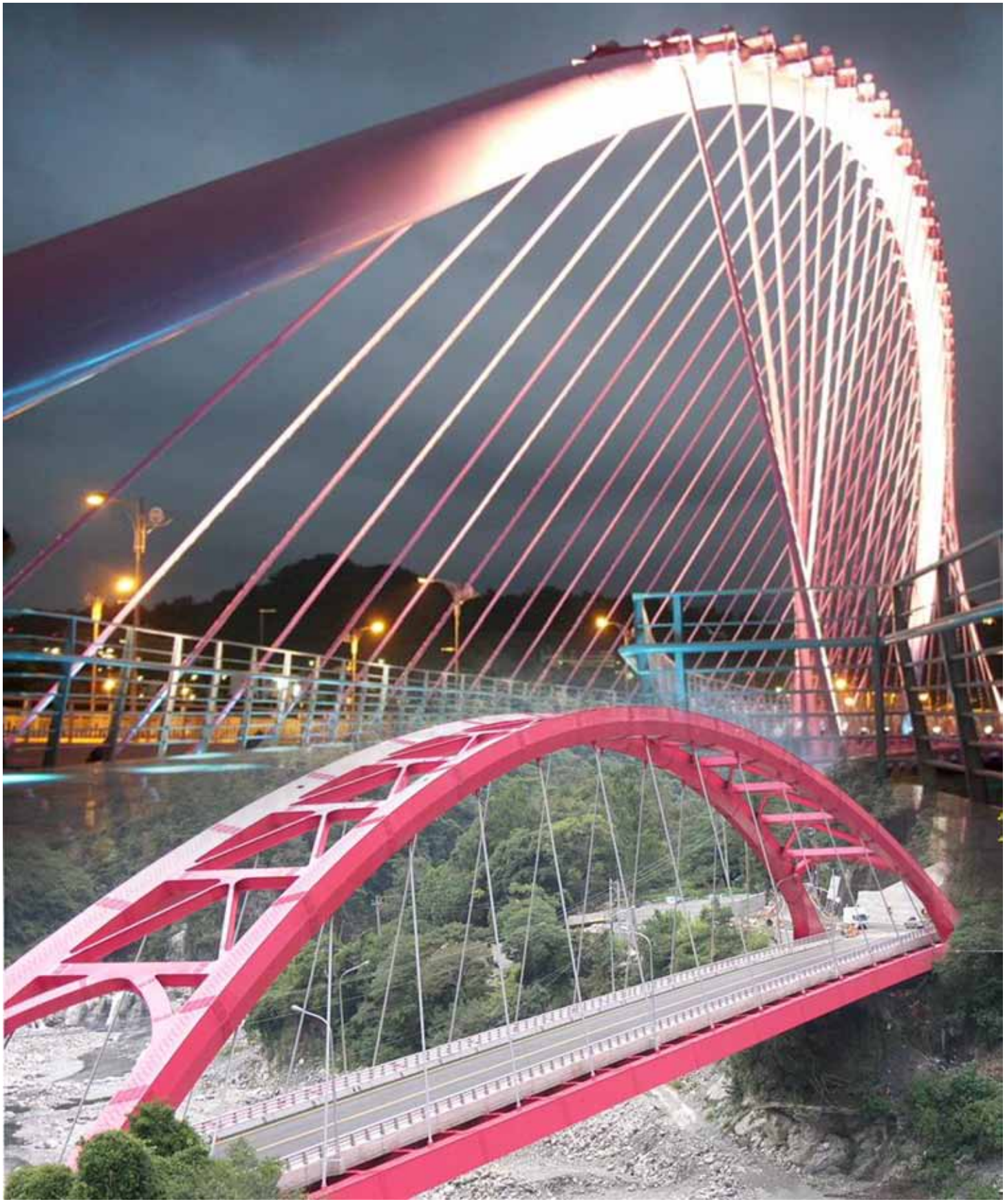
TMG



TMG Stay Cable System (Multistrand Series)

TMG Stay Cable System (Multistrand Series)

Recent years, the increased in stayed-cable bridges with demand for increased spans and cable lengths has triggered the requirements for faster erection cycles. And also the increased in dynamic demands accelerated the pace of constructions. TMG Stay Cable System offers the solutions to engage these cable-stayed construction challenges and continuously develops the next generation technology to tackle these challenges. TMG provide the best solution to such demands and excel in meeting clients' needs.

In this brochure, we focus our attention to TMG Stay Cable System that utilizes strand as its primary tendon.

Many stayed-cable bridges are designed to last 100 years or more. Clients' demands for

- long term performance of stay cables;
- leak-proof anchorage assembly;
- reduced foot-print during deck erection and stay cable installation;
- installation equipments that is easy and light to use;
- easy maintenance and simple inspection;
- the ability to replace cables with minimal disruption to bridge usage; etc

had inspired us to develop a Stay Cable System that answers to their demands.

TMG Stay Cable System is produced to the highest quality and its performance and durability are subjected to quality tests according to our quality assurance system. The anchors assembly is designed to control individual strand deviation and movement, and also to prevent the cable vibrations going into the wedge anchorage zone. TMG Stay Cable System allows for bare strand, galvanized strand or epoxy coated strand as cable tendon. A multi protection system in the anchors is designed to prevent corrosion as well. The system's small and compact nature allows for strand-by-strand installation with lightweight equipment and thus eliminates the usage of heavy deck equipment, minimizes tower crane usage and eliminates the requirement for bridge closure.

Stay Cable Structure

TMG Stay Cable Anchor

Cable Stayed Bridge

TMG Stay Cable System (Multistrand Series)

TMG Stay Cable System are tested at stress range of 250MPa with an upper stress limit of 45% GUTS on 2 million load cycles. We offer 4 types of Anchors to cater to different needs for cable sizes ranging from 12 to 151 strands. Leak tightness and excellent corrosion protection ensures the longevity of the whole stay cable system.

Vandalism protection and the cable's free length protected by UV-resistant HDPE stay pipe with outer helical fillet for wind-rain induced vibration reduction is also an important feature in our stay cable design.

Different Types of Stay Cable Anchors (109 strands)

Different Types of Stay Cable Anchors

Different Types of Stay Cable Anchors

Elastomeric Bearing

Compaction Clamp

Installed Stay Cables with Waterproof Protection

TMG Stay Cable System (Multistrand Series)

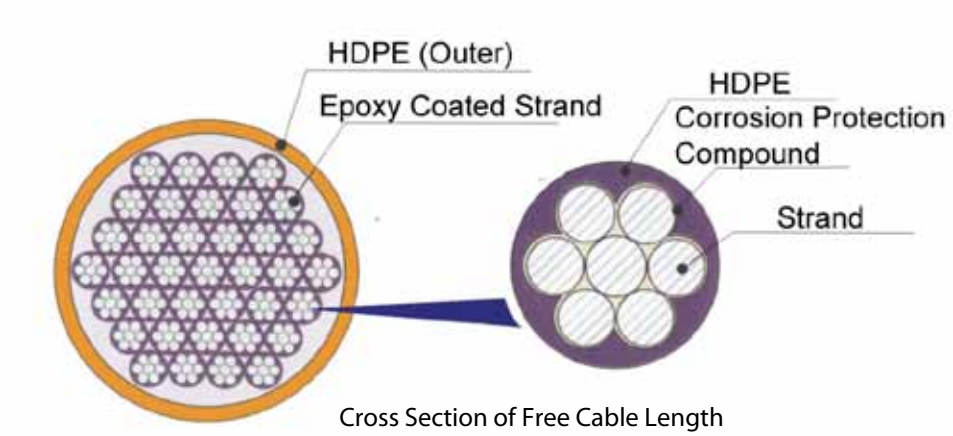
TMG Stay Cable System is designed for different types of strand. Listed below are some examples of the strand used. These strands are specially coated with epoxy or sheathed to provide maximum corrosion protection.

Individually Epoxy Coated Strand

Epoxy Coated Strand

PE Strand

The free length of the cable is further protected by a multi-layered tightly sheathed HDPE. And a wax filling can be used for the interstices in between. An outer Stay Cable pipe made of UV-resistant HDPE gives the whole cable an additional protection.



