cultural Centre, Tanhe Songcheng Eternal Love Theatre, Zhangjiajie Genting Cultural Centre, Zhangjiajie Songcheng Eternal Love Theatre,Zhangjiajie Dayong Ancient City, Changsha Tongguan Kiln, Zhuzhou Shennong City, 2022 Hunan TV New Year's Eve Gala, Changsha Furong Pavilion

◎Chongqing Dazu Cultural Arts Centre

◎Sichuan Silk Road Divine Lantern Fantasy Live Performance, Zigong Cultural Centre, Chengdu Hi-tech Zone Cultural Centre, Jiuzhai Millennium Songcheng Eternal Love Theatre, Ya'an Cultural Arts Centre

◎Macau Sands Macau Theater

◎Taiwan Taipei Music Center

主要业绩

演唱会 & 流动演出

- ◎ 2023/2022 湖南卫视跨年晚会
- ◎ 2023/2022 浙江卫视跨年晚会
- ◎ 2023/2022 江苏卫视跨年晚会
- ◎ Big bang 演唱会
- ◎ 黄绮珊演唱会
- ◎ 张靓颖 世界巡回演唱会
- ◎ 五月天 巡回演唱会
- ◎ 莫文蔚 巡回演唱会
- ◎ 罗志祥 巡回演唱会
- ◎ 邓紫棋 巡回演唱会
- ◎ 张学友 世界巡回演唱会
- ◎ 刘德华 世界巡回演唱会
- ◎ 韩国鸟叔 psy 演唱会



工业自动化 & 物流仓储

- ◎ 中国商飞 C919 飞行指挥车升降系统
- ◎ 李尔公司升降平台
- ◎ 河北承德金龙（菲律宾）汽车自动化
- ◎ 吉利汽车自动化系统
- ◎ 众泰汽车自动化系统
- ◎ 湖北国瑞自动化
- ◎ 福田瑞沃汽车自动化系统
- ◎ 湖北三丰汽车自动化装备
- ◎ 南京依维柯汽车自动化系统
- ◎ 永辉机械自动化系统



Key Project Achievement

Concerts & Shows

- ◎ 2023/2022 Hunan TV New Year's Eve Gala
- ◎ 2023/2022 Zhejiang TV New Year's Eve Gala
- ◎ 2023/2022 Jiangsu TV New Year's Eve Gala
- ◎ Big bang Concert
- ◎ Sophia Huang Concert
- ◎ Zhang Liang Ying World Tour
- ◎ Mayday Tour
- ◎ Karen Mok Tour
- ◎ Lo's Tour
- ◎ Deng Zhiqi Tour
- ◎ Jacky Cheung World Tour
- ◎ Andy Lau World Tour
- ◎ Psy psy concert in Korea



Industrial Automation, Logistics & Warehousing

- ◎ COMAC C919 Flight Command Vehicle Lift System
- ◎ Lear Corporation elevating platform
- ◎ Hebei Chengde Golden Dragon (Philippines) Automobile Automation
- ◎ Geely Automobile's automation systems
- ◎ Automation systems from Zotye Automobiles
- ◎ Hubei Guorui Automation
- ◎ Foton Riva Automotive Automation Systems
- ◎ Hubei Sanfeng Automotive Automation Equipment
- ◎ Iveco Nanjing Automotive Automation Systems
- ◎ Yonghui Machinery Automation Systems

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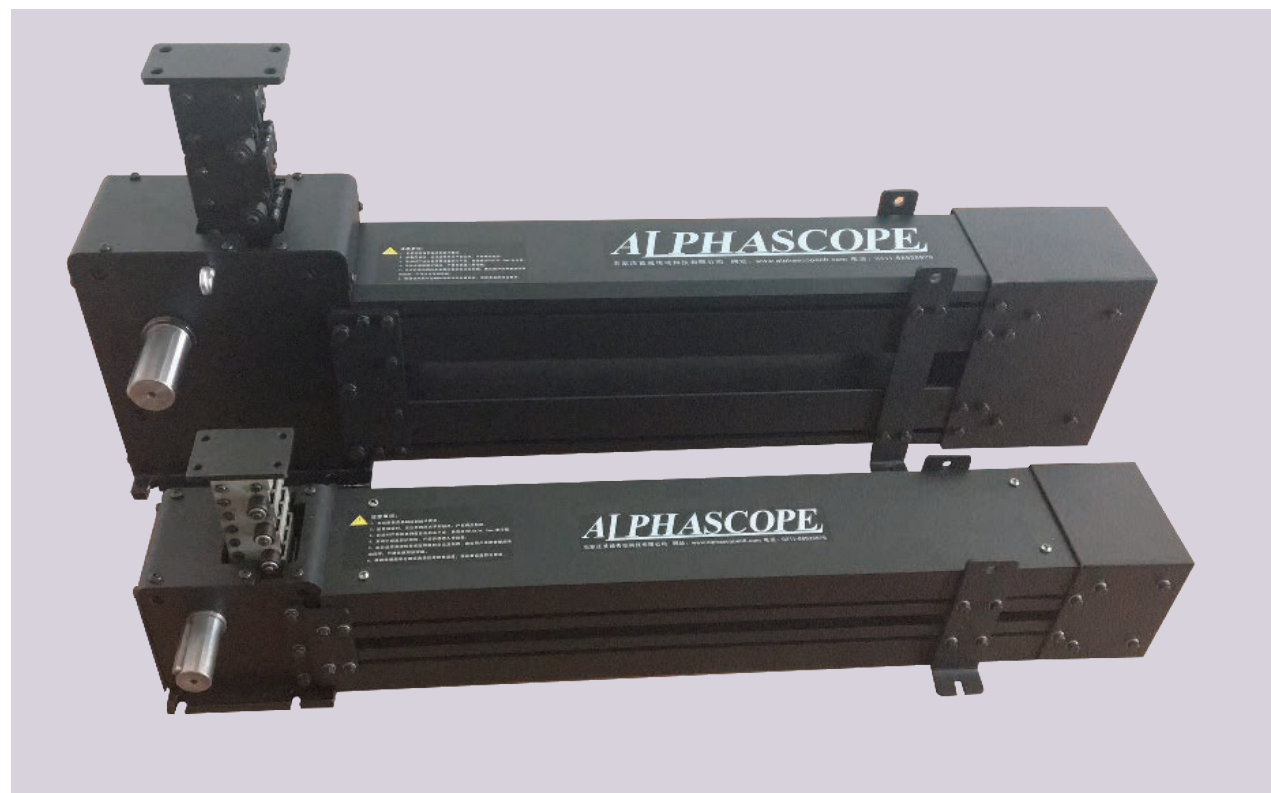
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1. 概述

柔性传动柱装置具备以下主要特点:

- 1) 将水平运动的柱节通过传动箱转换成垂直运动, 实现垂直升降。
- 2) 把柔软的柱节转变为具有单向刚度的柱节, 刚性柱节之间用活动铰接连接, 形成垂直的刚性立柱承受垂直载荷。
- 3) 运行平稳、可靠性强、寿命长、维护成本低, 重复定位精度高, 配置灵活, 安装方便, 适用于重载荷 (单根柔性传动柱最大动载荷 60吨、静载荷90吨以上)、浅基坑大行程 (最大行程可达16m以上)。



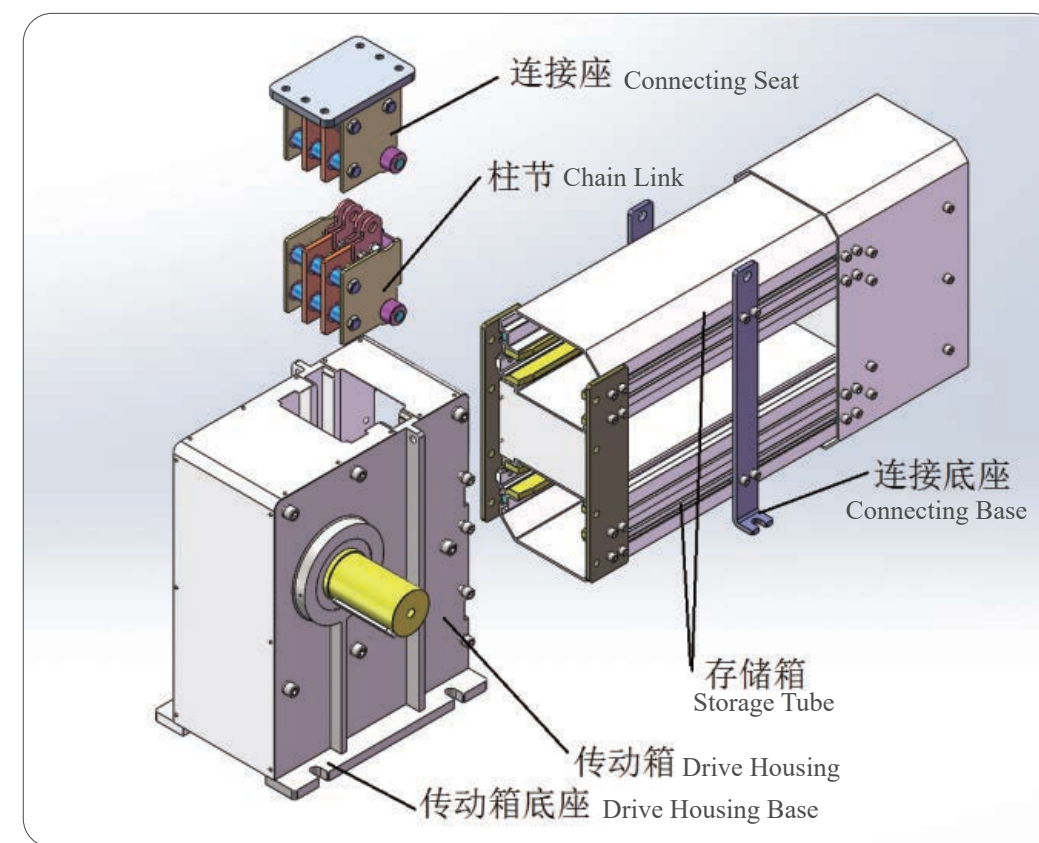
2. 应用范围

柔性传动柱主要为浅基坑、大行程的传动提供解决方案, 可用于特定生产线的升降, 替代传统的剪刀撑、螺旋丝杆、液压缸、柔性齿、大螺旋及刚性链等产品, 也可为新型领域提供高质可靠的传动方式。

1. Overview

Column Lift has the following main features.

- 1) Convert a horizontally moving chain link to a vertical movement through drive housing to achieve vertical lift.
- 2) Transform the soft chain link into the one with uni-directional stiffness, and connect the rigid chain link with movable hinges to form a vertical rigid column that bears vertical loads.
- 3) Stable operation, strong reliability, long service life, low maintenance costs, high repeatability, flexible configuration, easy installation, suitable for heavy loads (maximum dynamic load of 60tons and static load of 90tons for a single Column Lift), shallow pit and large stroke (maximum large stroke up to 16m or more).



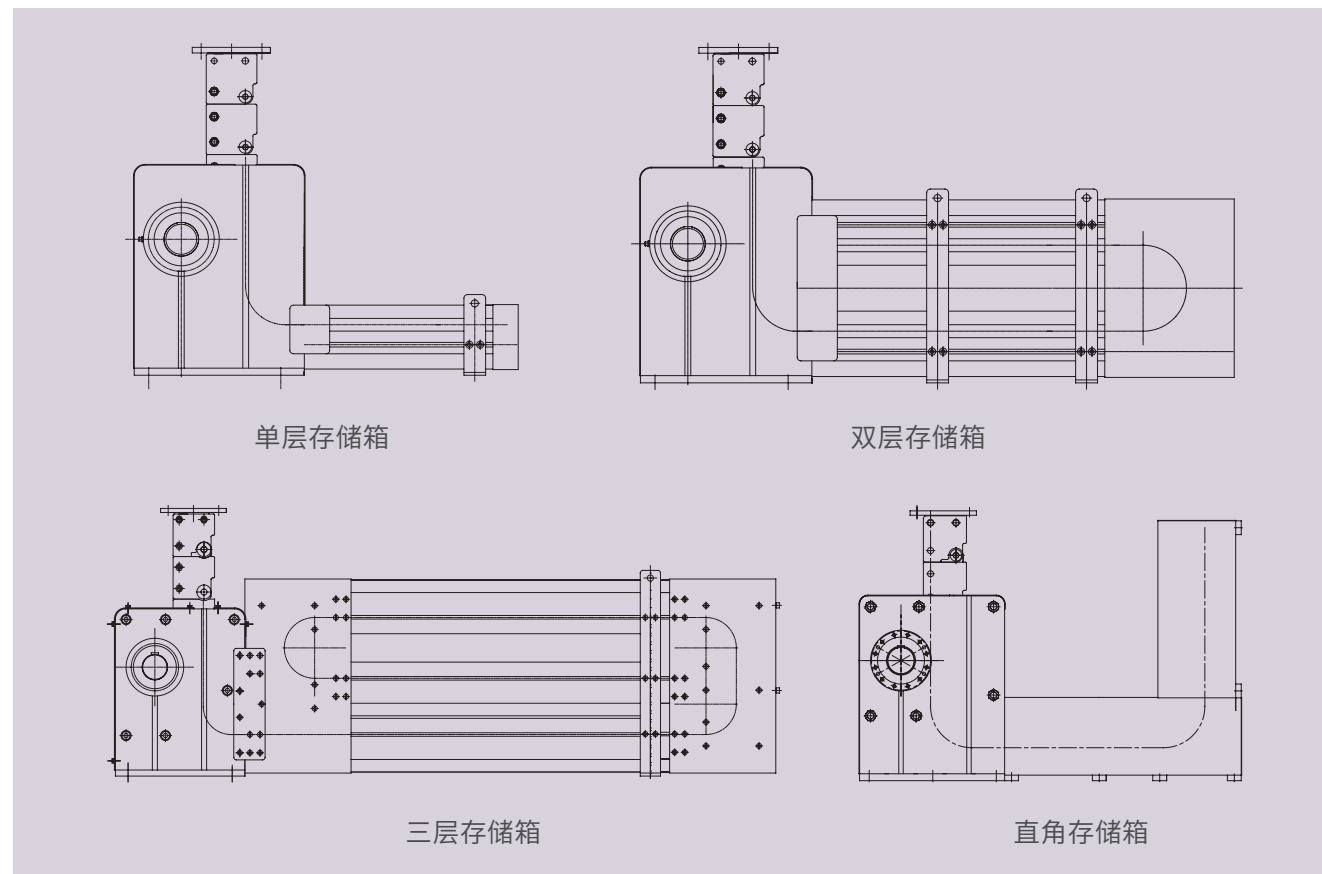
2. Application Range

Column Lift is a solution for the transmission of the short pit and large stroke, which can be used for the lifting of specific production lines, replacing traditional scissor supports, spiral screws, hydraulic cylinders, flexible gears, large spirals and rigid chains. It can be used for new fields where high quality and reliable transmission are required.

3. 柔性柱组成及形式

柔性传动柱由柱节连接座、若干节柱节组件、柱节传动箱和柱节存储箱组成。

柱节存储箱有单层、双层、直角和三层等多种形式，其中直角存储箱和三层存储箱可以选择双层与单层存储箱结合使用，具体请致电本公司垂询。



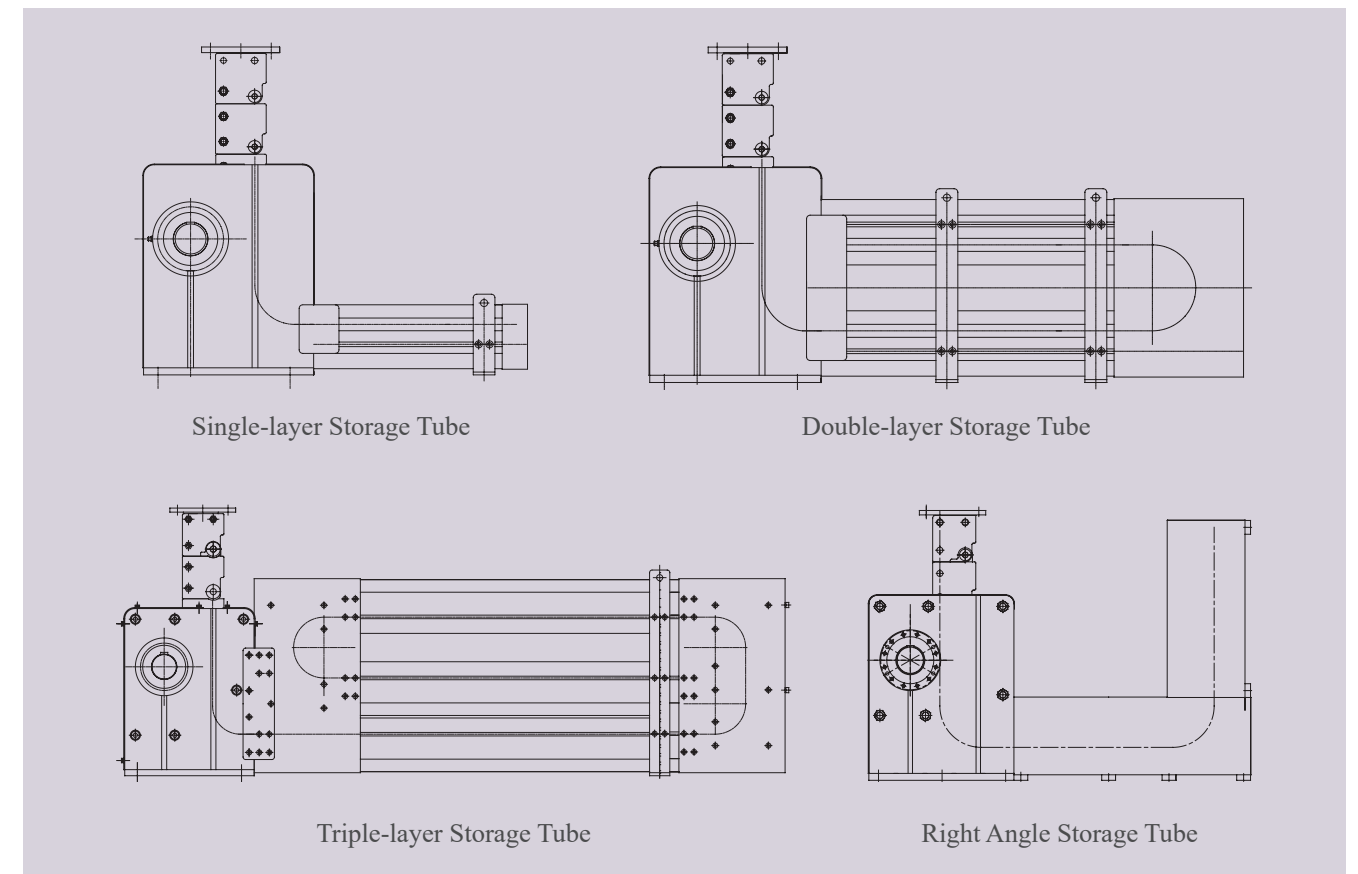
4. 技术参数

性能参数

- 速度：最大速度0.30m/s，详见各型号柔性柱参数。
- 垂直度要求: $S \leq 1\text{m}$ ，为 $\pm 1\text{mm/m}$
 $1\text{m} < S < 2\text{m}$ ，为 $\pm 1\text{mm/m}$ 、 $\pm 2\text{mm}$ /全行程
 $S > 2\text{m}$ ，为 $\pm 1\text{mm/m}$ 、 $\pm 3\text{mm}$ /全行程
- 传动效率：0.78~0.85
- 噪音情况：在速度为0.10m/s的情况下，噪音<35~50分贝（在0.1m/s速度，离1m处测得）
- 重复定位精度：< $\pm 1\text{mm}$
- 加速度：< 0.3m/s^2

3. Column Lift Composition and Form

Column Lift consists of chain link connecting seat, chain links, a drive housing and a storage tube. Storage tubes come in various forms, including single-layer, double-layer, right angle, and three-layer. Right angle storage tubes and three-layer storage tubes can be used in combination with double-layer and single layer storage tubes. Please call us for more information

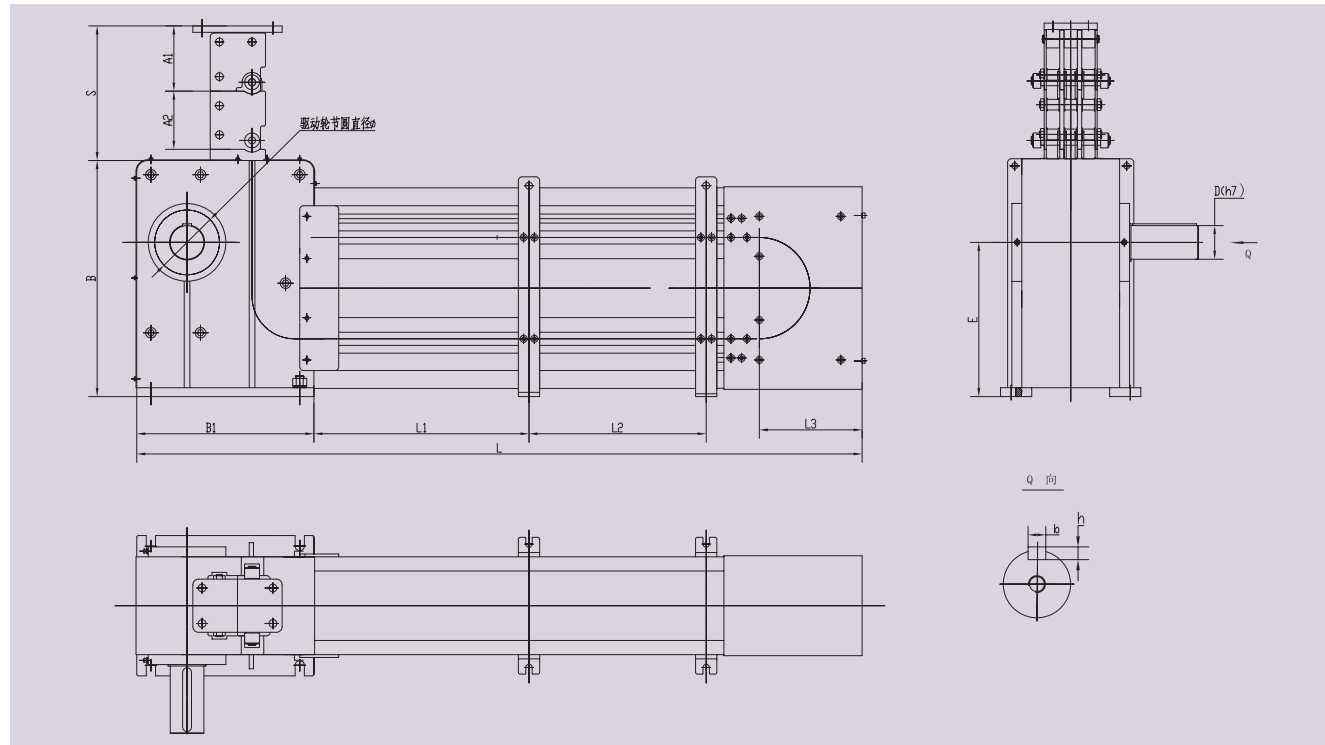


4. Technical Parameters

Performance parameters

- Speed: max speed 0.30m/s, Please refer to the parameters of each model of Lift for details.
- Required perpendicularity: $\pm 1\text{mm/m}$ if $S \leq 1\text{m}$
 $\pm 1\text{mm/m}$, $\pm 2\text{mm}$ /full travel if $1\text{m} < S < 2\text{m}$
 $\pm 1\text{mm/m}$, $\pm 3\text{mm}$ /full travel if $S > 2\text{m}$
- Transmission efficiency: 0.78 ~ 0.85
- Noise condition: <35-50 dB at a speed of 0.10m/s (measured at 0.1m/s, 1m away)
- Repeated positioning accuracy: < $\pm 1\text{mm}$
- Acceleration: < 0.3m/s^2

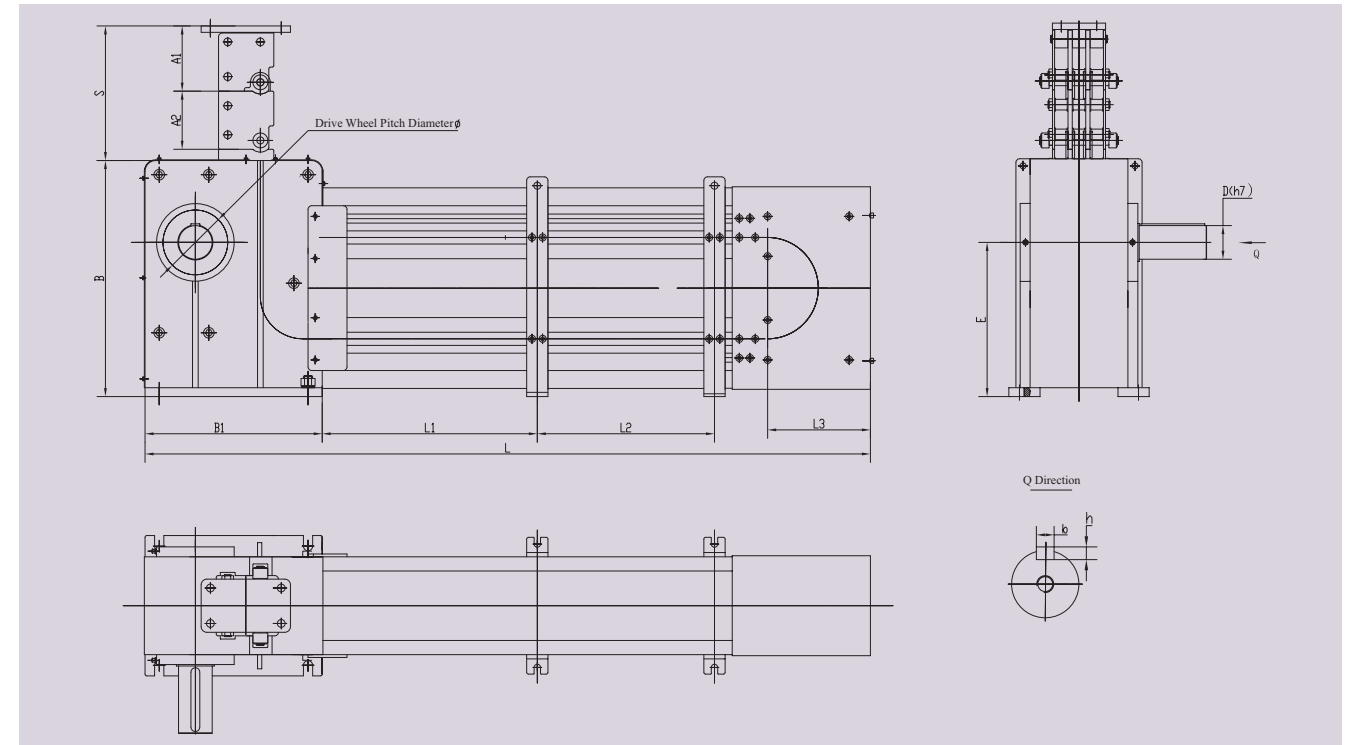
传动几何参数



型号	传动箱高度 B(mm)	传动箱中心高 E(mm)	驱动轮节圆直径 Φ(mm)	输出轴直径 D(mm)	输出轴键 型号 b×h (mm)	柱节长度 A2 (mm)	柱节重量 (kg/m)	最大速度 (m/s)	建议升降总余量 (mm)
07A	154	98	48.38	25	8×7	38	5.8	0.2	160
11A	260	175	81.49	40	12×8	64	11.98	0.2	240
15A	330	215	93.58	50	14×9	84	20	0.25	300
19A	420	275	113.64	60	18×11	102	31.09	0.25	300
23A	515	335	142.6	75	20×12	128	41.26	0.3	400
27A	590	385	160.43	85	22×14	144	57.24	0.3	400
31A	666	435	182.71	95	25×14	164	74.08	0.3	500
35A	760	495	207.22	110	28×16	186	93.94	0.3	500
39A	855	570	236.19	125	32×18	212	128.09	0.3	500
47A	915	605	258.47	140	36×20	232	156.96	0.3	600
53A	1090	725	303.03	160	40×22	272	200.7	0.3	600
63A	1197	800	329.77	180	45×25	296	276.64	0.3	700
71A	1330	880	369.88	200	45×25	332	402.44	0.3	700
77A	1538	1006	427.81	240	56×32	384	495.99	0.3	700

说明：表中的重量只是供选型时的参考数据，以实际标牌上的重量为准。

Transmission Geometrical Parameters



Model	Drive Housing Pitch B(mm)	Drive Housing Center Pitch E(mm)	Drive Wheel Pitch Diameter Φ(mm)	Output Shaft Diameter D(mm)	Output Shaft Key Model (mm)	Chain Link Pitch (mm)	Chain Link Weight (kg/m)	Max. Speed (m/s)	Total Lifting Margin (mm)
07A	154	98	48.38	25	8×7	38	5.8	0.2	160
11A	260	175	81.49	40	12×8	64	11.98	0.2	240
15A	330	215	93.58	50	14×9	84	20	0.25	300
19A	420	275	113.64	60	18×11	102	31.09	0.25	300
23A	515	335	142.6	75	20×12	128	41.26	0.3	400
27A	590	385	160.43	85	22×14	144	57.24	0.3	400
31A	666	435	182.71	95	25×14	164	74.08	0.3	500
35A	760	495	207.22	110	28×16	186	93.94	0.3	500
39A	855	570	236.19	125	32×18	212	128.09	0.3	500
47A	915	605	258.47	140	36×20	232	156.96	0.3	600
53A	1090	725	303.03	160	40×22	272	200.7	0.3	600
63A	1197	800	329.77	180	45×25	296	276.64	0.3	700
71A	1330	880	369.88	200	45×25	332	402.44	0.3	700
77A	1538	1006	427.81	240	56×32	384	495.99	0.3	700

Note: The weights in the table are for reference only when selecting models and are subject to the actual weight on the label.

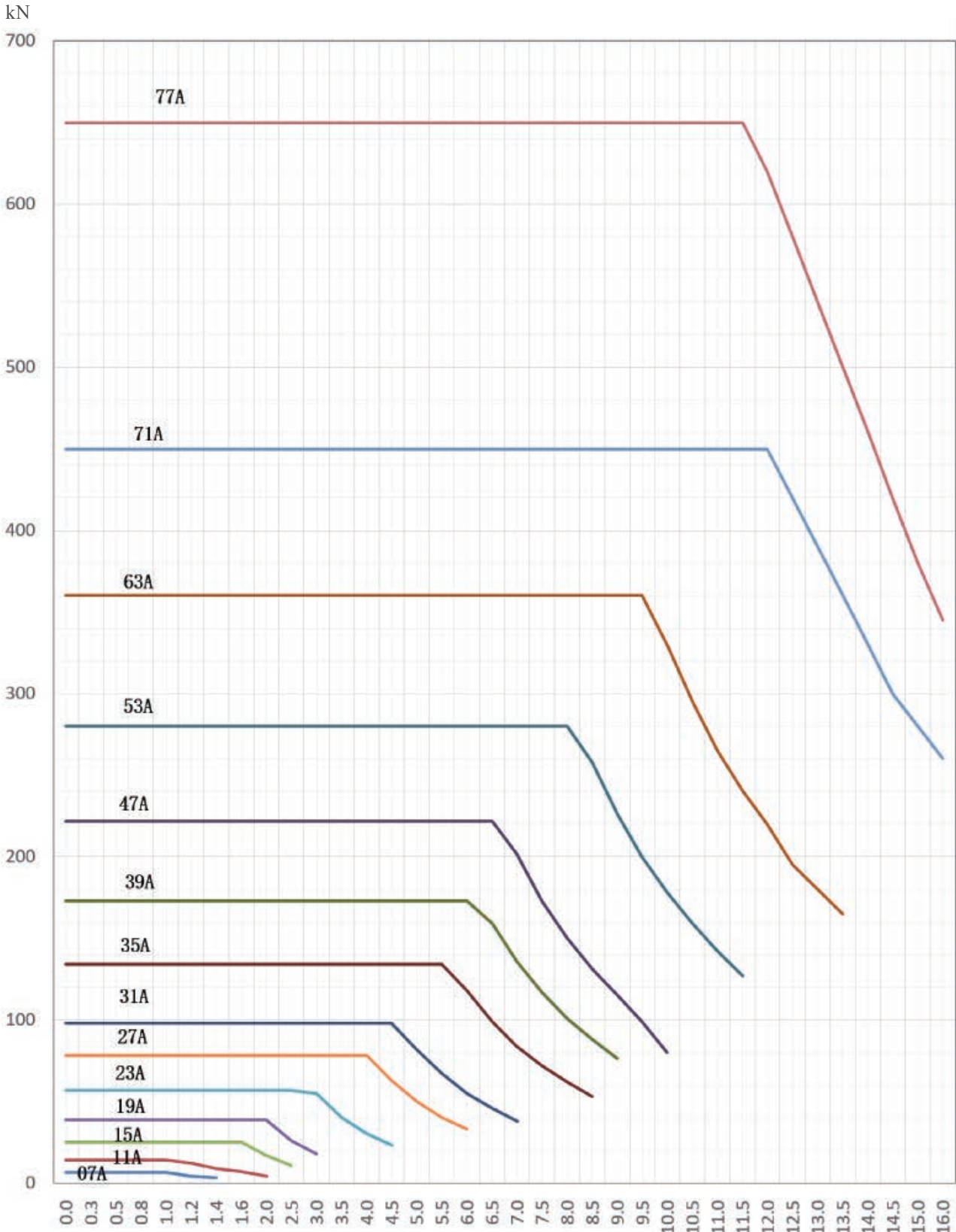
柱节总长度、动载荷参数(带导向)
Pitch of Chain Link-Dynamic Load Parameter (with guiding system)

动载荷与行程 DYN Load- Pitch of Chain Link														
型号	07A	11A	15A	19A	23A	27A	31A	35A	39A	47A	53A	63A	71A	77A
行程 (m)	动载荷 DYN Load (kN)													
0	6.3	14	25	39	57	78	98	134	173	222	280	360	450	650
0.30	6.3	14	25	39	57	78	98	134	173	222	280	360	450	650
0.50	6.3	14	25	39	57	78	98	134	173	222	280	360	450	650
0.80	6.3	14	25	39	57	78	98	134	173	222	280	360	450	650
1.00	6.3	14	25	39	57	78	98	134	173	222	280	360	450	650
1.20	4.3	12	25	39	57	78	98	134	173	222	280	360	450	650
1.40	3	9	25	39	57	78	98	134	173	222	280	360	450	650
1.60		7	25	39	57	78	98	134	173	222	280	360	450	650
2.00		4	17	39	57	78	98	134	173	222	280	360	450	650
2.50			11	26	57	78	98	134	173	222	280	360	450	650
3.00				18	55	78	98	134	173	222	280	360	450	650
3.50					40	78	98	134	173	222	280	360	450	650
4.00					30	78	98	134	173	222	280	360	450	650
4.50					23	63	98	134	173	222	280	360	450	650
5.00						50	82	134	173	222	280	360	450	650
5.50						40	67	134	173	222	280	360	450	650
6.00						33	55	118	173	222	280	360	450	650
6.50							46	99	159	222	280	360	450	650
7.00							38	84	136	202	280	360	450	650
7.50								72	117	173	280	360	450	650
8.00								62	101	150	280	360	450	650
8.50								53	88	131	258	360	450	650
9.00									76	115	226	360	450	650
9.50										99	200	360	450	650
10.00										80	178	330	450	650
10.50											159	295	450	650
11.00											142	265	450	650
11.50											127	240	450	650
12.00												220	450	620
12.50												195	420	580
13.00												180	390	540
13.50												165	360	500
14.00													330	460
14.50													300	420
15.00													280	380
16.00													260	345
	该颜色参数选型请致电我司确认						该颜色或以上参数可根据设计进行选型							
	Please call us for confirmation when selecting model of this color parameters.						The color or above parameters can be selected according to the design.							

说明：1) 柱节总长度 = 行程 + 升、降余量。2) 为减少振动，在柱节连接座与结构体之间增加一块橡胶垫，橡胶垫厚度与柱节连接座连接板厚度相当。3) 表中为选型参考值，如导向系统安全可靠，行程、载荷可适当提高，但最大承载能力不变。

Note: 1) Total length of chain link = stroke + lifting margin. 2) To reduce vibration, add a rubber pad between the chain link connecting seat and the structural body. The thickness of the rubber pad is equivalent to the thickness of the chain link connecting plate. 3) The table is a reference value for model selection. If the guiding system is safe and reliable, the stroke and load can be increased appropriately, but the maximum bearing capacity remains unchanged.

柱节总长度-动载荷曲线
Pitch of Chain Link-Dynamic Load Curve



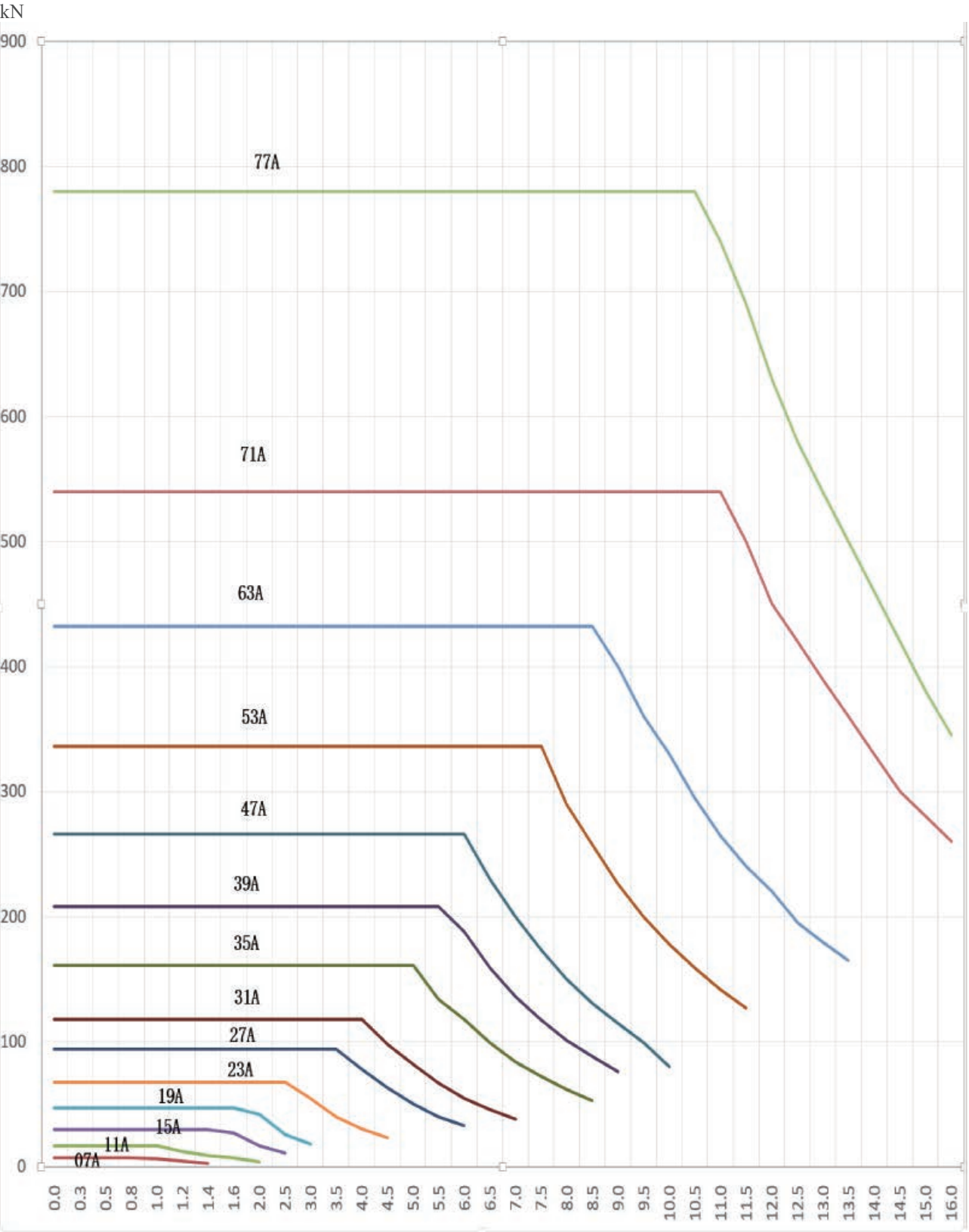
柱节总长度、静载荷参数(带导向)
Pitch of Chain Link-Static Load Parameter (with guiding system)

静载荷与行程 STA Load- Pitch of Chain Link														
型号	07A	11A	15A	19A	23A	27A	31A	35A	39A	47A	53A	63A	71A	77A
行程 (m)	静载荷 STA Load (kN)													
0	7.5	17	30	47	68	94	118	161	208	266	336	432	540	780
0.30	7.5	17	30	47	68	94	118	161	208	266	336	432	540	780
0.50	7.5	17	30	47	68	94	118	161	208	266	336	432	540	780
0.80	7.5	17	30	47	68	94	118	161	208	266	336	432	540	780
1.00	6.3	17	30	47	68	94	118	161	208	266	336	432	540	780
1.20	4.3	12	30	47	68	94	118	161	208	266	336	432	540	780
1.40	3	9	30	47	68	94	118	161	208	266	336	432	540	780
1.60		7	27	47	68	94	118	161	208	266	336	432	540	780
2.00		4	17	42	68	94	118	161	208	266	336	432	540	780
2.50			11	26	68	94	118	161	208	266	336	432	540	780
3.00				18	55	94	118	161	208	266	336	432	540	780
3.50					40	94	118	161	208	266	336	432	540	780
4.00					30	78	118	161	208	266	336	432	540	780
4.50					23	63	98	161	208	266	336	432	540	780
5.00						50	82	161	208	266	336	432	540	780
5.50						40	67	134	208	266	336	432	540	780
6.00						33	55	118	188	266	336	432	540	780
6.50							46	99	159	230	336	432	540	780
7.00							38	84	136	200	336	432	540	780
7.50								72	117	173	336	432	540	780
8.00								62	101	150	290	432	540	780
8.50								53	88	131	258	432	540	780
9.00									76	115	226	400	540	780
9.50										99	200	360	540	780
10.00										80	178	330	540	780
10.50											159	295	540	780
11.00												142	265	740
11.50												127	240	690
12.00													220	630
12.50													195	580
13.00													180	540
13.50													165	500
14.00														330
14.50														300
15.00														280
16.00														260
	该颜色参数选型请致电我司确认					该颜色或以上参数可根据设计进行选型								
	Please call us for confirmation when selecting model of this color parameters.					The color or above parameters can be selected according to the design.								

