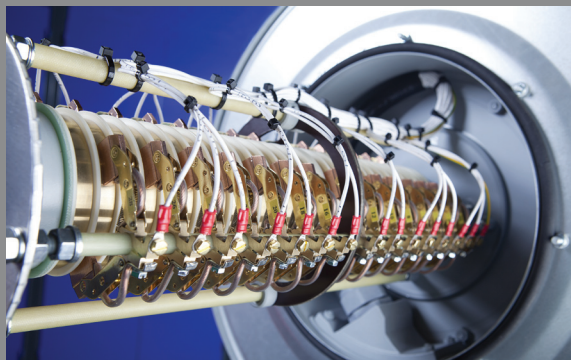




Hartmann & König
STROMZUFÜHRUNGS AG

Motorized cable reels



**YOUR PARTNER FOR ENERGY AND DATA TRANSMISSION SYSTEMS
FOR MOBILE CONSUMERS**

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Cable reeling drum with motor drive Table of contents

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Motor Driven Cable Reeling Drums

Cable reeling drums with motor drives are used to supplying consumers that change their local positions.

The drive is used for reeling the cable, whilst the drum body must provide the required storage volume. The drive always operates in the direction of reeling the cable. The drum body is supported on a drive shaft. At the output drive stage, however, opposite the drum body, the slip ring body is mounted in separate housing. Power transmission is provided via copper graphite brushes and slip rings with finely turned surfaces.

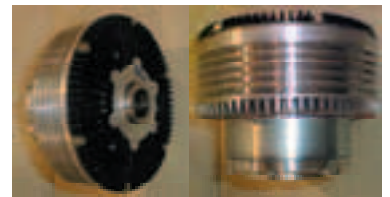
The drums consist of the following main assemblies:

- Drive Motors

Standard three-phase current motors designed with stop brake, 100% duty cycles, IP55 (also higher possible) and power 0.37 – 7.5 kW. If the motor has no brake (e.g. in connection with turbo coupling drives, see below), it will be provided with one separately. In any case, the brake prevents uncontrolled unreeling of the cable when the drive is switched off.

- Magnetic Coupling

Magnetic couplings are available in diverse power classes (nominal torques). The coupling has the tasks of torque transmission and slip regulation as well. The magnetic couplings are driven via three-phase asynchronous motors, always in the sense of cable reeling. The permanent magnets are nearly free of abrasion since the torque or magnetic flux is transmitted via an air gap. In addition, the torque level is based on the size of the air gap. The incurred generation of heat is conducted outwards via a suitable housing surface.



- Turbo Coupling

Has essentially the same task as a magnetic coupling, however, the power transmission occurs hydro-dynamically via oil filled in the coupling. There are different power classes at disposal. Turbo couplings are also suitable for high accelerations due to their low moments of inertia. Due to corresponding housing surfaces as well as sealing, the couplings are also suitable for onboard operation and rough ambient conditions.





Motor Driven Cable Reeling Drums

- Torque Motor

The torque motor equalises the speed differences between driving and drum reeling operations also without slip coupling. It can be operated both in the sense of cable reeling, in standstill, as well as in opposite direction (upon cable payout). The generated heat is dissipated via the housing surface or via a separately driven fan. The motors are equipped with stop brake.

Torque motors function as torque motors with or without a separately driven fan. Slip ring motor types additionally still need a shunt device.

- Frequency Inverter Drives

Three-phase-current asynchronous motors or servomotors are driven via an inverter or an amplifier device. These motors are used both as constant drives and as variable torque drives. The latter is particularly used for plants with great driving distances (for instance, container crane plants) and for comparably small cable cross-sections (medium voltage hawsers). The drives are suitable for highly dynamic processes (accelerations or velocities). Separately speeds fans are used for cooling. The motors and inverters have power outputs ranging from 1.5 kW to 22 kW.

- Hydraulic Drives

Both the motor as well as the stop brake are hydraulically pressurised, preferably via the hydraulic system mounted on the mobile device.

- Gearbox

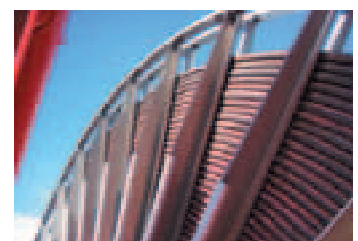
The gearboxes are designed as an enclosed housing version for industrial application. They are delivered filled with oil. The driven side is provided with diverse attachment lanterns for couplings and motor drives.

The following reduction gear sets are at disposal:

- Flat gearbox,
- Bevel gearbox,
- Spur gearbox with roller chain.

- Drum Body

- Mono spiral coiling, radial arm, drum body can be fabricated as a screwed or welded version. In a screwed design the coiling width can be adjusted and hence be adapted to different cable diameters. The coiling diameter is adapted to the minimum bending radius of the cable, outer diameter up to 8000 mm.





Motor Driven Cable Reeling Drums

- Drum body in 3-2-3 coiling.
- Cylindrical, wildly reeling drum body up to 1100 mm outer diameter from deep-drawn, galvanized steel sheet.
- Cylindrical, wildly reeling drum body in a welded spoke design.
- Cylindrical, wildly reeling drum body with reeling apparatus for accurately positioned coiling of cable suitable for reeling.

- Slip Ring Body

Pivotaly supported inside the protective housing. The standard protection class is IP54, higher protection classes available upon request. The slip ring bodies are equipped with a protective earth conductor (earth). The slip ring contacts are suitable for current transmissions from mA up to 1000 A as well as low voltage and medium voltage. Special slip ring contacts are also used for data transmission.

- Surfaces

- Paints in 1- or 2-component colours
- Senzimized parts with or without painting
- Hot-dip galvanized
- Upon request in stainless steel version

The cable drum is designed according to the following items:

- Customer Specific Application

To do this, we request for the submission of your documents or you should fill out the following questionnaire (see appendix).

- The electrical Design is based on:

- Consumer power rating
- Type of coiling or number of layers,
- Thermal ambient conditions,
- Duty cycle, cross-section of the cable,
- Number of loaded wires.

For this purpose, we refer to the details in the appendix.



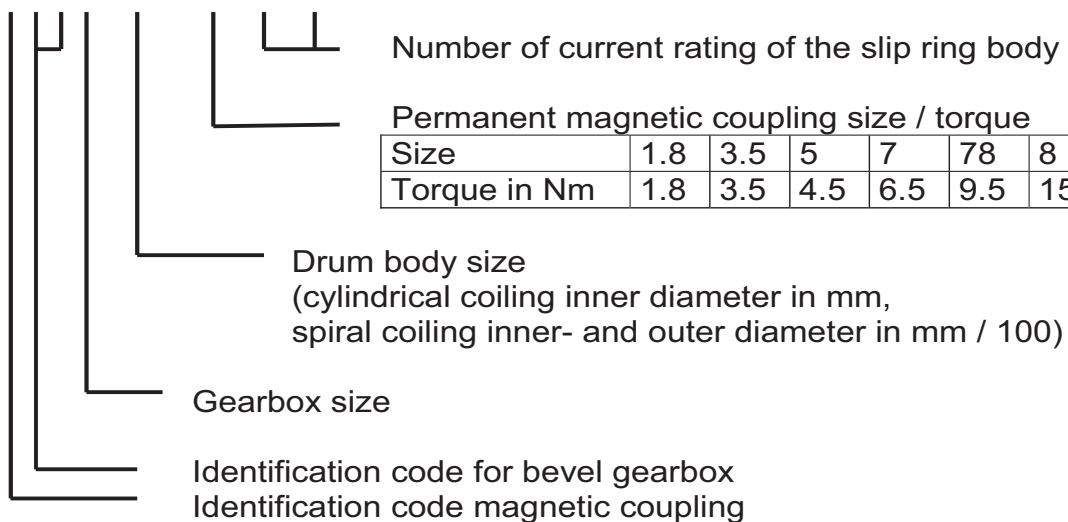
Motor Driven Cable Reeling Drums Type HGN

Type HGN

- Drive via a bevel gearbox, magnetic coupling and three-phase current brake motor
- Spiral and cylindrical coiling
- Vehicle speed subdivided in 20 m/min, 40 m/min, 60 m/min and 80 m/min.
- Standard acceleration 0.2 m/s²
- Drum on mobile device
- Mounting height max. 2.5 m for spiral coiling or 1.5 m for cylindrical coiling (for drum outer diameter greater 3 m and spiral coiling mounting height max. 3.5 m as well as for mounting height greater than 1 m and cylindrical coiling mounting height max. 2.5 m).
- Cable types - Cordaflex SM-K, Trommelflex PUR-HF or Trommelflex NSHTÖU-J
- Ambient temperature -10°C up to +40°C
- **Attention, for changed parameters or customer requirements, e.g. higher speed/ acceleration or application of cable guiding devices etc. we request for consultation because the power of a drive can change due to this and a larger drive unit may be necessary.**

Type Designation, Identification Code, Variants

Example: HGN 2 / 530 / 7S 4 - 150





Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN
 Horizontal Payout, Spiral Coiling, Mounting Height max 2.5 m, without Deflection,
 Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² Cordaflex SM-K, Ø 14.8 mm, 0.31 kg/m Weight, F tensile max. 300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	36	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
50	36	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
85	36	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
135	36	HGN1/6/18/1.8S	HGN1/6/18/1.8S	HGN1/6/18/1.8S	HGN1/6/18/1.8S
160	36	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S

4 x 4 mm ² Cordaflex SMK, Ø 18 mm, 0.46 kg/m Weight, F tensile max. 480 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	42	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
40	42	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
70	42	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
110	42	HGN1/6/18/1.8S	HGN1/6/18/1.8S	HGN1/6/18/3.5S	HGN1/6/18/3.5S
200	42	HGN2/10/25/1.8S	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S

4 x 6 mm ² Cordaflex SMK, Ø 19.4 mm, 0.58 kg/m Weight, F tensile max. 720 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
23	60	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
38	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
65	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S
90	60	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/3.5S
190	60	HGN2/10/25/1.8S	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S



4 x 10 mm ² Cordaflex SMK, Ø 23.6 mm, 0.91 kg/m Weight, F tensile max. 1200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
18	60	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/3.5S
30	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/3.5S	HGN1/5/12/3.5S
50	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/3.5S
95	60	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S
150	60	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/5S

4 x 16 mm ² Cordaflex SMK, Ø 26.7 mm, 1.24 kg/m Weight, F tensile max. 1920 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	150	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/3.5S	HGN1/5/12/3.5S
45	150	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/3.5S
80	150	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S	HGN2/8/20/5S
135	150	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/7S
190	150	HGN3/12/30/3.5S	HGN3/12/30/3.5S	HGN3/12/30/5SS	HGN3/12/30/7S

Drawing No. 07-401-00-000, 07-404-00-000, 07-406-00-000, 07-408-00-000, 07-410-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Spiral Coiling, Mounting Height max 2.5 m, without Deflection,
Acceleration 0.2m/s², Drum on Mobile Device



4 x 25 mm ² Cordaflex SMK, Ø 31.5 mm, 1.85 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	150	HGN2/5/12/1.8S	HGN2/5/12/3.5S	HGN2/5/12/5S	HGN2/5/12/7S
50	150	HGN2/8/18/1.8S	HGN2/8/18/3.5S	HGN2/8/18/5S	HGN2/8/18/7S
70	150	HGN2/8/20/3.5S	HGN2/8/20/3.5S	HGN2/8/20/7S	HGN2/8/20/7S
110	150	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/7S	HGN2/10/25/7S
165	150	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/7S

3 x 35 + 3 x 16/3 mm ² Cordaflex SMK, Ø 31.5 mm, 2.15 kg/m Weigth, F tensile max. 3150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	150	HGN2/5/12/1.8S	HGN2/5/12/3.5S	HGN2/5/12/5S	HGN2/5/12/7S
50	150	HGN2/8/18/1.8S	HGN2/8/18/3.5S	HGN2/8/18/5S	HGN2/8/18/7S
70	150	HGN2/8/20/3.5S	HGN2/8/20/3.5S	HGN2/8/20/7S	HGN2/8/20/7S
110	150	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/7S	HGN2/10/25/7S
165	150	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/7S

3 x 50 + 3 x 25/3 mm ² Cordaflex SMK, Ø 37.4 mm, 2.85 kg/m Weigth, F tensile max. 4150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	220	HGN2/6/15/1.8S	HGN2/6/15/3.5S	HGN2/6/15/7S	HGN2/6/15/7S
55	220	HGN2/8/20/3.5S	HGN2/8/20/5S	HGN2/8/20/7S	HGN2/8/20/7S
95	220	HGN2/10/25/3.5S	HGN2/10/25/5S	HGN2/10/25/7S	HGN2/10/25/7S
140	220	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/7S	HGN3/12/30/8S
180	220	HGN4/15/35/7S	HGN4/15/35/7S	HGN4/15/35/7S	HGN4/15/35/8S

3 x 70 + 3 x 35/3 mm ² Cordaflex SMK, Ø 42.7, 3.92 kg/m Weigth, F tensile max. 6300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	220	HGN2/8/20/3.5S	HGN2/8/20/7S	HGN2/8/20/7S	HGN3/8/20/8S
75	220	HGN2/12/25/5S	HGN2/10/25/7S	HGN2/10/25/7S	HGN3/10/25/8S
120	220	HGN3/12/30/7S	HGN3/12/30/7S	HGN3/12/30/8S	HGN3/12/30/8S
155	220	HGN4/15/35/7S	HGN4/15/35/7S	HGN4/15/35/8S	HGN4/15/35/8S
220	220	HGN4/15/40/7S	HGN4/15/40/7S	HGN4/15/40/8S	HGN4/15/40/8S

3 x 95 + 3 x 50/3 mm ² Cordaflex SMK, Ø 47.3 mm, 5.02 kg/m Weigth, F tensile max. 8550 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
65	265	HGN3/10/25/7S	HGN3/10/25/7S	HGN3/10/25/8S	HGN3/10/25/8S
105	265	HGN3/12/30/7S	HGN3/10/25/7S	HGN3/12/30/8S	HGN3/12/30/8S
140	265	HGN4/15/35/7S	HGN4/15/35/7S	HGN4/15/35/8S	HGN4/15/35/8S
200	265	HGN5/15/40/8S	HGN5/15/40/8S	HGN5/15/40/8S	HGN5/15/40/8S
320	265	HGN6/18/50/8S	HGN6/18/50/8S	HGN6/18/50/8S	

3 x 120 + 3 x 70/3 mm ² Cordaflex SMK, Ø 55 mm, 6.63 kg/m Weigth, F tensile max. 10800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	500	HGN3/12/25/7S	HGN3/12/25/7S	HGN3/12/25/8S	HGN3/12/25/8S
85	500	HGN3/12/30/7S	HGN3/12/30/8S	HGN3/12/30/8S	HGN3/12/30/8S
115	500	HGN4/15/35/8S	HGN4/15/35/8S	HGN4/15/35/8S	HGN4/15/35/8S
160	500	HGN5/15/40/8S	HGN5/15/40/8S	HGN5/15/40/8S	



Drawing No. 07-401-00-000, 07-404-00-000, 07-406-00-000, 07-408-00-000, 07-410-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Spiral Coiling, Mounting Height max 2.5 m, without Deflection,
Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² Trommelflex PUR-HF, Ø 12.3 mm, 0.21 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	36	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
65	36	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
105	36	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
150	36	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S

4 x 4 mm ² Trommelflex PUR-HF, Ø 13.6 mm, 0.29 kg/m Weigth, F tensile max. 1800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	42	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
55	42	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
100	42	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
135	42	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/3.5S	HGN1/8/18/3.5S

4 x 6 mm ² Trommelflex PUR-HF, Ø 14.9 mm, 0.38 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
90	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
120	60	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S
160	60	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S

4 x 10 mm ² Trommelflex PUR-HF, Ø 18.9 mm, 0.61 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/3.5S	HGN1/5/12/3.5S
65	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
120	60	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S
195	60	HGN2/10/25/1.8S	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S

4 x 16 mm ² Trommelflex PUR-HF, Ø 22.1 mm, 0.92 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
55	150	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/3.5S
105	150	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S
160	150	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/5S
240	150	HGN3/12/30/1.8S	HGN3/12/30/3.5S	HGN3/12/30/3.5S	HGN3/12/30/5S

4 x 25 mm ² Trommelflex PUR-HF, Ø 25.5 mm, 1.27 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	150	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/5S
85	150	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S	HGN2/8/20/5S
140	150	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/5S	HGN2/10/25/7S
210	150	HGN3/12/30/3.5S	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S

4 x 35 mm ² Trommelflex PUR-HF, Ø 30 mm, 1.78 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
75	150	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/5S	HGN2/8/20/5S
120	150	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/7S	HGN2/10/25/7S
175	150	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/7S



Drawing No. 07-401-00-000, 07-404-00-000, 07-406-00-000, 07-408-00-000, 07-410-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Spiral Coiling, Mounting Height max 2.5 m, without Deflection,
Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² Trommelflex PUR-HF, Ø 12.3 mm, 0.21 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	36	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
65	36	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
105	36	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
150	36	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S

4 x 4 mm ² Trommelflex PUR-HF, Ø 13.6 mm, 0.29 kg/m Weigth, F tensile max. 1800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	42	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S	HGN1/4/10/1.8S
55	42	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
100	42	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
135	42	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/3.5S	HGN1/8/18/3.5S

4 x 6 mm ² Trommelflex PUR-HF, Ø 14.9 mm, 0.38 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/1.8S
90	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
120	60	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S	HGN1/8/18/1.8S
160	60	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S

4 x 10 mm ² Trommelflex PUR-HF, Ø 18.9 mm, 0.61 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	60	HGN1/5/12/1.8S	HGN1/5/12/1.8S	HGN1/5/12/3.5S	HGN1/5/12/3.5S
65	60	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/1.8S
120	60	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S
195	60	HGN2/10/25/1.8S	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S

4 x 16 mm ² Trommelflex PUR-HF, Ø 22.1 mm, 0.92 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
55	150	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/3.5S
105	150	HGN2/8/20/1.8S	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S
160	150	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/5S
240	150	HGN3/12/30/1.8S	HGN3/12/30/3.5S	HGN3/12/30/3.5S	HGN3/12/30/5S

4 x 25 mm ² Trommelflex PUR-HF, Ø 25.5 mm, 1.27 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	150	HGN1/6/15/1.8S	HGN1/6/15/1.8S	HGN1/6/15/3.5S	HGN1/6/15/5S
85	150	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/3.5S	HGN2/8/20/5S
140	150	HGN2/10/25/1.8S	HGN2/10/25/3.5S	HGN2/10/25/5S	HGN2/10/25/7S
210	150	HGN3/12/30/3.5S	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S

4 x 35 mm ² Trommelflex PUR-HF, Ø 30 mm, 1.78 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
75	150	HGN2/8/20/1.8S	HGN2/8/20/3.5S	HGN2/8/20/5S	HGN2/8/20/5S
120	150	HGN2/10/25/3.5S	HGN2/10/25/3.5S	HGN2/10/25/7S	HGN2/10/25/7S
175	150	HGN3/12/30/3.5S	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/7S

Drawing No. 07-401-00-000, 07-404-00-000, 07-406-00-000, 07-408-00-000, 07-410-00-000





Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN
 Horizontal Payout, Spiral Coiling, Mounting Height max 2.5 m, without Deflection,
 Acceleration 0.2m/s², Drum on Mobile Device



4 x 35 mm ² NSHTÖU-J Trommelflex, Ø 38.6 mm, 2.57 kg/m Weigth, F tensile max. 2100 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN2/6/15/1.8S	HGN2/6/15/3.5S	HGN2/6/15/7S	HGN2/6/15/78S
55	150	HGN2/8/20/3.5S	HGN2/8/20/5S	HGN2/8/20/7S	HGN2/8/20/78S
90	150	HGN2/10/25/3.5S	HGN2/10/25/5S	HGN2/10/25/7S	HGN2/10/25/78S
130	150	HGN3/12/30/5S	HGN3/12/30/7S	HGN3/12/30/78S	HGN3/12/30/78S
180	150	HGN4/15/35/7S	HGN4/15/35/7S	HGN4/15/35/78S	HGN4/15/35/8S

4 x 50 mm ² NSHTÖU-J Trommelflex, Ø 46 mm, 3.6 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	220	HGN3/10/20/3.5S	HGN3/10/20/5S	HGN3/10/20/7S	HGN3/10/20/78S
70	220	HGN3/10/25/5S	HGN3/10/25/7S	HGN3/10/25/78S	HGN3/10/25/8S
105	220	HGN3/12/30/7S	HGN3/12/30/7S	HGN3/12/30/78S	HGN3/12/30/8S
150	220	HGN4/15/35/78S	HGN4/15/35/78S	HGN4/15/35/8S	HGN4/15/35/8S
200	220	HGN4/15/40/78S	HGN4/15/40/78S	HGN4/15/35/8S	HGN4/15/40/88S

4 x 70 mm ² NSHTÖU-J Trommelflex, Ø 51 mm, 4.62 kg/m Weigth, F tensile max. 4200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	220	HGN3/10/20/5S	HGN3/10/20/7S	HGN3/10/20/78S	HGN3/10/20/78S
60	220	HGN3/10/25/5S	HGN3/10/25/7S	HGN3/10/25/78S	HGN3/10/25/8S
90	220	HGN3/12/30/7S	HGN3/12/30/78S	HGN3/12/30/8S	HGN3/12/30/8S
180	220	HGN4/15/40/8S	HGN4/15/40/8S	HGN4/15/40/8S	HGN4/15/40/88S
280	220	HGN6/20/50/88S	HGN6/20/50/88S	HGN6/20/50/88S	HGN6/20/50/88S



4 x 95 mm ² NSHTÖU-J Trommelflex, Ø 60 mm, 6.1 kg/m Weigth, F tensile max. 5700 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	265	HGN3/10/25/7S	HGN3/10/25/78S	HGN3/10/25/8S	HGN3/10/25/8S
100	265	HGN4/15/35/8S	HGN4/15/35/8S	HGN4/15/35/8S	HGN4/15/35/88S
185	265	HGN5/18/45/88S	HGN5/18/45/88S	HGN5/18/45/88S	HGN5/18/45/88S