Cross Section of Free Cable Length

Stay Cable Installation

Reference Photos of TMG Stay Cable System (Multistrand Series)

Stay Cable Installation

Stay Cable Installation

Stay Cable Installation

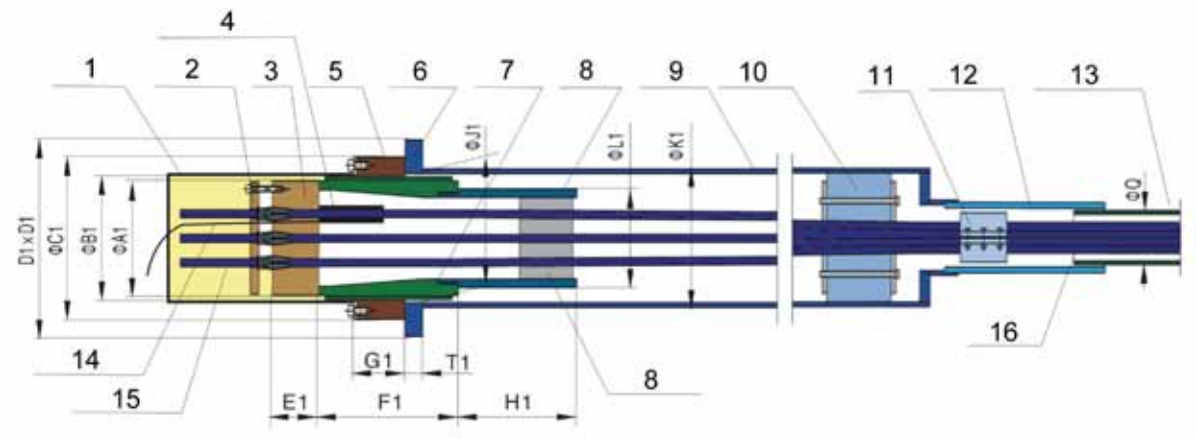
Stressing In Progress

Stay Cable Installation

Stay Cable Installation

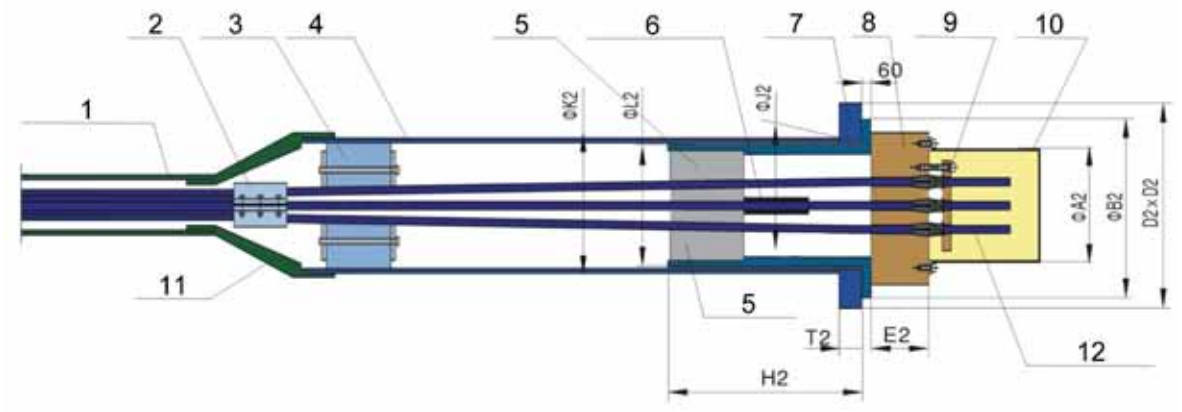
Stay Cable (Type A)

Type A Stay Cable is an intelligence Stay Cable System. By burying a transducer into the anchorage zone, we can use a computerized system to monitor and control the whole installation process. Maintenance of the cable is also greatly improved after installation.



TMG Stay Cable (Type A) Structural Diagram (Stressing Side)

1) Cap
2) Wedge Keeper Plate
3) Anchor Head
4) Transducer
5) Ring Nut
6) Bearing Plate
7) Guide Deviator
8) Compression Plate
9) Recess Pipe
10) Elastomeric Bearing
11) Compaction Clamp
12) Vandalism Protection Pipe
13) HDPE (Outer)
14) Transducer cable
15) Corrosion Protection Compound
16) Strand



TMG Stay Cable (Type A) Structural Diagram (Fixed Side)

1) HDPE (Outer)
2) Compaction Clamp
3) Elastomeric Bearing
4) Recess Pipe
5) Compression Plate
6) Transducer
7) Bearing Plate
8) Anchor Head
9) Wedge Keeper Plate
10) Cap
11) Waterproof Cap
12) Corrosion Protection Compound

Technical Drawing & Data for TMG Stay Cable System (Multistrand Series)

Technical Data of TMG Stay Cable (Type A) - Stressing Side

Unit : mm

No. of Strand	Anchor Head		Guide Deviator		Ring Nut		Compression Plate	Bearing Plate			Recess Pipe
	ΦA1	E1	ΦB1	F1	ΦC1	G1	ΦL1	D1	ΦJ1	T1	ΦK1 (Outer / Wall Thickness)
12	190	80	205	200	265	80	265	345	215	35	245 / 10
19	225	90	240	225	300	90	300	380	250	40	273 / 10
22	240	95	255	240	320	95	320	415	265	40	299 / 10
27	270	110	285	260	350	105	350	435	295	40	325 / 10
31	270	110	285	260	350	105	350	460	295	50	325 / 10
34	285	110	310	280	375	110	375	490	320	55	351 / 10
37	285	120	310	280	375	110	375	490	320	55	351 / 10
43	310	125	330	310	400	125	400	520	340	60	377 / 10
55	330	140	350	340	430	135	430	580	360	60	402 / 10
61	360	145	380	370	460	145	460	600	390	70	426 / 12
73	380	155	400	390	490	155	490	640	410	75	450 / 12
85	400	175	420	440	520	175	520	700	430	80	457 / 12
91	430	180	450	460	550	185	550	750	470	85	500 / 15
109	450	210	480	530	590	210	590	790	490	90	530 / 15
127	500	210	530	550	640	220	640	850	540	100	610 / 15

For other requirements, please contact our Technical Department

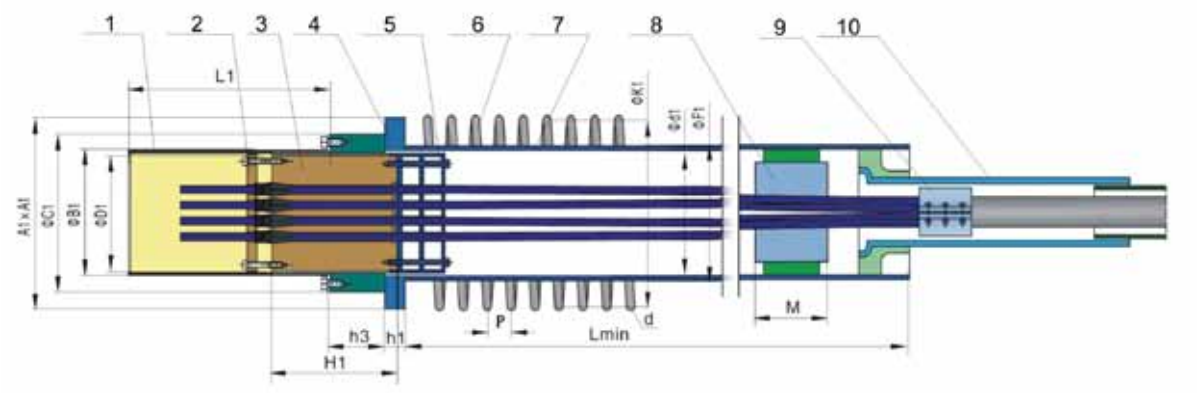
Technical Data of TMG Stay Cable (Type A) - Fixed Side

