

CLT - spring driven cable reels



Manufactured by **Cavotec Alfo**

CLT - spring driven cable reels

Who we are

Cavotec is a multi-national group of companies serving the following industries: mining and tunnelling, ports and maritime, steel and aluminium, energy and offshore, airports, general industry and automation. In the early 1960's our main focus was the design and production of motorised cable reels primarily for manufacturers of tower cranes, harbour cranes and mining equipment. Today, Cavotec is connecting mobile equipment around the world in many diverse applications.

Where we are

The Cavotec Group consists of 7 manufacturing "Centres of Excellence" located in Canada, France, Germany, Italy, Norway and Sweden and by 5 local manufacturing units located in Australia, China, Germany and the USA. For the distribution of products and providing support to customers Cavotec has 27 sales companies which, together with a network of distributors, serve more than 30 countries in five continents. The ultimate objective is to be perceived as "local everywhere".

How we work

Our aim is to work closely with our customers in order to build long-term partnerships. To achieve this aim we have created a working environment that attracts the best people, encourages them to stay and brings out their best qualities. By producing totally reliable systems and backing them with efficient service, we strive to create true customer satisfaction.



Cavotec Alfo

Established in 1991, Cavotec Alfo is a modern German manufacturing company in the specialised field of spring reels and slinging columns. In 1997 Cavotec Alfo became a member of the Cavotec Group, a world leader in cable reel technology, as one of its manufacturing units.

The Cavotec Alfo CLT spring reels are built from modular components which allow a great number of combinations covering most common requirements. The spring reels are strong and well designed in order to guarantee the highest reliability even in difficult applications. All reels are equipped with two, totally sealed bearings which are lubricated for life. Cavotec Alfo has been the first manufacturer to build its slings in a totally sealed and modular unit, fully separated from the mechanical parts. Protection of slings and reel is IP65/66.

Cavotec Alfo spring driven cable reels meet all applicable IEC international norms and standards and follow the latest EU-requirements (CE-marking).

Cavotec Group Organization

As shown here the Cavotec Group is organised to support its customers around the world through its manufacturing units and sales companies.

Each Cavotec manufacturing company, no matter where it is located, aims at being a market leader in its field by providing innovative and reliable products to Group customers.

Each Cavotec sales company, in the 27 countries where they operate, aims at better serving its local market following the Group philosophy "to be local everywhere".

Manufacturing network

Centres of Excellence

France

Cavotec RMS

Spring Driven Reels

Germany

Cavotec Alfo

Spring Driven Reels

Slipring Columns

Cavotec Fladung

Aircraft Support Systems

Security Systems

Italy

Cavotec Specimas

Motorized Cable Reels

Panzerbelt Cable Protection

Slipring Columns

Norway

Cavotec Micro-control

Radio Remote Controls

Sweden

Cavotec Connectors

Electrical Plugs & Sockets

New Zealand

Cavotec MoorMaster

Automated Mooring Systems

Local Manufacturing

Australia

Cavotec Australia

Motorized Cable Reels

China

Cavotec China

Product Assembly

Germany

Cavotec Micro-control

Radio Remote Controls

Sweden

Cavotec Sweden

Product Assembly

USA

Cavotec USA

Product Assembly

Group Partners

Belgium

Gantry

Crane Rail Systems

Italy

Brevetti Stendalto

Cable Chains

Prysmian (Pirelli)

Flexible Cables

Tratos Cavi

Flexible Cables

Sales network

Cavotec Sales Companies

Cavotec Australia
 Cavotec Belgium*
 Cavotec BeNeLux
 Cavotec Brazil*
 Cavotec Canada
 Cavotec Chile
 Cavotec China
 Cavotec Denmark
 Cavotec Finland

Cavotec France
 Cavotec Germany
 Cavotec Hong Kong
 Cavotec India
 Cavotec Italy
 Cavotec Korea
 Cavotec Latin America
 Cavotec Mexico
 Cavotec Middle East

Cavotec Norway
 Cavotec Russia*
 Cavotec Singapore
 Cavotec South Africa
 Cavotec Sweden
 Cavotec Turkey
 Cavotec UK & Ireland
 Cavotec USA

* Branch Office

General Information

Spring driven cable reels are subject to the standards and norms as specified in the latest edition of VDE 0100 and the UVV.

The springs are made of special high-grade steel which guarantees a long lifetime. Every spring is mounted inside a spring housing in order to avoid friction and wear.

The slipping assembly is mounted in a solid glassfiber reinforced plastic housing that can withstand corrosion and mechanical wear. The housing is designed to minimise condensation and to guarantee complete water tightness through glands and seals.

Corrosion protection is also an important feature of Cavotec Alfo reels. All steel plates and parts are either hot dip galvanised or have a polyester coating. Cavotec Alfo offers, as an option, all external parts such as screws, nuts and bolts in stainless steel.

Our warranty follows the general delivery conditions of the electric industry for products and services. Wear parts are exempted from the warranty. See also our Terms of Delivery.

Instructions regarding installation

The drum should be installed in such a way to ensure that the cable is reeled and unreeled to and from the drum without interference. Forced guidance and too small bending radius on sheaves and roller guides should be avoided at all times. The innovative design of the Cavotec Alfo spring reels allows the feeding point of the cable to be placed on either side of the drum. To relieve tension ensure that 1 or 2 additional reeling turns ($d \cdot \pi \cdot 2$) remain on the drum when the maximum traveling distance has been reached.

For examples please refer to page 6.

Cable selection

Our cable range includes a wide variety of flexible cables for reeling applications which can withstand the highest

mechanical stresses and harsh ambient conditions.

When selecting the cable, please take into consideration the cable data and the instructions provided by the manufacturer. In order to make the correct reel selection it is absolutely necessary to know the correct operating conditions. It is important to take into consideration the heating of the cable due to the number of layers on the drum and not to exceed the maximum allowed tension of the cable.

The data contained in the selection tables on page 7 are related to flexible cables of short lengths. The ambient temperature is assumed to be within $+30^{\circ}\text{C}$ to -10°C . Lower temperatures may require a higher spring force due to the higher rigidity of the cable.

The drum selection tables have been calculated with the maximum values (of each bracket) of diameter and weight. Consequently there could be significant deviations in specific cases.

Reeling cable on drum

It is an absolute necessity to reel the cable onto the drum without twists or bends. To this end, lay out the complete cable straight along the travel length. When reeling the cable on the drum be sure to maintain the same reeling direction used on the wooden drum delivered by the manufacturer.

