

江苏省高新技术企业



电梯用钢丝绳

ELEVATOR ROPES



无锡通用钢绳有限公司

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Wuxi Universal Steel Rope Co., Ltd.

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无锡通用钢绳有限公司
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无锡通用钢绳有限公司鸟瞰图



无锡通用钢绳有限公司始建于 1974 年，公司厂房占地面积 10 万平方米，公司有近 50 年的钢丝绳生产和研发经验。公司以科学的管理体制，精良的工艺装备，雄厚的技术实力以及完善的售后服务体系，一直深受国内外新老客户的好评。

本公司是具有进出口经营权的企业，通过了质量、环境、职业健康安全管理体系认证，本公司产品分 15 大系列，300 多个规格，主产品广泛应用于普通电梯、高速电梯、大吨位汽车吊、施工升降机、潜挖机、打桩机、航空、石油、港口、矿山、船舶、海洋，以及光纤等领域。近几年，公司自主研发的“高速电梯用钢丝绳”、“钢丝绳性能检测仪”、“电梯限速器用钢丝绳”，以及“钢丝绳可靠性试验机”等产品先后获得了国家发明专利或实用新型专利证书；同时，电梯绳产品也获得了江苏省高新技术产品认定证书，我司产品更是通过了 CE、兰德和英国劳氏船级社等多家第三方认证。目前本公司的电梯用钢丝绳产品已纳入通力电梯、蒂升电梯、迅达、康力电梯、巨人通力、沈阳远大、广日、华升富士达等国内外知名企业的采购系统，并一直是通力、康力、广日等优秀电梯制造企业的优秀供应商。自 2010 年以来本公司一直是江苏省高新技术企业，同时，也是电梯用钢丝绳、特殊绳，以及航空钢丝绳等国家或行业标准的起草单位之一。

目前，“华一”牌电梯用钢丝绳产品已经进入北京奥运场馆、国家大剧院、T3 航站楼、上海世博会会馆，以及浦东机场等重要场所，不旋转及其他特殊钢丝绳亦广泛应用于中联重科、三一重工、长江起重、广西建工，以及永茂集团等众多国内知名企业。

本公司先后获江苏市场名牌产品、第三届中国科技精品博览会金奖、中国钢绳十佳名优品牌、全国电梯部件用户满意首选品牌、中国著名品牌、“重合同、守信用”企业、江苏名牌产品证书，以及中国钢丝绳行业十大影响力品牌等荣誉称号。

Wuxi universal steel rope co., ltd. was founded in 1974, the Plant covers an area of 100,000m². Since the founding of the company is committed to wire rope design, development, production and sales. We are dedicated to provide you with high cost-effective, high-quality products and meticulous after-sales service.

Our company is the one with import-export operations right and has passed the authentication of quality, environment and occupational health and safety management system. Our company's products are separated into fifteen major series and more than 300 specifications and the main products are widely applied in these fields, such as common elevator, high-speed elevator, large-tonnage mobile crane, builders lift, pile driver, construction lifter, aviation, petroleum, port, mine, shipping, marine, optical fiber and so on. In recent years, the products that our company has independently researched and developed, for example, "High-speed elevator steel wire rope" "C-T test machine" "Steel wire rope for elevator governor" "Steel rope reliability tester", have successively acquired the certifications of national patent or utility model patent; the elevator rope products also have acquired the certifications that were asserted by Jiangsu high-tech products. Currently, the steel wire rope for elevator products of our company have been in the purchasing system of many international and domestic well-known enterprises, such as KONE, TKE, Schindler, Canny, Giant KONE, Brilliant, Fujitec and so on. We are the excellent supplier for outstanding elevator manufacturing enterprises, such as KONE, Canny, SEC and so on. Since 2010, our company has acquired the authentication of Jiangsu high-tech enterprises. And at the same time, our company is one of the drafting units of national or industrial standard of elevator wire rope, special wire rope, aircraft wire rope, etc., .

Currently, steel wire rope for elevator products of Huayi brand has entered into some important sites, such as Beijing Olympic Venues, National Grand Theater, Beijing International Airport T3 Terminal, Shanghai Expo Pavilion, Pudong Airport and so on; non-rotation and other special steel wire ropes have also been widely applied into various domestic famous enterprises, such as ZOOMLION, SANY, Changjiang Engineering Crane Co., Ltd, Guangxi Construction Engineering Group, Yongmao and so on.

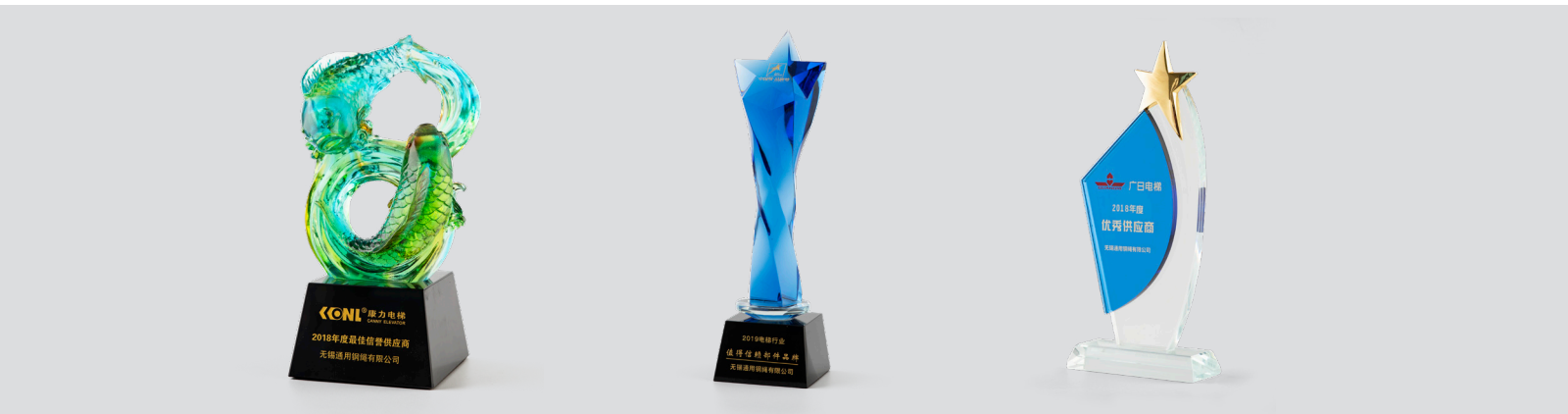
Our company has successively won the honorary tiles, for example, Jiangsu Market Brand Products, Golden Prize of 3rd China Science and Technology Boutique Expo, China Top Ten famous Brand of Steel Rope, Satisfaction Preferred Brand of National Elevator Component Users, China Famous Brand, "heavy contract, keep promise" unit, Jiangsu Brand Product Certification, China Top Ten Influential Brands of Steel Wire Rope Industry and so on.



