Project Fascicule

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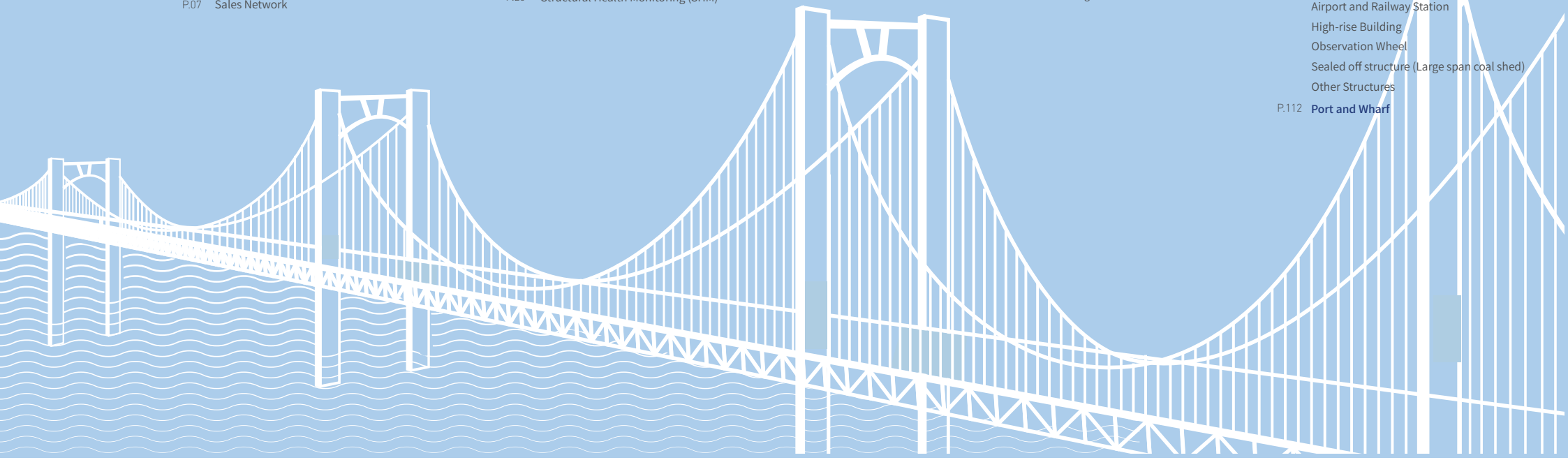


JULI SLING

Company profile

Vision

To Be Paragon Of Sling,
To Become The Leader Of Advanced Sling In The World!

Mission

To create the best comprehensive sling in the world,
Make the world easy!

Objective

Market-Oriented, Customer-Focused,
Concentrate To Create Enterprise Value!

Strategy

Relay On Independent R&D, Technical Innovation,
Market Innovation, And Lean Management,
To Become The Largest, Most Complete, Best Quality
Sling Manufacturer In The World!

01 Enterprise brief introduction

Juli Sling Co., Ltd. was founded in 1985, and concentrates on R&D and Manufacture of Sling all the way.
"Juli Sling" is the No.1 Brand in Sling industry in China.

We Establish:

Technical R&D Base
Manufacture Base
Inspection & Test Base.

We Own:

Post-doctoral Research Station
National Enterprise Technical Center
Hebei Province Sling Engineering Research Center

We Are:

Pioneer Of China Sling Industry
Entrepreneur Of Sling Civilization In The World
Standard Constitutor Of Sling Industry

We are not only the sling product supplier, but also lifting scheme consulting specialist! We were listed in Shenzhen Stock Market in Jan. 26th,2010, and were the first in sling industryand help us to achieve more and faster in the way to become the world level company!

Juli Staff: **To build sling industry with full heart in China,**
To create world level Juli in China,
To create China Juli in the world!

02 Honorary certificate

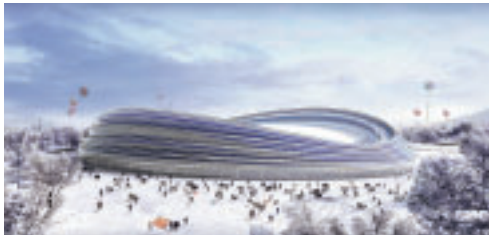
Honorary Certificates

Juli Sling Co., Ltd. has been qualified by ISO9001 quality management system, can meet the requirements of GB/EN/API/ISO, and gained the FACTORY CERTIFICATES of LR/ABS/BV/DNV/KR/GL/CCS and PRODUCT CERTIFICATES of MA/KA, the products have been sold all over the world.

Steel structure Grade II qualification,

Bridge professional engineering contract Grade III Qualification,

Special engineering contract qualification.



China Steel Structure
The gold medal project

03 The sales network

Sales Network

Juli Sling Co., Ltd. sales network covers the whole world.

In China, we have established over 100 branches, in which way, the service distance has been shortened and the service has been strengthened.

In Oversea market, we have established 10 branches, and provide sales and service in around 90 countries, we will follow “belt and road strategy” and continue to explore oversea market.

JULISLING

The engineering industry






Juli Sling Engineering industry mainly focuses on:

Space Structure

Bridge Structure

Port and Wharf

Tunnel

Reinforcement of levee

Supplies:

High Strength Steel Wire Cable

Pre-Fabricated Wire Strand For Main Cable Of Suspension Bridge

Zinc-5% Aluminum-Mixed mischmetal alloy-coated cable (Galfan cable)

Full Locked Coil Cable (FLC cable)

Steel Tie Rod

Cable saddle

Cable Nodes

Steel Structure nodes

Embed components

Can do:

Design

Manufacture

Inspection & Test

Construction & Installation

01 Technical R&D
Juli Sling Co., Ltd. owns:

Post-doctoral Research Station.
National Enterprise Technical Center.
Hebei Province Sling Engineering Research Center.
Member of Sling Industry Innovation Alliance
Excellent unit of Baoding Science and Technology Association
We own top level technical R&D team, and are the largest sling R&D center in Asia.
Juli Sling Co., Ltd. owns:
288 patented or non-patented technologies.
Constitutor or Editor of over 100 National Standards, Industry Standards or local standards, several has bridged industrial gap, and approach to international level.
Main standards:
GB/T39133-2020《Suspender of suspension bridge》
GB/T20934-2016《Steel Tie Rod》
CB/T3597-2004《Anchoring steel rod for drydock》
JG/T330-2011《Cable for construction》
JGJ257-2012《Technical specification for cable structures》
YB/T4543-2016《Zinc-5% Aluminum-mixed mischmetal alloy-coated cable for building engineering》

02 Production and manufacturing

Cable Factory

Covering an area of 36,000 square meters, the cable factory main focuses on high strength steel wire cable, full locked coil cable, Galfan cable, steel wire rope cable, etc. It can produce all kinds of sockets and cable components, and owns 800M long production line and 2000T/5000T horizontal tensile test machine, annual production capacity is 100,000.00 tons.

Steel tie rod factory

Covering an area of 20,000 square meters, it is the first professional manufacturer of R&D and production of steel tie rod and anchor rod in China, with a number of advanced forging, heat treatment, machining, surface treatment production lines, with an annual design capacity of 35,000 tons. Years of continuous development and innovation, occupy the first brand position in China steel tie rod industry.

Heavy industry factory

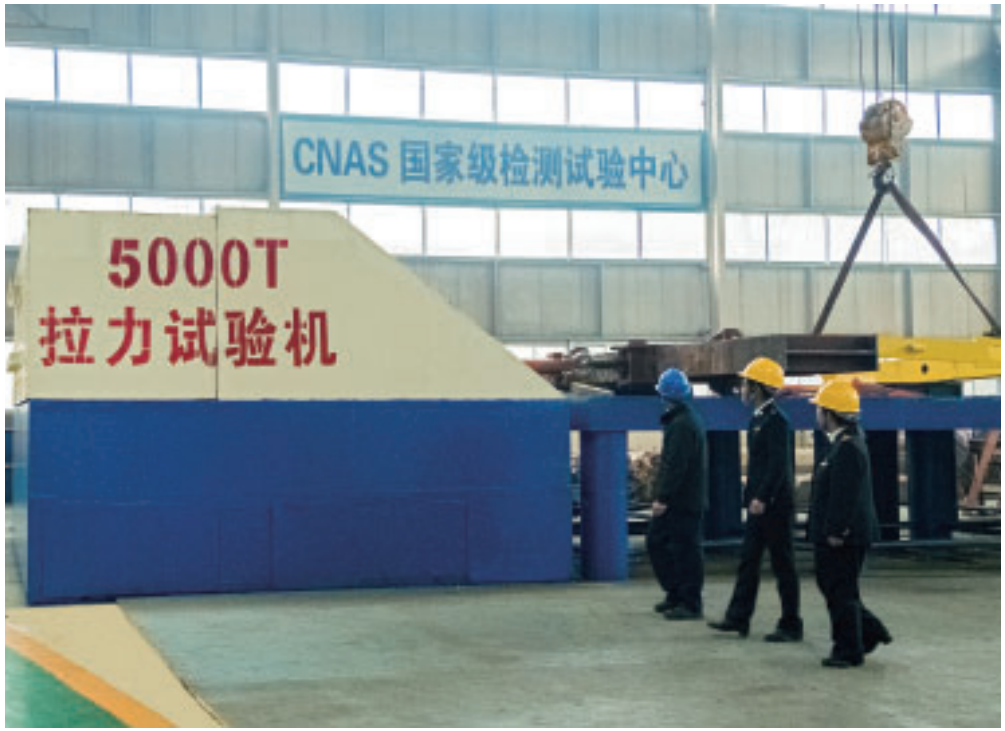
Covering an area of 30,000 square meters, the company has domestic advanced large complete sets of equipment, including 2mX8m CNC fixed beam milling and boring machine, 4mx8m gantry mobile milling and boring centerand boring center---- 4mx8m gantry mobile milling and boring centerand boring center, ϕ 200 floor type CNC milling and boring machine, ϕ160 floor automatic drilling and boring machine, ϕ2000 CNC lathe and other equipment, which can be used for the manufacture of various large saddle, scattered cable sleeve and Cable clamp—ccable nodes .

Steel tie rod Factory

Covering 20,000.00 square meters, it is the first professional factory who is specialized in R&D and Manufacture of steel tie rod and anchor rod in China. It owns several advanced forging\ heat treatments\ machining and surface treatment production line, annual production capacity is 35,000.00 Tons. With several years of innovation and development, it occupies the No.1 brand of steel tie rod in China.

03 INSPECTION AND TEST

The laboratory of the company was accredited by China National Accreditation Committee for Conformity Assessment (CNAS) Laboratory in 2006. The center has been built into a laboratory with strong technical force and advanced testing methods. There are five Testing Lab: Chemical Testing Lab, nondestructive Testing Lab, mechanical Testing Lab, wire rope Testing Lab, metallographic analysis room, all kinds of testing equipment 70 sets, complete types, functional and practical. Among them, 5000T horizontal tensile testing machine is the largest tensile testing equipment in China. With strong nondestructive, physical and chemical testing ability of metal materials and products, our testing center can issue test reports which are internationally recognized.



04 Construction and installation

Engineering & Construction

Founded in 1995, it was formerly subordinate to Shanghai Municipal No.1 Company, and was wholly acquired by Juli Sling Co.,Ltd The company is mainly engaged in professional construction of bridge cable structure, prestressing construction of space steel structure and special hoisting operation, etc. It is the earliest professional prestressing construction company in China.

In the project design stage, provide technical consultation for the design and client; In the project construction stage, provide professional cable structure installation and construction for the general contractor; In the project operation stage, provide cable structure testing and maintenance services for maintenance enterprises; In the overhaul stage of the project: undertake the replacement of all cables.

Business scope: suspension bridge cable system installation protection; Suspension bridge anchorage system installation; Cable-stayed bridge cable installation protection; Field protection of cable structure; Stay cable weatherproof and seismic construction protection; Old bridge maintenance, cable replacement engineering; Spatial structure calculation; Prestressed professional construction; Bridge pushing and unloading; Steel girder hoisting construction, etc.

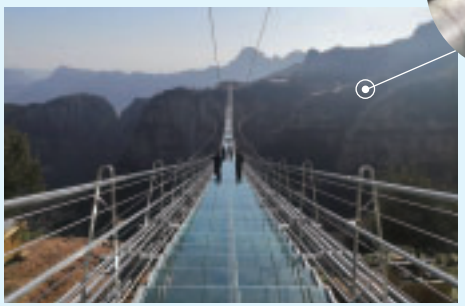
Enterprise advantages: It is the first enterprise in China to complete the construction of self-anchored suspension bridge cable structure, and it is the enterprise that has completed the most projects of self-anchored suspension bridge cable structure. Enterprises with the most completed cable replacement projects in China; With various kinds of bridge construction special equipment, and can meet the main span 800-1200 meters long span suspension bridge construction needs; The latest research and development of bridge construction without catwalk is leading in China. It is the first company in China to adopt winding helix technology to solve wind and rain shock in the field, and provides a practical example for the wind and rain shock resistant double helix cable.

Hongyagu Glass Suspension Bridge

Longest glass suspension bridge in the world

Hongyagu Glass Suspension Bridge has a total length of 488 meters, a total of 433 glass steps, and is paved by 1077 pieces of glass. The vertical distance from the bridge deck to the bottom of the bridge is 218 meters. The overall bridge is magnificent, highlighting the engineering style of a big country, and its length is the longest in the world.

Sensor Installation



Intelligent sling assisting bridge operation monitoring.

Through customized design and modeling analysis, the sensor is embedded in the anchor plate, and the load measurement of the main cable of the bridge is realized through long-term monitoring of the anchor plate load, which provides a scientific basis for bridge operation and maintenance. The system can finally realize the remote wireless monitoring of bridge load, save a lot of wire and other costs, reduce the cost of system construction, quickly complete system installation and debugging, system fault self-diagnosis function, and reduce the difficulty of system operation and maintenance in the later stage.

05 Health monitoring

Structural health monitoring is to point to from construction to operation period, according to the structure of the important parts of stress, deformation, as well as by the wind and snow load and temperature on the structure of the normal service ability of long-term test, in order to accurately and timely record and master the working state of buildings, which can make an accurate judgment to the life of the structure, to facilitate the construction unit to make decisions.

Monitoring system based on intelligent rope, rod, mainly through the cable and rod production process, the data acquisition terminal intellisense original sensor integration in cable-strut products, realize the monitoring to collect data structure, to achieve real-time monitoring, abnormal alarm functions, provide the basis for project maintenance and structure evaluation, to ensure the safety of building operations.

JULISLING

Product catalog

01

PWS Cable

PWS Cable

Fork Socket & Adjustable Fork Socket

Cylindrical Socket with External Thread

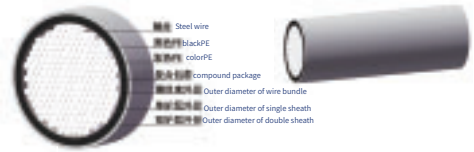
High strength steel wire cables used in engineering are divided into semi-parallel hot extrusion polyethylene steel wire cables and parallel wire cable strands.

Semi-parallel hot extruded polyethylene steel wire cable is the high strength galvanized or zinc-aluminum alloy steel wire, according to the regular hexagonal or hexagonal close arrangement, mildly twisted by left winding polyester fiber belt, and hot extruded high density polyethylene sheath outside the steel wire to form a wire bundle. Anchors are installed by casting at both ends of the wire bundle to form tensile members. Mainly used in cable stayed Bridges, arch Bridges, suspension Bridges, railway stations, airports, stadiums, coal shed and other prestressed structures, product specifications for ϕ5x7~ϕ5x649, ϕ7x7~ϕ7x649, the maximum diameter of ϕ229mm.

Parallel wire cable strand is a number of high strength galvanized or zinc-aluminum alloy steel wire, according to the regular hexagonal parallel group together, every certain distance winding binding tape shape form cable strand. Anchors are installed by casting at both ends of cable strands to form tensile members. Mainly used in the main cable of suspension bridge, the product specifications are 61 wire, 91 wire, 127 wire and 169 wire.

PWS Cable

- Execute GB/T18365-2018 "PWS Cable for cable-stayed Bridge".
- Suitable for building structure cable, bridge cable and sling.
- Special process of cable body: double helix line (D > 90mm), oil injection.



Strands with wire diameter of ϕ5mm

specifications	Diameter of wire bundle (mm)	Single diameter (mm)	Double diameter (mm)	Wire bundle single weight (Kg/m)	Single rope body weight (Kg/m)	Cross-sectional area (mm^2)	Breaking load(KN)			
							σb≥1670MPa	σb≥1770MPa	σb≥1860MPa	σb≥1960MPa
ϕ5×7	15	22		1.1	1.3	137	230	243	256	269
ϕ5×13	22	30		2.0	2.4	255	426	452	475	500
ϕ5×19	25	35	40	2.9	3.7	373	623	660	694	731
ϕ5×31	32	40	45	4.8	5.7	609	1017	1077	1132	1193
ϕ5×37	35	45	50	5.7	6.9	726	1213	1286	1351	1424
ϕ5×55	41	51	55	8.5	9.6	1080	1804	1912	2009	2117
ϕ5×61	45	55	59	9.4	10.8	1198	2001	2120	2228	2348
ϕ5×73	49	59	63	11.3	12.6	1433	2393	2536	2665	2809
ϕ5×85	51	61	65	13.1	14.6	1669	2787	2954	3104	3271
ϕ5×91	55	65	69	14.0	15.8	1787	2984	3163	3324	3503
ϕ5×109	58	68	72	16.8	18.5	2140	3574	3788	3980	4194
ϕ5×121	61	71	75	18.7	20.4	2376	3968	4206	4419	4657
ϕ5×127	65	75	79	19.6	21.7	2494	4165	4414	4639	4888
ϕ5×139	66	78	82	21.4	23.7	2729	4557	4830	5076	5349
ϕ5×151	68	79	83	23.3	25.4	2965	4952	5248	5515	5811
ϕ5×163	71	83	88	25.1	27.5	3200	5345	5665	5953	6273
ϕ5×187	75	87	92	28.8	31.1	3672	6132	6499	6829	7197
ϕ5×199	77	89	94	30.7	33.1	3907	6525	6916	7268	7658
ϕ5×211	81	93	98	32.5	35.3	4143	6919	7333	7706	8120
ϕ5×223	83	95	100	34.4	37.0	4379	7312	7750	8144	8582
ϕ5×241	85	97	102	37.1	39.7	4732	7902	8376	8802	9275
ϕ5×253	87	101	106	39.0	42.1	4968	8296	8793	9240	9737
ϕ5×265	90	105	110	40.8	44.4	5203	8689	9210	9678	10198
ϕ5×283	92	107	112	43.6	46.9	5557	9280	9835	10335	10891
ϕ5×301	95	111	116	46.4	50.1	5910	9870	10461	10993	11584
ϕ5×313	97	113	118	48.2	52.1	6146	10263	10878	11431	12046
ϕ5×337	100	117	122	51.9	55.8	6617	11050	11712	12308	12969
ϕ5×349	101	118	123	53.8	57.7	6853	11444	12129	12746	13431
ϕ5×367	105	121	126	56.6	60.7	7206	12034	12755	13403	14124
ϕ5×379	107	123	128	58.4	62.8	7442	12428	13172	13841	14586
ϕ5×409	110	128	133	63.0	67.5	8031	13411	14214	14937	15740
ϕ5×421	111	129	134	64.9	69.4	8266	13805	14631	15375	16202
ϕ5×439	115	133	138	67.7	72.7	8620	14395	15257	16033	16895
ϕ5×451	116	135	140	69.5	74.8	8855	14788	15674	16471	17356
ϕ5×475	119	137	142	73.2	78.2	9327	15575	16508	17347	18280
ϕ5×499	120	139	148	76.9	82.8	9798	16362	17342	18224	19204
ϕ5×511	123	143	152	78.8	85.5	10033	16756	17759	18662	19666
ϕ5×547	127	147	156	84.3	90.9	10740	17936	19010	19977	21051
ϕ5×583	130	150	159	89.9	96.6	11447	19117	20261	21292	22436
ϕ5×595	133	153	162	91.7	99.1	11683	19510	20679	21730	22898
ϕ5×649	137	157	166	100.0	107.1	12743	21281	22555	23702	24976

PWS Cable

- Execute GB/T18365-2018 "PWS Cable for cable-stayed Bridge".
- Suitable for building structure cable, bridge cable and sling.
- Special process of cable body: double helix line (D > 90mm), oil injection.

Strands with wire diameter of ϕ7mm

specifications	Diameter of wire bundle (mm)	Single diameter (mm)	Double diameter (mm)	Wire bundle single weight (Kg/m)	Single rope body weight (Kg/m)	Cross-sectional area (mm^2)	Breaking load(KN)			
							σb≥1670MPa	σb≥1770MPa	σb≥1860MPa	σb≥1960MPa
ϕ7×7	21	30		2.1	2.5	269	450	477	501	528
ϕ7×13	31	40		3.9	4.5	500	835	886	931	981
ϕ7×19	35	45	50	5.7	6.8	731	1221	1294	1360	1433
ϕ7×31	44	55	60	9.4	10.7	1193	1992	2112	2219	2338
ϕ7×37	49	60	65	11.2	12.8	1424	2378	2520	2649	2791
ϕ7×55	58	68	72	16.6	18.3	2117	3535	3747	3938	4149
ϕ7×61	63	73	77	18.4	20.5	2348	3920	4156	4367	4602
ϕ7×73	68	78	82	22.0	24.2	2809	4692	4972	5225	5506
ϕ7×85	71	83	87	25.6	28.0	3271	5463	5790	6084	6411
ϕ7×91	77	89	93	27.4	30.4	3502	5848	6199	6514	6864
ϕ7×109	81	93	97	32.8	35.7	4195	7005	7425	7803	8222
ϕ7×121	85	99	103	36.4	39.7	4657	7777	8243	8662	9128
ϕ7×127	91	105	109	38.2	42.2	4888	8162	8652	9092	9580
ϕ7×139	92	107	111	41.8	45.7	5349	8933	9468	9949	10484
ϕ7×151	94	109	113	45.5	49.2	5811	9705	10285	10808	11390
ϕ7×163	99	114	120	49.1	53.6	6273	10476	11103	11668	12295
ϕ7×187	105	121	127	56.3	61.2	7197	12018	12739	13386	14106
ϕ7×199	108	124	130	59.9	64.9	7658	12790	13555	14244	15010
ϕ7×211	113	129	135	63.5	69.0	8120	13561	14372	15103	15915
ϕ7×223	116	133	139	67.1	73.0	8582	14332	15190	15963	16821
ϕ7×241	119	135	141	72.5	78.1	9275	15489	16417	17252	18179
ϕ7×253	122	139	145	76.2	82.1	9737	16260	17234	18111	19085
ϕ7×265	127	144	150	79.8	86.3	10198	17031	18050	18968	19988
ϕ7×283	129	147	153	85.2	91.8	10891	18188	19277	20257	21346
ϕ7×301	133	151	157	90.6	97.4	11584	19345	20504	21546	22705
ϕ7×313	135	154	160	94.2	101.3	12046	20116	21321	22406	23610
ϕ7×337	141	160	166	101.4	109.0	12969	21659	22955	24122	25419
ϕ7×349	142	162	168	105.0	112.7	13431	22430	23773	24982	26325
ϕ7×367	147	167	173	110.5	118.6	14124	23587	24999	26271	27683
ϕ7×379	149	170	178	114.1	123.1	14586	24358	25817	27130	28589
ϕ7×409	155	176	184	123.1	132.6	15740	26286	27860	29276	30850
ϕ7×421	155	177	185	126.7	136.0	16202	27057	28678	30136	31756
ϕ7×439	161	183	191	132.1	142.4	16895	28214	29904	31425	33114
ϕ7×451	163	185	193	135.8	146.2	17357	28985	30722	32284	34020
ϕ7×475	166	190	198	143.0	153.9	18280	30528	32356	34001	35829
ϕ7×499	169	193	202	150.7	160.7	19204	32070	33991	35719	37639
ϕ7×511	172	197	206	154.4	165.3	19666	32841	34808	36578	38545
ϕ7×547	177	204	213	165.3	176.4	21051	35155	37260	39155	41260
ϕ7×583	182	209	218	176.1	187.8	22436	37469	39713	41732	43975
ϕ7×595	186	213	222	179.8	192.5	22898	38240	40530	42591	44881
ϕ7×649	192	220	229	196.1	208.6	24976	41711	44208	46456	48954

Fork Socket & Adjustable Fork Socket

- Execute GB/T18365-2018 "PWS Cable for cable-stayed Bridge".
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end and a regulating end.
- Scope of application: Sports venues, exhibition centers, etc. Easy to adjust, strong use.
- Phi sigma 5 mm series b p 1670 mpa

Two-way screw type with fork ears

specifications	Cable diameter (mm)	In opening A (mm)	Outside opening B (mm)	The end distance is C (mm)	Fork ear depth E (mm)	Pin shaft diameter F (mm)	The ear plate width G (mm)	Adjust quantity of T (mm)	Breaking force (KN)
ϕ5×7	22	25	55	45	70	29	70	50	230
ϕ5×13	30	35	75	61	85	39	95	50	426
ϕ5×19	40	40	85	73	110	46	114	50	623
ϕ5×31	45	50	105	95	130	59	148	50	1017
ϕ5×37	50	55	115	103	140	64	162	80	1213
ϕ5×55	55	65	135	126	165	78	200	80	1804
ϕ5×61	59	70	145	133	175	83	210	80	2001
ϕ5×73	63	75	155	145	190	89	228	80	2393
ϕ5×85	65	80	165	156	205	96	248	80	2787
ϕ5×91	69	85	175	160	210	98	252	80	2984
ϕ5×109	72	90	185	175	225	108	280	100	3574
ϕ5×121	75	95	195	185	240	114	295	100	3968
ϕ5×127	79	100	205	190	245	116	300	100	4165
ϕ5×139	82	105	215	198	255	122	315	100	4557
ϕ5×151	83	110	225	205	260	127	325	100	4952
ϕ5×163	88	115	235	215	270	132	340	100	5345
ϕ5×187	92	120	245	230	295	142	365	100	6132
ϕ5×199	94	120	250	237	300	146	375	100	6525
ϕ5×211	98	125	260	243	300	148	385	100	6919
ϕ5×223	100	135	275	250	315	154	400	100	7312
ϕ5×241	102	140	285	265	325	165	420	100	7902
ϕ5×253	106	140	290	275	340	172	435	100	8296
ϕ5×265	110	145	295	282	340	175	445	120	8689
ϕ5×283	112	145	300	290	355	180	460	120	9280
ϕ5×301	116	155	315	300	365	186	475	120	9870

note: 1. The opening (A) and adjusting amount (T) of the anchor can be adjusted appropriately according to the needs of the project.
2. The dimensions of ϕ7 series anchors can be replaced by ϕ5 series anchors according to the breaking load.