4 x 120 mm ² NSHTÖU-J Trommelflex, Ø 63.5 mm, 7.7 kg/m Weigth, F tensile max. 7200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
70	500	HGN4/12/30/8S	HGN4/12/30/8S	HGN4/12/30/88S	HGN4/12/30/88S
135	500	HGN5/15/40/88S	HGN5/15/40/88S	HGN5/15/40/88S	
180	500	HGN6/18/45/88S	HGN6/18/45/88S	HGN6/18/45/88S	

Drawing No. 07-401-00-000, 07-404-00-000, 07-406-00-000, 07-408-00-000, 07-410-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height max 1.5 m, without Deflection, Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² Cordaflex SM-K, Ø 14.8 mm, 0.31 kg/m Weight, F tensile max. 300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	36	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
45	36	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
80	36	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
130	36	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 4 mm ² Cordaflex SM-K, Ø 18 mm, 0.46 kg/m Weight, F tensile max. 480 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	42	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
40	42	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
70	42	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
110	42	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 6 mm ² Cordaflex SM-K, Ø 19.4 mm, 0.58 kg/m Weight, F tensile max. 720 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
45	60	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
60	60	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
110	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 10 mm ² Cordaflex SM-K, Ø 23.6 mm, 0.91 kg/m Weight, F tensile max. 1200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	60	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
55	60	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
90	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
130	60	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S

4 x 16 mm ² Cordaflex SM-K, Ø 26.7 mm, 1.24 kg/m Weight, F tensile max. 1920 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
80	150	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
115	150	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S
150	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/3.5S	HGN2/800/5S

4 x 25 mm ² Cordaflex SM-K, Ø 31.5 mm, 1.85 kg/m Weight, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S
45	150	HGN2/530/1.8	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S
95	150	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S	HGN2/700/5S
130	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/5S	HGN2/800/7S
190	150	HGN3/1200/3.5S	HGN3/1200/3.5S	HGN3/1200/5S	HGN3/1200/7S

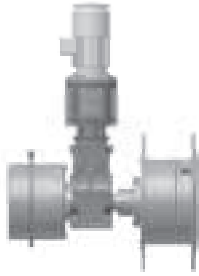


Drawing No. 07-400-00-000, 07-402-00-000, 07-403-00-000, 07-405-00-000, 07-407-00-000, 07-409-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height max 1.5 m, without Deflection, Acceleration 0.2m/s², Drum on Mobile Device



3 x 35 + 3 x 16/3 mm ² Cordaflex SM-K, Ø 31.5 mm, 2.16 kg/m Weigth, F tensile max. 3150 N					
l (m)	SRB	Speed in m/min			
		20		40	
A		Drum Type			
30	150	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S
45	150	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/3.5S
95	150	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S	HGN2/700/5S
130	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/7S	HGN2/800/7S
190	150	HGN3/1200/3.5S	HGN3/1200/3.5S	HGN3/1200/5S	HGN3/1200/7S

3 x 50 + 3 x 25/3 mm ² Cordaflex SM-K, Ø 37.4 mm, 2.85 kg/m Weigth, F tensile max. 4500 N					
l (m)	SRB	Speed in m/min			
		20		40	
A		Drum Type			
35	220	HGN2/531/1.8S	HGN2/531/1.8S	HGN2/531/3.5S	HGN2/531/3.5S
80	220	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S	HGN2/700/5S
110	220	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/7S	HGN2/800/7S
160	220	HGN4/1200/5S	HGN4/1200/5S	HGN4/1200/7S	HGN4/1200/7S

3 x 70 + 3 x 35/3 mm ² Cordaflex SM-K, Ø 42.7 mm, 3.92 kg/m Weigth, F tensile max. 6300 N					
l (m)	SRB	Speed in m/min			
		20		40	
A		Drum Type			
30	220	HGN2/531/1.8S	HGN2/531/1.8S	HGN2/531/3.5S	HGN2/531/3.5S
45	220	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/5S	HGN2/700/7S
90	220	HGN2/800/3.5S	HGN2/800/5S	HGN2/800/7S	HGN2/800/7S
160	220	HGN4/1600/5S	HGN4/1600/5S	HGN4/1600/7S	HGN4/1600/7S

3 x 95 + 3 x 50/3 mm ² Cordaflex SM-K, Ø 47.3 mm, 5.02 kg/m Weigth, F tensile max. 8550 N					
l (m)	SRB	Speed in m/min			
		20		40	
A		Drum Type			
50	265	HGN3/700/1.8S	HGN3/700/3.5S	HGN3/700/7S	HGN3/700/7S
90	265	HGN4/800/3.5S	HGN4/800/5S	HGN4/800/7S	HGN4/800/7S
130	265	HGN4/1200/5S	HGN4/1200/7S	HGN4/1200/7S	HGN4/1200/7S
180	265	HGN4/1800/7S	HGN4/1800/7S	HGN4/1800/7S	HGN4/1800/8S



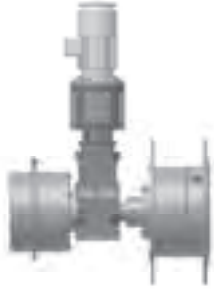
3 x 120 + 3 x 70/3 mm ² Cordaflex SM-K, Ø 55 mm, 6.63 kg/m Weigth, F tensile max. 10080 N					
l (m)	SRB	Speed in m/min			
		20		40	
A		Drum Type			
70	500	HGN4/800/5S	HGN4/800/7S	HGN4/800/7S	HGN4/800/8S
125	500	HGN4/1600/7S	HGN4/1600/7S	HGN4/1600/7S	HGN4/1600/8S
150	500	HGN5/2000/7S	HGN5/2000/7S	HGN5/2000/7S	HGN5/2000/8S

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Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height max 1.5 m, without Deflection, Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² Trommelflex PUR-HF, Ø 12.3 mm, 0.21 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	36	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
55	36	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
100	36	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
170	36	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 4 mm ² Trommelflex PUR-HF, Ø 13.6 mm, 0.28 kg/m Weigth, F tensile max. 1800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	42	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
55	42	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
90	42	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
150	42	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 6 mm ² Trommelflex PUR-HF, Ø 14.9 mm, 0.37 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	60	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
85	60	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
135	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 10 mm ² Trommelflex PUR-HF, Ø 18.9 mm, 0.61 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
70	60	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
110	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
105	60	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S



4 x 16 mm ² Trommelflex PUR-HF, Ø 22.1 mm, 0.92 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
60	150	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
95	150	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
140	150	HGN2/701/1.8S	HGN2/701/1.8S	HGN2/701/3.5S	HGN2/701/3.5S
180	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/3.5S	HGN2/800/5S

4 x 25 mm ² Trommelflex PUR-HF, Ø 25.5 mm, 1.27 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S
85	150	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S
125	150	HGN2/701/1.8S	HGN2/701/1.8S	HGN2/701/3.5S	HGN2/701/3.5S
150	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/3.5S	HGN2/800/5S
220	150	HGN2/1200/3.5S	HGN2/1200/3.5S	HGN2/1200/3.5S	HGN2/1200/7S

4 x 35 mm ² Trommelflex PUR-HF, Ø 30 mm, 1.78 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S	HGN2/421/1.8S
60	150	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/3.5S
105	150	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S	HGN2/700/5S
160	150	HGN2/1000/1.8S	HGN2/1000/3.5S	HGN2/1000/5S	HGN2/1000/7S

Drawing No. 07-400-00-000, 07-402-00-000, 07-403-00-000, 07-405-00-000, 07-407-00-000, 07-409-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Cylindrical Coiling, Mounting Height max 1.5 m, without Deflection, Acceleration 0.2m/s², Drum on Mobile Device



4 x 2.5 mm ² NSHTÖU-J Trommelflex, Ø 17.2 mm, 0.36 kg/m Weigth, F tensile max. 150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	36	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
35	36	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
75	36	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
120	36	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 4 mm ² NSHTÖU-J Trommelflex, Ø 19.1 mm, 0.55 kg/m Weigth, F tensile max. 240 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	42	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S	HGN1/221/1.8S
45	42	HGN1/301/1.8S	HGN1/301/1.8S	HGN1/301/1.8S	HGN1/301/1.8S
65	42	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
110	42	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S

4 x 6 mm ² NSHTÖU-J Trommelflex, Ø 20.4 mm, 0.6 kg/m Weigth, F tensile max. 360 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	60	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S	HGN1/300/1.8S
45	60	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
100	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
150	60	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/5S

4 x 10 mm ² NSHTÖU-J Trommelflex, Ø 25.7 mm, 0.98 kg/m Weigth, F tensile max. 600 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	60	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S	HGN1/420/1.8S
80	60	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S	HGN1/530/1.8S
115	60	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S
150	60	HGN2/800/1.8S	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/3.5S

4 x 16 mm ² NSHTÖU-J Trommelflex, Ø 30 mm, 1.38 kg/m Weigth, F tensile max. 960 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	150	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S	HGN1/421/1.8S
70	150	HGN1/531/1.8S	HGN1/531/1.8S	HGN1/531/1.8S	HGN1/531/3.5S
105	150	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S
160	150	HGN2/1000/1.8S	HGN2/1000/3.5S	HGN2/1000/3.5S	HGN2/1000/5S



4 x 25 mm ² NSHTÖU-J Trommelflex, Ø 35.7 mm, 2.02 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	150	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/1.8S	HGN2/530/3.5S
90	150	HGN2/700/1.8S	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/5S
110	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/5S	HGN2/800/7S
160	150	HGN2/1200/3.5S	HGN2/1200/3.5S	HGN2/1200/5S	HGN2/1200/7S

Drawing No. 07-400-00-000, 07-402-00-000, 07-403-00-000, 07-405-00-000, 07-407-00-000, 07-409-00-000



Motor Driven Cable Reeling Drums with Bevel Gearbox, Magnetic Coupling, Type HGN

Horizontal Payout, Spiral Coiling, Mounting Height max 1.5 m, without Deflection,
Acceleration 0.2m/s², Drum on Mobile Device



4 x 35 mm ² NSHTOU-J Trommelflex, Ø 38.6 mm, 2.57 kg/m Weigth, F tensile max. 2100 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	150	HGN2/531/1.8S	HGN2/531/1.8S	HGN2/531/3.5S	HGN2/531/3.5S
55	150	HGN2/700/1.8S	HGN2/700/3.5S	HGN2/700/3.5S	HGN2/700/5S
100	150	HGN2/800/1.8S	HGN2/800/3.5S	HGN2/800/5S	HGN2/800/7S
145	150	HGN2/1200/3.5S	HGN2/1200/5S	HGN2/1200/5S	HGN2/1200/7S

4 x 50 mm ² NSHTOU-J Trommelflex, Ø 46 mm, 3.6 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	220	HGN3/700/1.8S	HGN3/700/3.5S	HGN3/700/3.5S	HGN3/700/7S
90	220	HGN3/800/1.8S	HGN3/800/3.5S	HGN3/800/7S	HGN3/700/7S
130	220	HGN4/1200/5S	HGN4/1200/5S	HGN4/1200/7S	HGN4/1200/7S
165	220	HGN4/1600/5S	HGN4/1600/5S	HGN4/1600/7S	HGN4/1600/7S

4 x 70 mm ² NSHTOU-J Trommelflex, Ø 49.7 mm, 4.65 kg/m Weigth, F tensile max. 4200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	220	HGN3/700/1.8S	HGN3/700/3.5S	HGN3/700/5S	HGN3/700/7S
80	220	HGN3/800/3.5S	HGN3/800/5S	HGN3/800/7S	HGN3/800/7S
115	220	HGN4/1200/3.5S	HGN4/1200/5S	HGN4/1200/7S	HGN4/1200/7S
160	220	HGN4/1800/7S	HGN4/1800/7S	HGN4/1800/7S	HGN4/1800/8S

4 x 95 mm ² NSHTOU-J Trommelflex, Ø 60.6 mm, 6.1 kg/m Weigth, F tensile max. 5700 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
60	265	HGN3/800/3.5S	HGN3/800/5S	HGN3/800/7S	HGN3/800/7S
90	265	HGN4/1200/5S	HGN4/1200/7S	HGN4/1200/7S	HGN4/1200/7S
120	265	HGN4/1600/7S	HGN4/1600/7S	HGN4/1600/7S	HGN4/1600/8S
155	265	HGN5/2000/7S	HGN5/2000/7S	HGN5/2000/7S	HGN5/2000/8S

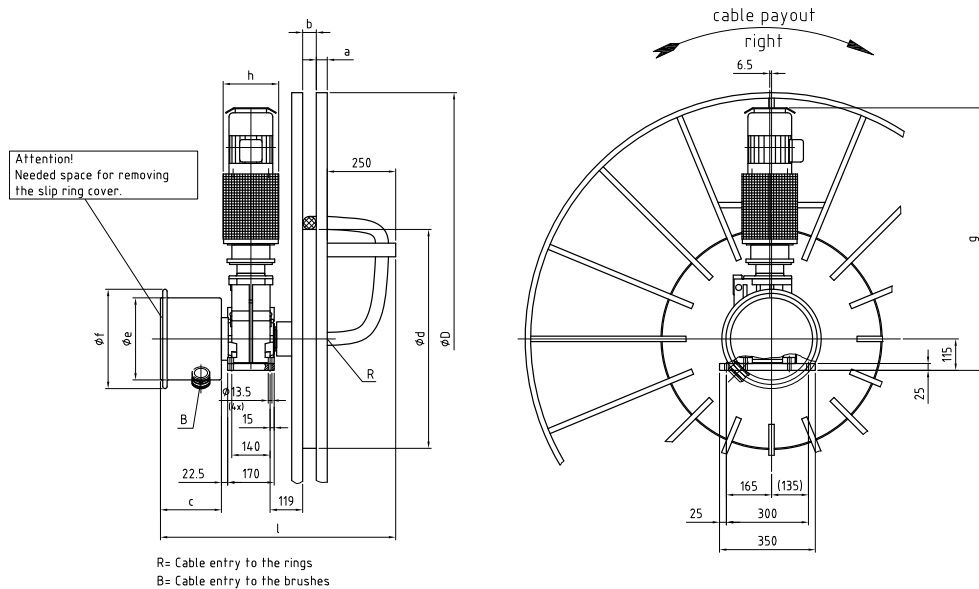


4 x 120 mm ² NSHTOU-J Trommelflex, Ø 63.5 mm, 7.7 kg/m Weigth, F tensile max. 7200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
60	500	HGN4/800/3.5S	HGN4/800/7S	HGN4/800/7S	HGN4/800/8S
90	500	HGN4/1400/7S	HGN4/1400/7S	HGN4/1400/7S	HGN4/1400/8S
125	500	HGN5/2000/7S	HGN5/2000/7S	HGN5/2000/8S	HGN5/2000/8S

Drawing No. 07-400-00-000, 07-402-00-000, 07-403-00-000, 07-405-00-000, 07-407-00-000, 07-409-00-000

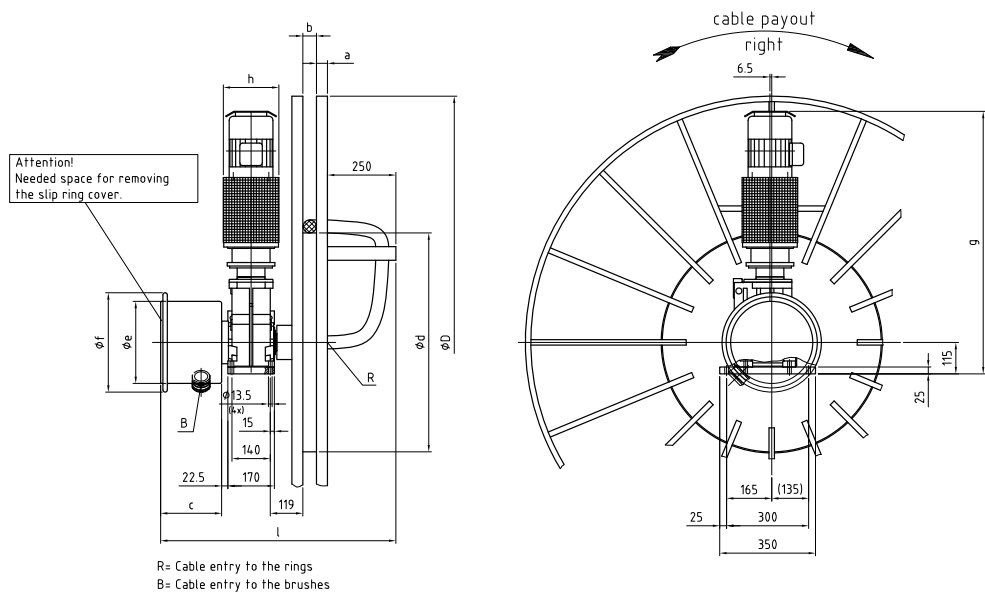
Drawing HGN Series, Spiral Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN1/4/10/1.8S	07-401-00-000	36	400	1000	121.5	Cable Diameter +5%	40	145	12.5	120	11	290	20
HGN1/5/12/1.8S	07-401-00-000	36	500	1200	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/1.8S	07-401-00-000	36	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/6/18/1.8S	07-401-00-000	36	600	1800	121.5		40	145	12.5	120	11	290	20
HGN1/6/18/3.5S	07-401-00-000	36	600	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/1.8S	07-401-00-000	36	800	1800	121.5		40	145	12.5	120	11	290	20
HGN2/8/20/1.8S	07-404-00-000	36	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/3.5S	07-404-00-000	36	800	2000	130		50	170	15	140	13.5	350	25
HGN1/4/10/1.8S	07-401-00-000	42	400	1000	121.5		40	145	12.5	120	11	290	20
HGN1/5/12/1.8S	07-401-00-000	42	500	1200	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/1.8S	07-401-00-000	42	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/6/18/1.8S	07-401-00-000	42	600	1800	121.5		40	145	12.5	120	11	290	20
HGN1/6/18/3.5S	07-401-00-000	42	600	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/1.8S	07-401-00-000	42	800	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/3.5S	07-401-00-000	42	800	1800	121.5		40	145	12.5	120	11	290	20
HGN2/10/25/1.8S	07-404-00-000	42	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/3.5S	07-404-00-000	42	1000	2500	130		60	170	15	140	13.5	350	25
HGN1/4/10/1.8S	07-401-00-000	60	400	1000	121.5		40	145	12.5	120	11	290	20
HGN1/4/10/3.5S	07-401-00-000	60	400	1000	121.5		40	145	12.5	120	11	290	20
HGN1/5/12/1.8S	07-401-00-000	60	500	1200	121.5		40	145	12.5	120	11	290	20
HGN1/5/12/3.5S	07-401-00-000	60	500	1200	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/1.8S	07-401-00-000	60	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/3.5S	07-401-00-000	60	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/1.8S	07-401-00-000	60	800	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/3.5S	07-401-00-000	60	800	1800	121.5		40	145	12.5	120	11	290	20
HGN2/8/20/1.8S	07-404-00-000	60	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/3.5S	07-404-00-000	60	800	2000	130		50	170	15	140	13.5	350	25
HGN2/10/25/1.8S	07-404-00-000	60	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/3.5S	07-404-00-000	60	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/5S	07-404-00-000	60	1000	2500	130		60	170	15	140	13.5	350	25
HGN1/5/12/1.8S	07-401-00-000	150	500	1200	121.5		40	145	12.5	120	11	290	20
HGN1/5/12/3.5S	07-401-00-000	150	500	1200	121.5		40	145	12.5	120	11	290	20



Drawing HGN Series, Spiral Coiling

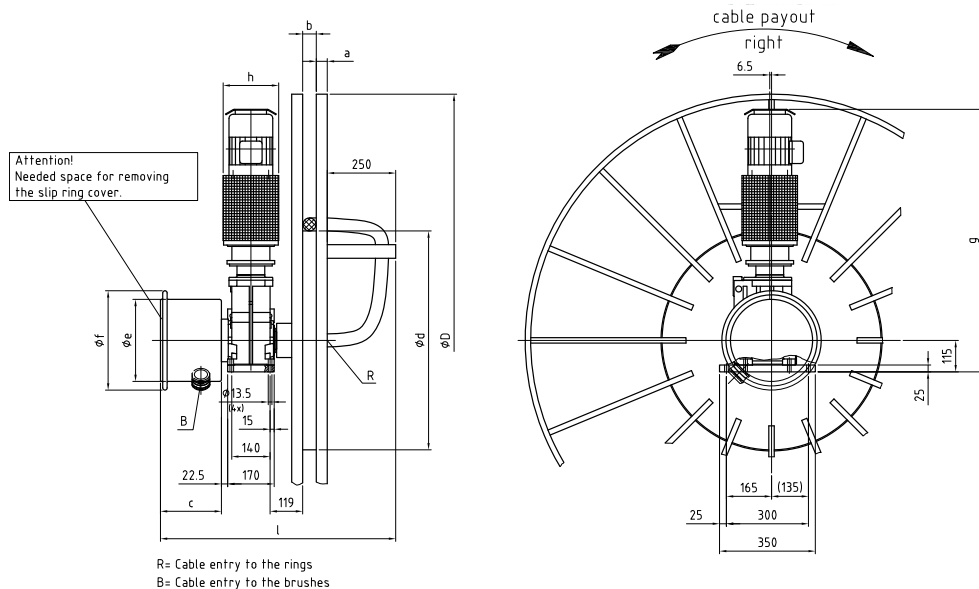
Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN1/4/10/1.8S	07-401-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/5/12/1.8S	07-401-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/15/1.8S	07-401-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/18/1.8S	07-401-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/18/3.5S	07-401-00-000	36	250	135	25	96	977	11	205	20.5	215	300	365
HGN1/8/18/1.8S	07-401-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN2/8/20/1.8S	07-404-00-000	36	300	165	25	115	935	6.5	205	20.5	225	300	365
HGN2/8/20/3.5S	07-404-00-000	36	300	165	25	115	1025	6.5	205	20.5	225	300	365
HGN1/4/10/1.8S	07-401-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/5/12/1.8S	07-401-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/15/1.8S	07-401-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/18/1.8S	07-401-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/18/3.5S	07-401-00-000	42	250	135	25	96	977	11	205	20.5	215	300	365
HGN1/8/18/1.8S	07-401-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/8/18/3.5S	07-401-00-000	42	250	135	25	96	977	11	205	20.5	215	300	365
HGN2/10/25/1.8S	07-404-00-000	42	300	165	25	115	935	6.5	205	20.5	225	300	365
HGN2/10/25/3.5S	07-404-00-000	42	300	165	25	115	1025	6.5	205	20.5	225	300	365
HGN1/4/10/1.8S	07-401-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/4/10/3.5S	07-401-00-000	60	250	135	25	96	977	11	205	20.5	215	300	365
HGN1/5/12/1.8S	07-401-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/5/12/3.5S	07-401-00-000	60	250	135	25	96	977	11	205	20.5	215	300	365
HGN1/6/15/1.8S	07-401-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/6/15/3.5S	07-401-00-000	60	250	135	25	96	977	11	205	20.5	215	300	365
HGN1/8/18/1.8S	07-401-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/8/18/3.5S	07-401-00-000	60	250	135	25	96	977	11	205	20.5	215	300	365
HGN2/8/20/1.8S	07-404-00-000	60	300	165	25	115	935	6.5	205	20.5	225	300	365
HGN2/8/20/3.5S	07-404-00-000	60	300	165	25	115	1025	6.5	205	20.5	225	300	365
HGN2/10/25/1.8S	07-404-00-000	60	300	165	25	115	935	6.5	205	20.5	225	300	365
HGN2/10/25/3.5S	07-404-00-000	60	300	165	25	115	1025	6.5	205	20.5	225	300	365
HGN2/10/25/5S	07-404-00-000	60	300	165	25	115	1053	6.5	250	20.5	225	300	365
HGN1/5/12/1.8S	07-401-00-000	150	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/5/12/3.5S	07-401-00-000	150	250	135	25	96	977	11	205	20.5	215	300	365



Technical progress reserved.