说明：1) 柱节总长度 = 行程 + 升、降余量。2) 为减少振动，在柱节连接座与结构体之间增加一块橡胶垫，橡胶垫厚度与柱节连接座连接板厚度相当。3) 表中为选型参考值，如导向系统安全可靠，行程、载荷可适当提高，但最大承载能力不变。

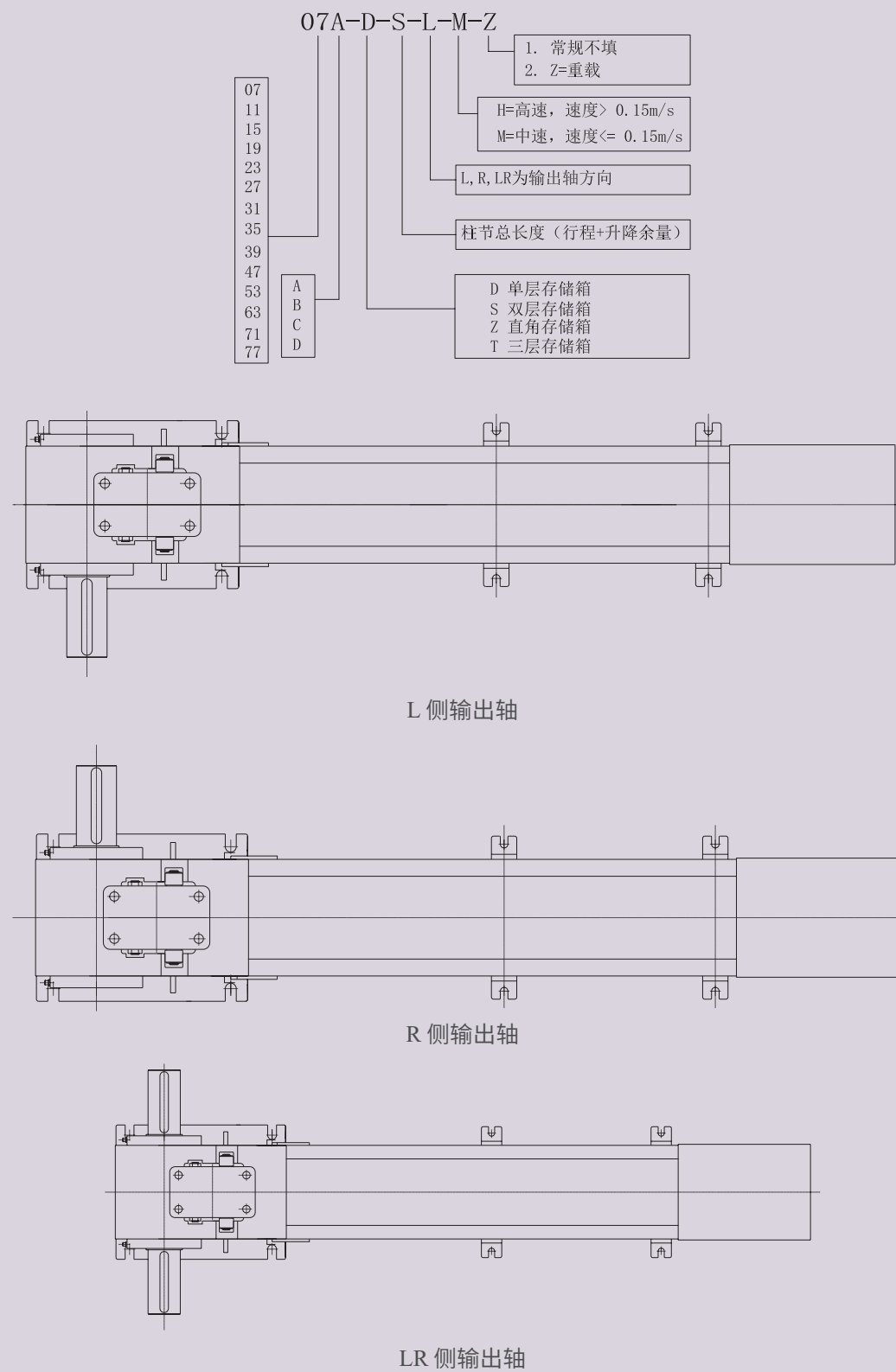
Note: 1) Total length of chain link = stroke + lifting margin. 2) To reduce vibration, add a rubber pad between the chain link connecting seat and the structural body. The thickness of the rubber pad is equivalent to the thickness of the chain link connecting plate. 3) The table is a reference value for model selection. If the guiding system is safe and reliable, the stroke and load can be increased appropriately, but the maximum bearing capacity remains unchanged.

柱节总长度 -静载荷曲线
Pitch of Chain Link-Static Load Curve



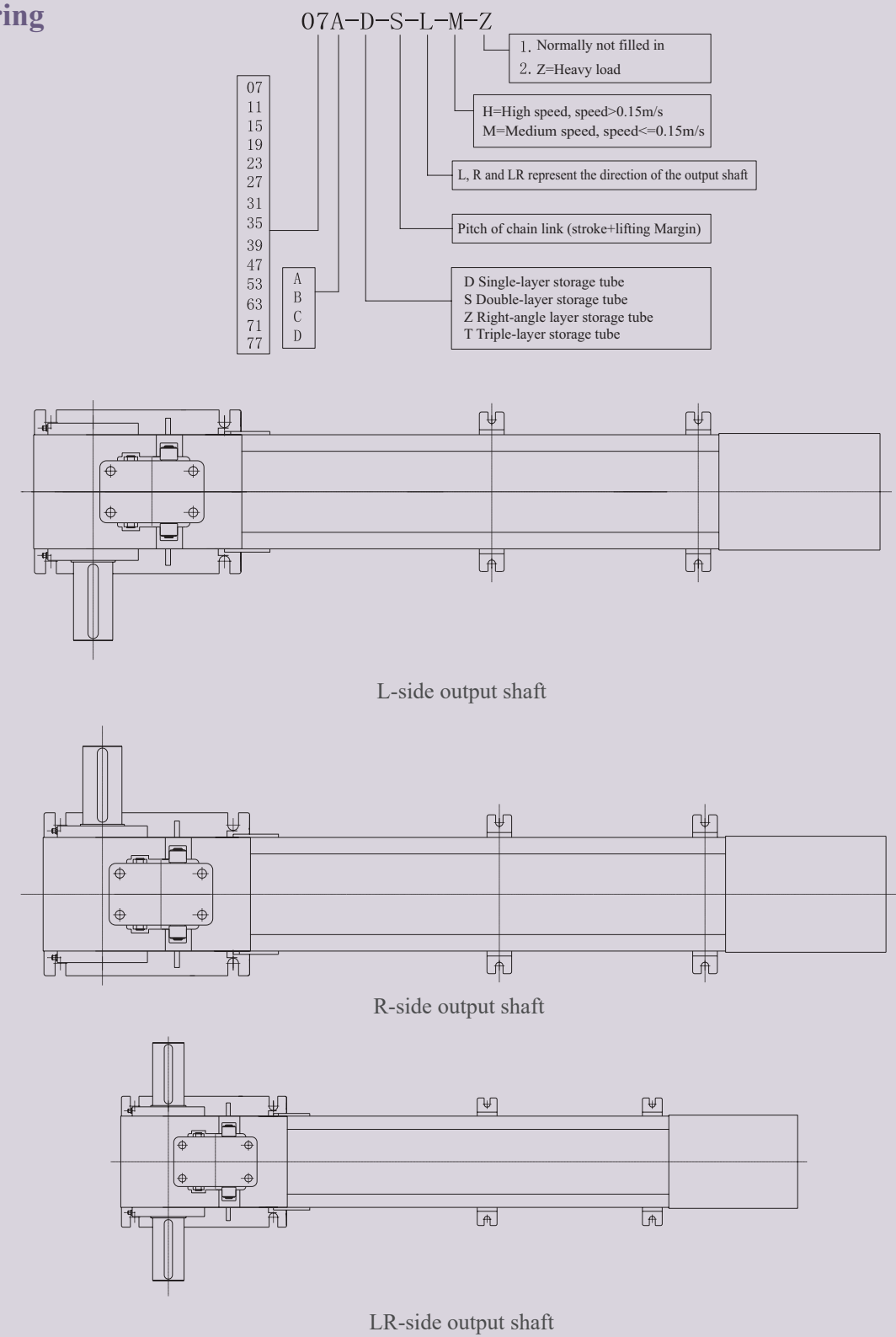
5. 选型说明

订货



5. Instructions for Model Selection

Ordering



6. 柔性柱选型

1) 载荷、柱节总长度关系参见《柱节总长度、动载荷参数》和《柱节总长度、静载荷参数》。

- 《传动几何参数》表中的数据为柔性柱升降的建议余量，如速度增加，应根据制动时间（加减速）计算实际的安全余量。

2) 柱节总长度计算：

- 行程：LH
- 升、降余量：Ly
- 柱节总长度： $S=LH+Ly=A1+Q \times A2$ 。

A1为头节柱节长度，A2为柔性柱柱节长度，Q为圆整的柔性柱柱节数量。

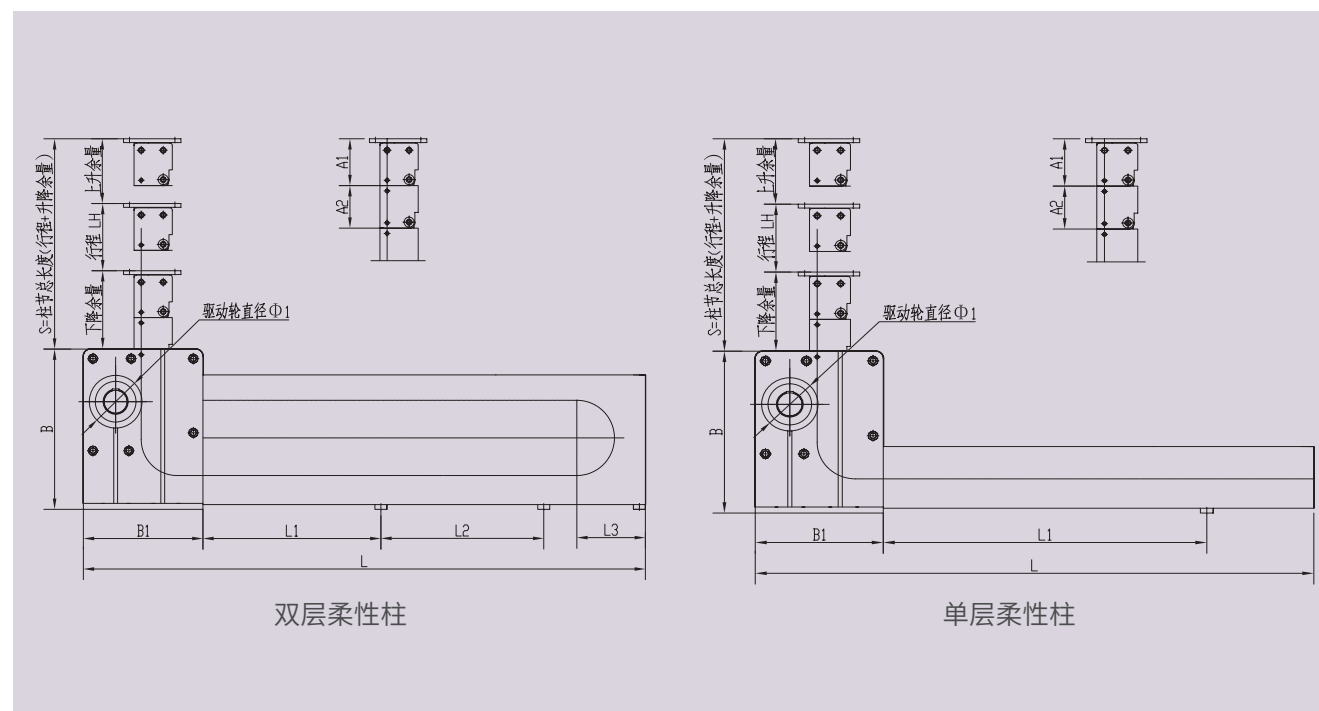
- 柔性柱长度L：参见柔性柱外形尺寸表。

上升余量：升降台（机）往上运行到预定（终点）位置后还允许的最大安全上升位移。

下降余量：升降台（机）往下运行到预定（起始点）位置后允许的最大安全下降位移。

升、降余量=上升余量+下降余量。

- 在设计、安装时需注意，为减少振动在柱节连接座与结构体之间增加一块橡胶垫，用于吸收振动，橡胶垫厚度与柱节连接座连接板厚度相当。



6. Model Selection

1) Please see "Pitch of chain link, dynamic load parameters" and "Pitch of chain link, static load parameters for the relationship between load and total length of chain link.

- The data in the table "Transmission geometrical parameters" are the recommended lifting margins for Column Lift. If the speed increases, the actual safety margins should be calculated according to the braking time (acceleration and deceleration).

2) Calculation of total length of chain link:

- Stroke: LH
- Lifting margin: Ly
- Total length of chain lift: $S=LH+Ly=A1+Q \times A2$.

A1 is the pitch of the first chain link, A2 is the length of chain link and Q is the rounding number of chain link.

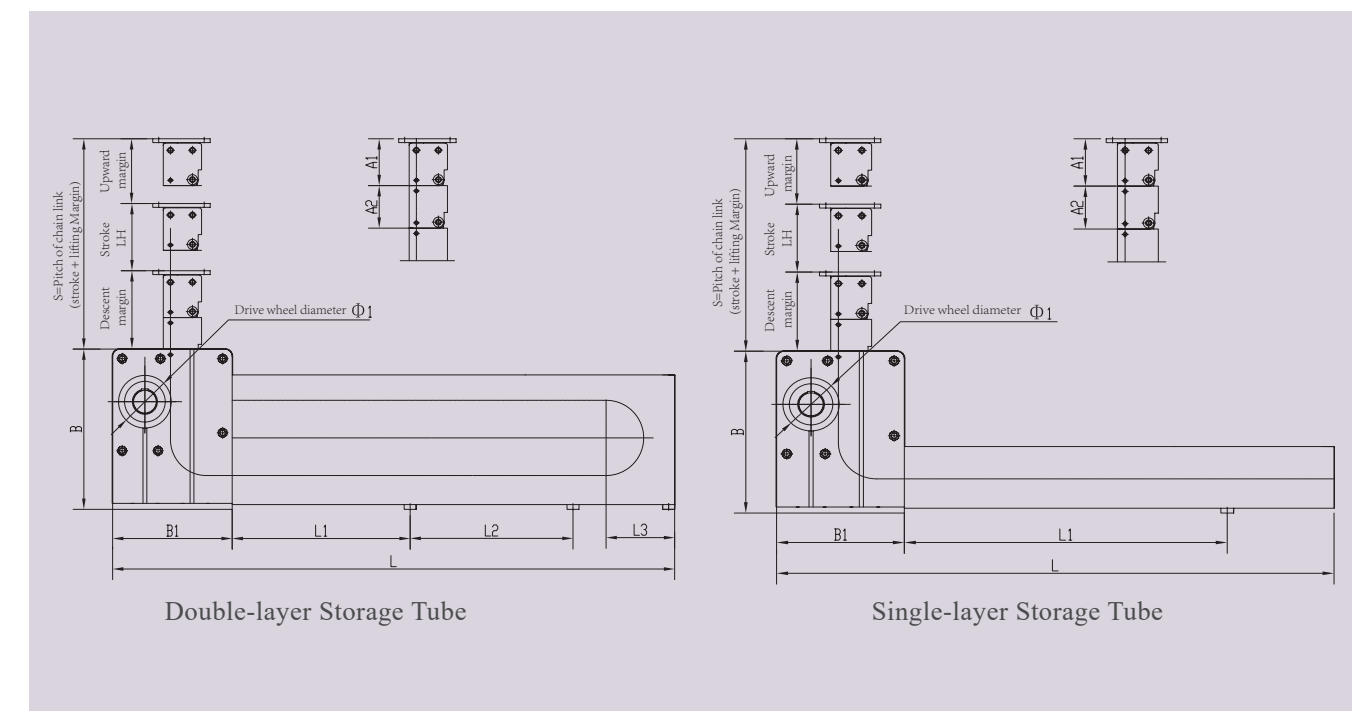
- Length of Column Lift L: refer to the table of column lift dimensions.

Upward margin: Maximum safe upward displacement after lifting platform has reached its intended (end) position.

Descent margin: Maximum safe descent displacement after the lifting platform has run down to a predetermined (starting point) position.

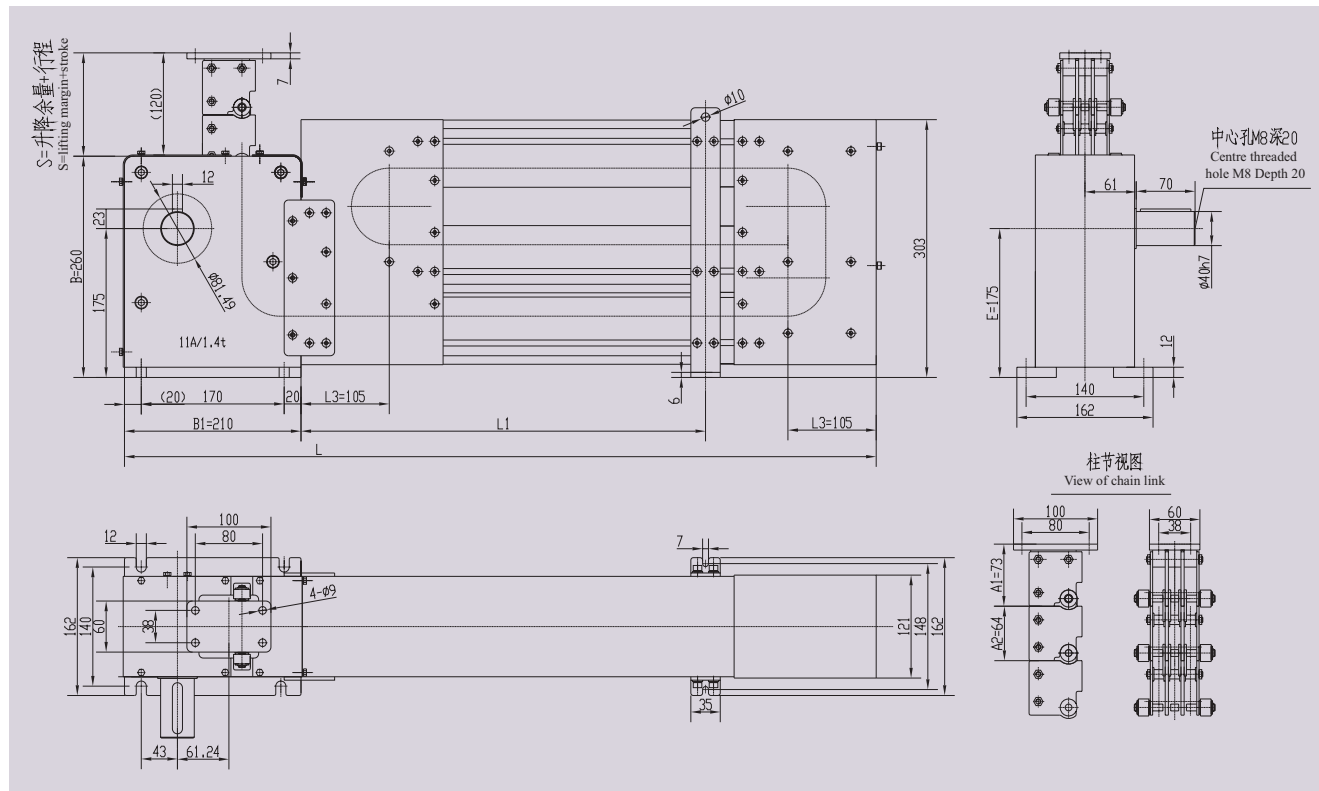
Lifting margin = upward margin + descent margin. During design and installation, it should be noted that in order to reduce vibration, a rubber pad is added between the chain link connecting seat and the structural body to absorb vibration.

- The thickness of the rubber pad is equivalent to the thickness of the chain link connecting seat connection plate.



11A 三层存储箱柔性柱外形图

11A Triple-layer Column Lift Outline Drawing



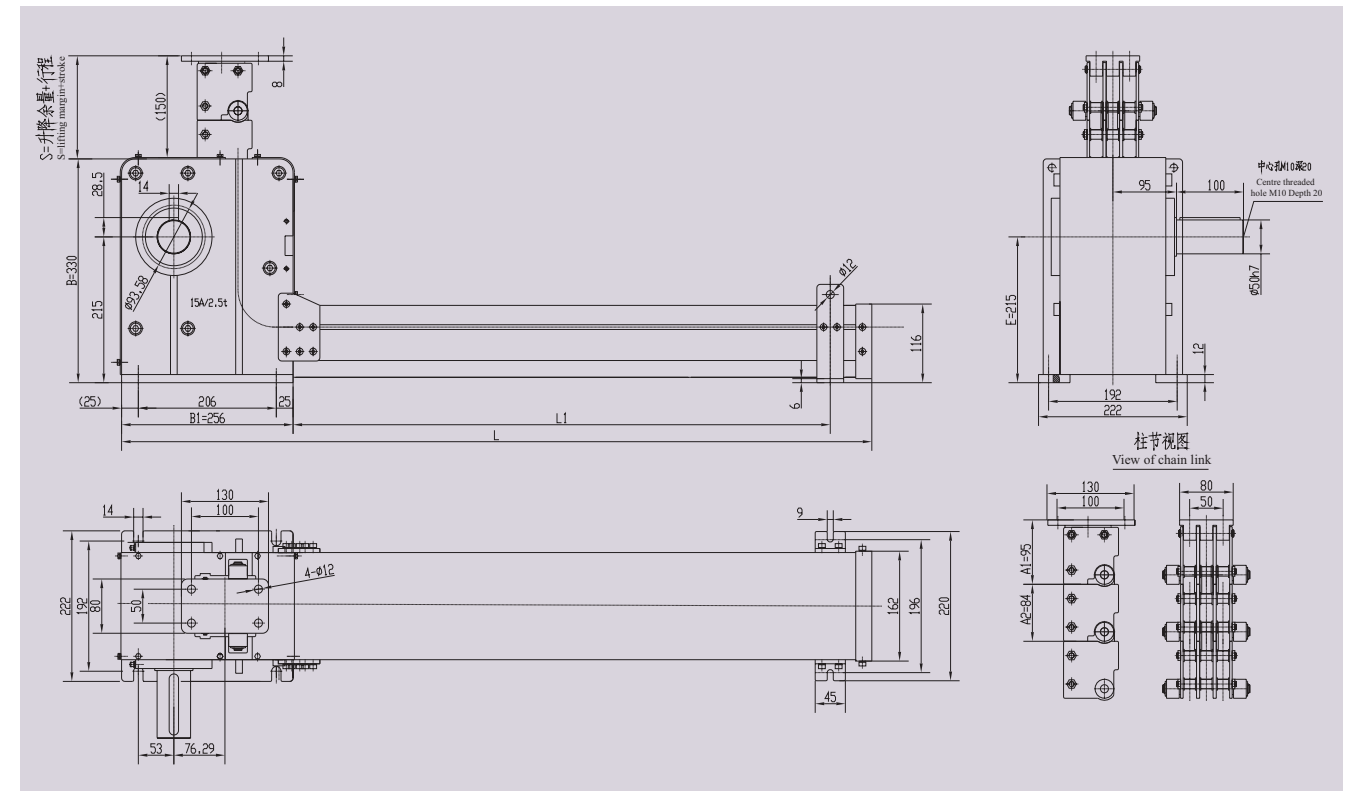
11A 三层存储箱柔性柱外形尺寸 11A Triple-layer Column Lift Dimensions

11A 三层存储箱柔性柱 11A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
73	64	210	105	240
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)		
1610 ~ 2121	1025	600 (可调 adjustable)		
1226 ~ 1609	855	400 (可调 adjustable)		
842 ~ 1225	725	250 (可调 adjustable)		
<=841	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.3. 15A 柔性柱 15A Column Lift

15A 单层存储箱柔性柱外形图

15A Single-layer Column Lift Outline Drawing

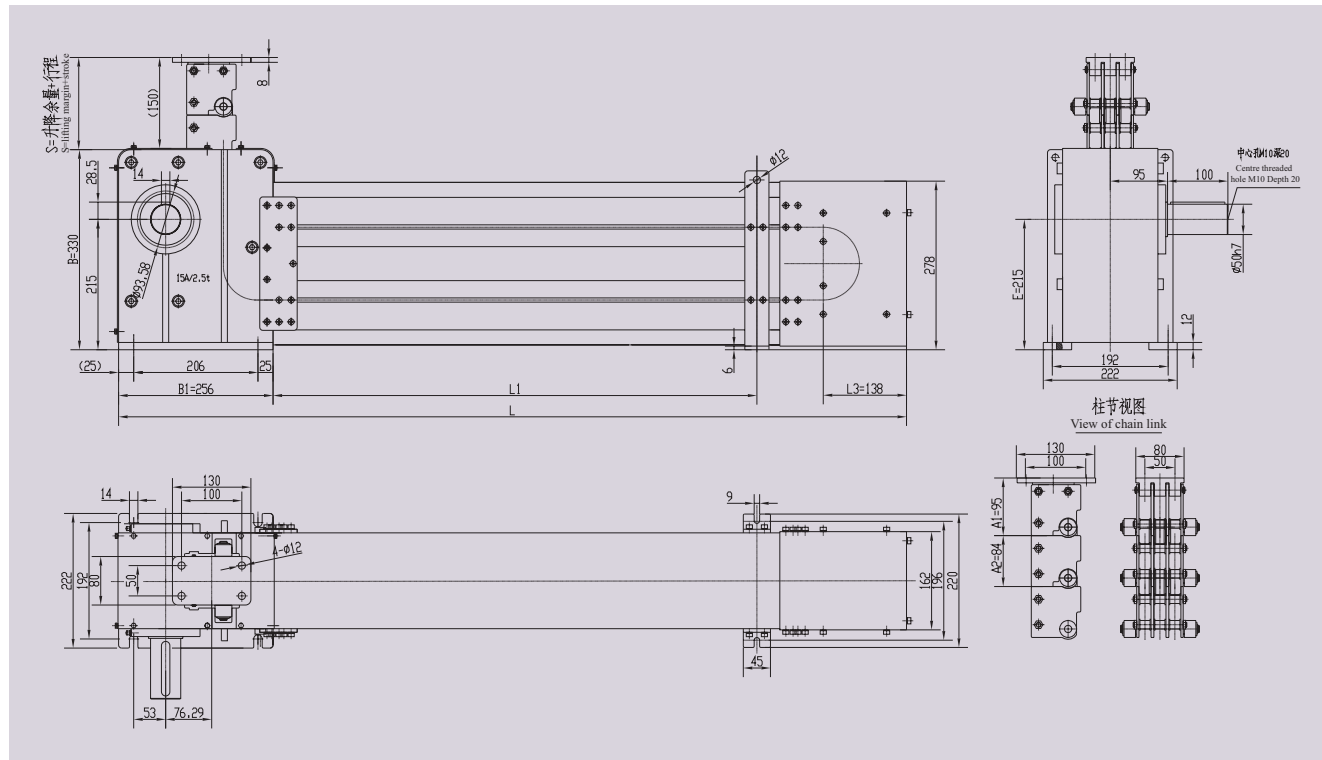


15A 单层存储箱柔性柱外形尺寸 15A Single-layer Column Lift Dimensions

15A 单层存储箱柔性柱 15A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
95	84	256	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
684 ~ 851	1156	750 (可调 adjustable)	
516 ~ 683	956	550 (可调 adjustable)	
348 ~ 515	806	400 (可调 adjustable)	
180 ~ 347	656	250 (可调 adjustable)	
<=179	456	100 (可调 adjustable)	
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

15A 双层存储箱柔性柱外形图

15A Double-layer Column Lift Outline Drawing

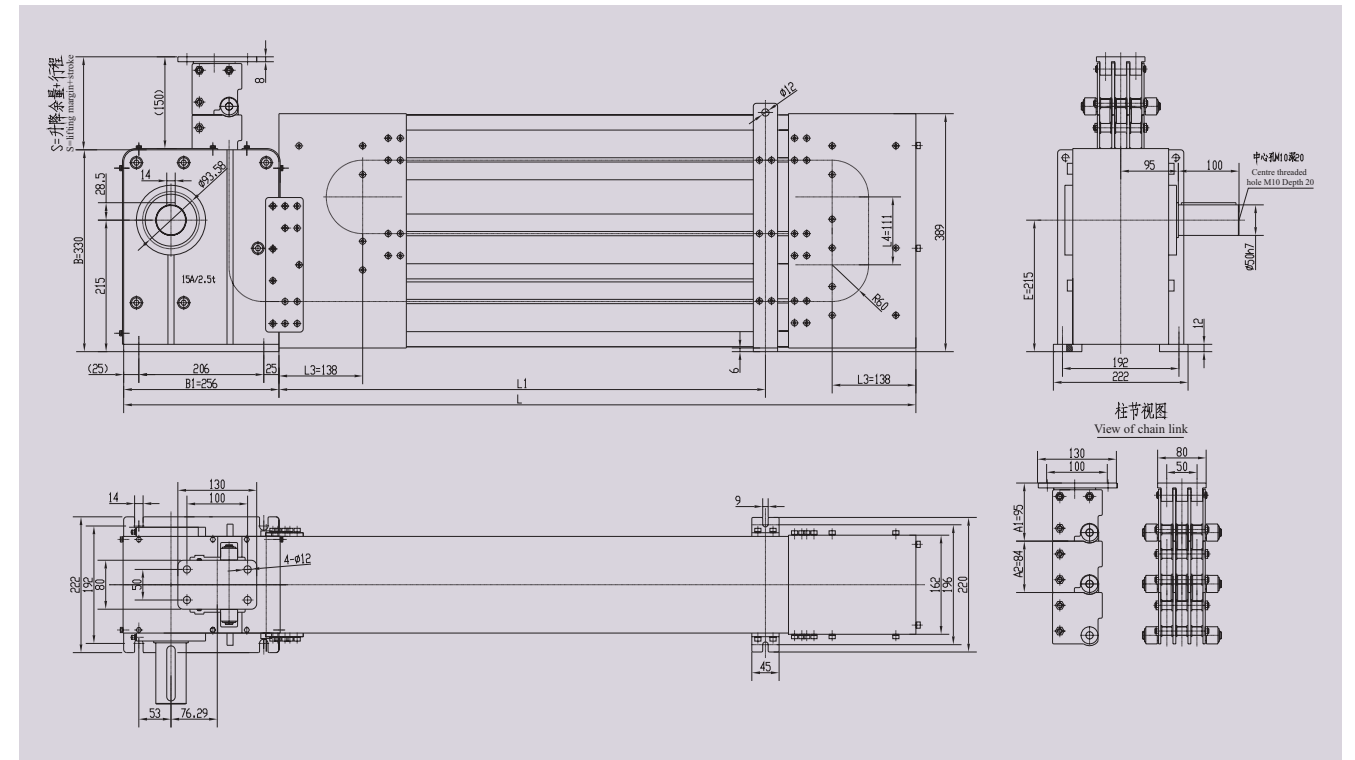


15A 双层存储箱柔性柱外形尺寸 15A Double-layer Column Lift Dimensions

15A 双层存储箱柔性柱 15A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
95	84	256	138	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)		
2280 ~ 2447	1600	900 (可调 adjustable)		
2112 ~ 2279	1510	900 (可调 adjustable)		
1776 ~ 2111	1430	800 (可调 adjustable)		
1356 ~ 1775	1260	660 (可调 adjustable)		
1020 ~ 1355	1050	460 (可调 adjustable)		
684 ~ 1019	880	300 (可调 adjustable)		
432 ~ 683	720	180 (可调 adjustable)		
<431	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

15A 三层存储箱柔性柱外形图

15A Triple-layer Column Lift Outline Drawing



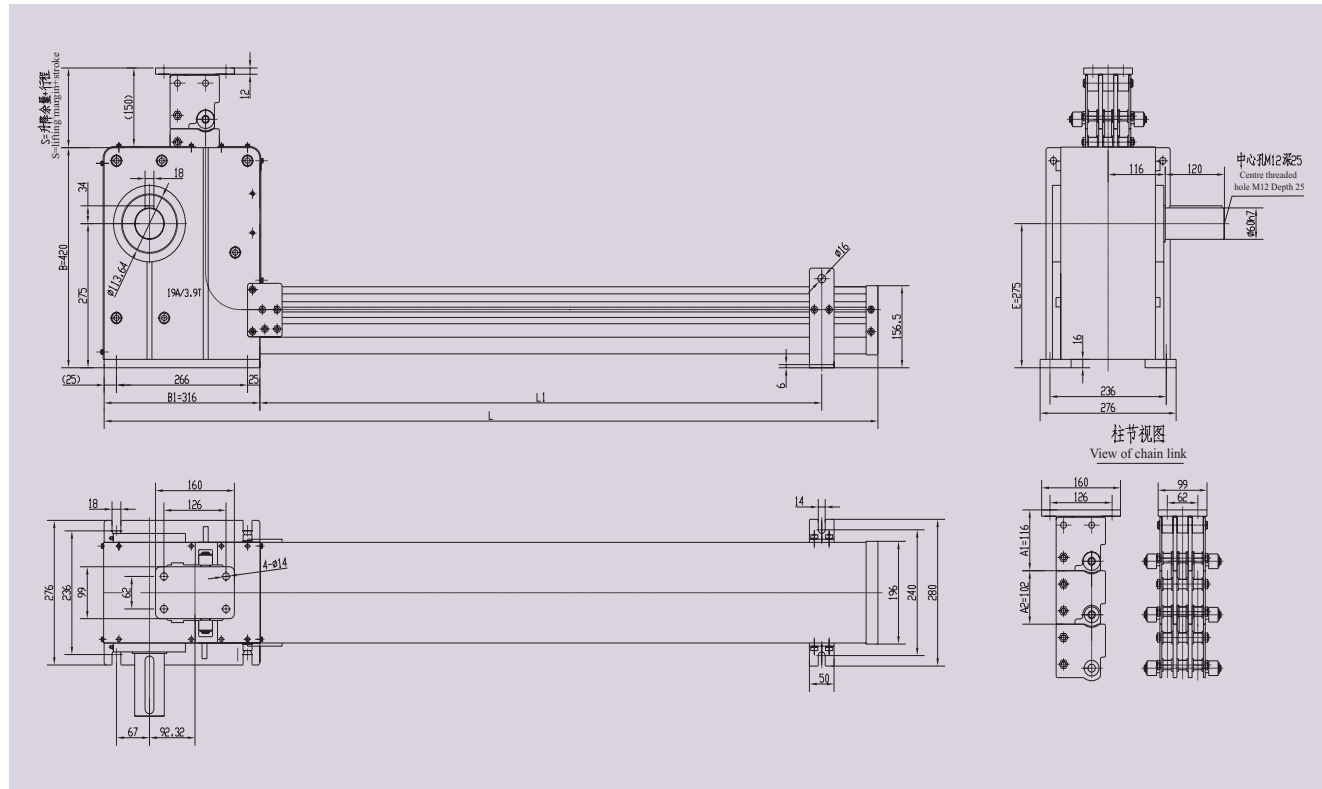
15A 三层存储箱柔性柱外形尺寸 15A Triple-layer Column Lift Dimensions

15A 三层存储箱柔性柱 15A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
95	84	256	138	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)		
2280 ~ 2447	1212	700 (可调 adjustable)		
2112 ~ 2279	1156	650 (可调 adjustable)		
1776 ~ 2111	1099	600 (可调 adjustable)		
1356 ~ 1775	990	500 (可调 adjustable)		
1020 ~ 1355	850	350 (可调 adjustable)		
684 ~ 1019	740	250 (可调 adjustable)		
<=683	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.4. 19A 柔性柱 19A Column Lift

19A 单层存储箱柔性柱外形图

19A Single-layer Column Lift Outline Drawing

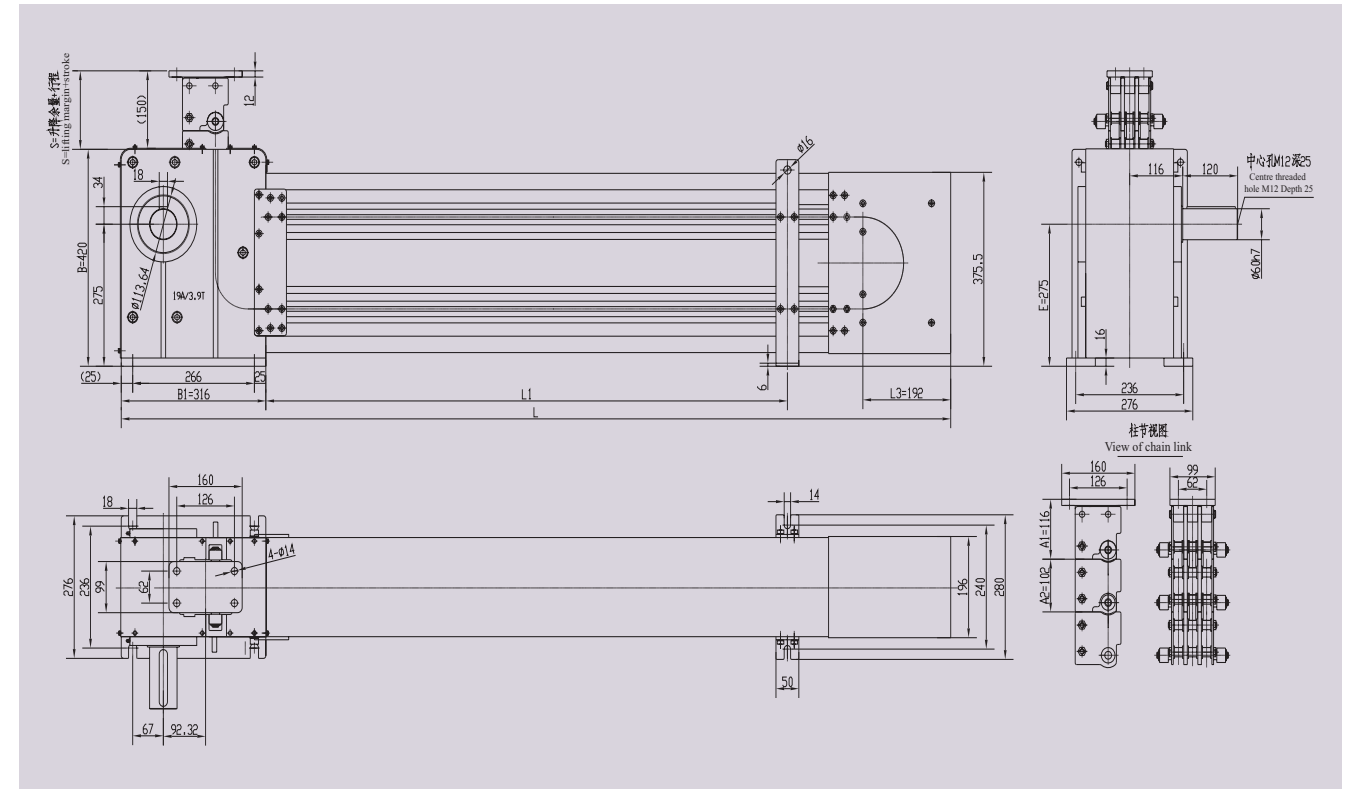


19A 单层存储箱柔性柱外形尺寸 19A Single-layer Column Lift Dimensions

19A 单层存储箱柔性柱 19A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
116	102	316	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
933 ~ 1136	1506	1000 (可调 adjustable)	
729 ~ 932	1306	700 (可调 adjustable)	
525 ~ 728	1096	600 (可调 adjustable)	
321 ~ 524	896	400 (可调 adjustable)	
≤320	686	250 (可调 adjustable)	
S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