Unit : mm

No. of Strand	HDPE (Outer)	Anchor Head		Compression Plate	Bearing Plate			Recess Pipe
	ΦQ	ΦA2	E2	ΦL2	D2	ΦJ2	T2	ΦK2 (Outer / Wall Thickness)
12	125	200	80	165	315	171	45	194 / 8
19	140	235	90	195	350	201	50	219 / 8
22	140	250	95	210	370	216	50	245 / 10
27	160	270	110	230	395	236	55	273 / 10
31	160	270	110	230	405	236	60	273 / 10
34	180	285	110	250	430	256	60	273 / 10
37	180	285	120	250	430	256	60	273 / 10
43	200	320	130	280	510	286	75	325 / 10
55	200	340	140	292	550	298	80	325 / 10
61	235	370	145	320	590	326	85	351 / 10
73	260	400	160	345	650	352	90	377 / 10
85	260	420	175	365	680	371	100	402 / 10
91	280	450	190	385	730	391	110	426 / 12
109	315	470	210	405	780	411	120	450 / 12
127	315	530	220	445	850	451	130	480 / 12

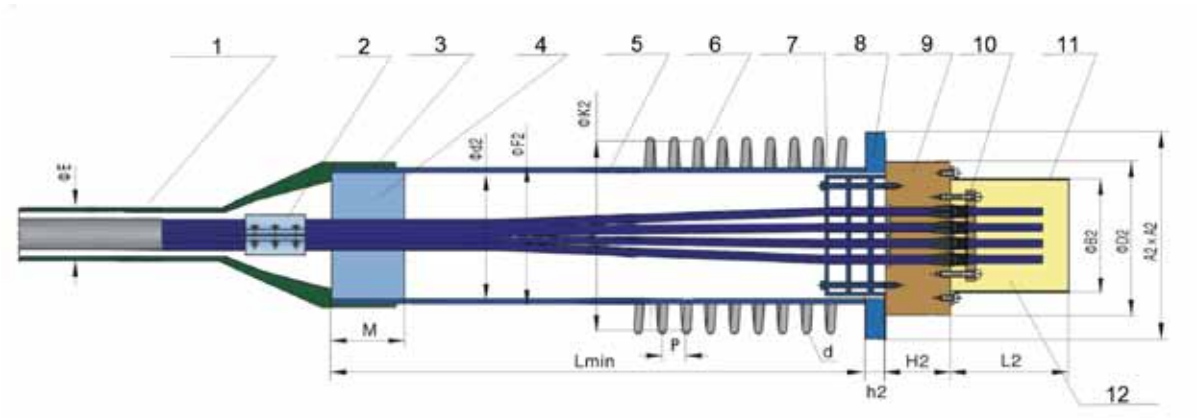
For other requirements, please contact our Technical Department

Stay Cable (Type B)



TMG Stay Cable (Type B) Structural Diagram (Stressing Side)

1) Cap
2) Wedge Keeper Plate
3) Anchor Head
4) Bearing Plate
5) Compression Plate
6) Bursting Reinforcement
7) Recess Pipe
8) Elastomeric Bearing
9) Compaction Clamp
10) Vandalism Protection Pipe



TMG Stay Cable (Type B) Structural Diagram (Fixed Side)

1) HDPE (Outer)
2) Compaction Clamp
3) Waterproof Cap
4) Elastomeric Bearing
5) Recess Pipe
6) Bursting Reinforcement
7) Compression Plate
8) Bearing Plate
9) Anchor Head
10) Wedge Keeper Plate
11) Cap
12) Corrosion Protection Compound

Technical Drawing & Data for TMG Stay Cable System (Multistrand Series)

Technical Data of TMG Stay Cable (Type B) - Stressing Side

Unit : mm

No. of Strand	Cap		Anchor Head		Ring Nut		Bearing Plate			Recess Pipe		Bursting Reinforcement				HDPE (Outer)	Elastomeric Bearing
	B1	L1	D1	H1	C1	h3	A1	h1	d1	Φf1 (Outer / Wall Thickness)	L (min)	K1	Φd	p	No. of Turns	ΦE (Outer / Wall Thickness)	M
12	220	300	210	80	290	90	360	40	220	180 / 8	1000	380	16	60	8	140 / 6.2	200
19	280	300	270	100	360	100	420	50	280	203 / 8	1200	430	16	60	8	160 / 6.2	200
22	280	300	270	100	360	100	420	55	280	219 / 8	1650	430	16	60	8	180 / 6.2	200
27	300	400	290	100	380	120	420	60	300	245 / 8	1650	510	16	60	8	180 / 6.2	200
31	320	400	310	140	420	120	480	60	320	273 / 8	1650	570	18	60	8	200 / 7.7	250
34	320	400	310	140	420	130	480	70	320	273 / 8	1800	570	18	60	8	200 / 7.7	250
37	340	400	330	150	450	130	550	70	340	299 / 10	1800	570	20	60	8	200 / 7.7	250
43	340	400	330	150	450	130	550	80	340	325 / 10	2000	610	20	60	8	240 / 8.6	250
55	360	400	350	180	480	140	600	80	360	325 / 10	2000	610	22	60	8	240 / 8.6	300
61	390	400	380	180	520	150	600	90	390	351 / 10	2100	610	22	60	8	240 / 8.6	300
73	410	500	400	180	560	160	680	100	410	377 / 10	2350	700	22	60	8	250 / 9.6	300
85	430	500	420	200	580	180	720	100	430	402 / 10	2500	740	22	60	8	250 / 9.6	300
91	460	500	450	200	600	200	780	110	460	426 / 12	2650	800	24	60	8	280 / 9.6	300
109	490	500	480	220	640	230	800	120	490	480 / 15	2700	820	24	60	8	315 / 12.1	300
127	540	500	530	220	700	240	900	130	540	500 / 15	3000	920	24	60	8	315 / 12.1	300

For other requirements, please contact our Technical Department

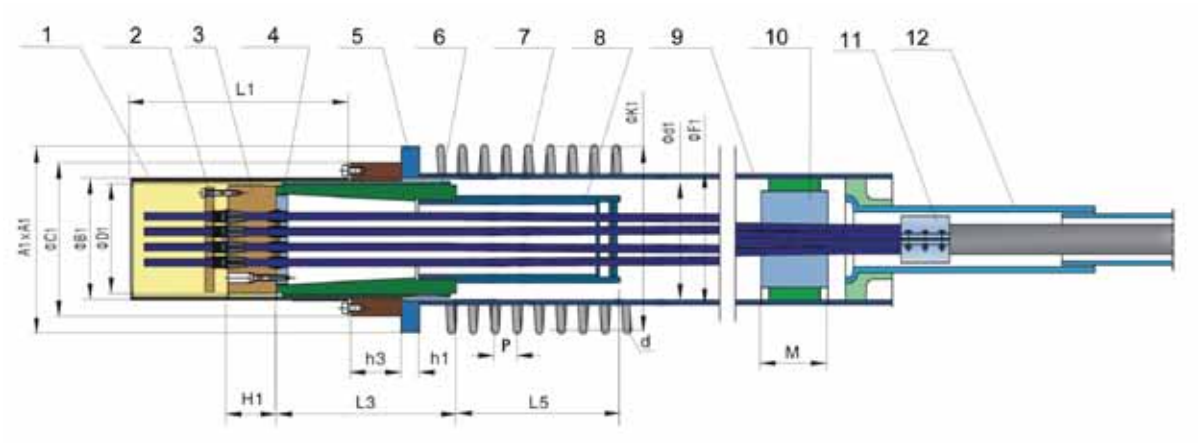
Technical Data of TMG Stay Cable (Type B) - Fixed Side

Unit : mm

No. of Strand	Cap		Anchor Head		Bearing Plate			Recess Pipe		Bursting Reinforcement				HDPE (Outer)	Elastomeric Bearing
	B2	L2	D2	H2	A2	h2	d2	ΦF2 (Outer / Wall Thickness)	L (min)	K2	Φd	p	No. of Turns	ΦE (Outer / Wall Thickness)	M
12	230	200	220	80	320	50	150	180 / 8	1000	320	16	60	8	140 / 6.2	200
19	290	200	280	90	400	60	180	203 / 8	1200	400	16	60	8	160 / 6.2	200
22	310	200	300	100	400	60	200	219 / 8	1650	400	16	60	8	180 / 6.2	200
27	330	250	320	120	400	70	210	245 / 8	1650	400	16	60	8	180 / 6.2	200
31	360	250	350	120	440	75	230	273 / 8	1650	440	18	60	8	200 / 7.7	250
34	380	250	370	140	440	80	250	273 / 8	1800	440	18	60	8	200 / 7.7	250
37	380	250	370	140	500	80	250	299 / 10	1800	500	20	60	8	200 / 7.7	250
43	420	300	410	160	520	90	290	325 / 10	2000	520	20	60	8	240 / 8.6	250
55	440	300	430	180	560	90	290	325 / 10	2000	560	22	60	8	240 / 8.6	300
61	470	300	460	180	580	100	320	351 / 10	2100	580	22	60	8	240 / 8.6	300
73	490	300	480	180	650	110	350	377 / 10	2350	650	22	60	8	250 / 9.6	300
85	510	350	500	200	700	110	360	402 / 10	2500	700	22	60	8	250 / 9.6	300
91	540	350	530	210	750	120	390	426 / 12	2650	750	24	60	8	280 / 9.6	300
109	570	350	570	240	800	130	410	480 / 15	2700	800	24	60	8	315 / 12.1	300
127	630	350	630	260	850	140	460	500 / 15	3000	850	24	60	8	315 / 12.1	300