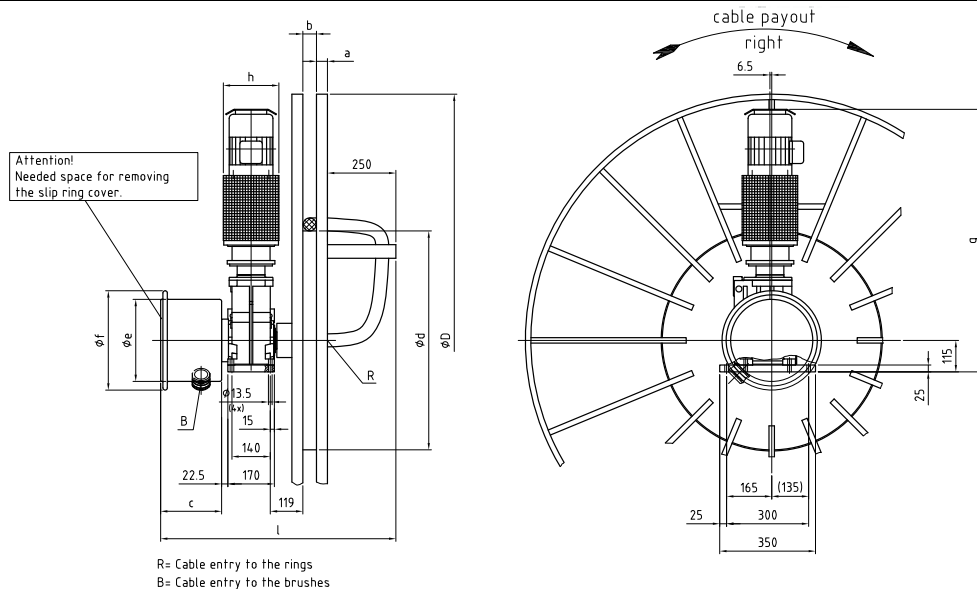
Drawing HGN Series, Spiral Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN1/5/12/5S	07-401-00-000	150	500	1200	121.5	Cable Diameter +5%	40	145	12.5	120	11	290	20
HGN1/6/15/1.8S	07-401-00-000	150	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/3.5S	07-401-00-000	150	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/6/15/5S	07-401-00-000	150	600	1500	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/1.8S	07-401-00-000	150	800	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/3.5S	07-401-00-000	150	800	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/5S	07-401-00-000	150	800	1800	121.5		40	145	12.5	120	11	290	20
HGN1/8/18/7S	07-401-00-000	150	800	1800	121.5		40	145	12.5	120	11	290	20
HGN2/5/12/1.8S	07-404-00-000	150	500	1200	130		40	170	15	140	13.5	350	25
HGN2/5/12/3.5S	07-404-00-000	150	500	1200	130		40	170	15	140	13.5	350	25
HGN2/5/12/5S	07-404-00-000	150	500	1200	130		40	170	15	140	13.5	350	25
HGN2/5/15/1.8S	07-404-00-000	150	500	1500	130		40	170	15	140	13.5	350	25
HGN2/5/15/3.5S	07-404-00-000	150	500	1500	130		40	170	15	140	13.5	350	25
HGN2/5/15/5S	07-404-00-000	150	500	1500	130		40	170	15	140	13.5	350	25
HGN2/6/15/1.8S	07-404-00-000	150	600	1500	130		40	170	15	140	13.5	350	25
HGN2/6/15/3.5S	07-404-00-000	150	600	1500	130		40	170	15	140	13.5	350	25
HGN2/6/15/7S	07-404-00-000	150	600	1500	130		40	170	15	140	13.5	350	25
HGN2/8/20/1.8S	07-404-00-000	150	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/3.5S	07-404-00-000	150	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/5S	07-404-00-000	150	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/7S	07-404-00-000	150	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/78S	07-404-00-000	150	800	2000	130		50	170	15	140	13.5	350	25
HGN2/10/25/1.8S	07-404-00-000	150	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/3.5S	07-404-00-000	150	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/5S	07-404-00-000	150	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/7S	07-404-00-000	150	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/78S	07-404-00-000	150	1000	2500	130		60	170	15	140	13.5	350	25
HGN3/12/30/3.5S	07-406-00-000	150	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/5S	07-406-00-000	150	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/7S	07-406-00-000	150	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/78S	07-406-00-000	150	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN4/15/35/7S	07-408-00-000	150	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/78S	07-408-00-000	150	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/8S	07-408-00-000	150	1500	3500	200	80	230	25	180	22	503	35	



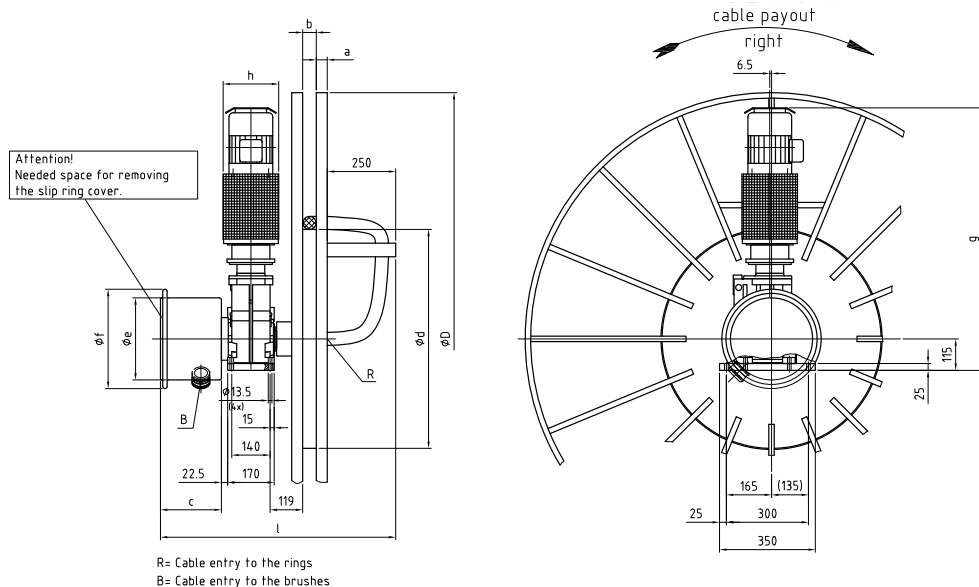
Drawing HGN Series, Spiral Coiling

Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN1/5/12/5S	07-401-00-000	150	250	135	25	96	1005	11	205	20.5	220	370	445
HGN1/6/15/1.8S	07-401-00-000	150	250	135	25	96	887	11	205	20.5	220	370	445
HGN1/6/15/3.5S	07-401-00-000	150	250	135	25	96	977	11	205	20.5	220	370	445
HGN1/6/15/5S	07-401-00-000	150	250	135	25	96	1005	11	205	20.5	220	370	445
HGN1/8/18/1.8S	07-401-00-000	150	250	135	25	96	887	11	205	20.5	220	370	445
HGN1/8/18/3.5S	07-401-00-000	150	250	135	25	96	977	11	205	20.5	220	370	445
HGN1/8/18/5S	07-401-00-000	150	250	135	25	96	1005	11	250	20.5	220	370	445
HGN1/8/18/7S	07-401-00-000	150	250	135	25	96	1005	11	250	20.5	220	370	445
HGN2/5/12/1.8S	07-404-00-000	150	300	165	25	115	935	6.5	205	20.5	270	370	445
HGN2/5/12/3.5S	07-404-00-000	150	300	165	25	115	1025	6.5	205	20.5	270	370	445
HGN2/5/12/5S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/5/15/1.8S	07-404-00-000	150	300	165	25	115	935	6.5	205	20.5	270	370	445
HGN2/5/15/3.5S	07-404-00-000	150	300	165	25	115	1025	6.5	205	20.5	270	370	445
HGN2/5/15/5S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/6/15/1.8S	07-404-00-000	150	300	165	25	115	935	6.5	205	20.5	270	370	445
HGN2/6/15/3.5S	07-404-00-000	150	300	165	25	115	1025	6.5	205	20.5	270	370	445
HGN2/6/15/7S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/8/20/1.8S	07-404-00-000	150	300	165	25	115	935	6.5	205	20.5	270	370	445
HGN2/8/20/3.5S	07-404-00-000	150	300	165	25	115	1025	6.5	205	20.5	270	370	445
HGN2/8/20/5S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/8/20/7S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/8/20/78S	07-404-00-000	150	300	165	25	115	1132	6.5	250	20.5	270	370	445
HGN2/10/25/1.8S	07-404-00-000	150	300	165	25	115	935	6.5	205	20.5	270	370	445
HGN2/10/25/3.5S	07-404-00-000	150	300	165	25	115	1025	6.5	205	20.5	270	370	445
HGN2/10/25/5S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/10/25/7S	07-404-00-000	150	300	165	25	115	1053	6.5	250	20.5	270	370	445
HGN2/10/25/78S	07-404-00-000	150	300	165	25	115	1132	6.5	250	20.5	270	370	445
HGN3/12/30/3.5S	07-406-00-000	150	360	205	30	142	1088	20	205	20.5	270	370	445
HGN3/12/30/5S	07-406-00-000	150	360	205	30	142	1116	20	250	20.5	270	370	445
HGN3/12/30/7S	07-406-00-000	150	360	205	30	142	1116	20	250	20.5	270	370	445
HGN3/12/30/78S	07-406-00-000	150	360	205	30	142	1195	20	250		270	370	445
HGN4/15/35/7S	07-408-00-000	150	433	242	30	162	1184	13	250	21	320	370	445
HGN4/15/35/78S	07-408-00-000	150	433	242	30	162	1264	13	250	21	320	370	445
HGN4/15/35/8S	07-408-00-000	150	433	242	30	162	1300	13	332	21	320	370	445



Drawing HGN Series, Spiral Coiling

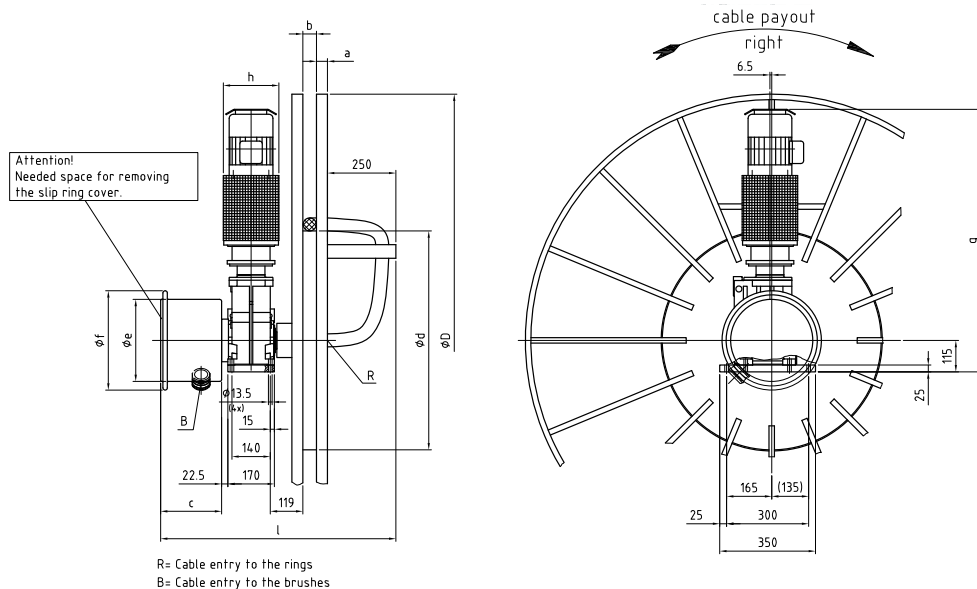
Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN2/6/15/1.8S	07-404-00-000	220	600	1500	130	Cable Diameter +5%	40	170	15	140	13.5	350	25
HGN2/6/15/3.5S	07-404-00-000	220	600	1500	130		40	170	15	140	13.5	350	25
HGN2/6/15/7S	07-404-00-000	220	600	1500	130		40	170	15	140	13.5	350	25
HGN2/6/15/78S	07-404-00-000	220	600	1500	130		40	170	15	140	13.5	350	25
HGN2/8/20/3.5S	07-404-00-000	220	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/5S	07-404-00-000	220	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/7S	07-404-00-000	220	800	2000	130		50	170	15	140	13.5	350	25
HGN2/8/20/78S	07-404-00-000	220	800	2000	130		50	170	15	140	13.5	350	25
HGN2/10/25/3.5S	07-404-00-000	220	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/5S	07-404-00-000	220	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/10/25/78S	07-404-00-000	220	1000	2500	130		60	170	15	140	13.5	350	25
HGN2/12/25/5S	07-404-00-000	220	1200	2500	130		60	170	15	140	13.5	350	25
HGN2/12/25/7S	07-404-00-000	220	1200	2500	130		60	170	15	140	13.5	350	25
HGN2/12/25/78S	07-404-00-000	220	1200	2500	130		60	170	15	140	13.5	350	25
HGN3/8/20/8S	07-406-00-000	220	800	2000	151.5		50	200	17.5	165	18	415	27.5
HGN3/10/20/3.5S	07-406-00-000	220	1000	2000	151.5		50	200	17.5	165	18	415	27.5
HGN3/10/20/5S	07-406-00-000	220	1000	2000	151.5		50	200	17.5	165	18	415	27.5
HGN3/10/20/7S	07-406-00-000	220	1000	2000	151.5		50	200	17.5	165	18	415	27.5
HGN3/10/20/78S	07-406-00-000	220	1000	2000	151.5		50	200	17.5	165	18	415	27.5
HGN3/10/25/5S	07-406-00-000	220	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/7S	07-406-00-000	220	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/78S	07-406-00-000	220	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/8S	07-406-00-000	220	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/12/30/5S	07-406-00-000	220	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/7S	07-406-00-000	220	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/78S	07-406-00-000	220	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/8S	07-406-00-000	220	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/15/35/7S	07-406-00-000	220	1500	3500	181.5		80	200	17.5	165	18	415	27.5
HGN3/15/35/78S	07-406-00-000	220	1500	3500	181.5		80	200	17.5	165	18	415	27.5
HGN3/15/35/8S	07-406-00-000	220	1500	3500	181.5		80	200	17.5	165	18	415	27.5
HGN4/15/35/7S	07-406-00-000	220	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/78S	07-408-00-000	220	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/8S	07-408-00-000	220	1500	3500	200	80	230	25	180	22	503	35	
HGN4/15/35/88S	07-408-00-000	220	1500	3500	200	80	230	25	180	22	503	35	



Technical progress reserved.

Drawing HGN Series, Spiral Coiling

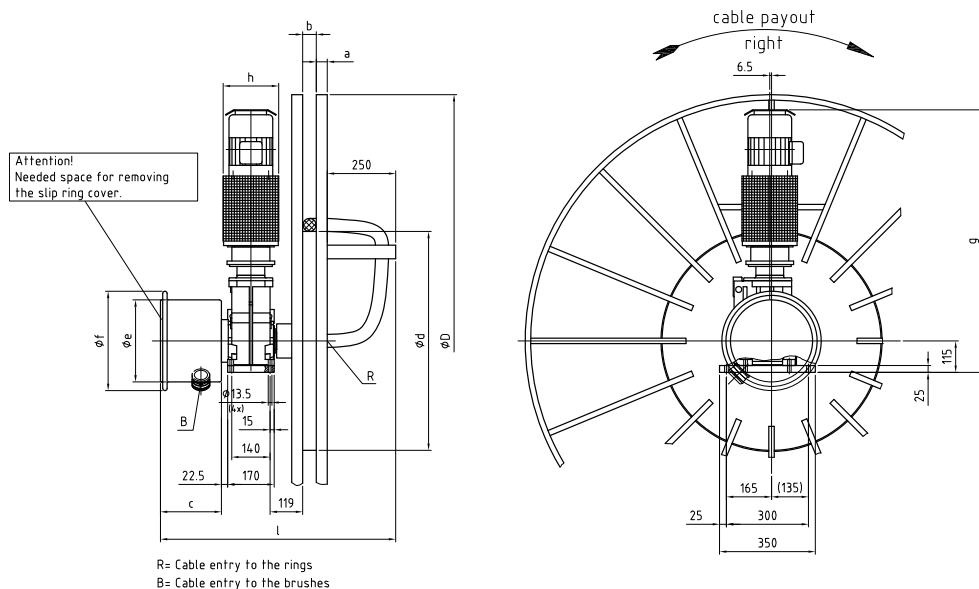
Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN2/6/15/1.8S	07-404-00-000	220	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/6/15/3.5S	07-404-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/6/15/7S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/6/15/78S	07-404-00-000	220	300	165	25	115	1132	6.5	250	22.5	270	370	445
HGN2/8/20/3.5S	07-404-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/8/20/5S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/8/20/7S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/8/20/78S	07-404-00-000	220	300	165	25	115	1132	6.5	250	22.5	270	370	445
HGN2/10/25/3.5S	07-404-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/10/25/5S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/10/25/78S	07-404-00-000	220	300	165	25	115	1132	6.5	250	22.5	270	370	445
HGN2/12/25/5S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/12/25/7S	07-404-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/12/25/78S	07-404-00-000	220	300	165	25	115	1132	6.5	250	22.5	270	370	445
HGN3/8/20/8S	07-406-00-000	220	360	205	30	142	1221	20	332	21.5	270	370	445
HGN3/10/20/3.5S	07-406-00-000	220	360	205	30	142	1088	20	205	21.5	270	370	445
HGN3/10/20/5S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/10/20/7S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/10/20/78S	07-406-00-000	220	360	205	30	142	1195	20	250	21.5	270	370	445
HGN3/10/25/5S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/10/25/7S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/10/25/78S	07-406-00-000	220	360	205	30	142	1195	20	250	21.5	270	370	445
HGN3/10/25/8S	07-406-00-000	220	360	205	30	142	1221	20	332	21.5	270	370	445
HGN3/12/30/5S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/12/30/7S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/12/30/78S	07-406-00-000	220	360	205	30	142	1195	20	250	21.5	270	370	445
HGN3/12/30/8S	07-406-00-000	220	360	205	30	142	1221	20	332	21.5	270	370	445
HGN3/15/35/7S	07-406-00-000	220	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/15/35/78S	07-406-00-000	220	360	205	30	142	1195	20	250	21.5	270	370	445
HGN3/15/35/8S	07-406-00-000	220	360	205	30	142	1221	20	332	21.5	270	370	445
HGN4/15/35/7S	07-406-00-000	220	433	242	30	162	1184	13	250	21	320	370	445
HGN4/15/35/78S	07-408-00-000	220	433	242	30	162	1264	13	250	21	320	370	445
HGN4/15/35/8S	07-408-00-000	220	433	242	30	162	1300	13	332	21	320	370	445
HGN4/15/35/88S	07-408-00-000	220	433	242	30	162	1421	13	332	21	320	370	445



Technical progress reserved.