精益品质 / 追求卓越 / 凝心聚力 / 砥砺前行

Gathering Strength, Sheer Endeavour
Improving Quality, Pursuing Excellence





产品控制

公司以雄厚的技术力量为基础，以各种先进的检测设备及完善的检测控制手段为保障。每根钢丝绳都在严格的工艺条件下经过热处理、拉丝、捻股、合绳等多道工序生产而成，并在合绳工序采取预成型、后变形、定径、预张拉等技术保证产品质量。为提高钢丝绳质量，我司更是选用优质线材、剑麻、国外进口电梯绳专用油脂。同时，在合绳工序引进德国尖端的生产设备，钢丝绳实现股恒张力和在线预张拉。同时，各种专业的原辅材料、半成品及成品检测工作更是贯穿钢丝绳生产的整个流程。近年来，我司产品质量稳步提升，成熟的新产品、新技术层出不穷。我司自主研发的高速电梯用钢丝绳产品及相关检测设备，先后获得了百余项国家专利。

Product Control

The company is based on the strong technical force, with all kinds of advanced testing equipments and control means. The production process of wire rope includes heat treatment, drawing, twisting, rope making and so on. Pre-forming, post-deformation, sizing, pre-tensioning and other technologies are adopted to ensure the quality of products in the rope making process. In order to improve the quality of wire rope, we choose high quality wire, sisal, imported elevator rope special grease. The final rope closing procedure adopts international leading German online tensioning technology. A real-time monitoring system is used to ensure the same tension for each strand during rope closing. Meanwhile, all kinds of professional inspection processes are carried out throughout the rope production process. The quality of our products is improving. In recent years, our company developed high-speed elevator ropes and related testing equipments, has obtained National inventions patents successively.



钢丝绳可靠性保证

本公司为“江苏省高新技术企业”、“江苏省技术创新示范企业”、“江苏省两化融合试点企业”、“江苏省节能环保优秀企业”、“无锡市专精特新小巨人企业”，同时也是“江苏省省级企业技术中心”“江苏省工程技术中心”、“无锡市新材料及特种钢丝绳工程技术研究中心”，通过了ISO9001/GB/T19001, ISO14001/GB/T24001, ISO45001/GB/T45001管理体系认证；同时，我公司与众多国内知名学府及专业金属制品研究院等科研单位在产品研发、技术创新、材料提升等方面建立了长期的产、学、研合作关系。。

Reliability guarantee of steel wire rope

The Company is officially recognized as one of the High and New Tech Enterprises of Jiangsu Province, Enterprises as Models for Technology Innovation in Jiangsu Province, Pilot Enterprises for Integration of Information and Industrialization in Jiangsu Province, Enterprises Outperforming in Energy-saving and Environment-protecting Sectors in Jiangsu Province, Little Giant Businesses of Wuxi City (i.e. businesses featured by their R&D competitiveness, products popularity, operation profitability and development potential), and certified as one of the Technological Centers of Provincial Level of Jiangsu, Engineering Technology Center of Jiangsu Province, Technology Research Center for New Material and Special Steel Wire Rope in Wuxi City. Meanwhile, it has been certified for its compliance with various international management systems and standards, including ISO9001/G-B/T19001, ISO14001/GB/T24001 and ISO 45001/GB/T45001. Further more, the Company has established and maintains cooperation with several domestic well-known colleges and universities and R&D institutes of metal products on long term basis for development of products and technological research in multiple fields including products R&D, technological innovation and material upgrading etc..



▲ 立式弯曲疲劳试验机 Vertical Bending Fatigue Tester

疲劳试验机：符合 OTIS 疲劳测试参数，测试环境更接近钢丝绳实际使用环境

Fatigue Test Machine:

In accordance with OTIS fatigue test parameters, the test environment of steel wire rope is closer to the actual use environment



▲ 卧式弯曲疲劳试验机 Horizontal Bending Fatigue Tester



▲ 游星式试验机 Epicyclic Type Fatigue Testing Machine



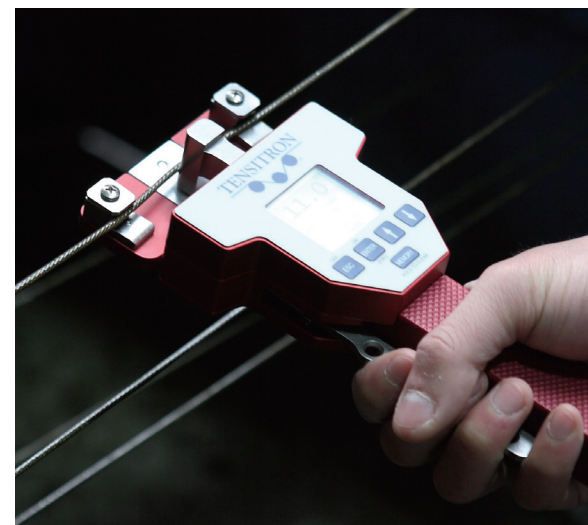
在线预张拉
On-line pretension

消除钢丝绳 80% 以上的结构伸长
Eliminate the structure elongation of over 80 percent of steel wire rope



CT-test

验证不同温度，不同运行速度下
电梯钢丝绳润滑油脂的使用性能
Verify the lubricant performance of
elevator rope under different
temperatures and operation speeds



张力仪
Tension meter

生产中调整钢丝绳股张力，
尽可能减小各股张力偏差
Adjust the strand tension of steel
wire rope during the production
and decrease the deviations of
every rope strand



金相显微分析仪
Metallographic
microscopic analyzer

验证加工工艺，优化材料内部组织结构，
提高机械性能
Verify processing technology,
optimize internal structure of material
and improve mechanical performance

质量 / 环境 / 职业健康安全方针：以人为本、健康安全；降耗节能、善待环境；精益品牌、追求卓越；遵纪守法、文明和谐。

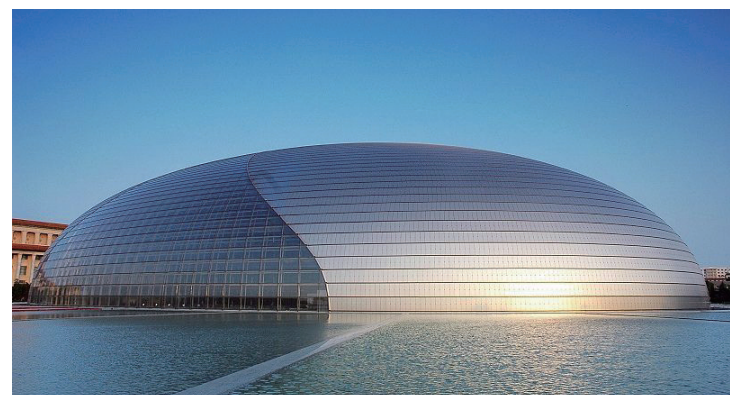
质量 / 环境 / 职业健康安全总目标：顾客满意率 >99%；钢丝绳一次检验合格率 >99.5%。

Quality/Environment/ Occupational health and safety policy: people-oriented, health and safety; reduce consumption and save energy and consider environment; outstanding brand and pursuit of excellence; abide by the law and civilization and harmony.

General goal of quality/environment/professional health and safety: General goal of quality/environment/Occupational health and safety: customer satisfaction rate over 99% ; steel wire rope once qualification rate over 99.5%.