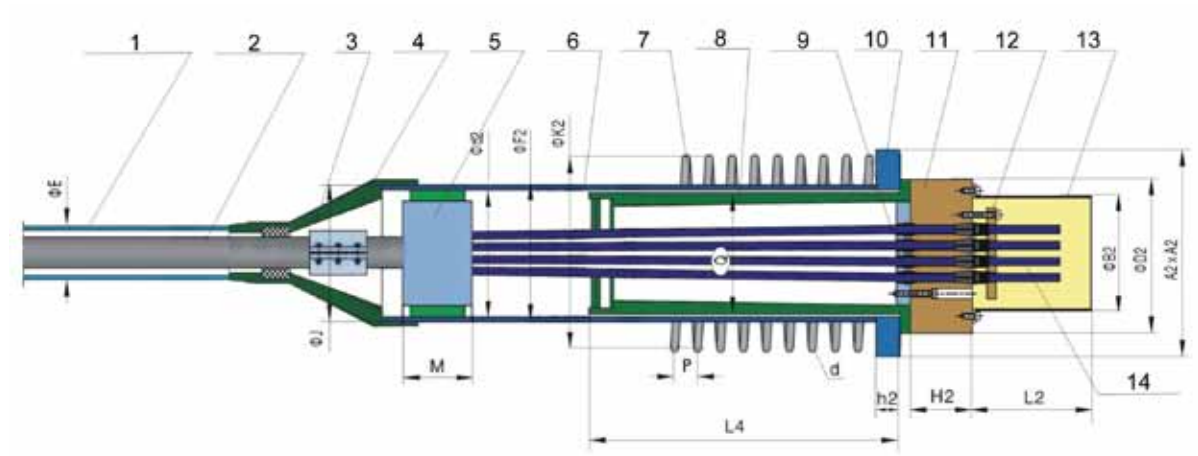
For other requirements, please contact our Technical Department

Stay Cable (Type C)



TMG Stay Cable (Type C) Structural Diagram (Stressing Side)

1) Cap
2) Wedge Keeper Plate
3) Anchor Head
4) Compression Assembly
5) Bearing Plate
6) Guide Deviator
7) Bursting Reinforcement
8) Extension Pipe
9) Recess Pipe
10) Elastomeric Bearing
11) Compaction Clamp
12) Vandalism Protection Pipe



TMG Stay Cable (Type C) Structural Diagram (Fixed Side)

1) HDPE (Outer)
2) Strand
3) Compaction Clamp
4) Waterproof Cap
5) Elastomeric Bearing
6) Recess Pipe
7) Bursting Reinforcement
8) Compression Plate
9) Compression Assembly
10) Bearing Plate
11) Anchor Head
12) Wedge Keeper Plate
13) Cap
14) Corrosion Protection Compound

Technical Data of TMG Stay Cable (Type C) - Stressing Side

Unit : mm

No. of Strand	Anchor Head		Guide Deviator		Extension Pipe	Ring Nut		Bearing Plate			Recess Pipe	Bursting Reinforcement			
	D1	H1	B1	L3	L5	C	h3	A1	h1	d1	ΦF1 (Outer / Wall Thickness)	K1	Φd	p	No. of Turns
12	220	80	240	300	300	300	90	380	40	250	270 / 8	380	16	60	8
19	270	100	290	400	300	360	100	420	50	300	325 / 10	420	16	60	8
22	270	100	290	400	300	360	100	420	55	300	325 / 10	420	16	60	8
27	280	120	300	400	300	380	100	420	60	310	340 / 10	420	16	60	8
31	320	140	340	450	350	420	150	480	60	350	377 / 10	480	18	60	8
34	320	150	340	450	350	420	150	480	70	350	377 / 10	480	18	60	8
37	330	150	350	500	400	450	150	550	70	360	402 / 10	550	20	60	8
43	350	160	370	500	400	460	150	550	80	380	402 / 10	550	20	60	8
55	380	180	400	600	450	500	180	600	80	410	450 / 10	600	22	60	8
61	400	180	420	600	450	520	180	600	90	430	450 / 10	600	22	60	8
73	420	200	440	600	450	560	190	680	100	450	480 / 12	680	22	60	8
85	450	200	470	700	500	600	200	720	100	480	508 / 12	720	22	60	8
91	460	220	480	700	500	610	200	780	110	490	530 / 12	780	24	60	8
109	500	230	520	700	500	660	230	800	120	530	560 / 12	800	24	60	8
127	550	250	570	700	500	720	240	950	130	580	610 / 12	900	24	60	8

For other requirements, please contact our Technical Department

Technical Data of TMG Stay Cable (Type C) - Fixed Side

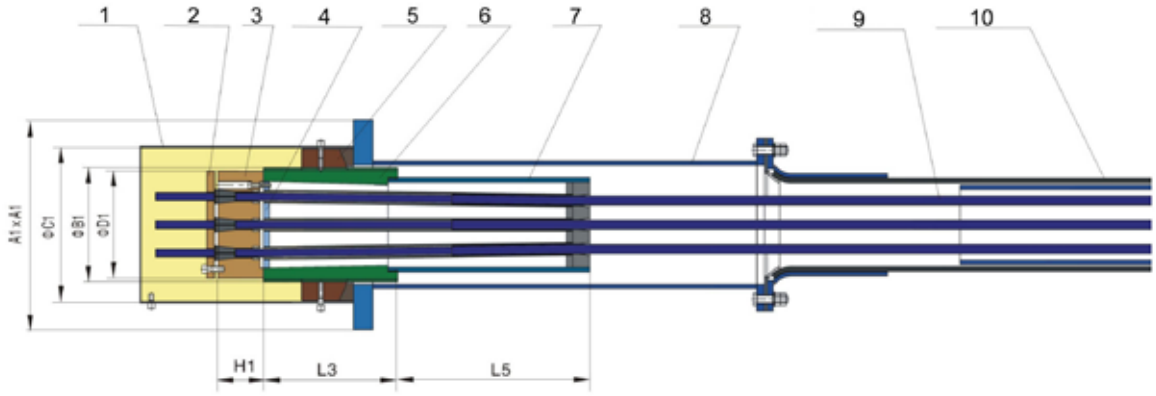
Unit : mm

No. of Strand	Anchor Head		HDPE (Outer)	Bearing Plate			Compression Plate		Elastomeric Bearing	Recess Pipe	Bursting Reinforcement			
	A2	H2	ΦE (Outer / Wall Thickness)	A2	h2	d2	Q	L4	M	ΦJ (Outer / Wall Thickness)	K2	Φd	p	No. of Turns
12	260	100	140 / 6.2	320	50	210	200	400	200	245 / 8	320	16	60	8
19	300	120	160 / 6.2	400	60	240	230	400	200	273 / 8	400	16	60	8
22	300	120	180 / 6.2	400	60	240	230	600	200	273 / 8	400	16	60	8
27	330	140	180 / 6.2	400	70	260	250	600	200	273 / 8	400	16	60	8
31	370	160	200 / 7.7	440	75	300	290	650	250	325 / 10	440	18	60	8
34	380	160	200 / 7.7	440	80	300	290	700	250	325 / 10	440	18	60	8
37	390	160	200 / 7.7	500	80	310	300	700	250	325 / 10	500	20	60	8
43	410	160	240 / 8.6	520	90	325	315	800	250	351 / 10	520	20	60	8
55	460	180	240 / 8.6	560	90	360	350	900	250	377 / 10	560	22	60	8
61	480	180	240 / 8.6	580	100	370	360	950	300	402 / 10	580	22	60	8
73	520	200	250 / 9.6	650	110	400	390	1000	300	426 / 10	650	22	60	8
85	560	200	250 / 9.6	700	110	430	420	1000	300	459 / 10	700	22	60	8
91	580	220	280 / 9.6	750	120	440	430	1150	300	480 / 10	750	24	60	8
109	620	220	315 / 12.1	800	130	470	460	1200	300	500 / 10	800	24	60	8
127	670	280	315 / 12.1	900	140	510	500	1350	300	560 / 10	850	24	60	8