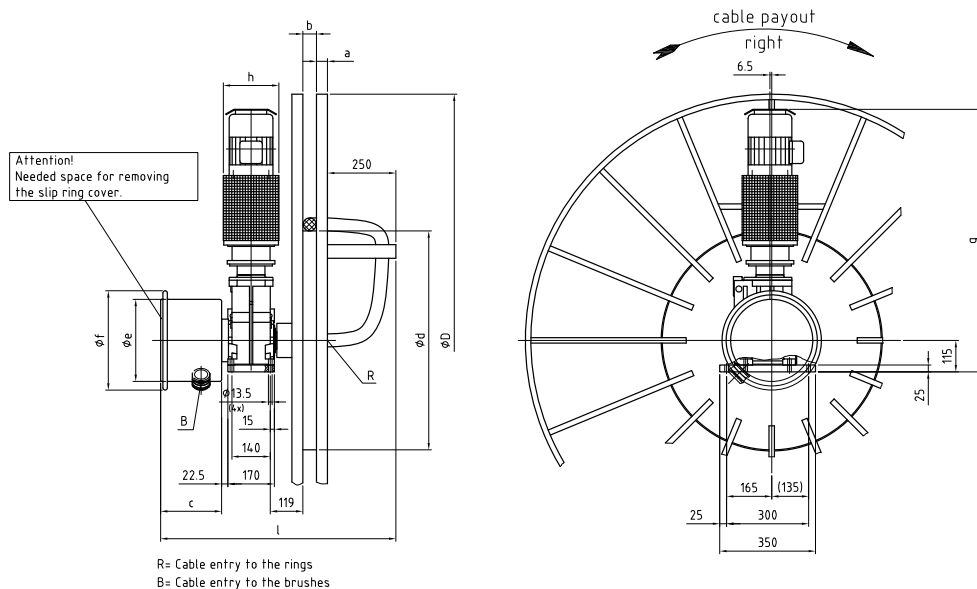
Drawing HGN Series, Spiral Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN4/15/40/78S	07-408-00-000	220	1500	4000	200	Cable Diameter +5%	100	230	25	180	22	503	35
HGN4/15/40/8S	07-408-00-000	220	1500	4000	200		100	230	25	180	22	503	35
HGN4/15/40/88S	07-408-00-000	220	1500	4000	200		100	230	25	180	22	503	35
HGN5/20/50/8S	07-410-00-000	220	2000	5000	172		100	290	25	240	26	575	40
HGN5/20/50/88S	07-410-00-000	220	2000	5000	172		100	290	25	240	26	575	40
HGN3/10/25/7S	07-406-00-000	265	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/78S	07-406-00-000	265	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/8S	07-406-00-000	265	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/10/25/88S	07-406-00-000	265	1000	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/12/30/78S	07-406-00-000	265	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/8S	07-406-00-000	265	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/88S	07-406-00-000	265	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN4/15/35/78S	07-408-00-000	265	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/8S	07-408-00-000	265	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/88S	07-408-00-000	265	1500	3500	200		80	230	25	180	22	503	35
HGN5/15/40/8S	07-410-00-000	265	1500	4000	172		100	290	25	240	26	575	40
HGN5/15/40/88S	07-410-00-000	265	1500	4000	172		100	290	25	240	26	575	40
HGN5/18/45/8S	07-410-00-000	265	1800	4500	172		100	290	25	240	26	575	40
HGN5/18/45/88S	07-410-00-000	265	1800	4500	172		100	290	25	240	26	575	40
HGN6/18/50/88S	07-422-00-000	265	1800	5000	200		100	340	35	270	33	700	40
HGN3/12/25/78S	07-406-00-000	500	1200	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/12/25/8S	07-406-00-000	500	1200	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/12/25/88S	07-406-00-000	500	1200	2500	151.5		60	200	17.5	165	18	415	27.5
HGN3/12/30/78S	07-406-00-000	500	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/8S	07-406-00-000	500	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN3/12/30/88S	07-406-00-000	500	1200	3000	181.5		80	200	17.5	165	18	415	27.5
HGN4/12/30/8S	07-408-00-000	500	1200	3000	200		80	230	25	180	22	503	35
HGN4/12/30/88S	07-408-00-000	500	1200	3000	200		80	230	25	180	22	503	35
HGN4/15/35/8S	07-408-00-000	500	1500	3500	200		80	230	25	180	22	503	35
HGN4/15/35/88S	07-408-00-000	500	1500	3500	200		80	230	25	180	22	503	35
HGN5/15/40/8S	07-410-00-000	500	1500	4000	172		100	290	25	240	26	503	40
HGN5/15/40/88S	07-410-00-000	500	1500	4000	172		100	290	25	240	26	503	40
HGN6/18/45/88S	07-422-00-000	500	1800	4500	200		100	340	35	270	33	700	40



Drawing HGN Series, Spiral Coiling

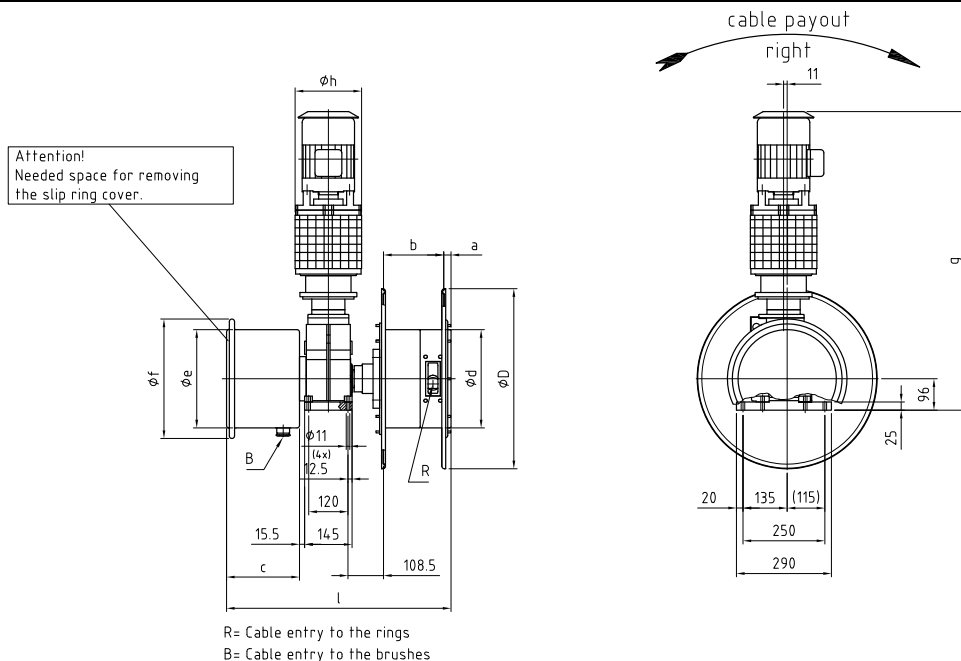
Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN4/15/40/78S	07-408-00-000	220	433	242	30	162	1264	13	250	21	320	370	445
HGN4/15/40/8S	07-408-00-000	220	433	242	30	162	1300	13	332	21	320	370	445
HGN4/15/40/88S	07-408-00-000	220	433	242	30	162	1421	13	332	21	320	370	445
HGN5/20/50/8S	07-410-00-000	220	495	290	40	195	1364	20	332	21	320	370	445
HGN5/20/50/88S	07-410-00-000	220	495	290	40	195	1471	20	332	21	320	370	445
HGN3/10/25/7S	07-406-00-000	265	360	205	30	142	1116	20	250	21.5	310	530	600
HGN3/10/25/78S	07-406-00-000	265	360	205	30	142	1195	20	250	21.5	310	530	600
HGN3/10/25/8S	07-406-00-000	265	360	205	30	142	1221	20	332	21.5	310	530	600
HGN3/10/25/88S	07-406-00-000	265	360	205	30	142	1352	20	332	21.5	310	530	600
HGN3/12/30/78S	07-406-00-000	265	360	205	30	142	1195	20	250	21.5	310	530	600
HGN3/12/30/8S	07-406-00-000	265	360	205	30	142	1221	20	332	21.5	310	530	600
HGN3/12/30/88S	07-406-00-000	265	360	205	30	142	1352	20	332	21.5	310	530	600
HGN4/15/35/78S	07-408-00-000	265	433	242	30	162	1264	13	250	21	360	530	600
HGN4/15/35/8S	07-408-00-000	265	433	242	30	162	1300	13	332	21	360	530	600
HGN4/15/35/88S	07-408-00-000	265	433	242	30	162	1421	13	332	21	360	530	600
HGN5/15/40/8S	07-410-00-000	265	495	290	40	195	1364	20	332	21	365	530	600
HGN5/15/40/88S	07-410-00-000	265	495	290	40	195	1481	20	332	21	365	530	600
HGN5/18/45/8S	07-410-00-000	265	495	290	40	195	1364	20	332	21	365	530	600
HGN5/18/45/88S	07-410-00-000	265	495	290	40	195	1481	20	332	21	365	530	600
HGN6/18/50/88S	07-422-00-000	265	620	350	50	250	1591	37	332	19	365	530	600
HGN3/12/25/78S	07-406-00-000	500	360	205	30	142	1195	20	250	21.5	310	530	600
HGN3/12/25/8S	07-406-00-000	500	360	205	30	142	1221	20	332	21.5	310	530	600
HGN3/12/25/88S	07-406-00-000	500	360	205	30	142	1352	20	332	21.5	310	530	600
HGN3/12/30/78S	07-406-00-000	500	360	205	30	142	1195	20	250	21.5	310	530	600
HGN3/12/30/8S	07-406-00-000	500	360	205	30	142	1221	20	332	21.5	310	530	600
HGN3/12/30/88S	07-406-00-000	500	360	205	30	142	1352	20	332	21.5	310	530	600
HGN4/12/30/8S	07-408-00-000	500	433	242	30	162	1300	13	332	21	360	530	600
HGN4/12/30/88S	07-408-00-000	500	433	242	30	162	1421	13	332	21	360	530	600
HGN4/15/35/8S	07-408-00-000	500	433	242	30	162	1300	13	332	21	360	530	600
HGN4/15/35/88S	07-408-00-000	500	433	242	30	162	1421	13	332	21	360	530	600
HGN5/15/40/8S	07-410-00-000	500	495	290	40	195	1364	20	332	21	365	530	600
HGN5/15/40/88S	07-410-00-000	500	495	290	40	195	1481	20	332	21	365	530	600
HGN6/18/45/88S	07-422-00-000	500	620	350	50	250	1591	37	332	19	365	530	600



Technical progress reserved.

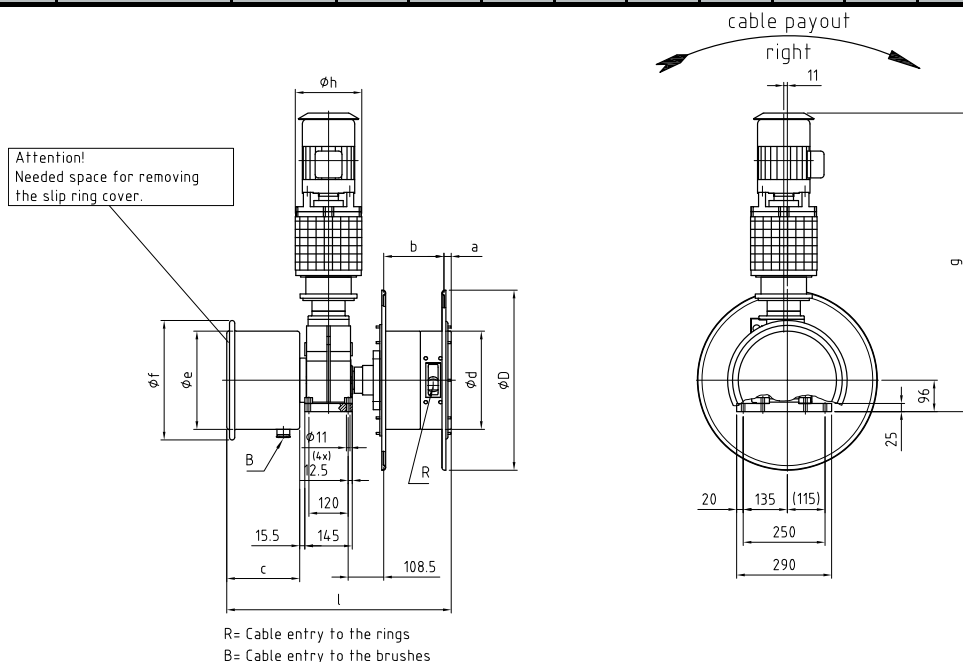
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN1/221/1.8S	07-400-00-000	36	220	450	105.5	150	20	145	12.5	120	11	290	20
HGN1/300/1.8S	07-400-00-000	36	300	550	108	190	25	145	12.5	120	11	290	20
HGN1/301/1.8S	07-400-00-000	36	300	550	108	290	25	145	12.5	120	11	290	20
HGN1/420/1.8S	07-400-00-000	36	420	680	111	240	25	145	12.5	120	11	290	20
HGN1/421/1.8S	07-400-00-000	36	420	770	111	240	25	145	12.5	120	11	290	20
HGN1/530/1.8S	07-400-00-000	36	530	900	109	310	30	145	12.5	120	11	290	20
HGN1/221/1.8S	07-400-00-000	42	220	450	105.5	150	20	145	12.5	120	11	290	20
HGN1/300/1.8S	07-400-00-000	42	300	550	108	190	25	145	12.5	120	11	290	20
HGN1/301/1.8S	07-400-00-000	42	300	550	108	290	25	145	12.5	120	11	290	20
HGN1/421/1.8S	07-400-00-000	42	420	770	111	240	25	145	12.5	120	11	290	20
HGN1/530/1.8S	07-400-00-000	42	530	900	109	310	30	145	12.5	120	11	290	20
HGN1/300/1.8S	07-400-00-000	60	300	550	108	190	25	145	12.5	120	11	290	20
HGN1/420/1.8S	07-400-00-000	60	420	680	111	240	25	145	12.5	120	11	290	20
HGN1/421/1.8S	07-400-00-000	60	420	770	111	240	25	145	12.5	120	11	290	20
HGN1/530/1.8S	07-400-00-000	60	530	900	109	310	30	145	12.5	120	11	290	20
HGN2/700/1.8S	07-402-00-000	60	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/700/3.5S	07-402-00-000	60	700	1200	133	350	15	170	15	140	13.5	350	25
HGN1/421/1.8S	07-400-00-000	150	420	770	111	240	25	145	12.5	120	11	290	20
HGN1/531/1.8S	07-400-00-000	150	530	1000	109	310	30	145	12.5	120	11	290	20
HGN1/531/3.5S	07-400-00-000	150	530	1000	109	310	30	145	12.5	120	11	290	20
HGN2/421/1.8S	07-402-00-000	150	420	770	145	240	25	170	15	140	13.5	350	25
HGN2/421/3.5S	07-402-00-000	150	420	770	145	240	25	170	15	140	13.5	350	25
HGN2/530/1.8S	07-402-00-000	150	530	900	142	310	30	170	15	140	13.5	350	25
HGN2/530/3.5S	07-402-00-000	150	530	900	142	310	30	170	15	140	13.5	350	25
HGN2/700/1.8S	07-402-00-000	150	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/700/3.5S	07-402-00-000	150	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/700/5S	07-402-00-000	150	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/531/1.8S	07-402-00-000	220	530	1000	142	310	30	170	15	140	13.5	350	25
HGN2/531/3.5S	07-402-00-000	220	530	1000	142	310	30	170	15	140	13.5	350	25
HGN2/531/5S	07-402-00-000	220	530	1000	142	310	30	170	15	140	13.5	350	25
HGN2/531/7S	07-402-00-000	220	530	1000	142	310	30	170	15	140	13.5	350	25
HGN2/700/1.8S	07-402-00-000	220	700	1200	133	350	15	170	15	140	13.5	350	25



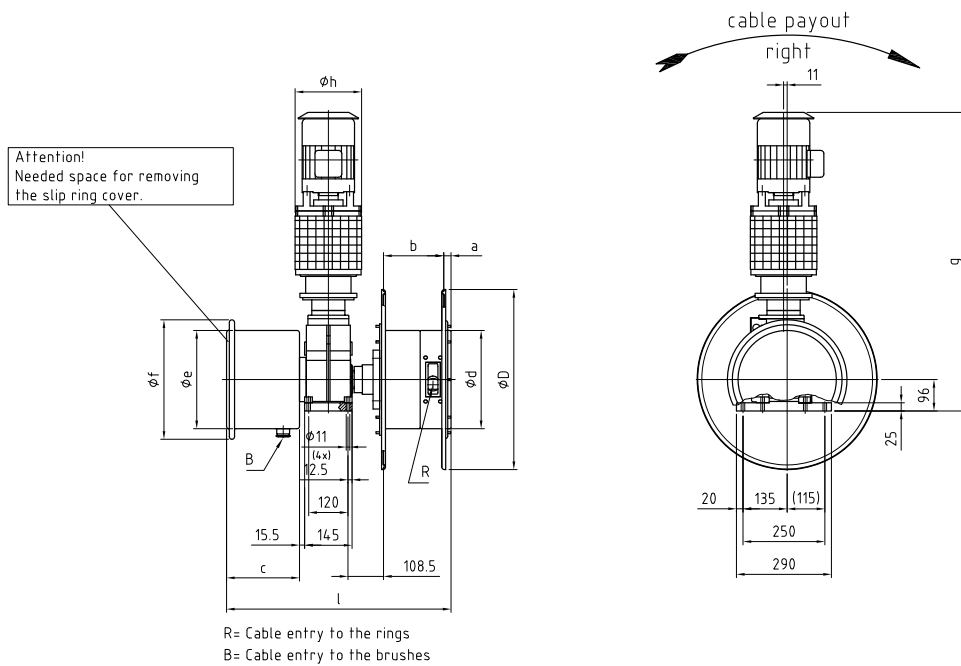
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN1/221/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/300/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/301/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/420/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/421/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/530/1.8S	07-400-00-000	36	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/221/1.8S	07-400-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/300/1.8S	07-400-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/301/1.8S	07-400-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/421/1.8S	07-400-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/530/1.8S	07-400-00-000	42	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/300/1.8S	07-400-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/420/1.8S	07-400-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/421/1.8S	07-400-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN1/530/1.8S	07-400-00-000	60	250	135	25	96	887	11	205	20.5	215	300	365
HGN2/700/1.8S	07-402-00-000	60	300	165	25	115	935	6.5	205	22.5	225	300	365
HGN2/700/3.5S	07-402-00-000	60	300	165	25	115	1025	6.5	205	22.5	225	300	365
HGN1/421/1.8S	07-400-00-000	150	250	135	25	96	887	11	205	20.5	220	370	445
HGN1/531/1.8S	07-400-00-000	150	250	135	25	96	887	11	205	20.5	220	370	445
HGN1/531/3.5S	07-400-00-000	150	250	135	25	96	977	11	205	20.5	220	370	445
HGN2/421/1.8S	07-402-00-000	150	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/421/3.5S	07-402-00-000	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/530/1.8S	07-402-00-000	150	300	165	25	115	935	6.5	205	22.5	270	370	365
HGN2/530/3.5S	07-402-00-000	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/700/1.8S	07-402-00-000	150	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/700/3.5S	07-402-00-000	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/700/5S	07-402-00-000	150	300	165	25	115	1053	6.5	205	22.5	270	370	445
HGN2/531/1.8S	07-402-00-000	220	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/531/3.5S	07-402-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/531/5S	07-402-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/531/7S	07-402-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/700/1.8S	07-402-00-000	220	300	165	25	115	935	6.5	205	22.5	270	370	445



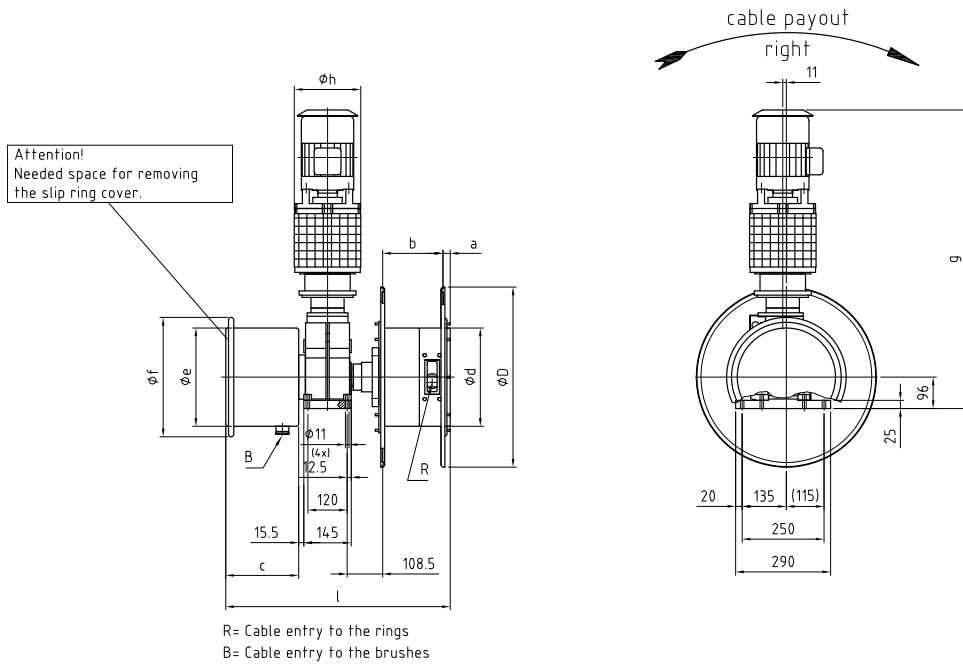
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN2/700/3.5S	07-402-00-000	220	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/700/5S	07-402-00-000	220	700	1200	133	350	15	170	15	140	13.5	350	25
HGN2/700/7S	07-402-00-000	220	700	1200	133	350	15	170	15	140	13.5	350	25
HGN3/700/1.8S	07-433-00-000	265	700	1200	154	350	15	200	17.5	165	18	415	27.5
HGN3/700/3.5S	07-433-00-000	265	700	1200	154	350	15	200	17.5	165	18	415	27.5
HGN3/700/7S	07-433-00-000	265	700	1200	154	350	15	200	17.5	165	18	415	27.5
HGN3/700/78S	07-433-00-000	265	700	1200	154	350	15	200	17.5	165	18	415	27.5