19A 双层存储箱柔性柱外形图

19A Double-layer Column Lift Outline Drawing

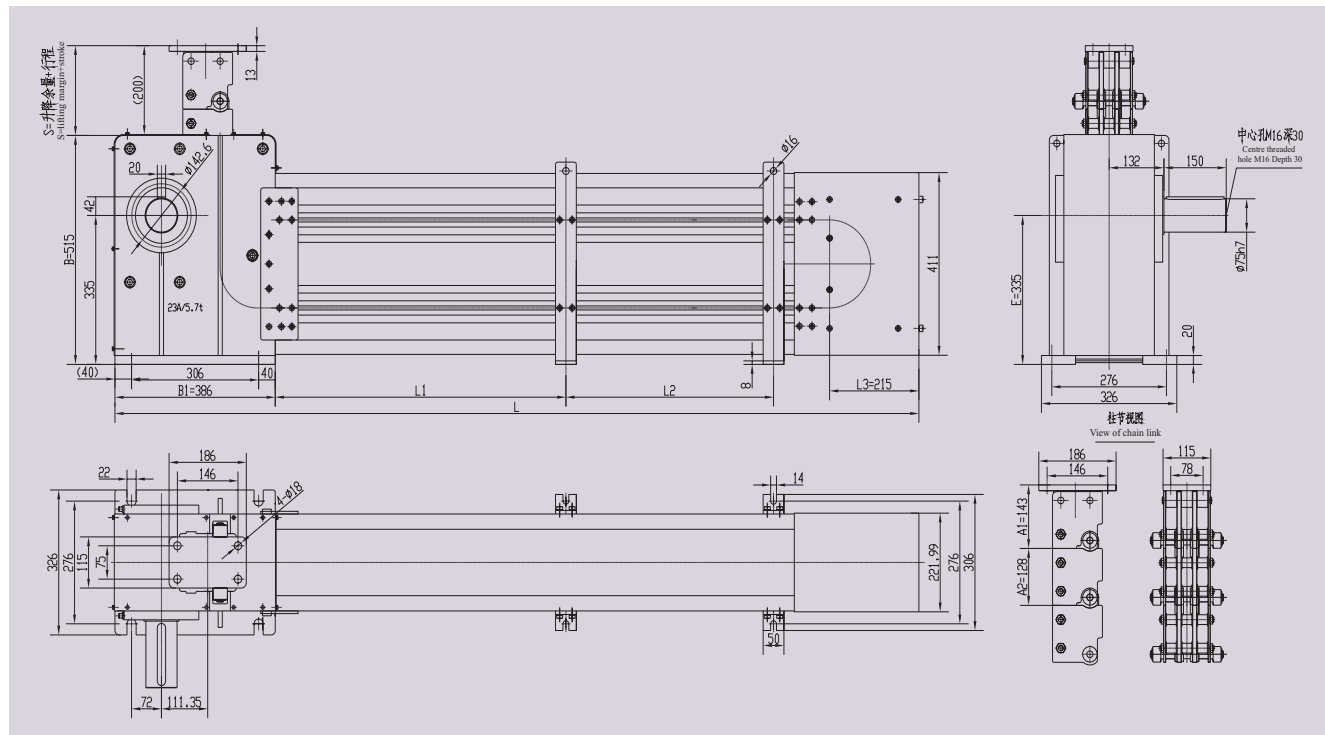


19A 双层存储箱柔性柱外形尺寸 19A Double-layer Column Lift Dimensions

19A 双层存储箱柔性柱 19A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
116	102	316	192	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)		
2463 ~ 2972	1968	1100 (可调 adjustable)		
2055 ~ 2462	1718	1000 (可调 adjustable)		
1647 ~ 2054	1508	800 (可调 adjustable)		
1239 ~ 1646	1308	600 (可调 adjustable)		
831 ~ 1238	1098	450 (可调 adjustable)		
321 ~ 830	898	250 (可调 adjustable)		
<320	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

23A 双层存储箱柔性柱外形图

23A Double-layer Column Lift Outline Drawing

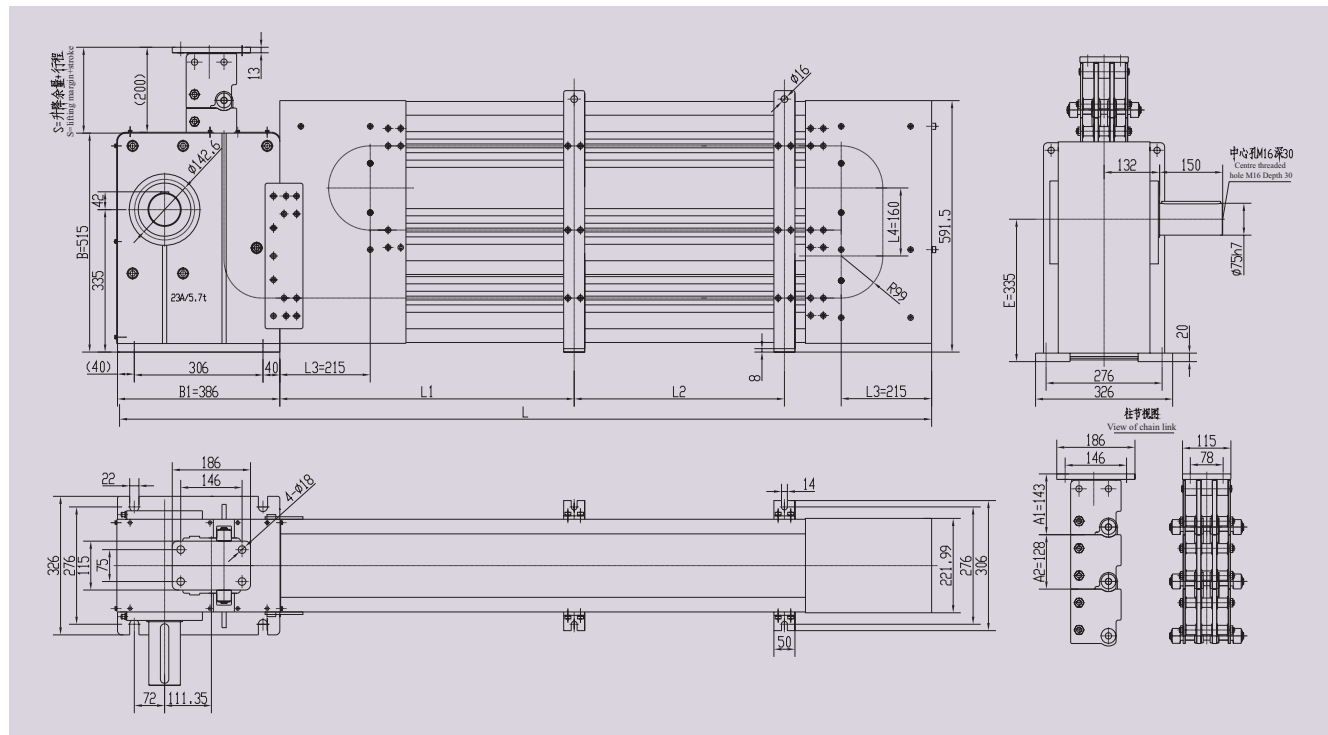


23A 双层存储箱柔性柱外形尺寸 23A Double-layer Column Lift Dimensions

23A 双层存储箱柔性柱 23A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
143	128	386	215	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
4112 ~ 4495	2820	1200 (可调)		800 (可调 adjustable)
3728 ~ 4111	2620	1200 (可调 adjustable)		600 (可调 adjustable)
3088 ~ 3727	2430	1500 (可调 adjustable)		
2448 ~ 3087	2110	1200 (可调 adjustable)		
1808 ~ 2447	1790	900 (可调 adjustable)		
1296 ~ 1807	1470	700 (可调 adjustable)		
912 ~ 1295	1220	400 (可调 adjustable)		
400 ~ 911	1030	250 (可调 adjustable)		
<399	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

23A 三层存储箱柔性柱外形图

23A Triple-layer Column Lift Outline Drawing



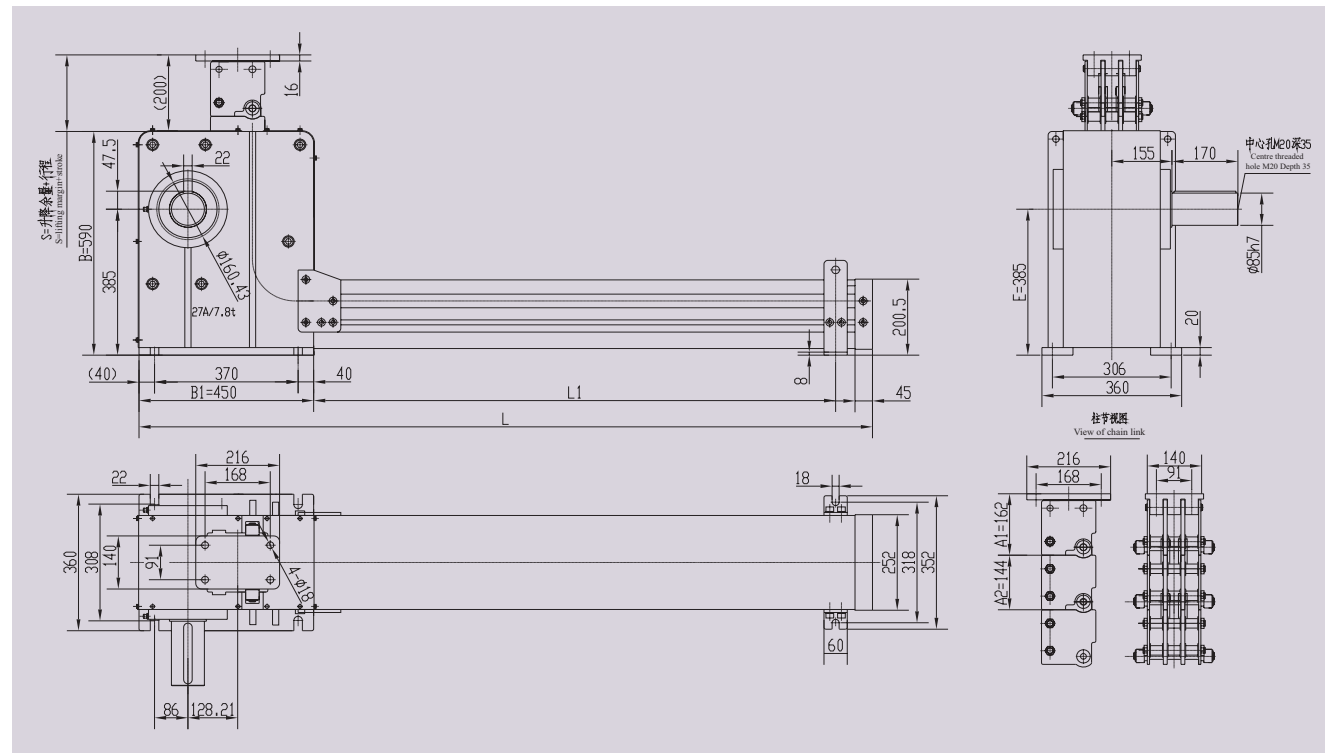
23A 三层存储箱柔性柱外形尺寸 23A Triple-layer Column Lift Dimensions

23A 三层存储箱柔性柱 23A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
95	84	256	138	300
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)		
4112 ~ 4495	2080	1300 (可调 adjustable)		
3728 ~ 4111	1976	1250 (可调 adjustable)		
3088 ~ 3727	1848	1150 (可调 adjustable)		
2448 ~ 3087	1636	900 (可调 adjustable)		
1808 ~ 2447	1420	700 (可调 adjustable)		
1296 ~ 1807	1210	500 (可调 adjustable)		
912 ~ 1295	1086	350 (可调 adjustable)		
<911	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.6. 27A 柔性柱 27A Column Lift

27A 单层存储箱柔性柱外形图

27A Single-layer Column Lift Outline Drawing

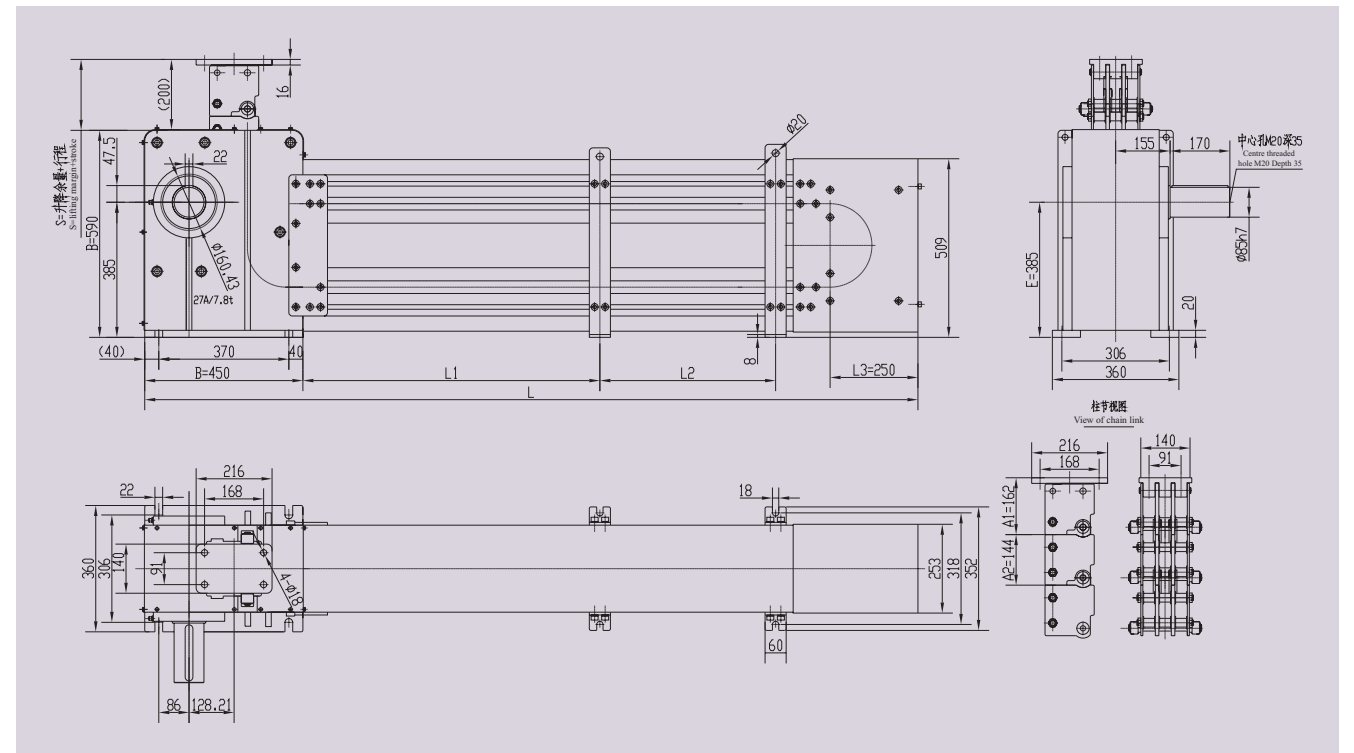


27A 单层存储箱柔性柱外形尺寸 27A Single-layer Column Lift Dimensions

27A 单层存储箱柔性柱 27A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
162	144	450	400
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift L (mm)	安装尺寸 Installation Dimensions L1 (mm)	备注 Remarks
		L1 (mm)	
1747 ~ 2034	2560	1800 (可调 adjustable)	
1459 ~ 1746	2270	1500 (可调 adjustable)	
1171 ~ 1458	1980	1200 (可调 adjustable)	
883 ~ 1170	1700	1000 (可调 adjustable)	
595 ~ 882	1410	700 (可调 adjustable)	
307 ~ 594	1120	550 (可调 adjustable)	
<=306	830	250 (可调 adjustable)	
S= 行程 + 升、降余量 = A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

27A 双层存储箱柔性柱外形图

27A Double-layer Column Lift Outline Drawing

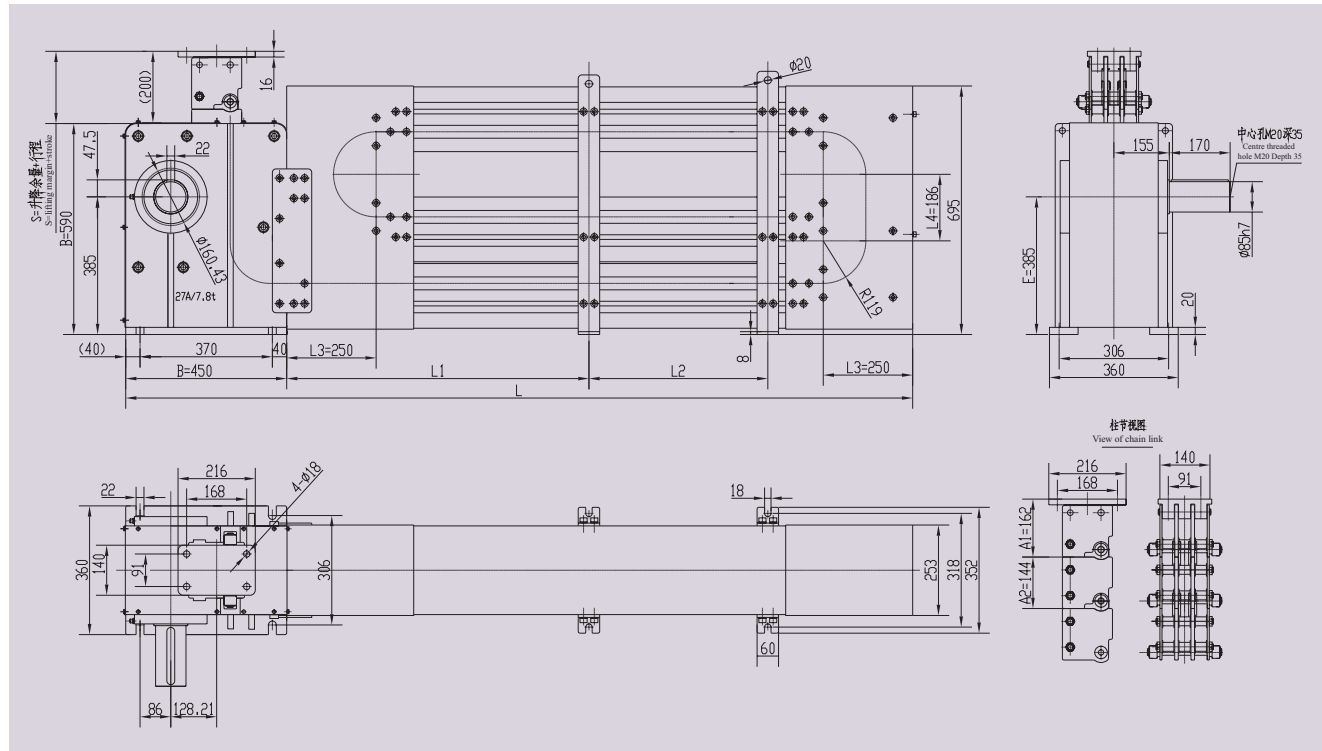


27A 双层存储箱柔性柱外形尺寸 27A Double-layer Column Lift Dimensions

27A 双层存储箱柔性柱 27A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
162	144	450	250	400
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
5635 ~ 6066	3700	1200 (可调 adjustable)		1200 (可调 adjustable)
5059 ~ 5634	3480	1200 (可调 adjustable)		1200 (可调 adjustable)
4483 ~ 5058	3190	1200 (可调 adjustable)		1000 (可调 adjustable)
3907 ~ 4482	2910	1200 (可调 adjustable)		700 (可调 adjustable)
3187 ~ 3906	2620	1400 (可调 adjustable)		
2611 ~ 3186	2260	1200 (可调 adjustable)		
2035 ~ 2610	1970	900 (可调 adjustable)		
1459 ~ 2034	1680	700 (可调 adjustable)		
1027 ~ 1458	1390	500 (可调 adjustable)		
451 ~ 1026	1180	300 (可调 adjustable)		
<450	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

27A 三层存储箱柔性柱外形图

27A Triple-layer Column Lift Outline Drawing



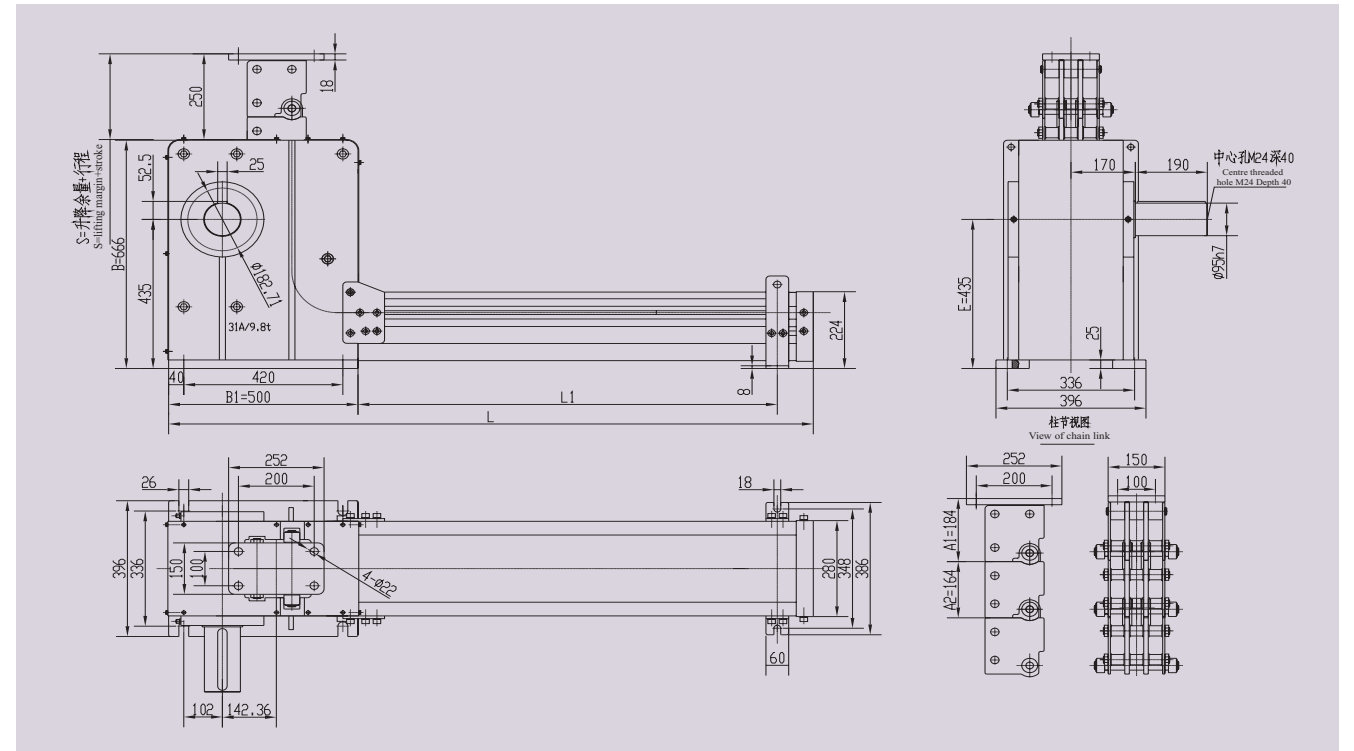
27A 三层存储箱柔性柱外形尺寸 27A Triple-layer Column Lift Dimensions

27A 三层存储箱柔性柱 27A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
162	144	450	250	400
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)	L2 (mm)	
5635 ~ 6066	2720	1200 (可调 adjustable)	650 (可调 adjustable)	
5059 ~ 5634	2580	1200 (可调 adjustable)	500 (可调 adjustable)	
4483 ~ 5058	2300	1400 (可调 adjustable)		
3907 ~ 4482	2100	1200 (可调 adjustable)		
3187 ~ 3906	1900	1000 (可调 adjustable)		
2611 ~ 3186	1760	900 (可调 adjustable)		
2035 ~ 2610	1580	700 (可调 adjustable)		
1459 ~ 2034	1380	500 (可调 adjustable)		
<1458	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.7. 31A 柔性柱 31A Column Lift

31A 单层存储箱柔性柱外形图

31A Single-layer Column Lift Outline Drawing

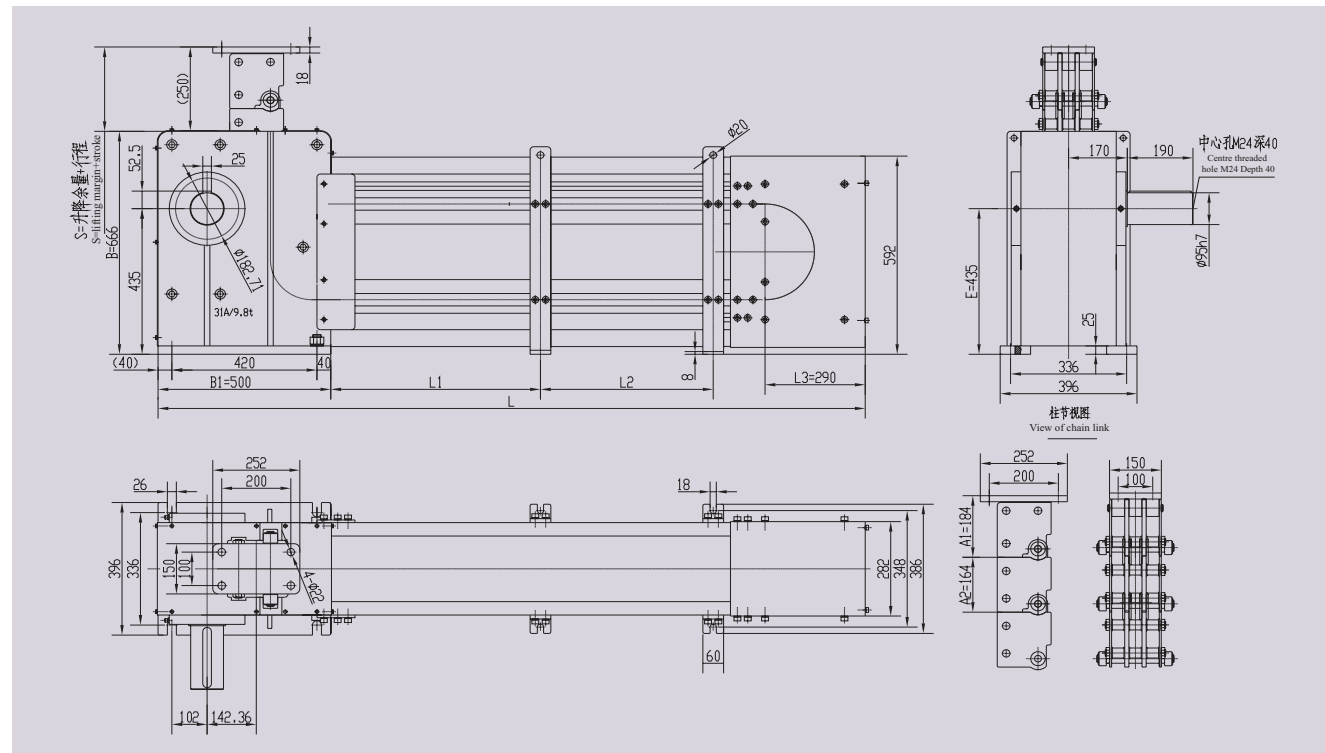


31A 单层存储箱柔性柱外形尺寸 31A Single-layer Column Lift Dimensions

31A 单层存储箱柔性柱 31A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
184	164	500	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	
		L (mm)	L1 (mm)
1825 ~ 2152	2740	2000 (可调 adjustable)	
1497 ~ 1824	2410	1700 (可调 adjustable)	
1169 ~ 1496	2100	1200 (可调 adjustable)	
841 ~ 1168	1750	1000 (可调 adjustable)	
513 ~ 840	1430	700 (可调 adjustable)	
<=512	1100	400 (可调 adjustable)	
S= 行程 + 升、降余量 = A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

31A 双层存储箱柔性柱外形图

31A Double-layer Column Lift Outline Drawing

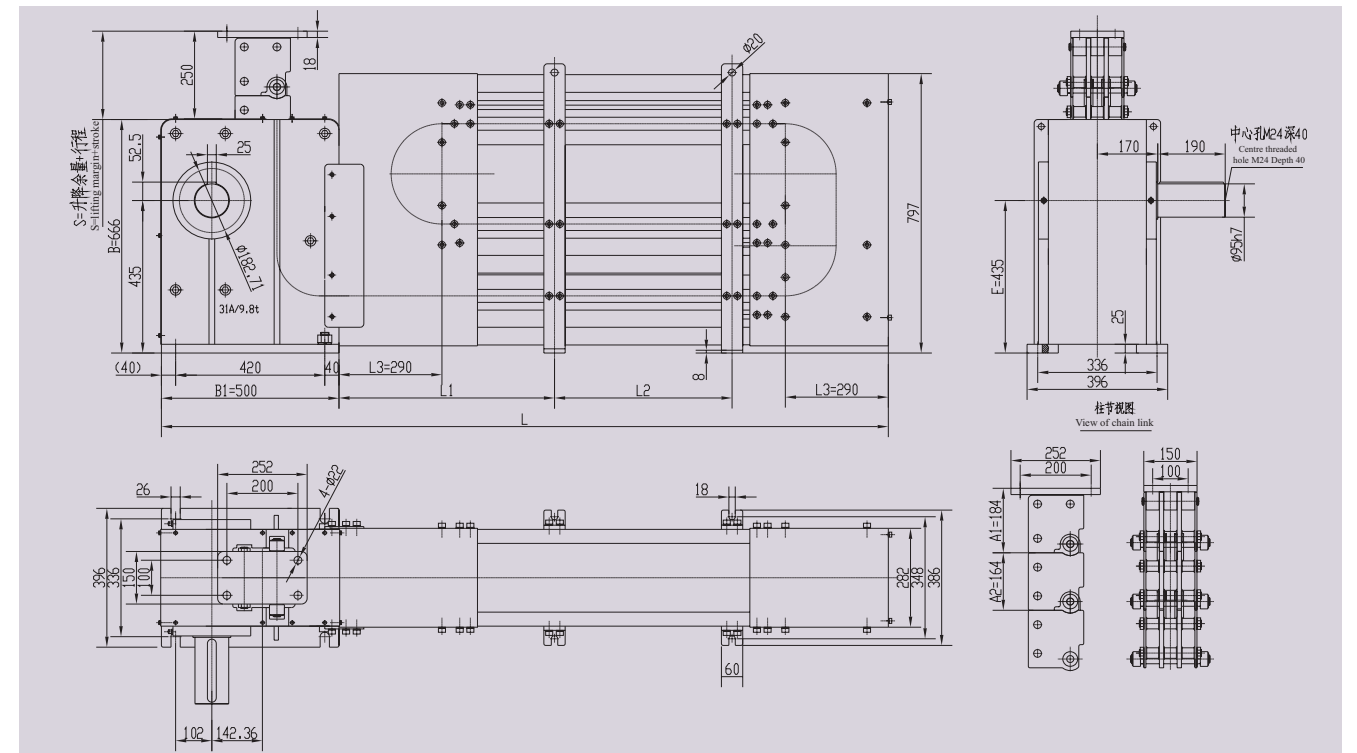


31A 双层存储箱柔性柱外形尺寸 31A Double-layer Column Lift Dimensions

31A 双层存储箱柔性柱 31A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
184	164	500	290	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
7073 ~ 7564	4530	1600 (可调 adjustable)		1600 (可调 adjustable)
6581 ~ 7072	4290	1500 (可调 adjustable)		1500 (可调 adjustable)
5761 ~ 6580	4040	1400 (可调 adjustable)		1400 (可调 adjustable)
5105 ~ 5760	3630	1200 (可调 adjustable)		1200 (可调 adjustable)
4285 ~ 5104	3300	1200 (可调 adjustable)		1000 (可调 adjustable)
3465 ~ 4284	2890	1200 (可调 adjustable)		600 (可调 adjustable)
2565 ~ 3464	2480	1300 (可调 adjustable)		
1883 ~ 2564	2070	1000 (可调 adjustable)		
1169 ~ 1882	1660	650 (可调 adjustable)		
349 ~ 1168	1330	250 (可调 adjustable)		
<348	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

31A 三层存储箱柔性柱外形图

31A Triple-layer Column Lift Outline Drawing



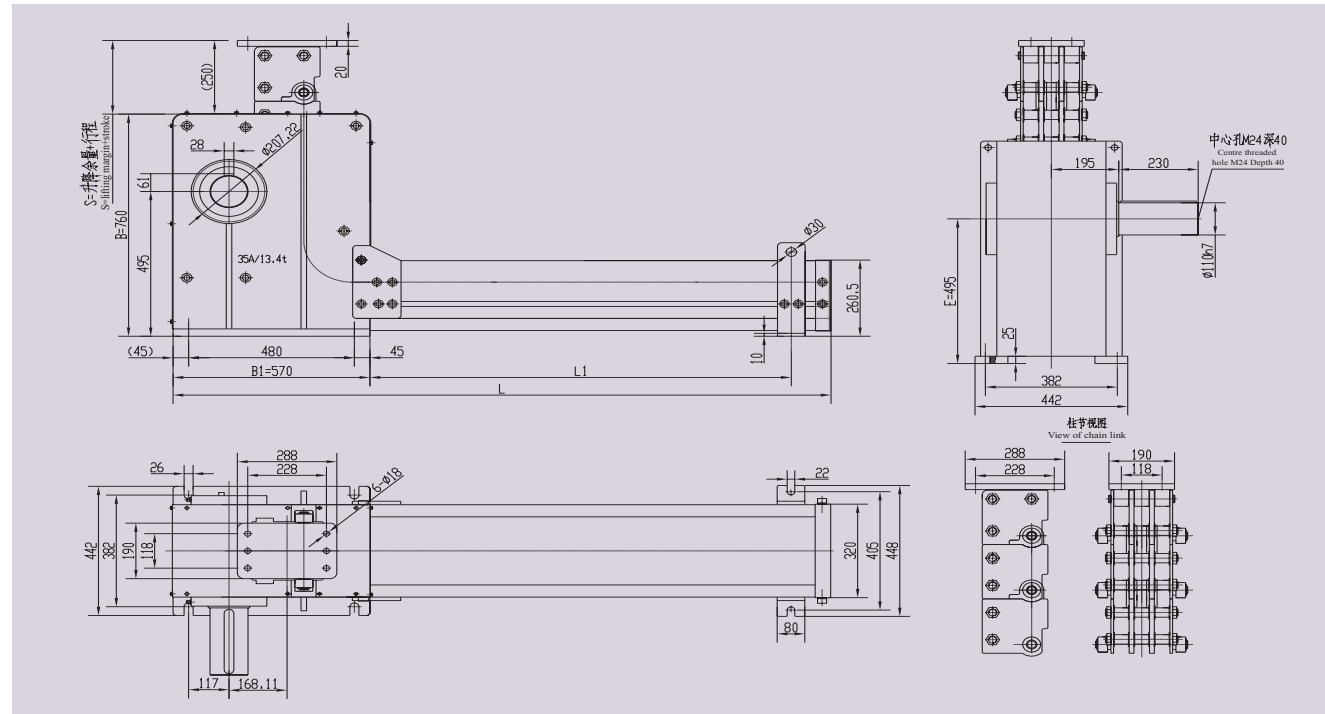
31A 三层存储箱柔性柱外形尺寸 31A Triple-layer Column Lift Dimensions

31A 三层存储箱柔性柱 31A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
184	164	500	290	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
7073 ~ 7564	3320	1200 (可调 adjustable)		1150 (可调 adjustable)
6581 ~ 7072	3150	1200 (可调 adjustable)		1000 (可调 adjustable)
5761 ~ 6580	2990	1200 (可调 adjustable)		800 (可调 adjustable)
5105 ~ 5760	2720	1200 (可调 adjustable)		500 (可调 adjustable)
4285 ~ 5104	2500	1500 (可调 adjustable)		
3465 ~ 4284	2220	1250 (可调 adjustable)		
2481 ~ 3464	1950	1000 (可调 adjustable)		
1883 ~ 2480	1700	750 (可调 adjustable)		
<1882	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required				

7.8. 35A 柔性柱 35A Column Lift

35A 单层存储箱柔性柱外形图

35A Single-layer Column Lift Outline Drawing



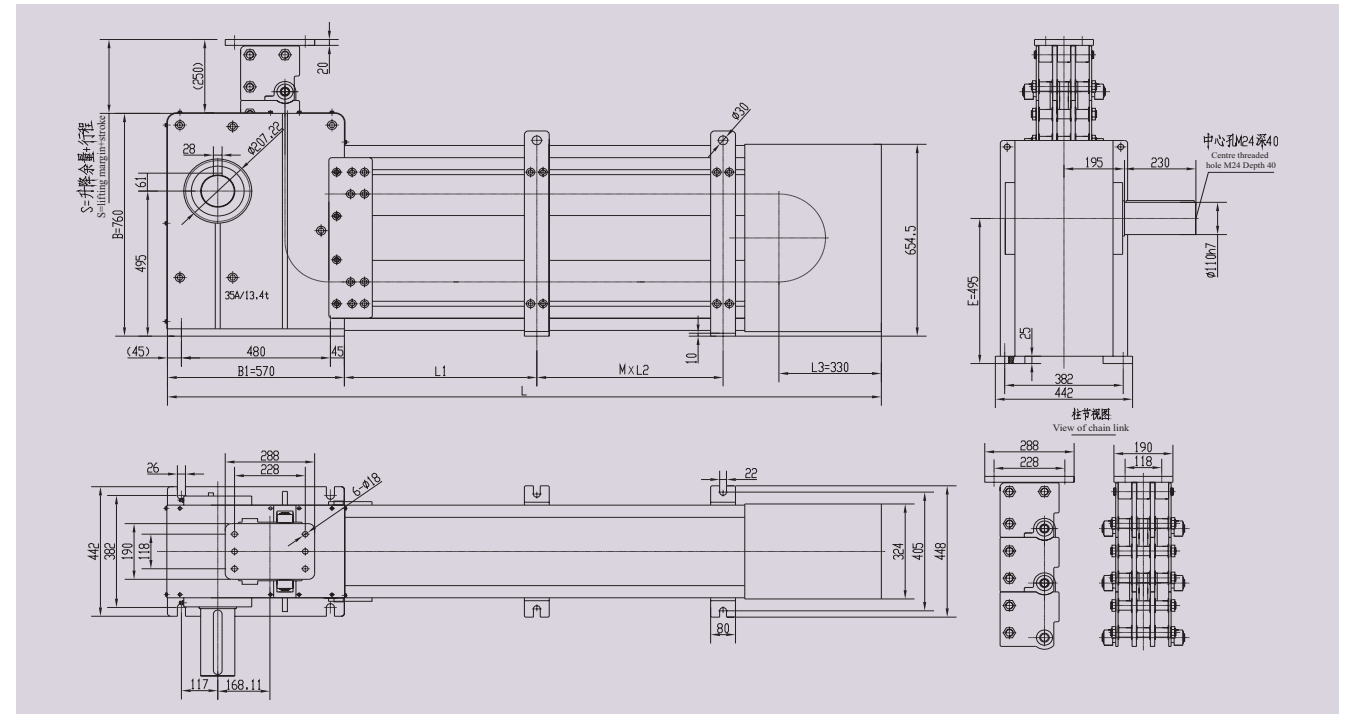
35A 单层存储箱柔性柱外形尺寸 35A Single-layer Column Lift Dimensions

35A 单层存储箱柔性柱 35A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
208	186	600	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift L (mm)	安装尺寸 Installation Dimensions L1 (mm)	备注 Remarks
		L1 (mm)	
1883 ~ 2254	2950	2100 (可调 adjustable)	
1511 ~ 1882	2580	1700 (可调 adjustable)	
1139 ~ 1510	2210	1400 (可调 adjustable)	
767 ~ 1138	1830	1000 (可调 adjustable)	
395 ~ 766	1460	700 (可调 adjustable)	
<=394	1090	300 (可调 adjustable)	

S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。
S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.

