



MV subsea trencher & plough umbilical

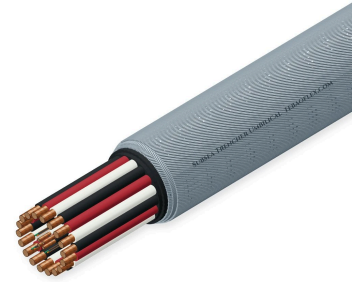
Subsea Trencher Umbilical

3.3–6.6 kV high-power dynamic electro-optical umbilical for seabed trenchers & ploughs

ISO 13628-5

3.3–6.6 kV MV

400–2,500 HP

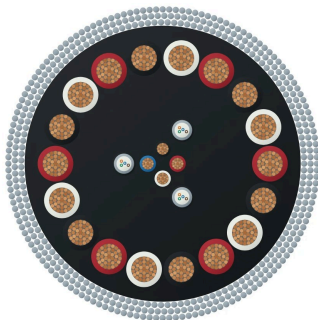
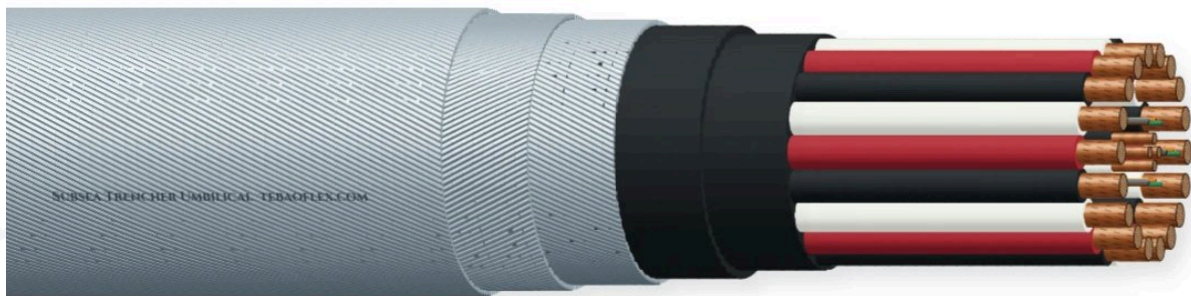


Application

Medium-voltage dynamic subsea umbilical delivering 400–2,500 HP (3.3 kV, 4.16 kV or 6.6 kV) power plus 316L FIMT optical telemetry to seabed jetting trenchers, mechanical cutters, pipeline ploughs and subsea mining crawlers.

Typical uses: Offshore Wind Export & Array Burial, Subsea Pipeline Jetting & Ploughing, Mechanical Rock & Clay Trenching, Subsea Telecom Cable Burial, Deep-Sea Polymetallic Mining

Construction



Cross-section, not to scale

- 1 MV phase & auxiliary conductors
- 2 Triple-extruded stress control
- 3 WTR-HEPR / XLPE MV dielectric
- 4 Metallic phase & interstitial earths
- 5 Redundant 316L FIMT optical units
- 6 Contra-helical steel or polyaramid armour

Technical data

Typical values

Rated MV voltage (U0/U)	1.8/3 (3.6) kV · 2.4/4.16 kV · 3.8/6.6 (7.2) kV	Auxiliary control voltage	0.6/1 (1.2) kV AC
AC routine test voltage	6.5 kV AC (3.3 kV) / 11.0 kV AC (6.6 kV) for 5 min	Partial discharge level	≤ 5 pC at 1.73 × U0
Max. conductor temperature	+90 °C continuous · +250 °C short-circuit	Subsea operating temperature	−10 °C to +60 °C
Deck winch operation	−25 °C to +75 °C	Thermal dissipation	Derate ampacity for multi-layer deck winch turns
Design water depth	Up to 3,000 m	Min. breaking load (STU-CAT)	150 kN to 320 kN (polyaramid)
Min. breaking load (STU-LIFT)	350 kN to 900 kN (contra-helical GIPS)	Min. bend radius (dynamic)	12 × OD (STU-CAT) · 15 × OD (STU-LIFT)
Torsional balance	≤ ±2°/m under working tension	Optical fibre spec	ITU-T G.652.D / G.657.A1 SM & OM3 MM
Fibre count	12, 18 or 24 fibres (single or dual FIMT)	Attenuation (1310 / 1550 nm)	≤ 0.36 dB/km / ≤ 0.22 dB/km
Longitudinal water blocking	Void-free elastomeric core matrix & sealed FIMT	Seabed boulder abrasion	Heavy-wall polyether PUR or HDPE outer sheath
Oil & hydraulic fluid	IEC 60811-404 resistant	Standards	ISO 13628-5 / API Spec 17E