◆ 浦东机场



◆ 国家大剧院



◆ 京沪高铁无锡东站



◆ 北京机场T3航站楼



◆ 奥体中心（鸟巢）



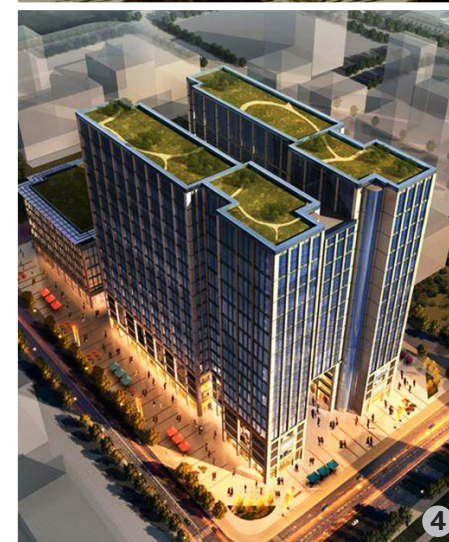
①



②



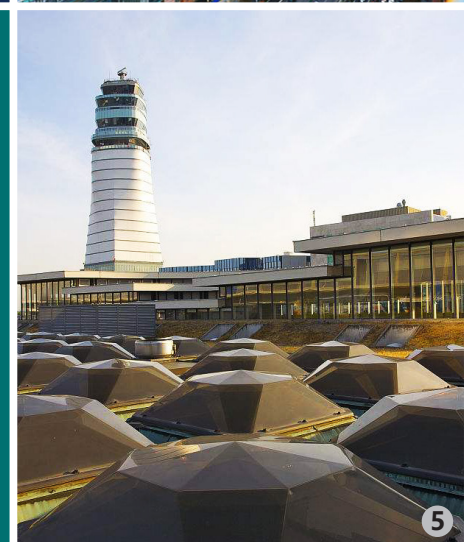
③



④



- ① 南京威尼斯水城
- ② 法兰克福机场
- ③ 绿地普利中心
- ④ 西安都市之窗CBD
- ⑤ 维也纳国际机场
- ⑥ 上海国际金融中心
- ⑦ 深圳飞鱼航站楼
- ⑧ 深圳湾一号



⑤



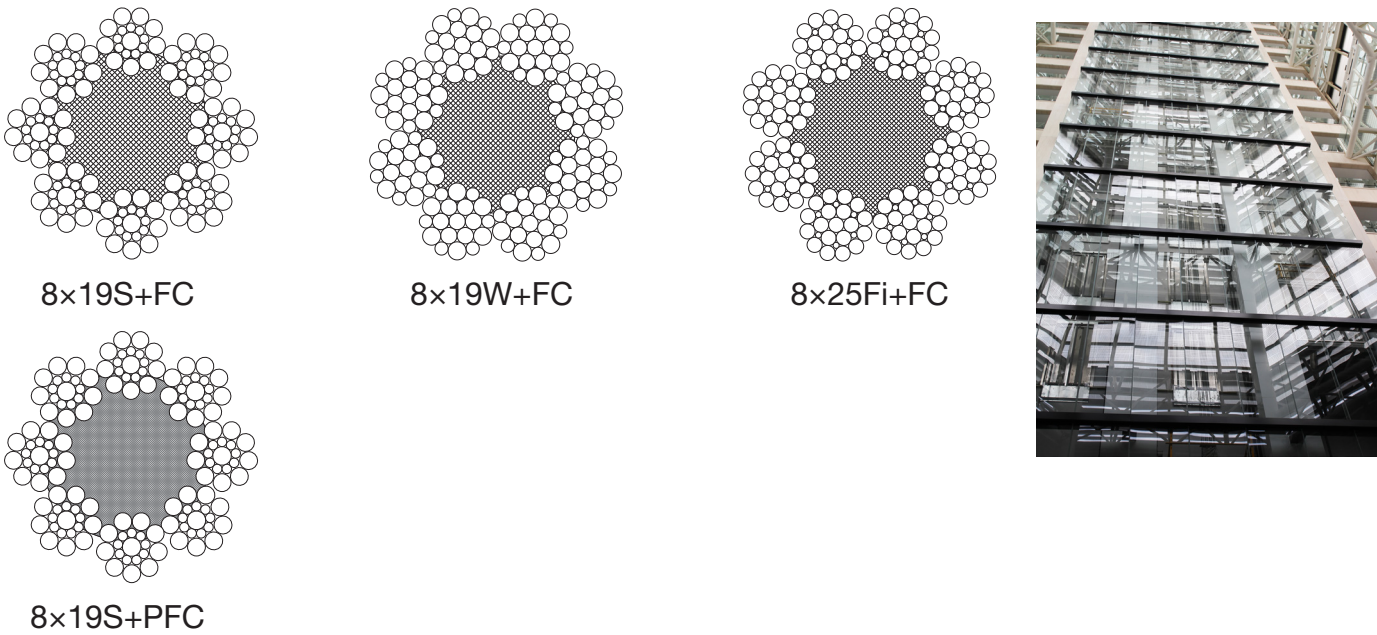
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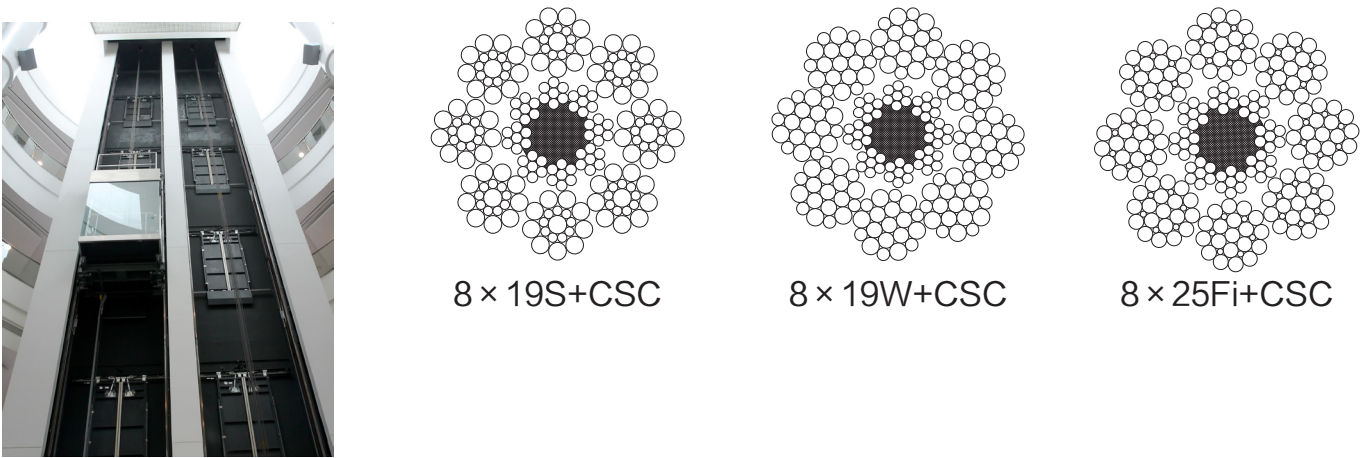


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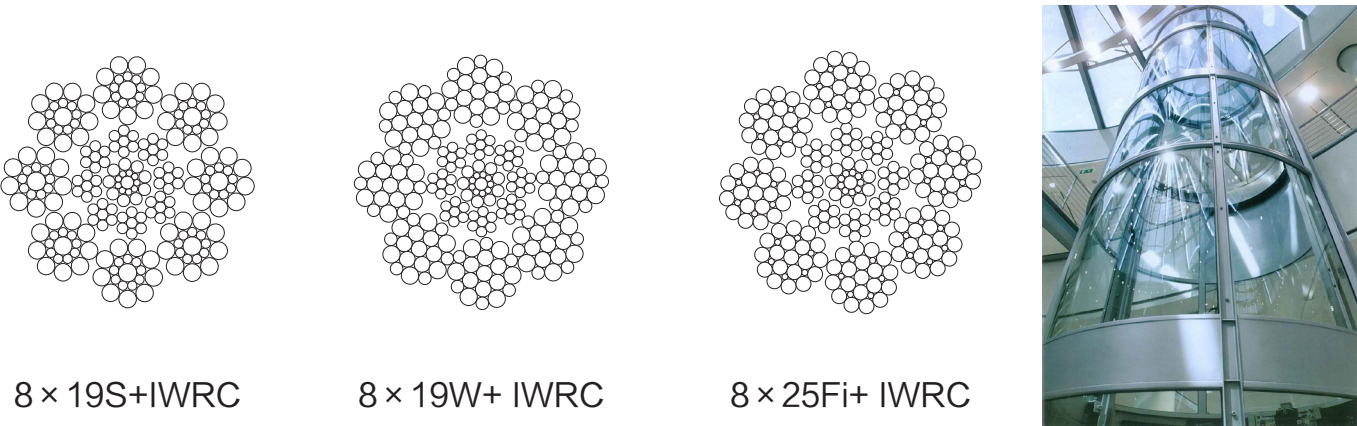