Fork Socket & Adjustable Fork Socket

- Execute GB/T18365-2018 "PWS Cable for cable-stayed Bridge".
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end and a regulating end.
- Scope of application: Sports venues, exhibition centers, etc. Large adjustment range.
- Phi sigma 5 mm series b p 1670 mpa

Single ear bidirectional screw type

specifications	Cable diameter (mm)	A single ear thick (mm)	The end distance is C (mm)	Monaural depth E (mm)	Pin shaft diameter F (mm)	The ear plate width G (mm)	Adjust quantity of T (mm)	Breaking force (KN)
ϕ5×7	22	30	45	70	29	70	80	230
ϕ5×13	30	40	61	85	39	95	80	426
ϕ5×19	40	45	73	110	46	114	100	623
ϕ5×31	45	55	95	130	59	148	100	1017
ϕ5×37	50	60	103	140	64	162	100	1213
ϕ5×55	55	70	126	165	78	200	100	1804
ϕ5×61	59	75	133	175	83	210	100	2001
ϕ5×73	63	80	145	190	89	228	100	2393
ϕ5×85	65	85	156	205	96	248	100	2787
ϕ5×91	69	90	160	210	98	252	100	2984
ϕ5×109	72	95	175	225	108	280	100	3574
ϕ5×121	75	100	185	240	114	295	100	3968
ϕ5×127	79	105	190	245	116	300	150	4165
ϕ5×139	82	110	198	255	122	315	150	4557
ϕ5×151	83	115	205	260	127	325	150	4952
ϕ5×163	88	120	215	270	132	340	150	5345
ϕ5×187	92	125	230	295	142	365	150	6132
ϕ5×199	94	130	237	300	146	375	150	6525
ϕ5×211	98	135	243	300	148	385	150	6919
ϕ5×223	100	140	250	315	154	400	150	7312
ϕ5×241	102	145	265	325	165	420	150	7902
ϕ5×253	106	150	275	340	172	435	150	8296
ϕ5×265	110	150	282	340	175	445	150	8689
ϕ5×283	112	155	290	355	180	460	150	9280
ϕ5×301	116	160	300	365	186	475	200	9870

note: 1. The opening (A) and adjusting amount (T) of the anchor can be adjusted appropriately according to the needs of the project.
2. The dimensions of ϕ7 series anchors can be replaced by ϕ5 series anchors according to the breaking load.

Cylindrical Socket with External Thread

- Implement internal standards.
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end anchor cup and a tensioned end anchor cup.
- Scope of application: prestressed structures such as buildings and Bridges.
- Phi sigma 5 mm series b p 1670 mpa

Φ5Standard cold cast anchor

specifications	Tensioning end anchor cup length L1 (mm)	Fixed end anchor cup length L2 (mm)	Height of nut H (mm)	Outer diameter of the nut D1 (mm)	Anchor cup OD D2 (mm)	Tension end internal thread D3 (mm)	Breaking force (KN)	Reference size of embedded pipe (mm)
JLLZMϕ5×55	280	240	75	190	Tr140x6	Tr110x6	1803	168x8
JLLZMϕ5×61	310	240	75	190	Tr140x6	Tr110x6	2000	168x8
JLLZMϕ5×73	350	280	100	210	Tr160x8	Tr120x8	2394	180x5
JLLZMϕ5×85	350	280	100	210	Tr160x8	Tr120x8	2787	180x5
JLLZMϕ5×91	365	295	100	230	Tr170x8	Tr130x8	2984	194x6
JLLZMϕ5×109	390	295	120	240	Tr180x10	Tr135x10	3574	203x6
JLLZMϕ5×121	400	305	120	250	Tr190x10	Tr140x10	3968	219x8
JLLZMϕ5×127	410	315	120	260	Tr200x10	Tr150x10	4164	245x15
JLLZMϕ5×139	430	325	120	270	Tr200x10	Tr150x10	4558	245x15
JLLZMϕ5×151	440	325	120	270	Tr200x10	Tr150x10	4951	245x15
JLLZMϕ5×163	460	345	140	280	Tr210x12	Tr155x12	5345	245x10
JLLZMϕ5×187	470	355	140	290	Tr220x12	Tr160x12	6132	273x18
JLLZMϕ5×199	500	360	140	300	Tr230x12	Tr165x14	6525	273x12
JLLZMϕ5×211	500	360	140	300	Tr230x12	Tr170x14	6919	273x12
JLLZMϕ5×223	510	370	170	310	Tr240x12	Tr175x14	7312	273x8
JLLZMϕ5×241	530	380	170	330	Tr250x14	Tr180x14	7902	273x6.5
JLLZMϕ5×253	560	390	170	340	Tr260x14	Tr190x16	8296	299x12
JLLZMϕ5×265	570	400	170	340	Tr260x14	Tr190x16	8689	299x12
JLLZMϕ5×283	580	410	170	350	Tr270x14	Tr200x16	9280	299x7.5
JLLZMϕ5×301	590	420	190	360	Tr280x16	Tr205x16	9870	325x14

Cylindrical Socket with External Thread

- Implement internal standards.
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end anchor cup and a tensioned end anchor cup.
- Scope of application: prestressed structures such as buildings and Bridges.
- Phi sigma 7 mm series b p 1670 mpa

ϕ7Standard Cylindrical Socket with External Thread

规格	Tensioning end anchor cup length L1 (mm)	Fixed end anchor cup length L2 (mm)	Height of nut H (mm)	Outer diameter of the nut D1 (mm)	Anchor cup OD D2 (mm)	Tension end internal thread D3 (mm)	Breaking force (KN)	Reference size of embedded pipe (mm)
JLLZM ϕ 7 × 55	385	340	80	230	Tr170 × 6	Tr140 × 6	3535	Φ 194 × 5
JLLZM ϕ 7 × 61	385	340	80	230	Tr170 × 6	Tr140 × 6	3920	Φ 194 × 5
JLLZM ϕ 7 × 73	405	360	100	250	Tr190 × 8	Tr155 × 6	4692	Φ 219 × 8
JLLZM ϕ 7 × 85	405	360	100	250	Tr190 × 8	Tr155 × 6	5463	Φ 219 × 8
JLLZM ϕ 7 × 91	440	370	100	260	Tr200 × 8	Tr165 × 8	5848	Φ 245 × 15
JLLZM ϕ 7 × 109	460	390	120	290	Tr220 × 10	Tr180 × 8	7005	Φ 245 × 6.5
JLLZM ϕ 7 × 121	510	415	120	300	Tr230 × 10	Tr185 × 8	7777	Φ 273 × 15
JLLZM ϕ 7 × 127	520	425	120	310	Tr240 × 10	Tr195 × 10	8162	Φ 273 × 8
JLLZM ϕ 7 × 139	520	425	120	310	Tr240 × 10	Tr195 × 10	8933	Φ 273 × 8
JLLZM ϕ 7 × 151	530	435	120	330	Tr250 × 10	Tr195 × 10	9705	Φ 273 × 6.5
JLLZM ϕ 7 × 163	550	455	120	340	Tr260 × 10	Tr205 × 10	10476	Φ 299 × 12
JLLZM ϕ 7 × 187	580	485	150	350	Tr270 × 12	Tr215 × 10	12018	Φ 299 × 7.5
JLLZM ϕ 7 × 199	620	515	150	370	Tr280 × 12	Tr220 × 10	12790	Φ 325 × 15
JLLZM ϕ 7 × 211	630	525	150	380	Tr290 × 12	Tr230 × 10	13561	Φ 325 × 10
JLLZM ϕ 7 × 223	640	535	150	390	Tr300 × 12	Tr235 × 10	14332	Φ 325 × 7.5
JLLZM ϕ 7 × 241	665	545	170	400	Tr310 × 14	Tr240 × 12	15489	Φ 351 × 13
JLLZM ϕ 7 × 253	700	570	170	420	Tr320 × 14	Tr250 × 12	16260	Φ 351 × 9
JLLZM ϕ 7 × 265	700	570	170	420	Tr320 × 14	Tr255 × 12	17031	Φ 351 × 9
JLLZM ϕ 7 × 283	730	590	170	430	Tr330 × 14	Tr265 × 14	18188	Φ 377 × 15
JLLZM ϕ 7 × 301	750	610	190	440	Tr340 × 16	Tr270 × 14	19345	Φ 377 × 10
JLLZM ϕ 7 × 313	795	630	190	470	Tr360 × 16	Tr285 × 16	20116	Φ 402 × 12
JLLZM ϕ 7 × 337	795	630	190	470	Tr360 × 16	Tr285 × 16	21659	Φ 402 × 12
JLLZM ϕ 7 × 349	815	650	190	480	Tr360 × 16	Tr295 × 16	22430	Φ 402 × 12
JLLZM ϕ 7 × 367	815	650	190	480	Tr370 × 18	Tr295 × 16	23587	Φ 406 × 10
JLLZM ϕ 7 × 379	865	690	220	510	Tr390 × 18	Tr310 × 16	24358	Φ 426 × 10
JLLZM ϕ 7 × 421	890	720	220	520	Tr400 × 18	Tr320 × 16	27057	Φ 450 × 15

Cylindrical Socket with External Thread

- Execute GB/T18365-2018 "PWS Cable for Cable-stayed Bridge"
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end anchor cup and a tensioned end anchor cup.
- Scope of application: prestressed structures such as buildings and Bridges.
- Phi is 5 mm series

ϕ5Cylindrical Socket with External Thread

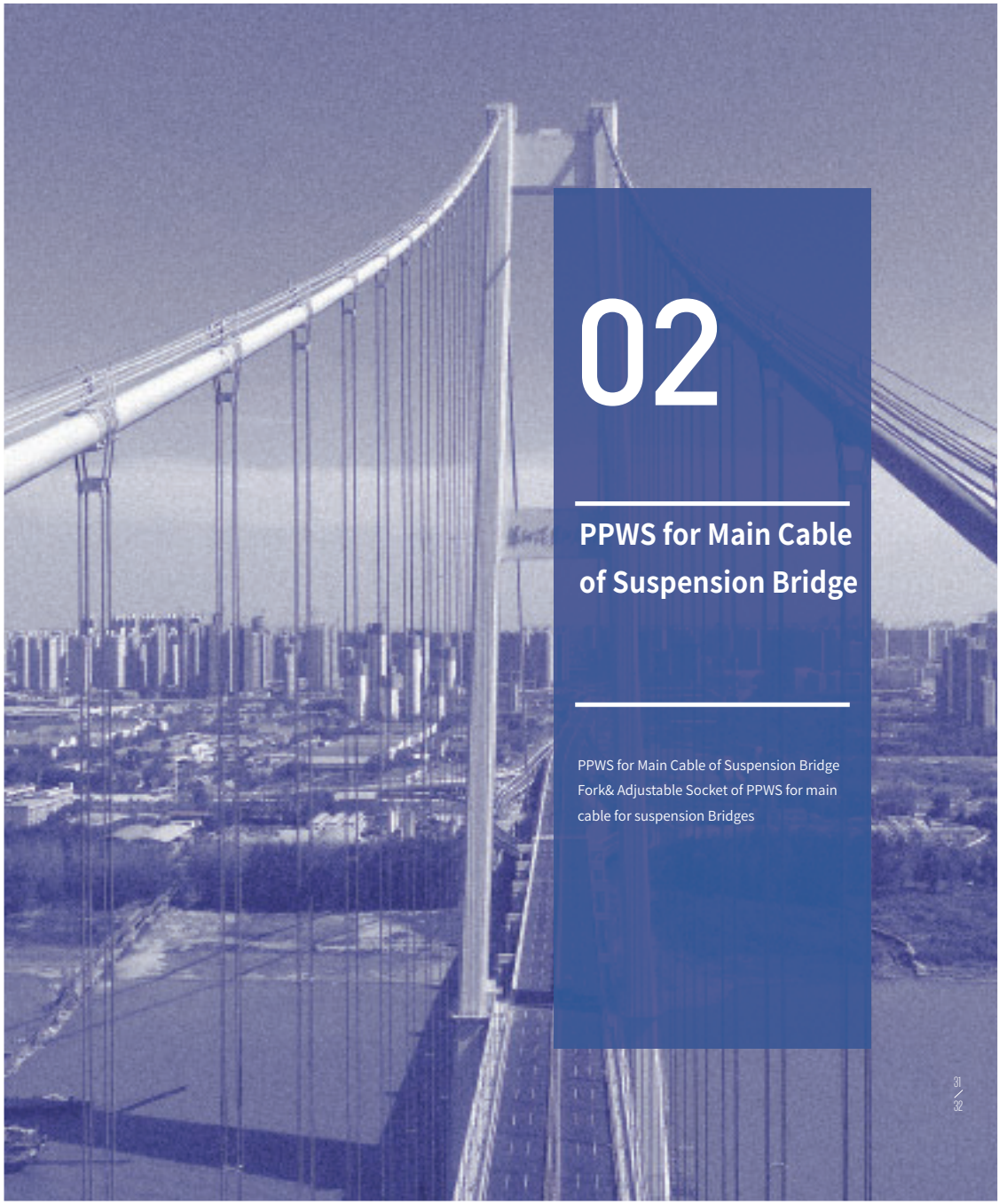
specifications	Tensioning end anchor cup length L1 (mm)	Fixed end anchor cup length L2 (mm)	Height of nut H (mm)	Outer diameter of the nut D1 (mm)	Outer diameter of the nut D1 (mm)	Tension end internal thread D3 (mm)	Breaking force (KN)	Reference size of embedded pipe (mm)
GBLZM ϕ 5 × 55	300	300	70	170	Tr135X6	Tr105X5	1804	152x4.5
GBLZM ϕ 5 × 61	300	300	90	190	Tr150X8	Tr115X6	2001	168x5
GBLZM ϕ 5 × 73	300	300	90	190	Tr150X8	Tr115X6	2393	168x5
GBLZM ϕ 5 × 85	335	335	90	210	Tr165X8	Tr125X6	2787	194x9
GBLZM ϕ 5 × 91	335	335	90	210	Tr165X8	Tr125X6	2984	194x9
GBLZM ϕ 5 × 109	350	295	90	220	Tr175X8	Tr130X8	3574	194x5
GBLZM ϕ 5 × 121	360	295	90	230	Tr180X8	Tr135X8	3968	203x6
GBLZM ϕ 5 × 127	370	295	90	245	Tr190X8	Tr140X8	4165	219x8
GBLZM ϕ 5 × 139	370	295	90	245	Tr190X8	Tr140X8	4557	219x8
GBLZM ϕ 5 × 151	410	325	110	270	Tr205X10	Tr150X8	4952	245x12

Cylindrical Socket with External Thread

- Implement GB/T18365-2018 standard.
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end anchor cup and a tensioned end anchor cup.
- Scope of application: prestressed structures such as buildings and Bridges.
- Phi sigma 7 mm series b = 1670 mpa

ϕ7Cylindrical Socket with External Thread

specifications	Tensioning end anchor cup length L1 (mm)	Fixed end anchor cup length L2 (mm)	Height of nut H (mm)	Outer diameter of the nut D1 (mm)	Outer diameter of the nut D1 (mm)	Tension end internal thread D3 (mm)	Breaking force (KN)	Reference size of embedded pipe (mm)
GBLZM ϕ 7 × 55	350	295	90	220	Tr175 × 8	Tr130 × 8	3535	Φ194 × 5
GBLZM ϕ 7 × 61	360	295	90	230	Tr180 × 8	Tr135 × 8	3920	Φ203 × 6
GBLZM ϕ 7 × 73	370	295	90	245	Tr190 × 8	Tr140 × 8	4692	Φ219 × 8
GBLZM ϕ 7 × 85	410	325	110	270	Tr205 × 10	Tr150 × 8	5463	Φ245 × 12
GBLZM ϕ 7 × 91	410	325	110	275	Tr210 × 10	Tr155 × 8	5848	Φ245 × 10
GBLZM ϕ 7 × 109	430	335	110	305	Tr225 × 10	Tr165 × 10	7005	Φ273 × 15
GBLZM ϕ 7 × 121	450	340	135	310	Tr240 × 12	Tr175 × 10	7777	Φ273 × 8
GBLZM ϕ 7 × 127	450	345	135	320	Tr245 × 12	Tr180 × 10	8162	Φ273 × 7
GBLZM ϕ 7 × 139	460	350	135	325	Tr250 × 12	Tr180 × 12	8933	Φ273 × 6.5
GBLZM ϕ 7 × 151	480	355	135	340	Tr265 × 12	Tr190 × 12	9705	Φ299 × 9
GBLZM ϕ 7 × 163	510	375	135	350	Tr270 × 12	Tr195 × 12	10476	Φ299 × 7.5
GBLZM ϕ 7 × 187	520	375	155	380	Tr285 × 12	Tr205 × 12	12018	Φ325 × 12
GBLZM ϕ 7 × 199	540	395	155	385	Tr300 × 14	Tr215 × 14	12790	Φ325 × 7.5
GBLZM ϕ 7 × 211	555	395	180	405	Tr310 × 14	Tr220 × 14	13561	Φ351 × 13
GBLZM ϕ 7 × 223	575	410	180	405	Tr315 × 14	Tr225 × 14	14332	Φ351 × 10
GBLZM ϕ 7 × 241	585	415	180	425	Tr330 × 16	Tr235 × 16	15489	Φ377 × 15
GBLZM ϕ 7 × 253	595	425	180	440	Tr335 × 16	Tr240 × 16	16260	Φ377 × 13
GBLZM ϕ 7 × 265	610	425	200	445	Tr345 × 16	Tr245 × 16	17031	Φ377 × 9
GBLZM ϕ 7 × 283	635	445	200	450	Tr345 × 18	Tr245 × 18	18188	Φ377 × 9
GBLZM ϕ 7 × 301	645	450	200	475	Tr360 × 18	Tr255 × 18	19345	Φ402 × 12
GBLZM ϕ 7 × 313	655	460	200	480	Tr365 × 18	Tr260 × 18	20116	Φ402 × 11
GBLZM ϕ 7 × 337	695	480	220	495	Tr385 × 20	Tr270 × 18	21659	Φ426 × 12
GBLZM ϕ 7 × 349	710	495	220	505	Tr385 × 20	Tr270 × 20	22430	Φ426 × 12
GBLZM ϕ 7 × 367	715	500	220	510	Tr390 × 20	Tr275 × 20	23587	Φ426 × 10
GBLZM ϕ 7 × 379	725	510	220	530	Tr400 × 20	Tr280 × 20	24358	Φ450 × 15
GBLZM ϕ 7 × 409	755	510	245	540	Tr415 × 22	Tr290 × 22	26286	Φ450 × 10
GBLZM ϕ 7 × 421	775	530	245	545	Tr420 × 22	Tr295 × 22	27057	Φ465 × 14
GBLZM ϕ 7 × 439	785	540	245	560	Tr425 × 22	Tr300 × 22	28214	Φ465 × 12
GBLZM ϕ 7 × 451	790	545	245	560	Tr430 × 22	Tr300 × 22	28985	Φ465 × 10
GBLZM ϕ 7 × 475	815	550	265	580	Tr445 × 24	Tr310 × 24	30528	Φ480 × 10



02

PPWS for Main Cable of Suspension Bridge

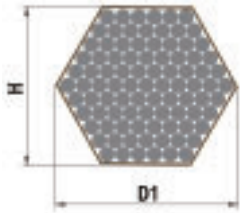
PPWS for Main Cable of Suspension Bridge
Fork& Adjustable Socket of PPWS for main cable for suspension Bridges

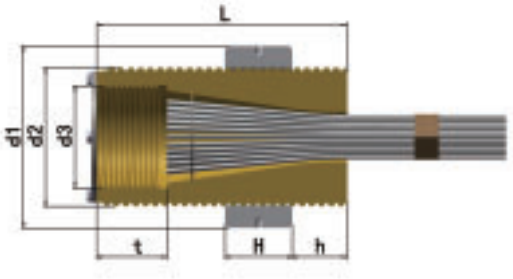
PPWS for Main Cable of Suspension Bridge

- Implement JT/T395-1999 "Technical Conditions for PPWS for Main Cable of Suspension Bridge".
- The structure is composed of wire strands and anchor heads at both ends.
- Application: Main cable of suspension bridge.
- Sigma phi 5 mm b p 1670 mpa

PPWS for Main Cable of Suspension Bridge

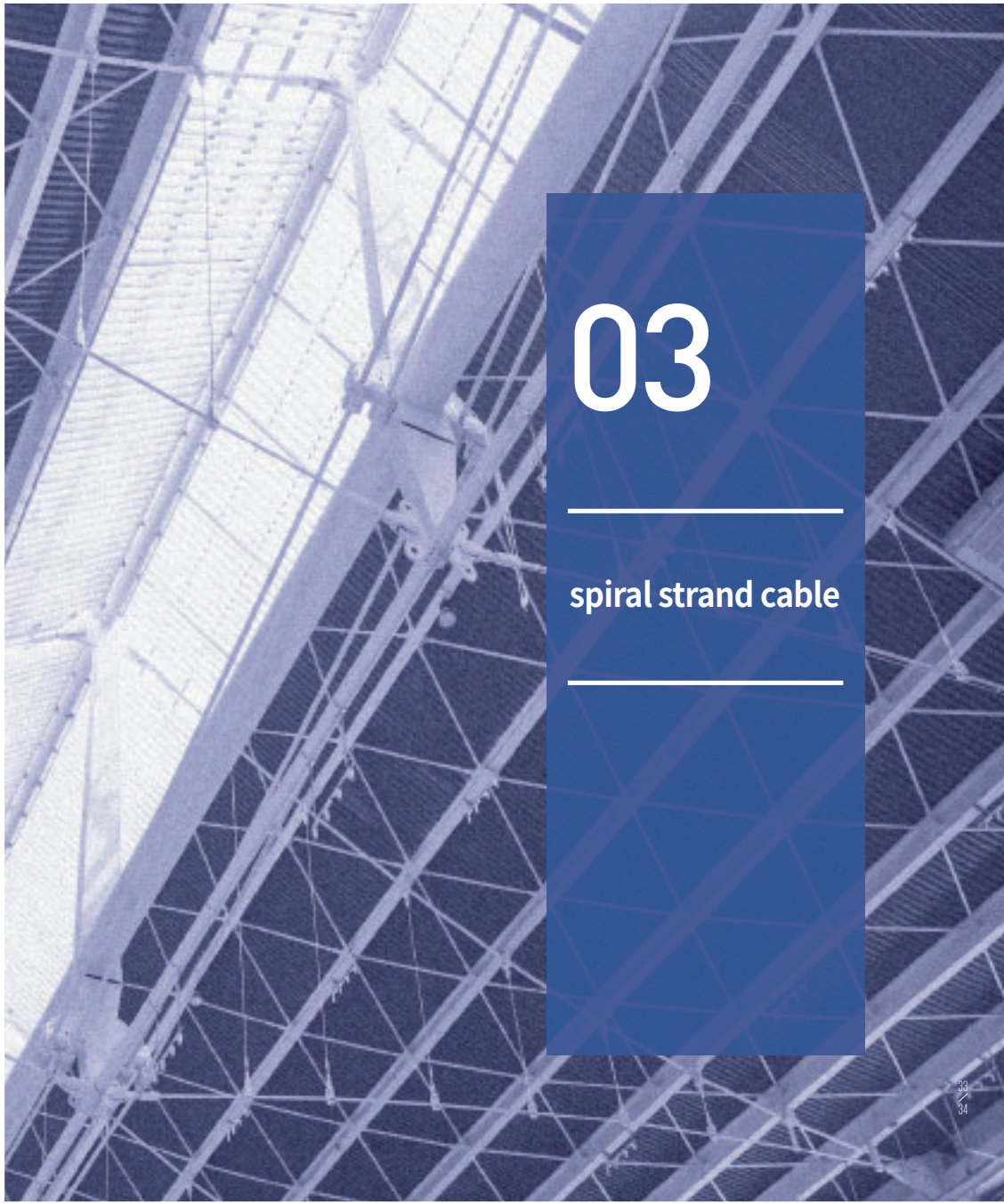
specifications	Maximum diameter of wire bundle D1 (mm)	Steel wire bundle height H (mm)	The cross-sectional area of the wire bundle S (mm2)	Wire bundle single weight (Kg/m)	Breaking force (KN)
Φ5×61	46	40	1198	9.4	2000
Φ5×91	56	48	1787	14	2984
Φ5×127	66	57	2494	19.6	4164
Φ5×169	75	66	3318	26	5541





ϕ5Fork& Adjustable Socket of PPWS for main cable for suspension Bridges

specifications	Anchor cup length L1 (mm)	Height of nut H (mm)	Length of tension thread T (mm)	Outer diameter of the nut D1 (mm)	Anchor cup external thread diameter D2 (mm)	Anchor cup inner thread diameter D3 (mm)	Nut adjustment quantity H (mm)	Breaking force (Pb) KN
Φ5×61	340	75	100	190	Tr140X6	Tr110X6	83	2000
Φ5×91	365	100	100	230	Tr170X8	Tr130X8	83	2984
Φ5×127	410	120	125	260	Tr200X10	Tr150X10	83	4164
Φ5×169	465	120	125	290	Tr220X10	Tr165X10	110	5541



03

spiral strand cable

spiral strand cable

The cable body is composed of a round steel wire as the center, and the outer part is composed of a layer or multiple layers of round steel wire with spiral wrapping twist. The surface of the steel wire is coated with spiral strand cable. Both ends of the cable body are connected with anchors by casting method, which is mainly used in prestressed structures such as railway stations, sports venues, exhibition centers, cable mold structures, glass curtain walls and bridge construction. Production specifications ϕ20mm-ϕ160mm.