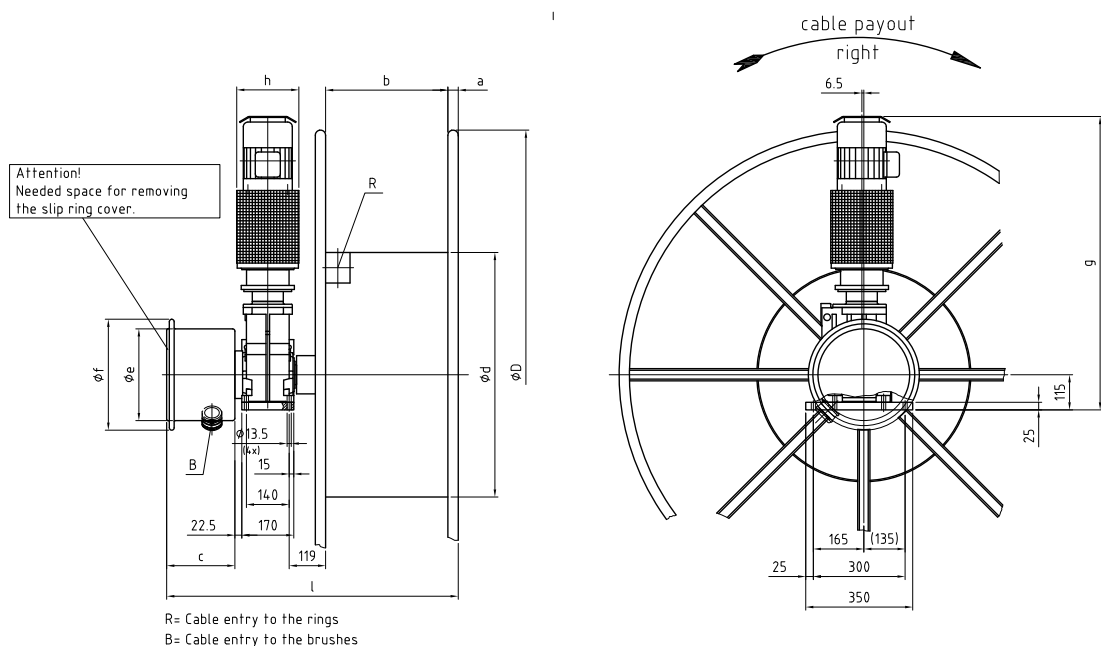
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN2/700/3.5S	07-402-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/700/5S	07-402-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/700/7S	07-402-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN3/700/1.8S	07-433-00-000	265	360	205	30	142	998	20	205	21.5	310	530	600
HGN3/700/3.5S	07-433-00-000	265	360	205	30	142	1088	20	205	21.5	310	530	600
HGN3/700/7S	07-433-00-000	265	360	205	30	142	1116	20	250	21.5	310	530	600
HGN3/700/78S	07-433-00-000	265	360	205	30	142	1195	20	250	21.5	310	530	600



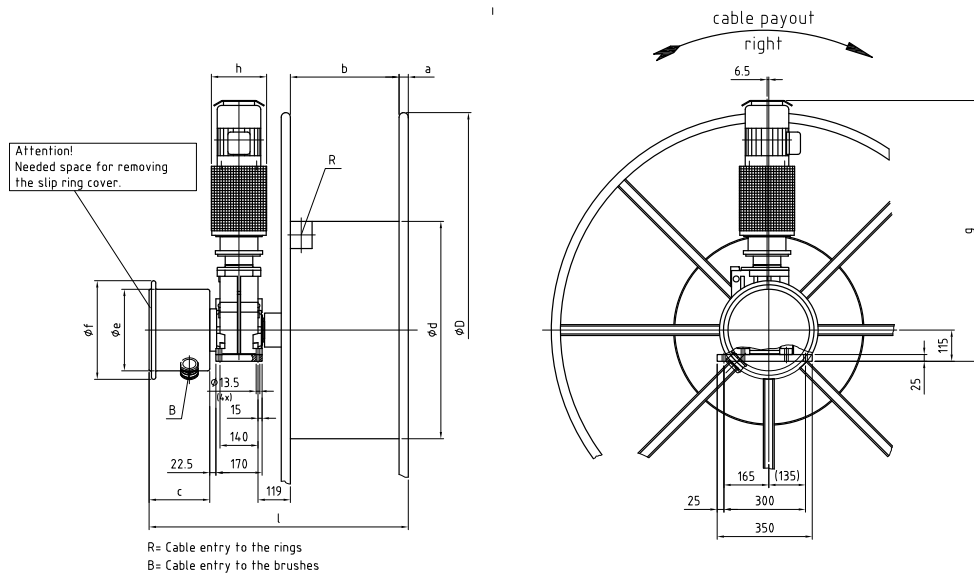
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	k
HGN2/800/1.8	07-403-00-000	60	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/3.5S	07-403-00-000	60	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/1.8S	07-403-00-000	150	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/3.5S	07-403-00-000	150	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/5S	07-403-00-000	150	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/7S	07-403-00-000	150	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/1000/1.8S	07-403-00-001	150	1000	1800	130	400	34	170	15	140	13.5	350	25
HGN2/1000/3.5S	07-403-00-002	150	1000	1800	130	400	34	170	15	140	13.5	350	25
HGN2/1000/7S	07-403-00-003	150	1000	1800	130	400	34	170	15	140	13.5	350	25
HGN2/1200/3.5S	07-403-00-004	150	1200	2000	130	400	34	170	15	140	13.5	350	25
HGN2/1200/5S	07-403-00-005	150	1200	2000	130	400	34	170	15	140	13.5	350	25
HGN2/1200/78S	07-403-00-006	150	1200	2000	130	400	34	170	15	140	13.5	350	25
HGN3/1200/3.5S	07-405-00-000	150	1200	2000	151.5	400	34	200	17.5	165	18	415	27.5
HGN3/1200/7S	07-405-00-000	150	1200	2000	151.5	400	34	200	17.5	165	18	415	27.5
HGN3/1200/78S	07-405-00-000	150	1200	2000	151.5	400	34	200	17.5	165	18	415	27.5
HGN2/800/3.5S	07-403-00-000	220	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/5S	07-403-00-000	220	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/7S	07-403-00-000	220	800	1600	130	400	34	170	15	140	13.5	350	25
HGN2/800/78S	07-403-00-000	220	800	1600	130	400	34	170	15	140	13.5	350	25
HGN4/1600/7S	07-407-00-000	220	1600	2600	160	400	50	230	25	180	22	503	35
HGN4/1600/78S	07-407-00-000	220	1600	2600	160	400	50	230	25	180	22	503	35
HGN4/800/3.5S	07-407-00-000	265	800	1600	160	400	34	230	25	180	22	503	35
HGN4/800/7S	07-407-00-000	265	800	1600	160	400	34	230	25	180	22	503	35
HGN4/800/78S	07-407-00-000	265	800	1600	160	400	34	230	25	180	22	503	35
HGN4/800/8S	07-407-00-000	265	800	1600	160	400	34	230	25	180	22	503	35
HGN4/1200/5S	07-407-00-000	265	1200	2000	160	400	34	230	25	180	22	503	35
HGN4/1200/7S	07-407-00-000	265	1200	2000	160	400	34	230	25	180	22	503	35
HGN4/1200/78S	07-407-00-000	265	1200	2000	160	400	34	230	25	180	22	503	35
HGN4/1200/8S	07-407-00-000	265	1200	2000	160	400	34	230	25	180	22	503	35
HGN4/1800/78S	07-407-00-000	265	1800	2800	160	400	50	230	25	180	22	503	35
HGN4/1800/8S	07-407-00-000	265	1800	2800	160	400	50	230	25	180	22	503	35
HGN4/800/5S	07-407-00-000	500	800	1600	160	400	34	230	25	180	22	503	35



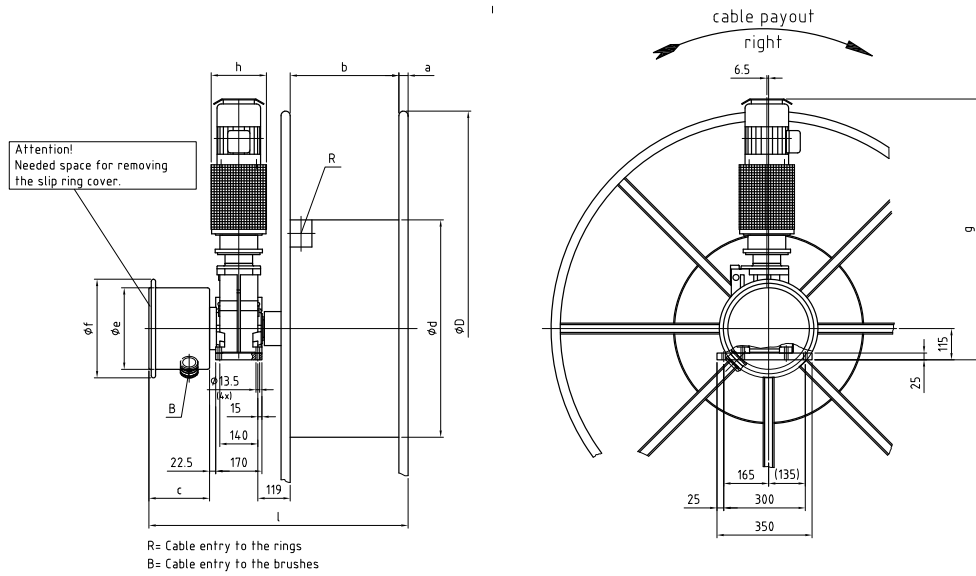
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN2/800/1.8	07-403-00-000	60	300	165	25	115	935	6.5	205	22.5	225	300	365
HGN2/800/3.5S	07-403-00-000	60	300	165	25	115	1025	6.5	205	22.5	225	300	365
HGN2/800/1.8S	07-403-00-000	150	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/800/3.5S	07-403-00-000	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/800/5S	07-403-00-000	150	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/800/7S	07-403-00-000	150	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/1000/1.8S	07-403-00-001	150	300	165	25	115	935	6.5	205	22.5	270	370	445
HGN2/1000/3.5S	07-403-00-002	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/1000/7S	07-403-00-003	150	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/1200/3.5S	07-403-00-004	150	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/1200/5S	07-403-00-005	150	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/1200/7S	07-403-00-006	150	300	165	25	115	1132	6.5	250	22.5	270	370	445
HGN3/1200/3.5S	07-405-00-000	150	360	205	30	142	1088	20	205	21.5	270	370	445
HGN3/1200/7S	07-405-00-000	150	360	205	30	142	1116	20	250	21.5	270	370	445
HGN3/1200/7S	07-405-00-000	150	360	205	30	142	1195	20	250	21.5	270	370	445
HGN2/800/3.5S	07-403-00-000	220	300	165	25	115	1025	6.5	205	22.5	270	370	445
HGN2/800/5S	07-403-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/800/7S	07-403-00-000	220	300	165	25	115	1053	6.5	250	22.5	270	370	445
HGN2/800/7S	07-403-00-000	220	300	165	25	115	1116	6.5	250	22.5	270	370	445
HGN4/1600/7S	07-407-00-000	220	433	242	30	162	1184	13	250	21	320	370	445
HGN4/1600/7S	07-407-00-000	220	433	242	30	162	1264	13	250	21	320	370	445
HGN4/800/3.5S	07-407-00-000	265	433	242	30	162	1212	13	205	21	360	530	445
HGN4/800/7S	07-407-00-000	265	433	242	30	162	1184	13	250	21	360	530	445
HGN4/800/7S	07-407-00-000	265	433	242	30	162	1264	13	250	21	360	530	445
HGN4/800/8S	07-407-00-000	265	433	242	30	162	1300	13	332	21	360	530	445
HGN4/1200/5S	07-407-00-000	265	433	242	30	162	1184	13	250	21	360	530	445
HGN4/1200/7S	07-407-00-000	265	433	242	30	162	1184	13	250	21	360	530	445
HGN4/1200/7S	07-407-00-000	265	433	242	30	162	1264	13	250	21	360	530	445
HGN4/1200/8S	07-407-00-000	265	433	242	30	162	1300	13	332	21	360	530	445
HGN4/1800/7S	07-407-00-000	265	433	242	30	162	1264	13	250	21	360	530	445
HGN4/1800/8S	07-407-00-000	265	433	242	30	162	1300	13	332	21	360	530	445
HGN4/800/5S	07-407-00-000	500	433	242	30	162	1184	13	250	21	360	530	445



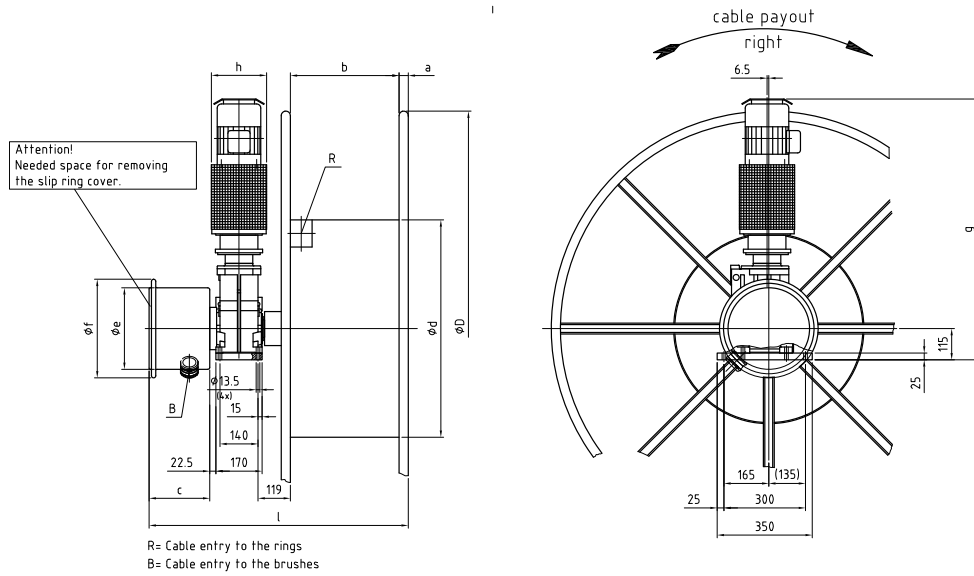
Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	$\varnothing d$	$\varnothing D$	a	b	c	e	f	g	$\varnothing h$	i	k
HGN4/800/7S	07-407-00-000	500	800	1600	160	400	34	230	25	180	22	503	35
HGN4/800/78S	07-407-00-000	500	800	1600	160	400	34	230	25	180	22	503	35
HGN4/800/8S	07-407-00-000	500	800	1600	160	400	34	230	25	180	22	503	35
HGN4/1600/7S	07-407-00-000	500	1600	2600	160	400	50	230	25	180	22	503	35
HGN4/1600/78S	07-407-00-000	500	1600	2600	160	400	50	230	25	180	22	503	35
HGN4/1600/8S	07-407-00-000	500	1600	2600	160	400	50	230	25	180	22	503	35
HGN5/2000/78S	07-409-00-000	500	2000	3000	172	400	50	290	25	240	26	575	40
HGN5/2000/8S	07-409-00-000	500	2000	3000	172	400	50	290	25	240	26	575	40



Drawing HGN Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	l	m	n	o	p	q	ør	s	t	øu	øv
HGN4/800/7S	07-407-00-000	500	433	242	30	162	1184	13	250	21	360	530	445
HGN4/800/78S	07-407-00-000	500	433	242	30	162	1264	13	250	21	360	530	445
HGN4/800/8S	07-407-00-000	500	433	242	30	162	1300	13	332	21	360	530	445
HGN4/1600/7S	07-407-00-000	500	433	242	30	162	1184	13	250	21	360	530	445
HGN4/1600/78S	07-407-00-000	500	433	242	30	162	1264	13	250	21	360	530	445
HGN4/1600/8S	07-407-00-000	500	433	242	30	162	1300	13	332	21	360	530	445
HGN5/2000/78S	07-409-00-000	500	495	290	40	195	1328	20	250	21	365	530	445
HGN5/2000/8S	07-409-00-000	500	495	290	40	195	1364	20	332	21	365	530	445





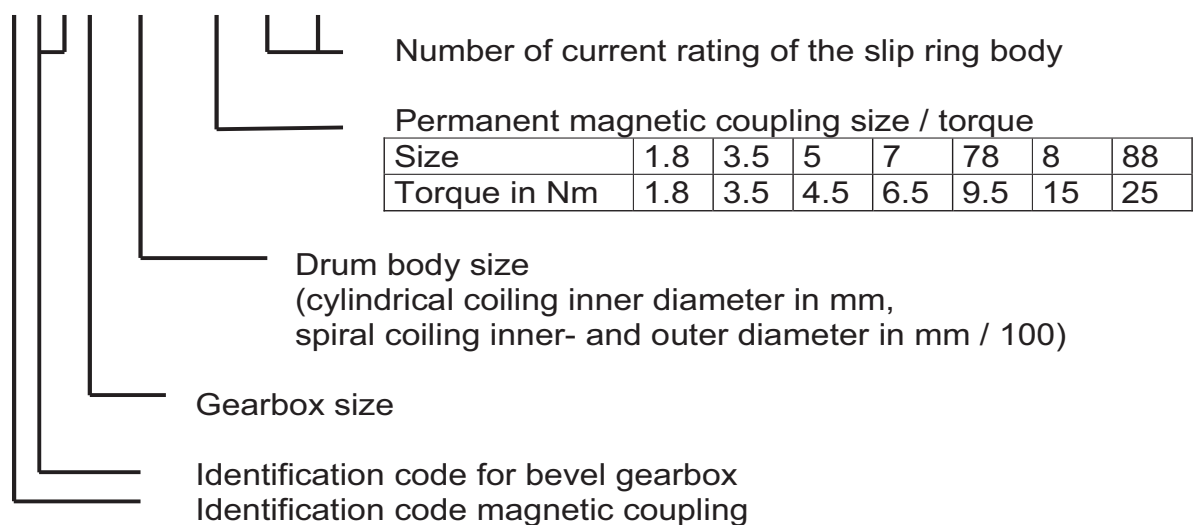
Motor Driven Cable Reeling Drums Type HF

Type HF

- Drive via a bevel gearbox, magnetic coupling and three-phase current brake motor
- Spiral and cylindrical coiling
- Vehicle speeds subdivided in 20 m/min, 40 m/min, 60 m/min and 80 m/min.
- Standard acceleration 0.2 m/s²
- Drum on mobile device
- Mounting height max. 2.5 m for spiral coiling or 1.5 m for cylindrical coiling (for drum outside diameter greater 3 m and spiral coiling mounting height max. 3.5 m as well as for mounting height greater than 1 m and cylindrical coiling mounting height max. 2.5 m).
- Cable types - Cordaflex SM-K, Trommelflex PUR-HF or Trommelflex NSHTÖU-J
- Ambient temperature -10°C up to +40°C
- **Attention, for changed parameters or customer requirements, e.g. higher velocities/acceleration or application of cable guiding devices etc. we request for consultation because the power of a drive can change due to this and a larger drive unit may be necessary.**

Type designation, identification code, variants

Example: HF I / 12 /28/ 7S 4 - 150





Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
Acceleration 0.2 m/s², Drum on Mobile Device



4 x 2.5 mm ² Cordaflex SM-K, Ø 14.8 mm, 0.31 kg/m Weigth, F tensile max. 300 N					
l (m)	SRB	Speed in m/min			
	3 + earth	20	40	60	80
	A	Drum Type			
30	36	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S
50	36	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
85	36	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S
120	36	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S

4 x 4 mm ² Cordaflex SM-K, Ø 18 mm, 0.46 kg/m Weigth, F tensile max. 480 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	42	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S
35	42	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
70	42	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S
95	42	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S

4 x 6 mm ² Cordaflex SM-K, Ø 19.4 mm, 0.58 kg/m Weigth, F tensile max. 720 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
65	60	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/1.8S
90	60	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/3.5S
120	60	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S

4 x 10 mm ² Cordaflex SM-K, Ø 23.6 mm, 0.91 kg/m Weigth, F tensile max. 1200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/3.5S
50	60	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/3.5S	HFI6/15/3.5S
95	60	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S
150	60	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S



4 x 16 mm ² Cordaflex SM-K, Ø 26.7 mm, 1.24 kg/m Weigth, F tensile max. 1920 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	125	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/3.5S	HFI5/12/3.5S
45	125	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/3.5S	HFI6/15/3.5S
80	125	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/5S
135	150	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/7S
195	150	HFI12/30/5S	HFI12/30/5S	HFI12/30/5S	HFI12/30/7S

4 x 25 mm ² Cordaflex SM-K, Ø 31.5 mm, 1.85 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	125	HFI6/15/3.5S	HFI6/15/3.5S	HFI6/15/5S	HFI6/15/7S
70	125	HFI8/20/3.5S	HFI8/20/5S	HFI8/20/5S	HFI8/20/7S
110	150	HFI10/25/5S	HFI10/25/7S	HFI10/25/7S	HFI10/25/7S
165	150	HFI12/30/7S	HFI12/30/7S	HFI12/30/7S	HFI10/25/7S

Drawing No. 06-32-00-000 und 06-33-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF
 Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
 Acceleration 0.2 m/s², Drum on Mobile Device



3 x 35 + 3 x 16/3 mm ² Cordaflex SM-K, Ø 31.5 mm, 1.85 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	125	HF16/15/3.5S	HF16/15/3.5S	HF16/15/5S	HF16/15/7S
70	125	HF18/20/3.5S	HF18/20/5S	HF18/20/5S	HF18/20/7S
110	150	HF110/25/5S	HF110/25/7S	HF110/25/7S	HF110/25/7S
165	150	HF112/30/7S	HF112/30/78S	HF112/30/78S	HF110/25/78S

3 x 50 + 3 x 25/3 mm ² Cordaflex SM-K, Ø 37.4 mm, 2.85 kg/m Weigth, F tensile max. 4500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	220	HF16/15/5S	HF16/15/5S	HF16/15/7S	HF16/15/78S
65	220	HF110/22/5S	HF110/22/5S	HF110/22/7S	HF110/22/78S
95	220	HF110/25/5S	HF110/25/5S	HF110/25/78S	HF110/25/78S
140	220	HF112/30/5S	HF112/30/7S	HF112/30/78S	

3 x 70 + 3 x 35/3 mm ² Cordaflex SM-K, Ø 42.7 mm, 3.92 kg/m Weigth, F tensile max. 6300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
55	220	HF110/22/7S	HF110/22/78S	HF110/22/78S	
120	220	HF112/30/78S	HF112/30/78S		

Drawing No.06-32-00-000 und 06-33-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
Acceleration 0.2 m/s², Drum on Mobile Device



4 x 2.5 mm ² Trommelflex PUR-HF, Ø 12.3 mm, 0.21 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
45	36	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S
65	36	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
105	36	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S
150	36	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S

4 x 4 mm ² Trommelflex PUR-HF, Ø 13.6 mm, 0.29 kg/m Weigth, F tensile max. 1800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	42	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S
55	42	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
100	42	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S
135	42	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S

4 x 6 mm ² Trommelflex PUR-HF, Ø 14.9 mm, 0.38 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
90	60	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/1.8S
120	60	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S
160	60	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S