35A 双层存储箱柔性柱外形图

35A Double-layer Column Lift Outline Drawing



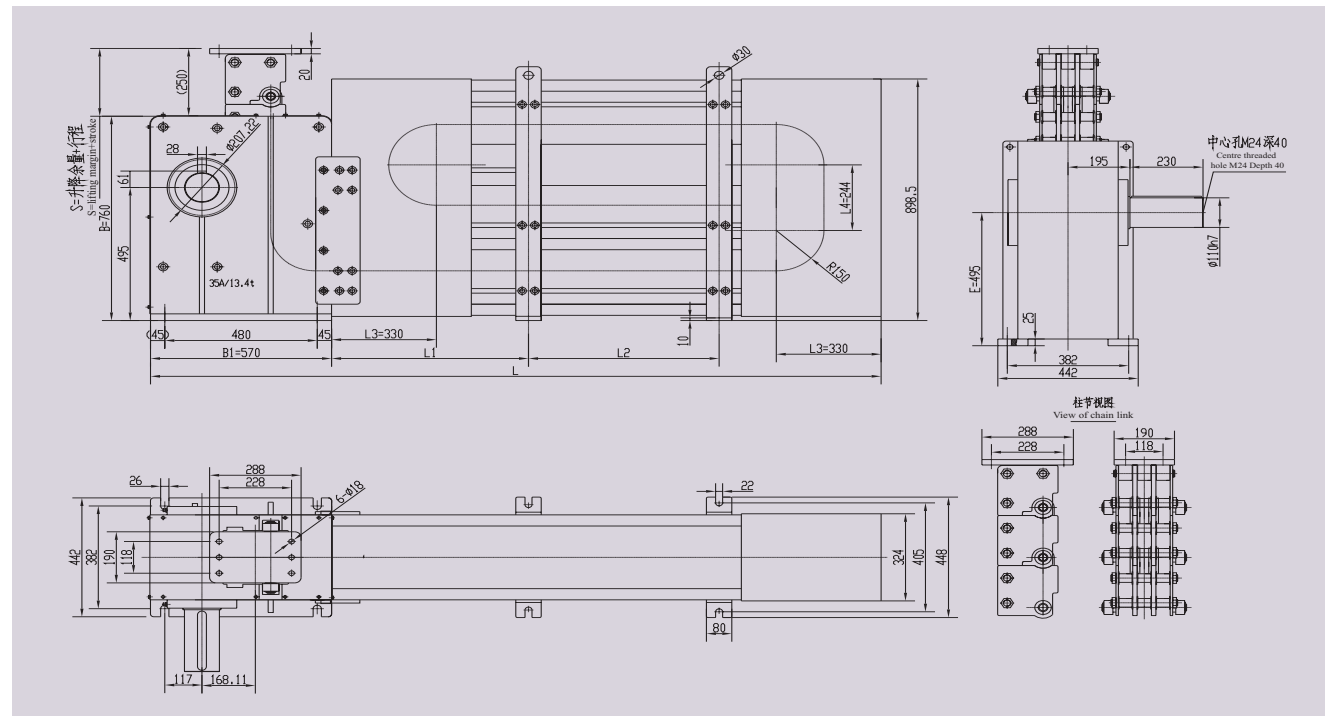
35A 双层存储箱柔性柱外形尺寸 35A Double-layer Column Lift Dimensions

35A 双层存储箱柔性柱 35A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
208	186	600	330	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift L (mm)	安装尺寸 Installation Dimensions		
		L1 (mm)	L2 (mm)	
8207 ~ 8578	5180	1200 (可调 adjustable)	2x1200 (可调 adjustable)	
7463 ~ 8206	4990	1200 (可调 adjustable)	2x1200 (可调 adjustable)	
6719 ~ 7462	4620	1200 (可调 adjustable)	2x1100 (可调 adjustable)	
5789 ~ 6718	4240	1500 (可调 adjustable)	1500 (可调 adjustable)	
5045 ~ 5788	3780	1300 (可调 adjustable)	1300 (可调 adjustable)	
4301 ~ 5044	3410	1200 (可调 adjustable)	1000 (可调 adjustable)	
3557 ~ 4300	3040	1200 (可调 adjustable)	600 (可调 adjustable)	
2813 ~ 3556	2660	1400 (可调 adjustable)		
1883 ~ 2812	2290	1000 (可调 adjustable)		
1139 ~ 1882	1830	700 (可调 adjustable)		
581 ~ 1138	1450	300 (可调 adjustable)		
<580	选单层存储箱 Suitable for single-layer storage tube			

S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。
S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.

35A 三层存储箱柔性柱外形图

35A Triple-layer Column Lift Outline Drawing



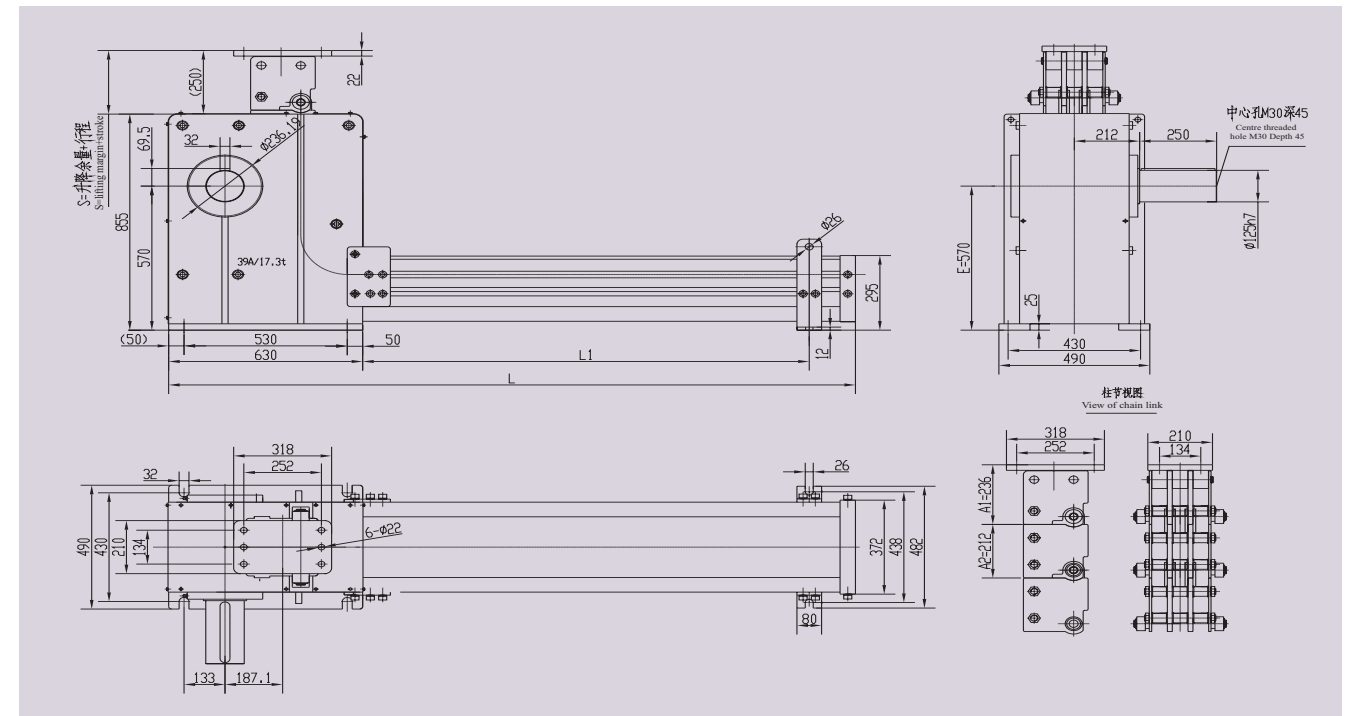
35A 三层存储箱柔性柱外形尺寸 35A Triple-layer Column Lift Dimensions

35A 三层存储箱柔性柱 35A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
208	186	570	330	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)	L2 (mm)	
8207 ~ 8578	3750	1300 (可调 adjustable)	1300 (可调 adjustable)	
7463 ~ 8206	3650	1300 (可调 adjustable)	1200 (可调 adjustable)	
6719 ~ 7462	3400	1200 (可调 adjustable)	1100 (可调 adjustable)	
5789 ~ 6718	3150	1200 (可调 adjustable)	850 (可调 adjustable)	
5045 ~ 5788	2840	1200 (可调 adjustable)	500 (可调 adjustable)	
4301 ~ 5044	2590	1500 (可调 adjustable)		
3557 ~ 4300	2350	1250 (可调 adjustable)		
2813 ~ 3556	2100	1000 (可调 adjustable)		
1883 ~ 2812	1850	700 (可调 adjustable)		
<1882	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.9. 39A 柔性柱 39A Column Lift

39A单层存储箱柔性柱外形图

39A Single-layer Column Lift Outline Drawing

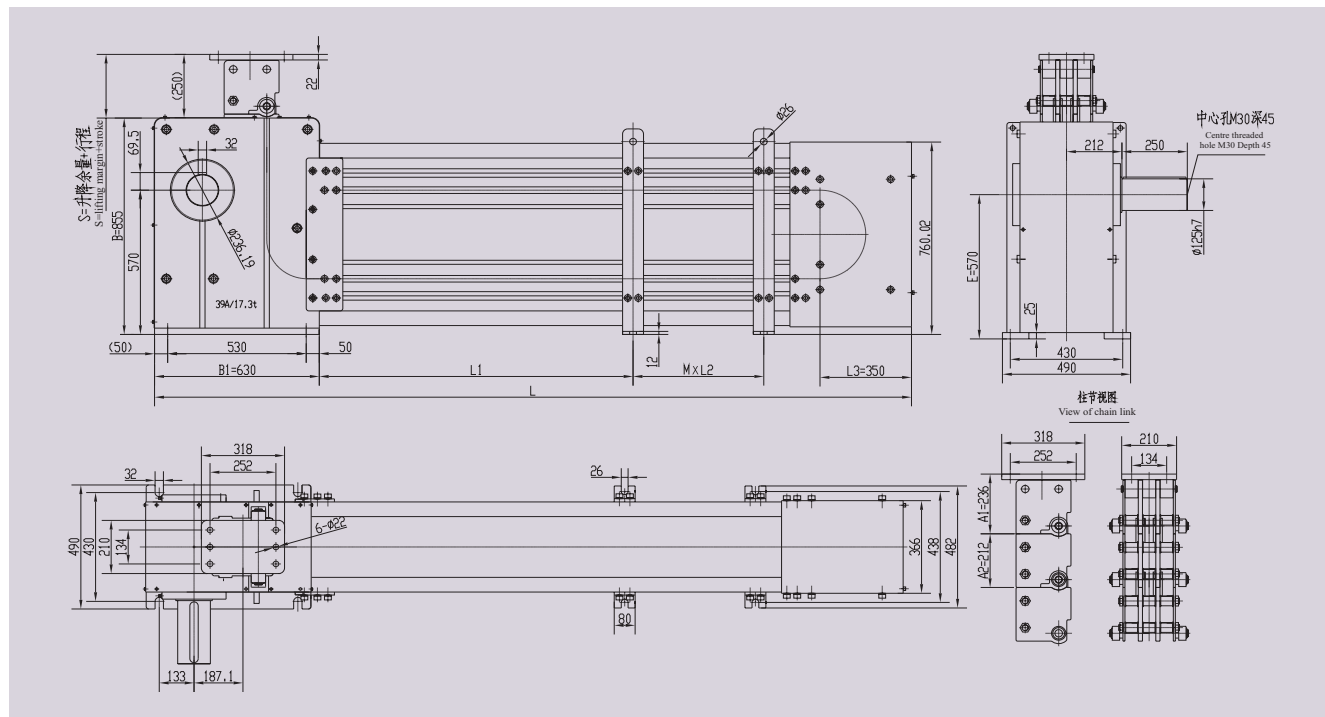


39A 单层存储箱柔性柱外形尺寸 39A Single-layer Column Lift Dimensions

39A 单层存储箱柔性柱 39A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
236	212	670	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift L (mm)	安装尺寸 Installation Dimensions	备注 Remarks
		L1 (mm)	
1721 ~ 2144	2920	2000 (可调 adjustable)	
1297 ~ 1720	2500	1600 (可调 adjustable)	
873 ~ 1296	2070	1200 (可调 adjustable)	
449 ~ 872	1650	650 (可调 adjustable)	
<=448	1220	350 (可调 adjustable)	
S= 行程 + 升、降余量 = A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

39A 双层存储箱柔性柱外形图

39A Double-layer Column Lift Outline Drawing

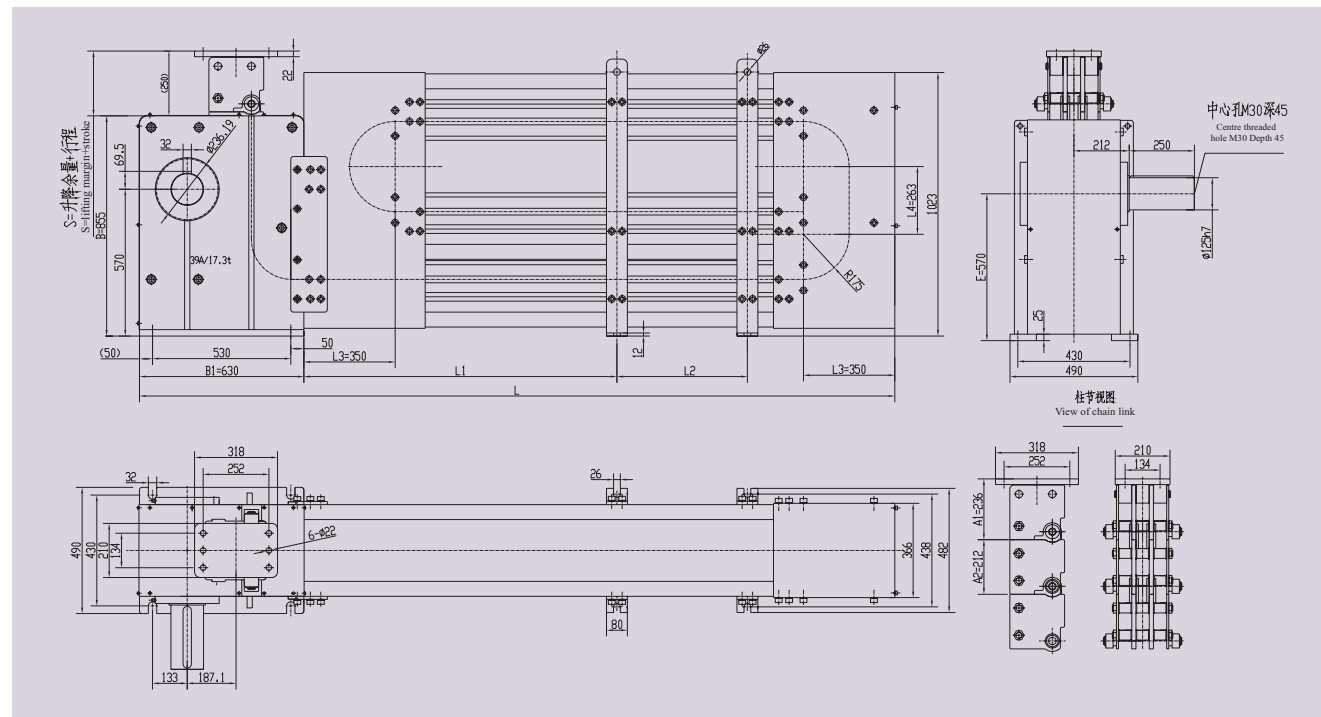


39A 双层存储箱柔性柱外形尺寸 39A Double-layer Column Lift Dimensions

39A 双层存储箱柔性柱 39A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
236	212	630	350	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)	L2 (mm)	
8717 ~ 9140	5500	1200 (可调 adjustable)	2×1400 (可调 adjustable)	
8293 ~ 8716	5290	1200 (可调 adjustable)	2×1400 (可调 adjustable)	
7445 ~ 8292	5070	1200 (可调 adjustable)	2×1200 (可调 adjustable)	
6597 ~ 7444	4650	1100 (可调 adjustable)	2×1100 (可调 adjustable)	
5749 ~ 6596	4230	1400 (可调 adjustable)	1400 (可调 adjustable)	
4901 ~ 5748	3800	1300 (可调 adjustable)	1200 (可调 adjustable)	
4265 ~ 4900	3380	1200 (可调 adjustable)	900 (可调 adjustable)	
3417 ~ 4264	3060	1700 (可调 adjustable)		
2569 ~ 3416	2640	1400 (可调 adjustable)		
1721 ~ 2568	2210	1000 (可调 adjustable)		
1085 ~ 1720	1790	550 (可调 adjustable)		
661 ~ 1084	1470	250 (可调 adjustable)		
<660	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

39A 三层存储箱柔性柱外形图

39A Triple-layer Column Lift Outline Drawing



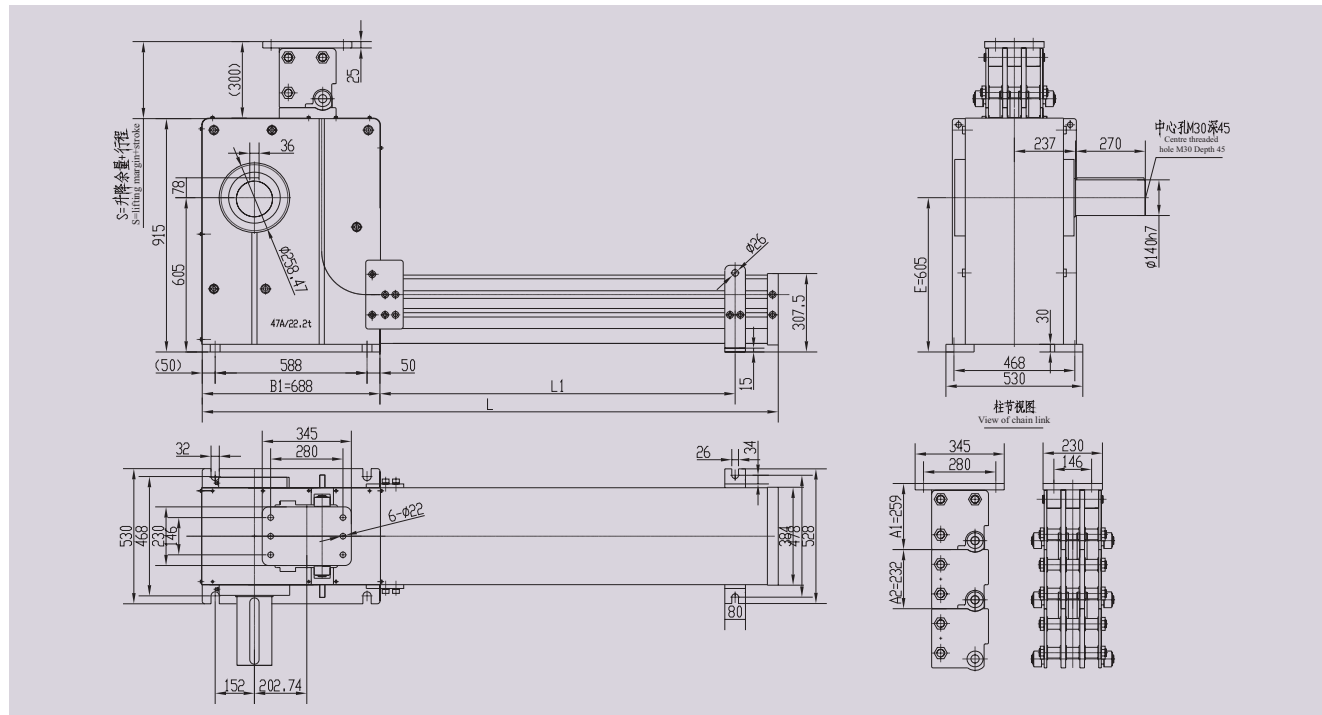
39A 三层存储箱柔性柱外形尺寸 39A Triple-layer Column Lift Dimensions

39A 三层存储箱柔性柱 39A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
236	212	630	350	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
8717 ~ 9140	4020	1400 (可调 adjustable)		1400 (可调 adjustable)
8293 ~ 8716	3880	1400 (可调 adjustable)		1300 (可调 adjustable)
7445 ~ 8292	3740	1300 (可调 adjustable)		1300 (可调 adjustable)
6597 ~ 7444	3460	1200 (可调 adjustable)		1100 (可调 adjustable)
5749 ~ 6596	3180	1200 (可调 adjustable)		800 (可调 adjustable)
4901 ~ 5748	2890	1200 (可调 adjustable)		500 (可调 adjustable)
4265 ~ 4900	2600	1400 (可调 adjustable)		
3417 ~ 4264	2400	1200 (可调 adjustable)		
2569 ~ 3416	2120	950 (可调 adjustable)		
1721 ~ 2568	1830	650 (可调 adjustable)		
<1720	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.10.47A 柔性柱 47A Column Lift

47A 单层存储箱柔性柱外形图

47A Single-layer Column Lift Outline Drawing

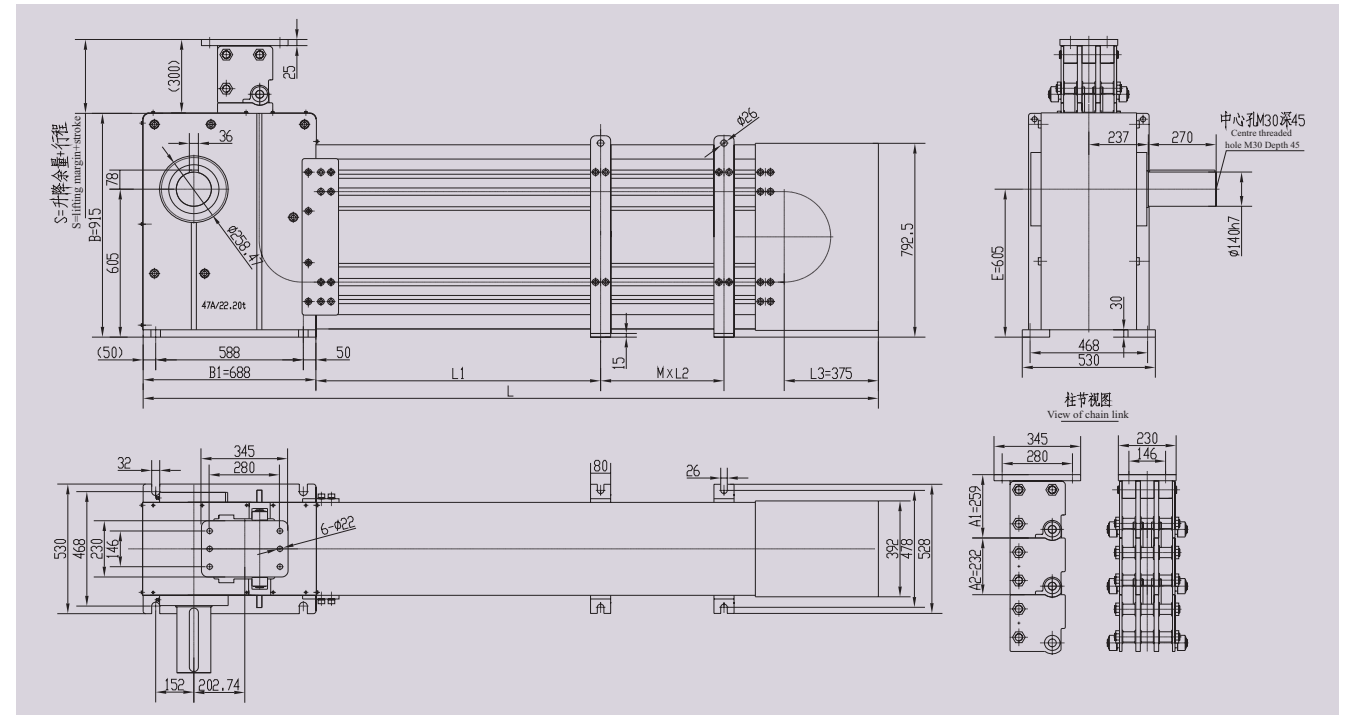


47A 单层存储箱柔性柱外形尺寸 47A Single-layer Column Lift Dimensions

47A 单层存储箱柔性柱 47A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
259	232	688	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
1456 ~ 1931	2738	1800 (可调 adjustable)	
980 ~ 1455	2268	1300 (可调 adjustable)	
504 ~ 979	1788	850 (可调 adjustable)	
<=503	1308	400 (可调 adjustable)	
S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

47A 双层存储箱柔性柱外形图

47A Double-layer Column Lift Outline Drawing

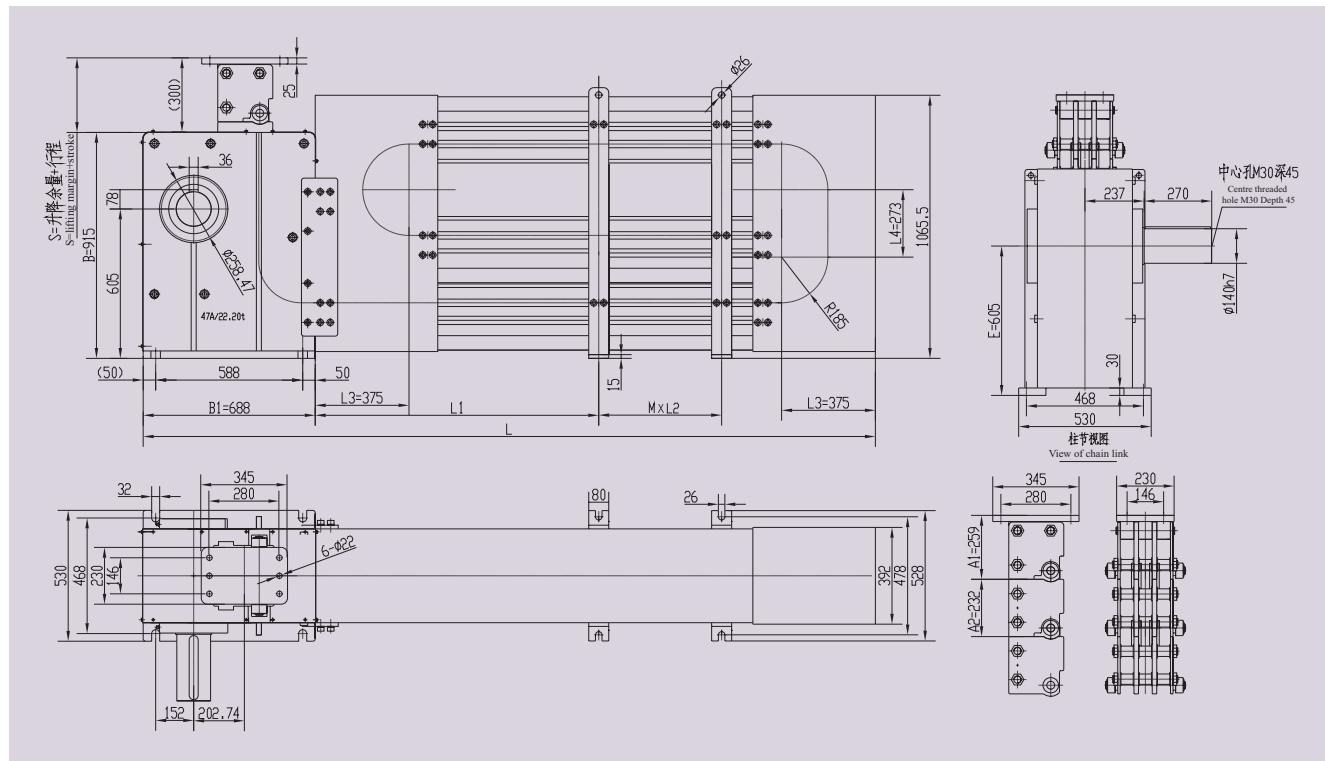


47A 双层存储箱柔性柱外形尺寸 47A Double-layer Column Lift Dimensions

47A 双层存储箱柔性柱 47A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
259	232	688	375	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)	L2 (mm)	
9772 ~ 10931	6473	1200 (可调 adjustable)	3×1300 (可调 adjustable)	
8612 ~ 9771	5893	1200 (可调 adjustable)	3×1100 (可调 adjustable)	
7452 ~ 8611	5313	1300 (可调 adjustable)	2×1300 (可调 adjustable)	
6756 ~ 7451	4733	1100 (可调 adjustable)	2×1100 (可调 adjustable)	
5828 ~ 6755	4383	1500 (可调 adjustable)	1500 (可调 adjustable)	
5132 ~ 5827	3923	1200 (可调 adjustable)	1200 (可调 adjustable)	
4436 ~ 5131	3573	1100 (可调 adjustable)	1100 (可调 adjustable)	
3508 ~ 4435	3223	1200 (可调 adjustable)	600 (可调 adjustable)	
2812 ~ 3507	2763	1400 (可调 adjustable)		
2116 ~ 2811	2413	1100 (可调 adjustable)		
1188 ~ 2115	2063	750 (可调 adjustable)		
724 ~ 1187	1603	300 (可调 adjustable)		
<723	选单层存储箱 Suitable for single-layer storage tube			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

47A 三层存储箱柔性柱外形图

47A Triple-layer Column Lift Outline Drawing



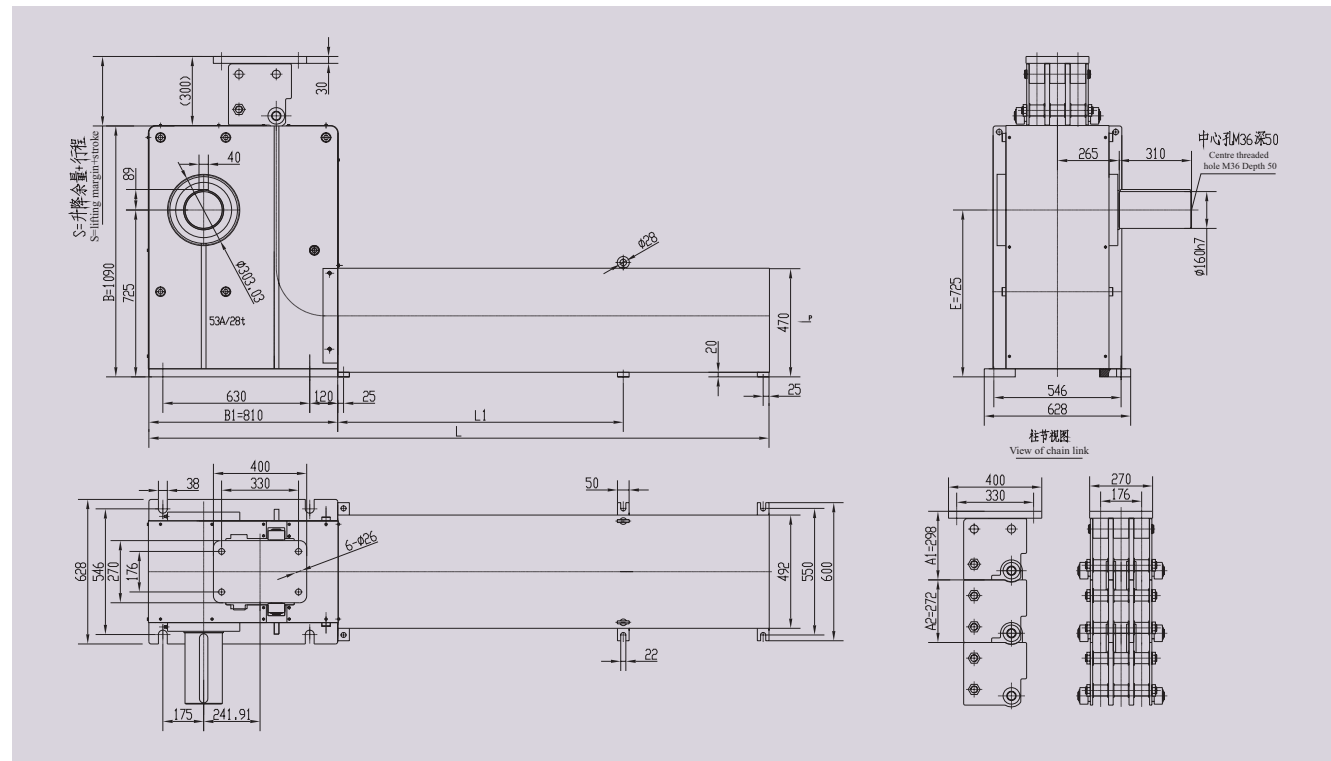
47A 三层存储箱柔性柱外形尺寸 47A Triple-layer Column Lift Dimensions

47A 三层存储箱柔性柱 47A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
259	232	688	375	600
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)	L2 (mm)	
9772 ~ 10931	4710	1200 (可调 adjustable)	2x1100 (可调 adjustable)	
8612 ~ 9771	4320	1560 (可调 adjustable)	1500 (可调 adjustable)	
7452 ~ 8611	3930	1380 (可调 adjustable)	1300 (可调 adjustable)	
6756 ~ 7451	3550	1200 (可调 adjustable)	1100 (可调 adjustable)	
5828 ~ 6755	3312	1200 (可调 adjustable)	800 (可调 adjustable)	
5132 ~ 5827	3005	1200 (可调 adjustable)	500 (可调 adjustable)	
4436 ~ 5131	2770	1500 (可调 adjustable)		
3508 ~ 4435	2540	1300 (可调 adjustable)		
2812 ~ 3507	2230	1000 (可调 adjustable)		
2116 ~ 2811	2000	700 (可调 adjustable)		
<2115	选单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+NxA2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.11. 53A 柔性柱 53A Column Lift

53A单层存储箱柔性柱外形图

53A Single-layer Column Lift Outline Drawing

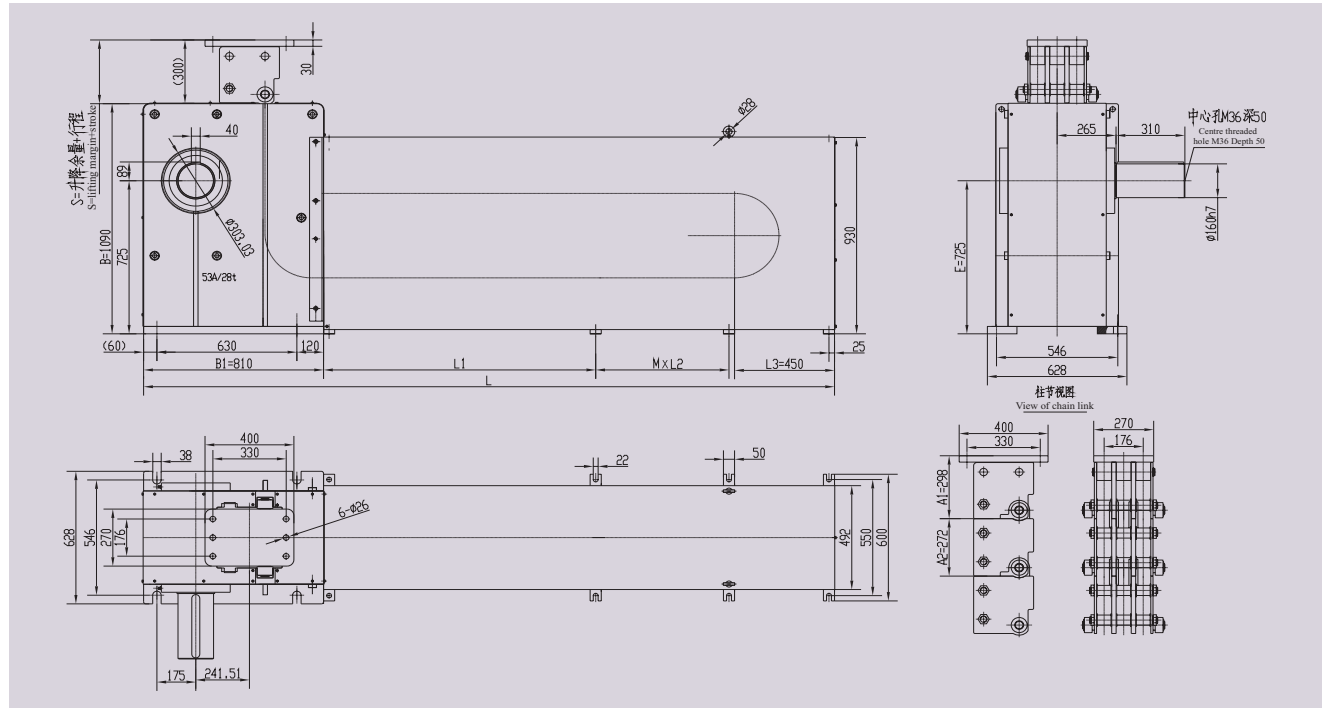


53A 单层存储箱柔性柱外形尺寸 53A Single-layer Column Lift Dimensions

53A 单层存储箱柔性柱 53A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
298	272	810	500
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift L (mm)	安装尺寸 Installation Dimensions	备注 Remarks
		L1 (mm)	
1659 ~ 1930	2880	1800	
1388 ~ 1658	2610	1500	
1115 ~ 1387	2330	1200	
843 ~ 1114	2060	1000	
571 ~ 842	1790	700	
<=570	1520	500	
S= 行程 + 升、降余量 = A1+NxA2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