The product implementation standard is spiral strand cable.

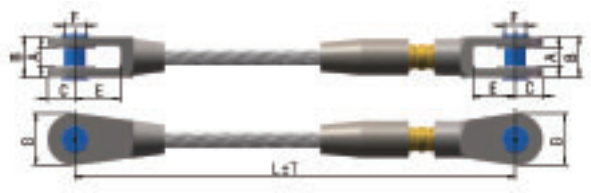
- Execute YB/T4542-2016 spiral strand cable
  The structure is composed of a steel wire core with one or more layers of round steel wire wrapped
- in a spiral twist.
  The steel wire surface is coated with Galfan coating (zinc -5% aluminum - mixed rare earth alloy coating).
- Strong corrosion resistance, metal texture, beautiful and generous.
  ϕ30～ϕ140mm σb≥1670MPa、σb≥1770MPa
-

Spiral Strand(SS)

The nominal name of steel strand Diameter (mm)	reference weight (kg/100m)	The nominal name of steel strand Cross-sectional area (was	Minimum breaking force of strand (KN)	
			1670MPa	1770MPa
ϕ30	434	525	789	836
ϕ32	493	601	903	957
ϕ36	624	755	1140	1200
ϕ40	783	965	1450	1540
ϕ44	933	1140	1710	1820
ϕ48	1110	1380	2070	2200
ϕ50	1200	1450	2180	2310
ϕ55	1460	1790	2630	2780
ϕ60	1730	2120	3190	3380
ϕ65	1990	2450	3680	3900
ϕ70	2360	2930	4310	4560
ϕ75	2680	3300	4960	5260
ϕ80	3080	3750	5640	6000
ϕ85	3480	4260	6260	6630
ϕ90	3900	4810	7230	7660
ϕ95	4290	5260	7910	8380
ϕ100	4820	5990	8800	9320
ϕ105	5300	6500	9770	10400
ϕ110	5830	7130	10700	11400
ϕ115	6370	7800	11460	12140
ϕ120	6940	8490	12190	12910
ϕ125	7470	9160	13800	14600
ϕ130	8140	9960	14310	15160
ϕ135	8780	10740	15430	16350
ϕ140	9350	11470	17200	18300

Fork Socket & Adjustable Fork Socket Fork-lug screw regulating type

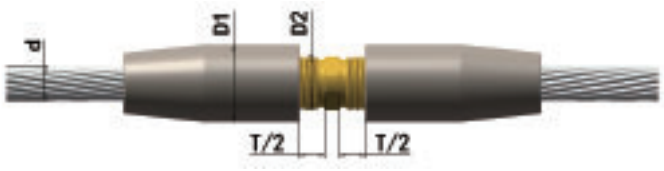
- Execute YB/T4543-2016 spiral strand cable.
- The structure is composed of cable body and anchor at both ends. The anchor is composed of a fixed end and a regulating end.
- Scope of application: Sports venues, exhibition centers, etc.
- From 30 to 140 mm sigma b p 1670 mpa



Cable body diameter D (mm)	In opening A (mm)	Outside opening B (mm)	The end distance is C (mm)	Pin shaft diameter F (mm)	Fork ear depth E (mm)	The ear plate width G(mm)	Adjust quantity of T (mm)	Breaking force (KN)
Φ30	50	100	90	55	110	140	60	789
Φ32	50	105	90	57	115	140	60	903
Φ36	55	115	104	65	130	162	60	1140
Φ40	65	135	115	73	145	182	60	1450
Φ44	70	145	124	79	160	195	60	1710
Φ48	75	155	140	88	170	215	60	2070
Φ50	80	165	150	93	180	225	80	2180
Φ55	90	180	165	102	195	250	80	2630
Φ60	95	190	175	107	210	270	80	3190
Φ65	105	210	185	117	230	290	80	3680
Φ70	110	220	205	126	245	315	100	4310
Φ75	115	235	220	136	260	340	100	4960
Φ80	125	250	235	145	280	365	100	5640
Φ85	130	265	250	155	295	385	100	6260
Φ90	140	285	265	166	315	410	100	7230
Φ95	145	295	275	174	330	430	100	7910
Φ100	155	310	295	182	350	455	100	8800
Φ105	160	320	300	186	360	475	120	9770
Φ110	170	340	315	196	380	500	120	10700
Φ115	175	350	330	206	395	520	120	11460
Φ120	190	370	345	215	415	540	120	12190
Φ125	195	385	355	222	425	560	150	13800
Φ130	200	395	370	228	440	575	150	14310
Φ135	205	405	385	236	455	600	150	15430
Φ140	210	420	395	245	475	620	150	17200

Fork Socket & Adjustable Fork Socket Ring type cable

- Execute YB/T4543-2016 spiral strand cable.
  The structure is composed of cable body, casting joint and adjusting screw.
- Scope of application: football stadium and other stadiums.
- ϕ30～ϕ140mm σb≥1670MPa

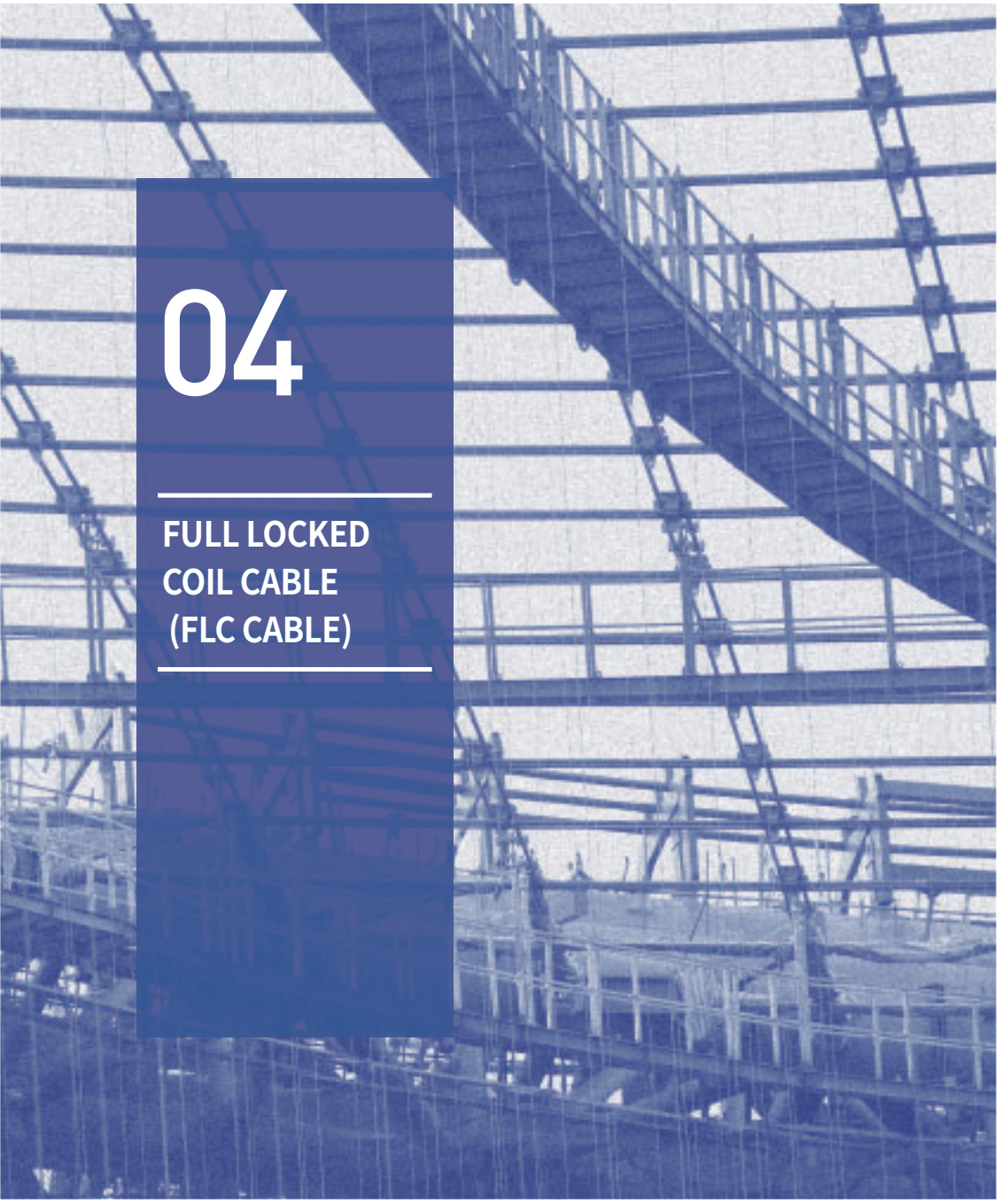


diameter of cable (mm)	Diameter of casting joint D1 (mm)	Screw rod diameter D2 (mm)	Adjustment T (mm)	Breaking force (KN)
Φ40	115	M75X6	60	1450
Φ44	125	M80X6	60	1710
Φ48	135	M85X6	60	2070
Φ50	145	M90X6	80	2180
Φ55	150	M95X6	80	2630
Φ60	165	Tr105X8	80	3190
Φ65	180	Tr115X8	80	3680
Φ70	195	Tr125X8	100	4310
Φ75	205	Tr130X8	100	4960
Φ80	220	Tr140X8	100	5640
Φ85	230	Tr150X10	100	6260
Φ90	250	Tr160X10	100	7230
Φ95	260	Tr170X10	100	7910
Φ100	275	Tr180X10	100	8800
Φ105	290	Tr190X10	120	9770
Φ110	310	Tr200X12	120	10700
Φ115	315	Tr200X12	120	11460
Φ120	325	Tr210X12	120	12190
Φ125	340	Tr220X12	150	13800
Φ130	350	Tr230X12	150	14310
Φ135	365	Tr240X12	150	15430
Φ140	380	Tr250X12	150	17200

Fork Socket & Adjustable Fork Socket Anchor cup nut type

- Complies with YB/T4543-2016spiral strand cable for construction engineering"
- The structure consists of cable and anchor head.
- Scope of application: Anchor cup nut type-For nut socketing
- ϕ30～ϕ140mm σb≥1670MPa

diameter of cable (mm)	Anchor cup length L (mm)	Outer diameter of the nut D1 (mm)	Anchor cup external thread D2 (mm)	Anchor cup internal thread D3 (mm)	Length of tension thread T (mm)	Height of nut H (mm)	Breaking force (KN)
ϕ40	220	165	M115X6	M76X6	75	70	1450
ϕ44	235	180	M125X6	M85X6	75	70	1710
ϕ48	255	190	M135X6	M90X6	80	75	2070
ϕ50	260	195	M140X6	M95X6	80	75	2180
ϕ55	280	215	M155X6	M100X6	80	80	2630
ϕ60	300	230	M165X6	M110X6	85	95	3190
ϕ65	345	250	Tr180X8	Tr120X8	110	95	3680
ϕ70	370	265	Tr195X8	Tr130X8	115	105	4310
ϕ75	395	280	Tr205X8	Tr135X8	120	105	4960
ϕ80	425	300	Tr220X10	Tr145X8	130	115	5640
ϕ85	445	320	Tr235X10	Tr155X10	135	135	6260
ϕ90	475	340	Tr250X12	Tr165X10	145	135	7230
ϕ95	500	350	Tr260X12	Tr170X10	150	135	7910
ϕ100	515	370	Tr275X12	Tr180X10	160	135	8800
ϕ105	540	380	Tr285X14	Tr190X12	165	160	9770
ϕ110	565	400	Tr300X14	Tr200X12	170	160	10700
ϕ115	590	415	Tr315X14	Tr210X12	175	165	11460
ϕ120	605	425	Tr325X14	Tr215X12	175	170	12190
ϕ125	650	435	Tr335X14	Tr225X14	200	170	13800
ϕ130	675	445	Tr345X14	Tr235X14	205	175	14310
ϕ135	700	465	Tr360X16	Tr245X16	215	190	15430
ϕ140	720	475	Tr370X16	Tr250X16	215	190	17200



04

FULL LOCKED COIL CABLE (FLC CABLE)

- Complies with YB/T5295-2010 “Full locked coil wire rope” or EN12385-10:2003 “Single lay wire rope for general structural purposes”.
- The structure consists of inner round steel wire and outer Z-shaped steel wire. Two adjacent layers of steel wire twisted around each other.
- The steel wire surface of coated with Galfan coating (Spiral strand cable). Good sealing and corrosion resistance.
- 40～φ140mm σb≥1570MPa

Parameters of Full Locked Coil Cable (FLC cable)

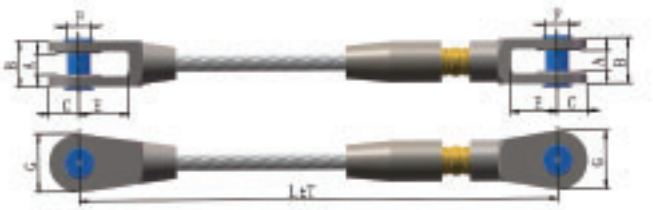
Nominal diameter (mm)	eference weight (kg/100m)	Nominal cross-sectional area (mm2)	minimum breaking load (KN)
ϕ 40	920	1100	1580
ϕ 45	1200	1410	2000
ϕ 50	1400	1740	2470
ϕ 55	1800	2170	3020
ϕ 60	2200	2590	3590
ϕ 65	2500	2980	4220
ϕ 70	2900	3420	4890
ϕ 75	3300	3910	5620
ϕ 80	3700	4420	6390
ϕ 85	4200	4990	7210
ϕ 90	4600	5560	8090
ϕ 95	5100	6150	9110
ϕ 100	5600	6760	10100
ϕ 105	6400	7650	11100
ϕ 110	7100	8460	12200
ϕ 115	7600	9110	13400
ϕ 120	8200	9910	14500
ϕ 125	8900	10700	15800
ϕ 130	9700	11470	16200
ϕ 135	10400	12370	17500
ϕ 140	11200	13300	18700

introduction to full locked coil cable

The cable adopts full locked coil wire rope, which consists of inner round steel wire and outer Z-shaped steel wire. The outer layer consists of 1~3 layers of Z-shaped steel wire. The inner round steel wire is hot-galvanized and the outer Z-shaped steel wire is coated with Zinc-5% Aluminum-mixed mischmetal alloy coating. Both end of the cable are connected with the anchor by casting. It is mainly used in prestressed structures such as football fields, large sports stadiums and bridges. The production diameter is Φ30mm-Φ200mm.

Fork Socket & Adjustable Fork Socket Fork-lug screw regulating type

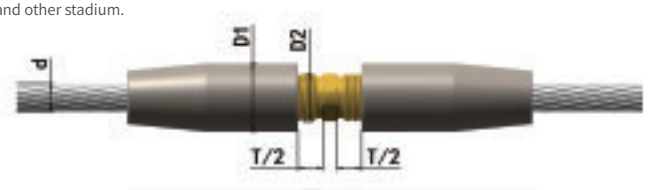
- Complies with JG/T330-2011 “Cable for Construction Engineering”.
- The structure consists of cable and forks at both ends (one fixed end and one regulating end).
- Scope of application: Stadium, convention and exhibition center, etc.
- ϕ40～ϕ140mm σb≥1570MPa



diameter of cable (mm)	In opening A (mm)	Outside opening B (mm)	end length C (mm)	Pin shaft diameter F (mm)	Fork ear depth E (mm)	The ear plate width G(mm)	adjustment T (mm)	Minimum breaking tension (KN)
Φ40	70	145	124	79	160	195	60	1580
Φ45	75	155	140	88	170	215	60	2000
Φ50	90	180	165	102	195	250	60	2470
Φ55	95	190	175	107	210	270	80	3020
Φ60	105	210	185	117	230	290	80	3590
Φ65	110	220	205	126	245	315	80	4220
Φ70	115	235	220	136	260	340	80	4890
Φ75	125	250	235	145	280	365	100	5620
Φ80	130	265	250	155	295	385	100	6390
Φ85	140	285	265	166	315	410	100	7210
Φ90	145	295	275	174	330	430	100	8090
Φ95	160	320	300	186	360	475	100	9110
Φ100	170	340	315	196	380	500	100	10100
Φ105	175	350	330	206	395	520	120	11100
Φ110	190	370	345	215	415	540	120	12200
Φ115	195	385	355	222	425	560	120	13400
Φ120	200	395	370	228	440	575	120	14500
Φ125	205	405	385	236	455	600	120	15800
Φ130	210	420	395	245	475	620	150	16200
Φ135	215	430	405	252	495	635	150	17500
Φ140	220	440	415	256	515	655	150	18700

Fork Socket & Adjustable Fork Socket with ring cable type

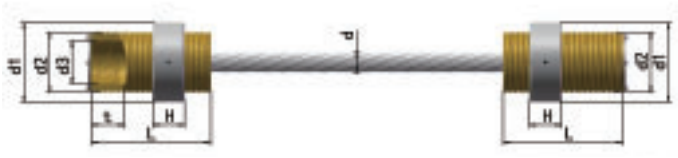
- Complies with JG/T330-2011 “Cable for Construction Engineering”.
- The structure consists of cable, casting joint and adjusting thread.
- Scope of application: football field and other stadium.
- ϕ40～ϕ140mm σb≥1570MPa



diameter of cable (mm)	Diameter of casting joint D1 (mm)	Screw rod diameter D2 (mm)	adjustment T (mm)	minimum breaking load (KN)
Φ40	125	M80X6	60	1580
Φ45	135	M85X6	60	2000
Φ50	150	M95X6	60	2470
Φ55	165	Tr105X8	80	3020
Φ60	180	Tr115X8	80	3590
Φ65	195	Tr125X8	80	4220
Φ70	205	Tr130X8	80	4890
Φ75	220	Tr140X8	100	5620
Φ80	230	Tr150X10	100	6390
Φ85	250	Tr160X10	100	7210
Φ90	260	Tr170X10	100	8090
Φ95	290	Tr190X10	100	9110
Φ100	310	Tr200X12	100	10100
Φ105	315	Tr200X12	120	11100
Φ110	325	Tr210x12	120	12200
Φ115	340	Tr220x12	120	13400
Φ120	350	Tr230X12	120	14500
Φ125	365	Tr240X12	120	15800
Φ130	380	Tr250X12	150	16200
Φ135	390	Tr260X12	150	17500
Φ140	400	Tr270X12	150	18700

Fork Socket & Adjustable Fork Socket Anchor cup nut type

- Complies with JG/T330-2011 “Cable for Construction Engineering”.
- The structure consists of cable and anchor cup at both ends.
- Scope of application: prestressed structures such as buildings and bridges.
- ϕ40～ϕ140mm σb≥1570MPa



diameter of cable (mm)	Anchor cup length L (mm)	Outer diameter of the nut D1 (mm)	Anchor cup external thread D2 (mm)	Anchor cup internal thread D3 (mm)	Length of tension thread T (mm)	Height of nut H (mm)	minimum breaking load (KN)
ϕ40	235	165	M115X6	M85X6	75	70	1580
ϕ45	250	185	M130X6	M90X6	75	70	2000
ϕ50	275	200	M140X6	M100X6	75	75	2470
ϕ55	300	220	M155X6	M110X6	85	75	3020
ϕ60	320	240	M170X6	M120X6	85	80	3590
ϕ65	365	255	Tr185X8	Tr130X8	110	95	4220
ϕ70	395	270	Tr195X8	Tr135X8	120	100	4890
ϕ75	420	290	Tr210X8	Tr145X8	125	105	5620
ϕ80	445	310	Tr225X10	Tr155X10	135	115	6390
ϕ85	470	330	Tr240X10	Tr165X10	140	120	7210
ϕ90	500	345	Tr250X10	Tr175X10	150	125	8090
ϕ95	540	365	Tr265X12	Tr185X12	155	140	9110
ϕ100	560	380	Tr280X12	Tr195X12	165	145	10100
ϕ105	580	400	Tr295X12	Tr205X12	165	150	11100
ϕ110	610	420	Tr310X14	Tr215X14	180	160	12200
ϕ115	640	435	Tr320X14	Tr220X14	190	165	13400
ϕ120	670	450	Tr330X14	Tr230X14	200	170	14500
ϕ125	690	470	Tr345X14	Tr240X14	205	175	15800
ϕ130	710	480	Tr355X14	Tr250X14	205	180	16200
ϕ135	735	490	Tr365X14	Tr260X14	210	185	17500
ϕ140	755	510	Tr380X14	Tr270X14	210	190	18700

Instructions for use of cable:

01

When the cable products arrive at the designated place, please use fiber belt hoisting to avoid damage to cable surface or packaging. Please use three-point hoisting, and lift gently during hoisting (see figure 1). During lifting, the cable should be prevented from collision with other objects and damaged. (see figure 2).

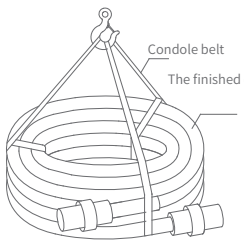


figure1

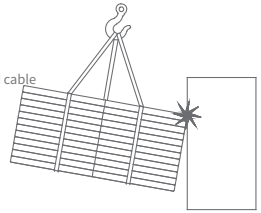


figure2

02

The place where the cables stored should be dry. The bottom of the cable is padded with sleepers and covered completely with a tarpaulin. When the cables are stacked, sleepers should placed between each layer of cables. Stack the cables neatly, with no more than two bundles stacked (see figure 3)

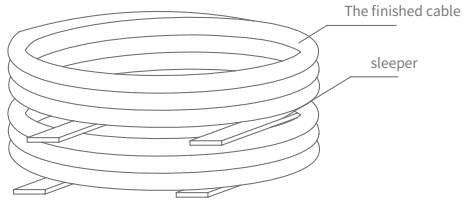


figure3 Finished cable stacking diagram

Instructions for use of cable

03 Cables with a diameter less than 50mm and a short length (less than 10m) can be directly hoisted by a crane (the cables shall be placed for a period of time to release the internal stress), and coil cables with a diameter greater than 50mm and a long length shall be hoisted by a special cable tray (see Figure 4). The main cable shall be laid with a special cable tray (FIG. 5).

04 The steel bar and other hard pointed objects should be cleaned up at the construction site before laying the cable; Ensure that the cable body is not in contact with the ground. Lay a smooth rubber roller on the ground and set up a vertical protection roller to ensure that the cable body is not scratched by hard objects on the ground during construction.

05 In the process of cable traction, the necessary special lifting fixture and traction tools must be used. The fixture is lined with rubber washer and then fixed on the surface of the cable body. Do not directly use steel wire ropes to bind on the surface of the cable sheath to avoid collisions between the cable and other steel components (see Figure 6).

06 The packing material wrapped around the cable is a protective layer to avoid the direct contact between the cable and the outside world, which can not only prevent the contact scratch of the cable in the process of transportation and release. At the same time, it is also to avoid contamination of the surface of the color cable body by external debris after the cable hanging. Therefore, it is recommended not to open the packaging before the completion of the project, and it is better to dismantle the package after the completion of the project to ensure that the color PE of the cable is intact and the color is consistent.

07 When adjusting the cable force, use a special wrench or tool to adjust the anchor. Liner should be added between the two. It is forbidden to use chain pliers, pincer pliers and other tools to directly load the cable to prevent damage to the surface protection layer.