Selecting the cable cross-section

When selecting the cable cross-section it is important to take in consideration the maximum current allowed (thermal heating) and the voltage drop limits, as well as the maximum tension allowed. The most important factors are:

1. Max. current load allowed according to norms and manufacturer's data.
2. Reduction factors due to duty cycle
3. Ambient temperature
4. Number of cable layers on the drum

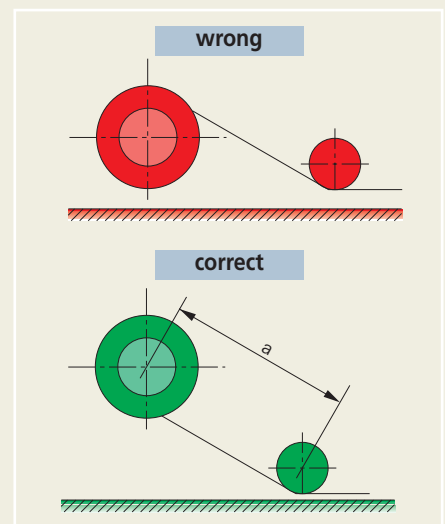
Important: The number of layers $L_z = 4$ should not be exceeded as $L_z > 4$ gives higher current reduction and worse reeling conditions. You will find the upper limits in the selection tables.

5. Reduction factor when using multi-core cables. Relevant values are given by the cable manufacturer.

Using roller guides and sheaves

When roller guides and sheaves are used, it is important to avoid reverse bending whenever possible. The following example illustrates the correct usage of roller guides.

Unreeling direction



Standard unreeling direction is anticlockwise, when looking into the slipping body, i.e. to the left when unreeling the cable.

Code key

| | | | | | | | |
|----|----|----|----|----|---|----|----|
| 22 | 36 | 12 | 20 | BC | — | 45 | 07 |
|----|----|----|----|----|---|----|----|

22 - 36 Drum size
22: 220mm inner Ø
36: 360mm outer Ø
12: 125mm drum width

45 - 07 Slipping assembly
45: Slipping type
07: number of poles incl. PE (earth)

20 BC Spring type
20: number and configuration of springs
BC: type of spring

Operating voltages

Please find the operating voltages in the respective sliping data tables.

Maximum current values

All drums and sliping bodies are designed for the maximum allowed current values of the cable at 100% ED. (duty cycle). Please find the maximum allowed values in the respective sliping data tables.

Earth conductor and number of poles

All drums and sliping bodies for voltages > 24V are manufactured with an un-insulated protective earth conductor (PE). Number of poles = number of insulated poles including PE. In your order form, please state the number of poles, protective earth conductor, and operating voltage.

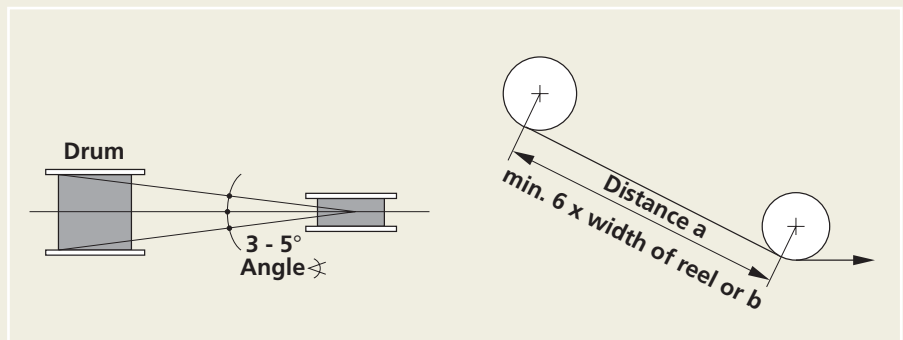
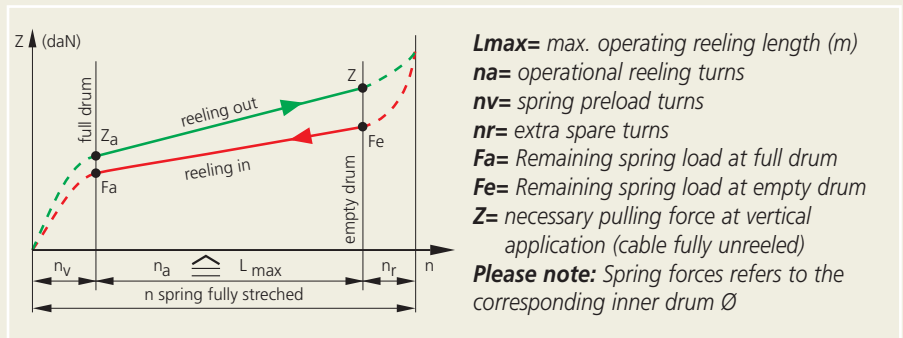
Extreme operating conditions

Extreme environmental and operating conditions must be given additional attention. The following factors are of primary importance:

- extreme high and low temperatures
- significant temperature variations
- high air humidity
- strong vibrations
- heavily polluted and aggressive air
- use in a marine environment

The force of the springs in spring reeling drums, may have to be increased if:

- the unit is moving at very low speed ($v < 10$ m/min)
- significant deflections of the cable is necessary
- at high acceleration and speeds
- the temperature is lower than -10°C .



When spring reels are mounted low, the cable must always leave the drum from the top. If roller guides or sheaves are used it is important to respect a minimum distance (a) between drum and guide.



Cavotec Alfo spring driven reels are a common sight in theatre applications around the world.

General Information

APPLICATION EXAMPLES

Case 1 & 2

Horizontal mobile application

The cable is unreeled on a flat and continuous surface. The cable is unreeled horizontally in either travelling directions.

Case 3 & 4

Horizontal mobile application

The cable is reeled out on supports ($L1 < 1\text{ m}$) or on rollers or rounded smooth supports ($L1 = 1$ to 3 m , depending on the cable size). The cable is unreeled horizontally in either travelling directions.

Case 5

Stationary application

The cable is unreeled horizontally in either travelling directions through support rollers ($L1 = 1$ to 3 m , depending on the cable size). *This type of application is not recommended.*