For other requirements, please contact our Technical Department

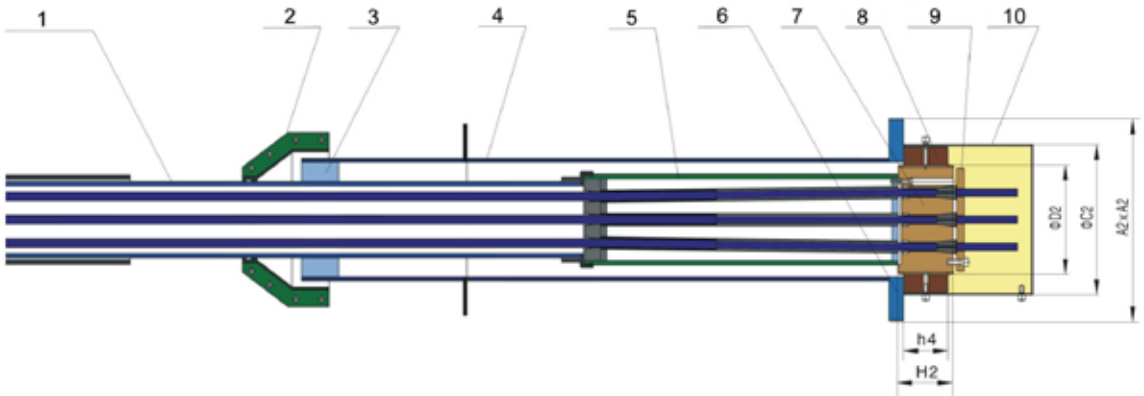
Stay Cable (Type D)

Type D Stay Cable has an Eccentric Flange Connection to make sure that eccentricities caused by wrong installation angles of the Recess Pipe can be compensated.



TMG Stay Cable (Type D) Structural Diagram (Stressing Side)

1) Cap
2) Wedge Keeper Plate
3) Anchor Head
4) Compression Assembly
5) Eccentric Flange Connection
6) Guide Deviation
7) Extension Pipe
8) Recess Pipe
9) Epoxy Coated Strand
10) Vandalism Protection Pipe



TMG Stay Cable (Type D) Structural Diagram (Fixed Side)

1) HDPE (Outer)
2) Waterproof Cap
3) Elastomeric Bearing
4) Recess Pipe
5) Extension Pipe
6) Bearing Plate
7) Anchor Head
8) Ring Nut
9) Wedge Keeper Plate
10) Cap

Technical Data of TMG Stay Cable (Type D)

Unit : mm

No. of Strand	Stressing Side						Fixed Side			
	C1	B1	D1	H1	L3	h5	D2	C2	h4	H2
9	220	170	160	80	160	80	220	170	60	90
12	250	190	180	80	200	100	250	190	80	110
13	260	200	190	80	200	100	260	200	100	120
19	280	215	200	100	220	120	280	215	100	130
22	300	225	210	110	220	120	300	225	100	130
31	320	255	240	110	250	150	320	255	120	150
37	350	280	265	130	250	150	350	280	120	150
43	390	310	290	140	300	170	390	310	140	170
55	420	330	310	150	320	190	420	330	160	190
61	440	350	330	150	320	190	440	350	160	190
73	470	375	355	160	360	210	470	375	180	210
85	500	390	370	180	380	230	500	390	200	230
91	530	420	400	190	380	230	530	420	200	230
109	570	450	420	210	430	250	570	450	220	250
121	600	480	445	230	430	250	600	480	220	260
127	620	500	470	230	440	260	620	500	220	260
139	640	510	480	250	500	300	640	510	260	300
151	675	540	500	280	500	300	675	540	260	310

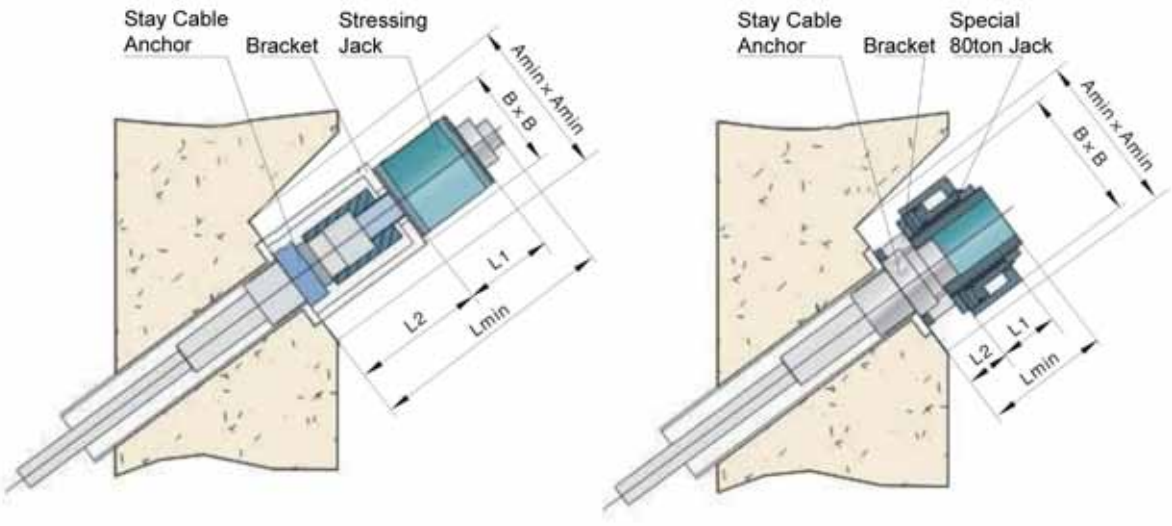
For other requirements, please contact our Technical Department

Matching Stressing Jack for TMG Stay Cable

No. of Strand	Tensile Strength				Stressing Jack
	1770Mpa		1860MPa		
	Breaking Load (kN)	Maximum Applicable Load kN (0.45 GUTS)	Breaking Load (kN)	Maximum Applicable Load kN (0.45 GUTS)	
12	2974	1338	3125	1406	SJ300 (300 ton)
19	4708	2118	4947	2226	
22	5451	2452	5729	4578	
27	6690	3010	7031	3164	
31	7682	3456	8072	3632	
34	8425	3791	8853	3984	SJ550 (550 ton)
37	9160	4125	9635	4335	
43	10655	4794	11197	5038	
55	13629	6133	14322	6445	
61	15116	6802	15884	7148	SJ800 (800 ton)
73	18089	8140	19009	8554	
85	21063	9478	22134	9960	
91	22550	10147	23696	10663	4 x SJ250 (4 x 250 ton)
109	27010	12154	28383	12772	
127	31470	14161	33070	14881	