08 The surface of cable anchors is galvanized before delivery. Install cables as soon as possible after each batch arrives on site. After installation, secondary painting (painting) shall be carried out on all exposed anchors of cables, which can be applied in the same way as that of steel structures. Anti-corrosion grease shall be applied to exposed thread parts, and sealing silica gel shall be used to protect joints, so as to ensure the protective performance and service life of cables.

09 Iron wire will be used to tie the cable body before leaving the factory. In order to prevent skip steel wire and bulge wire, do not remove the iron wire before cable installing and tensioning.

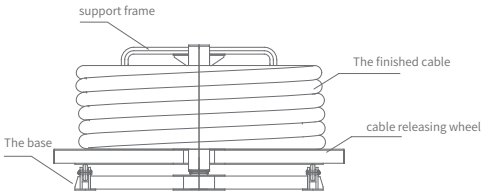


figure4 Schematic diagram of cable release device

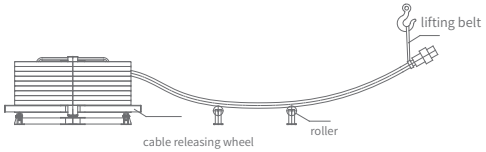


figure5

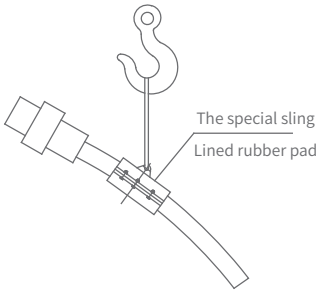
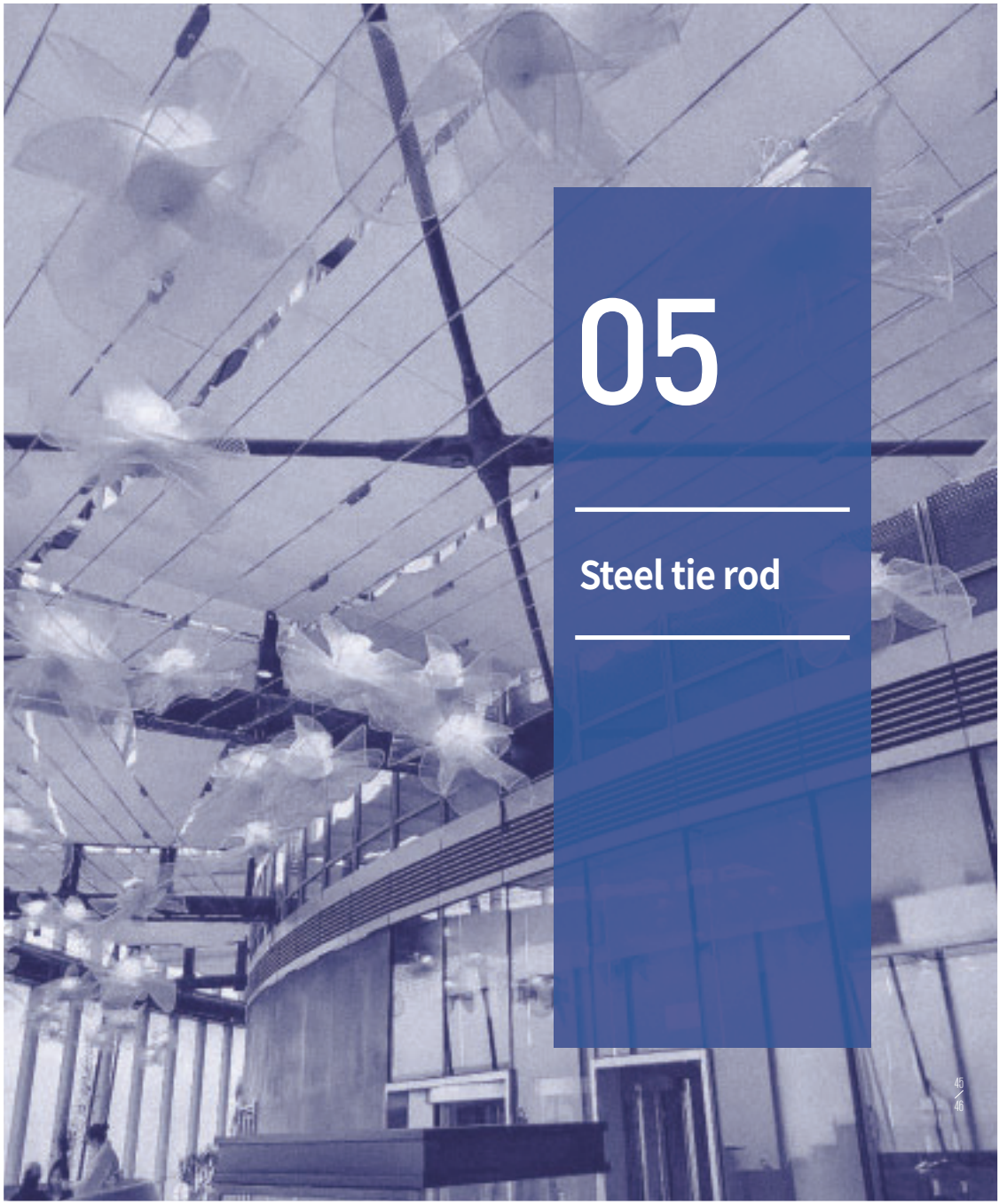


figure6 Schematic diagram of lifting



05

Steel tie rod

Brief introduction of steel tie rod

Steel tie rod is composed of steel rod body and connector, which mainly bear axial static load tension. Steel tie rod can form a variety of structural forms by connecting parts of different structures, with a variety of structures, flexible and simple installation; With tensioner, not only the length of steel tie rod can be adjusted, but also the prestress can be conveniently applied, so that the structure has greater stiffness. It is widely used in roof support, inter-column support, cable-stayed support, vertical hanging structure, lower string of truss, ground anchor of tower column, anchor of main cable of bridge, etc.

The rod body is usually made of high quality alloy structural steel, through the overall tempering treatment to achieve excellent mechanical properties, with high strength, good toughness and other advantages, at the same time, the steel tie rod is easy to do fireproof and anti-corrosion treatment. After special processing, the steel tie rod can meet the requirements of 2 million fatigue tests.

Construction of bridge steel tie rod

- Different connectors with rod bodies can achieve a variety of connection forms, at the same time Juli Sling has a strong research and development capacity, More connection structures can be provided according to user requirements.
- Sensing connector or sensing pin can be used for steel tie rod to realize real-time stress monitoring.

Steel tie rod for dock and wharf

The steel tie rod of dock and wharf adopts forging integrated forming technology, and the bending resistance of the thread part of the shaft is enhanced. After the overall tempering, the comprehensive performance of the tie rod has been improved.

There are sheep-pile wall and anchor wall of different structure at dock and wharf. The steel tie rod has a variety of end connection structure to satisfy the connection with various structure. The middle of steel tie rod can adopt unidirectional hinge, bidirectional hinge or universal hinge structure to reduce the bending moment caused by land subsidence. In practical application, a variety of structures can be combined to meet the needs of more complex terrain. The turnbuckle can adjust the length of the tie rod, also can be used for tensioning.

The whole steel tie rod shall be treated with anti-corrosion after installation and tension. Our company can recommend suitable anti-corrosion scheme according to different application environment.

Structure drawing of end connection of steel tie rod

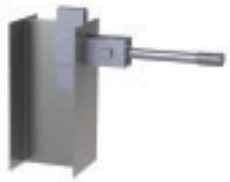
The steel tie rod is connected with the Z steel sheet pile (ordinary pad, spherical nut + spherical pad structure)

The steel tie rod is connected with the U-shaped steel sheet pile (Spherical nut + spherical plate structure)

The steel tie rod is connected with the steel pipe pile

The steel tie rod is connected with the steel pipe pile

Steel tie bars are connected to concrete walls

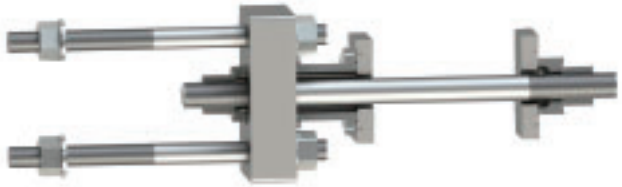


The steel tie rod is connected with H - shaped steel sheet pile

High strength anchor rod

High strength anchor rod usually made of high quality alloy steel, achieves excellent mechanical properties through integral tempering treatment and has the advantages of high strength, good toughness and so on. It' s easy to do anti-corrosion treatment. High strength anchor rod is mainly used in the anchor position of tower anchor and bridge main cable anchor of suspension bridges and cable-stayed bridges.

High strength anchor rod



Anchorage system of Anchor rod type suspension bridge

Introduction of steel tie rod body technology

According to the processing technology of the shaft, the steel tie rod can be divided into equal strength forged structure and non equal strength forged structure. Equal strength forging is a patent technology of Juli Sling. After forging, the bearing capacity of the thread part increases. The bearing capacity of equal-strength structural tie rod with the same diameter is 15% higher than that of non-equal-strength structural tie rod.

Equal strength forged structure

Non equal strength forged structure

Mechanical properties and parameters of steel tie rod products(GB/T 20934-2016)

Mechanical properties of steel tie rod for construction, bridge and wharf (Alloy steel material)

strength level	quality leve	The diameter of the rod bodyD mm	The yield strength ReH/Rp0.2 MPa	Tensile strength Rm MPa	Elongation after fracture A %	Reduction of section Z %	Shock absorption KV2 energy	
							J	The temperature / °C
			不小于					
GLG345	I	20～210	345	470	22	50	34	0
	II						34	- 20
	III						27	- 40
	IV						27	- 60
GLG460	I	20～210	460	610	20	50	34	0
	II						34	- 20
	III						27	- 40
	IV						27	- 60
GLG550	I	20～210	550	750	18	50	34	0
	II						34	- 20
	III						27	- 40
	IV						27	- 60
GLG650	I	20～210	650	850	15	45	34	0
	II						34	- 20
	III						27	- 40
	IV						27	- 60

Note 1: When the yield is not obvious, Rp0.2 can be measured instead of the upper yield strength;

Note 2: If there is a higher requirement for the impact absorption energy of -40 °C and -60 °C, it shall be stipulated by the agreement between the supply and demand parties;

Note 3: The length of the test rod in the furnace is 400mm, and the middle 200mm is taken when measuring the mechanical properties.

Mechanical properties of high strength steel tie rod

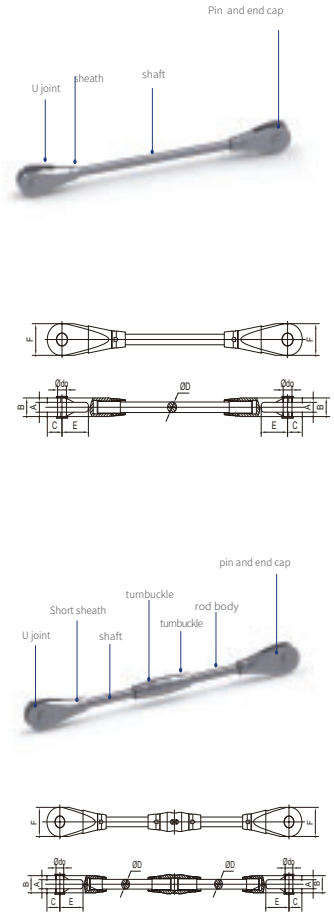
Note 1: When the yield is not obvious, Rp0.2 can be measured instead of the upper yield strength;
Note 2: If there is a higher requirement for the impact absorbed energy of -40 °C and -60 °C, it shall be stipulated by the agreement between the supply and demand parties;
Note 3: The length of the test rod in the furnace is 400mm, and the middle 200mm is taken when measuring the mechanical properties.

strength level	quality level	diameter of shaft mm	The yield strength ReH/Rp0.2 MPa	Tensile strength R m MPa	Elongation after fracture A %	Reduction of section Z %	Impact absorbed energy KV2	
							J	The temperature / °C
GLG750	I	20～150	750	950	13	45	34	0
	II						34	- 20
	III						27	- 40
	IV						27	- 60
GLG850	I	20～130	850	1050	10	45	27	0
	II						27	- 20
	III						20	- 40
	IV						15	- 60
GLG1100	I	20～100	1100	1230	8	40	20	0
	II						20	- 20
	III						15	- 40
	IV						15	- 60

Mechanical properties of steel tie rod for construction (Stainless steel)

Strength level	diameter D mm	yield strength ReH/Rp0.2 MPa	Tensile strength Rm MPa	Elongation after fracture A %	Reduction of section Z %
		Not less than			
BLG 205	12 ～ 100	205	520	40	60
BLG 400		400	600	25	48
BLG 725		725	930	16	50
BLG 835	20 ～ 80	835	1030	12	40
	85～ 100			10	
BLG1080	20 ～ 80	1080	1230	10	40

Table of steel tie rod connection dimensions UU型



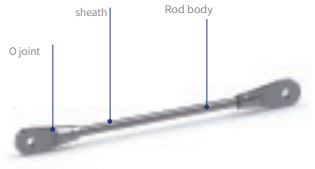
The specifications not indicated in the table can be customized according to customer requirements.

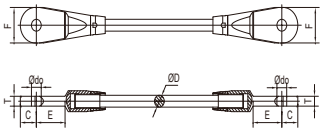
diameter of shaft rod body D (mm)	A (mm)	B (mm)	C (mm)	d (mm)	E (mm)	F (mm)	Adjusting range (mm)
20	20	39	37	22	65	58	± 20
25	24	47	47	28	80	74	± 20
30	28	56	55	33	95	85	± 30
35	32	64	63	38	110	100	± 30
40	38	75	73	43	125	114	± 30
45	44	85	81	49	140	125	± 30
50	46	92	90	54	150	138	± 50
55	51	102	98	60	160	155	± 50
60	56	111	106	65	180	165	± 50
65	61	121	114	70	190	178	± 50
70	66	130	122	75	200	190	± 50
75	70	139	130	80	215	205	± 70
80	75	148	138	85	230	215	± 70
85	78	156	148	91	255	230	± 70
90	82	164	156	96	270	245	± 70
95	86	173	165	101	280	255	± 70
100	92	184	172	106	300	268	± 100
105	98	194	184	112	310	285	± 100
110	104	205	191	117	325	298	± 100
115	108	213	199	122	335	310	± 100
120	108	218	210	128	350	325	± 100
125	118	232	217	133	370	338	± 100
130	118	237	225	138	380	350	± 100
135	124	247	234	144	395	365	± 100
140	128	256	242	149	410	380	± 100
145	132	265	250	154	425	390	± 100
150	138	275	258	159	440	405	± 100
155	140	282	268	165	460	420	± 100
160	145	291	275	169	475	430	± 100
165	150	301	285	175	490	445	± 100
170	155	310	290	179	500	455	± 100
175	160	320	300	185	520	470	± 100
180	170	334	312	192	535	486	± 100
185	175	344	320	197	555	498	± 100
190	180	354	328	202	570	512	± 100
195	185	363	335	207	585	524	± 100
200	190	373	344	212	600	537	± 100
205	195	382	354	218	610	552	± 100
210	200	392	362	223	620	565	± 100

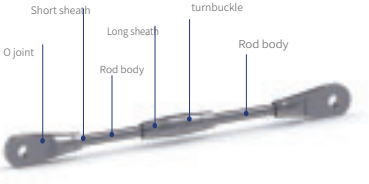
able of steel tie rod connection dimention 00 Type

The specifications not indicated in the table can be customized according to customer requirements.

iameter of shaft rod body D (mm)	A (mm)	C (mm)	d (mm)	E (mm)	F (mm)	adjusting range range is (mm)
20	19	37	22	65	58	± 20
25	23	47	28	80	74	± 20
30	28	55	33	95	85	± 30
35	32	63	38	110	100	± 30
40	37	73	43	125	114	± 30
45	41	81	49	140	125	± 30
50	46	90	54	150	138	± 50
55	51	98	60	160	155	± 50
60	55	106	65	180	165	± 50
65	60	114	70	190	178	± 50
70	64	122	75	200	190	± 50
75	69	130	80	215	205	± 70
80	73	138	85	230	215	± 70
85	78	148	91	255	230	± 70
90	82	156	96	270	245	± 70
95	87	165	101	280	255	± 70
100	92	172	106	300	268	± 100
105	96	184	112	310	285	± 100
110	101	191	117	325	298	± 100
115	105	199	122	335	310	± 100
120	110	210	128	350	325	± 100
125	114	217	133	370	338	± 100
130	119	225	138	380	350	± 100
135	123	234	144	395	365	± 100
140	128	242	149	410	380	± 100
145	133	250	154	425	390	± 100
150	137	258	159	440	405	± 100
155	142	268	165	460	420	± 100
160	146	275	169	475	430	± 100
165	151	285	175	490	445	± 100
170	155	290	179	500	455	± 100
175	160	300	185	520	470	± 100
180	164	312	192	535	486	± 100
185	169	320	197	555	498	± 100
190	174	328	202	570	512	± 100
195	178	335	207	585	524	± 100
200	183	344	212	600	537	± 100
205	187	354	218	610	552	± 100
210	192	362	223	620	565	± 100







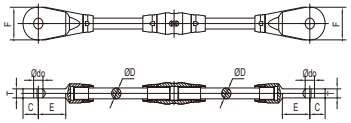
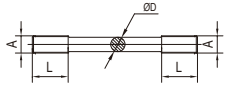
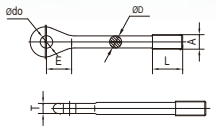


Table of steel tie rod connection dimensions type I



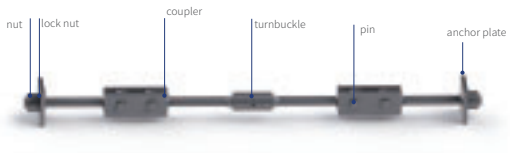
diameter of shaft (mm)	L (mm)	A
20	65	M24X3
25	75	M30X3.5
30	85	M36X4
35	100	M42X4.5
40	105	M48X5
45	105	M56X5.5
50	125	M60X5.5
55	140	M68X6
60	145	M72X6
65	165	M76X6
70	170	M85X6
75	190	M90X6
80	210	M95X6
85	230	M100X6
90	250	M105X6
95	270	M110X6
100	285	M115X6
105	290	Tr125X10
110	300	Tr130X10
115	310	Tr135X10
120	320	Tr140X10
125	325	Tr150X12
130	330	Tr155X12
135	335	Tr160X12
140	340	Tr165X12
145	345	Tr170X14
150	350	Tr175X14
155	355	Tr180X14
160	360	Tr185X14
165	365	Tr195X16
170	370	Tr200X16
175	375	Tr205X16
180	380	Tr210X16
185	385	Tr220X16
190	390	Tr225X16
195	395	Tr230X18
200	400	Tr235X18
205	405	Tr240X18
210	410	Tr245X18

Table of steel tie rod connection dimensions type II

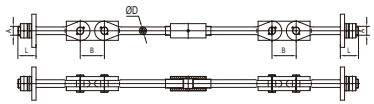


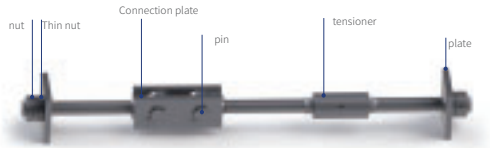
diameter of shaft (mm)	T (mm)	E (mm)	d0 (mm)	L (mm)	A
50	42	97	52	125	M60X5.5
55	45	105	57	140	M68X6
60	50	113	62	145	M72X6
65	55	120	67	165	M76X6
70	60	133	72	170	M85X6
75	65	141	77	190	M90X6
80	70	148	82	210	M95X6
85	70	161	87	230	M100X6
90	75	170	92	250	M105X6
95	80	178	97	270	M110X6
100	85	186	102	285	M115X6
105	90	193	107	290	Tr125X10
110	95	200	112	300	Tr130X10
115	95	209	117	310	Tr135X10
120	100	225	122	320	Tr140X10
125	105	232	127	325	Tr150X12
130	110	246	132	330	Tr155X12
135	115	253	137	335	Tr160X12
140	120	260	142	340	Tr165X12
145	125	269	147	345	Tr170X14
150	130	278	152	350	Tr175X14
155	130	294	157	355	Tr180X14
160	130	303	162	360	Tr185X14
165	135	311	167	365	Tr195X16
170	140	320	172	370	Tr200X16
175	140	331	177	375	Tr205X16
180	140	341	182	380	Tr210X16
185	140	357	187	385	Tr220X16
190	140	368	192	390	Tr225X16
195	145	378	197	395	Tr230X18
200	150	385	202	400	Tr235X18
205	155	392	207	405	Tr240X18
210	160	400	212	410	Tr245X18

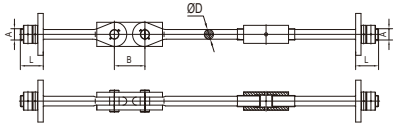
D-type Steel tie rod for dock and wharf



- The unidirectional hinge can rotate in the vertical plane
- It is suitable for dock and wharf with large structural stiffness and general foundation condition, and the deformation is mainly vertical deformation.

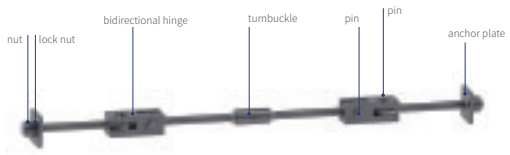




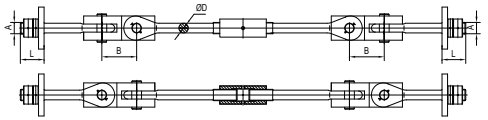


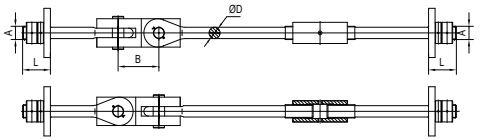
-diameter of shaft (mm)	L (mm)	B (mm)	A	adjusting range range is (mm)
50	125	165	M60X5.5	± 50
55	140	180	M68X6	± 50
60	145	200	M72X6	± 50
65	165	215	M76X6	± 50
70	170	230	M85X6	± 50
75	190	250	M90X6	± 70
80	210	265	M95X6	± 70
85	230	280	M100X6	± 70
90	250	300	M105X6	± 70
95	270	315	M110X6	± 70
100	285	330	M115X6	± 100
105	290	350	Tr125X10	± 100
110	300	365	Tr130X10	± 100
115	310	380	Tr135X10	± 100
120	320	395	Tr140X10	± 100
125	325	410	Tr150X12	± 100
130	330	430	Tr155X12	± 100
135	335	445	Tr160X12	± 100
140	340	460	Tr165X12	± 100
145	345	480	Tr170X14	± 100
150	350	495	Tr175X14	± 100
155	355	510	Tr180X14	± 100
160	360	525	Tr185X14	± 100
165	365	545	Tr195X16	± 100
170	370	560	Tr200X16	± 100
175	375	580	Tr205X16	± 100
180	380	595	Tr210X16	± 100
185	385	620	Tr220X16	± 100
190	390	650	Tr225X16	± 100
195	395	670	Tr230X18	± 100
200	400	680	Tr235X18	± 100
205	405	700	Tr240X18	± 100
210	410	725	Tr245X18	± 100

S type Steel tie rod for dock and wharf



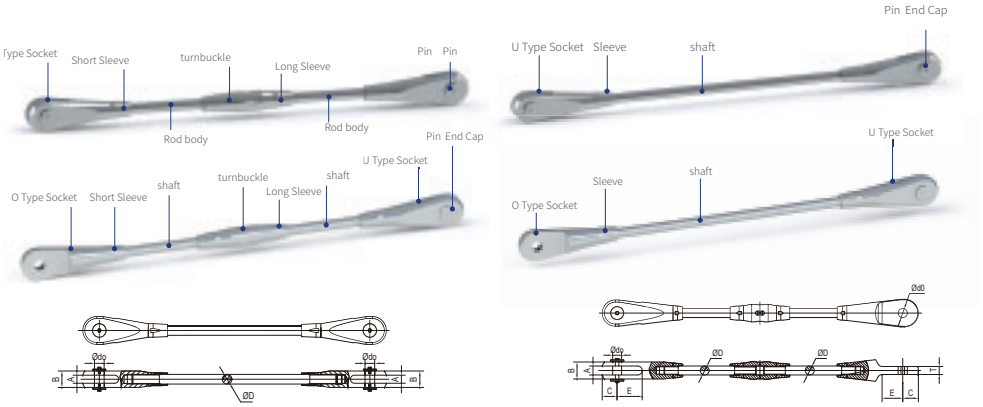
- The bidirectional hinge can rotate in the horizontal plane and the vertical plane
- Suitable for dock and wharf with large vertical load and soft foundation, and the structure and foundation are prone to vertical and horizontal deformation.