Case 6 & 7

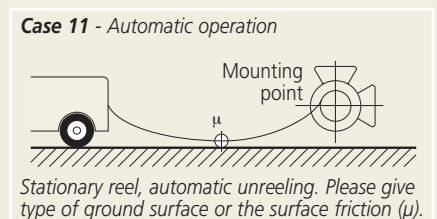
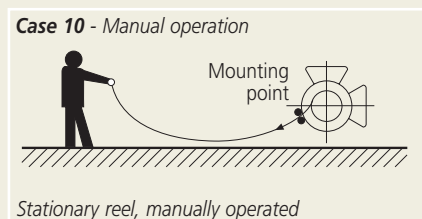
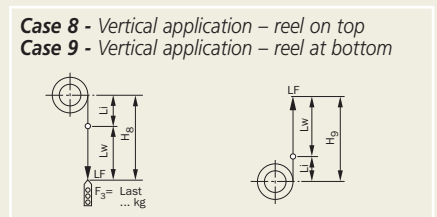
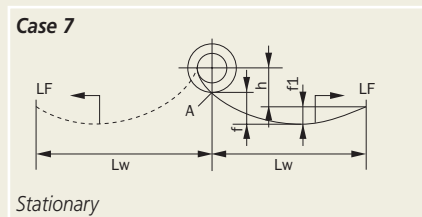
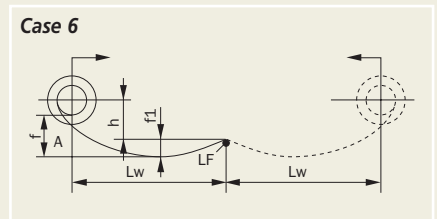
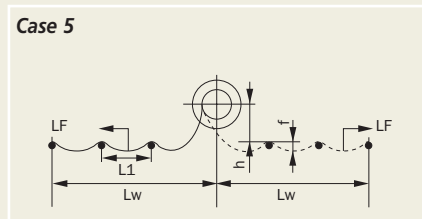
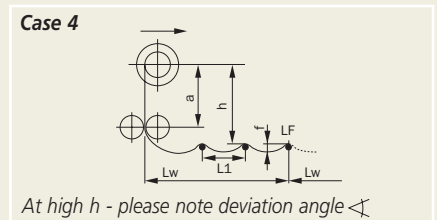
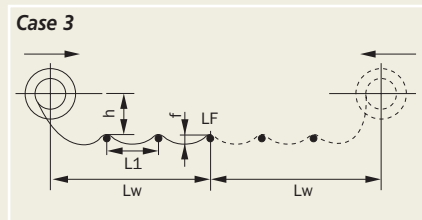
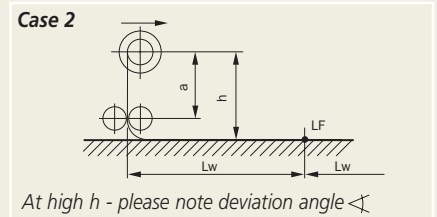
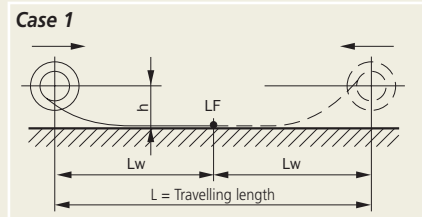
Horizontal mobile application

The cable is unreeled horizontally, above the ground and without support, in either travelling directions. The catenary $f1$ must be calculated accurately. As a rule the value of f_{max} is approximately 10% of L .

Case 8 & 9

Vertical application

The cable is unreeled vertically downwards (downward inclination). Alternatively the cable is unreeled vertically upwards (upward inclination).



Explanation of the symbols (case 1 to 7): **Lw**= maximum reeling cable length [m], (reeling length for reels travelling in both directions = one-half of the total travelling length); **h**= (installation height) distance between cable deposit plane and drum centre [m]; **LF**= cable feeding point; **f**= maximum cable sag [m], in case 6 and 7 related to position A in drawing; **f1**= maximum cable sag [m], related to cable feeding point LF; **L1**= roller or support distance [m]

$$\text{Calculation formula } f1 (m) \sim \frac{10 \times L^2 \times g}{8 \times F}$$

L= support distance [m]; **g**= cable weight [kg/m]; **F**= pulling force [Newton]

Explanation of the symbols (case 8 and 9): **Lw**= maximum reeling cable length [m]; **H8/9**= maximum cable length hanging down from the drum [m]. The drum is selected according to the total cable weight of the hanging cable. Additional weight (F3) must be considered and added to the cable weight.

General Information

CABLE CALCULATION TABLES

Selecting the correct cable for your application is extremely important. This page shows the Cavotec Alfo range of cables and their relative technical specifications. For specific help in selecting the correct cable or, if you have any special requirement for your type of application, please contact your local Cavotec office.

Special reeling cables - NSHT

| Cross sec. | kg/km | Ø (mm) | Max. allowed tension |
|------------|-------|--------|----------------------|
| | | | N |
| 4 x 1,5 | 157 | 10,2 | 150 |
| 5 x 1,5 | 176 | 10,8 | 190 |
| 7 x 1,5 | 245 | 12,9 | 265 |
| 12 x 1,5 | 337 | 16,8 | 450 |
| 18 x 1,5 | 526 | 18,6 | 675 |
| 24 x 1,5 | 662 | 21,3 | 900 |
| 30 x 1,5 | 901 | 24,6 | 1125 |
| 36 x 1,5 | 934 | 25,4 | 1350 |
| 42 x 1,5 | 1056 | 26,5 | 1575 |
| 4 x 2,5 | 208 | 11,7 | 250 |
| 5 x 2,5 | 263 | 12,7 | 315 |
| 7 x 2,5 | 327 | 14,8 | 440 |
| 12 x 2,5 | 533 | 20 | 750 |
| 18 x 2,5 | 725 | 21,1 | 1125 |
| 24 x 2,5 | 988 | 24,8 | 1500 |
| 30 x 2,5 | 1242 | 27,6 | 1875 |
| 36 x 2,5 | 1325 | 28,2 | 2250 |
| 4 x 4 | 270 | 12,5 | 600 |
| 5 x 4 | 362 | 14,3 | 900 |
| 4 x 6 | 409 | 16,9 | 900 |
| 5 x 6 | 511 | 17,8 | 750 |
| 7 x 6 | 715 | 20,9 | 1050 |
| 4 x 10 | 633 | 19,6 | 1000 |
| 5 x 10 | 766 | 20,9 | 1250 |
| 4 x 16 | 936 | 23,8 | 1600 |
| 5 x 16 | 1173 | 25,5 | 2000 |
| 4 x 25 | 1483 | 27,7 | 2500 |

Calculation table for multi-layer reels/drums (VDE 0298 part 4 1995 table 19)

| No. of layers | 1 | 2 | 3 | 4 | 5 |
|-------------------|------|------|------|-----|------|
| Correction factor | 0,76 | 0,58 | 0,47 | 0,4 | 0,38 |

Note: for spiraled cables the correction factor is 0,76.

Current capacity correction factor for multi-core cables*°

| No. loaded conductors | 5 | 7 | 10 | 14 | 19 | 24 | 40 | 61 |
|-----------------------|------|------|------|------|------|------|------|------|
| Correction factor | 0,75 | 0,65 | 0,55 | 0,50 | 0,45 | 0,40 | 0,35 | 0,30 |

* VDE 0298 part 4 1995 table 18

° max. conductor size 10 mm²

Ambient temperature for NSHT cable

| Temperature °C | 25-30 | 30-35 | 35-40 | 40-45 | 45-50 | 50-55 | 55-60 | 60-65 | 65-70 | 70-75 |
|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Correction factor | 1 | 0,95 | 0,98 | 0,84 | 0,77 | 0,71 | 0,63 | 0,55 | 0,45 | 0,32 |

CLT MODULAR SYSTEM

The concept of the Cavotec Alfo CLT reels is to provide a modular system that retains all the quality and reliability of a standard spring driven cable reel. To guarantee the above, all assembly will take place at Cavotec Alfo by our specially trained and experienced staff. Only when requested will we ship the separate components of the CLT reels unassembled. In this case the modular design allows for easy storage and thanks to the innovative design of the reels, replacing just one part is extremely easy.