53A 双层存储箱柔性柱外形图

53A Double-layer Column Lift Outline Drawing

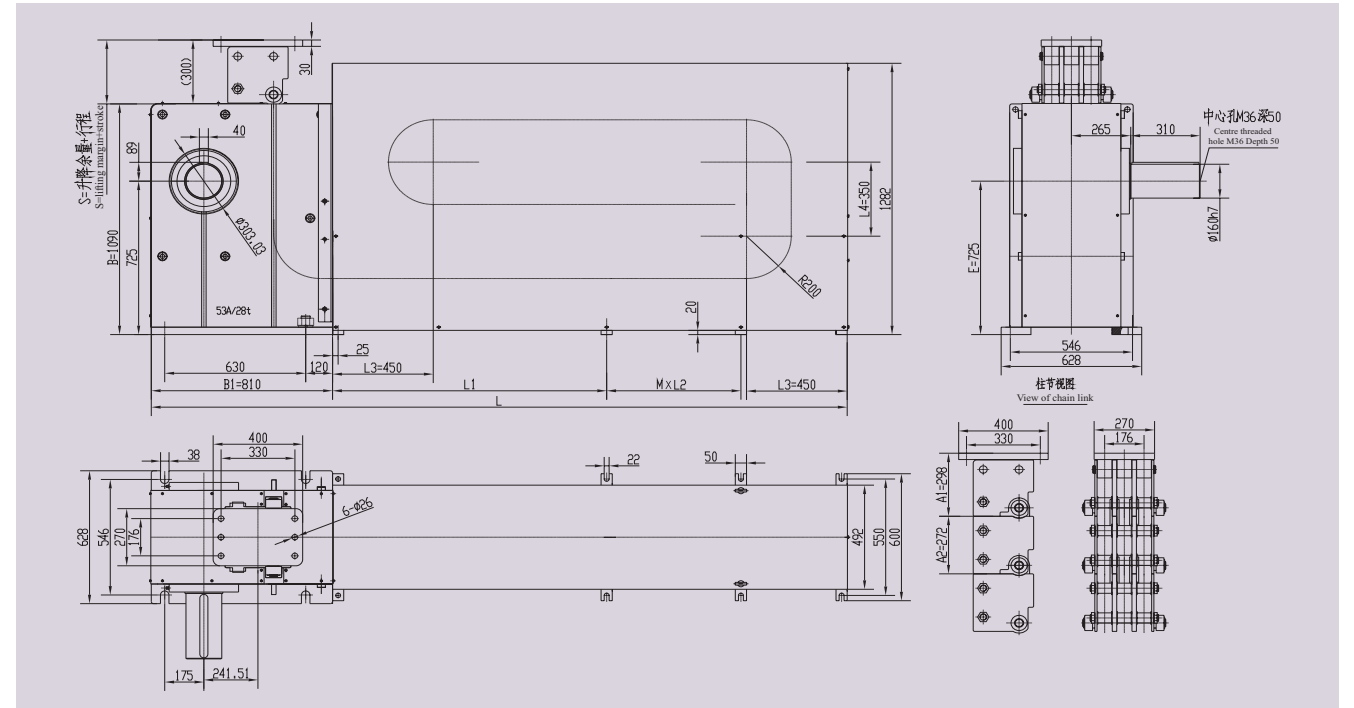


53A 双层存储箱柔性柱外形尺寸 53A Double-layer Column Lift Dimensions

53A 双层存储箱柔性柱 53A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
298	272	810	450	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
11179 ~ 12276	7385	1400		3x1365
9819 ~ 11178	6805	1400		3x1365
8731 ~ 9818	6125	1200		3x1205
7371 ~ 8730	5585	1425		2x1425
6283 ~ 7370	4905	1225		2x1185
5195 ~ 6282	4355	1525		1520
4107 ~ 5194	3815	1225		1280
3291 ~ 4106	3275	1225		740
2475 ~ 3290	2865	1555		
1659 ~ 2474	2455	1145		
1115 ~ 1658	2045	735		
571 ~ 1114	1775	465		
<570	选单层存储箱 Suitable for single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

53A 三层存储箱柔性柱外形图

53A Triple-layer Column Lift Outline Drawing



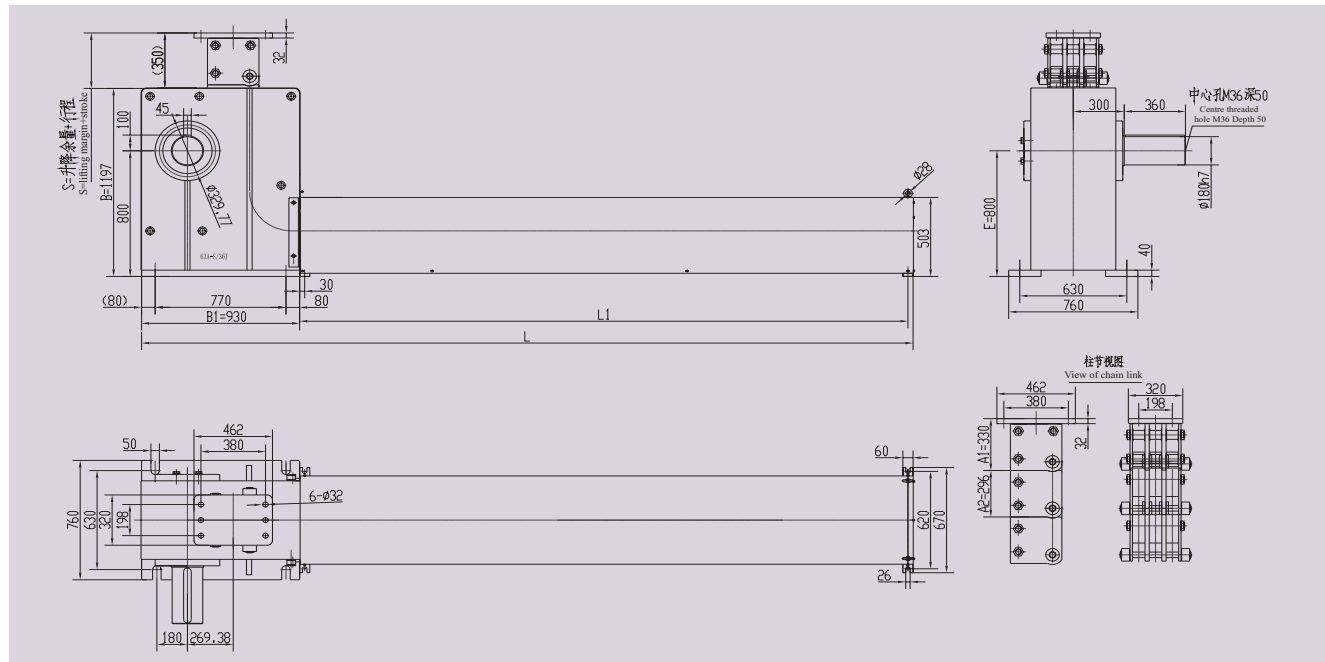
53A 三层存储箱柔性柱外形尺寸 53A Triple-layer Column Lift Dimensions

53A 三层存储箱柔性柱 53A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
298	272	810	450	600
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		
	L (mm)	L1 (mm)		L2 (mm)
11179 ~ 12266	5360	1400		2X1400
9819 ~ 11178	4990	1200		2X1200
8731 ~ 9818	4540	1590		1590
7371 ~ 8730	4180	1400		1400
6283 ~ 7370	3730	1200		1170
5195 ~ 6282	3360	1200		800
4107 ~ 5194	3000	1600		
3291 ~ 4106	2640	1280		
2475 ~ 3290	2370	1000		
1659 ~ 2474	2090	700		
<1658	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.12. 63A 柔性柱 63A Column Lift

63A 单层存储箱柔性柱外形图

63A Single-layer Column Lift Outline Drawing

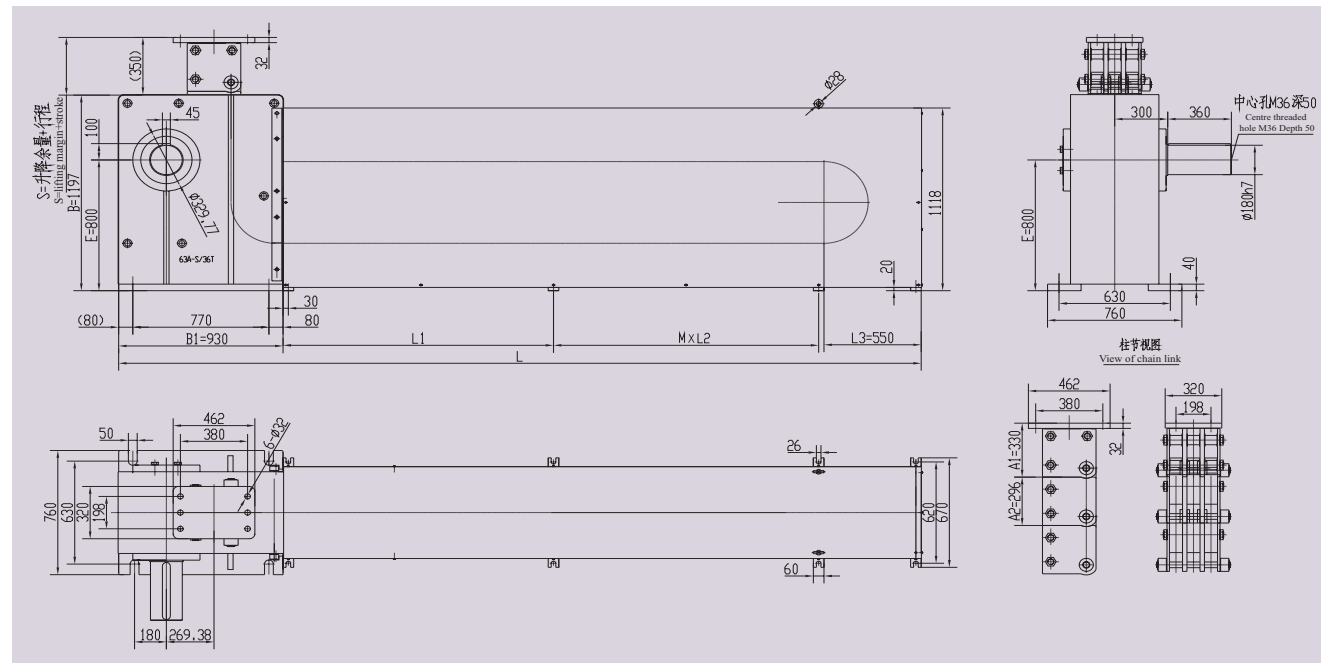


63A 单层存储箱柔性柱外形尺寸 63A Single-layer Column Lift Dimensions

63A 单层存储箱柔性柱 63A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
328	296	918	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
1799 ~ 2094	3158	1950	
1503 ~ 1798	2868	1700	
1207 ~ 1502	2568	1400	
911 ~ 1206	2268	1100	
615 ~ 910	1978	800	
<=614	1688	500	
S= 行程 + 升、降余量 = A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

63A 双层存储箱柔性柱外形图

63A Double-layer Column Lift Outline Drawing

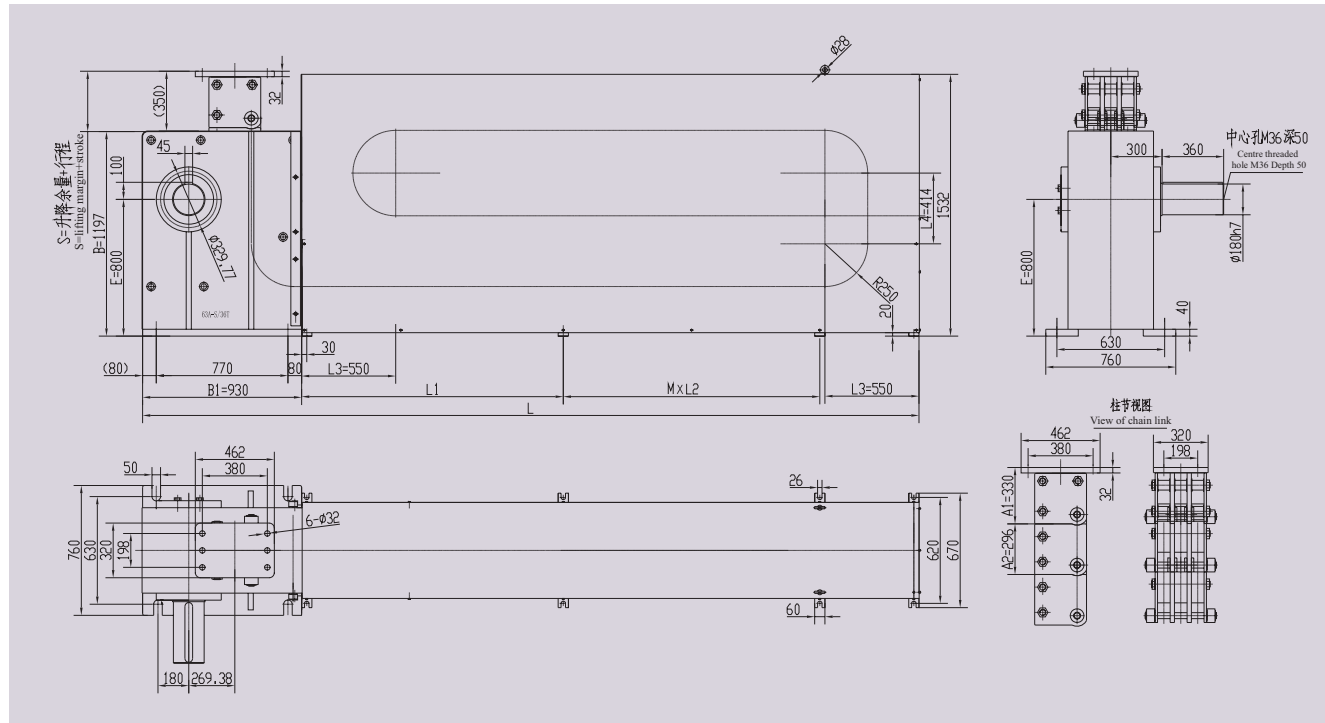


63A 双层存储箱柔性柱外形尺寸 63A Double-layer Column Lift Dimensions

63A 双层存储箱柔性柱 63A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
328	296	918	550	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)	L2 (mm)	
13507 ~ 13648	8253	1620	3x1605	
11577 ~ 13056	7953	1620	3x1605	
10393 ~ 11576	7213	1420	3x1425	
9209 ~ 10392	6623	1277	3x1276	
8026 ~ 9208	6023	1525	2x1490	
6841 ~ 8025	5433	1325	2X1295	
5953 ~ 6840	4843	1125	2X1100	
5065 ~ 5952	4403	1430	1455	
3881 ~ 5064	3953	1225	1210	
2993 ~ 3880	3363	1215	630	
2105 ~ 2992	2923	1405		
1217 ~ 2104	2473	955		
625 ~ 1206	2033	515		
<624	选单层存储箱 Suitable for single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

63A 三层存储箱柔性柱外形图

63A Triple-layer Column Lift Outline Drawing



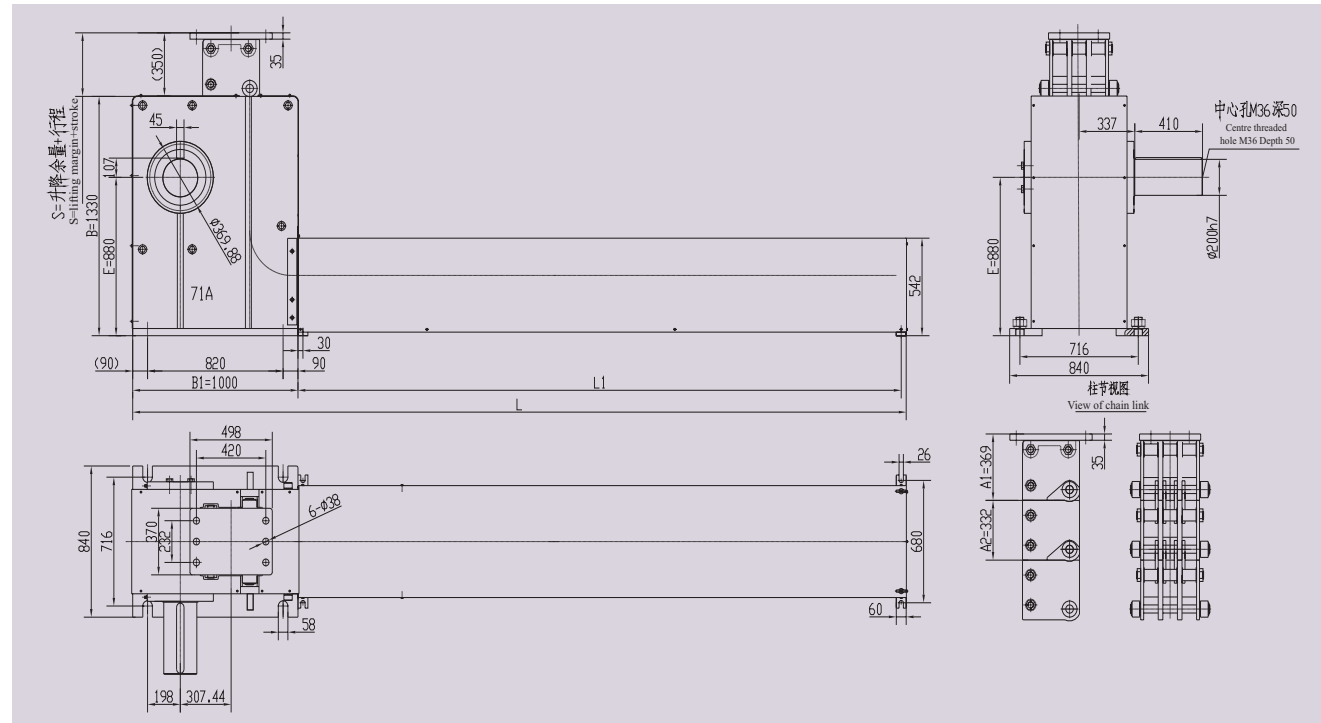
63A 三层存储箱柔性柱外形尺寸 63A Triple-layer Column Lift Dimensions

63A 三层存储箱柔性柱 63A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
328	296	930	550	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)	L2 (mm)	
13507 ~ 13648	6050	1490	2X1490	
11577 ~ 13056	5850	1420	2X1420	
10393 ~ 11576	5360	1260	2X1260	
9209 ~ 10392	4960	1120	2X1120	
8026 ~ 9208	4570	1490	1490	
6841 ~ 8025	4170	1290	1290	
5953 ~ 6840	3780	1100	1100	
5065 ~ 5952	3480	1200	700	
3881 ~ 5064	3190	1600		
2993 ~ 3880	2790	1200		
2105 ~ 2992	2510	900		
<1882	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.13. 71A 柔性柱 71A Column Lift

71A 单层存储箱柔性柱外形图

71A Single-layer Column Lift Outline Drawing

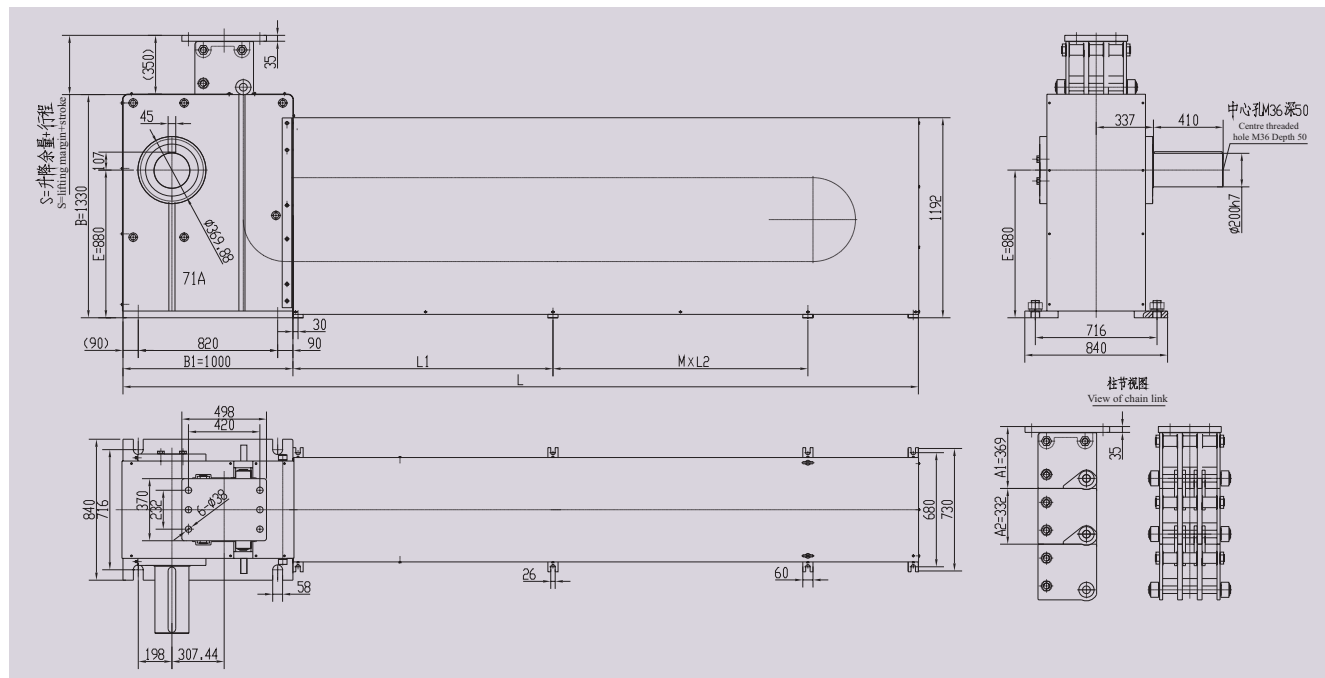


71A 单层存储箱柔性柱外形尺寸 71A Single-layer Column Lift Dimensions

71A 单层存储箱柔性柱 71A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
369	332	1000	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
2030 ~ 2361	3468	2200	
1698 ~ 2029	3138	2000	
1365 ~ 1697	2788	1600	
1034 ~ 1365	2458	1300	
702 ~ 1033	2128	1000	
<=701	1798	700	
S= 行程 + 升、降余量 = A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

71A 双层存储箱柔性柱外形图

71A Double-layer Column Lift Outline Drawing

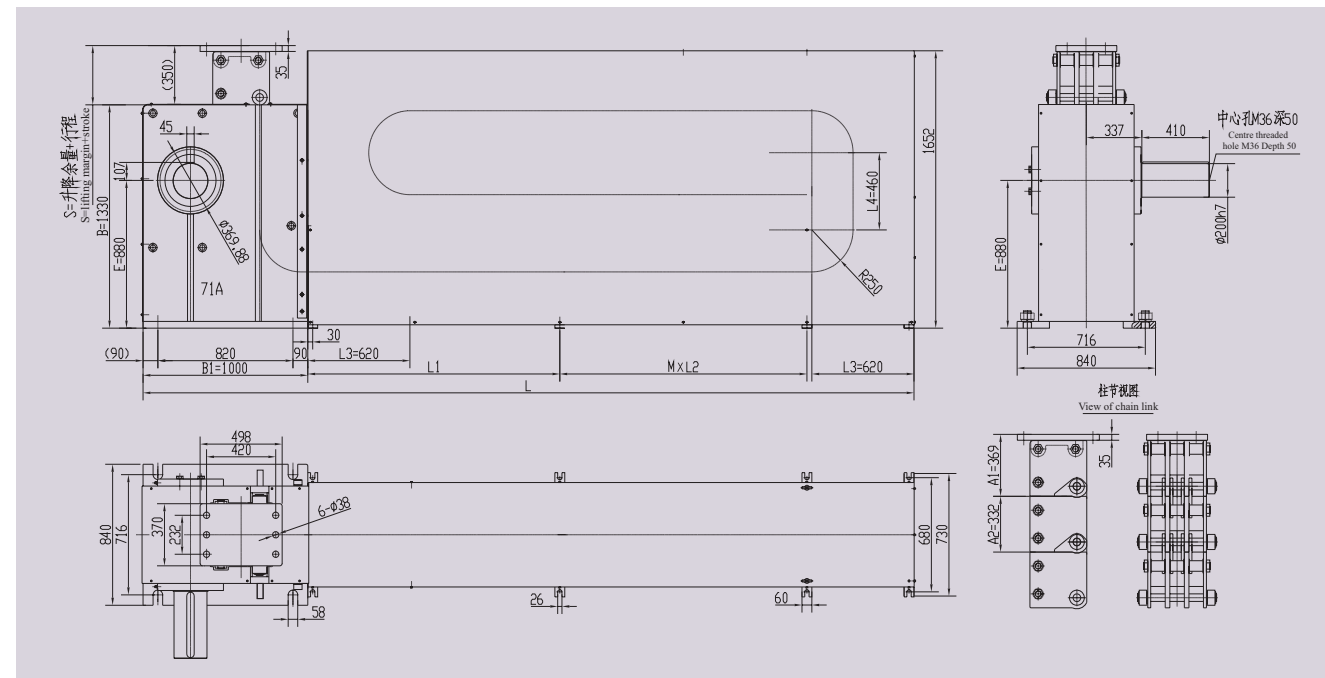


71A 双层存储箱柔性柱外形尺寸 71A Double-layer Column Lift Dimensions

71A 双层存储箱柔性柱外形图 71A Double-layer Column Lift Outline Drawing				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
369	332	1000	590	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)	L2 (mm)	
14646 ~ 16305	9700	2020	3x2020	
12986 ~ 14645	8840	1805	3x1805	
11658 ~ 12985	8010	1620	3x1590	
120330 ~ 11657	7370	1900	2x1925	
9002 ~ 10329	6720	1700	2X1700	
7674 ~ 9001	6020	1500	2X1450	
6678 ~ 7673	5360	1870	1870	
5682 ~ 6677	4860	1620	1620	
4354 ~ 5681	4360	1370	1370	
3358 ~ 4353	3700	2080		
2362 ~ 3357	3200	1580		
1366 ~ 2361	2710	1090		
1034 ~ 1365	2210	590		
<1033	选单层存储箱 Suitable for single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

71A 三层存储箱柔性柱外形图

71A Triple-layer Column Lift Outline Drawing



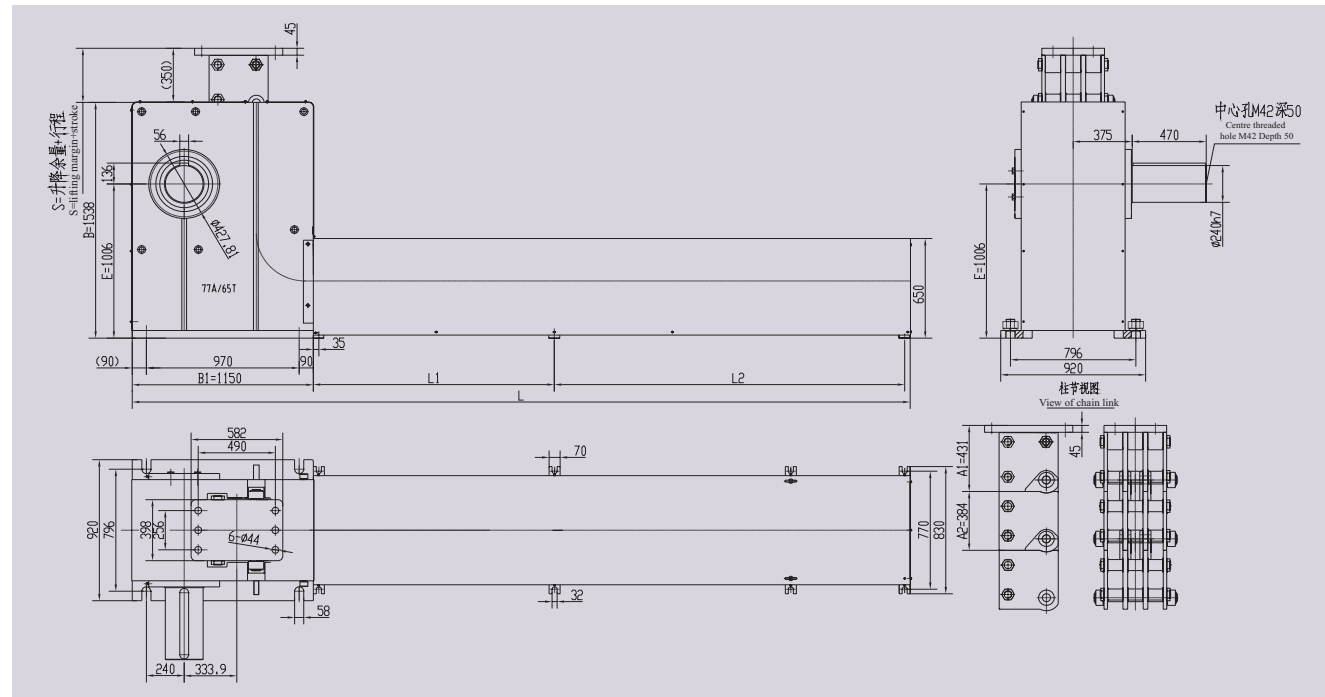
71A 三层存储箱柔性柱外形尺寸 71A Triple-layer Column Lift Dimensions

71A 三层存储箱柔性柱 71A Triple-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
369	332	1000	620	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
	L (mm)	L1 (mm)	L2 (mm)	
14646 ~ 16305	7100	1340	3X1340	
12986 ~ 14645	6550	1200	3X1200	
11658 ~ 12985	6000	1400	2X1400	
120330 ~ 11657	5550	1270	2x1270	
9002 ~ 10329	5110	1100	2x1100	
7674 ~ 9001	4670	1470	1470	
6678 ~ 7673	4220	1250	1250	
5682 ~ 6677	3890	1200	970	
4354 ~ 5681	3560	1200	600	
3358 ~ 4353	3110	1390		
2362 ~ 3357	2780	1060		
<2361	选双层或单层存储箱 Suitable for double/single-layer			
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.				

7.14. 77A 柔性柱 77A Column Lift

77A 单层存储箱柔性柱外形图

77A Single-layer Column Lift Outline Drawing



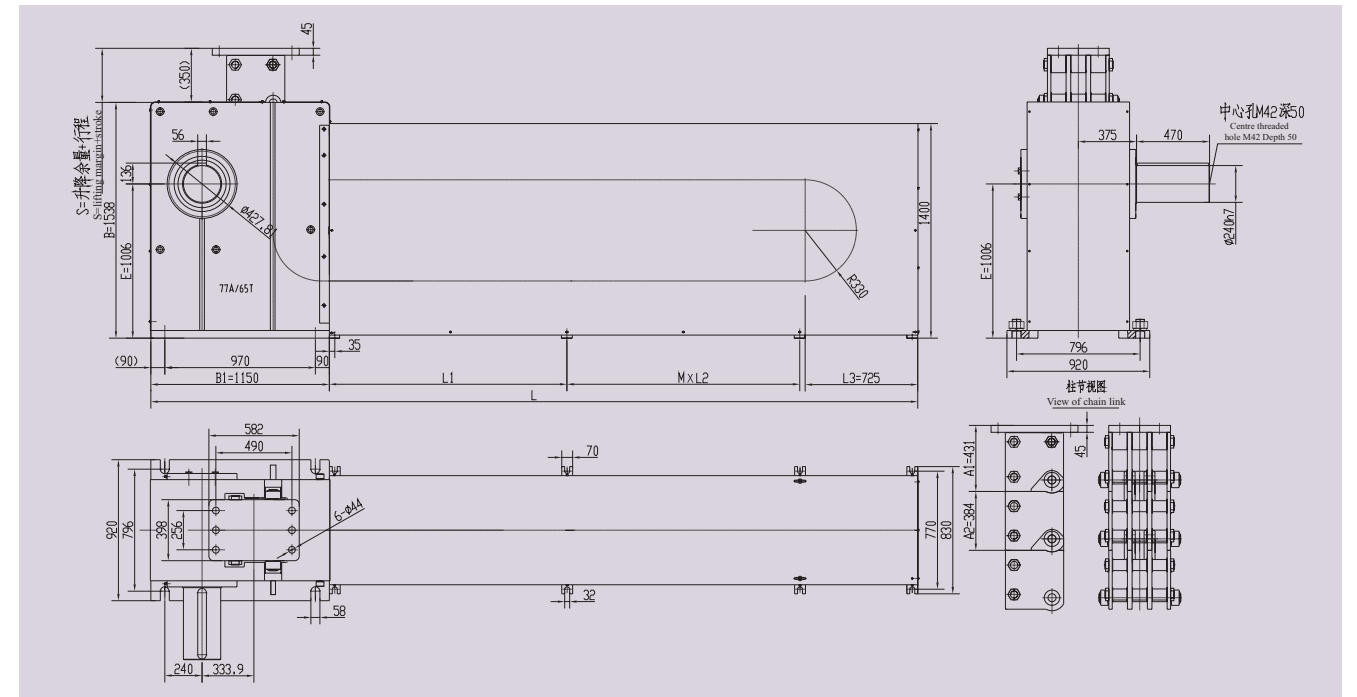
77A 单层存储箱柔性柱外形尺寸 77A Single-layer Column Lift Dimensions

77A 单层存储箱柔性柱 77A Single-layer Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
328	296	918	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions	备注 Remarks
	L (mm)	L1 (mm)	
1968 ~ 2351	3468	2300	
1584 ~ 1967	3078	1900	
1200 ~ 1583	2698	1600	
816 ~ 1199	2318	1200	
<=815	1928	800	

S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。
S= stroke + lifting margin = A1 + N × A2, where N is the number of chain link required.

77A 双层存储箱柔性柱外形图

77A Double-layer Column Lift Outline Drawing



77A 双层存储箱柔性柱外形尺寸 77A Double-layer Column Lift Dimensions

77A 双层存储箱柔性柱 77A Double-layer Column Lift				
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	L3 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
328	296	918	550	700
柱节总长度 Total Pitch of Chain Link S (mm)	柔性柱长度 Pitch of Column Lift	安装尺寸 Installation Dimensions		备注 Remarks
		L1 (mm)	L2 (mm)	
15024 ~ 16943	10255	2110	3x2080	
13488 ~ 15023	9315	2010	3x1800	
11952 ~ 13487	8535	1770	3x1620	
10416 ~ 11951	7765	1525	3x1445	
8880 ~ 10415	7015	1730	2X1690	
7728 ~ 8879	6225	1400	2X1460	
6576 ~ 7727	5655	1430	1455	
5040 ~ 6575	5075	1600	1570	
3888 ~ 5039	4305	1200	1200	
2736 ~ 3887	3735	1830		
1584 ~ 2735	3155	1250		
816 ~ 1583	2575	670		
<815	选单层存储箱 Suitable for single-layer			

S= 行程 + 升、降余量 = A1 + N × A2, 其中 N 为所需柱节数。
S= stroke + lifting margin = A1 + N × A2, where N is the number of chain link required.

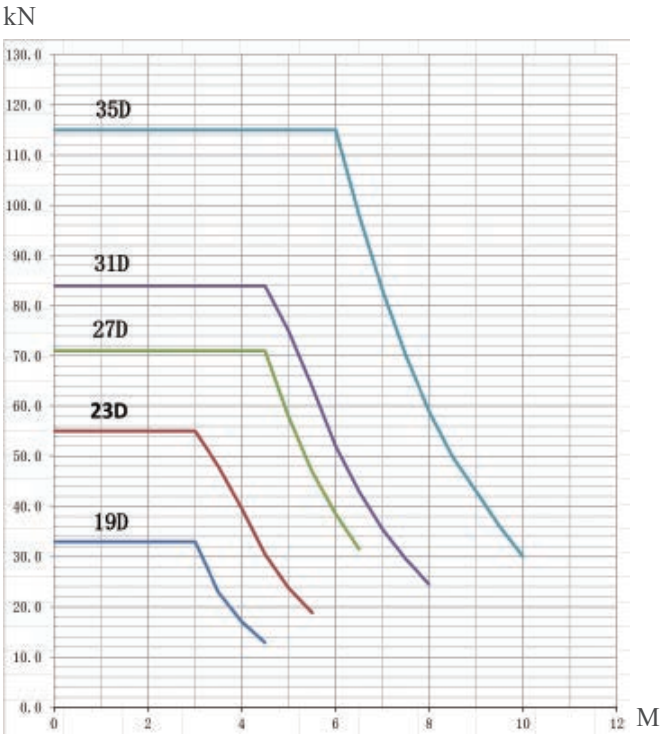
刚性柱柱节总长度、载荷参数
Pitch of RCL Chain Link-Load Parameters

载荷与柱节总长度 Load & Pitch of Chain Link										
型号Model	19D	23D	27D	31D	35D	19D	23D	27D	31D	35D
柱节总长度 Pitch (m)	动载荷 (Dynamic) kN					静载荷 (Static) kN				
0	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
0.30	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
0.50	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
0.80	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
1.00	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
1.20	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
1.40	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
1.60	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
2.00	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
2.50	33.0	55.0	71.0	84.0	115.0	42.9	71.5	92.3	109.2	149.5
3.00	33.0	55.0	71.0	84.0	115.0	33.0	60.5	92.3	109.2	149.5
3.50	23.0	48.0	71.0	84.0	115.0	23.0	48.0	92.3	109.2	149.5
4.00	17.1	39.7	71.0	84.0	115.0	17.1	39.7	81.7	109.2	149.5
4.50	12.9	30.5	71.0	84.0	115.0	12.9	30.5	71.0	92.4	149.5
5.00		23.8	58.0	75.0	115.0		23.8	58.0	75.0	149.5
5.50		18.8	47.0	64.0	115.0		18.8	47.0	64.0	149.5
6.00			38.5	52.0	115.0			38.5	52.0	126.5
6.50			31.5	43.0	98.0			31.5	43.0	98.0
7.00				35.5	83.0				35.5	83.0
7.50				29.5	70.0				29.5	70.0
8.00				24.5	59.0				24.5	59.0
8.50					50.0					50.0
9.00					43.0					43.0
9.50					36.0					36.0
10.00					30.0					30.0
横向弯矩 M TBM (kN.M)	2	4	6	8	12	3	5	8	10	15

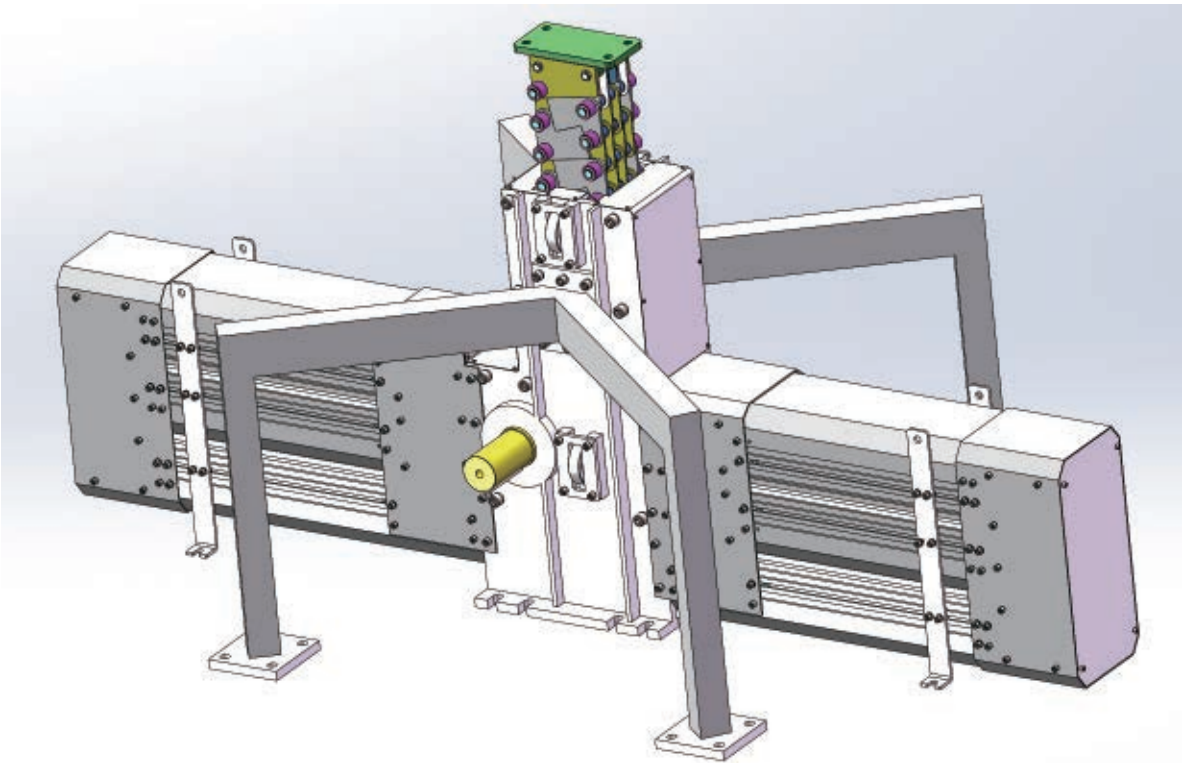
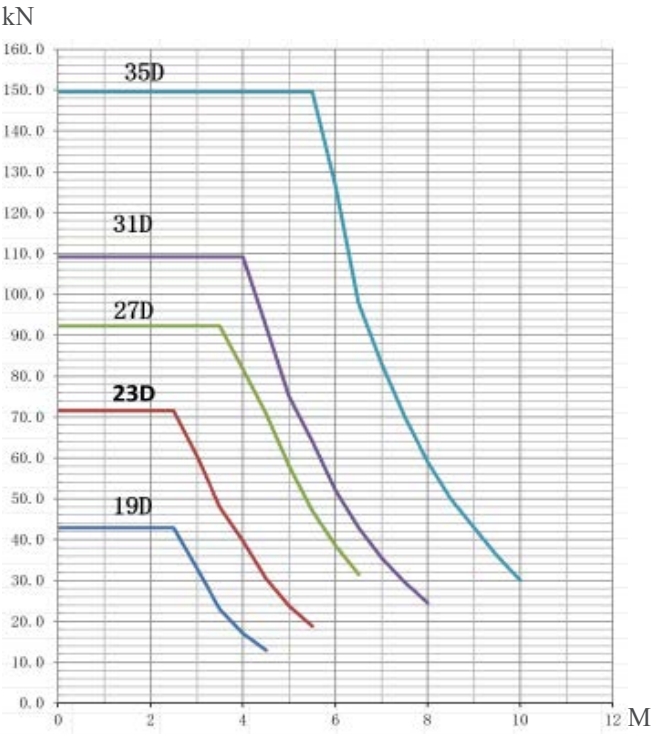
说明：1、选型时动静载荷必须包含柱节自身重量。如动载荷为100kg，柱节重量20kg，则刚性柱的动载荷为120kg。2、水平载荷对基础面产生的弯矩超过横向弯矩数值，必须像柔性柱一样增加类似升降台导向系统。

Note: 1. When selecting model, the dynamic and static loads must include the weight of chain link itself. If the dynamic load is 100kg and the weight of chain link is 20kg, the dynamic load of the rigid column lift is 120kg. 2. If the bending moment generated by the horizontal load on the foundation surface exceeds transverse bending moment value, a guide system is necessary.