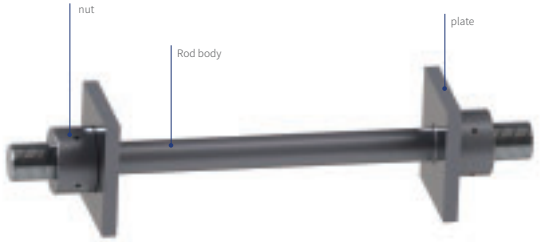
diameter of shaft (mm)	L (mm)	B (mm)	A	adjusting range (mm)
50	125	165	M60X5.5	± 50
55	140	180	M68X6	± 50
60	145	200	M72X6	± 50
65	165	215	M76X6	± 50
70	170	230	M85X6	± 50
75	190	250	M90X6	± 70
80	210	265	M95X6	± 70
85	230	280	M100X6	± 70
90	250	300	M105X6	± 70
95	270	315	M110X6	± 70
100	285	330	M115X6	± 100
105	290	350	Tr125X10	± 100
110	300	365	Tr130X10	± 100
115	310	380	Tr135X10	± 100
120	320	395	Tr140X10	± 100
125	325	410	Tr150X12	± 100
130	330	430	Tr155X12	± 100
135	335	445	Tr160X12	± 100
140	340	460	Tr165X12	± 100
145	345	480	Tr170X14	± 100
150	350	495	Tr175X14	± 100
155	355	510	Tr180X14	± 100
160	360	525	Tr185X14	± 100
165	365	545	Tr195X16	± 100
170	370	560	Tr200X16	± 100
175	375	580	Tr205X16	± 100
180	380	595	Tr210X16	± 100
185	385	620	Tr220X16	± 100
190	390	650	Tr225X16	± 100
195	395	670	Tr230X18	± 100
200	400	680	Tr235X18	± 100
205	405	700	Tr240X18	± 100
210	410	725	Tr245X18	± 100

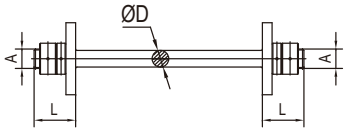
Stainless steel tie rod



diameter of shaft (mm)	T (mm)	A (mm)	B (mm)	C (mm)	E (mm)	D (mm)	do	Adjustment range (mm)
12	10	12	22	20	36	11	12	± 20
14	12	14	26	23	40	13	14	± 20
16	14	16	30	26	46	15	16	± 20
18	16	18	34	30	50	17	18	± 20
20	18	20	38	33	56	19	20	± 20
25	22	25	47	42	70	24	25	± 20
30	24	27	51	50	84	29	30	± 30
35	28	32	60	58	94	34	35	± 30
40	34	38	72	66	114	39	40	± 30
45	40	46	86	74	130	44	45	± 30
50	44	50	94	82	140	49	50	± 50
55	50	56	106	90	152	54	55	± 50
60	55	61	116	98	167	59	60	± 50
65	55	63	123	106	187	64	65	± 50
70	60	65	135	114	199	69	70	± 70
75	65	68	138	123	210	74	75	± 70
80	70	74	144	130	230	79	80	± 70
85	70	74	144	140	238	84	85	± 70
90	75	79	154	148	250	88	90	± 70
95	80	84	164	156	268	93	95	± 100
100	85	89	174	165	281	98	100	± 100
105	90	94	189	174	295	103	105	± 100
110	95	99	199	181	305	108	110	± 100
115	100	105	210	190	319	113	115	± 100
120	105	110	230	198	340	118	120	± 100
125	115	120	240	206	356	123	125	± 100
130	120	125	255	215	365	128	130	± 100

High strength Anchor Rod





Diameter of rod body D (mm)	L (mm)	A
20	65	M24X3
25	75	M30X3.5
30	85	M36X4
35	100	M42X4.5
40	105	M48X5
45	105	M56X5.5
50	125	M60X5.5
55	140	M68X6
60	145	M72X6
65	165	M76X6
70	170	M85X6
75	190	M90X6
80	210	M95X6
85	230	M100X6
90	250	M105X6
95	270	M110X6
100	285	M115X6
105	290	Tr125X10
110	300	Tr130X10
115	310	Tr135X10
120	320	Tr140X10
125	325	Tr150X12
130	330	Tr155X12

Theoretical Yield Load Table of Equal Strength Alloy Steel Tie Rod

Nominal Diameter of shaft	Strength grade (N/mm2)			
	GLG 345	GLG 460	GLG 550	GLG 650
	Theoretical yield bearing capacity ⩾ (KN)			
20	108	144	173	204
25	169	226	270	319
30	244	325	389	459
35	332	442	529	625
40	433	578	691	816
45	548	731	874	1033
50	677	903	1079	1276
55	819	1092	1306	1544
60	975	1300	1554	1837
65	1144	1526	1824	2156
70	1327	1769	2116	2500
75	1523	2031	2429	2870
80	1733	2311	2763	3266
85	1957	2609	3119	3687
90	2194	2925	3497	4133
95	2444	3259	3897	4605
100	2708	3611	4318	5103
105	2986	3981	4760	5626
110	3277	4369	5224	6174
115	3582	4776	5710	6748
120	3900	5200	6217	7348
125	4232	5642	6746	7973
130	4577	6103	7297	8623
135	4936	6581	7869	9299
140	5308	7078	8462	10001
145	5694	7592	9078	10728
150	6094	8125	9714	11481
155	6507	8675	10373	12259
160	6933	9244	11053	13062
165	7373	9831	11754	13892
170	7827	10436	12478	14746
175	8294	11059	13222	15626
180	8775	11700	13989	16532
185	9269	12359	14777	17463
190	9777	13036	15586	18420
195	10298	13731	16417	19402
200	10833	14444	17270	20410
205	11381	15175	18144	21443
210	11943	15925	19040	22502

Theoretical Yield Load Table of Non-equal Strength Alloy Steel Tie Rod

Nominal Diameter of shaft (mm)	Strength grade (N/mm2)			
	GLG 345	GLG 460	GLG 550	GLG 650
	Theoretical yield bearing capacity ⩾ (KN)			
20	84	113	135	159
25	122	162	194	229
30	193	258	308	364
35	239	319	381	451
40	336	449	536	634
45	450	600	718	848
50	508	677	810	957
55	606	808	966	1142
60	700	933	1116	1319
65	923	1230	1471	1738
70	1054	1405	1680	1935
75	1193	1591	1902	2248
80	1341	1788	2138	2527
85	1498	1997	2388	2822
90	1706	2275	2720	3214
95	1928	2570	3073	3632
100	2163	2884	3448	4075
105	2412	3216	3845	4544
110	2674	3566	4263	5038
115	2950	3934	4703	5558
120	3240	4319	5165	6104
125	3314	4419	5283	6244
130	3620	4827	5771	6821
135	3940	5154	6281	7423
140	4274	6598	6813	8052
145	4621	6161	7366	8705
150	4844	6459	7723	9127
155	5213	5951	8311	9822
160	5596	7461	8921	10543
165	5992	7989	9552	11289
170	6401	8535	10205	12060
175	6664	8885	10624	12556
180	7096	9461	11312	13369
185	7541	10054	12022	14208
190	8000	10666	12753	15072
195	8293	11057	13220	15624
200	8774	11698	13987	16530
205	9268	12357	14775	17461
210	9776	13034	15584	18418

Theoretical Yield Load Table of Stainless Steel Tie Rod

Nominal Diameter of shaft (mm)	Strength grade (N/mm2)				
	BLG 205	BLG 400	BLG 725	BLG 835	BLG 1080
	Yield load ⩾ (KN)				
12	17	33	61	---	---
14	24	47	84	---	---
16	32	62	114	---	---
18	39	76	140	---	---
20	50	98	177	204	264
25	72	141	256	294	381
30	115	225	406	468	605
35	142	278	503	579	749
40	200	392	707	815	1054
45	268	525	947	1091	1410
50	302	592	1068	1230	1591
55	360	705	1274	1468	1898
60	450	882	1590	1831	2368
65	549	1076	1940	2234	2890
70	626	1227	2215	2551	3300
75	709	1390	2508	2889	3737
80	797	1562	2820	3248	4200
85	891	1747	3149	3627	4692
90	1014	1988	3587	4131	5344
95	1146	2247	4053	4668	6038
100	1286	2521	4548	5238	6775

Yield Load Table of Equal Strenght Rod

The nominal rod body Diameter (mm)	Strength grade (N/mm2)		
	GLG 750	GLG 850	GLG 1100
	Theoretical yield bearing capacity ⩾ (KN)		
20	235	267	345
25	368	417	540
30	530	600	777
35	721	817	1058
40	942	1067	1381
45	1192	1351	1748
50	1472	1669	2159
55	1782	2019	2613
60	2120	2402	3109
65	2488	2819	3649
70	2885	3269	4231
75	3312	3753	4857
80	3768	4271	5527
85	4254	4821	6240
90	4769	5405	6994
95	5313	6022	7793
100	5888	6673	8636
105	6492	7357	–
110	7124	8074	–
115	7786	8824	–
120	8478	9609	–
125	9200	10426	–
130	9950	11276	–
135	10730	–	–
140	11539	–	–
145	12378	–	–
150	13247	–	–

Yield Load of Non-qual Strength Rod

The diameter of the rod body (mm)	Strength grade (N/mm2)		
	GLG 750	GLG 850	GLG 1100
	Theoretical yield bearing capacity ⩾ (KN)		
20	183	208	269
25	264	299	388
30	420	476	616
35	520	590	763
40	732	829	1073
45	978	1109	1435
50	1104	1251	1620
55	1318	1493	1933
60	1522	1725	2232
65	2005	2273	2941
70	2233	2530	3275
75	2594	2940	3804
80	2916	3305	4276
85	3256	3690	4776
90	3708	4203	5439
95	4191	4750	6146
100	4702	5329	6896
105	5243	5942	–
110	5813	6588	–
115	6413	7268	–
120	7043	7982	–
125	7205	8165	–
130	7870	8920	–
135	8565	–	–
140	9291	–	–
145	10044	–	–
150	10531	–	–

User Manual for Steel Tie Rod Installation

01 Installation Tools

a)Steel bar or special spanner; (as per required size)
b)Sole timber, chain block or other slings;
c)Special tensioning tools and hydraulic jack or torque spanner; (as per required tonnage)
d)Inspection tools. (as per project requirements)

02 Necessary check before Installation

The quantity, length and number of the steel tie rod are consistent with Order Contract or not;
b) Steel tie rod accessories is complete or not, surface coating is undamaged or not, thread part is rusty or not;
c) Steel tie rod is distorted and damaged or not.

03 Precautions before Installation

a)Read the instruction carefully.
b)Make the detailed installation plan.
c)To make sure the correct installation, please examine the goods (including length, specification, form, quantity, etc) according to the installation list before installation.
d)During the process of lifting installation, please lift and put lightly to prevent steel tie rod with accessories from bumping against and breaking the surface coating. Besides, please repair paint timely if there is surface scratch or paint removing.
e)During the installation process, please note that the thread part of tie rod and tensioner don' t paste in sand grain and other sundries.
f)Forbid to drag the steel tie rod on the ground that avoiding damaging the coating and label.
g)Tie rod, tensioner and nut' s thread parts were all coated by moderate antirust oil. Don' t open the package before installation to prevent the antirust oil hardening after a long time.
h)The tie rod of opening package and tensioner should be put on the sole timber. Please don' t put on the ground directly to prevent the antirust oil of thread attaching sands that influences the installation.

04 Installation of Architectural Steel Tie Rod

a)Open the package and install the components besides hinge pin and end cap. In addition, tensioner should be adjusted to appropriate position. Please note the direction of thread to prevent the thread damaging and attaching sundries. (The shorter tie rod can be shipped before delivery and after assembly according to contract requirement.)
b) Measure the length between the installation nodes of steel tie rods and make sure the steel tie rod initial installation length. (Please make sure the "O" joint or "U" joint and tensioner keep safe screw length. Generally, 8-10 buckles.)
c) Put the assembled tie rod into the corresponding installing place through the hinge pin and tighten the cap. When the tie rod length is bigger, it should be lifting by crane. To prevent breaking the tie rod surface anticorrosive coating when hoisting, please use the soft sling.

d)When the tensioning tonnage is big, the two long sheaths should be installed with special tensioning tools. Special tensioning tools can make the tensioner in non-stressed state. When it reaches the preconcerted force value, use the spanner to screw the tensioner tightly to get tensioning.

e) The tie rod without tensioner can install special tensioning tools on its connectors or steel structure. Special tensioning tools can make the central rod in non-stressed state and use spanner to scraw the rod when it reaches the preconcerted value.

f) Dismantle tensioning tools to finish the installation.

g) Use torque spanner to scraw tightly when the tension is small; Use spanner to scraw the tie rod tightly directly without tension requirements.

h) After all installation, the whole should make anti-corrosion and other surface treatment.

05 Dock Steel Tie Rod Installation

a) Put the two embedded rods through the anchor wall or steel sheet pile. Don' t break the thread and prevent the thread attaching sands. It should be required tie rod' s outward thread can appear appropriately when install backing boarding, nut and tighten the nut. Generally, around 5-6 buckles.

Installation state as shown in Figure 1:

b) Install the connecting board, hinge pin, cotter pin and central rod successively. Cotter pin should be big opening to prevent cotter pin loosening and slipping. Put sole timber under the one-way hinge composed of connecting boards to keep the tie rod in approximate level when install. Please note the two long rods' thread is reversed that prevent thread damaging and attaching sands.

Wrong installation as figure 2, the correct as figure 3.

c) Install central tensioner. Use appropriate steel bar or special spanner through the central mounting hole of tensioner and scraw the tensioner to tighten the thread. Please pay attention it must reaches spin button numbers. To make the tightness degree of tie rod appropriate, tensioner and two ends nut can be adjusted. Please pay attention to the inner thread' s direction.

d) Doing tension after above installation. Install tensioning tools and hydraulic jack on one end of rod. Start jack to tension to the specified tonnage, and scraw nut with lock nut tightly. Figure 4 shows simple tension:

e) Dismantle tension and jack to finish installation.

f) After all installation, the unit makes the whole anticorrosion treatment.

06 Malfunction Analysis and elimination

Malfunction Phenomena	Analysis Causes	Elimination Ways
thread screwing troubles	thread deformation	Repair by triangular file
	thread attached sands	Repair by triangular file
	thread corrosion	Rust removal by triangular or steel brush
tensioner Can't install	Thread direction or shape deviation	Replace tension or tie rod

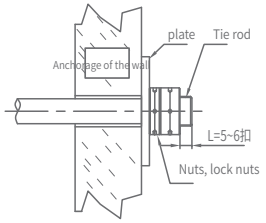


Figure 1 Installation status

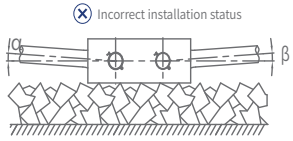


FIG. 2 The rod body and unidirectional hinge are directly placed on the ground, and the rod body is tilted

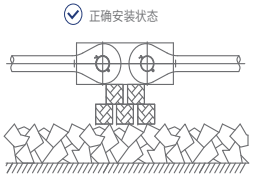


FIG. 3 Pad wood is placed under the rod body and unidirectional hinge, and the rod body is horizontal

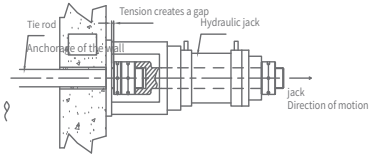


FIG. 4 Schematic diagram of simple tension

07 Transportation and Storage

a)After shipping the goods to the point place, it should be stored in the cool ventilated place to prevent the chemicals and moisture. If store outside, it should be in dry ground and bedded by sleepers and covered by tarpaulins.

b)Don' t use slings with oil when steel tie rod and components are carried.

c)Please avoid bumping and omitting components during the process of storage and transportation and make sure the intactness of component labels.

d)Products should be bedded stably and clamped tightly to be fixed in the package boxes which prevents the goods moving in the process of removal and transportation. Adopt double-leg lifting when hoist the products (especially rod body). Binding way as shown in Figure 5.

e)Forbid to drag tie rod on the ground and soak it in water.

f)Each layer of tie rod should be placed neatly when transportation and stack after storage (as Figure 6). Besides, each layer should be bedded by sole timber to prevent damaging thread and facilitate hoisting.

g)Products shall not to collide with obstacles as Figure 7. Especially thread end.

Figure 5 Bundling form

08 Maintaining and Keeping

a)Generally, steel tie rod surface will be painted with epoxy zinc rich primer. The keeping time is short (around 1 month), it should be installed as soon as possible and do anticorrosion re-treatments. If primer is broken, should be repaired in time. Please eliminate the dust and oil stain when doing the secondary anticorrosion.

Figure 6 pieces

b)The paint surface of steel tie rod should be inspected because steel tie rod always be exposed directly under the sun and applied outside, so it will be in touch easily with water, acid, alkali, salt and other corrosive chemicals. In the process of inspection, if the surface of paint is aged, deteriorated, exfoliated and blistered, the damaged parts should be polished to appear based materials and touch up paint. If there is antifire coating, should be touched up with antifire coating.

c)Generally, all steel tie rod components were connected by thread. The steel tie rod will shake in a long time under the external factors and thread will loosen abnormally to back buckle. Therefore, the thread connecting part should be maintained strongly. If the hinge pin between screw and end cap is loosen, hinge pin will move and even fall out. Meanwhile, please note sheath loosening and check it regularly and fasten it tightly.

d)Forbid to hit steel tie rod and do other barbaric operations during installation. During use, please forbid artificial hit to the steel tie rod.

e)In north winter, clean the surface icing of steel tie rod when using to prevent low temperature damage.

f)When the steel tie rod is shaped and damaged by outer force, it should be dealt by professional construction qualified team and replace timely.

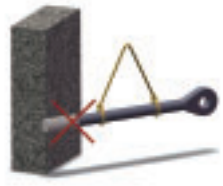
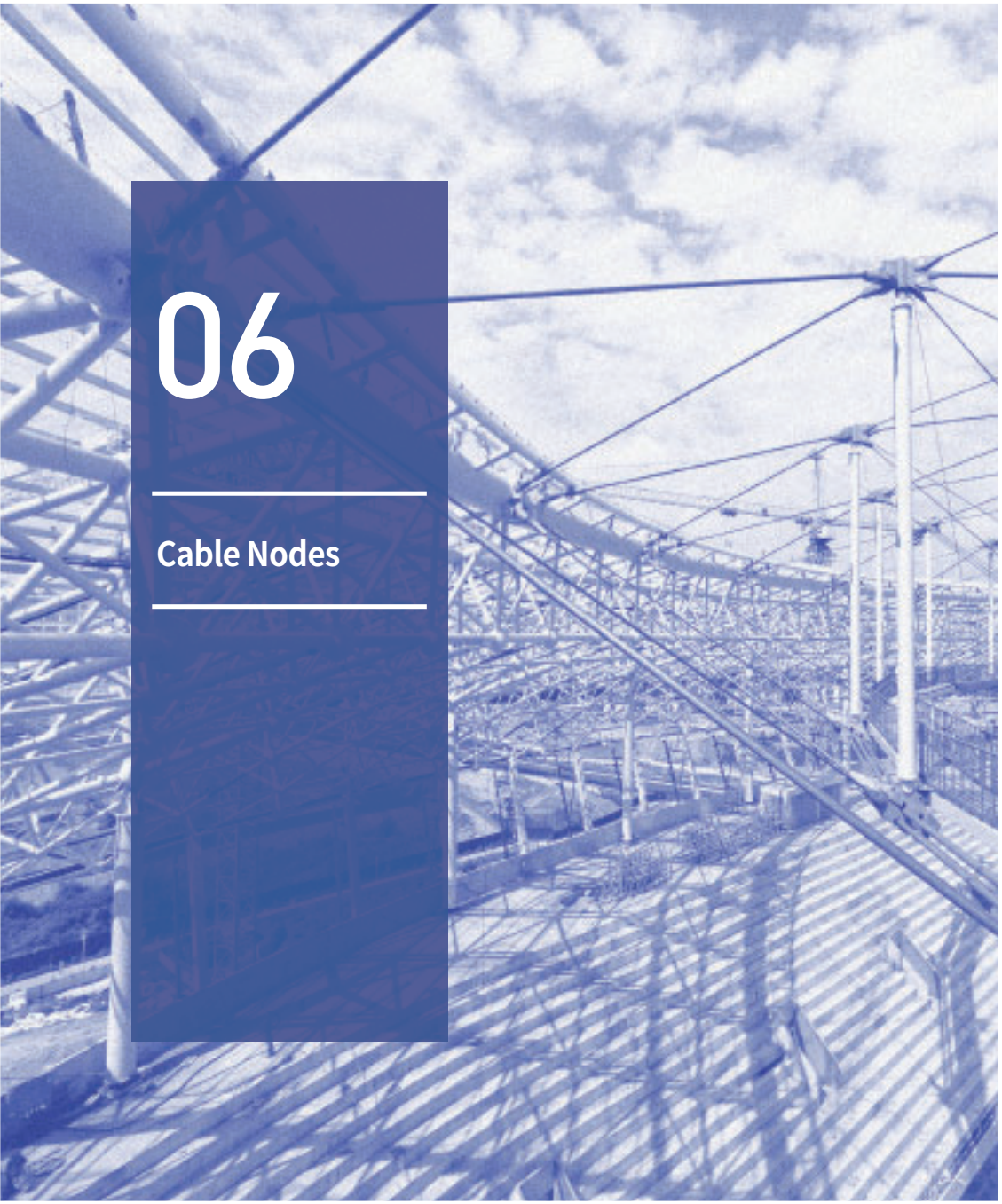


Figure 7.



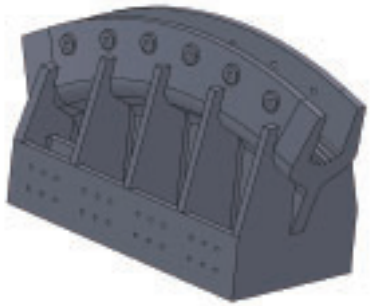
06

Cable Nodes

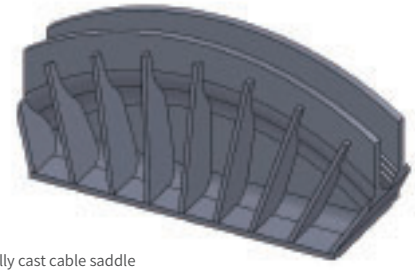
Introduction to Cable Nodes

Cable saddles for bridge and cable nodes for stadium are the key parts in projects, which can be divided into fully casted strcuture, casted and welded structure. Juli Sling has its own specialised team from deepening design, casting and welding fabrication, testing and inspection. The factory is equipped with advanced equipment for designing, manufacturing and testing. The technology and process for saddle and node fabrication is systematic, mature and unique. High quality of Juli Sling products were widely applied in both domestic and oversea projects.

Bridge accessories

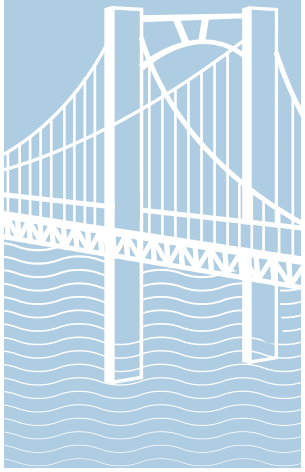


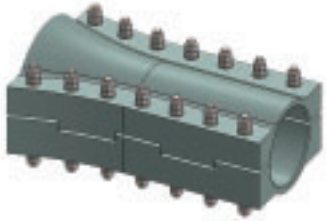
Cast and welded structural cable saddle



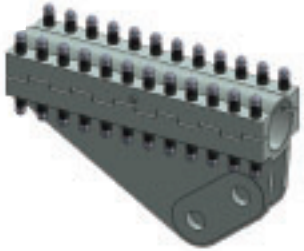
Fully cast cable saddle

Bridge accessories





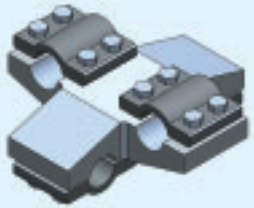
Cable Band



Cable Node

:Anchorage Box

Cable Node



Cable Node for multi-cable joints

Single Cable Node

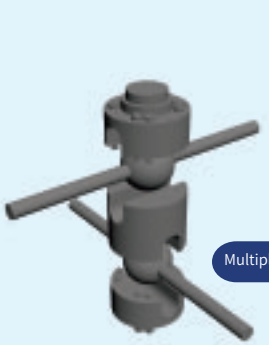
Single Cable Node

Tension Ring Node

Double Cable & Pedants Cable Node

Cable Nodes for Spatial Structure

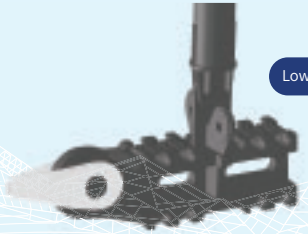
Use of spatial structure Cable Node



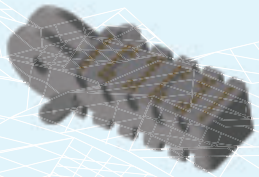
Multiple cable junction clamp

Radial Cable Node

Bottom Chord Structure Bracing Cable Node



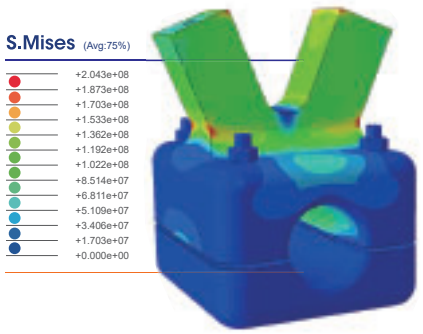
Lower Ring Cable Node

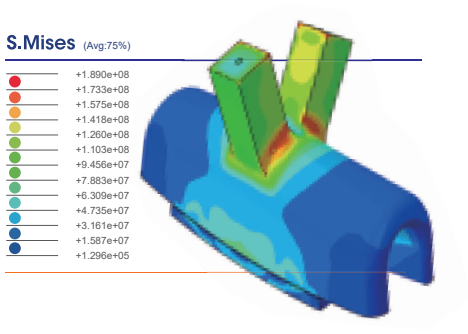


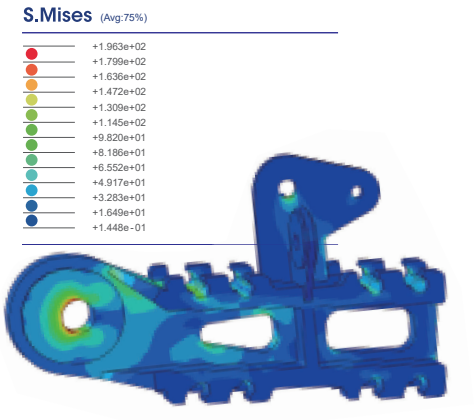
Tension Ring Cable Node for Leshan Olympic Sports Center

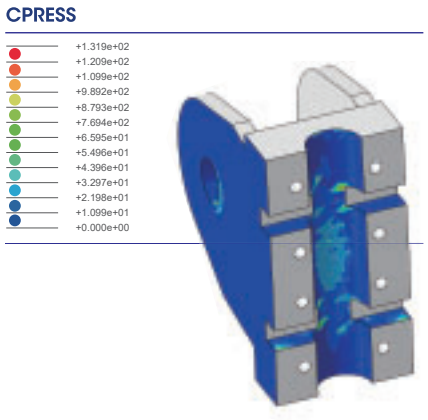
Finit Element Analysis

With rich experience for node designing, Juli Sling can meet the requirements different structures such as cables, cables & structures, cables & tie rods etc. With the help of finite element analysis, we can optimize the design of nodes to achieve a nicer and simpler design of structures.