The photographs on right show the different packages that can be ordered from Cavotec Alfo. Please refer to the code-tables on the following pages to ascertain the correct codes for your specific CLT reel.

Side plates



Mounting flange



Slipping collector



Spring body



Mounted drum



Drum mounted with cable



Spring driven cable reel CLT 220

CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 4.6

| Cable (*) | | Reeling length Lw (m), Case 1 | | h ≤ 1m | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|-------------------------|-------------------------------|---|--------|---|-----|---|---|---|---|----|----|----|----|----|-----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| ∅ (mm) from ... to ... | Weighth kg/m max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <8 | 0.09 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 8 - 10 | 0.15 | 1,1 | | | | 2,2 | | | | | | | | | | 3,6 | | | | | 4,5 | | | | | | | | | | | | | | | | | | | | |
| 10 - 12 | 0.25 | 2,3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 - 14 | 0.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 - 16 | 0.40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 - 18 | 0.45 | 3,4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 - 20 | 0.55 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 - 22 | 0.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

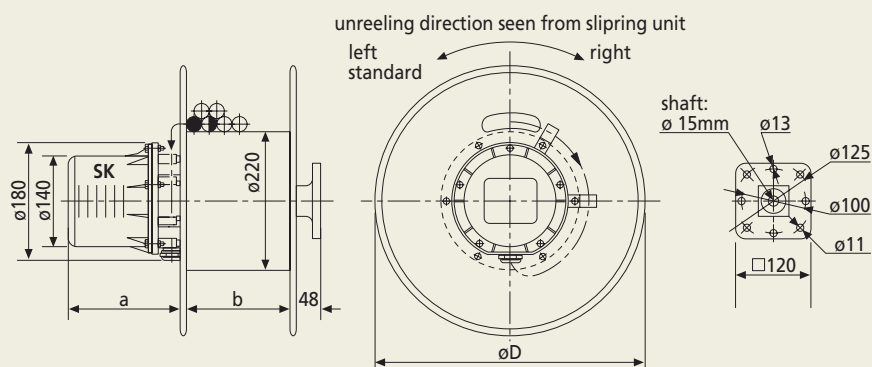
| Cable (*) | | Reeling length Lw (m), Case 8 | | Lw = H | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------------------------|-------------------------|-------------------------------|---|--------|---|-----|---|---|---|---|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| ∅ (mm) from ... to ... | Weighth kg/m max. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <8 | 0.09 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 |
| 8 - 10 | 0.15 | 1,1 | | | | 3,4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 - 12 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 - 14 | 0.30 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 - 16 | 0.40 | 2,4 | | | | 3,5 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 - 18 | 0.45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 - 20 | 0.55 | 2,6 | | | | 4,6 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 - 22 | 0.70 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Gray background: Diameter of axis hole is 15mm



The photograph shows a CLT 220 reel mounted with a SK 58 slipping collector.

| Search key | Drum type |
|------------|--------------|
| 1.1 | 22300810BC – |
| 2.2 | 22361220BC – |
| 2.3 | 22431220DC – |
| 2.4 | 22360810DC – |
| 3.4 | 22431630DC – |
| 4.5 | 22432040DC – |
| 2.6 | 22431220DC – |
| 3.5 | 22431630EB – |
| 3.6 | 22431630DC – |
| 4.6 | 22431220EB – |



| Spring-body | b | Turns (work) | n _v | n _r | Z (daN) | Fe (daN) | Item-Nr. |
|------------------------|-------|--------------|----------------|----------------|---------|----------|---------------|
| Spring-body 22..0810DC | 85mm | 13 | 2 | 1,5 | 10,8 | 10,3 | A01-C10DC08-0 |
| Spring-body 22..0810BC | 85mm | 16 | 3 | 1,5 | 6,1 | 6,1 | A01-C10BC08-0 |
| Spring-body 22..1212DC | 125mm | 13 | 2 | 1,5 | 21,6 | 20,6 | A01-C12DC12-0 |
| Spring-body 22..1220EB | 125mm | 18 | 5 | 2 | 15,0 | 14,5 | A01-C20EB12-0 |
| Spring-body 22..1220DC | 125mm | 26 | 4 | 3 | 10,8 | 10,3 | A01-C20DC12-0 |
| Spring-body 22..1220BC | 125mm | 32 | 8 | 3 | 6,1 | 6,1 | A01-C20BC12-0 |
| Spring-body 22..1630EB | 165mm | 27 | 7,5 | 3 | 15,0 | 14,5 | A01-C30EB16-0 |
| Spring-body 22..1630DC | 165mm | 39 | 6 | 4,5 | 10,8 | 10,3 | A01-C30DC16-0 |
| Spring-body 22..2024DC | 205mm | 52 | 8 | 6 | 10,8 | 10,3 | A01-C40DC20-0 |

Other spring configurations upon request

| Side plate (2 pcs.) | D | Item-Nr. |
|----------------------|-------|---------------|
| Side plate CLT 22-30 | 300mm | A04-C22-30-0Z |
| Side plate CLT 22-36 | 360mm | A04-C22-36-0Z |
| Side plate CLT 22-43 | 430mm | A04-C22-43-0Z |

| Slipring-body | No. rings | Max. cable types | Current | Max. Voltage | a | ø Housing | PG | Item-Nr. |
|---------------|---------------|------------------|------------|--------------|-------|-----------|----|---------------|
| GSK CLT 45-04 | 3 x 25A + PE | 4 x 2,5 | 50mA - 25A | 415V | 130mm | 140mm | 16 | A02-C450414-0 |
| GSK CLT 45-05 | 4 x 25A + PE | 5 x 2,5 | 50mA - 25A | 415V | 150mm | 140mm | 16 | A02-C450514-0 |
| GSK CLT 45-07 | 6 x 25A + PE | 7 x 2,5 | 50mA - 25A | 415V | 190mm | 140mm | 16 | A02-C450714-0 |
| GSK CLT 45-12 | 11 x 25A + PE | 12 x 2,5 | 50mA - 25A | 415V | 245mm | 140mm | 21 | A02-C451214-0 |
| GSK CLT 45-18 | 17 x 25A + PE | 18 x 2,5 | 50mA - 25A | 415V | 325mm | 140mm | 21 | A02-C451814-0 |
| GSK CLT 46-04 | 3 x 25A + PE | 4 x 4 | 50mA - 25A | 415V | 130mm | 140mm | 21 | A02-C460414-0 |
| GSK CLT 46-05 | 4 x 25A + PE | 5 x 4 | 50mA - 25A | 415V | 150mm | 140mm | 21 | A02-C460514-0 |
| GSK CLT 47-04 | 3 x 50A + PE | 4 x 6 | 50mA - 50A | 500V | 150mm | 140mm | 21 | A02-C470414-0 |
| GSK CLT 47-05 | 4 x 50A + PE | 5 x 6 | 50mA - 50A | 500V | 160mm | 140mm | 21 | A02-C470514-0 |
| GSK CLT 58-04 | 3 x 16A + PE | 4 x 1,5 | 30mA - 16A | 500V | 130mm | 140mm | 21 | A02-C580414-5 |
| GSK CLT 58-12 | 11 x 16A + PE | 12 x 1,5 | 30mA - 16A | 500V | 130mm | 140mm | 21 | A02-C581214-5 |