公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load				
		双强度： 1370/1770N/mm²	双强度： 1570/1770N/mm²	单强度： 1570N/mm²	单强度： 1620N/mm²	单强度： 1770N/mm²
		(Doubel T/S)	(Doubel T/S)	(Single T/S)	(Single T/S)	(Single T/S)
8	22.2	28.1	30.8	29.4	30.4	33.2
9	28.1	35.6	38.9	37.3	38.4	42.0
9.5	31.3	39.7	43.6	41.5	42.8	46.8
10	34.7	44.0	48.1	46.0	47.5	51.9
11	42.0	53.2	58.1	55.6	57.4	62.8
12	50.0	63.3	69.2	66.2	68.4	74.7
12.7	56.0	70.9	77.5	74.2	76.6	83.6
13	58.6	74.3	81.2	77.7	80.2	87.6
14	67.9	86.1	94.2	90.2	93.0	102.0
16	88.8	113.0	123	118.0	122	133.0
19	125.0	159.0	173	166.0	171	187.0

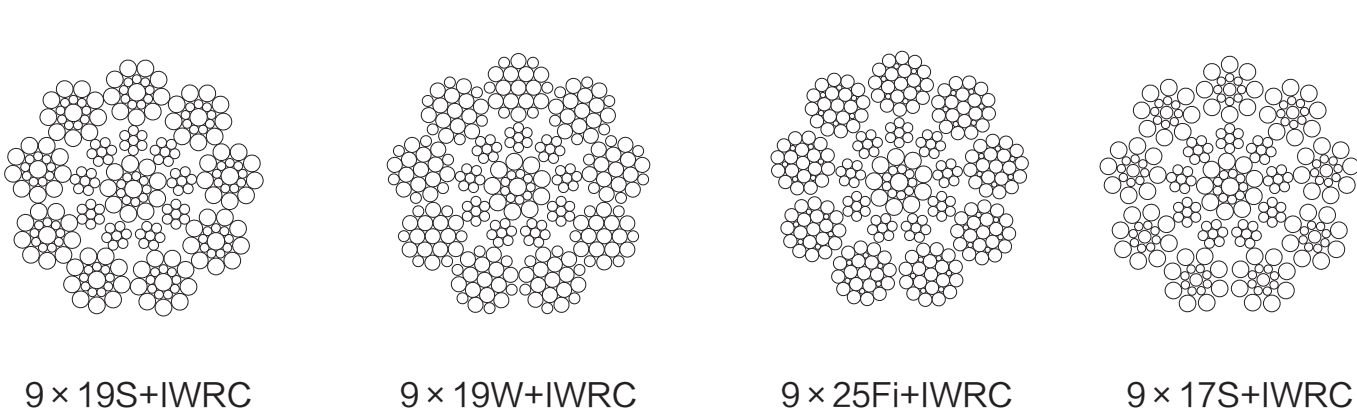
注：PFC 钢丝绳优先使用 1620/1770 强度等级 Note: PFC wire rope is preferred to use T/S 1620/1770N/mm²



公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load				
		双强度： 1370/1770N/mm²	双强度： 1570/1770N/mm²	单强度： 1570N/mm²	单强度： 1770N/mm²	单强度： 1960N/mm²
		(Doubel T/S)	(Doubel T/S)	(Single T/S)	(Single T/S)	(Single T/S)
6	14.2	20.1	21.4	20.1	22.7	25.1
6.5	16.7	23.6	25.6	23.6	26.6	29.5
8	25.5	35.8	38.0	35.8	40.3	/
9	32.5	45.3	48.2	45.3	51.0	/
9.5	36.0	50.4	53.7	50.4	56.9	/
10	39.7	55.9	59.5	55.9	63.0	/
11	48.5	67.6	79.1	67.6	76.2	/
12	57.5	80.6	85.6	80.6	90.7	/
12.7	64.0	90.1	95.9	90.1	102.0	/
13	68.0	94.5	100	94.5	106.0	/
14	78.5	110.0	117	110.0	124.0	/
16	102	143.0	152	143.0	161.0	/
19	144	202.0	215	202.0	227.0	/

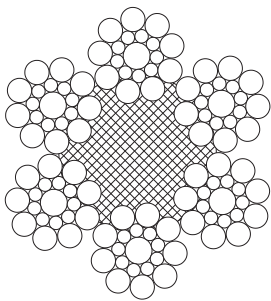


公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load				
		双强度： 1370/1770N/mm² (Doubel T/S)	双强度： 1570/1770N/mm² (Doubel T/S)	单强度： 1570N/mm² (Single T/S)	单强度： 1770N/mm² (Single T/S)	单强度： 1960N/mm² (Single T/S)
6	15.2	21.2	22.6	21.2	23.9	26.5
6.5	17.8	24.9	26.5	24.9	28	31
8	26.5	37.7	40.1	37.7	42.5	47.1
10	42.0	58.9	62.6	58.9	66.3	73.4
11	51.1	71.2	75.3	71.2	80.3	88.9
12	62.0	84.8	90.2	84.8	95.6	106
12.7	68.1	95	101	95	107	119
13	69.8	98.8	105	98.8	111	123
16	107	150	160	150	169	187



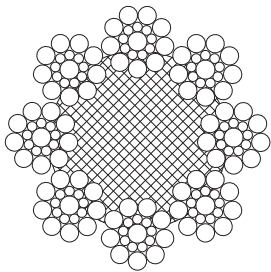
公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load				
		双强度： 1370/1770N/mm² (Doubel T/S)	双强度： 1570/1770N/mm² (Doubel T/S)	单强度： 1570N/mm² (Single T/S)	单强度： 1770N/mm² (Single T/S)	单强度： 1960N/mm² (Single T/S)
8	27.5	39.4	41.9	39.4	44.4	49.2
9	34.8	49.9	53	49.9	56.2	62.3
10	43.0	61.5	65.5	61.5	69.4	76.8
11	52.0	74.5	79.2	74.5	84.0	93.0
12	61.9	88.6	94.3	88.6	99.9	110.6
13	72.7	104	111	104	117	129.8
14	84.3	121	128	121	136	151.0
16	110	158	168	158	178	197.0
19	155	222	236	222	250	277

注：用于超高速电梯 Note: it is used for super high-speed elevator



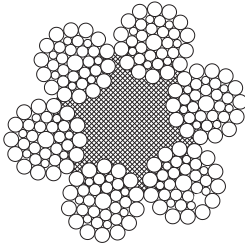
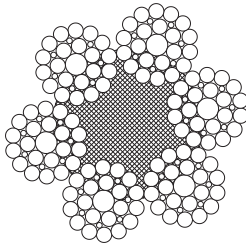
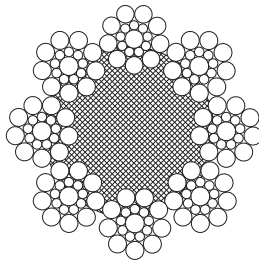
6 × 19S+SFC(PP)