07

Health monitoring

System Frame

Description for System Main Features

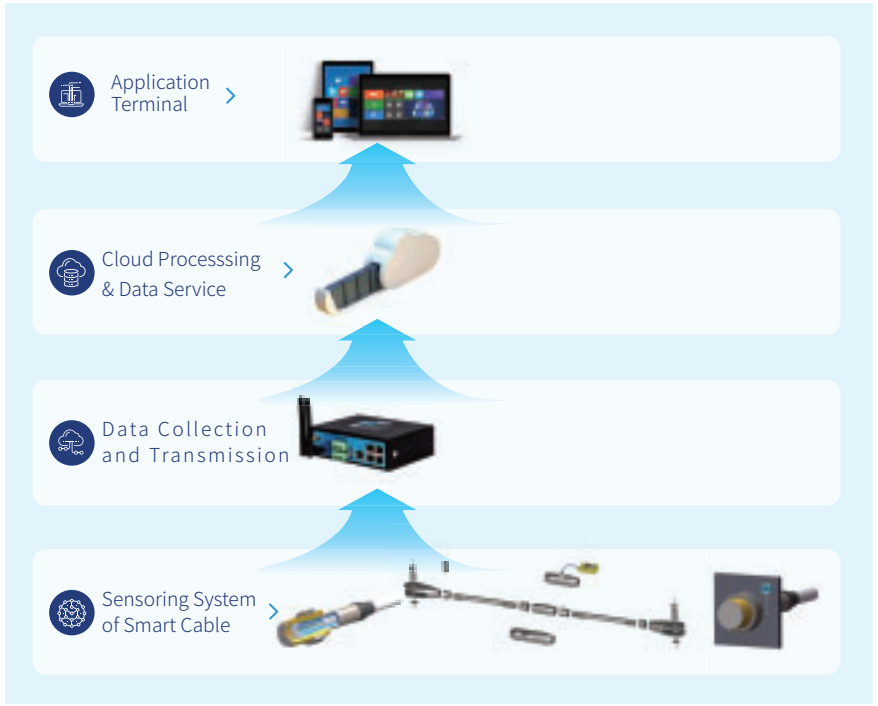
01 System monitoring accuracy 1.5%FS.

02 Sensor Installation Method: embedded in the anchorage, meet the IP67 protection grade, to achieve the function of self measurement.

03 Sensor calibration method: the sensor will be calibrated prior to delivery, it is not necessary to calibrate on site.

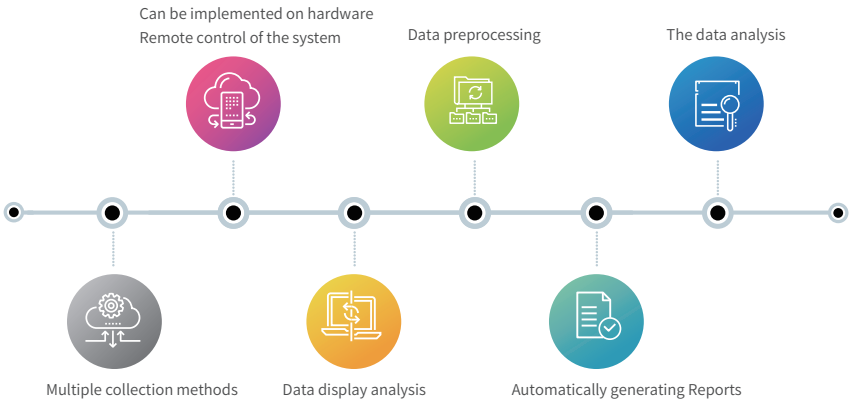
04 Collection device will be installed at one side of the sensor with conduction cable. Information data will be transmitted to gateway through wireless internet, which will be transmiited to cloud platform through GPRS data, thus fulfilling the function of display, storage and query, the data collection granularity can be set.

05 The system can fulfill remote data transmision automatically. The measured results can be operated and analyzed by the cloud platform. It also makes it possible to convey the measurement data and special warning to client end. High compatibility, measurement end and collection end are easy to connect to the platform with standardized connector, which is convenient for the data application and development.

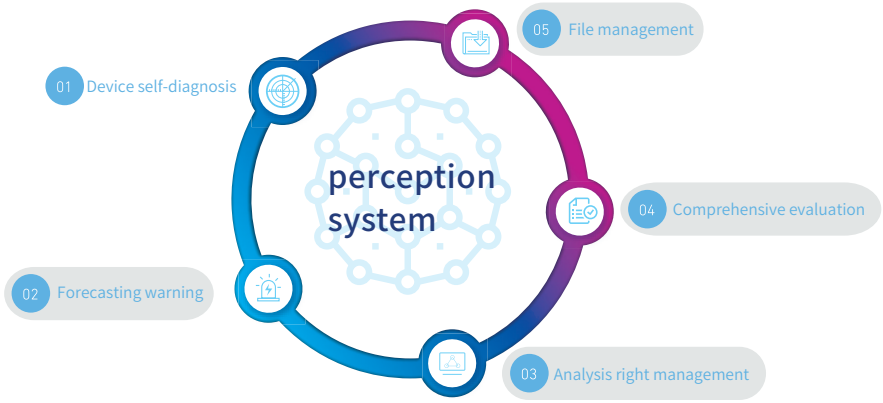


software application

The software application is mainly based on the rigging requirements, the existing localized products, the framework of the cloud platform, and the function points are simply sorted out, and the usability support of the rigging detection system is considered. The system can provide a good man-machine interaction interface, easy for users to operate, with the following functions:



Perception system

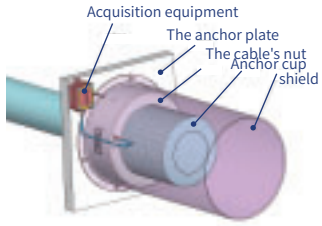


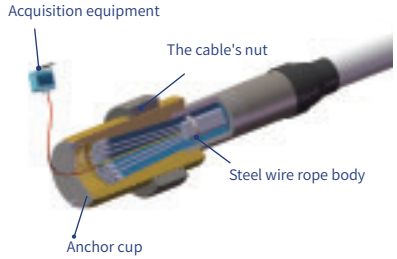
The intelligent cable

Cables are widely used in large structures such as large Bridges, which are of great social significance and economic value to bridge operation departments. The intelligent cable will generally adopt the mechanism health detection technology that will install the detection system on the bridge after the completion of the bridge, jumping to the real organic integration of the detection system and the structure system as one.

Operating principle

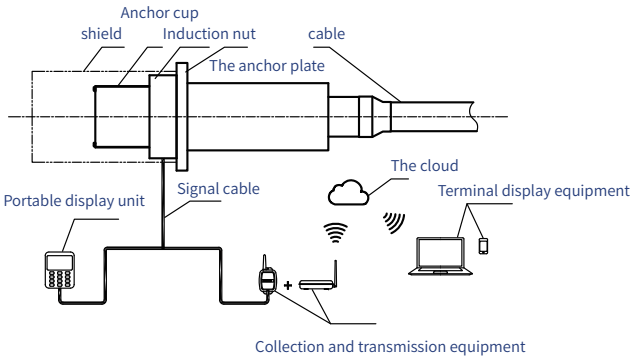
The intelligent cable system consists of intelligent induction nut, cable body and other cable components, acquisition and transmission equipment, cloud and application end. When the cable is stressed, the strain can be sensed on the cable nut and cable body, and the acquisition device can collect the data at the sensor end and transmit it to the cloud via wired or wireless, so that the detection data can be directly viewed or processed.





Intelligent cable force measurement process

① Production of intelligent cables →② calibration of intelligent cables →③ Installation and arrangement of cables and equipment on site →④ Load monitoring in which ① and ② are processed in the factory and ③ and ④ are realized in the site. The development of intelligent cable can realize the load detection of cable during tension and long-term load monitoring after anchorage, and realize portable installation at the same time, which can meet the construction requirements of the present structure.

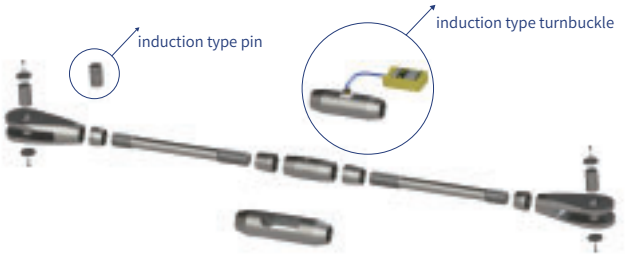


Intelligent steel tie rod

Steel tie rod has the advantages of high strength, good toughness and economic applicability, and has been widely used in the direct units of prestressed steel structures. Whether the prestress conforms to the design requirements in the construction state of steel tie rod is directly related to the bearing capacity and safety performance of the prestressed structure. So the internal force detection and monitoring has become an important part of the construction stage. At present, torque coefficient method or hydraulic conversion method is used to measure the force of steel tie rod. The measurement results are affected by many factors, and the comprehensive factors are larger. It is difficult to meet the construction requirements of the current prestressed steel structure. The intelligent steel tie rod aims to realize the perceptual monitoring of the structure, provide effective evaluation data for the construction personnel, construction and operation units through a set of intelligent steel tie rod system, and realize the convenient, rapid, safe and effective installation at the site.

Operating principle

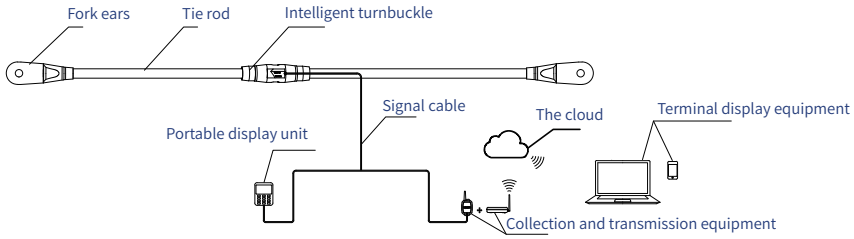
The intelligent steel tie rod system is composed of steel tie rod components such as induction type pin or intelligent turnbuckle, acquisition and transmission equipment, cloud and application end. When the steel tie rod is stressed, it can be induced on the pin or turnbuckle. The data collected in the induction section by the collection and transmission equipment will be transmitted to the cloud by wired or wireless transmission. In the application end, the stress status of the steel tie rod can be directly viewed or the detection data can be processed.



Force measuring process of intelligent steel tie rod

① Production of intelligent steel tie rod →② calibration of intelligent steel tie rod →③ Installation and arrangement of steel tie rod and equipment on site →④ Load monitoring in which ① and ② are processed in the factory and ③ and ④ are realized in the site.

The development of intelligent steel tie rod can realize load detection during tension and long-term load monitoring after installation of steel tie rod, and realize portable installation at the same time, which can meet the construction requirements of the present structure.



Comparative advantage

2 System implementation efficiency

3 Field installation efficiency

1 High compatibility

JULI SLING

Project case

01 Bridge

- Suspension bridge
- Cable-stayed bridge
- Arch bridge
- Landscape bridge

02 Space structure

- Sports Facilities
- Exhibition center
- Airport & railway station
- High-rise building
- Observation wheel
- Sealed off structure (Large span coal shed)
- Other structure

03 Port & wharf

01

Bridge application performance

Wuhan Yingwuzhou Yangtze River Bridge

Product Application The PWS cable:Φ5X151、Φ5X211
High Strength Anchor Rod：Φ110mm

Project Introduction Project Introduction Wuhan Yingwuzhou Yangtze River Bridge is the eighth bridge over the Yangtze River in Wuhan, Hubei province. The bridge is located 2.3 km upstream of the Wuhan Yangtze River Bridge, with a total length of 9.18 km, of which the main bridge is 3.42 kilometers, a three-tower suspension bridge with a span of (225+2X850+225) meters.

Liujiaxia Yellow River Bridge

Product Application
Main cable strand: 88-5.2×127;
PWS cable: ϕ5×73

Project introduction
Liujiaxia Bridge adopts 536m single-span stiffened beam suspension bridge, with the Linxia side cable span of 148m and Lanzhouchuan side cable span of 138m. The total length of the bridge is 568m, which is the largest span bridge in Northwest China.

Shantou Bay Bridge

Product Application
Hanger(Wire rope)

Project introduction
Shantou Bay Bridge is the first modern long-span prestressed concrete suspension bridge in our country, with a total length of 2420 meters. The bridge is a three-span double-hinged prestressed concrete reinforced box girder suspension bridge with span of 154M + 452M + 154M, which was completed and opened to traffic on December 28, 1995. After years of operation, the hanger is replaced. The replacement hanger is ϕ46 galvanized steel wire rope, and the wire rope specification is 6×36WS+IWR.

Yangsigang Yangtze River Bridge in Wuhan

Product Application

Wire rope sling: ϕ84mm

Project introduction

The Yangsigang Yangtze River Bridge is located between Wuhan's Baishazhou Bridge and Liuzhou Bridge. The Yangsigang Yangtze River Bridge is about 4.32 kilometers long and is the first double-decker highway bridge in Wuhan. The Yangsigang Bridge, which spans 1,700 meters across the Yangtze River, is the world's largest double-deck suspension bridge with a span that ranks first in China and second in the world.

Guanting Super Reservoir Bridge in Zhang Jiakou

Product Application

Anchor rod and anchor beam for main cable anchorage; The overall construction of the The PWS cableϕ5*137 and the main cable, saddle clamp and sling of the superstructure.

Project introduction

The total design length of Guanting Reservoir bridge is 1,888 meters. The bridge is designed as a single-span suspension bridge with two towers. The main bridge is 720 meters long and crosses the lake, which is the longest suspension bridge in North China.

Guiweng high-speed Qingshui River Bridge in Guizhou

Product Application

Wire rope sling: ϕ60mm,
Wire rope specification: 6×36WS+IWR.

Project introduction

Qingshuihe Bridge is one of the components of Guiyang-Weng 'an Expressway (National Highway G69). The total length of the bridge is 2174.1 meters, the main span of the bridge is 1130 meters, and the main cable span is (258+1130+345) meters. The length of the main span is the first in Guizhou Province, and the first steel truss girder suspension bridge in Asia mountain area at present.

Taizhou Yangtze River Highway Bridge

Product Application

High strength rod for main tower: Φ130mm

Project introduction

Taizhou Yangtze River Bridge is located between Taizhou City and Yangzhong City, Jiangsu Province, the bridge is about 7 kilometers long, with the main span of 2×1080 meters of three-tower double-span steel box girder suspension bridge, is the world's first, the main tower anchorage using ϕ130mm high-strength bolt is the first domestic application in the field of bridge main tower anchorage.

Yakang high-speed Luding Dadu River Xingkang Bridge

Product Application

High strength rod for tunnel anchor and gravity anchor: ϕ72mm,
Phi 82 mm;
Wire rope for construction of cat road: ϕ54mm, ϕ60mm

Project introduction

Yakang high-speed Luding Dadu River Xingkang Bridge (formerly Luding Dadu River Bridge), with a total bridge length of 1,411 meters and a main bridge length of 1,100 meters, is the longest main span bridge on the Sichuan-Tibet line, and is known as "the first Sichuan-Tibet Bridge". The most critical part of the anchoring system of tunnel anchor and gravity anchor is 187*4=748 groups of high-strength steel tie rods, about 1700 tons of high-strength steel tie rods, the longest single steel tie rod is 12 meters, the longest single group is less than 40 meters, the length of the single group is the largest in China.

Huali high-speed Jinan Jinshajiang Bridge project

Product Application

Wire rope sling: ϕ56mm

Wire rope specification：8x55SWS+IWR

Project introduction

Huali Expressway is one of the key construction projects of the Belt and Road Initiative. The MAIN BRIDGE OF JINSHAJIANG BRIDGE IN Jin 'AN IS A 1,386-METER SINGLE-SPAN SUSPENSION BRIDGE WITH STEEL GIRDERS, WHICH IS COMPOSED OF TUNNEL ANCHORAGE, CABLE TOWER, CABLE SADDLE, MAIN CABLE and GIRDERS WITH STEEL girDERS. It is the largest mountain canyon suspension bridge under construction in the world at present.

Gulin high-speed Chishui River Bridge

Product Application

Steel tie rod anchorage system: steel tie rod ϕ72mm

PC strand: 15-13, 15-27

Project introduction

Chishuihe Bridge is a typical super high pier, large span, long mountain highway bridge, the total length of the bridge is 2009 meters, the main span of the bridge 1200 meters, is the world's second in the same type of bridge span, the second in the main tower height canyon suspension bridge.

Guojiatuo Yangtze River Bridge in Chongqing

Product Application

Steel tie rod anchorage system,

Steel tie rod: ϕ80mm

PC strand: 15-16, 15-31

Project introduction

Guojiatue Yangtze River Bridge is 6.2 kilometers in length, the main bridge is 1403.8 meters in length, and the main span is 720 meters. The design adopts single-hole suspension double-tower three-span continuous steel truss girder suspension bridge, the upper layer is six longitudinal expressway, the lower layer is reserved for rail transit line 8 crossing the river channel, two-way eight lanes.

Chongqing Jiangjin Baisha Yangtze River

Product Application

Steel tie rod anchorage system

Steel tie rod: ϕ85mm

PC strand: 15-16, 15-31

Project introduction

The Baisha Yangtze River BRIDGE PROJECT has a total investment of 1.441 billion yuan. The total length of the bridge and connecting lines is 3,500 meters, the total length of the bridge is 1,290 meters, the main span is 590 meters, and the steel box girder suspension bridge with two towers and two cable faces is a bridge.

Yunmeng Bridge in Beijing Miyun Jingcheng Expressway rail link

Product Application

Main cable strand: 88-5.2×127;

The PWS cable: ϕ5×73

Project introduction

Yunmeng Bridge of Miyun Jingcheng Expressway has a unique "seed" shape. It is the first single-tower self-anchored special-shaped suspension bridge with the highest tower in North China, and is known as the "First bridge of North China Highway". The bridge is 744 meters long, with the main bridge 370 meters long and 36.6 meters wide. The structure of the bridge is a single-tower self-anchored suspension bridge.

Osmanthus Bridge in Wushan County, Chongqing

Product Application

Steel tie rod anchorage system

Steel tie rod: ϕ80mm

PC strand: 15-16, 15-32

Project introduction

Wushan Guihua Bridge is located on Daning River, a tributary of the Yangtze River. It is a key traffic construction project of the follow-up work planning of the Three Gorges migration, and it is an important passage connecting Wushan high-speed railway station, Wushan County seat and Wushan Airport. The bridge is 1540 meters long, and the main bridge is a steel box girder suspension bridge with two towers and a main span of 550 meters.

Hong Kong-Zhuhai-Macao Bridge

Product Application

PWS cable: φ7×109, φ7×159, φ7×379;

High strength bolt: φ110mm, φ130mm;

Bridge deck steel box girder series spreader;

Stay cable installation and construction

Project introduction

Hong Kong-Zhuhai-Macao Bridge is the first super large cross-sea channel jointly built by Guangdong, Hong Kong and Macao under the framework of "One country, two systems", with a total length of 55KM. Our company undertakes the production of high-strength anchor bolts of the main tower of the bridge, the installation and construction of the cable, the design and production of the deck and the main tower crane.

Chongqing Changshou Yangtze River Highway Bridge

Product Application

The PWS cable: φ7 ×127, φ7 ×139,

φ7 ×163, φ7 ×199, φ7 ×211, φ7 ×241,

Φ 7 x 283

Project introduction

Longevity Yangtze RIVER BRIDGE in the east of Chongqing, connecting Fuling, Wanzhou, Yunyang and other Three Gorges reservoir area in the heart of the bridge for cable stayed bridge, length of 1.2 kilometers, the main span of 450 meters, across the Yangtze River connection longevity CITY and Jiangnan town.

Fuling Lidu Yangtze River Bridge in Chongqing

Product Application

The PWS cable: φ7×109, φ7×127,

φ7×151, φ7×163, φ7×187, φ7×211,

φ7×223, φ7×253, φ7×265

Project introduction

Lidu Yangtze River Bridge is a cross-river passage in Chongqing, China. It is a double-tower concrete cable-stayed bridge with double cable surface and equal height. The total length of the line is 822 meters, the main span is 398 meters, the side span is 170 meters, and the main bridge adopts (170+398+170) meters span layout with 2 lines and 5 pairs of stayed cables.

Changzhou Longcheng Bridge

Product Application

Main cable strand: 7-7×397;

The PWS cable: φ5×253

Project introduction

The main span of Longcheng Bridge is 72+113.8+30m. The middle span adopts suspension cable structure. The main cable is anchored at the end of the longeron, and the other end is scattered into 7 secondary cables and anchored at the main tower after passing through the secondary tower. Five cable-stayed back cables (φ7×253) are installed on the side span of the main tower to balance the tension of the main cable. It is the first self-anchored cable-stayed cooperative bridge in China.

New Shougang Bridge in Beijing

Product Application

The PWS cable: φ7×139,
φ7×151
And installation and construction

Project introduction

New Beijing shougang bridge is an important part of chang an avenue west extension, crossing the yongding river, connecting the shijingshan district and the mentougou district, mainspan span 280 meters, is Beijing's largest bridge models, as well as the most wide bridge at present our country a steel bridge, the bridge of the iconic shape is the door shape steel tower two extraversion, by pulling cable, pull up nearly 30000 tons of steel box girder bridge.

Chaijiaxia Yellow River Bridge in Lanzhou

Product Application

The PWS cable: φ7 ×139, φ7 ×151,

φ7 ×187, φ7 ×211 and installation construction

Project introduction

Lanzhou Chaijiaxia Yellow River Bridge is an A-shaped, double-tower, double-cable plane cable-stayed cable bridge with A total of 980 tons, A total length of 1,250 meters and A bridge width of 36 meters, among which the main span is 364 meters. It is A double-box semi-closed steel box girder structure, which is the "S-shaped" curve cable-stayed cable bridge with the smallest curvature radius and the largest span in China.

Baoding Lekai street south extension overpass

Product Application

The PWS cable: φ7 ×211, φ7 ×241,

φ7 ×283, φ7 ×337, φ7 ×379 and installation construction

Project introduction

Baoding South Railway Station rotary cable-stayed bridge (South extension Viaduct of Baoding Yuekai Street) adopts the structure form of 145+240+110 meters double-tower single-cable surface prestressed concrete cable-stayed bridge, with a total length of 495 meters, and adopts the shape of torch bridge tower. The transverse stay cables are set in the center of the main beam, and there are 42 pairs of stay cables in the whole bridge. The weight and length of the rotation have set new world records. The technology is complex and difficult.

Guiguang Railway Sixian cellar, Beijiang bridge

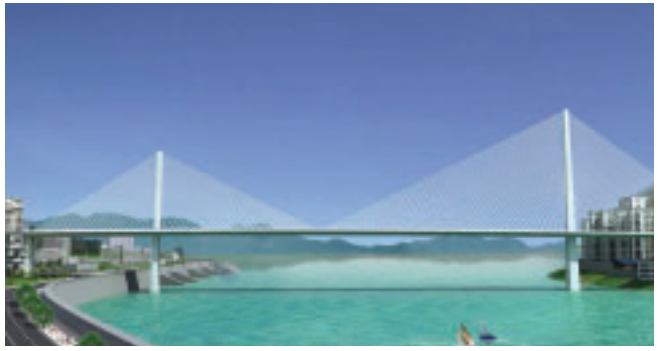
Product Application

The PWS cable: φ7 ×211, φ7 ×241,

φ7 ×283, φ7 ×337, φ7 ×379 and installation construction

Project introduction

The main span of the Beijiang and Sixianyao super Bridges is (57.5+109.25+230+109.25+57.5) m steel truss girder cable-stayed bridge, which is a railway cable-stayed bridge with two towers and two cable planes. Each bridge has 72 cables and the weight is 780 tons.