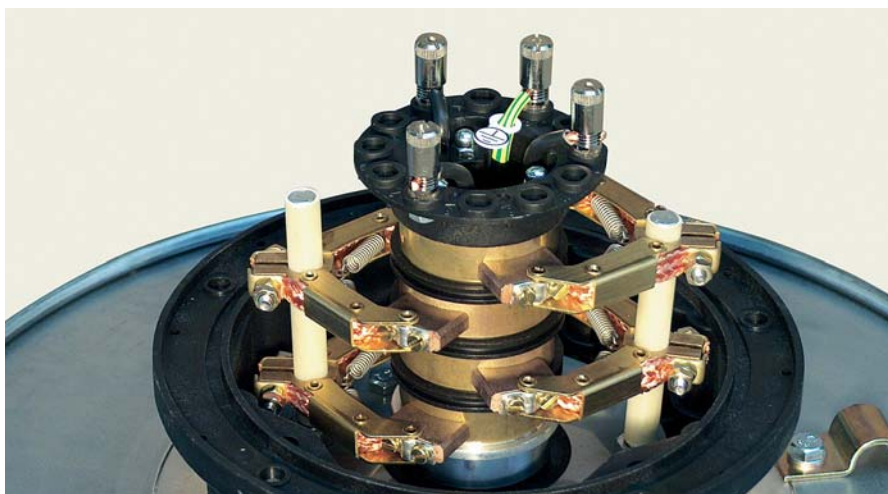
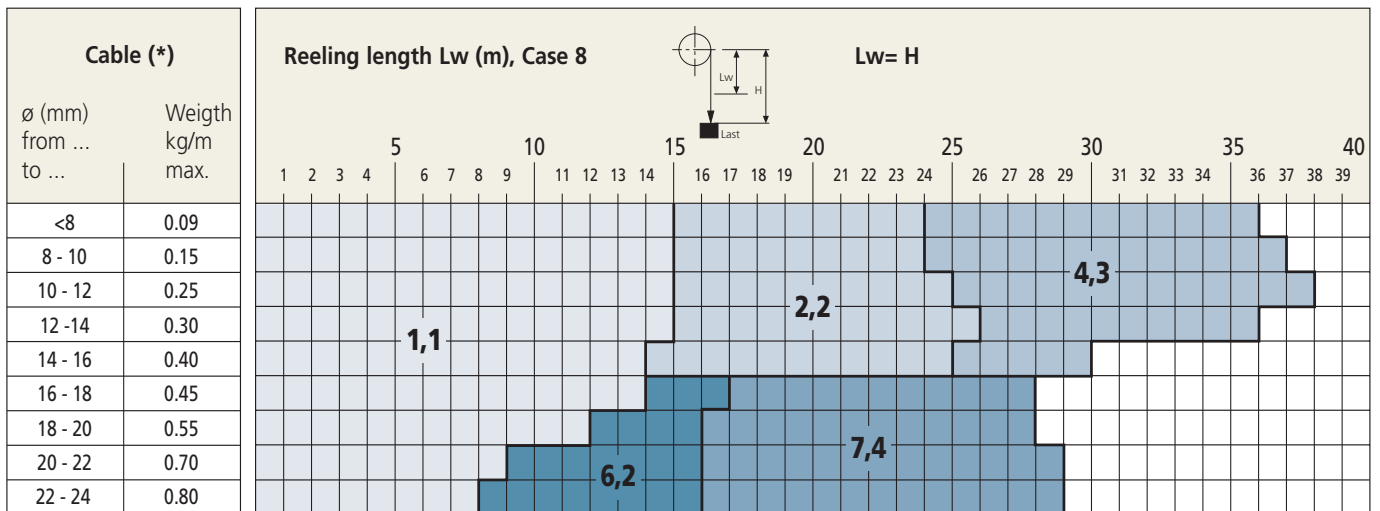
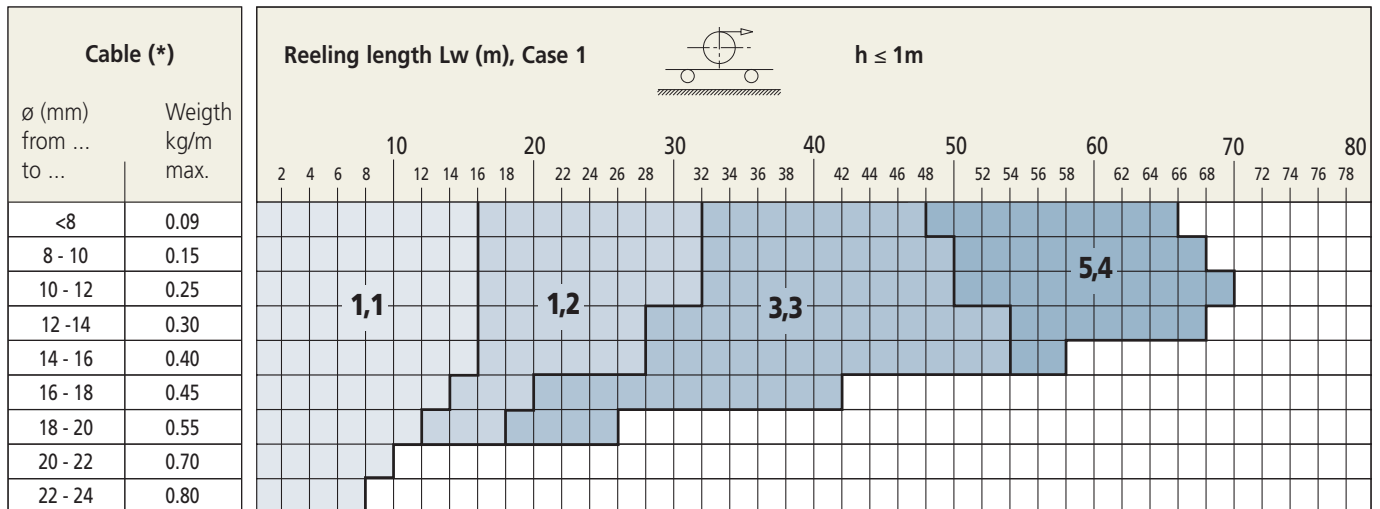
Deviating other types upon request

| Mounting flange | Item-Nr. |
|-------------------------------------|---------------|
| Mounting flange | AA4-A00411-0A |
| Mounting flange with roll back lock | A09-D01922-0Z |

| Accessories | Item-Nr. |
|------------------------------|---------------|
| Extension of width b + 40 mm | AA4-G22821-0B |
| Rigid mounting base | AA9-L05361-0Z |
| Guidearm short b= 85 | A06-A1955080Z |
| Guidearm short b=125 | A06-A1955120Z |
| Guidearm short b=165 | A06-A1955160Z |