4 x 10 mm ² Trommelflex PUR-HF, Ø 18.9 mm, 0.61 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/3.5S
65	60	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/1.8S	HFI6/15/3.5S
120	60	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S
195	60	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S



4 x 16 mm ² Trommelflex PUR-HF, Ø 22.1 mm, 0.92 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
55	125	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/3.5S	HFI6/15/3.5S
105	125	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/3.5S
160	150	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S
240	150	HFI12/30/5S	HFI12/30/5S	HFI12/30/5S	HFI12/30/5S

4 x 25 mm ² Trommelflex PUR-HF, Ø 25.5 mm, 1.27 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	125	HFI6/15/1.8S	HFI6/15/1.8S	HFI6/15/3.5S	HFI6/15/7S
70	125	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/5S
110	150	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/7S
165	150	HFI12/30/5S	HFI12/30/5S	HFI12/30/7S	HFI10/25/7S

Drawing No. 06-32-00-000 und 06-33-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF
 Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
 Acceleration 0.2 m/s², Drum on Mobile Device



4 x 35 mm ² Trommelflex PUR-HF, Ø 30 mm, 1.78 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	125	HF16/15/1.8S	HF16/15/3.5S	HF16/15/3.5S	HF16/15/7S
75	125	HF18/20/1.8S	HF18/20/3.5S	HF18/20/5S	HF18/20/7S
120	150	HF110/25/5S	HF110/25/5S	HF110/25/7S	HF110/25/7S
175	150	HF112/30/5	HF112/30/7S	HF112/30/7S	HF110/25/78S



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
Acceleration 0.2 m/s², Drum on Mobile Device

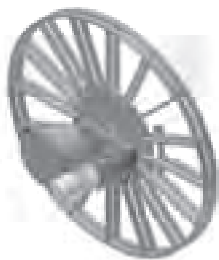


4 x 2.5 mm ² NSHTÖU-J Trommelflex, Ø 17.2 mm, 0.36 kg/m Weigth, F tensile max. 150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	36	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S	HFI4/10/1.8S
75	36	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S
105	36	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S
140	36	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S

4 x 4 mm ² NSHTÖU-J Trommelflex, Ø 19.1 mm, 0.55 kg/m Weigth, F tensile max. 240 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	42	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
65	42	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S
120	42	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S

4 x 6 mm ² NSHTÖU-J Trommelflex, Ø 20.4 mm, 0.6 kg/m Weigth, F tensile max. 360 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S
60	60	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/3.5S
85	60	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/1.8S	HFI8/18/3.5S
110	60	HFI8/20/1.8S	HFI8/20/1.8S	HFI8/20/3.5S	HFI8/20/3.5S

4 x 10 mm ² NSHTÖU-J Trommelflex, Ø 25.7 mm, 0.98 kg/m Weigth, F tensile max. 600 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/1.8S	HFI5/12/3.5S
45	60	HFI6/16/1.8S	HFI6/16/1.8S	HFI6/15/3.5S	HFI6/15/3.5S
85	60	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/3.5S
140	60	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S



4 x 16 mm ² NSHTÖU-J Trommelflex, Ø 30.3 mm, 1.38 kg/m Weigth, F tensile max. 960 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	125	HFI6/15/3.5S	HFI6/15/3.5S	HFI6/15/3.5S	HFI6/15/5S
70	125	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/3.5S	HFI8/20/5S
115	150	HFI10/25/5S	HFI10/25/5S	HFI10/25/5S	HFI10/25/7S
170	150	HFI12/30/5S	HFI12/30/7S	HFI12/30/7S	HFI12/30/7S

4 x 25 mm ² NSHTÖU-J Trommelflex, Ø 35.7 mm, 2.02 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HFI6/15/3.5S	HFI6/15/3.5S	HFI6/15/5S	HFI6/15/7S
55	125	HFI8/20/5S	HFI8/20/5S	HFI8/20/5S	HFI8/20/7S
100	150	HFI10/25/5S	HFI10/25/5S	HFI10/25/7S	HFI10/25/7S
145	150	HFI12/30/7S	HFI12/30/7S	HFI12/30/7S	HFI12/30/7S

Drawing No. 06-32-00-000 und 06-33-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Spiral Coiling, Mounting Height 2.5 m, without Deflection,
Acceleration 0.2 m/s², Drum on Mobile Device



4 x 35 mm ² NSHTOU-J Trommelflex, Ø 38.6 mm, 2.57 kg/m Weigth, F tensile max. 2100 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	150	HFII8/20/7S	HFII8/20/7S	HFII8/20/7S	HFII8/20/78S
85	150	HFII10/25/7S	HFII10/25/7S	HFII10/25/7S	HFII10/25/78S
130	150	HFII12/30/78S	HFII12/30/78S	HFII12/30/78S	HFII12/30/78S

4 x 50 mm ² NSHTOU-J Trommelflex, Ø 46 mm, 3.6 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	150	HFII8/20/7S	HFII8/20/7S	HFII8/20/78S	HFII8/20/78S
70	150	HFII10/25/78S	HFII10/25/78S	HFII10/25/78S	

Drawing No. 06-32-00-000
und 06-33-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height 1.5 m, without Deflection, Acceleration 0.2 m/s², Drum on Mobile Device



4 x 2.5 mm ² Cordaflex SM-K, Ø 14.8 mm, 0.31 kg/m Weigth, F tensile max. 300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	36	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S
50	36	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
85	36	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
135	36	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 4 mm ² Cordaflex SM-K, Ø 18 mm, 0.46 kg/m Weigth, F tensile max. 480 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	42	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S
40	42	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
70	42	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
115	42	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 6 mm ² Cordaflex SM-K, Ø 19.4 mm, 0.58 kg/m Weigth, F tensile max. 720 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
45	60	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S
110	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S
160	60	HFI700/5S	HFI700/5S	HFI700/5S	HFI700/5S

4 x 10 mm ² Cordaflex SM-K, Ø 23.6 mm, 0.91 kg/m Weigth, F tensile max. 1200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	60	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
55	60	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
90	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S
135	60	HFI700/5S	HFI700/5S	HFI700/5S	HFI700/5S
170	60	HFI800/5S	HFI800/5S	HFI800/5S	HFI800/5S



4 x 16 mm ² Cordaflex SM-K, Ø 26.7 mm, 1.24 kg/m Weigth, F tensile max. 1920 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
80	125	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S
115	150	HFI700/5S	HFI700/5S	HFI700/5S	HFI700/5S
150	150	HFI800/5S	HFI800/5S	HFI800/5S	HFI800/5S
185	150	HFI1000/5S	HFI1000/5S	HFI1000/5S	HFI1000/7S

4 x 25 mm ² Cordaflex SM-K, Ø 31.5 mm, 1.85 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/3.5S
70	125	HFI531/1.8S	HFI531/1.8S	HFI531/3.5S	HFI531/3.5S
95	150	HFI700/5S	HFI700/5S	HFI700/5S	HFI700/5S
130	150	HFI800/5S	HFI800/5S	HFI800/5S	HFI800/7S

Drawing No. 06-30-00-000 und 06-31-(34)-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF
 Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height 1.5 m,
 without Deflection, Acceleration 0.2 m/s², Drum on Mobile Device



3 x 35 + 3 x 16/3 mm ² Cordaflex SM-K, Ø 31.5 mm, 2.16 kg/m Weigth, F tensile max. 3150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HF1421/1.8S	HF1421/1.8S	HF1421/1.8S	HF1421/3.5S
70	125	HF1531/1.8S	HF1531/1.8S	HF1531/3.5S	HF1531/3.5S
95	150	HF1700/5S	HF1700/5S	HF1700/5S	HF1700/5S
130	150	HF1800/5S	HF1800/5S	HF1800/5S	HF1800/7S

3 x 50 + 3 x 25/3 mm ² Cordaflex SM-K, Ø 37.4 mm, 2.85 kg/m Weigth, F tensile max. 4500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	220	HF1531/5S	HF1531/5S	HF1531/5S	HF1531/5
55	220	HF1700/5S	HF1700/5S	HF1700/5S	HF1700/5S
90	220	HF1800/5S	HF1800/5S	HF1800/5S	HF1800/7S

3 x 70 + 3 x 35/3 mm ² Cordaflex SM-K, Ø 42.7 mm, 3.92 kg/m Weigth, F tensile max. 6300 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	220	HF1531/5S	HF1531/5S	HF1531/5S	HF1531/5S
65	220	HF1800/5S	HF1800/5S	HF1800/5S	HF1800/7S

Drawing No. 06-30-00-000 und 06-31(34)-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height 1.5 m, without Deflection, Acceleration 0.2 m/s², Drum on Mobile Device



4 x 2.5 mm ² Trommelflex PUR-HF, Ø 12.3 mm, 0.21 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
35	36	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S
55	36	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
100	36	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
170	36	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 4 mm ² Trommelflex PUR-HF, Ø 13.6 mm, 0.28 kg/m Weigth, F tensile max. 1800 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	42	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S
55	42	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
90	42	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
150	42	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 6 mm ² Trommelflex PUR-HF, Ø 14.9 mm, 0.37 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	60	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
85	60	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S
110	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 10 mm ² Trommelflex PUR-HF, Ø 18.9 mm, 0.61 kg/m Weigth, F tensile max. 2000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
70	60	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
110	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S



4 x 16 mm ² Trommelflex PUR-HF, Ø 22.1 mm, 0.92 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
60	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
95	125	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S
140	150	HFI1701/5S	HFI1701/5S	HFI1701/5S	HFI1701/5S
180	150	HFI1800/5S	HFI1800/5S	HFI1800/5S	HFI1800/5S

4 x 25 mm ² Trommelflex PUR-HF, Ø 25.5 mm, 1.27 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/3.5S
85	125	HFI530/1.8S	HFI530/1.8S	HFI530/3.5S	HFI530/3.5S
125	150	HFI1701/5S	HFI1701/5S	HFI1701/5S	HFI1701/5S
150	150	HFI1800/5S	HFI1800/5S	HFI1800/5S	HFI1800/5S



4 x 35 mm ² Trommelflex PUR-HF, Ø 30 mm, 1.78 kg/m Weigth, F tensile max. 2500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/3.5S
60	125	HFI531/1.8S	HFI531/1.8S	HFI531/3.5S	HFI531/3.5S
105	150	HFI1701/5S	HFI1701/5S	HFI1701/5S	HFI1701/5S
155	150	HFI1000/5S	HFI1000/5S	HFI1000/5S	HFI1000/7S

Drawing No. 06-30-00-000 und 06-31-(34)-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height 1.5 m, without Deflection, Acceleration 0.2 m/s², Drum on Mobile Device



4 x 2.5 mm ² NSHTÖU-J Trommelflex, Ø 17.2 mm, 0.36 kg/m Weigth, F tensile max. 150 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
15	36	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S	HFI221/1.8S
40	36	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
75	36	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S
120	36	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 4 mm ² NSHTÖU-J Trommelflex, Ø 19.1 mm, 0.55 kg/m Weigth, F tensile max. 240 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	42	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
45	42	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S
65	42	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
110	42	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 6 mm ² NSHTÖU-J Trommelflex, Ø 20.4 mm, 0.6 kg/m Weigth, F tensile max. 360 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
25	60	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S	HFI300/1.8S
45	60	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S	HFI420/1.8S
65	60	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
100	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S

4 x 10 mm ² NSHTÖU-J Trommelflex, Ø 25.7 mm, 0.98 kg/m Weigth, F tensile max. 600 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
20	60	HFI301/1.8S	HFI301/1.8S	HFI301/1.8S	HFI301/1.8S
80	60	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S
115	60	HFI1700/5S	HFI1700/5S	HFI1700/5S	HFI1700/5S
150	60	HFI1800/5S	HFI1800/5S	HFI1800/5S	HFI1800/5S



4 x 16 mm ² NSHTÖU-J Trommelflex, Ø 30.3 mm, 1.38 kg/m Weigth, F tensile max. 960 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
30	125	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S	HFI421/1.8S
70	125	HFI531/1.8S	HFI531/1.8S	HFI531/1.8S	HFI531/1.8S
105	150	HFI1700/5S	HFI1700/5S	HFI1700/5S	HFI1700/5S
160	150	HFI11000/5S	HFI11000/5S	HFI11000/5S	HFI11000/5S

4 x 25 mm ² NSHTÖU-J Trommelflex, Ø 35.7 mm, 2.02 kg/m Weigth, F tensile max. 1500 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	125	HFI530/1.8S	HFI530/1.8S	HFI530/1.8S	HFI530/3.5S
90	150	HFI1700/5S	HFI1700/5S	HFI1700/5S	HFI1700/5S
110	150	HFI1800/5S	HFI1800/5S	HFI1800/5S	HFI1800/5S
160	150	HFI1200/5S	HFI1200/5S	HFI1200/5S	HFI1200/7S

Drawing No. 06-30-00-000 und 06-31-(34)-00-000



Motor Drive Cable Reeling Drums with Flat Gearbox, Magnetic Coupling, Type HF

Horizontal Payout, Cylindrical Coiling (max. 4 Layers), Mounting Height 1.5 m,
without Deflection, Acceleration 0.2 m/s², Drum on Mobile Device



4 x 35 mm ² NSHTÖU-J Trommelflex, Ø 38.6 mm, 2.57 kg/m Weigth, F tensile max. 2100 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
55	150	HFII700/5S	HFII700/5S	HFII700/5S	HFII700/5S
100	150	HFII800/5S	HFII800/5S	HFII800/5S	HFII800/7S

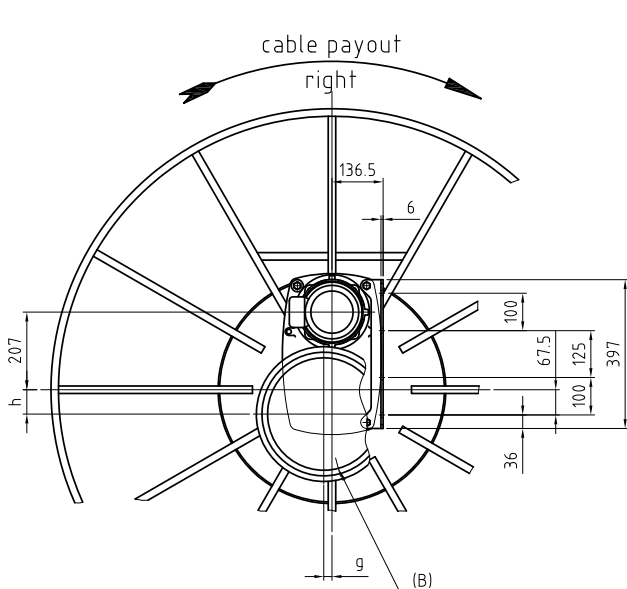
4 x 50 mm ² NSHTÖU-J Trommelflex, Ø 46 mm, 3.6 kg/m Weigth, F tensile max. 3000 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
50	220	HFII700/5S	HFII700/5S	HFII700/5S	HFII700/5S
90	220	HFII800/5S	HFII800/5S	HFII800/7S	HFII800/7S

4 x 70 mm ² NSHTÖU-J Trommelflex, Ø 49.7 mm, 4.65 kg/m Weigth, F tensile max. 4200 N					
l (m)	SRB	Speed in m/min			
	3 + Earth	20	40	60	80
	A	Drum Type			
40	220	HFII700/5S	HFII700/5S	HFII700/5S	HFII700/7S
55	220	HFII800/5S	HFII800/5S	HFII800/7S	HFII800/7S

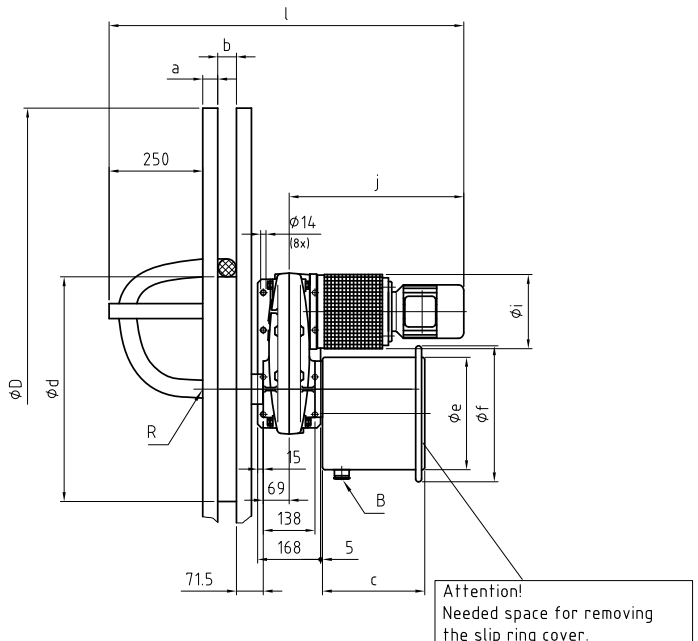
Drawing No. 06-30-00-000 und 06-31-(34)-00-000

Drawing HF Series, Spiral Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	j	k	l
HF14/10/1.8S	06-32-00-000	36	400	1000	71.5	Cable Diameter +5%	40	168	15	138	14	36	67.5	100	125
HF15/12/1.8S	06-32-00-000	36	500	1200	71.5		40	168	15	138	14	36	67.5	100	125
HF16/15/1.8S	06-32-00-000	36	600	1500	71.5		40	168	15	138	14	36	67.5	100	125
HF18/18/1.8S	06-32-00-000	36	800	1800	71.5		40	168	15	138	14	36	67.5	100	125
HF18/20/1.8S	06-32-00-000	36	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF18/20/3.5S	06-32-00-000	36	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF14/10/1.8S	06-32-00-000	42	400	1000	71.5		40	168	15	138	14	36	67.5	100	125
HF15/12/1.8S	06-32-00-000	42	500	1200	71.5		40	168	15	138	14	36	67.5	100	125
HF16/15/1.8S	06-32-00-000	42	600	1500	71.5		40	168	15	138	14	36	67.5	100	125
HF18/18/1.8S	06-32-00-000	42	800	1800	71.5		40	168	15	138	14	36	67.5	100	125
HF18/20/1.8S	06-32-00-000	42	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF18/20/3.5S	06-32-00-000	42	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF15/12/1.8S	06-32-00-000	60	500	1200	71.5		40	168	15	138	14	36	67.5	100	125
HF15/12/3.5S	06-32-00-000	60	500	1200	71.5		40	168	15	138	14	36	67.5	100	125
HF16/15/1.8S	06-32-00-000	60	600	1500	71.5		40	168	15	138	14	36	67.5	100	125
HF16/15/3.5S	06-32-00-000	60	600	1500	71.5		40	168	15	138	14	36	67.5	100	125
HF18/18/1.8S	06-32-00-000	60	800	1800	71.5		40	168	15	138	14	36	67.5	100	125
HF18/18/3.5S	06-32-00-000	60	800	1800	71.5		40	168	15	138	14	36	67.5	100	125
HF18/20/1.8S	06-32-00-000	60	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF18/20/3.5S	06-32-00-000	60	800	2000	80		50	168	15	138	14	36	67.5	100	125
HF110/25/5S	06-33-00-000	60	1000	2500	100		60	234	30	174	18	45	100	150	150
HF15/12/1.8S	06-32-00-000	125	500	1200	71.5		40	168	15	135	14	36	67.5	100	125
HF16/15/1.8S	06-32-00-000	125	600	1500	71.5		40	168	15	135	14	36	67.5	100	125
HF16/15/3.5S	06-32-00-000	125	600	1500	71.5		40	168	15	135	14	36	67.5	100	125
HF16/15/5S	06-32-00-000	125	600	1500	71.5		40	168	15	135	14	36	67.5	100	125
HF16/15/7S	06-32-00-000	125	600	1500	71.5		40	168	15	135	14	36	67.5	100	125
HF18/20/1.8S	06-32-00-000	125	800	2000	80		50	168	15	135	14	36	67.5	100	125
HF18/20/3.5S	06-32-00-000	125	800	2000	80		50	168	15	135	14	36	67.5	100	125
HF18/20/5S	06-32-00-000	125	800	2000	80		50	168	15	135	14	36	67.5	100	125
HF18/20/7S	06-32-00-000	125	800	2000	80		50	168	15	135	14	36	67.5	100	125