The Second Wujiang Bridge in Chongqing

Product Application

The PWS cable: φ7 ×187, φ7 ×223,

φ7 ×253, φ7 ×301, φ7 ×379, φ7 ×421

Project introduction

The Second Wujiang Bridge in Chongqing is a cable-stayed bridge in the form of 100 m +340 m +150 m double-tower single-cable plane pylon-beam consolidation, and its span ranks the first among the single-cable plane cable-stayed Bridges.

Tianjin Haihe Bridge

Product Application

The PWS cable:
φ7 ×85,

φ7 ×109, φ7 ×139, φ7 ×151,

φ7 ×187, φ7 ×199, φ7 ×211,

Φ 7 x 367

Project introduction

Haihe Bridge is located in the west of Haihe Estuary moisture-proof lock and Xingang ship lock, Tanggu Street, Binhai New Area, Tianjin. It is composed of two main Bridges, both of which are cable-stayed Bridges with main spans of 310+190M, single tower and double cable surface, steel and concrete mixed main beams, the main bridge is 500M long.

Linjiangmen Bridge in Jilin Province

Product Application

The PWS cable: φ7 ×61,

φ 7×85, φ 7×91, φ 7×121,

φ7 ×127, φ7 ×139, φ7 ×151,

φ7 ×163, φ7 ×187, φ7 ×241,

φ7 ×265 and cable replacement construction

Project introduction

Linjiang Gate Bridge is the first single-tower cable-stayed bridge in Jilin city, which was built in 1994. Linjiang Gate Bridge is 27.5 meters wide, with a total length of 686 meters. The completion of Linjiangmen Bridge greatly relieved the communication pressure between Jiangnan area and urban area of Jilin City, and provided an extremely important traffic guarantee for the subsequent development of Jilin City high-tech Industrial Development Zone. Our company undertook the whole bridge cable replacement project (material, construction, installation and tension).

Shishou Yangtze River Bridge

Product Application

installation and tension of Stay cable

Project introduction

Shishou Yangtze River Highway Bridge is located at the head of Jingjiang River, which is known as "Jiuqu ileum". It is the control project of national highway "G234 Xinglong - Yangjiang" across the Yangtze River, and it is also the crossing channel of "Zaoyang - Shishou" on the fifth vertical line of Hubei "953" expressway network. Our company undertook cable system installation and protection. The construction technical difficulties of this project are as follows: the maximum length of a single cable is 439m, the maximum weight is 49T, the maximum installation force is 500 tons and the maximum tension force is 1000 tons; High altitude and adjacent operation cable long cable reinstallation tensile cable force is large, and there is no traction space for installation at the beam end, no large lifting equipment; The technical difficulty of construction is far more difficult than that of cable construction of general long-span cable-stayed bridge.

Zhoushan Zhoudai Bridge

Product Application

installation and tension of Stay cable

项目介绍

The main navigable bridge of Zhoudai cross-Sea Bridge is a steel box girder cable-stayed bridge with three towers and two cable faces, with a total length of 1,630 meters and a main span of 2×550 meters. The main span of the bridge is the largest in the world. The total cable span of the bridge is 2,063 tons. Our company undertook cable system installation and protection. This project is a cross-sea bridge, as the construction content is all in the sea section, has overcome the invasion of 14 typhoons.

Beijing - Xiongan intercity railway ---Super Baxiong Bridge

Product Application

The PWS cable: φ7 ×127

Project introduction

The newly built Baxiong Bridge for the Beijing-Xiongan intercity Railway has a main span of 217 meters and spans the Dagang Expressway. The main body of the bridge has 900 tons of steel structure and 62 suspension cables, using φ7*127 parallel wire bundles.

Suzhou Xiegang Bridge

Product Application

The PWS Cable: φ7×127;

Steel tie rod: φ121mm, φ170mm

Project introduction

The Xiegang BRIDGE IS THE FIRST superlarge BRIDGE BUILT WITH a double-layer STEEL structure, ARCHES AND BEAMS, designed AFTER THE Chinese CLASSICAL INSTRUMENT KONGHOU, WITH A TOTAL LENGTH OF 1,062 METERS, AND THE MAIN BRIDGE BEING 318 METERS LONG.

The Fourth Xiangjiang River Bridge in Xiangtan, Hunan Province

Product Application

The PWS cable: φ7 ×61, φ7 ×109,

Φ 7 x 139, Φ 7 x 187

Project introduction

It is the world's first cable-stayed steel tube arch bridge on the Second Ring Road of Xiangtan City in Hunan Province. The bridge has three spans across the river. The main bridge adopts the cable-stayed concrete filled steel tube arch with flying tie pole of 120m+ 400M +120m.

Harbin - Dalian passenger dedicated line Xinkaihe Bridge

Product Application

Steel tie rod: φ100mm, φ130mm

Project introduction

Xinkaihe Bridge of Harbin Dalian Railway passenger dedicated line across Fumin Street in Changchun City is designed with 1-138m steel box arch structure, which is the first railway bridge in China to adopt high-strength and high-fatigue steel tie rod as the derrick. The φ100mm and φ130mm steel derrick rod used in this project has passed not less than 2 million fatigue tests.

Tianjin Dagu Bridge

Product Application

The PWS cable: φ 5×37, φ 5×73

Project introduction

Tianjin Dagu Bridge completed in 2004, the design of the novel, unique, "sun and moon arch", composed of two asymmetrical arch rings, they are a total of 88 suspender tied to the bridge on both sides, this design is called "asymmetric floating joint beam tie arch bridge", so far in the world is also unique.

Li Gonglou overpass in Tianjin

Product Application

Stainless steel tie rod: φ70mm, φ55mm

Project introduction

The main bridge of Ligongou overpass of Tianjin Station junction project has four operating railways, and the main bridge adopts the form of three-span continuous tan-arch steel structure. The 725 class high strength stainless steel tie rod adopted in this bridge has passed not less than 2 million fatigue tests.

Shijiazhuang Hongyagu Glass Suspension Bridge

Product Application

This project adopts PPP general contracting mode, which is high in vanadium

Cable specifications: ϕ10mm, ϕ16mm, ϕ50mm, ϕ62mm

Project introduction

Hongyagu Pedestrian cableway Bridge is located in the Hongyagu Scenic Area, Wentang Town, Pingshan County, connecting two beautiful peaks. Bridge for play, high ornamental glass cableway bridge. The main span is 442 meters, the bridge width is 4 meters, the clear width is 2 meters, and the height difference between the two bridge heads is 19.5 meters.

Zhangjiakou Shangyi Daqingshan Glass Walkway

Product Application

Main cable strand:Φ5*37 (38 strands) ;Sling:Φ5*19;Main wind cable :Φ104mm;Wind sling:Φ30mm;Steel tie rod:Φ30mm;

Project introduction

Daqingshan Glass Walkway is located in Daqingshan International Tourist Area, Shangyi County. It is the only glass suspension bridge on the Grassland Road, with a total length of 639 meters, known as the longest glass suspension bridge in Asia.

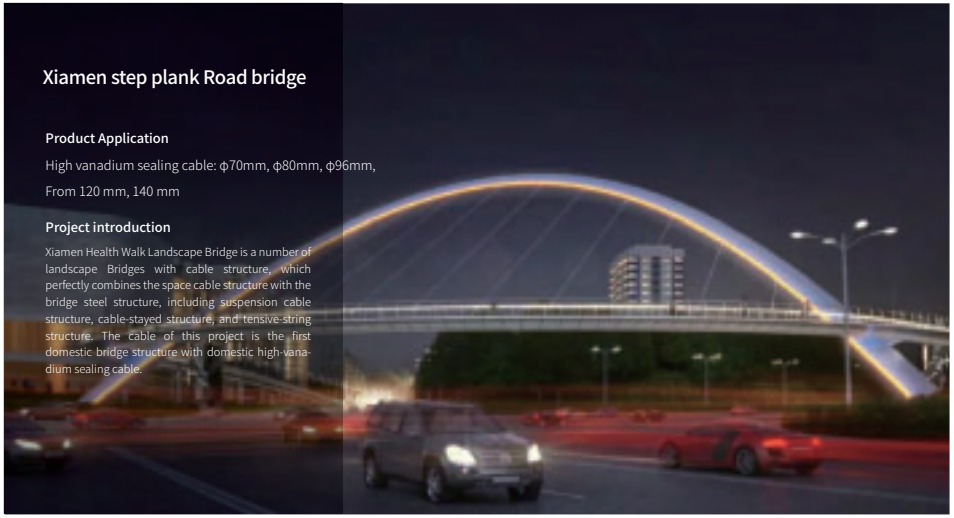
Tiantai Mountain Waterfall landscape glass bridge in Zhejiang province

Product Application

Cable system production and construction, including steel structure, main cable, craneCable, cable saddle clamp and anchorage system, wherein parallel wire bundles Main cable: 5.1×61; Steel strand sling: 15-3

Project introduction

The glass suspension bridge in Tiantai Mountain Waterfall Scenic Spot is the first high and low tower three-tower suspension bridge in China, with a total length of 340 meters and a deck width of 4 meters. The surface layer is laid with laminated tempered glass and part of the 5D glass panel.



Xiamen step plank Road bridge

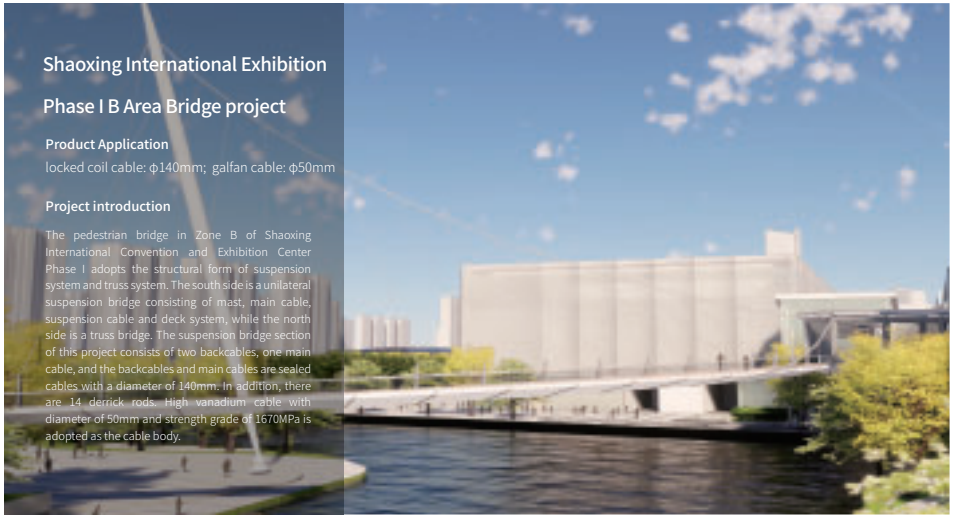
Product Application

High vanadium sealing cable: ϕ70mm, ϕ80mm, ϕ96mm,

From 120 mm, 140 mm

Project introduction

Xiamen Health Walk Landscape Bridge is a number of landscape Bridges with cable structure, which perfectly combines the space cable structure with the bridge steel structure, including suspension cable structure, cable-stayed structure, and tensive-string structure. The cable of this project is the first domestic bridge structure with domestic high-vanadium sealing cable.



Shaoxing International Exhibition Phase I B Area Bridge project

Product Application

locked coil cable: ϕ140mm; galfan cable: ϕ50mm

Project introduction

The pedestrian bridge in Zone B of Shaoxing International Convention and Exhibition Center Phase I adopts the structural form of suspension system and truss system. The south side is a unilateral suspension bridge consisting of mast, main cable, suspension cable and deck system, while the north side is a truss bridge. The suspension bridge section of this project consists of two backcables, one main cable, and the backcables and main cables are sealed cables with a diameter of 140mm. In addition, there are 14 derrick rods. High vanadium cable with diameter of 50mm and strength grade of 1670MPa is adopted as the cable body.

02

The spatial structure

The National Speed Skating Hall

Product Application

Galfan coating locked coil cable.: ϕ48, ϕ56, ϕ64, ϕ74; Cable clamp, cable force retainer

Project introduction

The roof of the National Speed Skating Hall is a single-layer two-way orthogonal saddle-shaped cable net structure, the maximum span is 198 meters ×124 meters, which is the largest orthogonal cable net stadium roof in the world. The galfan coating locked coil cable for roof structure and façade has been localized for the first time.

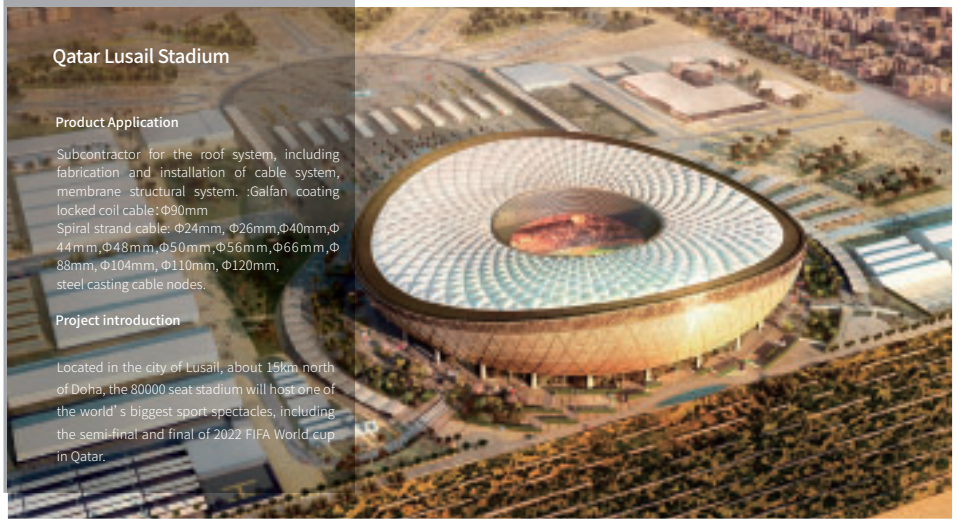
Qatar Lusail Stadium

Product Application

Subcontractor for the roof system, including fabrication and installation of cable system, membrane structural system. :Galfan coating locked coil cable：Φ90mm
Spiral strand cable: Φ24mm, Φ26mm,Φ40mm,Φ44mm,Φ48mm,Φ50mm,Φ56mm,Φ66mm,Φ88mm, Φ104mm, Φ110mm, Φ120mm,
steel casting cable nodes.

Project introduction

Located in the city of Lusail, about 15km north of Doha, the 80000 seat stadium will host one of the world' s biggest sport spectacles, including the semi-final and final of 2022 FIFA World cup in Qatar.



Phoenix Mountain Sports Center

Product Application

galfan coating locked coil cable: ϕ115mm, ϕ125mm;
ring cable node

Project introduction

The core venue of the 31st World University Summer Games in 2021 and the important competition venue of the 18th Asian Cup in 2023 in Chengdu, a professional football stadium with 60,000 seats, and the world's first large opening overall tension-cable dome structure.

Sanya Sports Center

Product Application

galfan coating locked coil cable: ϕ80mm, ϕ110mm

Project introduction

The inner side of the steel structure of the roof of Sanya Sports Center is a spoke-type cable truss structure, which is the largest stadium of Sanya Sports Center in Hainan Province. The whole roof cable structure applies galfan coating locked coil cable made in China.

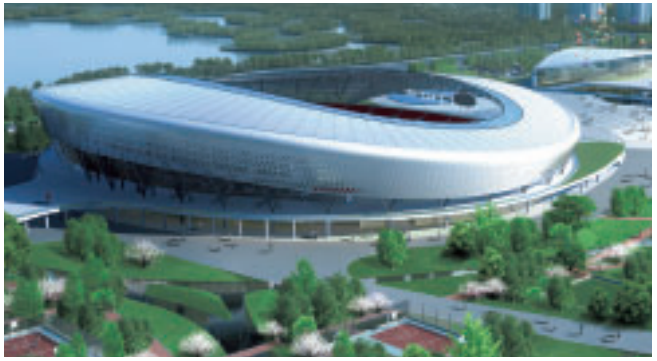
Leshan Olympic Sports Center

Product Application

galfan coating locked coil cable: ϕ120mm, ϕ130mm; ring cable node

Project introduction

Leshan Olympic CENTER, AS A 30,000-SEAT STADIUM, IS DESIGNED WITH SINGLE-double-layer hybrid SPOkes cable membrane structure, which is the first in China. This system is not only novel in structure, but also the most complex structure in China, and the diameter of the cable has broken through all domestic projects.



Taizhou Sports Center

Product Application

galfan coating locked coil cable(ring cable) : 125mm; domestic galfan cable(radial cable) : ϕ140mm, 122mm, 95mm, 82mm

Project introduction

Taizhou Sports Park project is located in the south of Tiande Lake Park in the urban area, with a stadium for 30,000 people, a gymnasium for 6,000 people, a natatorium for 1,500 people and a national fitness gym, which can meet the requirements of sports venues for provincial comprehensive events and domestic single events.

Dongxihu sports center

Product Application

Ring cable applies imported galfan coating locked coil wire ropeϕ110mm; its

The others apply domestic galfan coating cable: ϕ75mm, ϕ95mm,

From 101 mm, 102 mm; Cable clips: 72ring cable nodes

227 radial cable nodes

Project introduction

The Dongxihu Sports Center consists of a stadium, a gymnasium and a natatorium. The stadium adopts a cable grid structure. It is one of the competition venues for the 7th Military World Games in 2019.

Haikou Wuyuanhe Stadium

Product Application

galfan coating locked coil cable: ϕ90mm, ϕ95mm, 100 mm and 115 mm ΦΦ; galfan cable: ϕ25mm,Φ 35 mm; Steel tie rod: ϕ75mm, ϕ85mm, 120 mm and 150 mm ΦΦ; steel casting nodes

Project introduction

Haikou Stadium is a Class A stadium, which can host national and individual international competitions. The design of the stadium boldly breaks the symmetrical layout and adopts the bleachers with high west and low east.

Rizhao Kuishan Sports Center

Product Application

galfan coating locked coil cable: ϕ118 mm

Project introduction

The stadium has a total of 36,000 seats. It is the opening ceremony venue of the 25th Provincial Games in Shandong Province, and it is also responsible for the track and field events of the provincial games. Considering the utilization problem after the games, it can also be responsible for international and national track and field events, football events and other events.

Pudong Football Stadium

Product Application

galfan coating locked coil cable: ϕ95mm, ϕ100mm, ϕ110mm,Phi 120 mm

Project introduction

Pudong Football Stadium will be another professional football stadium in Shanghai after Hongkou Football Stadium and Jinshan Football Stadium. It is positioned as A professional football stadium that can meet the requirements of FIFA International A competition. The number of seats fixed at the stadium is 33,765.

Xi'an International Football Center

Product Application

galfan coating locked coil cable: ϕ45mm, 50mm, 60mm, 75mm, 95 mm and 100 mm

Project introduction

The venue design of Xi'an International Football center conforms to the standards of FIFA and Asian Football Federation. With 60000 fixed seats, it can undertake all international top football events, including the Asian Cup and the world cup.

Shaoxing County Olympic Sports Center

Product Application

Steel tie rod: ϕ200mm, grade 650

Project introduction

The fix roof main stress system of Shaoxing County Olympic Stadium steel structure is super-large parallel flexible combination of bottom chord truss structure.
the span is 260 m long, short for 200 m, is currently the largest span in the world of truss structures, the composite truss structure adopted in four parallel 200 mm diameter grade 650 strong alloy steel rod, such as flexible bottom chord, Bear up to more than 3,600 tons of design forces. 200mm diameter high strength steel (650 class) tie rod is applied for the first time in China.

Xinjiang Convention and Exhibition Center Phase II

Product Application

PWS cable: ϕ5×31, ϕ7×379, ϕ7×583

Project introduction

The second phase of Xinjiang Convention and Exhibition Center covers a total construction area of 200,000 square meters. The roof is a stringed steel truss structure with a span of 120 meters. The semi-parallel wire cable is used to stay the cable, among which the ϕ7×583 cable is the largest cable product in domestic bridge construction projects so far.

Shijiazhuang International Exhibition Center

Product Application

galfan cable: ϕ26mm, ϕ63mm, ϕ86mm, ϕ97mm, From 113 mm, 133 mm; Steel tie rod: ϕ40mm, ϕ50mm; steel casting nodes

Project introduction

Shijiazhuang International Convention and Exhibition Center includes 100,000 square meters of exhibition center and 60,000 square meters of conference center. The roof adopts suspension truss structure, which combines the suspension bridge structure with the architectural space structure.

Shenzhen International Convention and Exhibition Center

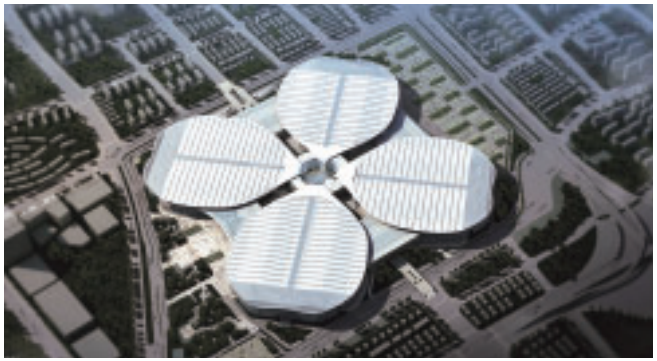
Product Application

galfan cable: ϕ25mm; Steel tie rod: ϕ30mm;

steel casting nodes

Project introduction

Shenzhen International Convention and Exhibition Center covers an area of 1.48 million square meters. After the completion of the first phase of the project, it will be the second largest exhibition center in the world and the first largest in China after the Hannover Convention and Exhibition Center in Germany. When completed, it will become the world's largest convention and exhibition center.



China Expo and Exhibition Complex

Product Application

Steel tie rod: ϕ40mm, ϕ50mm, ϕ60mm,

ϕ70mm, ϕ80mm, ϕ120mm

Project introduction

The total construction area of the project is over 1.5 million square meters. It is the largest convention and exhibition complex in the world at present, integrating various forms of business such as exhibition, conference, event, business, office and hotel. In 2020, it won the national Three-star Green building operation certification and achieved the three-star design and operation certification. It has become the first three-star green building for large-scale exhibition and exhibition in China, and is also the largest green building in China.

Tianjin International Convention and Exhibition Center Phase II

Product Application

galfan coating locked coil cable: ϕ42mm; Steel tie rod: ϕ25mm,

ϕ30mm, ϕ35mm, ϕ40mm

Project introduction

Tianjin National Convention and Exhibition Center, located in the south bank of the middle reaches of Haihe River in Jinnan District of Tianjin, is a national convention and exhibition center jointly built by the Ministry of Commerce and Tianjin Municipality. Tianjin Convention and Exhibition Center is the third largest international convention and exhibition center outside Shanghai and Guangzhou.

Kunming Changshui International Airport

Product Application

Steel tie rod: ϕ40mm, ϕ50mm,

Φ60mm

Project introduction

Kunming changshui international airport in kunming, yunnan province is located in guandu district water village, the airport is a 4 f civil transport, management run by the yunnan airport group co., LTD., is one of the world top airport, is the only approved the construction of the country during the period of "11th five-year plan" major portal hub airport is China's eight regional hub airports, international aviation hub.

Guangzhou Baiyun Airport expansion project

Product Application

Parallel wire bundle cable: ϕ5×31, ϕ7×61,

Φ7*53; Steel tie rod: ϕ40mm, ϕ50mm,

Φ 55 mm, 70 mm Φ

Project introduction

Baiyun Airport is a large international aviation hub airport, the core airport of the Pearl River Delta airport group, and an important hub node of China's air transportation network.

Tianjin Binhai International Airport T2 Terminal

Product Application

Steel tie rod: ϕ50mm, ϕ60mm, ϕ65mm

Project introduction

Terminal T2 is an important part of the second phase expansion project of Tianjin Binhai International Airport. Located to the east of Terminal T1, Terminal T2 has a total floor area of about 248,000 square meters.

The second phase of Shanghai Pudong International Airport

Product Application

Steel tie rod: ϕ100mm, ϕ130mm, ϕ150mm, Φ 160 mm and 180 mm

Project introduction

The second phase of Shanghai pudong international airport for the major of Shanghai municipal engineering, design of the terminal is the "eye", all adopt the large span steel roof truss structure, the main building steel roof truss for three spans continuous large-span space curve of the structure, the total span of 217.6 meters, the span 64.298 m, 89 m, 64.298 m, using prestressed string structure.