For other requirements, please contact our Technical Department

Block-out Dimensions for Stressing Jack



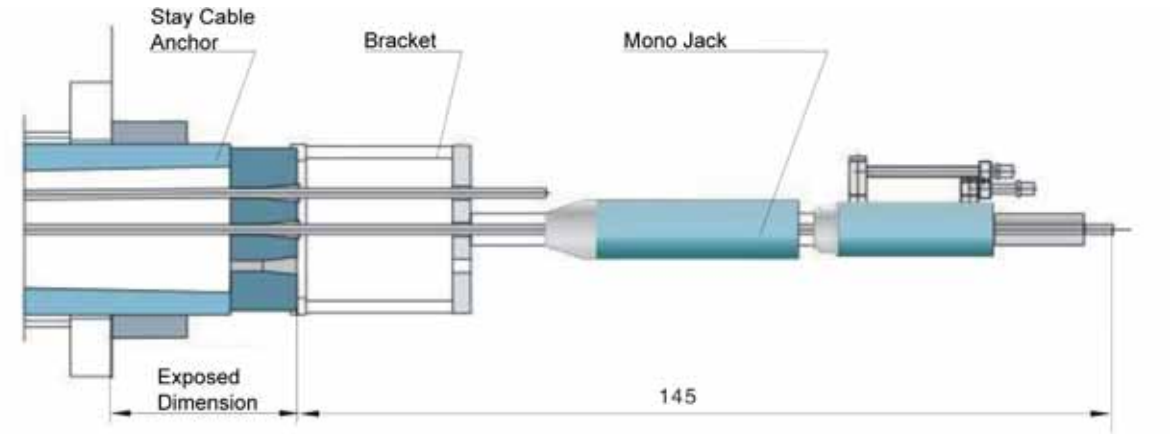
Block-Out Dimensions

Block-Out Dimensions for TMG Stay Cable

Unit : mm

Stressing Jack	Stroke	L1	L2	Lmin	Amin x Amin	B x B
SJ300 (300 ton)	150	420	1200	1800	800 x 800	500 x 500
SJ550 (550 ton)	100	360	1200	1800	900 x 900	580 x 580
SJ800 (800 ton)	100	400	1200	2000	1000 x 1000	720 x 720
SSJ80 (Special 80 ton Jack	100	300	400	850	950 x 950	Φ876

For other requirements, please contact our Technical Department



Block-Out Dimensions

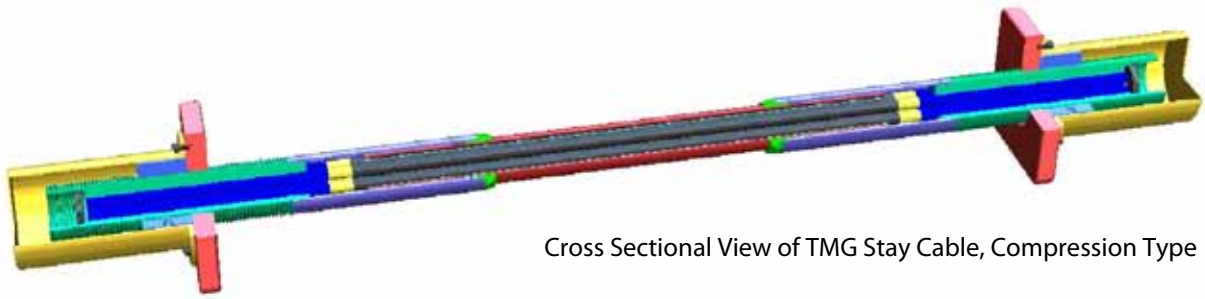
TMG Stay Cable System (Multistrand Series, Compression Type)

Compression Fitting Stay Cable System is one of the latest technology in stay cable development. By using the principle of compression fitting for a single strand in fixed anchor (or dead anchor), we had further developed this technology on a stay cable by compressing up to 37 strands (15.20mm size strand) simultaneously on a larger anchor. The strands are physically separated from each other and the anchorage efficiency is way above the conventional method of using wedge.

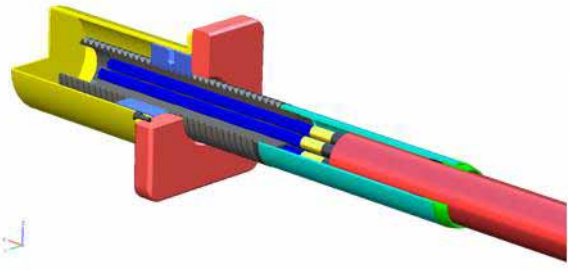
By innovating in a process in our production, we had button headed the strand at its edge. And this feature total eliminate the draw-in lost of strand during its life span. Slippage is almost non existence. This is especially true for stay cable that requires low stressing and good anchorage.

Advantages of Compression Type Stay Cable are :

- Small and compact as compared to traditional wedge-type Stay Cable
- No slippage of strand under low or even negative prestressing force
- Very minimum cable bending with no Compaction Clamp needed and transverse pressure is almost eliminated
- No damage to surface of strand as bonding is achieve by natural frictional forces exerted from Compression Fittings onto surface of strand. And because of this unique feature, fatigue stress test exceeding range of 250MPa with an upper stress limit of 45% GUTS on 2 million load cycles is easily achievable
- Pre-fabricated in a factory and reduces the need for heavy lifting machinery and equipments during transportation and cable installation. And thus reduces deck erection foot-print.
- Excellent corrosion protection as multi-layered waterproofing protection can be carried out under ideal factory environment



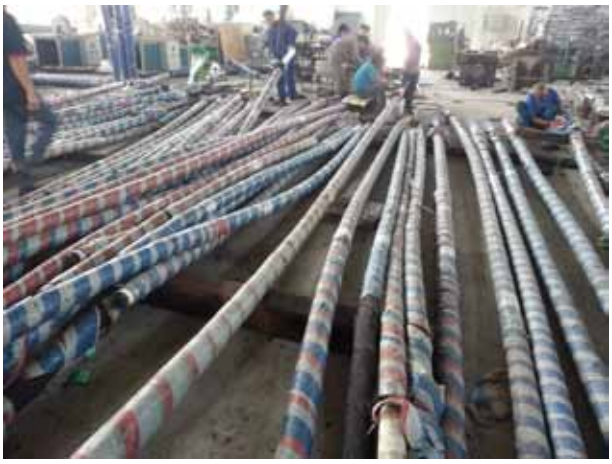
Cross Sectional View of TMG Stay Cable, Compression Type



Cross Section Structure of Stay Cable, Compression Type

Completed Stay Cable, Compression Type

Reference Photos of TMG Stay Cable System, Compression Type



Scenes of Production

Scenes of Production

Prefabricated TMG Stay Cable

Stay Cable Installation

Stay Cable Installation

Stay Cable Installation

Reference Photos of TMG Stay Cable System, Compression Type

Checking Elongation After Stressing

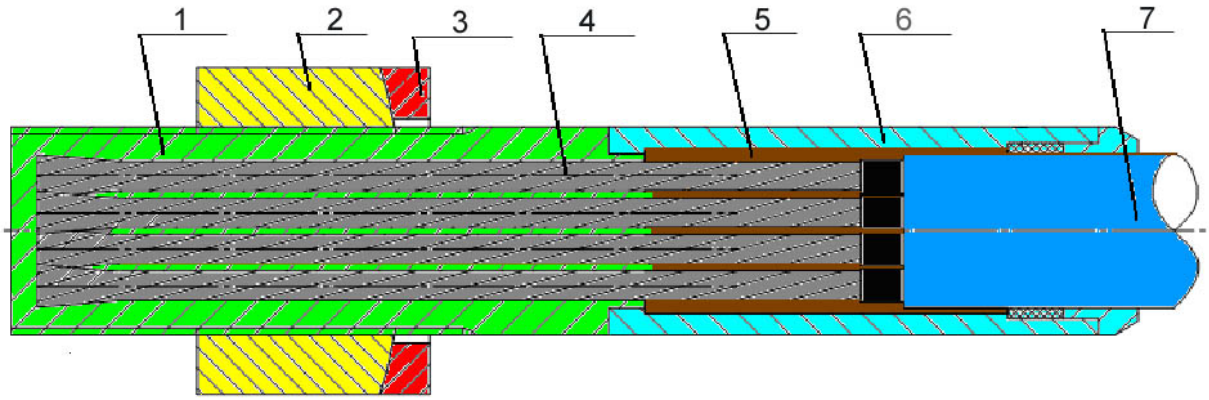
Stay Cable Installation

Completed Stay Cables

Completed Projects

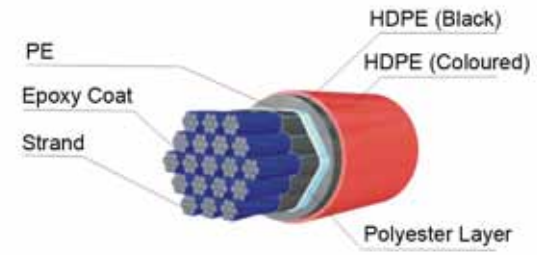
Completed Projects

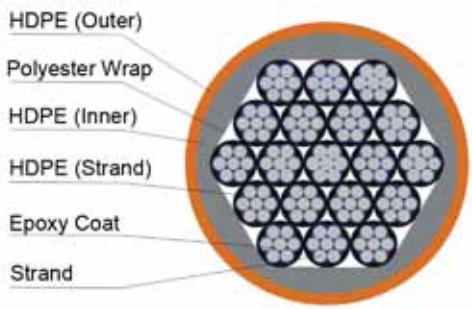
Completed Projects



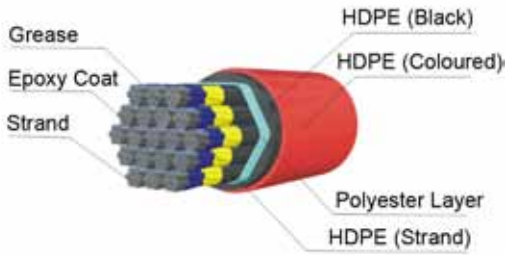
Cross Section Structure of Stay Cable, Compression Type