柱节总长度-动载荷曲线
Pitch of RCL-Dynamic Curve



柱节总长度-静载荷曲线
Pitch of RCL-Static Curve



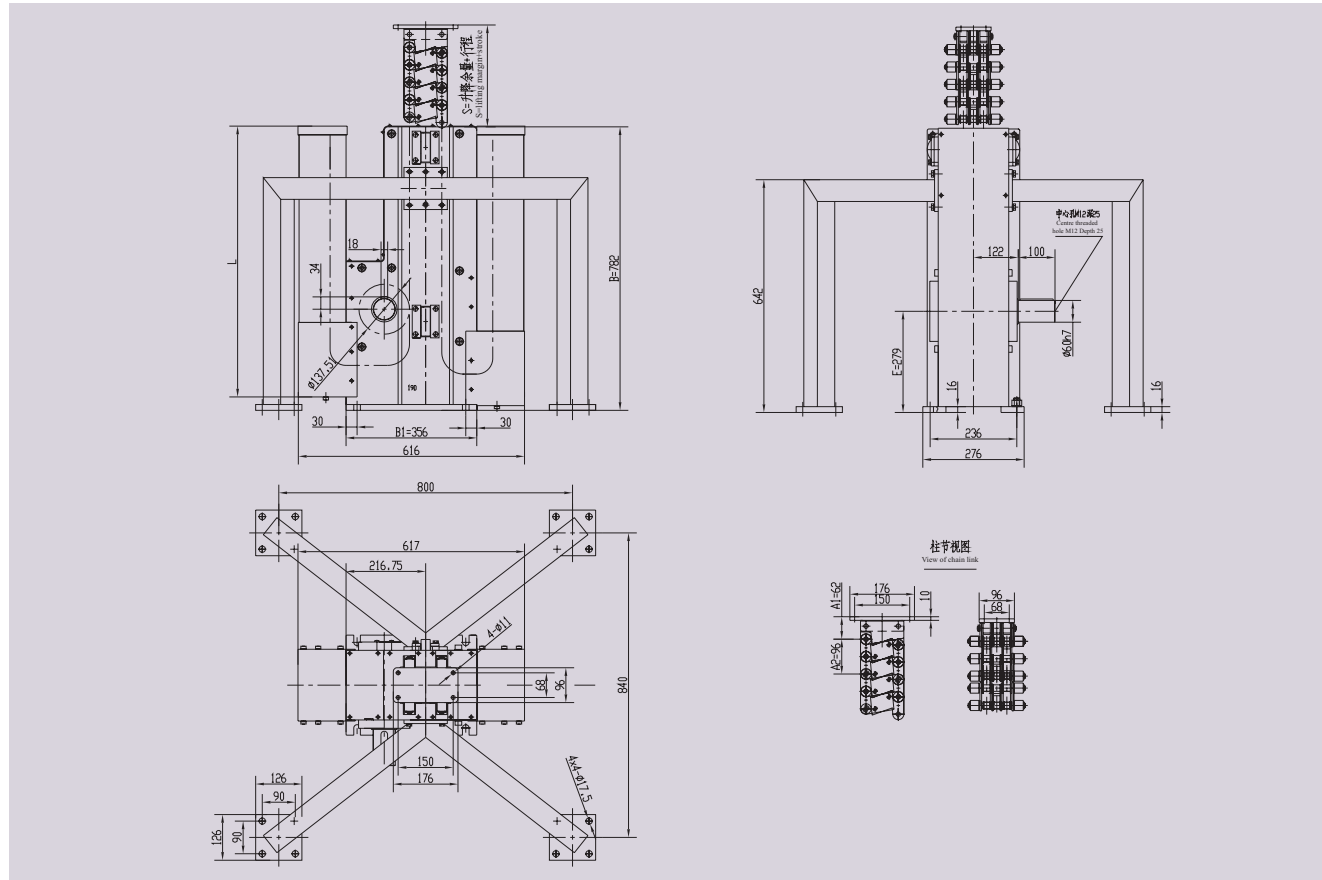
注意：如有升降台的导向系统，刚性柱的支架可不装。

Note: If there is a guide system for the lifting platform, the rack for RCL is unnecessary.

8.1. 19D 刚性柱 19D Rigid Column Lift

19D 单层存储箱刚性柱外形图

19D Single-layer RCL Outline Drawing

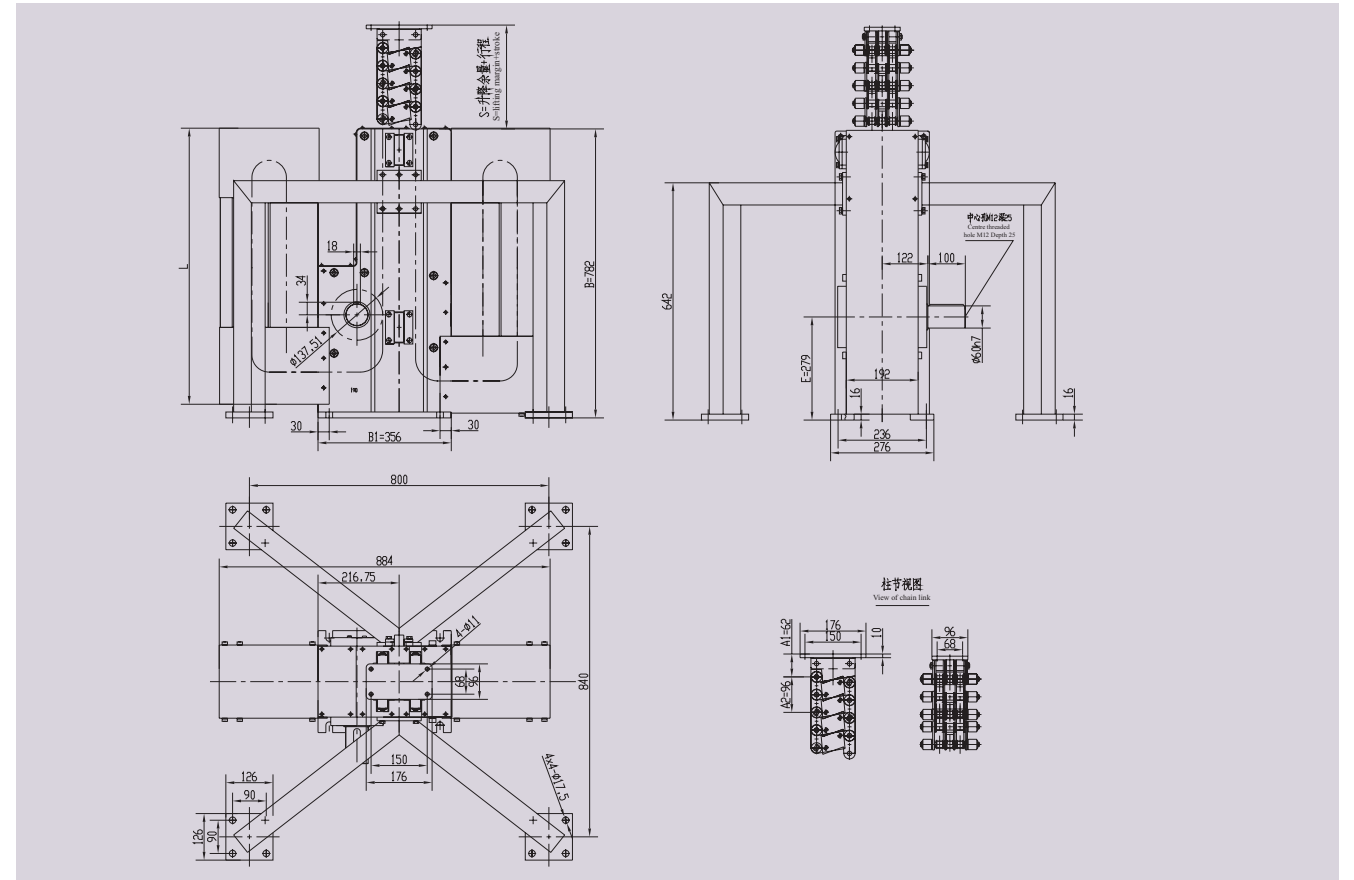


19D 单层、双层存储箱刚性柱外形尺寸 19D Double/Single-layer RCL Dimensions

19D 双层、单层存储箱刚性柱 19D Double/Single-layer Rigid Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
62	96	356	300
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
927 ~ 1214	740	351 ~ 638	670
639 ~ 926	600	<350	470
351 ~ 638	450		
<350	可选单层存储箱 Suitable for single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

19D 双层存储箱刚性柱外形图

19D Double-layer RCL Outline Drawing

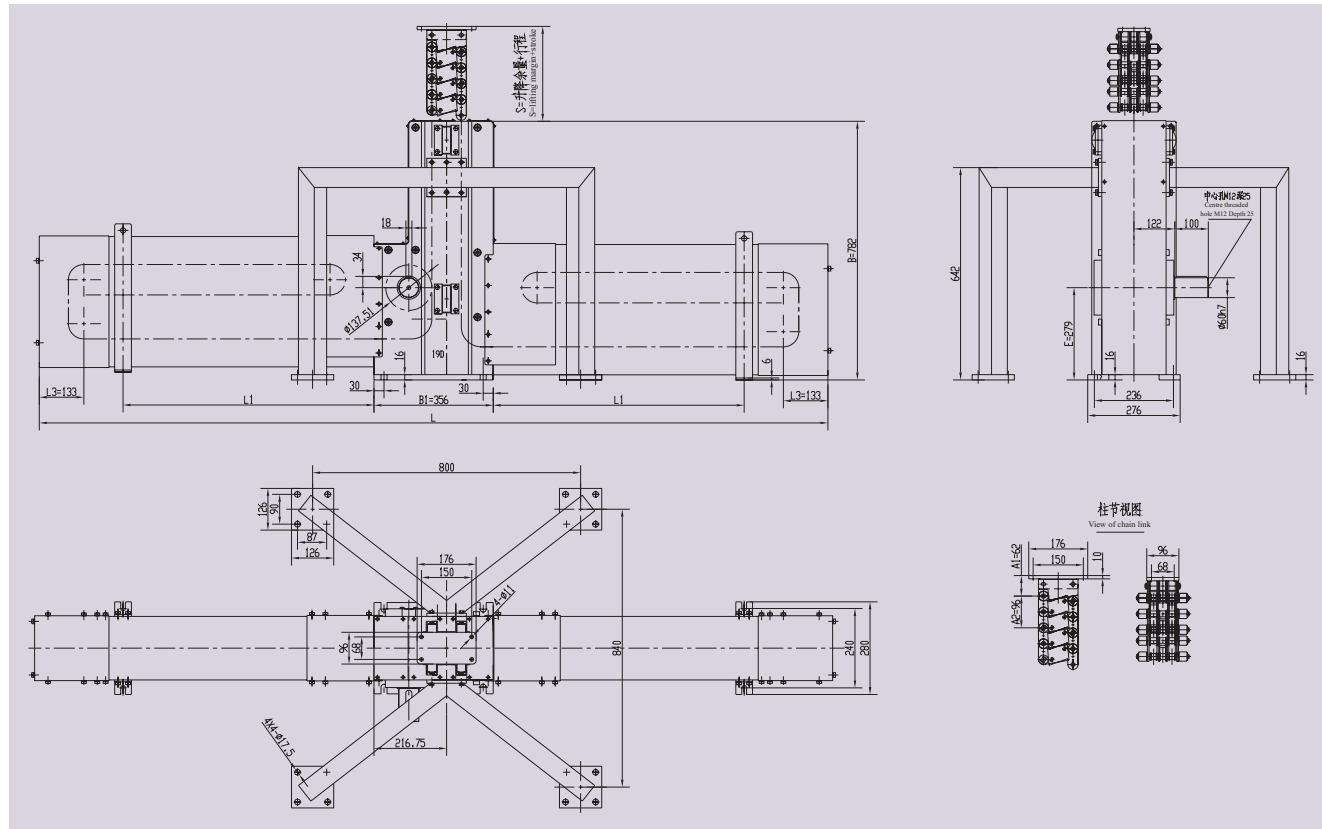


19D 单层、双层存储箱刚性柱外形尺寸 19D Double/Single-layer RCL Dimensions

19D 双层、单层存储箱刚性柱 19D Double/Single-layer Rigid Column Lift			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
62	96	356	300
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
927 ~ 1214	740	351 ~ 638	670
639 ~ 926	600	<350	470
351 ~ 638	450		
<350	可选单层存储箱 Suitable for single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

19D 三层存储箱刚性柱外形图

19D Triple-layer RCL Outline Drawing

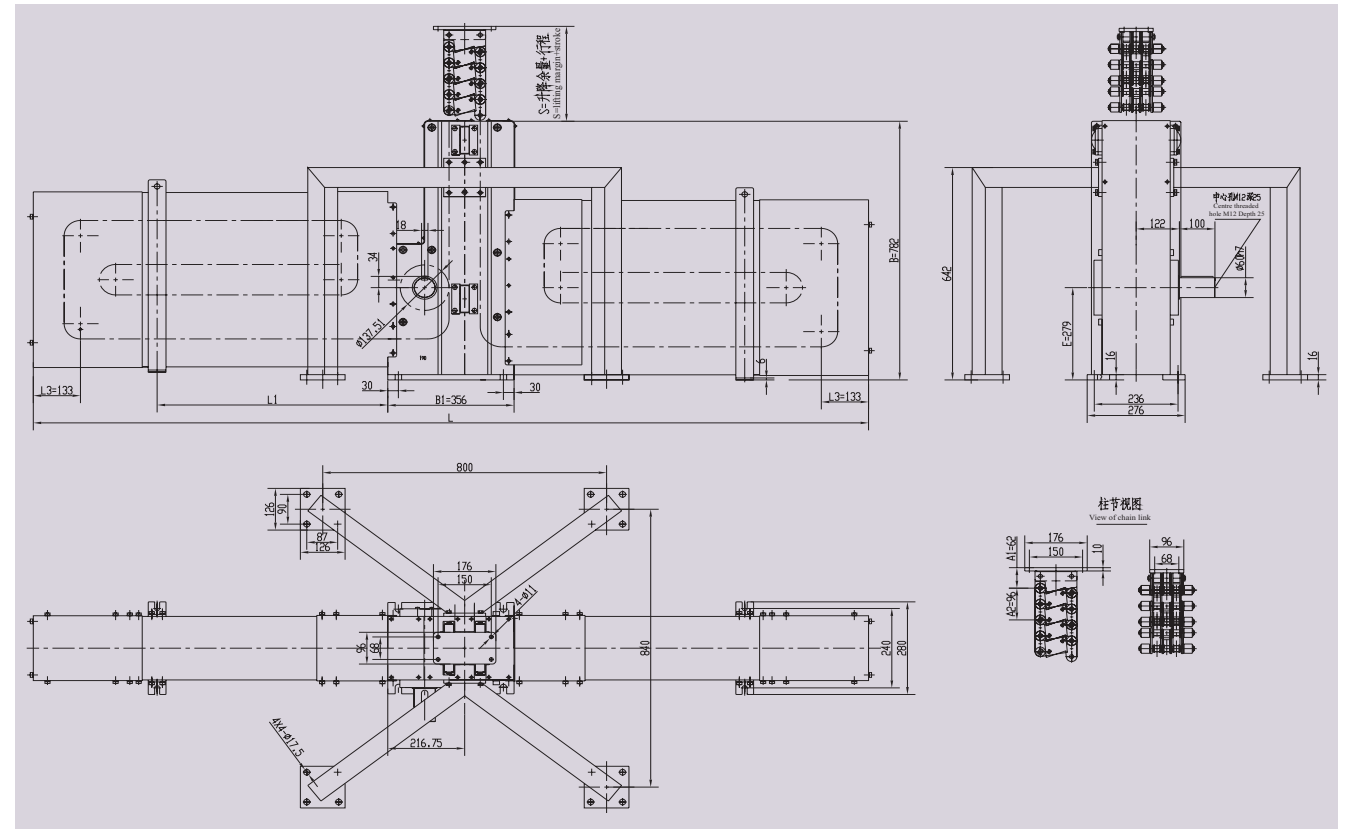


19D 三层存储箱刚性柱外形尺寸 19D Triple-layer RCL Dimensions

19D 三层存储箱刚性柱 19D Triple-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
62	96	356	300
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
3327 ~ 3614	3036	1000 (可调 adjustable)	
3039 ~ 3326	2836	900 (可调 adjustable)	
2751 ~ 3038	2656	800 (可调 adjustable)	
2463 ~ 2750	2456	700 (可调 adjustable)	
2175 ~ 2462	2276	600 (可调 adjustable)	
1791 ~ 2174	2076	550 (可调 adjustable)	
1503 ~ 1790	1816	400 (可调 adjustable)	
1215 ~ 1502	1636	300 (可调 adjustable)	
<1214	可选双层或单层存储箱 Suitable for double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

19D 四层存储箱刚性柱外形图

19D Four-layer RCL Outline Drawing



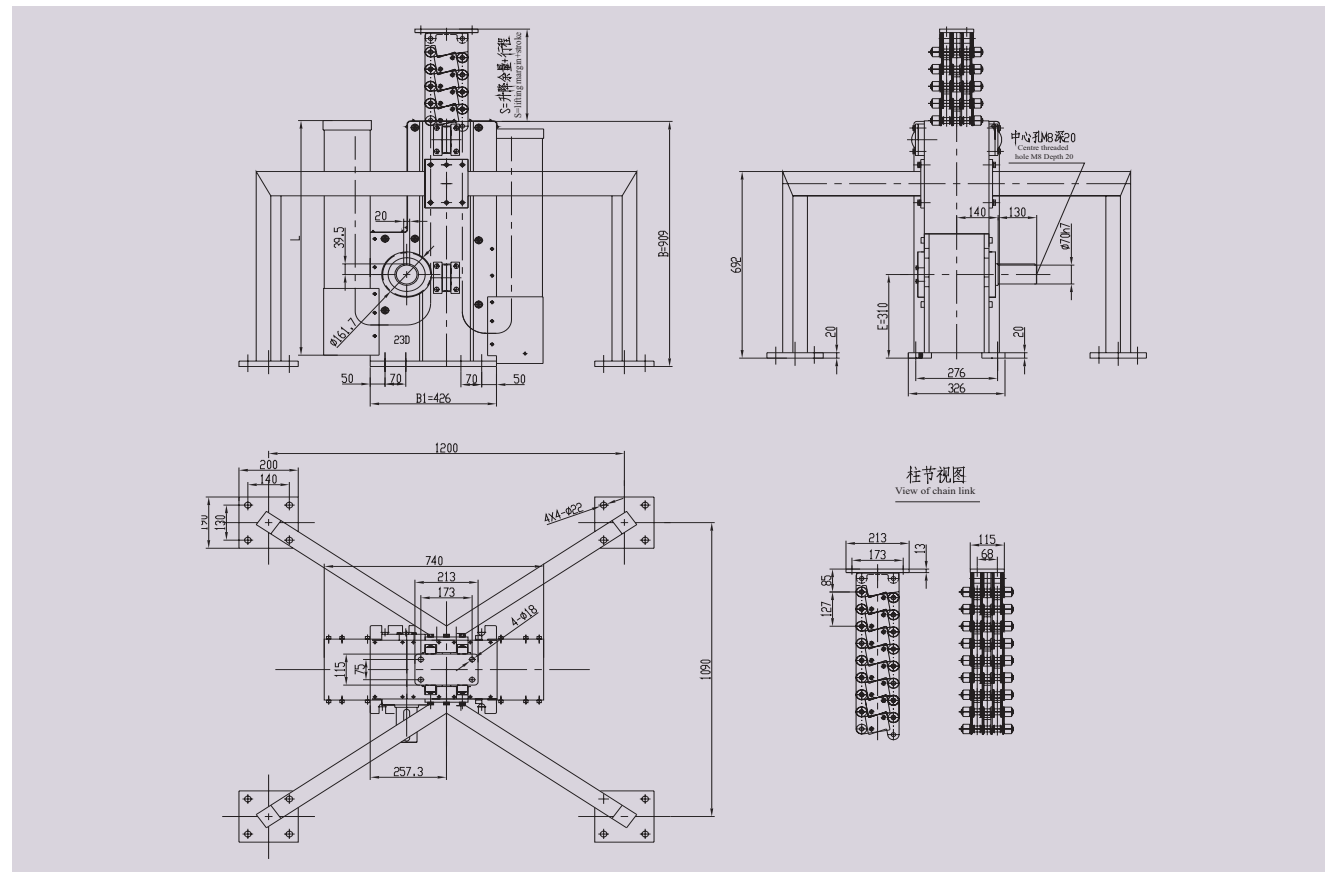
19D 四层存储箱刚性柱外形尺寸 19D Four-layer RCL Dimensions

19D 四层存储箱刚性柱 19D Four-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
62	96	356	300
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
4383 ~ 4766	2996	900 (可调 adjustable)	
3999 ~ 4382	2796	800 (可调 adjustable)	
3615 ~ 3998	2616	700 (可调 adjustable)	
3231 ~ 3614	2436	600 (可调 adjustable)	
2751 ~ 3230	2236	500 (可调 adjustable)	
<2750	可选三层、双层或单层存储箱 Suitable for triple/double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

8.2. 23D 刚性柱 23D Rigid Column Lift

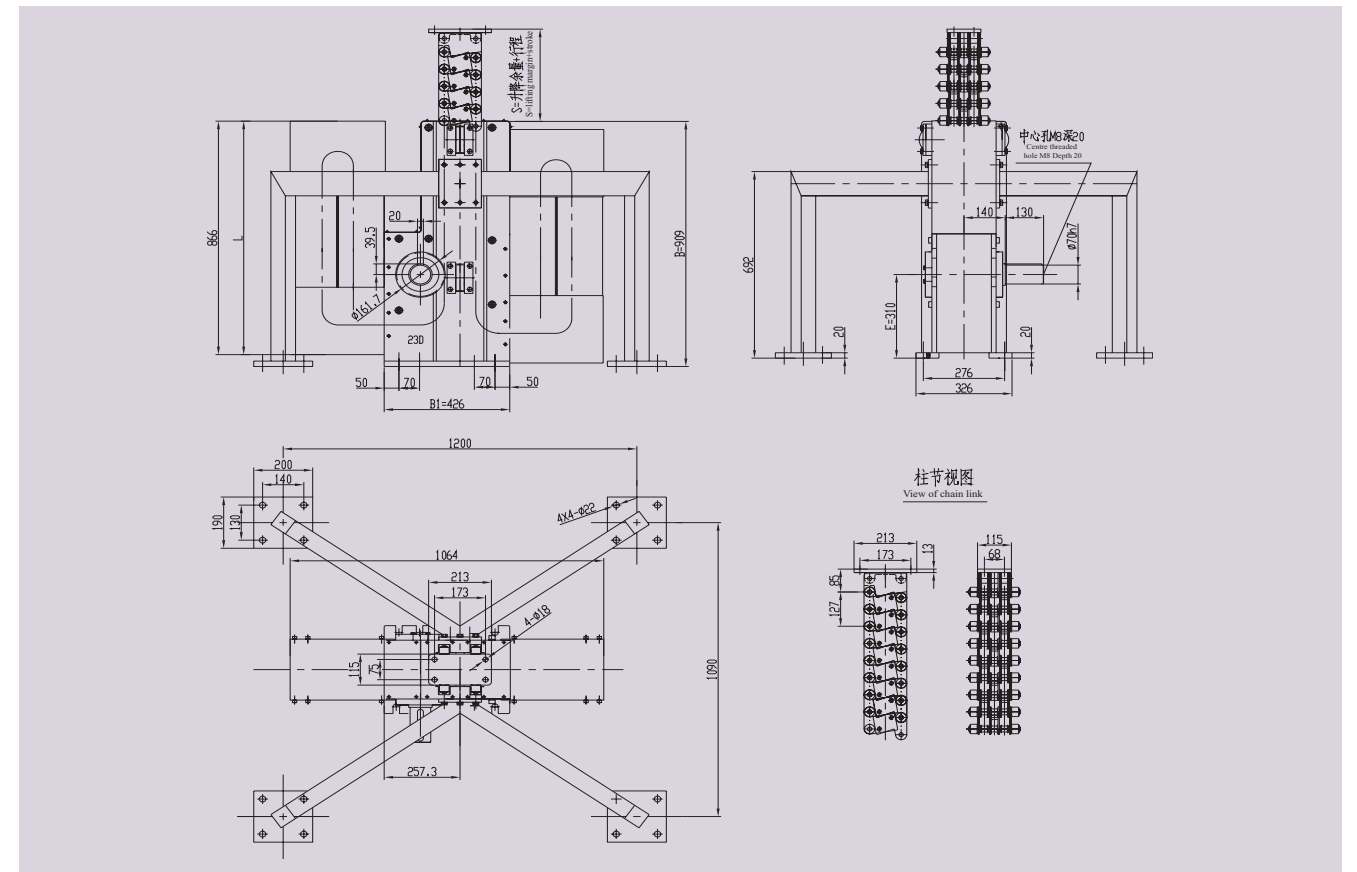
23D 单层存储箱刚性柱外形图

23D Single-layer RCL Outline Drawing



23D 双层存储箱刚性柱外形图

23D Double-layer RCL Outline Drawing



23D 单层、双层存储箱刚性柱外形尺寸 23D Double/Single-layer RCL Dimensions

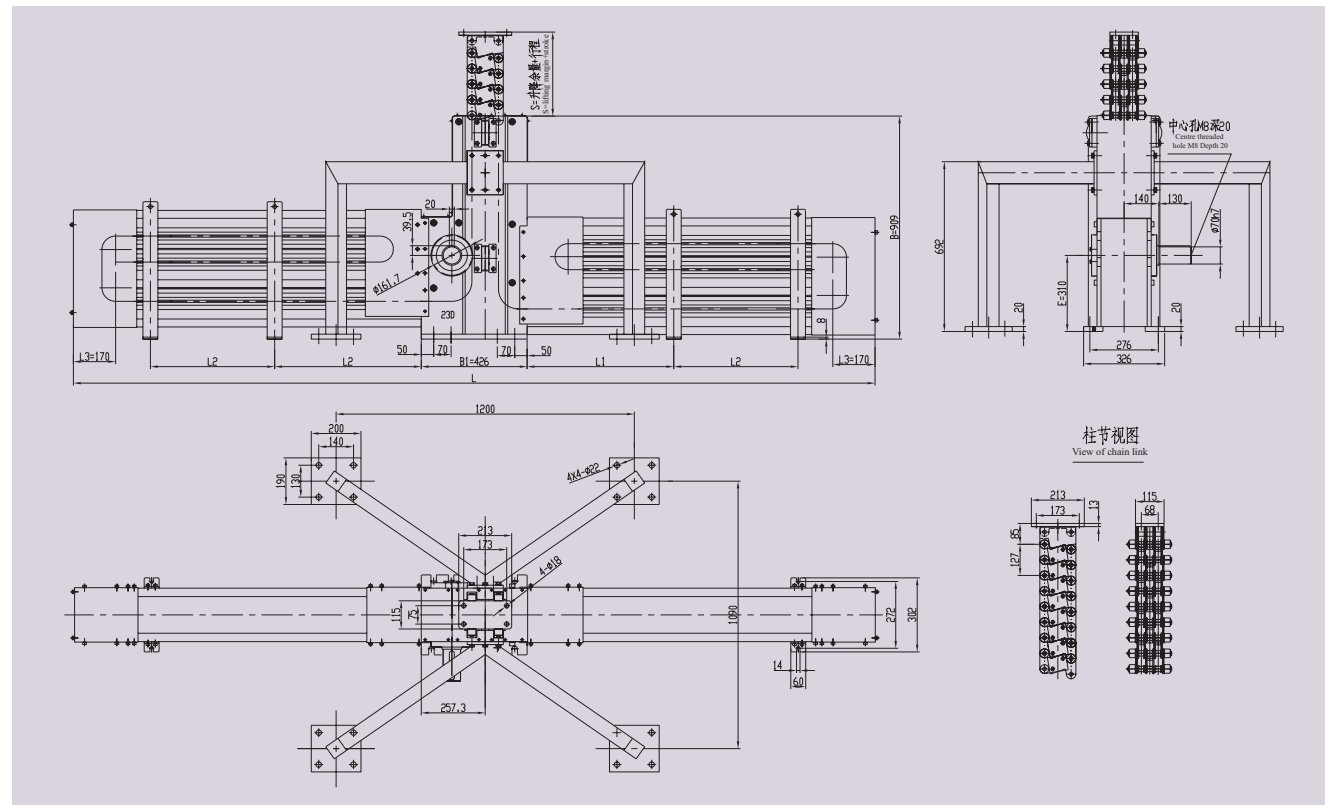
23D 双层、单层存储箱刚性柱 23D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
85	127	426	400
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
948 ~ 1355	860	467 ~ 720	840
721 ~ 947	660	<466	580
467 ~ 720	530		
<466	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

23D 单层、双层存储箱刚性柱外形尺寸 23D Double/Single-layer RCL Dimensions

23D 双层、单层存储箱刚性柱 23D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
85	127	426	400
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
948 ~ 1355	860	467 ~ 720	840
721 ~ 947	660	<466	580
467 ~ 720	530		
<466	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

23D 三层存储箱刚性柱外形图

23D Triple-layer RCL Outline Drawing

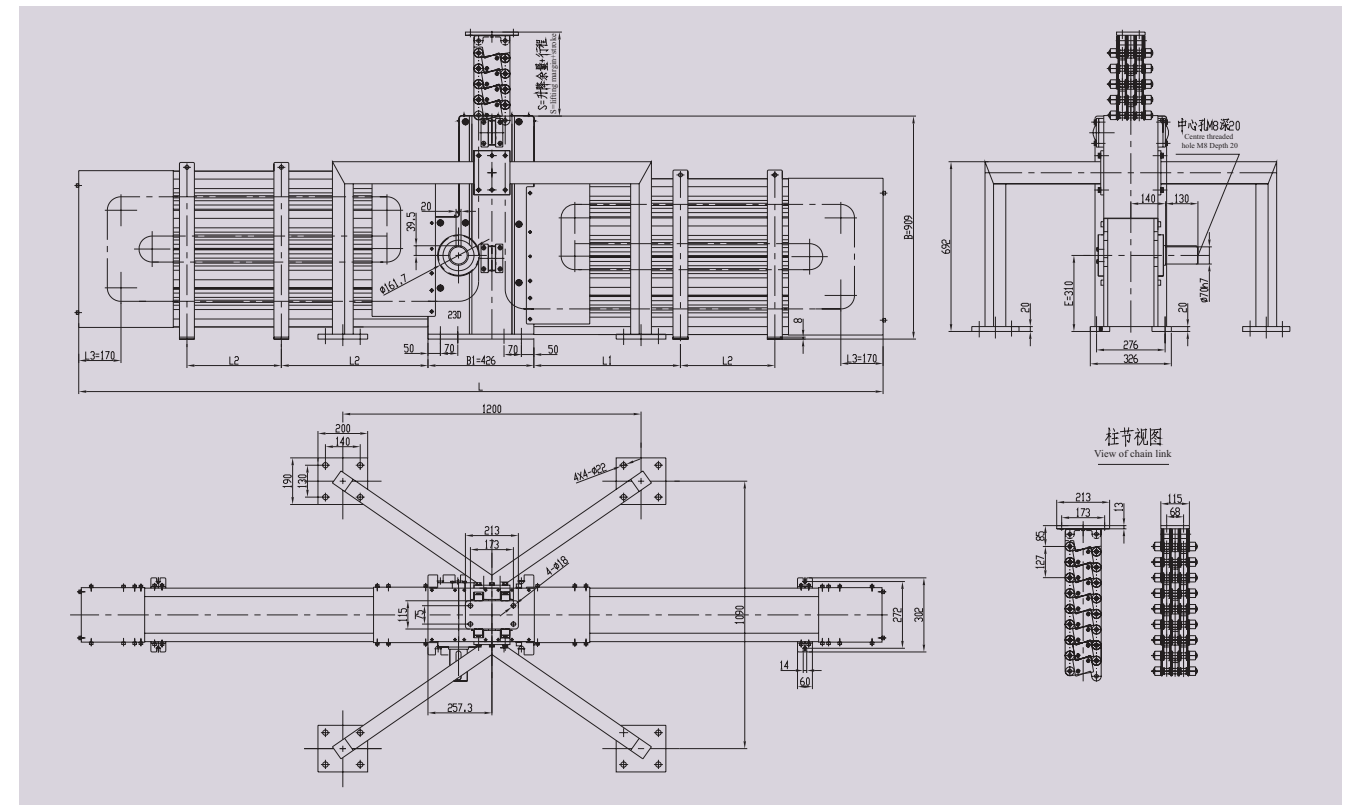


23D 三层存储箱刚性柱外形尺寸 23D Triple-layer RCL Dimensions

23D 三层存储箱刚性柱 23D Triple-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
85	127	426	400
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
4520 ~ 4403	3546	1200 (可调 adjustable)	
4091 ~ 4022	3466	1100 (可调 adjustable)	
3663 ~ 3641	3226	1000 (可调 adjustable)	
3235 ~ 3260	2966	900 (可调 adjustable)	
2663 ~ 2879	2706	700 (可调 adjustable)	
2235 ~ 2371	2366	600 (可调 adjustable)	
1807 ~ 1609	2106	450 (可调 adjustable)	
1235 ~ 1806	1866	350 (可调 adjustable)	
<1234	可选双层或单层存储箱 Suitable for double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

23D 四层存储箱刚性柱外形图

23D Four-layer RCL Outline Drawing



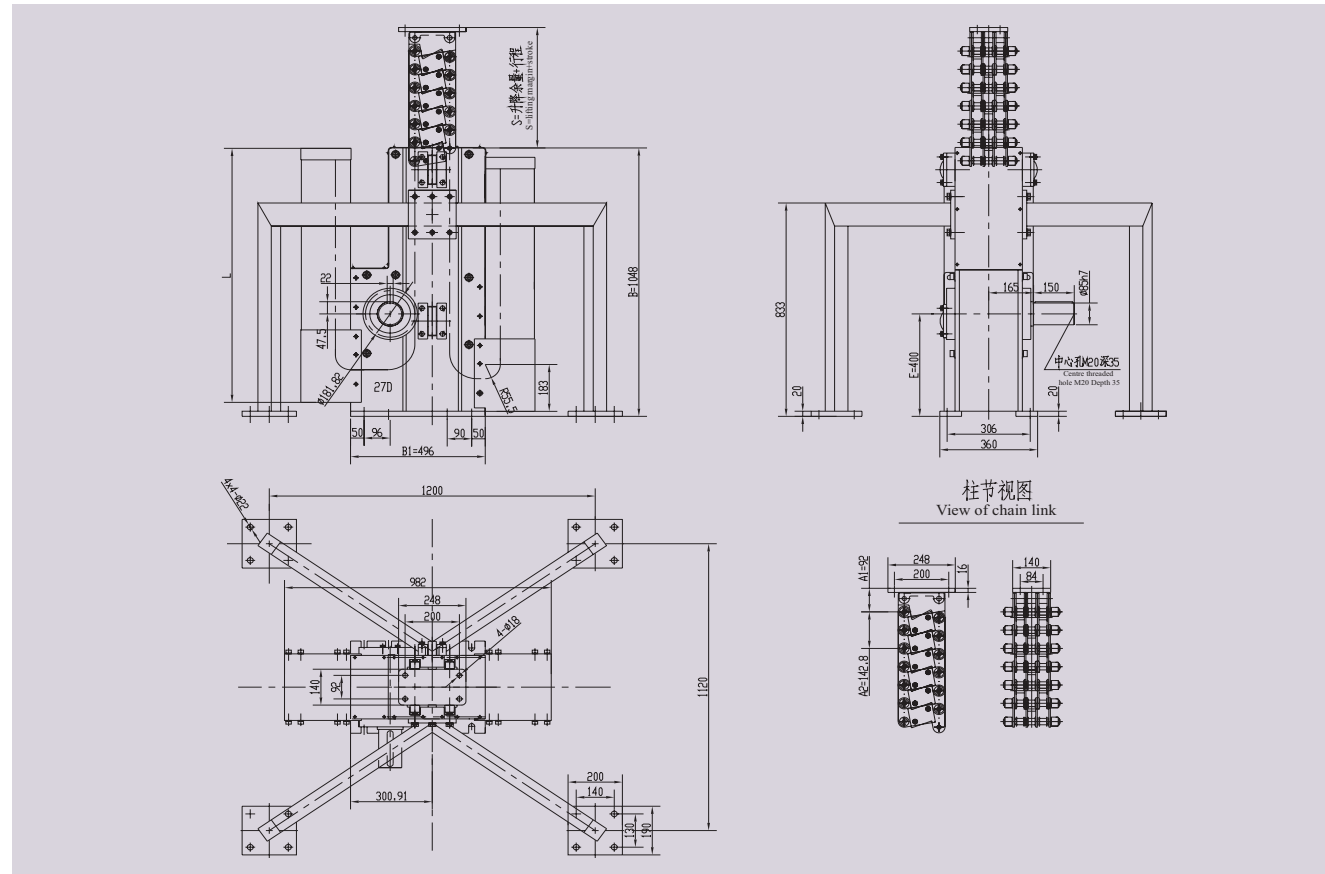
23D 四层存储箱刚性柱外形尺寸 23D Four-layer RCL Dimensions

23D 四层存储箱刚性柱 23D Four-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
85	127	426	400
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
5293 ~ 5800	3666	1100 (可调 adjustable)	
4785 ~ 5292	3426	1000 (可调 adjustable)	
4277 ~ 4784	3166	900 (可调 adjustable)	
3642 ~ 4276	2926	750 (可调 adjustable)	
<3641	可选三层、双层或单层存储箱 Suitable for triple/double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