公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load				
		双强度： 1320/1770N/mm ² (Double T/S)	双强度： 1370/1770N/mm ² (Double T/S)	单强度： 1570N/mm ² (Single T/S)	单强度： 1770N/mm ² (Single T/S)	单强度： 1960N/mm ² (Single T/S)
6.0	12.9	16.8	17.8	18.7	21.0	23.3
6.3	14.2	18.5	19.6	20.6	23.2	25.7
6.5	15.2	19.7	20.9	21.9	24.7	27.3
8.0	23.0	29.8	31.7	33.2	37.4	41.4
9.5	32.4	42	44.7	46.8	52.7	58.4



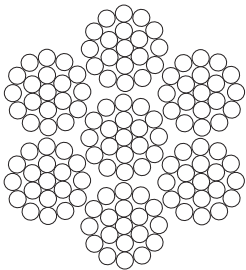
8 × 19S+SFC(PP)

公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力（kN） Minimum breaking load	
		双强度： 1370/1770 N/mm ² (Doubel T/S)	单强度： 1570N/mm ² (Single T/S)
8.0	21.8	28.1	29.4
9.5	30.7	39.7	41.5
10.0	34.0	44.0	46.0
12.7	54.8	70.9	74.2
16.0	87.0	113.0	118.0



截面结构实例 Example of Seetianl Construction		钢丝绳结构 Steel Rope Construction			股结构 Strand Construction			
6 × 29Fi+FC		项目 Item		数量 Number	项目 Item	数量 Number		
		股数 Outer Stramd		6	钢丝 Wire	25-41		
		股数 Outer Stramd		6	多层钢丝 Outer Wire	12-16		
		股的层数 Layer of Stramd		1	钢丝层数 Layer of Wire	2-3		
		钢丝绳钢丝数 Wire Number of Rope		150-246				
		典型例子 Typical		外层钢丝的数量 Number of Outer Wire		外层钢丝系数 Ratio of Outer Wire		
		典型例子 Typical	股 Stramd	总数 Total No.	每股 Per Stramd			
		6 × 29Fi 6 × 36WS	1+7+7F+14 1+7+7/7+14	84	14	0.056		
		6 × 36WS+FC		钢丝绳类别 Steel Rope Type:6 × 36				
				最小破断力系数 Ratio of MBL			K1=0.330	
单位重量系数 Ratio of Unit Weight				W1=0.367				
金属断面系数 Ratio of Section				C1=0.393				
钢丝绳公称直径 Nominal Diameter	近似配合重量 Approximate Weight	钢丝绳类别 Steel Rope Grade		最小破断力（kN） Minimum breaking load				
mm	kg/100m	6 × 36 类别 （包括 6 × 36WS 和 6 × 29Fi） 6 × 36 Grade （Including 6 × 36WS and 6 × 29Fi）		1570 等级 1570 Grade	1770 等级 1770 Grade	1960 等级 1960 Grade		
24 / 25	219 / 238			298 / 324	336 / 365	373 / 404		
26 / 27	257 / 277			350 / 378	395 / 426	437 / 472		
28 / 29	298 / 320			406 / 436	458 / 491	507 / 544		
30 / 31	342 / 365			466 / 498	526 / 561	582 / 622		
32 / 33	389 / 414			531 / 564	598 / 636	662 / 704		
34 / 35	439 / 466			599 / 635	675 / 716	748 / 792		
36 / 37	492 / 520			671 / 709	757 / 800	838 / 885		
38	549			748	843	934		

同时提供 8 股天然纤维芯、合成纤维芯、混合钢芯结构的补偿钢丝绳
Also provide 8 strands compensating ropes with natural core, PP core or semi-steel core.



Zn 6x19+WSC

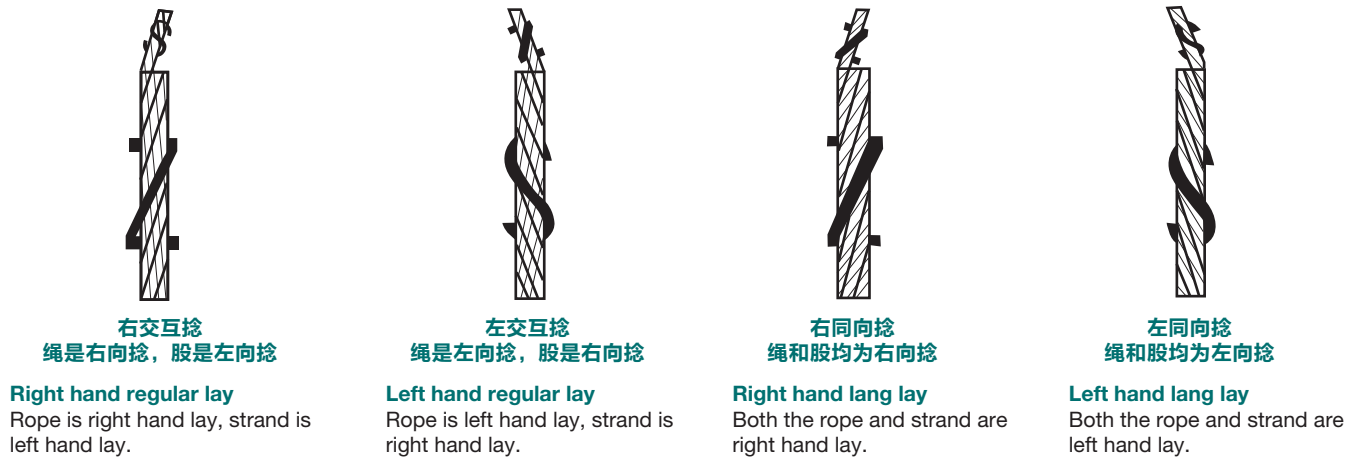
公称直径 Nominal Diameter(mm)	参考重量 Approximate Weight kg/100m	钢丝绳最小破断拉力 (kN) Minimum breaking load
3.0	4.20	7.6
3.18(3.2)	4.30	8.9
3.6	6.00	10.4

钢丝绳的捻法及捻向

所谓捻法是指股在绳中或丝在股中捻制时螺旋线的走向。钢丝绳的捻法有两种，即交互捻钢丝绳和同向捻钢丝绳。钢丝绳的捻向通常分为右交互捻、左交互捻、右同向捻、左同向捻四种。

The type of lay and twist direction of steel wire rope

Laying type of steel wire rope means the spiral direction of strands in the steel wire rope or wires in the strand. The steel wire rope has two kinds of laying type: Regular lay and lang lay wire rope. Laying type of steel wire rope is usually divided into four types: right hand regular lay, left hand regular lay, right hand lang lay and left hand lang lay.



钢丝绳的捻距 钢丝绳的捻距是指钢丝绳股绕绳芯旋转一周（360°）时所移动的距离。

Length of lay

Length of lay means the distance it moves when the strand revolves round (360°) the rope core.