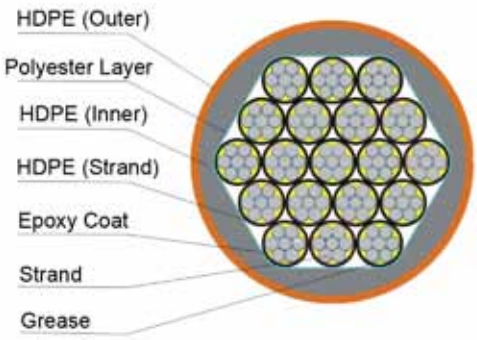
1) Compression Fitting
2) Ring Nut
3) Bearing Plate
4) Strand
5) Corrosion Protection Compound
6) Compression Plate
7) Cable Free Length





Epoxy Coated Strand
(Cable Free Length)





Epoxy PE Strand
(Cable Free Length)

Cable Free Length Specifications

No. of Strand	Strand Cross Section Area (mm^2)	Strand Weight (kg/m)			Weight of Cable Free Length (kg/m)	Cable Outer Diameter (mm)		Breaking Load (kN)
		Bare / Galvanised	Epoxy Coated	Epoxy Filled		Single Layer Protection	Double Layer Protection	
1	140	1.101	1.119	1.19	1.24	19	23	206.4
3	420	3.303	3.357	3.57	4.73	50	53	781.2
4	560	4.404	4.476	4.76	5.93	52	55	1041.6
5	700	5.505	5.595	5.95	7.32	64	68	1302.0
6	840	6.606	6.714	7.14	8.56	64	68	1562.4
7	980	7.707	7.833	8.33	9.79	64	68	1822.8
8	1120	8.808	8.952	9.52	11.25	76	80	2083.2
9	1260	9.909	10.071	10.71	13.21	84	88	2343.6
12	1680	13.212	13.428	14.28	16.65	84	88	3124.8
13	1820	14.313	14.547	15.47	18.46	96	100	3385.2
14	1960	15.414	15.666	16.66	20.00	98	102	3645.6
15	2100	16.515	16.785	17.85	21.42	98	102	3906.0
16	2240	17.616	17.904	19.04	22.66	105	109	4166.4
17	2380	18.717	19.023	20.23	23.34	105	109	4426.8
18	2520	19.818	20.142	21.42	24.58	105	109	4687.2
19	2660	20.919	21.261	22.61	25.81	105	109	4947.6
22	3080	24.222	24.618	26.18	30.41	118	112	5728.8
25	3500	27.525	27.975	29.75	34.69	128	132	6510.0
27	3780	29.727	30.213	32.13	36.79	128	132	7030.8
31	4340	34.131	34.689	36.89	40.90	133	137	8072.4
37	5180	40.737	41.403	44.03	50.28	148	152	9634.8

Remarks

1) The above weight are for reference only. Strand weight can vary due to material and coating density
2) Based on Strand Tensile Strength of 1806MPa
3) For design safety factor, we suggest $n \geq 2.5 \sim 3$, with cable free length of more than 2 meters
4) For other requirements, please contact our Technical Department

Stay Cable Installation

Scenes of Production -
Stay Cable, Compression Type

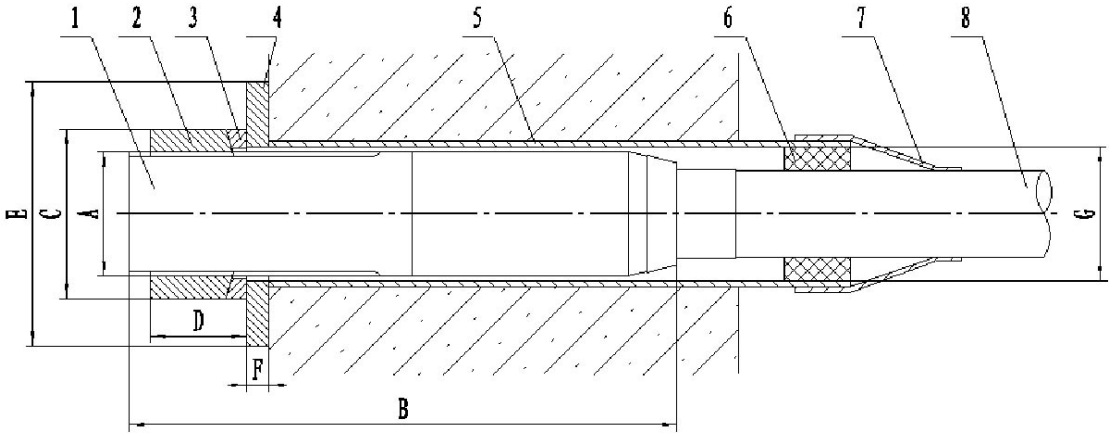
Scenes of Production - Stay Cable Clevis

Stay Cable Compression Type A

TMG has 4 types of Compression Type Stay Cable, namely Type A, B, C & D. Each has its unique feature to suit different types of requirements.

Type A, B & C comes with a Swivel Ring Nut to make sure that eccentricities caused by wrong installation angles of the Recess Pipe can be compensated. For ease of installation, we recommend that Recess Pipe to have an inner diameter of 10-12mm larger than the Anchor Head. This is also to limit the excess bending of the cable.

Type A are generally used for Fixed End Anchor with minimum adjustment needed. It is also suitable for small Stay Cable of length 20 meters or less (as Stressing End).



TMG Stay Cable Compression Type A Structural Diagram

1) Compression Anchor Head
2) Swivel Ring Nut
3) Swivel Bearing Plate
4) Bearing Plate
5) Recess Pipe
6) Elastomeric Bearing
7) Waterproof Cap
8) Cable Free Length

Technical Data for TMG Stay Cable Compression A

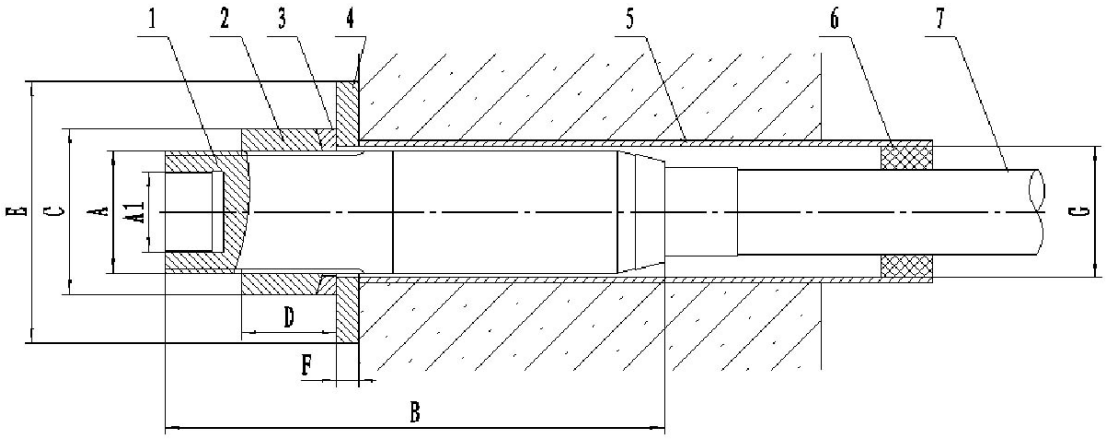
Unit : mm

No. of Strand	Compression Anchor Head		Swivel Ring Nut	Swivel Assembly	Bearing Plate		Recess Pipe (Inner Diameter)
	A	B	φC	D	E	F	G
1	Tr36 x 3	270	50	50	120 x 120	25	46
3	Tr62 x 4	450	95	60	155 x 155	28	72
4	Tr68 x 4	465	105	85	180 x 180	30	78
5 - 7	Tr80 x 4	600	127	85	240 x 240	38	92
9 - 12	Tr115 x 8	700	180	100	310 x 310	50	127
13 & 14	Tr125 x 8	750	190	110	320 x 320	50	137
15 - 19	Tr140 x 10	850	215	130	350 x 350	50	152
22 - 27	Tr160 x 10	950	240	165	420 x 420	50	172
31 - 37	Tr200 x 12	1200	280	180	550 x 550	60	215

1) 'B' is only for reference and is subjected to change on case to case basis
2) For other requirements, please contact our Technical Department

Stay Cable Compression Type B

Type B has an additional threaded recess portion on one end of the Compression Anchor Head for the fixation of Stressing Rod (see 'A1' below). This is usually used on the Stressing End of the Stay Cable and for bigger tonnage Stay Cables.