8.3. 27D 刚性柱 27D Rigid Column Lift

27D 单层存储箱刚性柱外形图

27D Single-layer RCL Outline Drawing

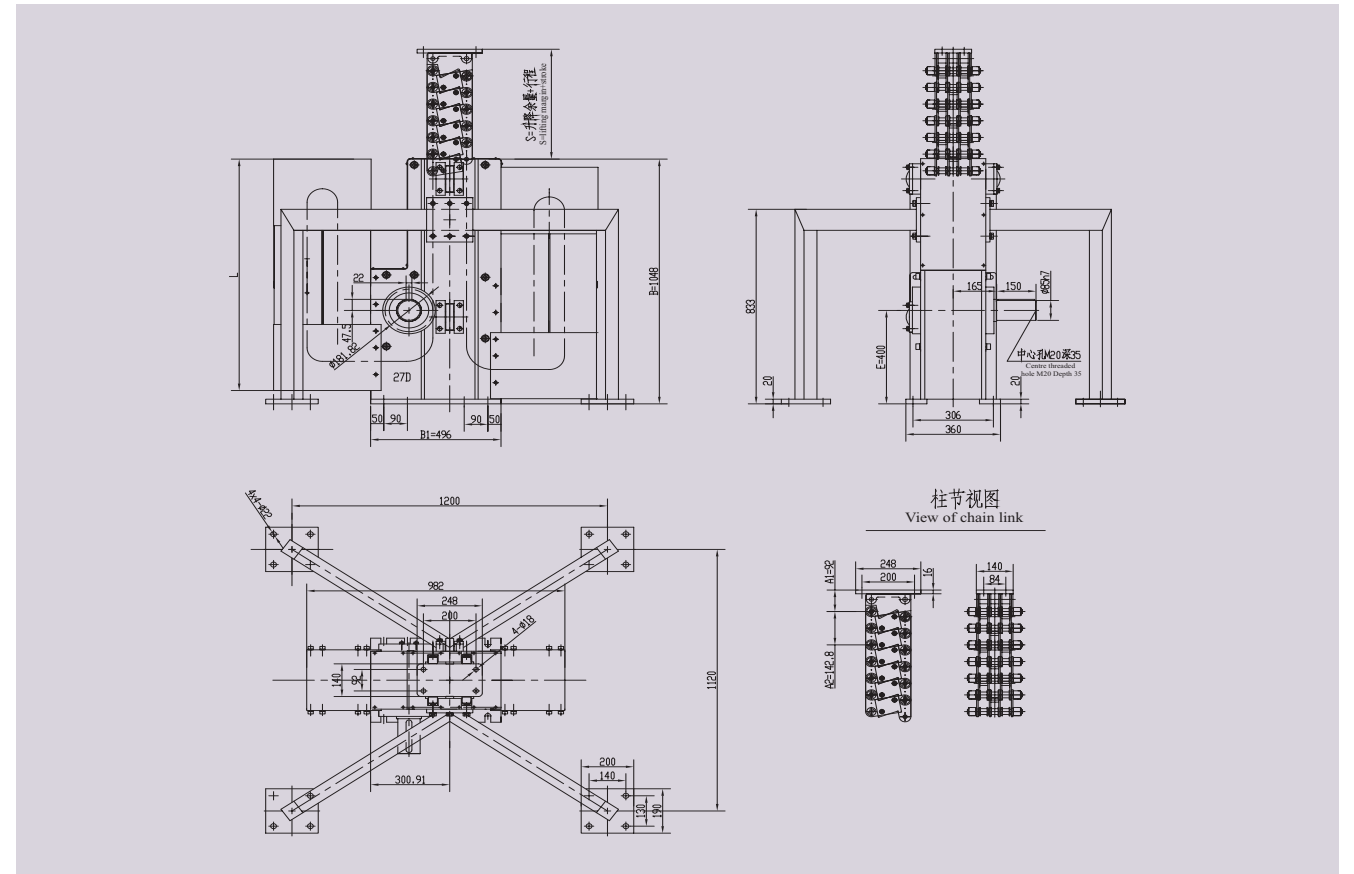


27D 单层、双层存储箱刚性柱外形尺寸 27D Double/Single-layer RCL Dimensions

27D 双层、单层存储箱刚性柱 27D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
92	142.8	496	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
1093 ~ 1377	890	521 ~ 806	950
897 ~ 1092	750	<520	660
521 ~ 896	610		
<520	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

27D 双层存储箱刚性柱外形图

27D Double-layer RCL Outline Drawing

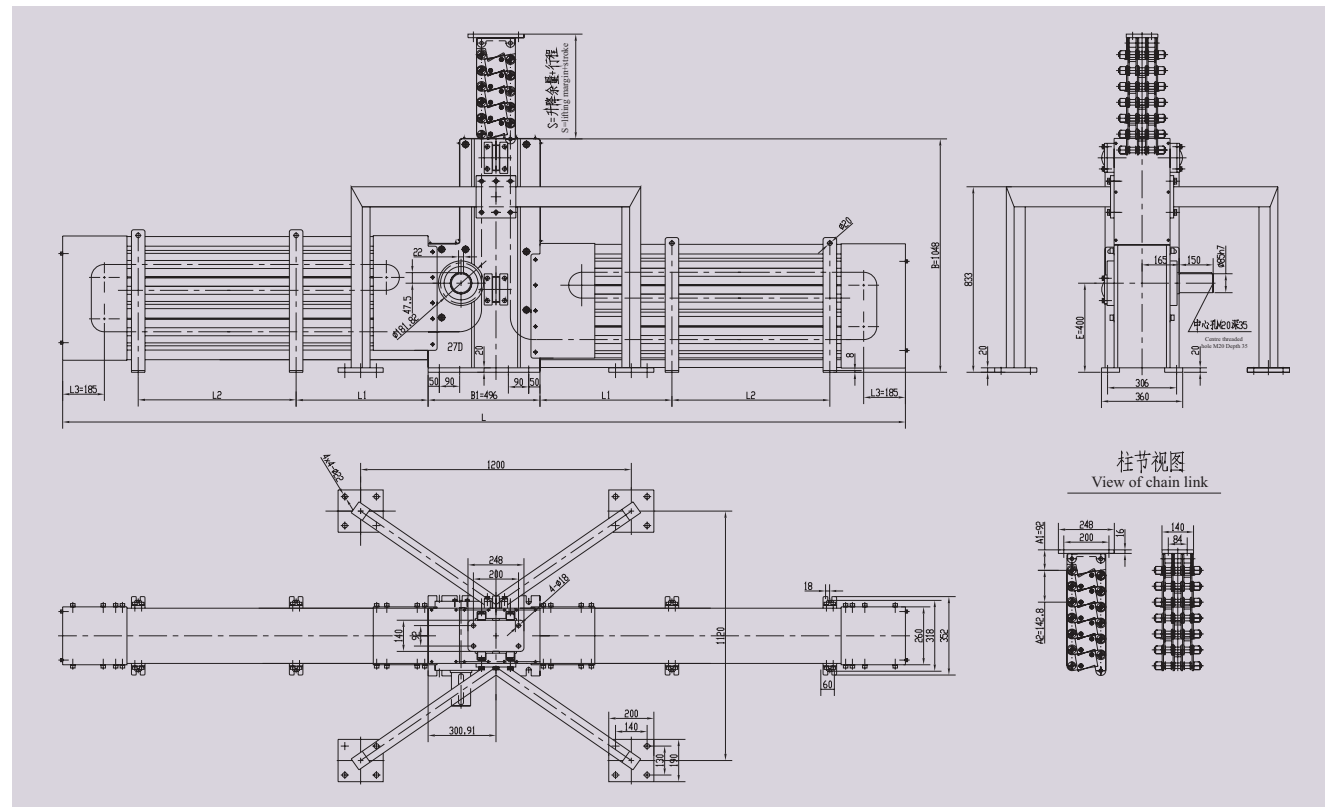


27D 单层、双层存储箱刚性柱外形尺寸 27D Double/Single-layer RCL Dimensions

27D 双层、单层存储箱刚性柱 27D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
92	142.8	496	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
1093 ~ 1377	890	521 ~ 806	950
897 ~ 1092	750	<520	660
521 ~ 896	610		
<520	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

27D 三层存储箱刚性柱外形图

27D Triple-layer RCL Outline Drawing

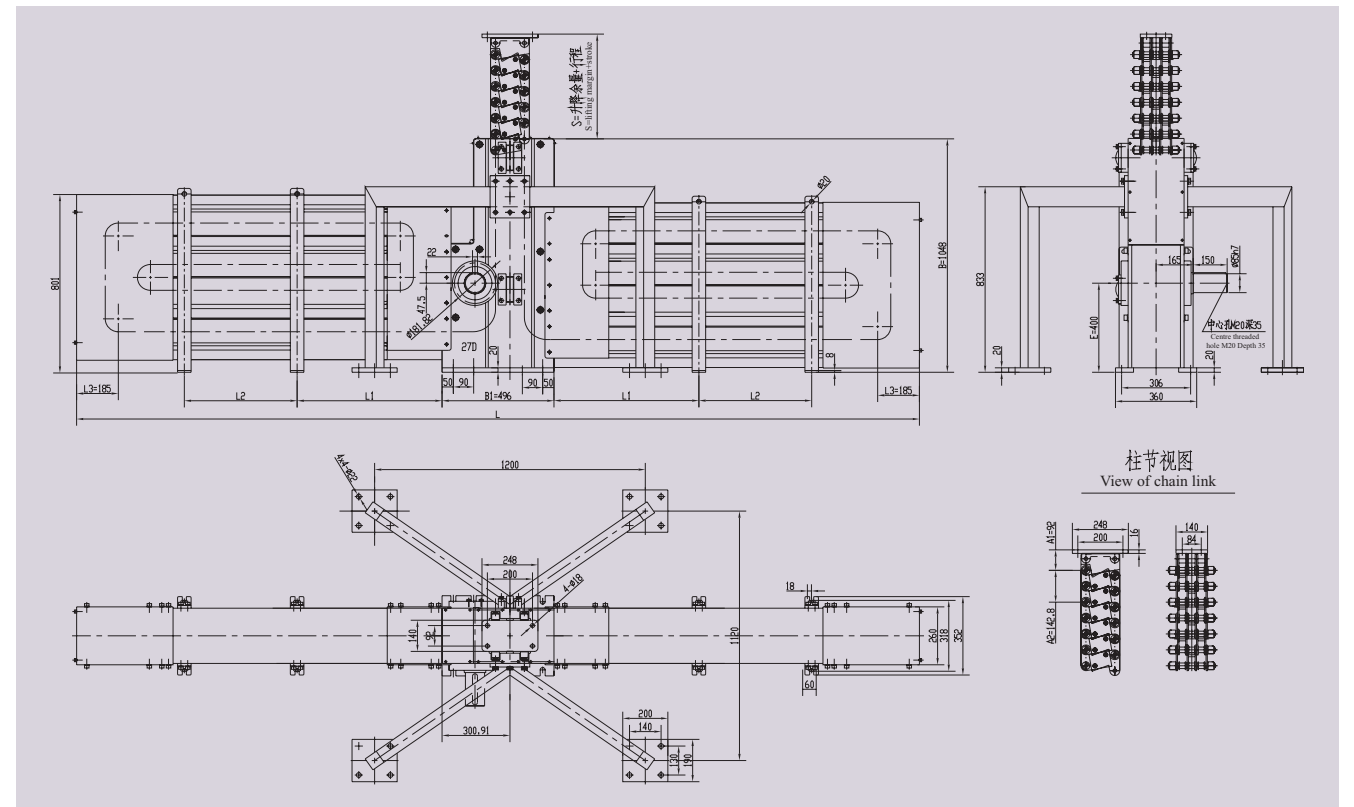


27D 三层存储箱刚性柱外形尺寸 / 27D Triple-layer RCL Dimensions

27D 三层存储箱刚性柱 / 27D Triple-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
92	142.8	496	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
4520 ~ 4947	4176	1400 (可调 adjustable)	
4091 ~ 4519	3896	1300 (可调 adjustable)	
3663 ~ 4090	3616	1100 (可调 adjustable)	
3235 ~ 3662	3316	1000 (可调 adjustable)	
2663 ~ 3234	3036	800 (可调 adjustable)	
2235 ~ 2662	2656	700 (可调 adjustable)	
1807 ~ 2234	2376	550 (可调 adjustable)	
1235 ~ 1806	2096	400 (可调 adjustable)	
<1234	可选双层或单层存储箱 Suitable for double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

27D 四层存储箱刚性柱外形图

27D Four-layer RCL Outline Drawing



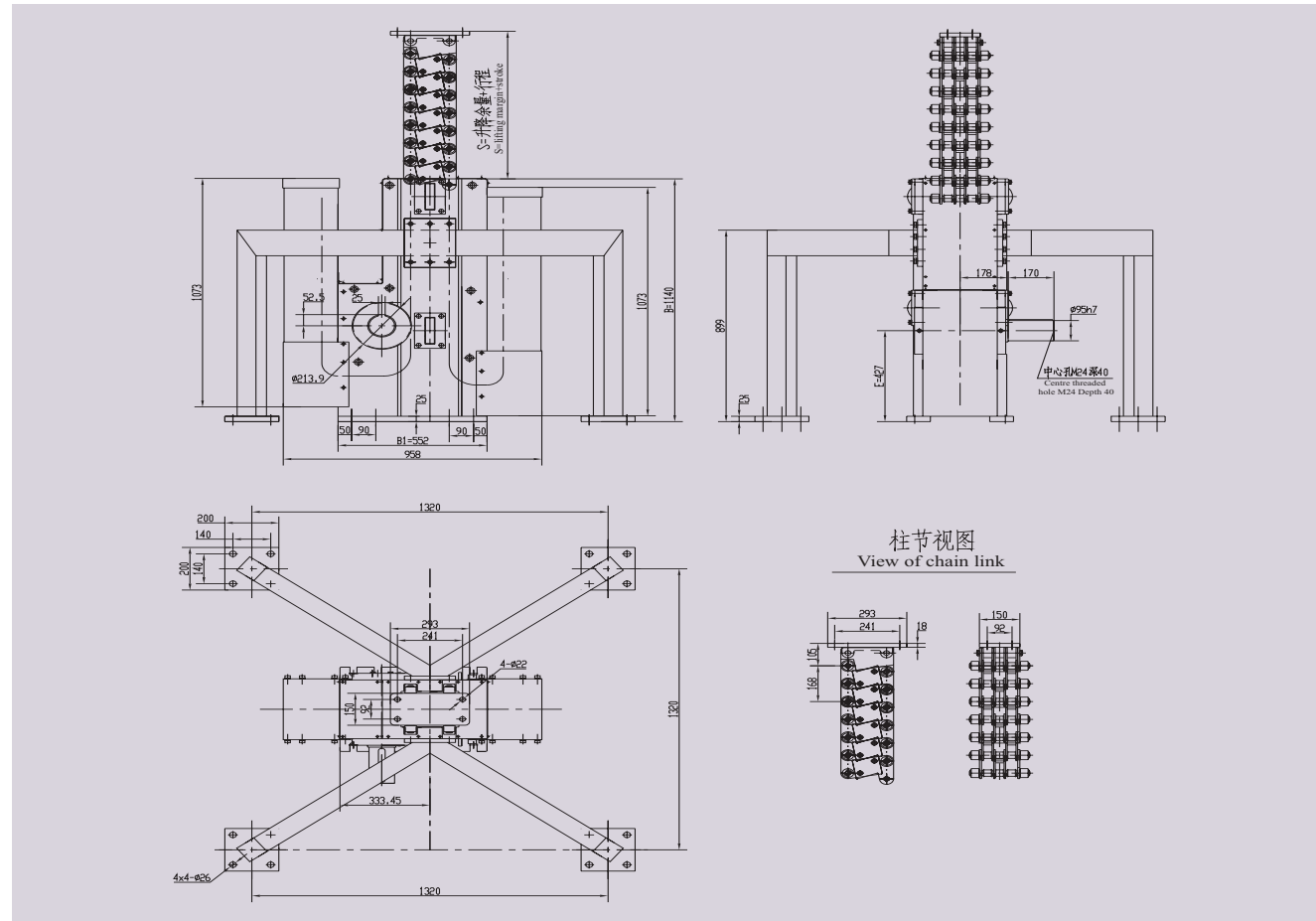
27D 四层存储箱刚性柱外形尺寸 / 27D Four-layer RCL Dimensions

27D 四层存储箱刚性柱 / 27D Four-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
92	142.8	496	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	
5948 ~ 6518	4156	1200 (可调 adjustable)	
5377 ~ 5947	3896	1100 (可调 adjustable)	
4805 ~ 5376	3616	950 (可调 adjustable)	
4091 ~ 4804	3216	800 (可调 adjustable)	
<4090	可选三层、双层或单层存储箱 Suitable for triple/double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

8.4. 31D 刚性柱 31D Rigid Column Lift

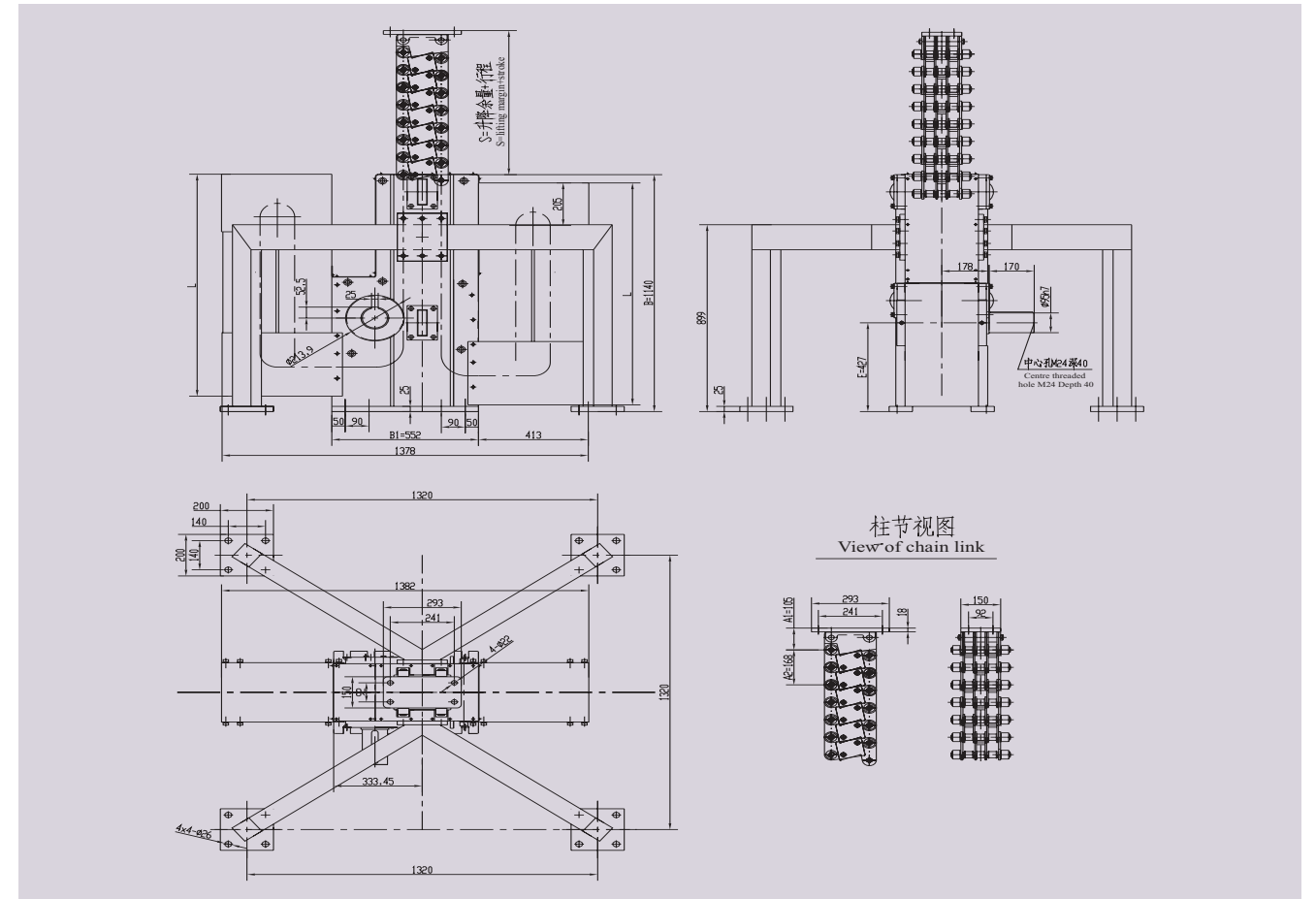
31D 单层存储箱刚性柱外形图

31D Single-layer RCL Outline Drawing



31D 双层存储箱刚性柱外形图

31D Double-layer RCL Outline Drawing



31D 单层、双层存储箱刚性柱外形尺寸 31D Double/Single-layer RCL Dimensions

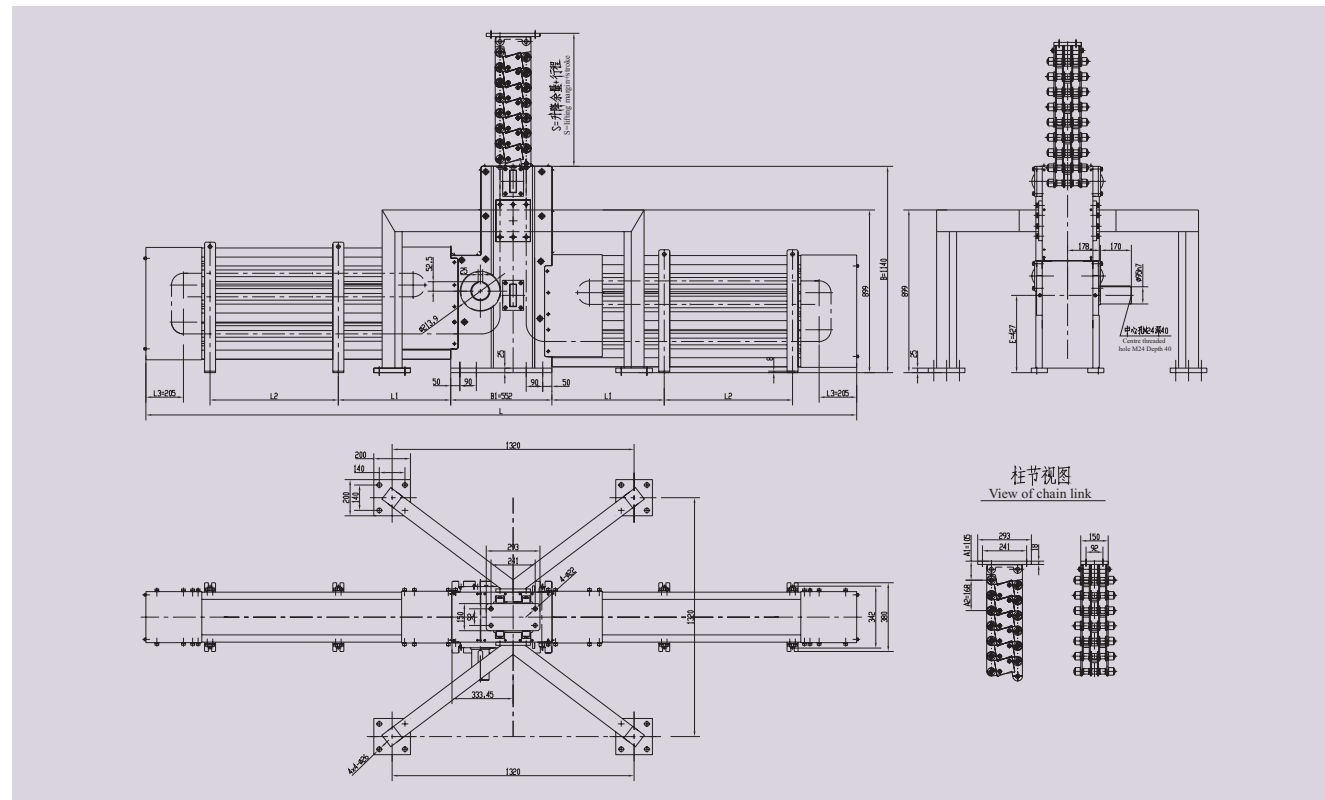
31D 双层、单层存储箱刚性柱 31D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
105	168	552	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
12820 ~ 1617	1030	442 ~ 777	940
946 ~ 1281	860	<441	600
610 ~ 945	690		
<609	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

31D 单层、双层存储箱刚性柱外形尺寸 31D Double/Single-layer RCL Dimensions

31D 双层、单层存储箱刚性柱 31D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
105	168	552	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
12820 ~ 1617	1030	442 ~ 777	940
946 ~ 1281	860	<441	600
610 ~ 945	690		
<609	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

31D 三层存储箱刚性柱外形图

31D Triple-layer RCL Outline Drawing

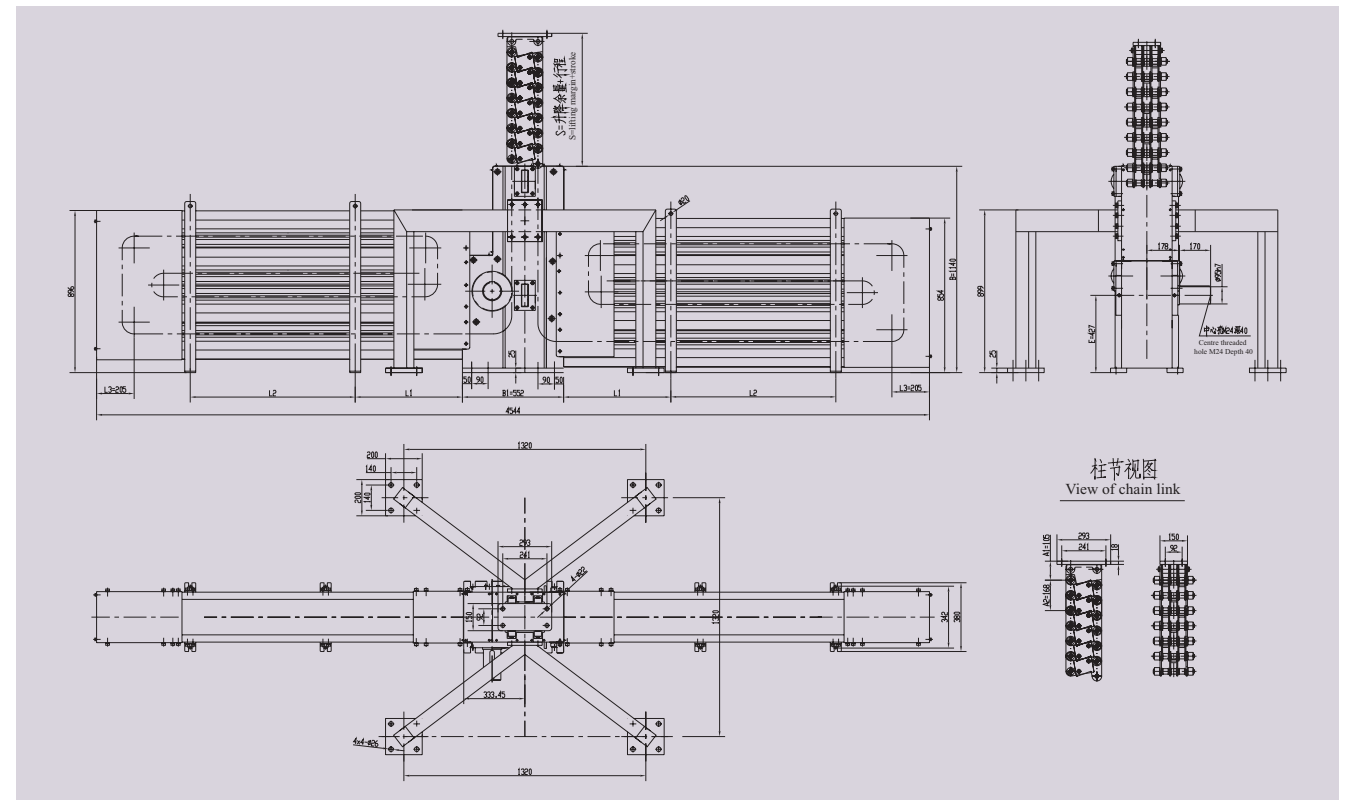


31D 三层存储箱刚性柱外形尺寸 31D Triple-layer RCL Dimensions

31D 三层存储箱刚性柱 31D Triple-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
105	168	552	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	L2 (mm)
5818 ~ 6321	5192	1200 (可调 adjustable)	700 (可调 adjustable)
5314 ~ 5817	4852	1200 (可调 adjustable)	500 (可调 adjustable)
4810 ~ 5313	4532	1500 (可调 adjustable)	
4306 ~ 4809	4192	1400 (可调 adjustable)	
3802 ~ 4305	3852	1200 (可调 adjustable)	
3130 ~ 3801	3512	1000 (可调 adjustable)	
2626 ~ 3129	3072	850 (可调 adjustable)	
1618 ~ 2625	2732	600 (可调 adjustable)	
<1617	可选双层或单层存储箱 Suitable for double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

31D 四层存储箱刚性柱外形图

31D Four-layer RCL Outline Drawing



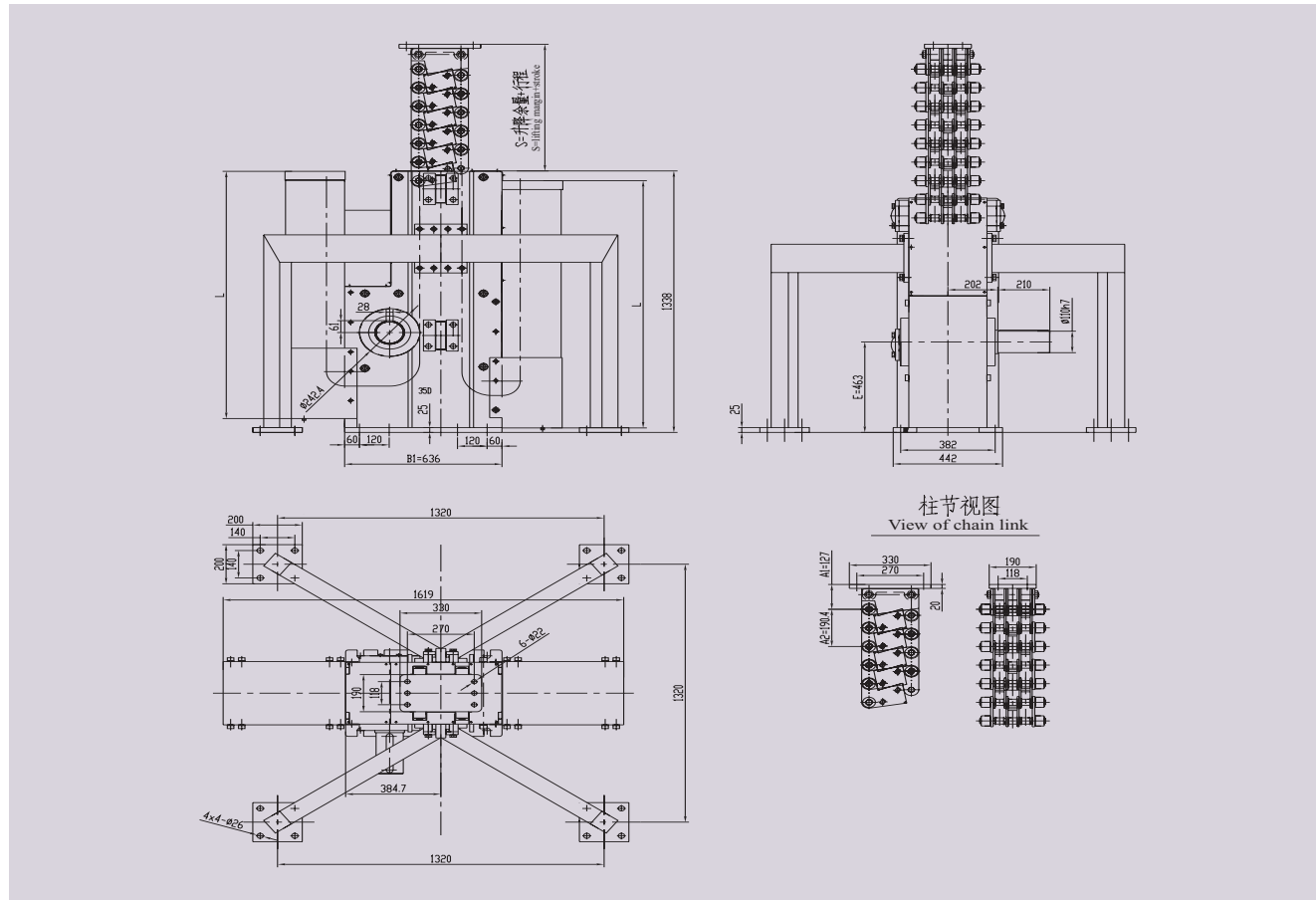
31D 四层存储箱刚性柱外形尺寸 31D Four-layer RCL Dimensions

31D 四层存储箱刚性柱 31D Four-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
105	168	552	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	L2 (mm)
7666 ~ 8337	5132	1200 (可调 adjustable)	500 (可调 adjustable)
6994 ~ 7665	4812	1500 (可调 adjustable)	
6322 ~ 6993	4472	1300 (可调 adjustable)	
5650 ~ 6321	4132	1200 (可调 adjustable)	
4810 ~ 5649	3792	1000 (可调 adjustable)	
<4809	可选三层、双层或单层存储箱 Suitable for triple/double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

8.5. 35D 刚性柱 35D Rigid Column Lift

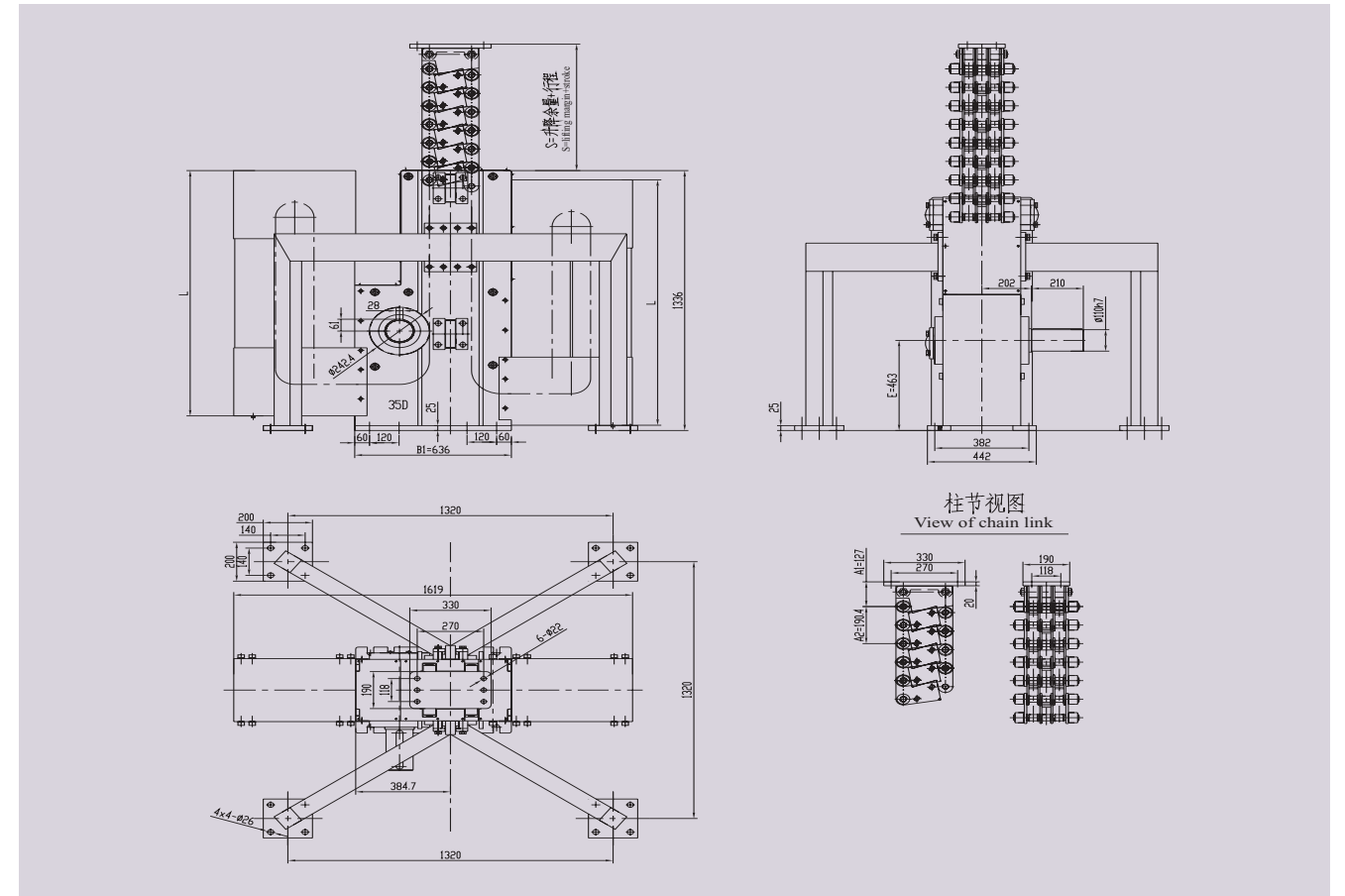
35D 单层存储箱刚性柱外形图

35D Single-layer RCL Outline Drawing



35D 双层存储箱刚性柱外形图

35D Double-layer RCL Outline Drawing



35D 单层、双层存储箱刚性柱外形尺寸 35D Double/Single-layer RCL Dimensions

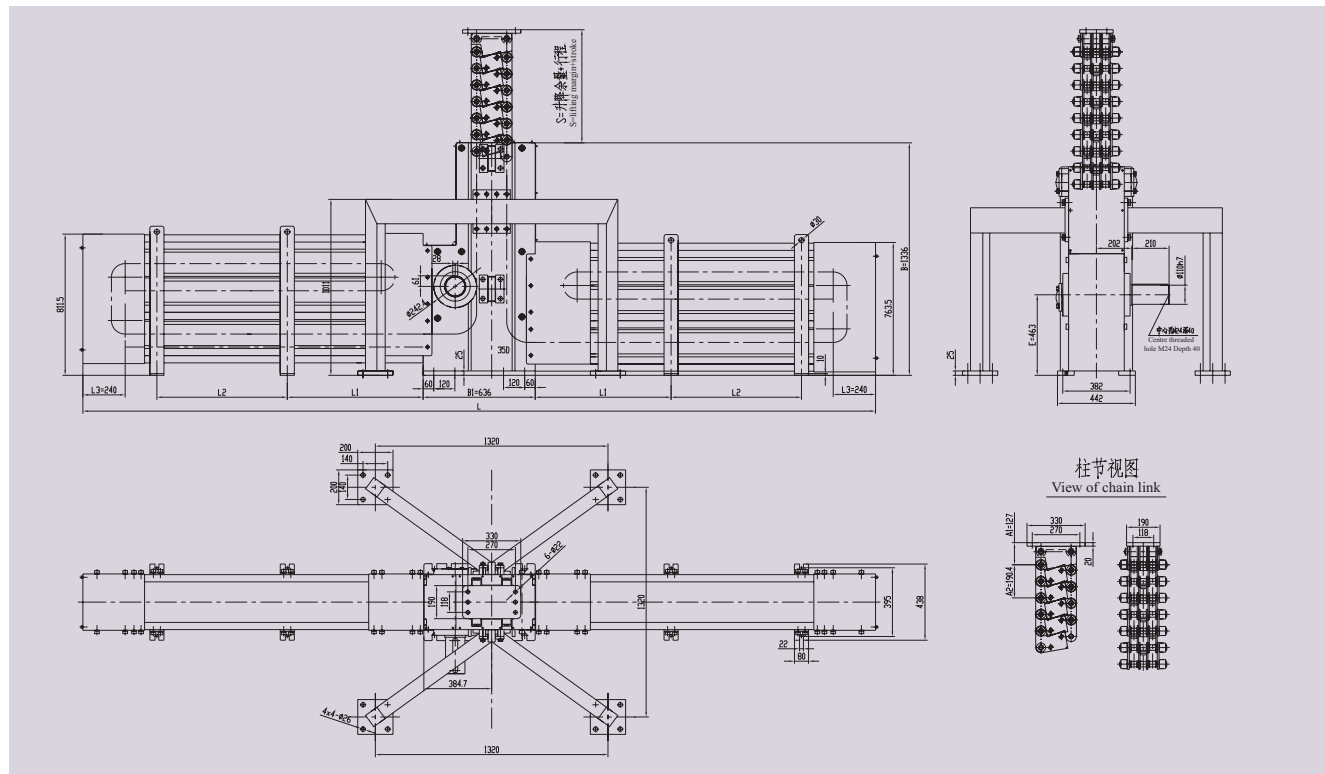
35D 双层、单层存储箱刚性柱 35D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
127	190.4	636	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
1651 ~ 2031	1260	1651 ~ 1079	1260
1270 ~ 1650	1080	<668	880
890 ~ 1269	890		
<889	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

35D 单层、双层存储箱刚性柱外形尺寸 35D Double/Single-layer RCL Dimensions

35D 双层、单层存储箱刚性柱 35D Double/Single-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
127	190.4	636	500
双层 Double-layer		单层 Single-layer	
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL
	L (mm)		L (mm)
1651 ~ 2031	1260	1651 ~ 1079	1260
1270 ~ 1650	1080	<668	880
890 ~ 1269	890		
<889	可选单层存储箱 Suitable for single-layer storage tube		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

35D 三层存储箱刚性柱外形图

35D Triple-layer RCL Outline Drawing

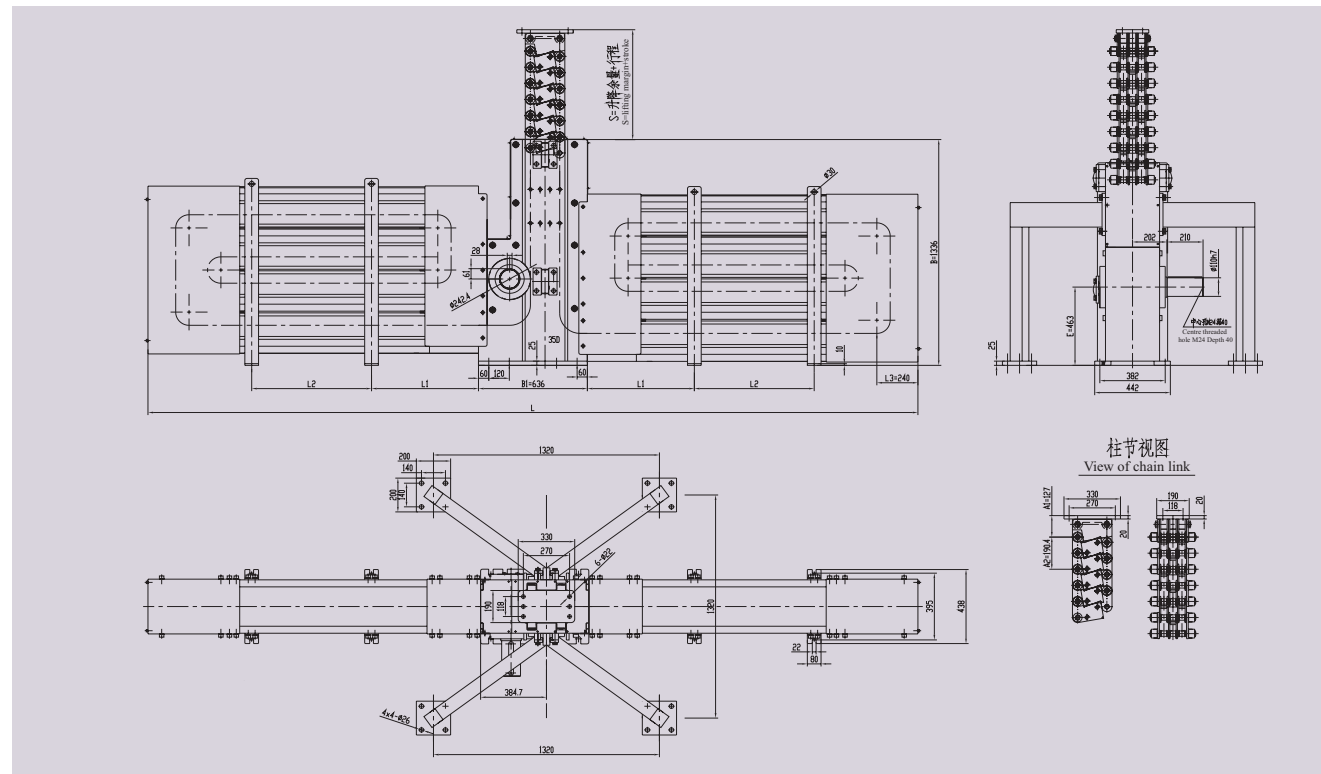


35D 三层存储箱刚性柱外形尺寸 35D Triple-layer RCL Dimensions

35D 三层存储箱刚性柱 35D Triple-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
127	190.4	636	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	L2 (mm)
7173 ~ 7743	6296	1200 (可调 adjustable)	1100 (可调 adjustable)
6602 ~ 7172	5916	1200 (可调 adjustable)	900 (可调 adjustable)
6030 ~ 6601	5516	1200 (可调 adjustable)	800 (可调 adjustable)
5459 ~ 6029	5136	1200 (可调 adjustable)	600 (可调 adjustable)
4888 ~ 5458	4756	1600 (可调 adjustable)	
4317 ~ 4887	4396	1400 (可调 adjustable)	
3555 ~ 4316	3996	1200 (可调 adjustable)	
2984 ~ 3554	3496	900 (可调 adjustable)	
2413 ~ 2983	3116	700 (可调 adjustable)	
1842 ~ 2412	2736	600 (可调 adjustable)	
<1841	可选双层或单层存储箱 Suitable for double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。			
S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

35D 四层存储箱刚性柱外形图

35D Four-layer RCL Outline Drawing



35D 四层存储箱刚性柱外形尺寸 35D Four-layer RCL Dimensions

35D 四层存储箱刚性柱 35D Four-layer RCL			
头节柱节 Pitch of First Chain Link A1 (mm)	柱节 Chain Link Pitch A2 (mm)	B1 (mm)	建议升降总余量 Recommended Total Lifting Margin (mm)
127	190.4	636	500
柱节总长度 Total Pitch of Chain Link S (mm)	刚性柱长度 Pitch of RCL	安装尺寸 Installation Dimensions	
	L (mm)	L1 (mm)	L2 (mm)
9458 ~ 10409	6316	1200 (可调 adjustable)	1000 (可调 adjustable)
8696 ~ 9457	5836	1200 (可调 adjustable)	700 (可调 adjustable)
7934 ~ 8695	5476	1200 (可调 adjustable)	500 (可调 adjustable)
7173 ~ 7933	5076	1500 (可调 adjustable)	
6111 ~ 7172	4696	1300 (可调 adjustable)	
5459 ~ 6410	4316	1100 (可调 adjustable)	
<4809	可选三层、双层或单层存储箱 Suitable for triple/double/single-layer		
S= 行程 + 升、降余量 =A1+N×A2, 其中 N 为所需柱节数。 S= stroke + lifting margin = A1 + N x A2, where N is the number of chain link required.			