钢丝绳直径的测量方法

正确的钢丝绳测量方法，对于钢丝绳直径的选择以及对于使用过程中钢丝绳直径变化情况资料的积累具有重要的意义。如下图所示，钢丝绳直径的测量方法正确与否，所得到的测量数据将会截然不同。

Steel wire rope diameter measurement method

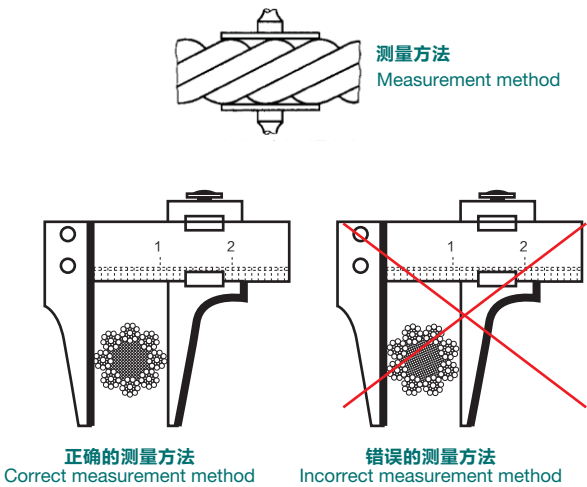
The correct measurement method of steel wire rope plays an important role in the choice of rope diameter and the information accumulation of the rope diameter change situation during the use process. The measurement data that is obtained will be totally different which depends on whether the measurement method of diameter of steel wire rope is correct or not, shown as the following diagram.

测量工具：宽钳口游标卡尺。

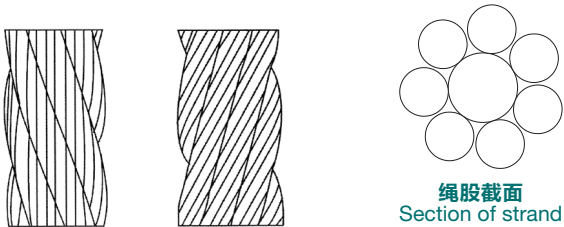
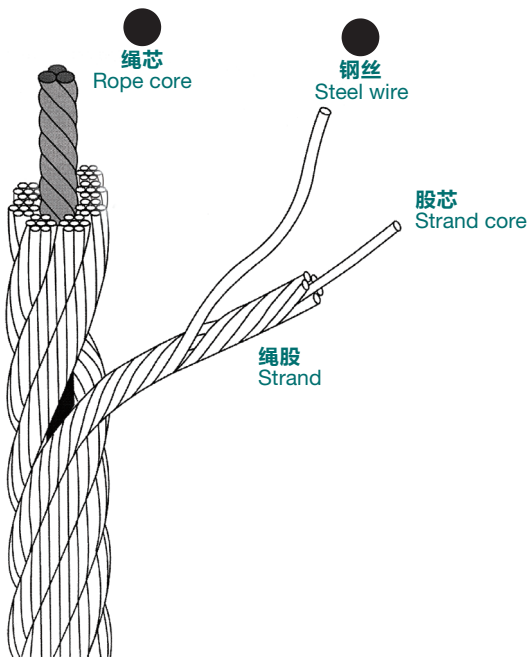
Measuring tool: Wide jaw vernier caliper

测量方法：钢丝绳的实测直径测量，应使用带有宽钳口的游标卡尺来测量，其钳口的宽度最少要足以跨越两个相邻的股。测量应在钢丝绳端头 15m 外的平直部位上进行，在相距至少 1m 的两截面上，并在同一截面互相垂直地测取两个数值，四次测量结果的平均值，即为钢丝绳的实测直径。

Measurement method: The measured diameter of the wire rope shall be measured by a vernier caliper with a wide jaw, at least wide enough to span two adjacent strands. The measurement should be carried out on the straight part 15m away from the end of the wire rope, on two sections at least 1m apart, and two values are measured perpendicular to each other in the same section. The average value of the four measurement results is the measured diameter of the wire rope.



钢丝绳构成分解图 Structure decomposition graph of steel wire rope

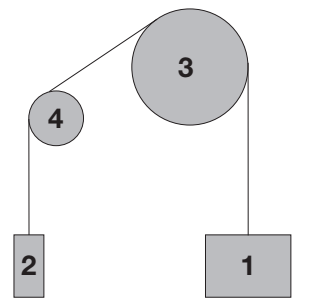


钢丝绳：由一定数量钢丝一层或多层的股绕成螺旋状而形成的结构
Steel wire rope: the structure which is formed by one layer or various layers of strands winding into helical form by a certain quantity of steel wires

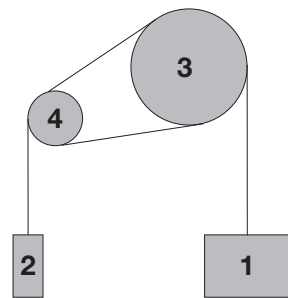
绳芯 (rope core):

- 纤维芯 FC(Fibre Core), 包含:
 - 天然纤维芯 NFC, 如剑麻芯
 - 合成纤维芯 SFC, 如 PP 芯, PFC 芯 (高强度纤维芯)
 - 天然和合成混合纤维芯 CFC
- 钢芯 WC, 包含:
 - 钢丝股芯 WSC;
 - 独立钢丝绳芯 IWRC;
 - 混合钢芯 CSC

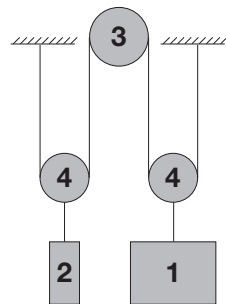
钢丝绳使用的曳引方式 Hoist way of steel wire rope



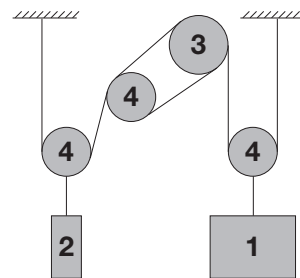
曳引比: 1:1 单绕
Hoist rope ratio: 1:1 single wind
★ 优先推荐使用
Recommended



曳引比: 1:1 复绕
Hoist rope ratio: 1:1 rewind



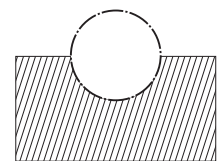
曳引比: 2:1 单绕
Hoist rope ratio: 2:1 single wind
★ 优先推荐使用
Recommended



曳引比: 2:1 复绕
Hoist rope ratio: 2:1 rewind

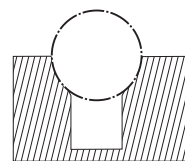
- | | |
|-------------|--------------------------------------|
| 1. 轿厢 | Elevator car |
| 2. 平衡块 | Counterbalance |
| 3. 曳引轮 | Traction wheel |
| 4. 过线滑轮、导向轮 | Over-line pulley and directive wheel |