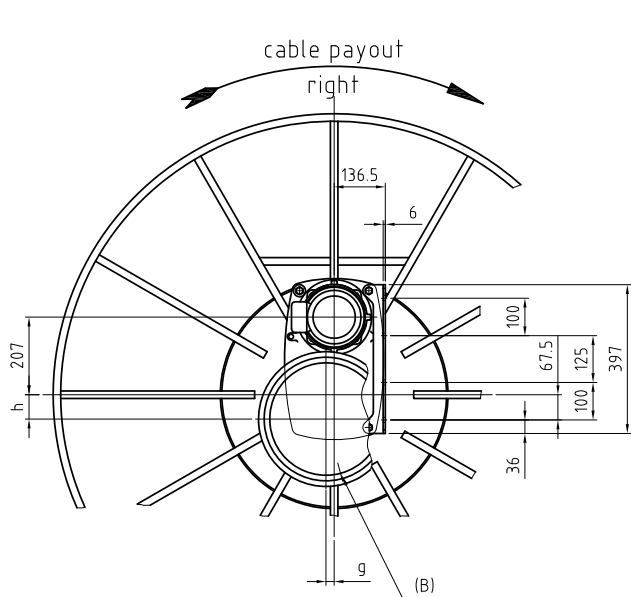


R= Cable entry to the rings
B= Cable entry to the brushes

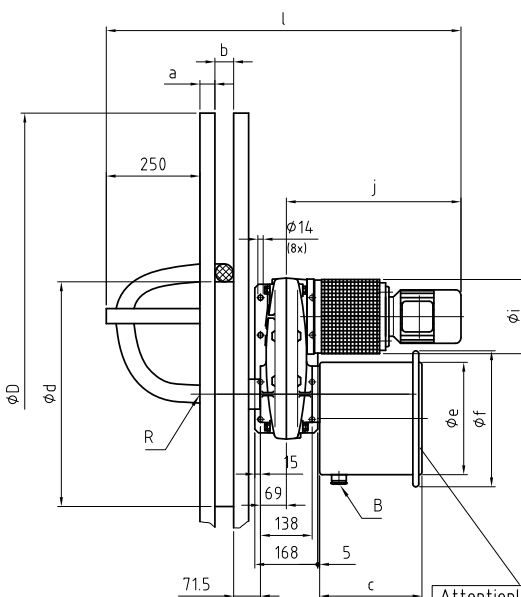


Drawing HF Series, Spiral Coiling

Type	Drawing No.	3+earth in A	m	n	o	p	q	ør	s	t	u	v	w	øx	øy
HF14/10/1.8S	06-32-00-000	36	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF15/12/1.8S	06-32-00-000	36	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF16/15/1.8S	06-32-00-000	36	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/18/1.8S	06-32-00-000	36	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/20/1.8S	06-32-00-000	36	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/20/3.5S	06-32-00-000	36	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF14/10/1.8S	06-32-00-000	42	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF15/12/1.8S	06-32-00-000	42	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF16/15/1.8S	06-32-00-000	42	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/18/1.8S	06-32-00-000	42	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/20/1.8S	06-32-00-000	42	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/20/3.5S	06-32-00-000	42	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF15/12/1.8S	06-32-00-000	60	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF15/12/3.5S	06-32-00-000	60	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF16/15/1.8S	06-32-00-000	60	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF16/15/3.5S	06-32-00-000	60	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF18/18/1.8S	06-32-00-000	60	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/18/3.5S	06-32-00-000	60	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF18/20/1.8S	06-32-00-000	60	397	6	136.5	69	482	205	207	70	/	5	230	300	365
HF18/20/3.5S	06-32-00-000	60	397	6	136.5	69	630	205	207	70	/	5	230	300	365
HF110/25/5S	06-33-00-000	60	540	8	181.5	87	699	250	286	30	10	10	215	300	365
HF15/12/1.8S	06-32-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HF16/15/1.8S	06-32-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HF16/15/3.5S	06-32-00-000	125	397	6	136.5	69	630	205	207	70	/	5	275	300	365
HF16/15/5S	06-32-00-000	125	397	6	136.5	69	668	250	207	70	/	5	275	300	365
HF16/15/7S	06-32-00-000	125	397	6	136.5	69	668	250	207	70	/	5	275	300	365
HF18/20/1.8S	06-32-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HF18/20/3.5S	06-32-00-000	125	397	6	136.5	69	630	205	207	70	/	5	275	300	365
HF18/20/5S	06-32-00-000	125	397	6	136.5	69	668	250	207	70	/	5	275	300	365
HF18/20/7S	06-32-00-000	125	397	6	136.5	69	668	250	207	70	/	5	275	300	365



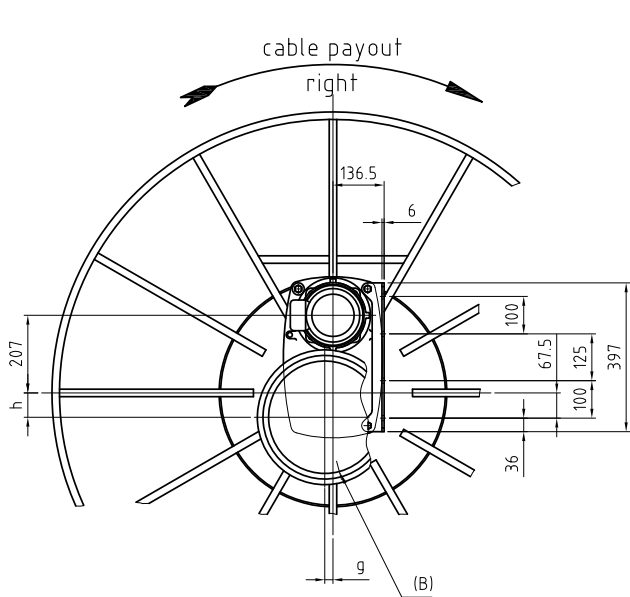
R= Cable entry to the rings
B= Cable entry to the brushes



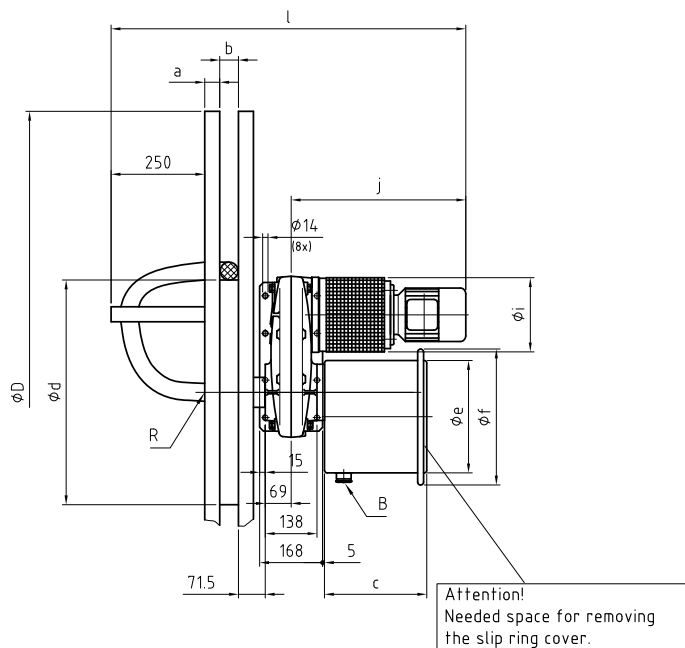
Attention!
Needed space for removing
the slip ring cover.

Drawing HF Series, Spiral Coiling

Type	Drawing	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	j	k	l
HFII8/20/7S	06-33-00-000	150	800	2000	100	Cable Diameter +5%	50	234	30	174	18	45	100	150	150
HFII8/20/78S	06-33-00-000	150	800	2000	100		50	234	30	174	18	45	100	150	150
HFII10/25/5S	06-33-00-000	150	1000	2500	100		60	234	30	174	18	45	100	150	150
HFII10/25/7S	06-33-00-000	150	1000	2500	100		60	234	30	174	18	45	100	150	150
HFII10/25/78S	06-33-00-000	150	1000	2500	100		60	234	30	174	18	45	100	150	150
HFII12/30/5S	06-33-00-000	150	1200	3000	125		80	234	30	174	18	45	100	150	150
HFII12/30/7S	06-33-00-000	150	1200	3000	125		80	234	30	174	18	45	100	150	150
HFII12/30/78S	06-33-00-000	150	1200	3000	125		80	234	30	174	18	45	100	150	150
HFII6/15/5S	06-33-00-000	220	600	1500	85		40	234	30	174	18	45	100	150	150
HFII6/15/7S	06-33-00-000	220	600	1500	85		40	234	30	174	18	45	100	150	150
HFII6/15/78S	06-33-00-000	220	600	1500	85		40	234	30	174	18	45	100	150	150
HFII10/22/5S	06-33-00-000	220	1000	2200	100		50	234	30	174	18	45	100	150	150
HFII10/22/7S	06-33-00-000	220	1000	2200	100		50	234	30	174	18	45	100	150	150
HFII10/22/78S	06-33-00-000	220	1000	2200	100		50	234	30	174	18	45	100	150	150
HFII10/25/5S	06-33-00-000	220	1000	2500	100		60	234	30	174	18	45	100	150	150
HFII10/25/78S	06-33-00-000	220	1000	2500	100		60	234	30	174	18	45	100	150	150
HFII12/30/5S	06-33-00-000	220	1200	3000	125		80	234	30	174	18	45	100	150	150
HFII12/30/7S	06-33-00-000	220	1200	3000	125		80	234	30	174	18	45	100	150	150
HFII12/30/78S	06-33-00-000	220	1200	3000	125		80	234	30	174	18	45	100	150	150

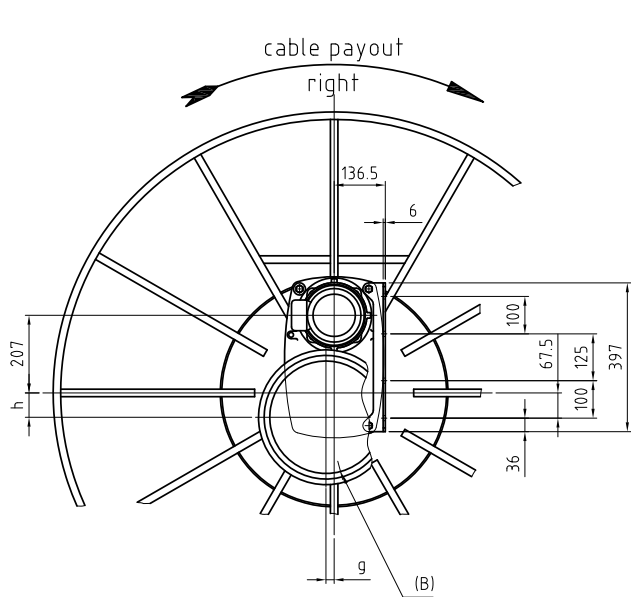


R= Cable entry to the rings
B= Cable entry to the brushes

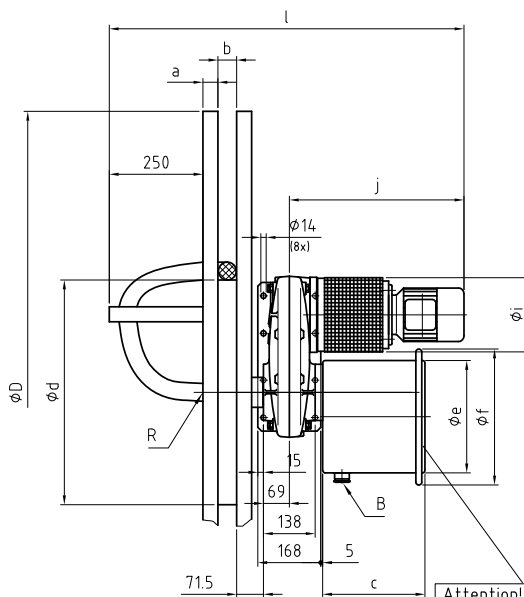


Drawing HF Series, Spiral Coiling

Type	Drawing	3+earth in A	m	n	o	p	q	ør	s	t	u	v	w	øx	øy
HFII8/20/7S	06-33-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII8/20/78S	06-33-00-000	150	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII10/25/5S	06-33-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII10/25/7S	06-33-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII10/25/78S	06-33-00-000	150	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII12/30/5S	06-33-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII12/30/7S	06-33-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII12/30/78S	06-33-00-000	150	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII6/15/5S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII6/15/7S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII6/15/78S	06-33-00-000	220	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII10/22/5S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII10/22/7S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII10/22/78S	06-33-00-000	220	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII10/25/5S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII10/25/78S	06-33-00-000	220	540	8	181.5	87	774	250	286	70	45	10	225	370	445
HFII12/30/5S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII12/30/7S	06-33-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII12/30/78S	06-33-00-000	220	540	8	181.5	87	774	250	286	70	45	10	225	370	445



R= Cable entry to the rings
B= Cable entry to the brushes

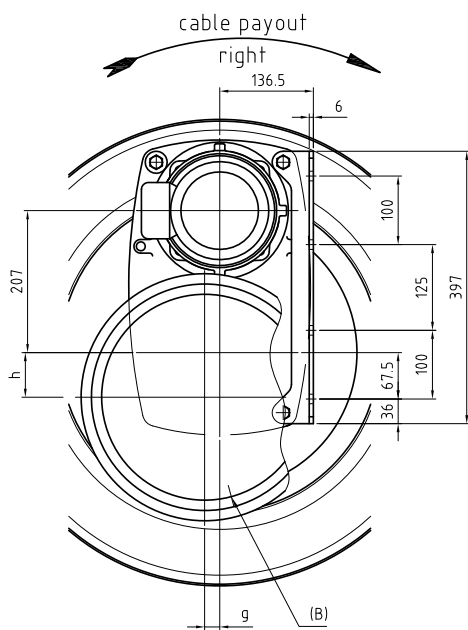


Attention!
Needed space for removing
the slip ring cover.

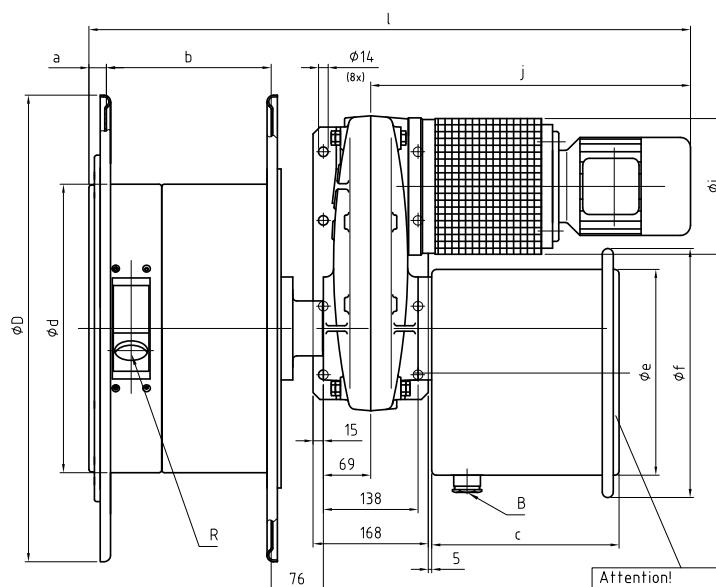


Drawing HF Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	j	k	l
HFI221/1.8S	06-30-00-000	36	220	450	70.5	150	20	168	15	138	14	36	67.5	100	125
HFI300/1.8S	06-30-00-000	36	300	550	73	190	25	168	15	138	14	36	67.5	100	125
HFI420/1.8S	06-30-00-000	36	420	680	75	240	25	168	15	138	14	36	67.5	100	125
HFI421/1.8S	06-30-00-000	36	420	770	75	240	25	168	15	138	14	36	67.5	100	125
HFI530/1.8S	06-30-00-000	36	530	900	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI221/1.8S	06-30-00-000	42	220	450	70.5	150	20	168	15	138	14	36	67.5	100	125
HFI300/1.8S	06-30-00-000	42	300	550	73	190	25	168	15	138	14	36	67.5	100	125
HFI420/1.8S	06-30-00-000	42	420	680	75	240	25	168	15	138	14	36	67.5	100	125
HFI421/1.8S	06-30-00-000	42	420	770	75	240	25	168	15	138	14	36	67.5	100	125
HFI530/1.8S	06-30-00-000	42	530	900	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI300/1.8S	06-30-00-000	60	300	550	73	190	25	168	15	138	14	36	67.5	100	125
HFI301/1.8S	06-30-00-000	60	300	550	73	290	25	168	15	138	14	36	67.5	100	125
HFI420/1.8S	06-30-00-000	60	420	680	75	240	25	168	15	138	14	36	67.5	100	125
HFI421/1.8S	06-30-00-000	60	420	770	75	240	25	168	15	138	14	36	67.5	100	125
HFI530/1.8S	06-30-00-000	60	530	900	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI700/5S	06-31-00-000	60	700	1200	75.5	350	15	234	30	174	18	45	100	150	150
HFI421/1.8S	06-30-00-000	125	420	770	75	240	25	168	15	138	14	36	67.5	100	125
HFI421/3.5S	06-30-00-000	125	420	770	75	240	25	168	15	138	14	36	67.5	100	125
HFI530/1.8S	06-30-00-000	125	530	900	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI530/3.5S	06-30-00-000	125	530	900	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI531/1.8S	06-30-00-000	125	530	1000	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI531/3.5S	06-30-00-000	125	530	1000	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI531/5S	06-30-00-000	125	530	1000	76.5	310	30	168	15	138	14	36	67.5	100	125
HFI700/5S	06-31-00-000	150	700	1200	75.5	350	15	234	30	174	18	45	100	150	150
HFI531/5S	06-31-00-000	220	530	1000	87	310	30	234	30	174	18	45	100	150	150
HFI531/7S	06-31-00-000	220	530	1000	87	310	30	234	30	174	18	45	100	150	150
HFI700/5S	06-31-00-000	220	700	1200	75.5	350	15	234	30	174	18	45	100	150	150
HFI700/7S	06-31-00-000	220	700	1200	75.5	350	15	234	30	174	18	45	100	150	150



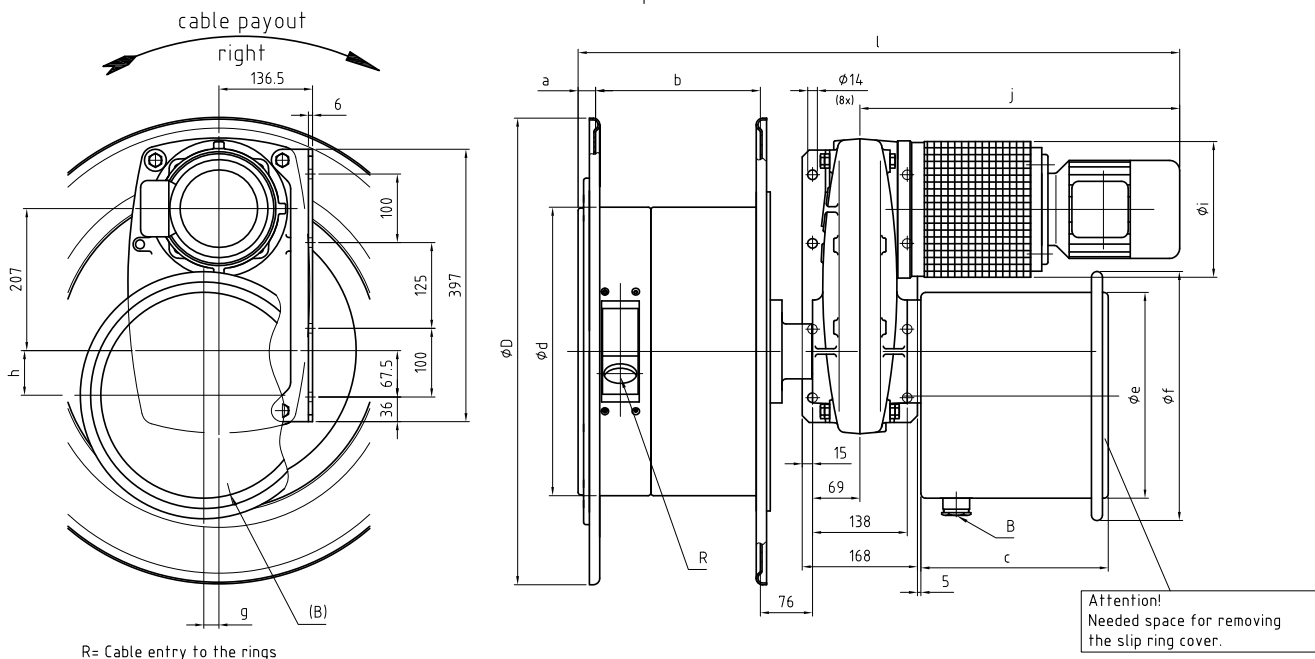
R= Cable entry to the rings



Attention!
Needed space for removing
the slip ring cover.