9. 使用要求

- 柔性柱安装应由具备机械安装资质的技术人员完成。
- 安装人员必须遵守柔性柱限定的安装参数及性能要求。
- 参数、载荷行程和速度不应超过选用柔性柱的规定参数。
- 当柔性柱运行到最低位置时，柔性柱的连接座不应与传动箱上表面接触，当运行到柔性柱的警示线——黄线必须减速，当运行到最大行程时不应超过柔性柱标识的红线（停止线），如右图所示。
- 任何维护工作都应由符合资质的技术人员完成。
- 任何被拆除的安全装置，在恢复重启之前，必须重新安装在升降系统中。
- 运行前必须安装好限位、极限位开关，避免操作失误的事故发生。
- 在运行前，必须安装足够强的升降导向系统。
- 柔性柱不允许直接举升人员，如有特殊要求，请致电垂询确认。



9. Operation Requirements

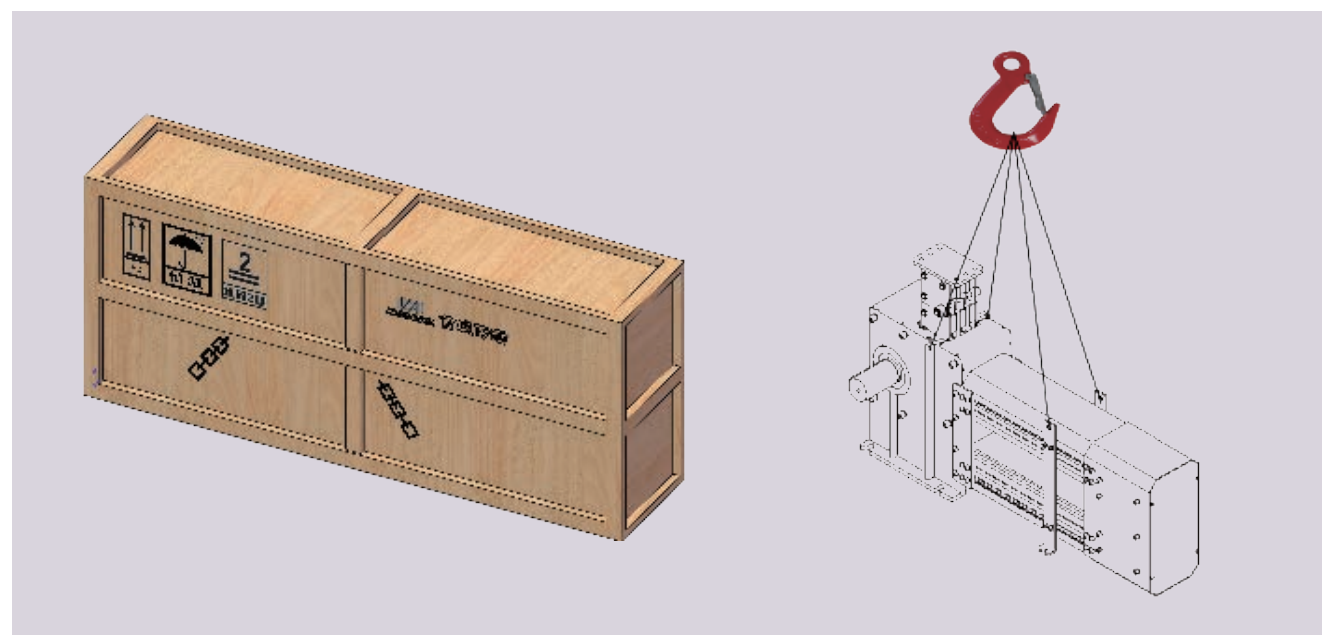
- The installation of Column Lift should be carried out by technicians with mechanical installation qualifications.
- Installation personnel must comply with the installation parameters and performance requirements specified for Column Lift.
- The parameters, load, stroke and speed should not exceed those specified for Column Lift selected.
- When Column Lift reaches its lowest position, the connecting seat should not be in contact with the upper surface of drive housing. When reaching the warning line of Column Lift - the yellow line - it must slow down. When reaching the maximum stroke it should not exceed the red line (stop line) marked on Column Lift, as shown in the diagram on the right.
- Any maintenance work should be carried out by a qualified technician.
- Any removed safety devices must be reinstalled in the lifting system before resuming restarts.
- Limit switch and extreme limit switch must be installed before operation to avoid accidents caused by operating errors.
- Before operation, a sufficiently strong lifting guide system must be installed.
- Column Lift does not allow direct lifting of personnel. Please call us for confirmation if you have special requirements.



10. 吊装和安装

起重吊装时应注意以下情况：

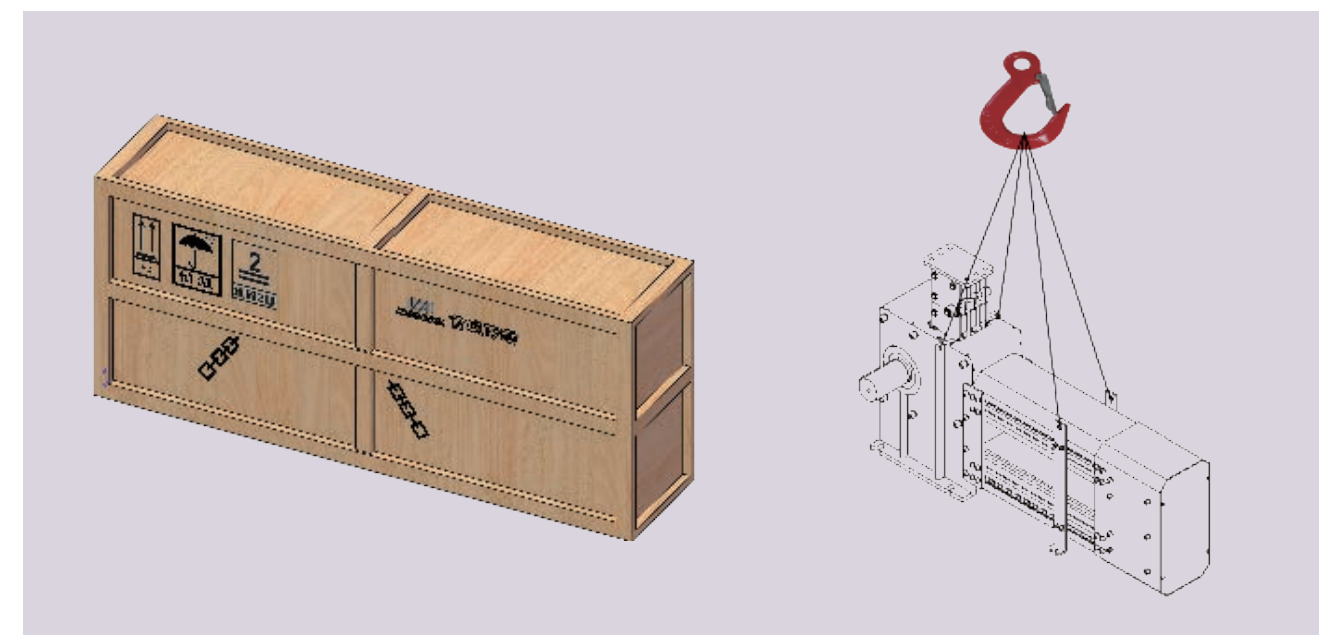
- 吊装前，找好运输箱的正确方向放平，然后拆箱。
- 四吊点平衡起吊，严禁两点起吊。



10. Lifting & Installation

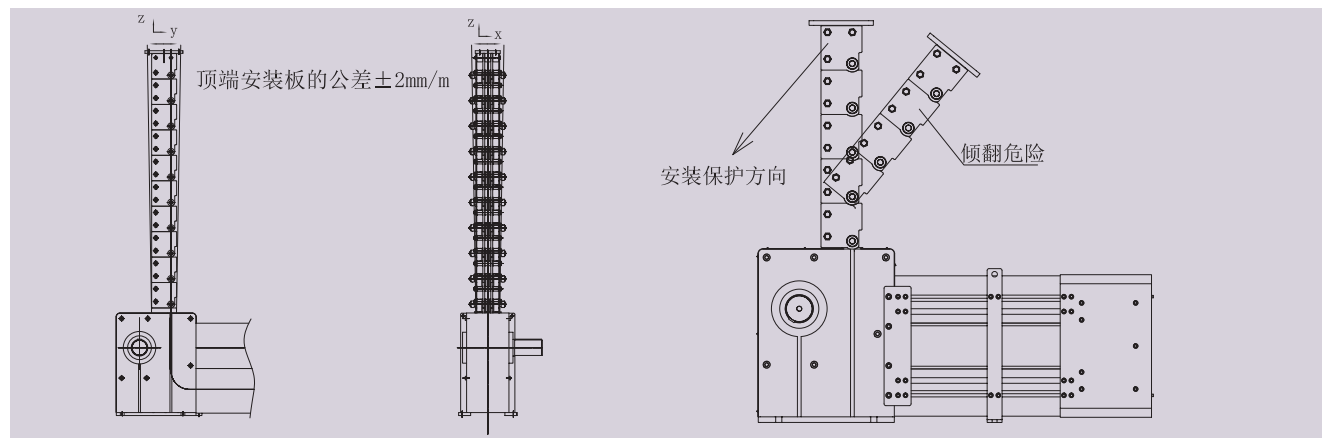
Attention should be paid to the following situations when lifting and hoisting.

- Before lifting, find the correct direction for the packing case and lay it flat, then unpack it.
- Balanced lifting at four points shall be obeyed while two-point lifting is strictly prohibited.



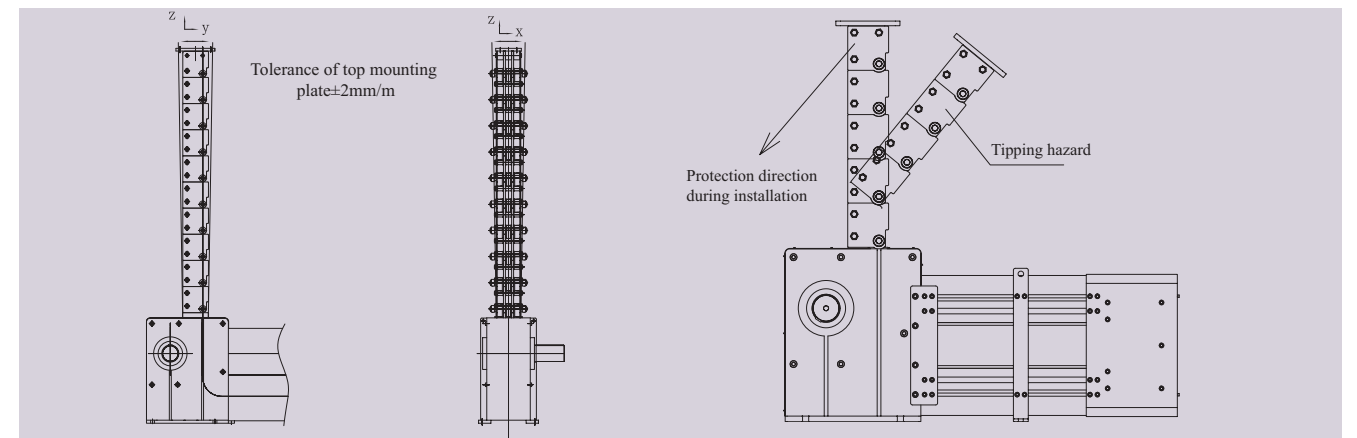
为了保证柔性传动柱装置的稳定性和优化的性能，安装时必须遵照以下要求：

- 在柱节连接座与结构体之间增加一块橡胶垫，橡胶垫厚度与柱节连接座连接板厚度相当。
- 顶端的安装板必须与升降台呈刚性连接，柱节连接座与结构体的连接位置的螺栓等级为 8.8 级，正常情况下不提供旋转附件（如有特殊需求，请致电垂询）。
- 传动箱必须与基座牢固地连接，不能有任何间隙，且必须与顶部的安装板在水平方向平行，传动箱与地面结构连接时的螺栓等级为8.8级。
- 柱节存储箱与地面结构连接时的螺栓等级不小于4.8级。
- 载荷的传送路径必须是垂直的，并且与柔性柱平行。
- 传动箱安装水平方向找正：以传动箱上面做基准，允差小于0.5mm。
- 柔性柱垂直找正：以柱节导向滚子圆面和柱节链板侧面做基准，对垂直度和扭曲度进行检验。
- 垂直度：
 - 1) $S \leq 1\text{m}$ ，为 $\pm 1\text{mm/m}$
 - 2) $1\text{m} < S < 2\text{m}$ ，为 $\pm 1\text{mm/m}$ 、 $\pm 2\text{mm/全行程}$
 - 3) $S > 2\text{m}$ ，为 $\pm 1\text{mm/m}$ 、 $\pm 3\text{mm/全行程}$
- 设备安装过程中对柔性柱和传动箱进行覆盖、保护，以免异物进入或者污染。
- 升降台必须安装与柔性柱方向一致的导向系统，不允许有水平方向的运动。
- 柔性柱由柱节通过轴组装起来，所有的零部件都经过了预先润滑，具有抗腐蚀性的作用。
- 为确保使用时杂物不卷入传动箱内影响传动，柱节内的滚子可用重型齿轮油润滑，不建议使用润滑脂。环境较好的工况可以在滚子链上加少量的润滑脂润滑。
- 柔性柱为单向刚性体，安装必须避免下图出现的危险。
- 通电试运行，采用低速、点动以确认运行方向；上行程限位开关调整到最低，下行程开关调整到最高，运行顺畅后逐步调整行程开关到正确位置；调整下限位时，不得超出柱节尾部红色的警示线。
- 柱节连接座在下降到最低位置时，与滚子链传动箱之间预留足够的缓冲空间。柱节连接座在上升到最大高位置时，也需留出足够的余量，速度越快预留的余量越多，确保柔性柱运行安全。
- 为了保证柔性传动柱装置的运行安全，在运行前，必须安装保护用的安全行程开关，建议安全行程开关信号反馈到控制系统并显示。
- 柔性柱不能承受大的水平载荷，类似升降机或升降台等设备存在侧向载荷必须安装足够强的导向系统，如导轨、剪刀撑、导向柱等。
- 多组柔性传动柱装置安装时，优先考虑对称安装，有助于升降机或升降台的整体稳定性。



In order to ensure the stability and optimized performance of Column Lift, the following requirements must be followed during :

- Add a rubber between the chain link connecting seat and the structural body, with a thickness equivalent to that of the chain link connecting seat connecting plate.
- The top mounting plate must be rigidly attached to the lifting platform. The bolt grade for the attachment position of the column joint attachment seat to the structure is grade 8.8. Rotating accessories are not provided under normal circumstances (please call for inquiries due to special needs).
- The drive housing must be firmly attached to the base without any gaps and must be parallel to the top mounting plate in the horizontal direction. The bolt grade of connecting the driving case to the ground structure is 8.8.
- The bolt grade of connecting storage tube to the ground structure shall not be less than 4.8.
- The transmission path of the load must be vertical and parallel to Column Lift.
- Horizontal alignment of drive housing: use the top of the drive housing as a benchmark, with a tolerance of less than 0.5mm.
- Vertical alignment of Column Lift: use the circular surface of chain link guide roller and the side of the chain link plate as the benchmark to check the verticality and torsion.
- Perpendicularity.
 - 1) $\pm 1\text{mm/m}$ if $S \leq 1\text{m}$
 - 2) $\pm 1\text{mm/m}$, $\pm 2\text{mm/full travel}$ if $1\text{m} < S < 2\text{m}$
 - 3) $\pm 1\text{mm/m}$, $\pm 3\text{mm/full travel}$ if $S > 2\text{m}$
- Cover and protect Column Lift and drive housing during equipment installation to avoid the entry of other objects or contamination.
- The lifting platform must be equipped with a guiding system that is consistent with the direction of Column Lift, and horizontal movement is not allowed.
- Column Lift is assembled by chain link through shafts. All components and parts are pre-lubricated for corrosion resistance.
- To prevent the sundries from falling into drive housing, the rollers in the chain link can be lubricated with heavy duty gear oil. Lubricating grease is not recommended. A small amount of grease can be added to the roller chain for lubrication under good working conditions.
- Column Lift is a unidirectional rigid body and installation must avoid danger from appearing as shown in the picture below.
- During powered on trial operation, use low speed and jogging to confirm the operation direction. Adjust the upper travel limit switch to the lowest position, the down travel switch to the highest position, and gradually adjust the travel switch to the correct position after smooth operation. When adjusting the lower limit, do not exceed the red warning line at the end of the chain link.
- When chain link connecting seat is lowered to the lowest position, sufficient buffer space is reserved between connecting seat and the roller chain drive housing. When chain link connecting seat rises to the highest position, sufficient margin should also be left. The faster the speed, the more margin should be reserved to ensure the safe operation of Column Lift.
- In order to ensure the safe operation of Column Lift, a safety travel switch for protection must be installed before operation. It is recommended that the safety travel switch signal should be fed back to the control system and displayed.
- Column Lift cannot bear large horizontal loads, and equipment such as elevators or lifting platforms must be equipped with sufficiently strong guiding systems, such as guide rails, scissor-truss and guiding columns, when subjected to lateral loads.
- When installing multiple sets of Column Lift, priority should be given to symmetrical installation, which helps to ensure the overall stability of the elevator or lifting platform.

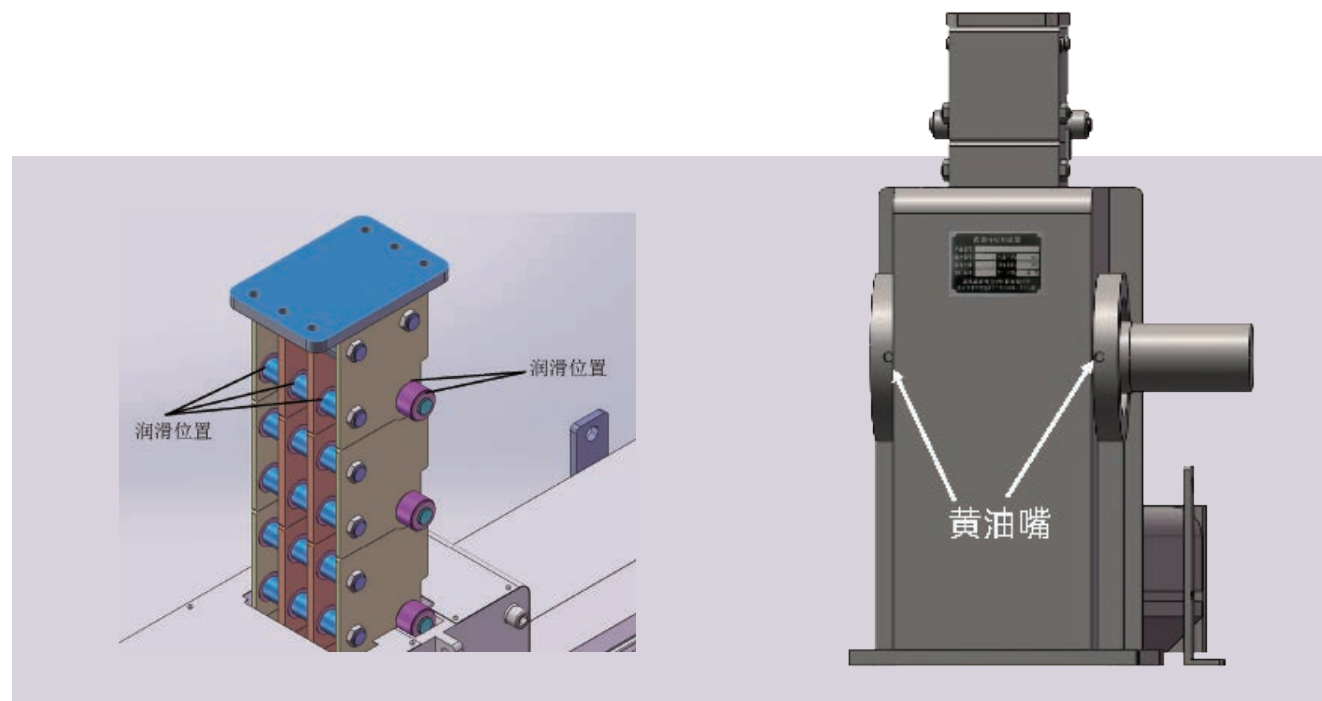


11. 维护

- 柔性传动柱装置在多次试运行后，需调整柔性柱的垂直度，保证柱节正常入传动箱；根据运行使用情况定期检查，检查的方法同安装时的找垂直方法。
- 柔性柱加注少量的重型齿轮油润滑，柱节表面和滚子及滚子套刷油进行润滑和防锈，见左下图。
- 累计运行500小时后，传动箱油嘴加注润滑脂（3#锂基脂），见右下图。
- 每隔3个月检测柔性柱的垂直度，保证柔性柱的垂直度在使用范围内。
- 检查螺栓等紧固件的紧固情况。

12. 订购所需技术参数

我们会仔细研读每个订单，并确保所提供的升降系统完全符合您的要求。为此，我们需要您提供以下信息：升降台尺寸、有效行程、行程余量、静载荷、动载荷、升降台自重、升降速度、基坑深度、加速和减速等。

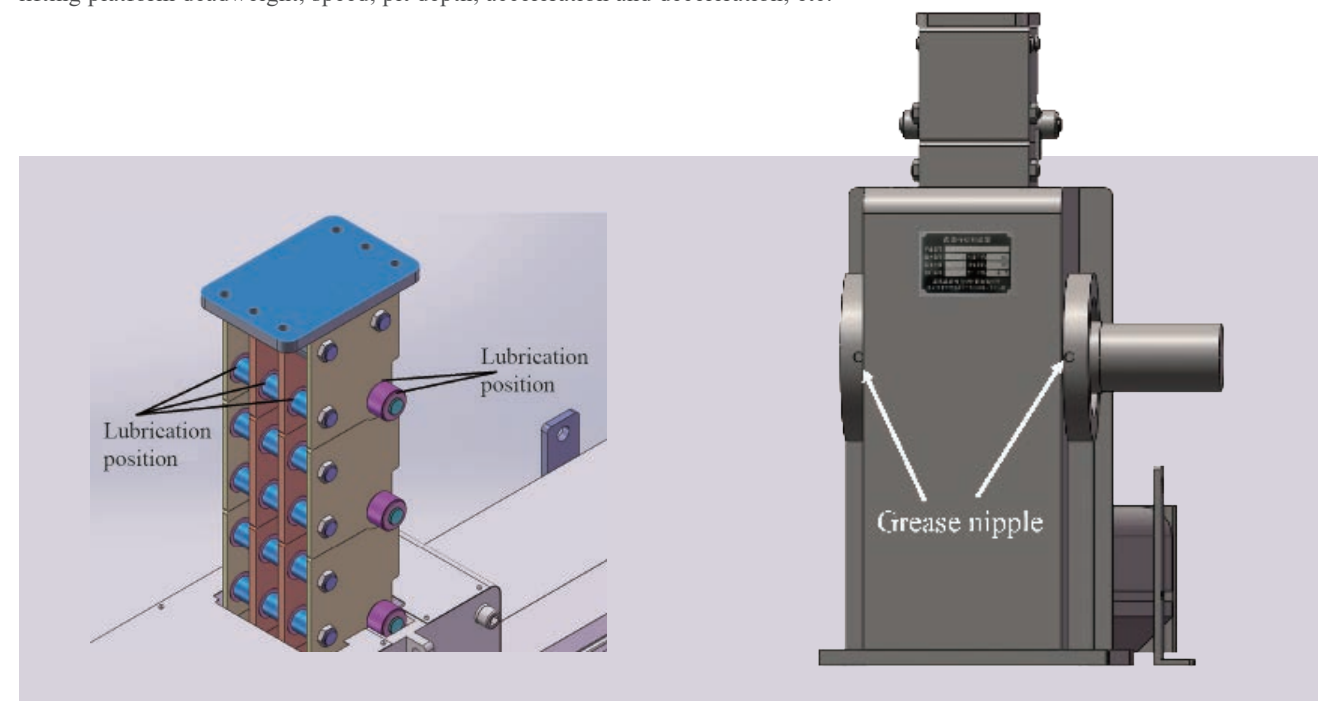


11.Maintenance

- After multiple trial runs of Column Lift, the verticality of lift needs to be adjusted to ensure that chain link enters the drive housing normally. Regularly inspect according to operation and usage, and the inspection method is the same as the vertical alignment method during installation.
- Column Lift is lubricated with a small amount of heavy duty gear oil and the chain link surface and rollers and roller sleeves are applied with oil for lubrication and rust prevention. See picture below on the left.
- After a total of 500 hours of operation, add lubricating grease to the oil nozzle of driving case (3# lithium grease). See picture below on the right.
- Check the verticality of Column Lift every 3 months to ensure that it is within the range of use.
- Check the tightness of bolts and other fasteners.

12.Technical Parameters Required for Ordering

We will carefully study each inquiry and order to ensure that the lifting system provided by us fully meet clients' requirements. Please provide the following information: lifting platform dimensions, effective stroke, stroke allowance, static load, dynamic load, lifting platform deadweight, speed, pit depth, acceleration and deceleration, etc.

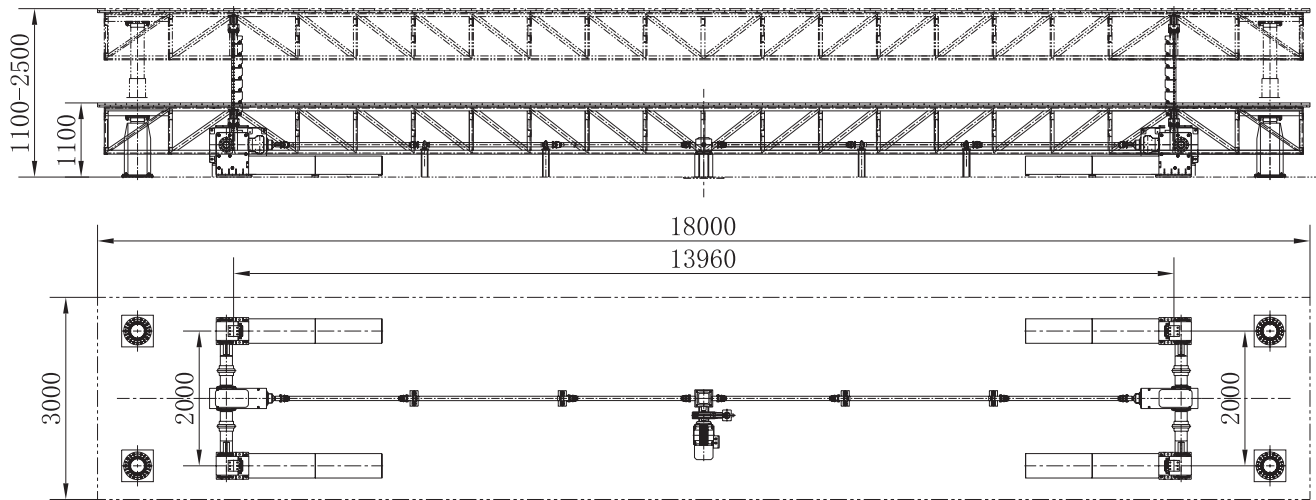


13. 设计案例

经典案例一

1) 技术参数：

台面尺寸	18×3m，有效面积：54m²
基坑的深度 (m)	1.1
工作行程 (m)	1.4
动载荷 (kN/m²)	1.00
静载荷 (kN/m²)	4.00
速度 (m/min)	6
导向系统	两级导向柱或剪刀撑
设备布置	见图



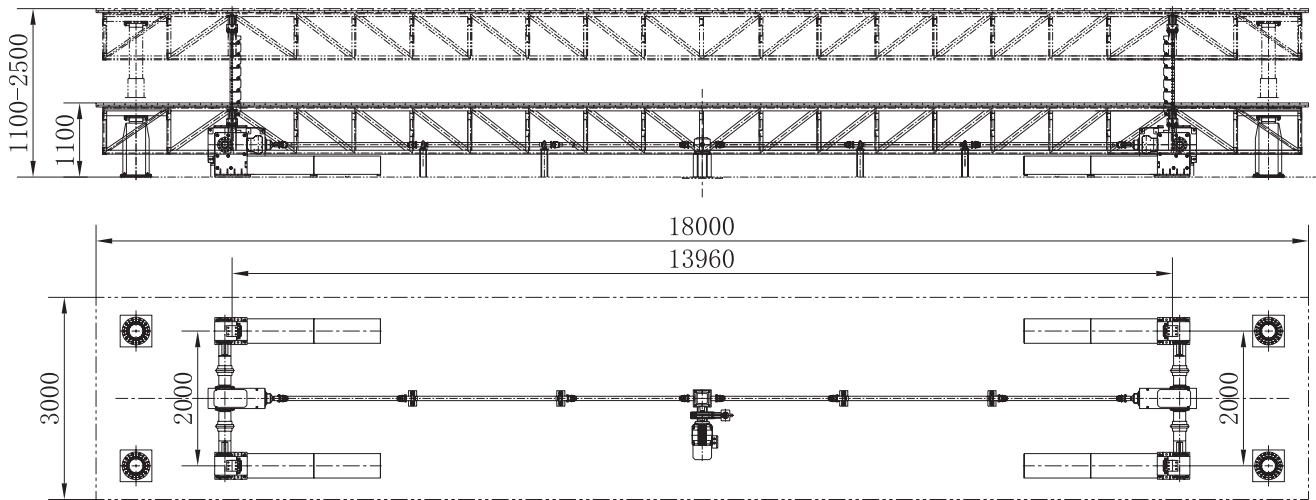
导向柱导向

13. Sample Proposal

Typical Case 1

1) Technical parameters:

Platform size	18×3m, effective area : 54m²
Depth of foundation pit (m)	1.1
Working stroke (m)	1.4
Dynamic load (kN/m²)	1.00
Static load (kN/m²)	4.00
Speed (m/min)	6
Guiding system	Two-stage guiding post or scissor-truss
Equipment layout	See picture for reference.



Guided by guiding post

2) 计算与选型：

动载荷 (kN)	$54 \times 1.00 = 54$
每平米结构载荷 (kN/m²)	2
结构自重载荷 (kN)	$54 \times 2.0 = 108$
总动载荷 (kN)	$54 + 108 = 162$
每根柔性柱动载荷 (kN)	$162 / 4 = 40.5$
静载荷 (kN)	$54 \times 4.0 = 216$
总静载荷 (kN)	$108 + 216 = 324$
每根柔性柱静载荷 (kN)	$324 / 4 = 81$
设计柱节总长度=行程+升降余量	$1400 + 500 = 1900(\text{mm})$
柱节组件数量 Q	$1900 / 144 = 113.19$, 取 13 节 (含头节)
订货时的柱节总长度	$S = 162 + 12 \times 144 = 1890\text{mm}$
最终动载荷 (KN)	$40.5 + 1.89 \times 57.24 / 100 = 41.58$
最终总静载荷 (kN)	$81 + 1.89 \times 57.24 / 100 = 82.08$

- 在该柱节总长度 1890mm 时, 27A 载荷情况如下：

动载荷 (kN): $78 > 41.58$

静载荷 (kN): $94 > 82.08$

选型后的升降余量: $1890 - 1400 = 490$ (mm)

注意：当速度缓慢时，柱节数量可选 12 节（含头节），相应的升降余量会减少 144mm，成本也会降低。

- 安装尺寸见 27A 柔性柱

3) 订货：

订货标示：27A-S-1890-L-M两套，27A-S-1890-R-M两套。

2) Calculation and selection：

Dynamic load (kN)	$54 \times 1.00 = 54$
Structural load per m² (kN/m²)	2
Deadweight of structure (kN)	$54 \times 2.0 = 108$
Total dynamic load (kN)	$54 + 108 = 162$
Dynamic load per each Column Lift (kN)	$162 / 4 = 40.5$
Static load (kN)	$54 \times 4.0 = 216$
Total static load (kN)	$108 + 216 = 324$
Static load per each Column Lift (kN)	$324 / 4 = 81$
Designed pitch of chain link = stroke + lifting margin	$1400 + 500 = 1900(\text{mm})$
Number of chain link Q	$1900 / 144 = 113.19$, taking 13 chain link (including the first chain link)
Actual pitch of chain link	$S = 162 + 12 \times 144 = 1890\text{mm}$
Final dynamic load (KN)	$40.5 + 1.89 \times 57.24 / 100 = 41.58$
Total final static load (kN)	$81 + 1.89 \times 57.24 / 100 = 82.08$

- At a total pitch of 1890mm for this Column Lift, Model 27A load is as follows:

Dynamic load (kN): $78 > 41.58$

Static load (kN): $94 > 82.08$

Lifting margin: $1890 - 1400 = 490$ (mm)

Note: The number of chain link can be selected as 12 (including the first link) at a low speed. The corresponding lifting margin will be reduced by 144mm, which will also reduce the cost.

- See Model 27A Column Lift for mounting dimensions.

3) Ordering:

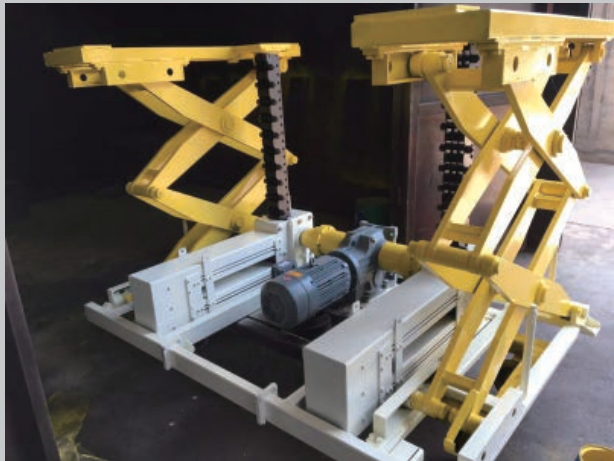
Order label: Two sets of 27A-S-1890-L-M, two sets of 27A-S-1890-R-M.

柔性柱产品及应用展示

Display of Column Lift & Application



柔性柱系列产品
Column Lift Series



工业生产线应用
Industrial Production Line Project



无导向刚性柱演出效果
Unguided Rigid Column Lift



无导向刚性柱
Unguided Rigid Column Lift



2022 北京冬奥会和冬残奥会开闭幕式
2022 Beijing Winter Olympic and Paralympic Games Opening and Closing Ceremonies



台北流行音乐中心
Taipei Music Center