曳引轮绳槽类型 Types of rope groove of traction wheel



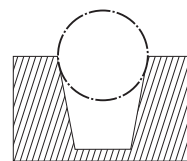
“U” 型槽
“U” type groove

★ 优先推荐使用
Recommended



“U” 型开口槽
“U” type open slot

★ 优先推荐使用
Recommended



“V” 型槽
“V” type groove

储运、安装、维护 Storage, transportation, installation and maintenance

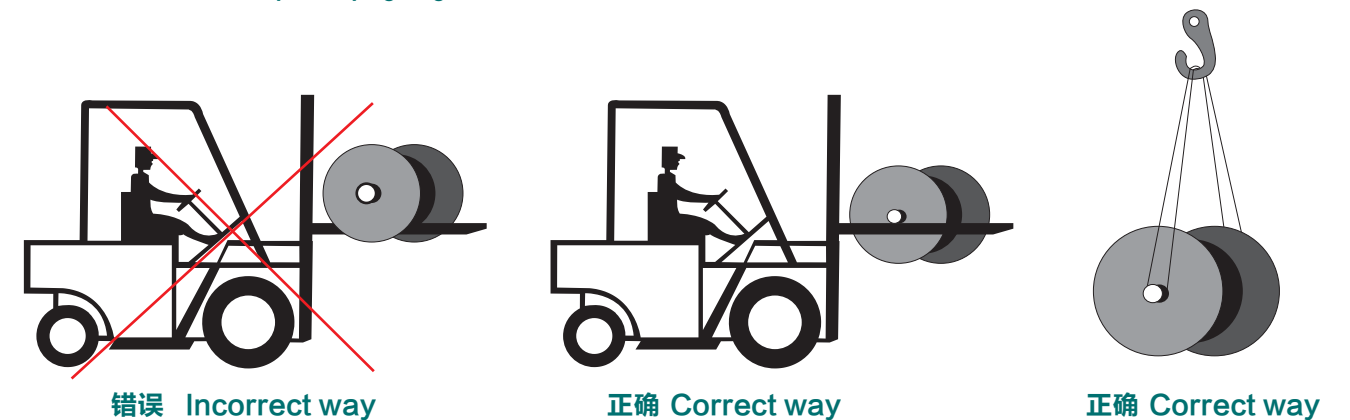
储运

- 钢丝绳应存放在干燥、干净的室内，最好能用托盘等材料将钢丝绳垫离地面，避免钢丝绳接触酸碱等化学物质，严禁露天存放。
- 地面搬运时，钢丝绳不允许在凹凸不平的地面上滚动，以防止钢丝绳表面压伤。
- 使用铲车铲运木盘、卷筒时，只能铲卷筒盘片或借助起重设备；铲运无木盘的卷钢丝绳时，必须采用悬挂钩和悬带或其它合适的起吊装置，不能直接铲触钢丝绳，防止损伤钢丝绳。

Storage and transportation

- The steel wire rope should be stored at dry and clean indoor site and it is better to pad steel wire rope off the ground by using materials, such as pallet and so on, so as to avoid steel wire rope connecting with chemical substances, such as acid, alkali and so on and storage at open site is strictly forbidden.
- When it is ground transportation, the steel wire rope is not allowed to be rolling at uneven ground, which would crush the surface of steel wire rope.
- When using fork lift to shovel the wooden reel and drum, it is only allowed to shovel the drum platter or by means of lifting equipment; when shoveling the rolling steel wire rope without wooden reel, the hanging hook and sling or other appropriate slinging device must be adopted and it is not allowed to directly shovel or connect with steel wire rope so as to prevent damaging steel wire rope.

钢丝绳铲运示意图: Rope scraping diagram:



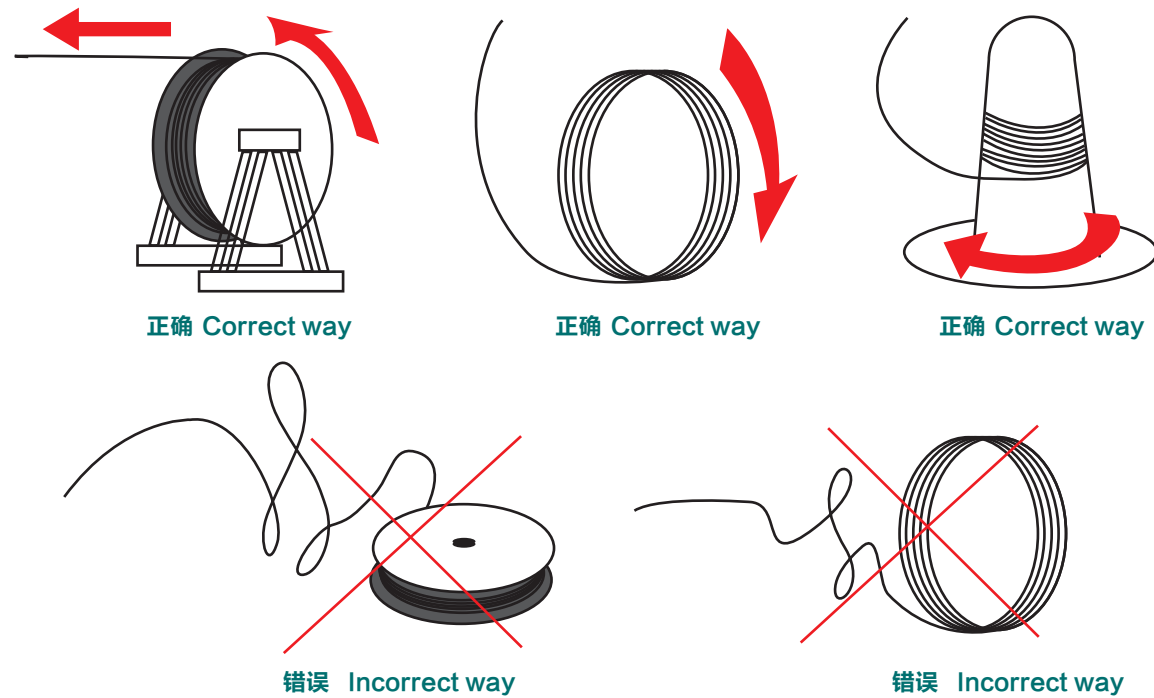
安装

- a) 在钢丝绳安装过程中应采取正确规范的操作方法，避免产生人为的扭转、扭松等现象，导致钢丝绳使用寿命缩短。

Installation

a) During the installation process of steel wire rope, correct normative operation method should be taken so as to avoid the occurrence of these phenomena, such as artificial torsion and twisting loose and which would lead the shortening of service life of steel wire rope.

钢丝绳放线示意图 Rope to put line schematic



- b) 在钢丝绳安装过程中放绳的绳头应固定在对重导轨放线架上（专用放线架）或者对放绳头进行加载，防止因钢丝绳旋转而产生内应力。避免电梯安装时由于内应力释放产生松股和灯笼状打结现象，造成钢丝绳过早报废。

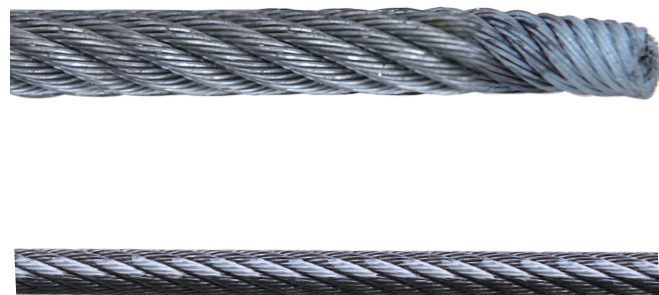
b) In the installation process, the rope should be fixed on the counterweight guide rail bracket (pay-out angle) or load on the rope head to prevent the internal stress caused by wire rope rotation. The internal stress will cause strand relaxation and bird-caging knotting which shorten the working life of wire rope.

对整梯钢丝绳由我公司分切的，可提供锥形焊头，不变形，不松开，便于安装

For the steel wire rope that is cut into piece by our company, conical welding head can be provided and without deformation or looseness which is convenient for installation.

- c) 辅助安装线：简单快速识别安装过程中产生的钢丝绳扭转，从而能够及时矫正，增加安全性，延长钢丝绳的使用寿命。

c) Installation mark line: simple and quick to identify twisting of wire ropes produced during installation so as to correct in time. It make elevator safety and extend the service life of wire rope.