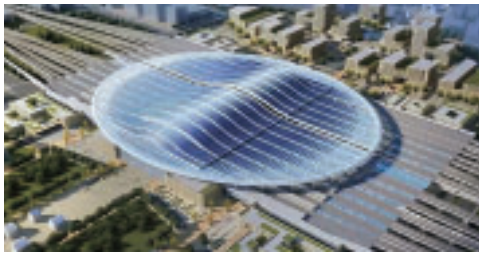
Qingdao north station

Product Application

Galfan cable: ϕ30mm, ϕ50mm, ϕ60mm, ϕ74mm,ϕ84mm, ϕ90mm, ϕ106mm, ϕ126mm, Phi 140 mm; PWS cable: ϕ5×85; Steel tie rod: ϕ50mm, ϕ90mm

Project introduction

Qingdao North Railway Station, located in Licang District, Qingdao City, Shandong Province, China, is the largest railway hub in Shandong Province, China. The structural system of Qingdao North Railway Station is complex. Cross arches are used as the main structural system to support the curved roof.



Xiongan Railway Station

Product Application

galfan coating locked coil cable: ϕ40mm;
Steel tie rod: ϕ55mm

Project introduction

Xiongan Station covers an area of about 150,000 square meters, with a total construction area of 472,000 square meters. It is an important hub station of the national Xiongan New Area, bearing the mission of the great development of Xiongan New Area, and an important transportation channel connecting the capital Beijing to the Xiongan New Area.

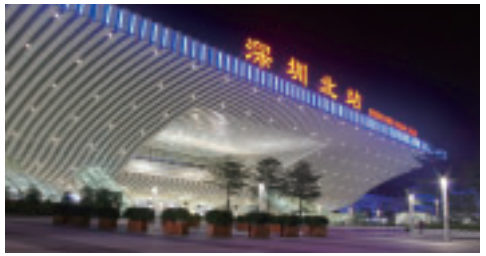
Guangzhou New Railway Station (Guangzhou South Railway Station)

Product Application

PWS cable: ϕ5×91, ϕ5×121;
Steel tie rod: ϕ30mm, ϕ50mm, ϕ70mm, Phi 100 mm; steel casting nodes

Project introduction

Guangzhou South Railway Station, located in Panyu District, Guangzhou City, Guangdong Province, China, is a first-class station with a total construction area of 615,000 square meters and a total space of 486,000 square meters.



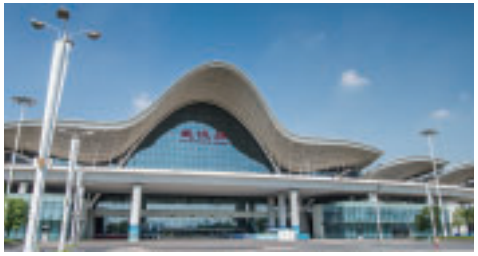
Shenzhen north station

Product Application

PWS cable: ϕ5×121;
Steel tie rod: ϕ60mm, ϕ70mm, Phi 80 mm

Project introduction

Shenzhen North Railway Station is located in Minzhi Street, Longhua District, Shenzhen City, Guangdong Province, China. Under the jurisdiction of China Railway Guangzhou Bureau Group Co., LTD., Shenzhen North Railway Station is the core station of the "four main and four auxiliary" passenger transportation pattern of Shenzhen Railway. It is also the intermediate hub station of Guangzhou-Shenzhen-Hong Kong high-speed Railway and the original station of Hangzhou-Shenzhen Railway.



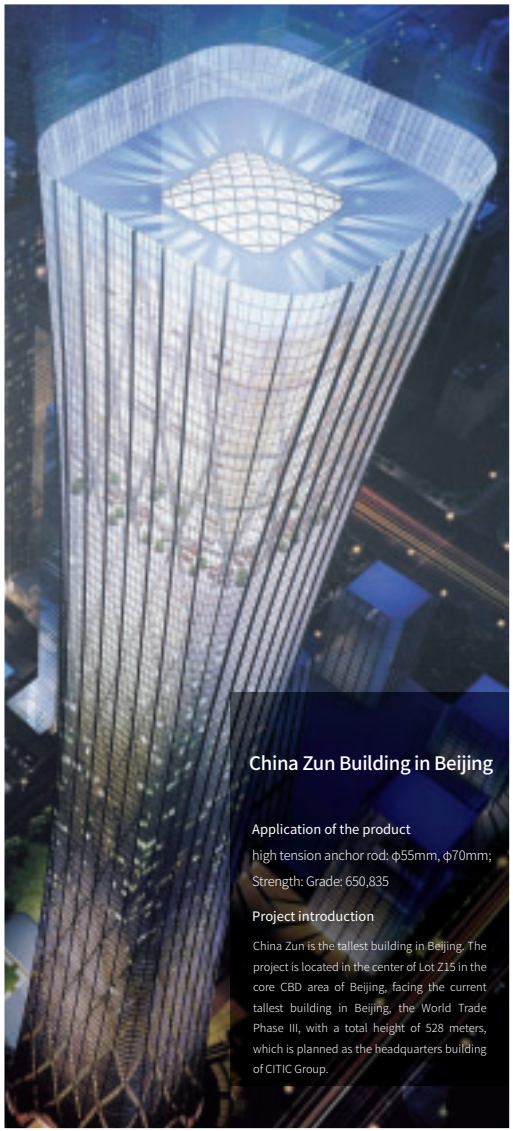
New Wuhan Railway Station

Product Application

Steel tie rod: ϕ30mm, ϕ40mm, ϕ60mm, ϕ80mm, 90mm

Project introduction

Wuhan Station is a high-speed railway station, which is a new type of structure railway station in which the large structure above works together with the lower bridge. Wuhan railway station can be "seamless" transfer, will realize the railway, trunk, underground railway, highway close connection.



China Zun Building in Beijing

Application of the product

high tension anchor rod: ϕ55mm, ϕ70mm;

Strength: Grade: 650,835

Project introduction

China Zun is the tallest building in Beijing. The project is located in the center of Lot Z15 in the core CBD area of Beijing, facing the current tallest building in Beijing, the World Trade Phase III, with a total height of 528 meters, which is planned as the headquarters building of CITIC Group.

Tianjin 117 Building

Product Application

high tension anchor rod: ϕ50mm, ϕ75mm;

Strength: Grade: 835

Project introduction

Tianjin Gaoyin 117 Building integrates high-end shopping malls, office buildings, business apartments and six-star hotels. When completed, it will be a beautiful "city name card" of Tianjin High-tech Zone and a very representative landmark of Tianjin.

Haikou tower

Product Application

high tension anchor rod: ϕ30mm, ϕ60mm, Φ75 mm;

Grade: 650,835

Project introduction

Haikou Tower Project is located in D15, south of Guoxing Avenue, Dayingshan, Haikou. The project consists of one tower and two podium buildings, with a building height of 428 meters. It is a comprehensive business center integrating office, hotel, business, leisure and entertainment.

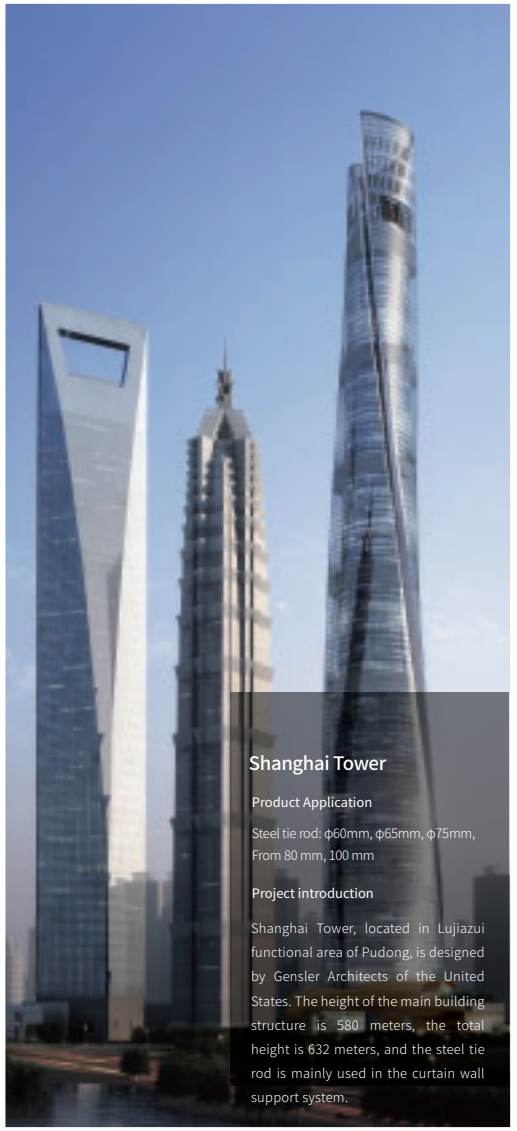
Eye of Spring in Kunming

Product Application

high tension anchor rod: ϕ30mm, ϕ40mm,From 50 mm and 75 mm;Strength: Grade: 835

Project introduction

The project is located at Dongfeng Square in downtown Kunming City. The main tower is 407 meters high and the secondary tower is 308 meters high. In order to realize the function of Kunming as the bridgehead of Southeast Asia and South Asia, the new landmark of the city, together with Henglong Plaza, builds the new skyline of Dongfeng Plaza CBD.



Shanghai Tower

Product Application

Steel tie rod: ϕ60mm, ϕ65mm, ϕ75mm, From 80 mm, 100 mm

Project introduction

Shanghai Tower, located in Lujiazui functional area of Pudong, is designed by Gensler Architects of the United States. The height of the main building structure is 580 meters, the total height is 632 meters, and the steel tie rod is mainly used in the curtain wall support system.

DUBAI EYE OBSERVATION WHEEL-250M

Product:

PWS cable:ϕ7x109

"Dubai Eye" Observation Wheel is located in Dubai, UAE, with diameter of 250M, which has used 192 Pcs of PWS cable, each cable reaches 115M long, which is the highest in the world and has become the landmark of the whole world. We have obtained patent of the key technology and passed the horizontal fatigue test in the lab of Germany.

TIANJIN CIHAI BRIDGE OBSERVATION WHEEL-140M

Product:

PWS cable:ϕ7x85, ϕ7x163, ϕ7x301

Project description:

Cihai Bridge Observation Wheel is located in Tianjin City, China, with diameter of 140M, which has surpassed London Eye and became the World Highest Observation Wheel at that time and recorded in the World Record Association. When reach the top you can have a full view of the whole city and Haihe River within 40KM round, which can match its reputation of "Tianjin Eye".

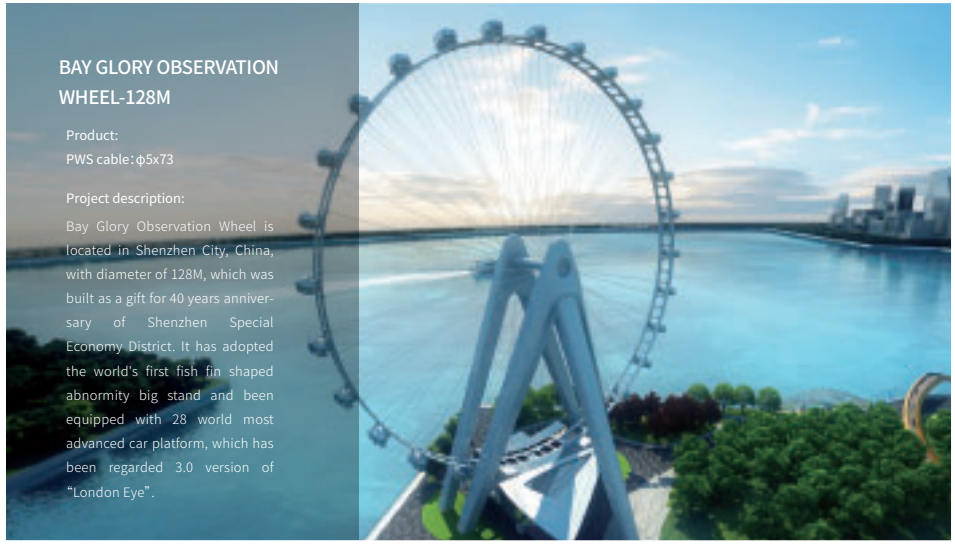
BOHAI EYE OBSERVATION WHEEL-125M

Product:

PWS cable:ϕ7x265, ϕ5x37, ϕ5x253

Project description:

Bohai Eye Observation Wheel is located in Weifang City, China, with diameter of 125M, total height of 145M, which has achieved three world No.1: World largest shaftless observation wheel; World first mesh format observation wheel; World first shaftless observation wheel with combination of wheel and bridge, which has become the new landmark.



BAY GLORY OBSERVATION WHEEL-128M

Product:

PWS cable:ϕ5x73

Project description:

Bay Glory Observation Wheel is located in Shenzhen City, China, with diameter of 128M, which was built as a gift for 40 years anniversary of Shenzhen Special Economy District. It has adopted the world's first fish fin shaped abnormity big stand and been equipped with 28 world most advanced car platform, which has been regarded 3.0 version of "London Eye".

Dezhou-OUTLETS INTERNATIONAL OBSERVATION WHEEL-120M

Product:

PWS cable:ϕ5x37, ϕ5x109

Project description:

Dezhou Outlets International Observation Wheel is located in Dezhou City, China, with diameter of 120M, which is the largest one in Northern China, and has become the landmark of Dezhou City.

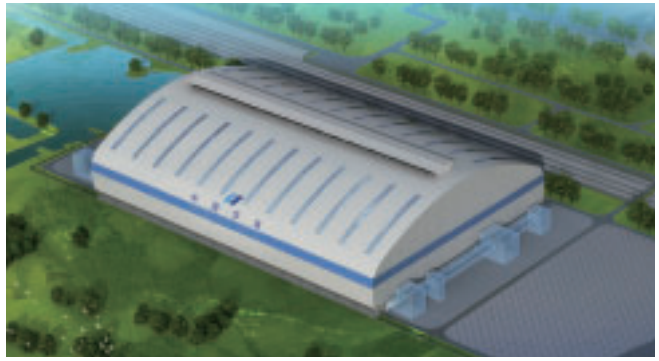
SHUNDE HUAQIAOCHENG THEME PARK OBSERVATION WHEEL-99M

Product:

PWS cable:ϕ5x37, ϕ5x109

Project description:

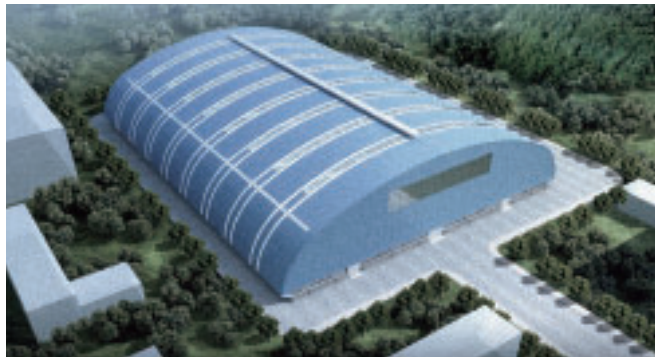
Shunde Huaqiaocheng Theme Park Observation Wheel is located in Shunde City, China, with diameter of 99M, which is the first one with high double supporting frame wheel in Sorthern China and has become the landmark of Shunde City.



Weifang Power Generation Co. LTD Phase I coal yard closure project

Product Application

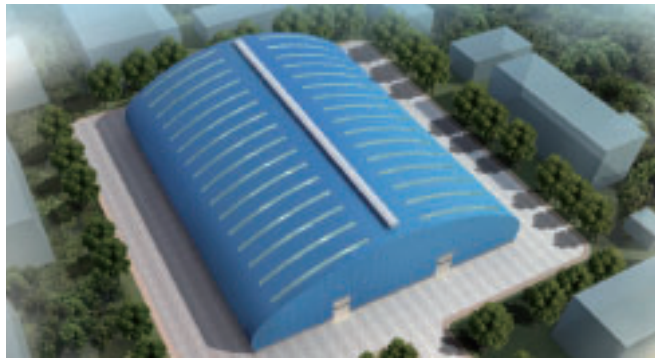
PWS cable: ϕ5×109; cable nodes



Jiaozuo Danhe Coal Plant of State Power Investment Corporation Enclosed engineering

Product Application

PWS cable: ϕ5×199; cable nodes



Guodian Ningdong Fangjiazhuang Power plant Dry coal shed works

Product Application

PWS cable: ϕ5×109, ϕ5×121;
cable nodes

Dji UAV headquarters in Shenzhen The Sky City project

Product Application

galfan coating locked coil cable: ϕ90mm, ϕ120mm;

Steel tie rod: ϕ30mm, ϕ40mm;

Installation and construction of cable nodes and cable

Project introduction

Big xinjiang unmanned aerial vehicle (uav) shenzhen headquarters "sky city" project two buildings technology feels dye-in-the-wood, concave and convex facade, irregular hidden base in the building structure design as a science fiction blockbuster, the twin towers designed a cool suspension cable between air nest of derrick structure, not only as a function of the connection, as the entry of the unmanned aerial vehicle (uav), It is another peak work designed by Foster + Partners for the headquarters of technology enterprises after Apple's headquarters. It was named as one of the "10 most anticipated new buildings in the world in 2021" by media.

Zhujiang New City, Guangzhou Haixinsha afforestation Renovation project

Product Application

PWS cable: ϕ5×121, ϕ5×223,

From 5 x 349, 5 x 583

Project introduction

Haixinsha adheres to the nature of Asian Games park and citizen square, and the original buildings and new facilities are all free to open after the transformation. According to the three functional positioning of "Asian Games card, citizen square and international fashion", the original facilities will be properly transformed and the supporting service functions will be improved.

Qudian Innovation Park - Qudian Headquarters Building

Product Application

galfan cable: ϕ120mm; Steel tie rod: ϕ175mm,grade 650

Project introduction

Qudian Innovation Park is a science and technology innovation park built by Qudian Group in the East Sea of Xiamen, which integrates Internet technology, big data and artificial intelligence. It will also be the location of the new headquarters of Qudian Group in the future.

The East Wing of Shanghai Library

Product Application

Steel tie rod: ϕ250mm, ϕ290mm, grade 460

Project introduction

Located in Pudong New Area, the East Branch of Shanghai Library covers a total floor area of 110,000 square meters, with 7 floors above ground and 2 floors underground. About 6,000 reading seats will be provided for readers, the whole open-shelf collection of about 4.8 million books, the full introduction of digital reading and other intelligent services, become the city's "study, living room, studio".

Beijing capital airport charge shed

Product Application

PWS cable: ϕ5×7, ϕ5×19, ϕ5×31, ϕ5×85, ϕ5×91, ϕ5×121, ϕ5×151, ϕ5×199, ϕ5×223, ϕ5×367, ϕ5×409, ϕ5×475, ϕ5×583; Steel tie rod: ϕ160mm, ϕ150mm, ϕ90mm; Wire rope: ϕ17mm

Project introduction

The cable membrane structure of Capital airport charging shed is relative large span cable membrane structure in China, with a maximum span of 166 meters, a projection area of 3275 square meters and a membrane expansion area of 3385 square meters. The project is located in the south of the new T3 Terminal of Beijing Capital Airport, which is the main entrance of the new Beijing Airport and was completed in early 2008.

03

ports

Karachi Deep Water Port, Pakistan

Product Application

Steel tie rod: ϕ140mm, ϕ150mm

Project introduction

Karachi Deep Water Port Terminal is Pakistan's first deep water container terminal with a draft depth of 18 meters, and it is also the largest deep water container terminal in Karachi. The wharf is a continuously anchored sheet pile structure with a total length of 1600 meters and a total of 4 berths.

new container wharf project at Port of Cabello, Venezuela

Product Application

Steel tie rod: ϕ90mm, ϕ140mm

Project introduction

The project is located in Cabello City, Caravovo State, Venezuela. It mainly includes two berths for container ships, a container yard with a total area of about 380,000 square meters and a breakwater about 758 meters long.

Breakwater project of Mindoru, Malaysia

Product Application

Steel tie rod: ϕ55mm, ϕ90mm, ϕ105mm and guide beam

Project introduction

Mindoru Port is the central point of Simah, Singapore, Brunei and Sabah. Malaysia LNG Berhad's three LNG plants, all located in the Dudong Industrial zone in Mindur, are the single largest LNG plants in the world. The biggest goal of Mindoru Port is to become a world-class LNG port.

The Second Container terminal in Sukhna, Egypt

Product Application

Steel tie rod: ϕ85mm

Project introduction

The Second Container terminal project of Suhena is located about 40km from the south entrance of Suez Canal in Egypt. The project includes the excavation and dredging of about 6.7 million cubic meters of port pool, about 1,302 meters of ground wall wharf (200,000-ton class), about 88,900 square meters of yard (water cut and electric pipe network), about 1,937 meters of revetment, 2 terminal offices and 2 substations.

Angola fishing port finished oil depot expansionProject wharf and dredging EPC engineering

Product Application

Steel tie rod: ϕ120mm, ϕ140mm

Project introduction

The project adopts tubular plate and pile structure, and the main engineering contents include 50,000-ton and 15,000-ton on-shore oil docks, harbor pool and channel dredging, land area formation and revetment construction, etc.

The dockyard at the New Tisham Shipyard in SingaporeAnd wharf works

Product Application

Steel tie rod: ϕ60mm, ϕ65mm

Project introduction

Located at the southwest end of Singapore, the project consists of 4 shipyards, 4 docking terminals, 2 revetment terminals and 3 jetty terminals.

Guangzhou Port Nansha Port Area Phase 4 project

Product Application

Steel tie rod: ϕ70mm, ϕ75mm, ϕ115mm, 130mm

Project introduction

The project will construct two 100,000-ton container berths and two 50,000-ton container berths, with a length of 1,460 meters. 12 berths for 2,000-ton container river barges with a length of 984 meters; 4 work vessel berths with a length of 200 meters.

Caofeidian Shougang series dock

Product Application

Steel tie rod: ϕ70mm, ϕ75mm, ϕ80mm, ϕ85mm, Phi 90 mm

Project introduction

The Caofeidian Shougang Series wharf is an important infrastructure construction after the relocation of Shougang to Caofeidian, including coal wharf, ore wharf, finished product wharf, bulk cargo wharf and other series wharfs, with a total of ten thousand tons of steel tie rods.

Guangzhou Jinyang port wharf

Product Application

Steel tie rod: ϕ85mm

Project introduction

The project is located in Shazai Island, Huangge Town, Nansha District, Guangzhou City. The project consists of two general berths of 70,000-ton class, both for vehicle RO-RO ship operation of 50,000-ton gross ton, and the length of berths is 546 meters. The project is to arrange a digging-in inner harbor pool. It is planned to build one 3,000-ton and two 2,000-ton general cargo berths, one 2,000-ton and two 1,000-ton RO-RO vehicle berths, and two working ship berths with a length of 745 meters.

China Shipbuilding Changxing Shipbuilding Base

Product Application

Steel tie rod: ϕ60mm, ϕ75mm, ϕ85mm, Φ90mm

Project introduction

The WORLD's LARGEST shipbuilding BASE, ChangXING Shipbuilding Base, is located at the southeastern tip of Changxing Island, with a planned area of 10 square kilometers and a coastline of 4.5 kilometers, covering an area of 5.6 square kilometers. Its annual shipbuilding capacity ranks first in the world, reaching more than 8 million tons.

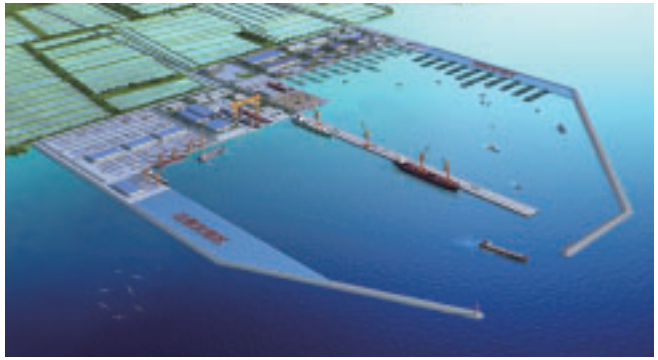
Csic Tianjin Lingang Ship Building and repair Base

Product Application

Steel tie rod: ϕ65mm, ϕ75mm

Project introduction

China Shipbuilding Industry Corporation (CSIC) Tianjin Port Ship building and repairing base has a coastline of 3,900 meters, two large shipyard, two repair dock, one Marine engineering slide, with an annual shipbuilding capacity of 3 million load, the construction of 4 offshore platforms.



Tangshan Lang Wo Kou central fishing port project

Product Application

Steel tie rod: ϕ75mm, ϕ80mm, ϕ85mm

Project introduction

The project is located in Leting County, Tangshan City, Hebei Province, with a fish unloading berth of 794 meters. 327m refrigerated ship berth and double as ice-loading berth for fishing boats; 10,000-ton waterway 4,630 meters; Embankment 1294 meters, embankment 1150 meters, breakwater 3011.09 meters; Supporting construction of ship repair area, including a slide,2 2000-ton-class slipway, 2 5000-ton-class slipway and ship repair workshop.

Yantian International Container Terminal - Expansion project

Product Application

Steel tie rod: ϕ65mm, ϕ75mm

Project introduction

Yantian International Container Terminal (YANTIAN International) is a natural deep-water port and an important gateway for China's import and export trade. The port area now has 16 large container deep-water berths, with a terminal area of 373 hectares, and close cooperation with nearly 40 large shipping companies worldwide, providing nearly 100 routes to the world's major ports every week.

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