TMG Stay Cable Compression Type B Structural Diagram

1) Compression Anchor Head
2) Swivel Ring Nut
3) Swivel Bearing Plate
4) Bearing Plate
5) Recess Pipe
6) Elastomeric Bearing
7) Cable Free Length

Technical Data for TMG Stay Cable Compression B

Unit : mm

No. of Strand	Compression Anchor Head			Swivel Ring Nut	Swivel Assembly	Bearing Plate		Recess Pipe (Inner Diameter)
	A	B	A1	φC	D	E	F	G
9 - 12	Tr115 x 8	750	M84 x 6	180	100	310 x 310	50	127
13 & 14	Tr125 x 8	810	M94 x 6	190	110	320 x 320	50	137
15 - 19	Tr140 x 10	915	M102 x 8	200	130	350 x 350	50	152
22 - 27	Tr160 x 10	1000	M122 x 10	240	165	420 x 420	50	172
31 - 37	Tr200 x 12	1300	M132 x 10	280	180	550 x 550	60	215

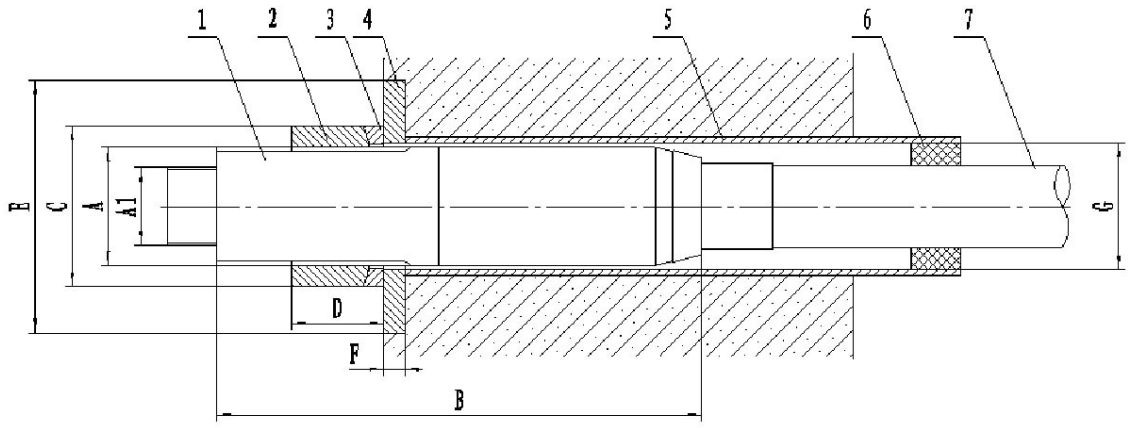
1) 'B' is only for reference and is subjected to change on case to case basis
2) For other requirements, please contact our Technical Department

Scenes of Production

Scenes of Production -
Stay Cable, Compression Type

Stay Cable Compression Type C

Type C is similar to Type B, instead of a threaded recess, Type C has an extruded threaded head (See 'A1' below). And it is usually used for small tonnage Stay Cable.



TMG Stay Cable Compression Type C Structural Diagram

1) Compression Anchor Head
2) Swivel Ring Nut
3) Swivel Bearing Plate
4) Bearing Plate
5) Recess Pipe
6) Elastomeric Bearing
7) Cable Free Length

Technical Data for TMG Stay Cable Compression C

Unit : mm

No. of Strand	Compression Anchor Head			Swivel Ring Nut	Swivel Assembly	Bearing Plate		Recess Pipe (Inner Diameter)
	A	B	A1	φC	D	E	F	G
1	Tr36 x 3	300	M20 x 2	50	50	120 x 120	25	46
3	Tr62 x 4	430	M45 x 2	95	60	155 x 155	28	72
4	Tr68 x 4	485	M48 x 3	105	85	180 x 180	30	78
5 - 7	Tr80 x 4	635	M62 x 4	127	85	240 x 240	38	92
9 - 12	Tr115 x 8	740	M84 x 6	180	100	310 x 310	50	127

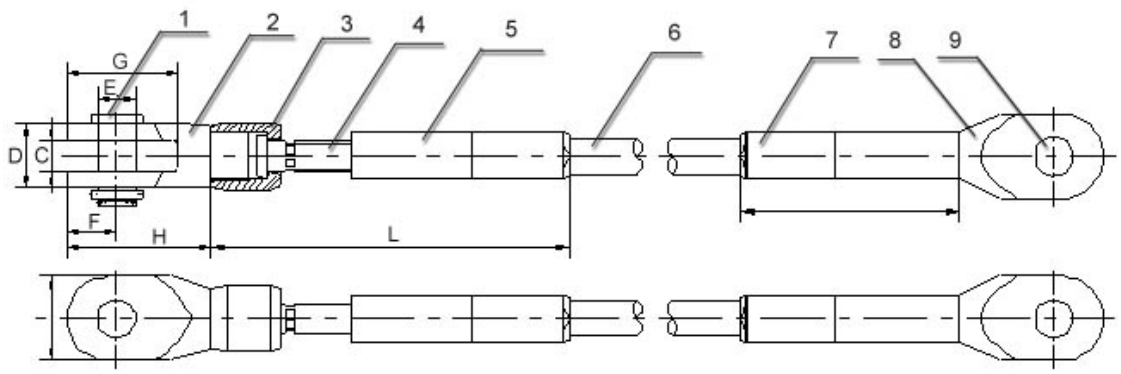
1) 'B' is only for reference and is subjected to change on case to case basis
2) For other requirements, please contact our Technical Department

Cross Section of Stay Cable Free Length

Stay Cable Compression Type D

Type D Stay Cable uses Clevis as the anchorage. Such solution is generally used for slim pylon where the stay cables have to be connected to the structure outside of the pylon, due to space constraint. It is also commonly used for arch bridge hangers where the available space is too small for ordinary fixed anchors.

A Stay Cable can be fixed with Type A, B or C anchorage on one end and a Type D (Clevis) on the other end. If both ends are fixed with Type D (Clevis), then an Adjusting Assembly must be fixed to the whole cable structure for adjustment requirement during cable installation.



TMG Stay Cable Compression Type D Structural Diagram

1) Pin
2) Clevis
3) Adjustment Device
4) Adjustment Rod
5) Compression Anchor Head
6) Cable Free Length
7) Compression Anchor Head
8) Clevis
9) Pin

Technical Data for TMG Stay Cable Compression D

Unit : mm

No. of Strand	Compression Anchor Head		Clevis						Pin
	φA	B	C	D	F	G	H	I	E
1	36	300	20	45	30	95	155	75	25
3	62	430	35	75	55	155	205	110	40
4	68	485	45	90	65	180	230	120	45
5 - 7	80	635	55	115	85	240	300	150	65
9 - 12	112	740	75	155	110	285	360	200	85
13 & 14	125	820	85	170	135	345	430	240	105
15 - 19	140	915	90	185	155	395	500	260	120
22 - 27	160	1000	105	215	195	500	610	350	150
31 - 37	200	1300	130	260	215	530	640	380	165

1) 'L' has no reference value as it is dependent on design
2) For other requirements, please contact our Technical Department

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