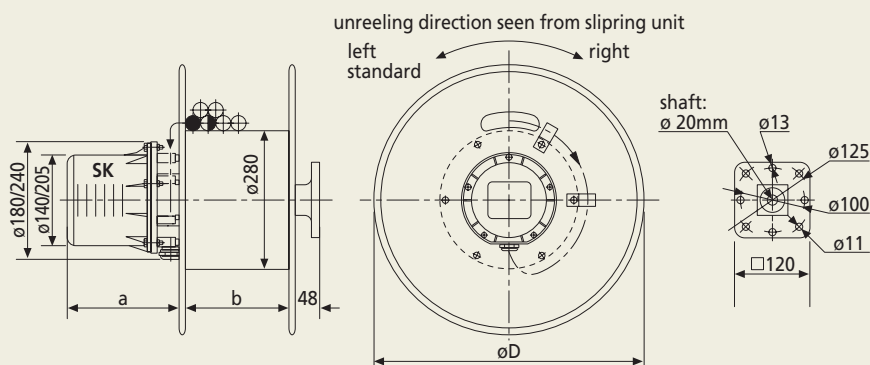
Spring driven cable reel CLT 280

CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 7.4



A SK 47 type slipping collector mounted inside its housing.

| Search key | Drum type |
|------------|--------------|
| 1.1 | 28431610EA - |
| 1.2 | 28431620EA - |
| 2.2 | 28431610EA - |
| 3.3 | 28432030EA - |
| 4.3 | 28502030HA - |
| 5.4 | 28502040EA - |
| 6.2 | 28501612EA - |
| 7.4 | 28502022HA - |



| Spring-body | b | Turns (work) | n_v | n_r | Z (daN) | Fe (daN) | Item-Nr. |
|------------------------|-------|--------------|-------|-------|---------|----------|---------------|
| Spring-body 28..1610EA | 165mm | 17 | 3 | 1,5 | 12,0 | 10,0 | A01-C10EA16-0 |
| Spring-body 28..1620EA | 165mm | 34 | 6 | 3 | 12,0 | 10,0 | A01-C20EA16-0 |
| Spring-body 28..1620HA | 165mm | 26 | 6 | 3 | 19,0 | 17,5 | A01-C20HA16-0 |
| Spring-body 28..2030EA | 205mm | 51 | 9 | 4,5 | 12,0 | 10,0 | A01-C30EA20-0 |
| Spring-body 28..2030HA | 205mm | 39 | 9 | 4,5 | 19,0 | 17,5 | A01-C30HA20-0 |
| Spring-body 28..2040EA | 205mm | 68 | 12 | 6 | 12,0 | 10,0 | A01-C40EA20-0 |
| Spring-body 28..1612EA | 165mm | 17 | 3 | 1,5 | 24,0 | 20,0 | A01-C12EA16-0 |
| Spring-body 28..2022EA | 205mm | 26 | 6 | 3 | 38,0 | 35,0 | A01-C22HA20-0 |

Other spring configurations upon request

| Side plate (2 pcs.) | D | Item-Nr. |
|----------------------|-------|---------------|
| Side plate CLT 28-43 | 430mm | A04-C28-43-0Z |
| Side plate CLT 28-50 | 500mm | A04-C28-50-0Z |

| Spring-body | No. rings | Max. cable types | Current | Max. Volatge | a | ϕ Housing | PG | Item-Nr. |
|---------------|---------------|------------------|------------|--------------|-------|----------------|----|----------------|
| GSK CLT 45-04 | 3 x 25A + PE | 4 x 2,5 | 50mA - 25A | 415V | 130mm | 140mm | 16 | A02-C450414-0 |
| GSK CLT 45-05 | 4 x 25A + PE | 5 x 2,5 | 50mA - 25A | 415V | 150mm | 140mm | 16 | A02-C450514-0 |
| GSK CLT 45-07 | 6 x 25A + PE | 7 x 2,5 | 50mA - 25A | 415V | 190mm | 140mm | 16 | A02-C450714-0 |
| GSK CLT 45-12 | 11 x 25A + PE | 12 x 2,5 | 50mA - 25A | 415V | 245mm | 140mm | 21 | A02-C451214-0 |
| GSK CLT 45-18 | 17 x 25A + PE | 18 x 2,5 | 50mA - 25A | 415V | 325mm | 140mm | 21 | A02-C451814-0 |
| GSK CLT 46-04 | 3 x 25A + PE | 4 x 4 | 50mA - 25A | 415V | 130mm | 140mm | 21 | A02-C460414-0 |
| GSK CLT 46-05 | 4 x 25A + PE | 5 x 4 | 50mA - 25A | 415V | 150mm | 140mm | 21 | A02-C460514-0 |
| GSK CLT 47-04 | 3 x 50A + PE | 4 x 6 | 50mA - 50A | 500V | 150mm | 140mm | 21 | A02-C470414-0 |
| GSK CLT 47-05 | 4 x 50A + PE | 5 x 6 | 50mA - 50A | 500V | 160mm | 140mm | 21 | A02-C470514-0 |
| GSK CLT 02-04 | 3 x 50A + PE | 4 x 10 | 50mA - 50A | 500V | 205mm | 205mm | 29 | A02-C 200420-0 |
| GSK CLT 03-04 | 3 x 90A + PE | 4 x 16 | 50mA - 90A | 500V | 205mm | 205mm | 29 | A02-C030420-0 |
| GSK CLT 98-24 | 23 x 25A + PE | 24 x 2,5 | 30mA - 25A | 500V | 205mm | 205mm | 29 | A02-C982420-0 |
| GSK CLT 58-04 | 3 x 16A + PE | 4 x 1,5 | 30mA - 16A | 500V | 130mm | 140mm | 21 | A02-C580414-5 |
| GSK CLT 58-12 | 11 x 16A + PE | 12 x 1,5 | 30mA - 16A | 500V | 130mm | 140mm | 21 | A02-C581214-5 |