Sizes

12 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	MV Power + Aux + Optical	Voltage kV	Nominal OD mm	Weight in air kg/km	Weight in sea kg/km	SWL kN	MBL kN	Min. sheave R mm
Polyaramid Catenary Trencher Umbilicals (STU-CAT, 3.3–6.6 kV) 6 sizes								
☐ STU-CAT-33-3X16-12FO	3×16 + 2G16 + 3×2.5 + 12FO (Polyaramid)	3.3	36.5	1,680	590	35	150	548
☐ STU-CAT-33-3X25-18FO	3×25 + 2G16 + 3×4.0 + 18FO (Polyaramid)	3.3	40.8	2,190	830	45	190	612
☐ STU-CAT-33-3X35-24FO	3×35 + 2G16 + 3×4.0 + 24FO (Polyaramid)	3.3	44.5	2,680	1,060	55	230	668
☐ STU-CAT-66-3X25-24FO	3×25 + 2G16 + 3×4.0 + 24FO (Polyaramid)	6.6	45.2	2,640	980	55	230	678
☐ STU-CAT-66-3X35-24FO	3×35 + 2G16 + 3×6.0 + 24FO (Polyaramid)	6.6	49.0	3,180	1,240	65	270	735
☐ STU-CAT-66-3X50-24FO	3×50 + 2G25 + 3×6.0 + 24FO (Polyaramid)	6.6	53.6	3,920	1,590	75	320	804
Contra-Helical Steel-Armoured Trencher Lift Umbilicals (STU-LIFT, 3.3–6.6 kV) 6 sizes								
☐ STU-LIFT-33-3X25-18FO	3×25 + 2G16 + 3×4.0 + 18FO (Steel Armour)	3.3	42.5	4,480	3,290	95	475	638
☐ STU-LIFT-33-3X35-24FO	3×35 + 2G16 + 3×4.0 + 24FO (Steel Armour)	3.3	46.8	5,560	4,120	120	600	702
☐ STU-LIFT-33-3X50-24FO	3×50 + 2G25 + 3×6.0 + 24FO (Steel Armour)	3.3	51.4	6,840	5,090	145	725	771
☐ STU-LIFT-66-3X35-24FO	3×35 + 2G16 + 3×6.0 + 24FO (Steel Armour)	6.6	51.0	6,280	4,610	135	675	765
☐ STU-LIFT-66-3X50-24FO	3×50 + 2G25 + 3×6.0 + 24FO (Steel Armour)	6.6	55.8	7,690	5,680	160	800	837
☐ STU-LIFT-66-3X70-24FO	3×70 + 2G35 + 3×10 + 24FO (Steel Armour)	6.6	61.2	9,350	6,980	180	900	918

– Ampacity in seawater ranges from 115 A (16 mm²) to 310 A (70 mm²); apply derating factors for wound layers remaining on the deck storage drum.

Standards and approvals

- ✓ ISO 13628-5 / API Spec 17E Compliant
- ✓ IEC 60502-2 Medium-Voltage Dielectric Certified

Certifications



Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone

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Email

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tebaoflex.com/cables/subsea-trencher-umbilical



Typical values for this cable type, based on ISO 13628-5 / IEC 60502-2 / DNV-ST-E402. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.