维护

- a) 由于无法确定钢丝绳储存条件和从储存到安装的时间间隔，因此建议在钢丝绳安装前后对其进行检查，确定是否需要再次润滑；

b) 电梯经过运行后，钢丝绳中含有的润滑油脂会逐渐减少，引起钢丝绳及绳轮的磨损和钢丝绳生锈。因此，应定期涂加润滑油脂。（请使用本公司专用维护油脂，如有维护需求时请与我司联系。）

当出现以下情形时应及时对电梯钢丝绳进行再次润滑：

- 1) 钢丝绳表面变干，摸不到润滑油脂；
- 2) 钢丝绳表面局部出现锈斑；
- 3) 电梯每升降运行 20 万次。

Maintenance

- a) Because the storage condition of steel wire rope and the time interval from storage to installation can not be determined, we suggest to check the steel wire rope before and after its installation to determine if it needs re-lubricant;

b) During elevator running, the grease contained in the steel wire rope will gradually decrease which would lead the wear of steel wire rope and sheave and rust of steel wire rope. Therefore, grease should be lubricant periodically. If you need the special maintenance oil, please contact us.

When one of the following situations appears, the steel wire rope should be re-lubricant in time:

- 1) The surface of steel wire rope becomes dry and the grease lubricant can not be touched;
- 2) Part of the surface of steel wire rope appears rust spot;
- 3) Elevator runs 200,000 times each.



电梯钢丝绳专用维护油 Special maintenance oil for steel wire rope of elevator

A: W-A9-1

性 状：无色或淡黄色油体
闪 点：≥70℃（开口）
施油温度：常温

使用方法

直接将本维护油涂刷、喷涂在钢丝绳表面。油量不宜过多，以电梯运转时油不甩出为宜。

注意事项

- a) 本品不得与其它油料混合使用，如溶剂、润滑脂、防锈油等，否则可能降低油品性能，甚至可能导致油品失效。
- b) 反复接触时，可能导致皮肤皴裂，必须带防护手套。
- c) 本油品属非危险品，无爆炸危险性，属可燃品。

A: W-A9-1

Appearance: colorless or pale yellow oil
Flash point: ≥70 ℃
Use temperature: Normal temperature

Use instruction

Lubricant and spray this maintenance oil on the wire rope surface. Do not use too much or the oil will be dropped out during the elevator using.

Precautions:

- a) This product must not be mixed with other oils, such as solvents, greases, anti-rust oils, etc., otherwise it may reduce the performance of the oil and may even cause the oil to fail.
- b) Repeated contact may result in chapped skin. Protective gloves must be worn.
- c) This product is non-hazardous and has no explosion hazard. It is a flammable product.



W-A9-1



HC-17



涂油方式 Lubricant method

B: HC-17

性状：油状液体/s
粘度：170mm2/s
闪点：258℃
特性：具有卓越的防锈性能、润滑性能、附着性能和良好的渗透性

使用方法

在常温条件下，使用刷子或滚筒直接涂抹到钢丝绳表面。

注意事项

- a)本品不得与其它油料混合使用，如溶剂、润滑脂、防锈油等。否则可能降低油品性能，甚至可能导致油品失效。
- b)反复接触时，可能导致皮肤皴裂，必须带防护手套。
- c)本油品属非危险品，无爆炸危险性，包装运输可按普通货物条件办理。

B: HC-17

Appearance: oily liquid
Viscosity: 170mm2/s
Flash point: 258℃
Characteristics: has excellent anti-rust, lubricating and adhesion properties, good permeability
How to use: Apply directly to the surface of the wire rope using a brush or roller at room temperature

Precautions:

- a) This product must not be mixed with other oils, such as solvents, greases, anti-rust oils, etc., otherwise it may reduce the performance of the oil and may even cause the oil to fail.
- b) Repeated contact may result in chapped skin. Protective gloves must be worn.
- c) This product is non-hazardous and has no explosion hazard. Packing and transportation can be handled as ordinary goods.

报废

- a)用于铸铁和钢轮槽的纤维芯钢丝绳单层可见断丝根数(ISO4344:2004标准规定)
- b)《电梯监督检验和定期检验规则—曳引与强制驱动电梯》中规定出现下列情况之一时，悬挂钢丝绳和补偿钢丝绳应当报废：
 - ①出现笼状畸变、绳芯挤出、扭结、部分压扁、弯折。
 - ②断丝分散出现在整条钢丝绳，任何一个捻距内单股的断丝数大于4根；或者断丝集中在钢丝绳某一部位或一股，一个捻距内断丝总数大于12根（对于股数为6 的钢丝绳）或者大于16 根（对于股数为8的钢丝绳）；
 - ③磨损后的钢丝绳直径小于钢丝绳公称直径的90%。采用其他类型悬挂装置的，悬挂装置的磨损、变形等应当不超过制造单位设定的报废指标。

Scrap

- a) The single layer of fiber core wire rope used for casting iron and steel Geneva wheel visible broken wires root number (ISO4344:2004)
- b) According to the rules of Regulation for Lift Supervisory Inspection and Periodical Inspection-Traction and Positive Drive Lift, when one of the following situations appears, the hoist and compensating steel wire rope should be scrapped:
 - ①Cage-shape distortion appears, the wire core is extruded and knotted and part is flattening or bending;
 - ②The broken wire is dispersed and appears at the whole steel wire rope and the number of broken wires for single strand within any lay length is larger than four roots; or the broken wire is concentrated at a certain part or one strand of steel wire rope, the total number of broken wires within one lay pitch is larger than twelve roots (for the steel wire rope with the strand number of 6) or larger than 16 roots (for the steel wire rope with the strand number of 8);
 - ③After wearing, the diameter of steel wire rope is less than 90% of the nominal diameter of steel wire rope and the wear and deformation of hoist devices should not over the out of use index that is set by manufacturing unit when adopting other types of hanging devices.

情况 Situations	更换钢丝绳或由检定人员定期检查 Change the steel wire rope or regularly check by the verification personnel		钢丝绳直接报废 Directly scrap the steel wire rope	
	6×19FC类 Type	8×19FC类 Type	6×19FC类 Type	8×19FC类 Type
外层股中断丝数 Outer strand wire broken number	每个捻距中超过 12 根 Surpass 12 roots for each lay pitch	每个捻距中超过 15 根 More than 15 roots for each lay pitch	每个捻距中超过 24 根 More than 24 roots for each lay pitch	每个捻距中超过 30 根 More than 30 roots for each lay pitch
在一到二根股中集中断丝数 The wires concentrated broken number at one to two strands	每个捻距中超过 6 根 Surpass 6 roots for each lay pitch	每个捻距中超过 8 根 More than 8 roots for each lay pitch	每个捻距中超过 8 根 More than 8 roots for each lay length	每个捻距中超过 10 根 More than 10 roots for each lay pitch
一根外层股中相邻断丝数 The wires adjacent broken number at one outer strand	4	4	超过 4 根 More than 4 roots	超过 4 根 More than 4 roots
谷丝断裂 Fracture of valley wire	一个捻距 One lay pitch	一个捻距 One lay length	超过一个捻距 More than one lay pitch	超过一个捻距 More than one lay pitch
钢丝绳捻距长度约为公称直径的 6 倍 Rope twist six times the diameter of the gauge length is about public				

包装 Package



▲ 钢丝绳木轮装箱 Rope wheel packaged in box



▲ 钢丝绳木轮包装 Wooden wheel package of steel wire rope



▲ 钢丝绳卷装装箱 Rope roll packaged in box



▲ 钢丝绳卷装包装 Roll package of steel wire rope