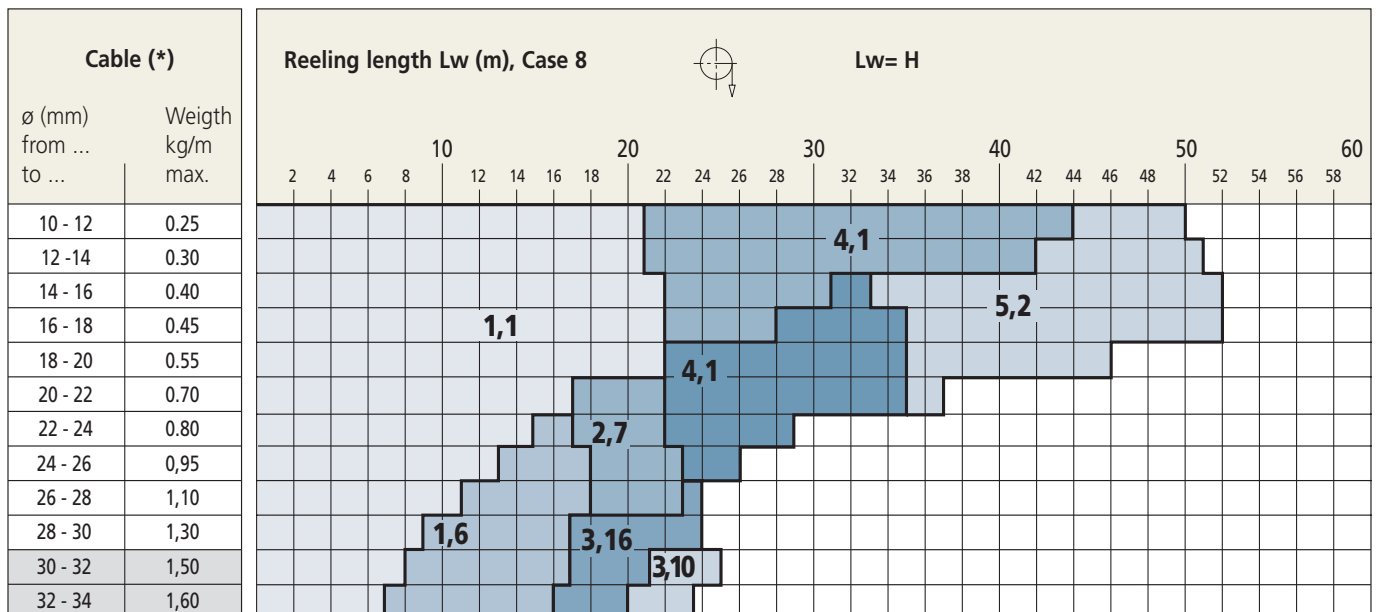
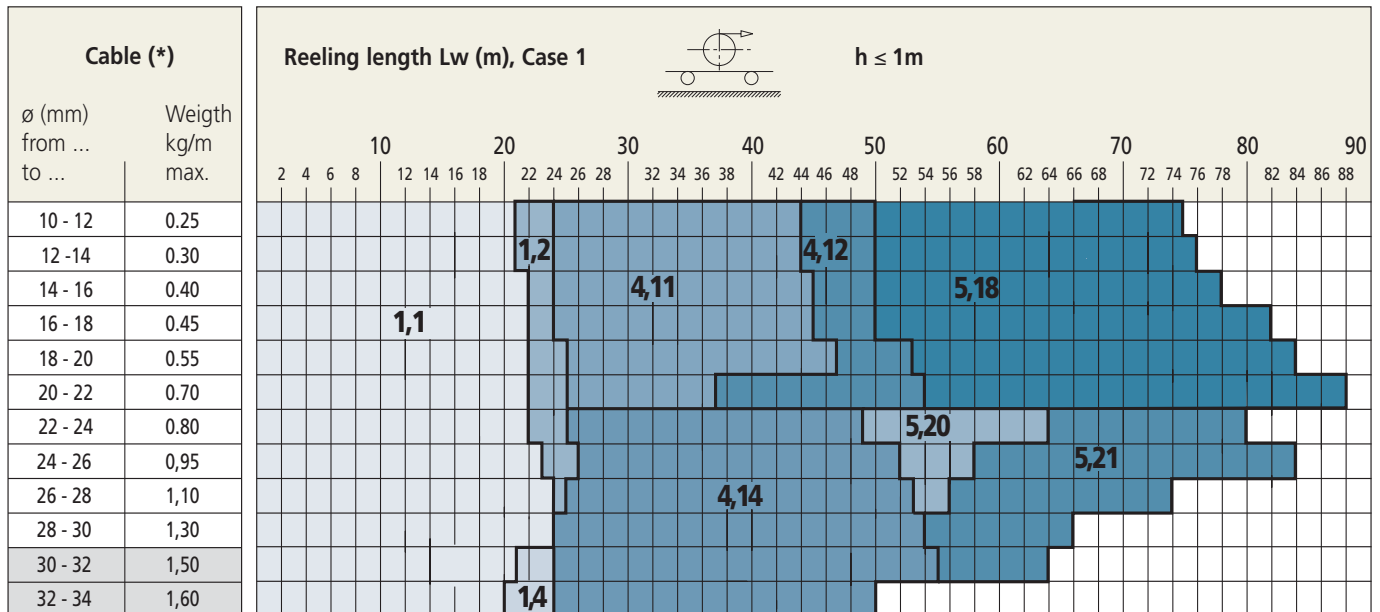
Deviating other types upon request

| Mounting flange | Item-Nr. |
|-------------------------------------|---------------|
| Mounting flange | AA4-A00412-0A |
| Mounting flange with roll back lock | A09-D02800-0Z |

| Accessories | Item-Nr. |
|-----------------------|---------------|
| Rigid mounting base | AA9-L05361-0Z |
| Guidearm short b= 165 | A06-A1955160Z |

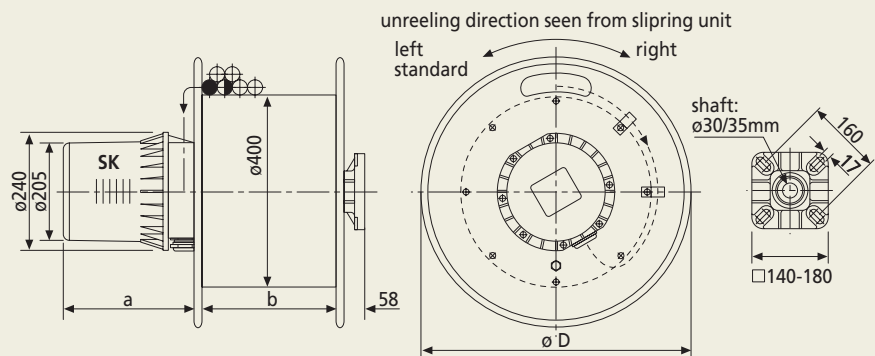
Spring driven cable reel CLT 400

CHOICE OF CABLE REEL ACCORDING TO SEARCH KEY 1.1 TO 5.21



Gray background: Diameter of axis hole is 30mm

| Search key | Drum type |
|------------|--------------|
| 1.1 | 40562810TA - |
| 1.2 | 40562810SA - |
| 1.4 | 40712810TA - |
| 1.6 | 40632810UA - |
| 2.7 | 40562812TA - |
| 3.10 | 40712813TA - |
| 4.11 | 40562820TA - |
| 4.12 | 40632820SA - |
| 4.14 | 40802820TA - |
| 4.15 | 40562820UA - |
| 5.18 | 40712830SA - |
| 5.21 | 40802830TA - |
| 5.22 | 40632830UA - |



| Spring-body | b | Mod. shaft (ϕ) | Turns (work) | n_v | n_r | Z (daN) | Fe (daN) | Item-Nr. |
|------------------------|-------|-----------------------|--------------|-------|-------|---------|----------|----------------|
| Spring-body 40..2810TA | 280mm | 35 | 17 | 2,5 | 1,5 | 24 | 20 | A01-C10TA28-0 |
| Spring-body 40..2810SA | 280mm | 35 | 20 | 3,5 | 1,5 | 15 | 13 | A01-C10SA28-0 |
| Spring-body 40..2810UA | 280mm | 35 | 13 | 2,5 | 1,0 | 46 | 39 | A01-C10UA28-0 |
| Spring-body 40..2812TA | 280mm | 35 | 17 | 2,5 | 1,5 | 48 | 40 | A01-C12TA28-0 |
| Spring-body 40..2813TA | 280mm | 35 | 17 | 2,5 | 1,5 | 72 | 60 | A01-C20TA28-0 |
| Spring-body 40..2820TA | 280mm | 30 | 34 | 5 | 3 | 24 | 20 | A01-C10UA28-0 |
| Spring-body 40..2820SA | 280mm | 30 | 40 | 7 | 3 | 15 | 13 | A01-C20SA28-0 |
| Spring-body 40..2820UA | 280mm | 30 | 26 | 5 | 2 | 46 | 39 | A01-C20UA28-0 |
| Spring-body 40..2830TA | 280mm | 30 | 51 | 7,5 | 4,5 | 24 | 20 | A01-C30TA28-0 |
| Spring-body 40..2830SA | 280mm | 30 | 60 | 10,5 | 4,5 | 15 | 13 | A01-C30SA28-0 |
| Spring-body 40..2830UA | 280mm | 30 | 39 | 7,5 | 3 | 45 | 39 | A01-C230UA28-0 |

Other spring configurations upon request

| Side plate (2 pcs.) | D | Item-Nr. |
|----------------------|-------|---------------|
| Side plate CLT 40-56 | 560mm | A04-C40-56-0Z |
| Side plate CLT 40-63 | 630mm | A04-C40-63-0Z |
| Side plate CLT 40-71 | 710mm | A04-C40-71-0Z |
| Side plate CLT 40-80 | 800mm | A04-C40-80-0Z |

| Spring-body | No. rings | Max. cable types | Current | Max. Volatge | a | ϕ Housing | PG | Item-Nr. |
|---------------|---------------|------------------|------------|--------------|-------|----------------|----|---------------|
| GSK CLT 45-04 | 3 x 25A + PE | 4 x 2,5 | 50mA - 25A | 415 | 205mm | 205mm | 21 | A02-C450421-0 |
| GSK CLT 45-05 | 4 x 25A + PE | 5 x 2,5 | 50mA - 25A | 415 | 205mm | 205mm | 21 | A02-C450521-0 |
| GSK CLT 45-07 | 6 x 25A + PE | 7 x 2,5 | 50mA - 25A | 415 | 205mm | 205mm | 21 | A02-C450721-0 |
| GSK CLT 45-12 | 11 x 25A + PE | 12 x 2,5 | 50mA - 25A | 415 | 295mm | 205mm | 21 | A02-C451221-0 |
| GSK CLT 45-18 | 17 x 25A + PE | 18 x 2,5 | 50mA - 25A | 415 | 390mm | 205mm | 21 | A02-C451821-0 |
| GSK CLT 02-04 | 3 x 50A + PE | 4 x 10 | 50mA - 50A | 500 | 205mm | 205mm | 29 | A02-C020421-0 |
| GSK CLT 02-05 | 4 x 50A + PE | 5 x 10 | 50mA - 50A | 500 | 205mm | 205mm | 29 | A02-C020521-0 |
| GSK CLT 03-04 | 3 x 90A + PE | 4 x 16 | 50mA - 90A | 500 | 205mm | 205mm | 29 | A02-C030421-0 |
| GSK CLT 03-05 | 4 x 90A + PE | 5 x 16 | 50mA - 90A | 500 | 205mm | 205mm | 29 | A02-C030521-0 |
| GSK CLT 98-24 | 23 x 25A + PE | 24 x 2,5 | 30mA - 25A | 500 | 295mm | 205mm | 29 | A02-C902421-0 |

Deviating other types upon request

| Mounting flange | Item-Nr. |
|-------------------------------------|---------------|
| Mounting flange | AA4-A12060-0A |
| Mounting flange with roll back lock | A09-D04050-0Z |

| Accessories | Item-Nr. |
|-----------------------|---------------|
| Rigid mounting base | AA9-L04651-0Z |
| Guidearm short b= 280 | A06-A4080280Z |

Head Office

Cavotec MSL Holdings Ltd.

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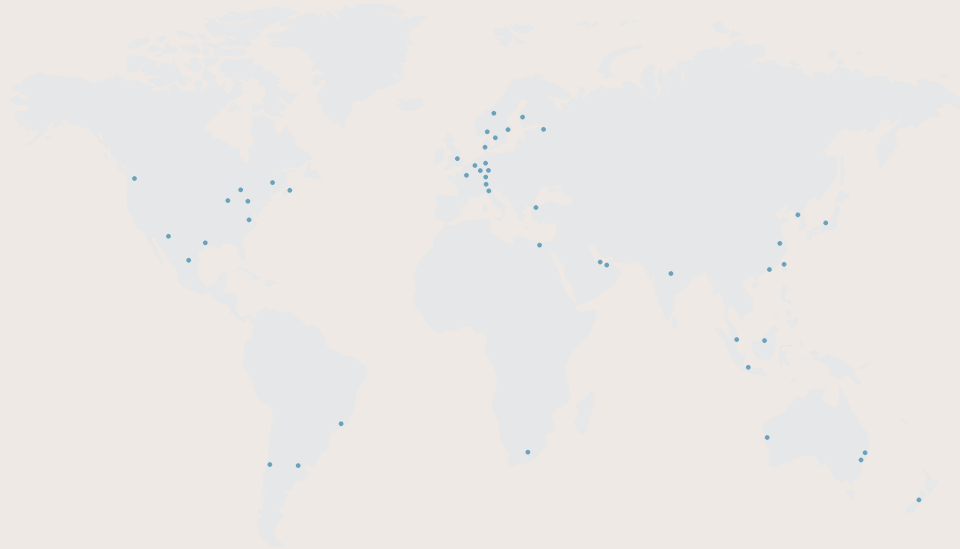
Corporate Office

Cavotec (Swiss) SA

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CH-6900 Lugano, Switzerland

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