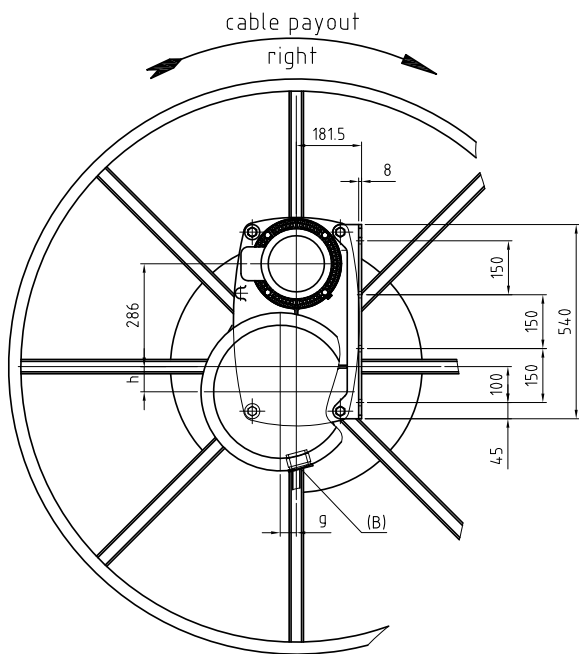
Drawing HF Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	m	n	o	p	q	ør	s	t	u	v	w	øx	øy
HFI221/1.8S	06-30-00-000	36	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI300/1.8S	06-30-00-000	36	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI420/1.8S	06-30-00-000	36	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI421/1.8S	06-30-00-000	36	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI530/1.8S	06-30-00-000	36	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI221/1.8S	06-30-00-000	42	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI300/1.8S	06-30-00-000	42	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI420/1.8S	06-30-00-000	42	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI421/1.8S	06-30-00-000	42	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI530/1.8S	06-30-00-000	42	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI300/1.8S	06-30-00-000	60	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI301/1.8S	06-30-00-000	60	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI420/1.8S	06-30-00-000	60	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI421/1.8S	06-30-00-000	60	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI530/1.8S	06-30-00-000	60	397	6	136.5	69	482	205	207	70	/	5	225	300	365
HFI700/5S	06-31-00-000	60	540	8	181.5	87	699	250	286	30	10	10	215	300	365
HFI421/1.8S	06-30-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HFI421/3.5S	06-30-00-000	125	397	6	136.5	69	630	205	207	70	/	5	275	300	365
HFI530/1.8S	06-30-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HFI530/3.5S	06-30-00-000	125	397	6	136.5	69	630	205	207	70	/	5	275	300	365
HFI531/1.8S	06-30-00-000	125	397	6	136.5	69	482	205	207	70	/	5	275	300	365
HFI531/3.5S	06-30-00-000	125	397	6	136.5	69	630	205	207	70	/	5	275	300	365
HFI531/5S	06-30-00-000	125	397	6	136.5	69	668	250	207	70	/	5	275	300	365
HFI700/5S	06-31-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFI531/5S	06-31-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFI531/7S	06-31-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFI700/5S	06-31-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFI700/7S	06-31-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445

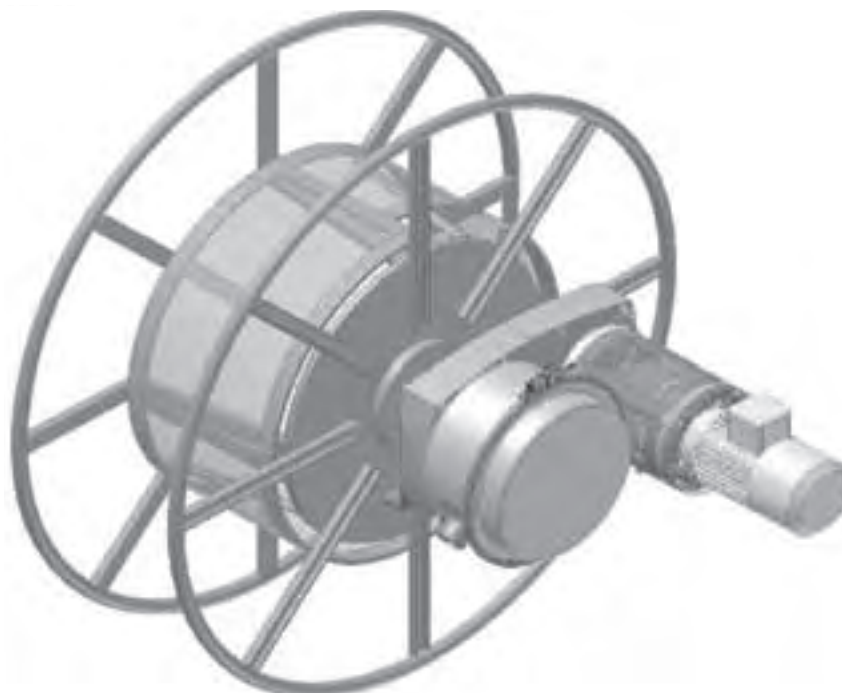
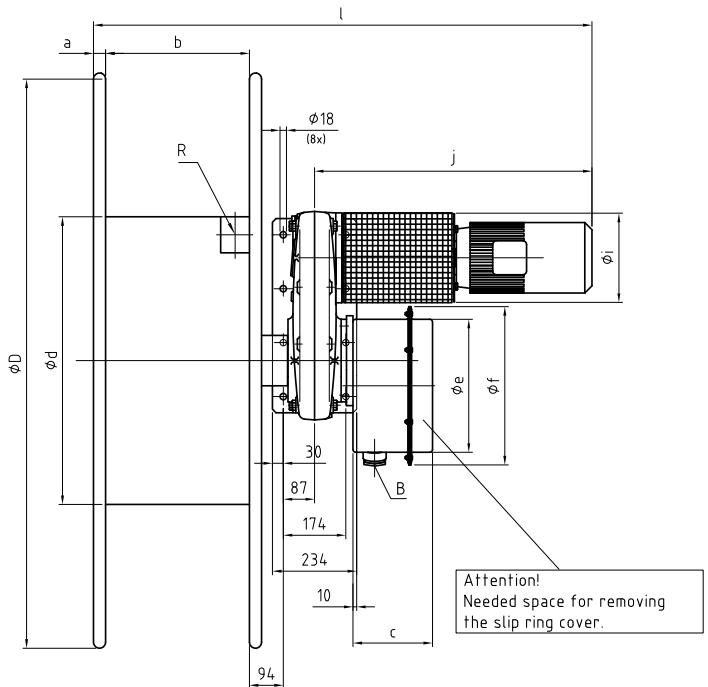


Drawing HF Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	ød	øD	a	b	c	e	f	g	øh	i	j	k	l
HFII800/5S	06-34-00-000	60	800	1600	94	400	34	234	30	174	18	45	100	150	150
HFII800/5S	06-34-00-000	150	800	1600	94	400	34	234	30	174	18	45	100	150	150
HFII800/7S	06-34-00-000	150	800	1600	94	400	34	234	30	174	18	45	100	150	150
HFII1000/5S	06-34-00-000	150	1000	1800	94	400	34	234	30	174	18	45	100	150	150
HFII1000/7S	06-34-00-000	150	1000	1800	94	400	34	234	30	174	18	45	100	150	150
HFII1200/5S	06-34-00-000	150	1200	2000	94	400	34	234	30	174	18	45	100	150	150
HFII1200/7S	06-34-00-000	150	1200	2000	94	400	34	234	30	174	18	45	100	150	150
HFII800/5S	06-34-00-000	220	800	1600	94	400	34	234	30	174	18	45	100	150	150
HFII800/7S	06-34-00-000	220	800	1600	94	400	34	234	30	174	18	45	100	150	150
HFII800/78S	06-34-00-000	220	800	160	94	400	34	234	30	174	18	45	100	150	150

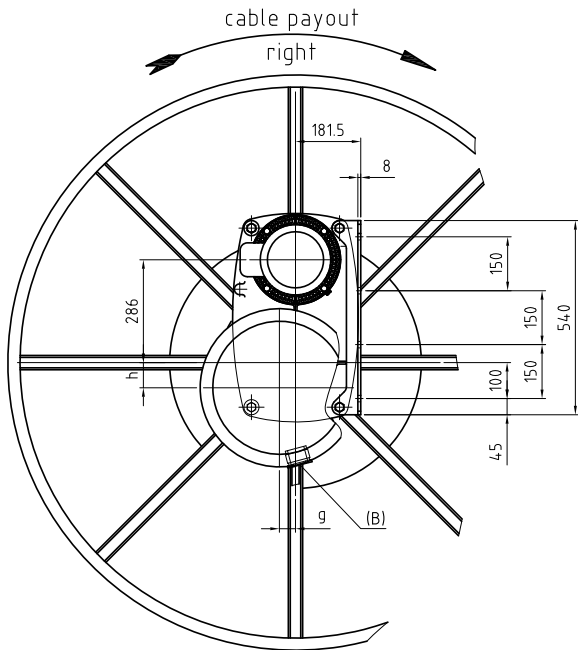


R= Cable entry to the rings
B= Cable entry to the brushes

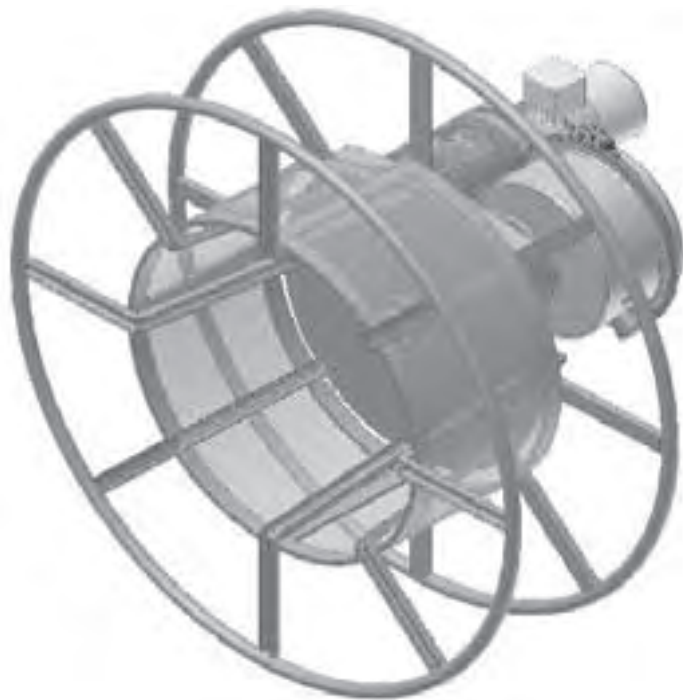
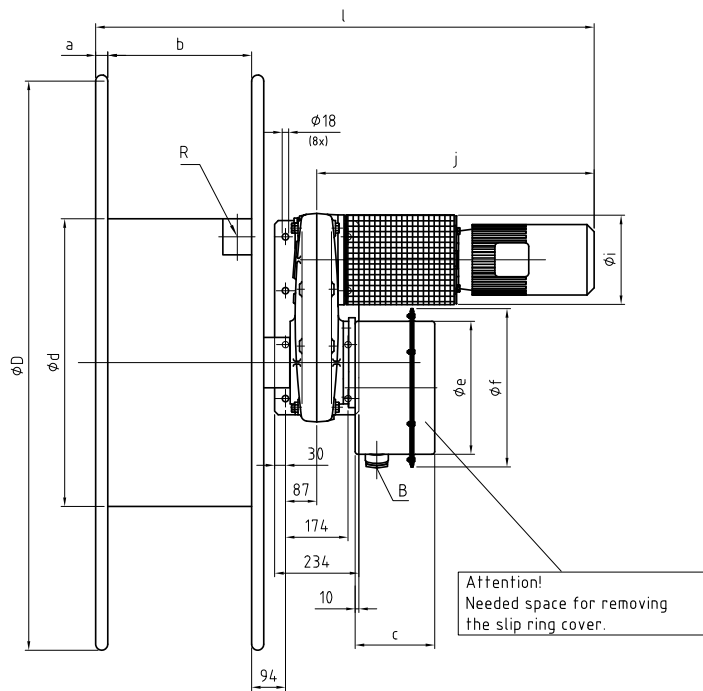


Drawing HF Series, Cylindrical Coiling

Type	Drawing No.	3+earth in A	m	n	o	p	q	ør	s	t	u	v	w	øx	øy
HFII800/5S	06-34-00-000	60	540	8	181.5	87	699	250	286	30	10	10	215	300	365
HFII800/5S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII800/7S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII1000/5S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII1000/7S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII1200/5S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII1200/7S	06-34-00-000	150	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII800/5S	06-34-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII800/7S	06-34-00-000	220	540	8	181.5	87	699	250	286	70	45	10	225	370	445
HFII800/78S	06-34-00-000	220	540	8	181.5	87	774	250	286	70	45	10	225	370	445



R= Cable entry to the rings
B= Cable entry to the brushes





Motor Driven Cable Reeling Drums with Bevel Gearbox or Flat Gearbox and Torque Motor



Gearbox:

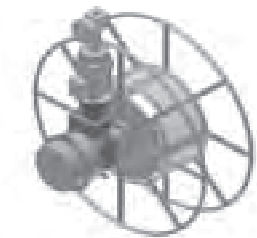
- Bevel gearbox
- Flat gearbox
- Spur gear with roller chain

Motor Variants:

- Three-phase field magnets (standard motors) with / without a separately powered fan
- Squirrel-cage torque motors without a separately powered fan
- Squirrel-cage torque motors with a separately powered fan
- Slip-ring torque motors without a separately powered fan, with a shunt device
- Slip-ring torque motors with a separately powered fan and a shunt device

Coiling Type:

- Cylindrical
- Mono spiral



Speed:

- Up to max. 60 m/min

Cable Types:

- Low-voltages NSHTÖU-J up to 1 kV
- PUR-H cables
- Special cables

Cable payout:

- Vertical
- Horizontal

To process an offer, we request for your enquiry documents or refer to our questionnaire in the appendix.



Motor Cable Reeling Drums with Inverter Drives

- Horizontal cable payout with cable lengths up to 800 m
- Speed up to 200 m/min
- Spiral coiling drum body, outer diameter 2500 – 8000 mm
- Drive via bevel gearbox and three-phase motors
- Variable driving torque for preserving cable quality
- Cable control via limit switches in connection with roller deflection sheave



Slip Ring Body for

- Low voltage up to 1 kV
- Medium voltage between 1 kV – 25 kV



Cable Types:

- Low voltage cables type NSHTÖU-J up to 1 kV
- Medium voltage hawsers from 1 – 25 kV with and without a fibre-optic cable
- Special cables



Applications:

- Container crane facilities
- Stacker / reclaiming device
- Unloading stations
- Conveyance vehicle



Cable and Rope Reeling Drums with Turbo Coupling and Gearbox Type KFM and KSM



Regulations:

- According to the regulations of Det Norske Veritas, German Lloyd, Lloyds Register etc., but without approval.

Application:

- Harbour and onboard operation.
- Refuse incineration.
- Other vertical applications.

Drive:

- Gearbox with turbo coupling.

Motor:

- Three-phase motor in onboard version.

Brake:

- Separate stop brake.

Coiling Type:

- Cylindrical.
- Mono spiral.

Speed / Acceleration:

- Up to 100 m/min/max. 1 m/s².

Types of Cables:

- Low voltage lines NSHTÖU-J up to 1 kV
- PUR-H cables
- Special lines

Cable Payout:

- Vertical, direct or via deflection rollers (accessories).



4 x 16 mm ² Cordaflex SM-K, Ø 26.7 mm, 1.24 kg/m Weigth, F tensile max. 1920 N					
l (m)	A	Speed	Drum Type	Weigth	Drawing No.
		m/min		kg	
38	150	100	KFM8/600BO	270	06-20-00-000
50	150	100	KFM8/600/11BO	290	06-20-01-000

4 x 25 mm ² Cordaflex SM-K, Ø 31.5 mm, 1.85 kg/m Weigth, F tensile max. 3000 N					
l (m)	A	Speed	Drum Type	Weigth	Drawing No.
		m/min		kg	
25	150	100	KFM8/600BO	270	06-20-00-000
30	150	100	KFM8/600BO	290	06-20-01-000

3 x 35 + 3 x 16/3 mm ² Cordaflex SM-K, Ø 31.5 mm, 2.16 kg/m Weigth, F tensile max. 3150 N					
l (m)	A	Speed	Drum Type	Weigth	Drawing No.
		m/min		kg	
25	150	100	KFM8/600BO	270	06-20-00-000
30	150	100	KFM8/600BO	290	06-20-01-000

Rope Drum Type KSM, Application:

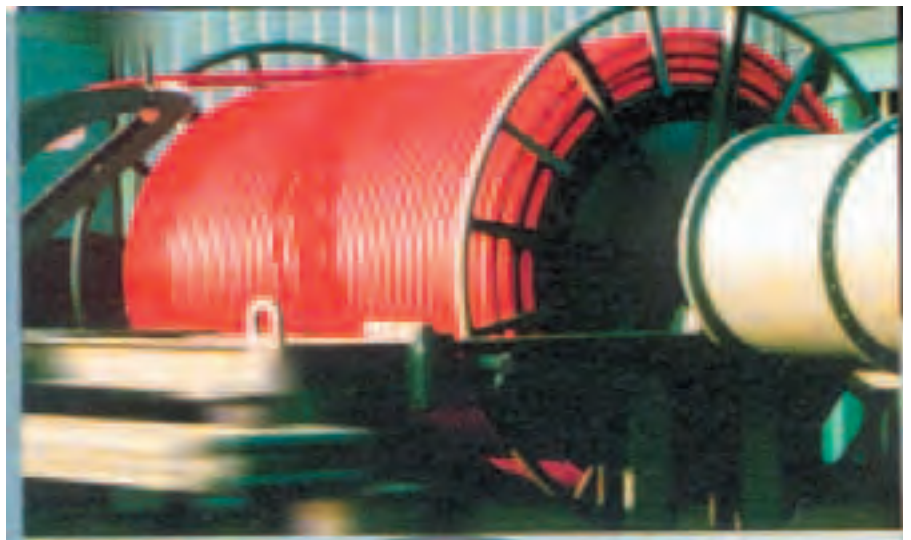
- For calm slewing motion and rotational motions of grippers and spreaders

Flexible Steel Rope, Ø 8 mm, 0.3 kg/m Weight					
l (m)	Fz	Speed	Drum Type	Weight	Drawing No.
	N	m/min		kg	
50	900	100	KSM2BO	180	11-06-00-000



Motor Driven Cable Reeling Drums for long Cable Length, Type HP

Cylindrical Coiling, with attached Spooling Device, Drive with Gearbox and Magnetic Coupling, Horizontal Payout, Speed up to 60 m/min, Acceleration 0.2 m/s², optional with Roller Guiding Device



Cable Types:

- Low voltage cables, type NSHTÖU-J
- Medium voltage hawsers 1 kV – 25 kV with and without fibre optic cable
- Special lines

To process an offer, we request for your enquiry documents or refer you to our questionnaire in the appendix.



Motor Cable Driven Cable Reeling Drums with Hydraulic Drive
Drive via Flat and Bevel Gearbox with Hydraulic Brake Motor, Cylindrical or Spiral Coiling,
Horizontal or Vertical Payout, Speed up to 200 m/min, Acceleration max. 2 m/s²



To process an offer, we request for your enquiry documents or refer you to our questionnaire in the appendix.



Accessories Roller Payout Guide

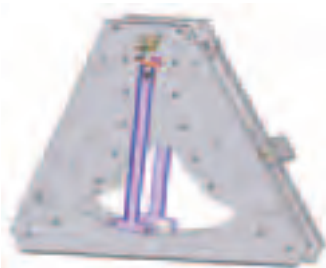
Type RUT (without slack and tight cable control).



Type RUT

Type	Drawing No.	max. Cable-Ø mm	Weigth kg
RUT 860	13-95-00-000	60	320
RUT 1160	13-91-00-000	80	400

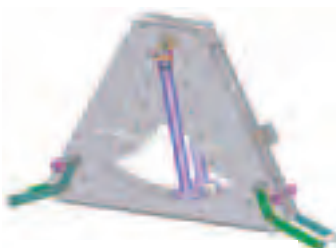
Type RUTS (with slack cable control).



Type RUTS

Type	Drawing No.	max. Cable-Ø mm	Weigth kg
RUTS 860	13-96-00-000	60	360
RUTS 1160	13-92-00-000	80	450

Type RUTS ST (with slack and tight cable control).



Type RUTS ST

Type	Drawing No.	max. Cable-Ø mm	Weigth kg
RUTS 860 ST	13-97-00-000	60	390
RUTS 1160 ST	13-93-00-000	80	490

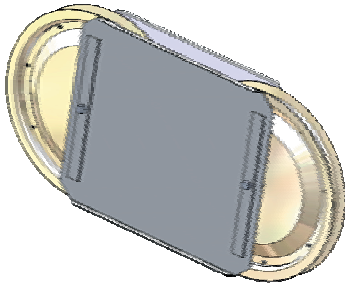
All cable payout guides with a control function can be equipped with non-contact proximity switches or mechanical limit switches for this purpose. Proximity switches can be operated with 15 – 250 VAC or 15 – 30 VDC connected voltage.



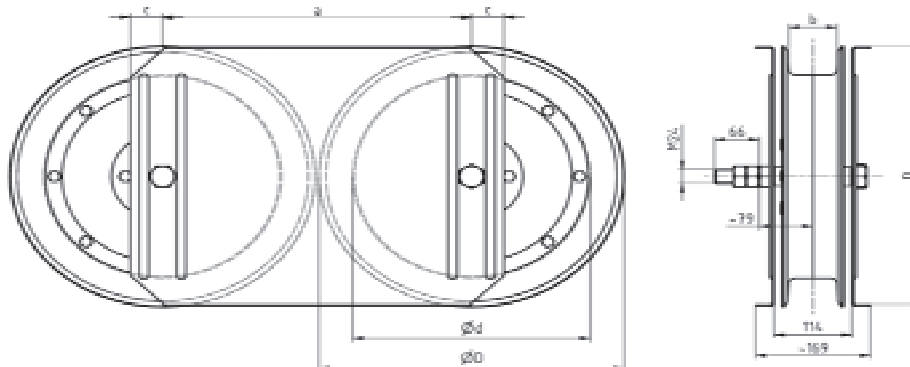
Accessories Double Cable Deflector Sheave, Type UD and UDQ

The double cable deflector sheave is used for spiral coiling drums. It serves for cable deflection of the top cable reeling drum and for passing over the feed-in point.

Type UD



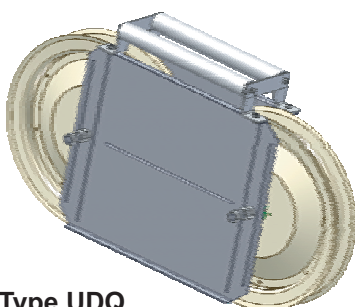
Type	Drawing No.	max. Cable-Ø mm	Weighth kg
UD I	13-70-00-000	20	36
UD II	13-71-00-000	30	65
UD III	13-72-00-000	40	92
UD IV	13-73-00-000	50	115



Type	a mm	b mm	c mm	Ø d mm	Ø D mm	n mm
UD I	455	70	47,5	350	450	444
UD II	655	70	50	530	650	640
UD III	785	70	70	660	780	770
UD IV	925	70	70	780	900	910

Type UDQ

The double cable deflector sheave with cross roller is used for cylindrical coiling drums. It serves for cable deflection of the top cable reeling drum and for passing over the feed-in centre feed funnel. The locating height of the drum relative to the deflection should be selected such that the drum width allows only a max. inclination of 4°.

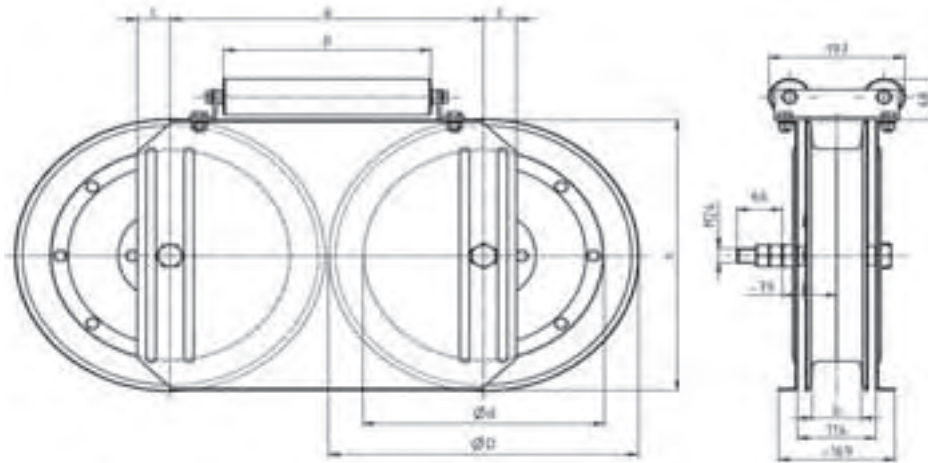


Type	Drawing No.	max. Cable-Ø mm	Weighth kg
UDQ I	13-70-01-000	22	47
UDQ II	13-71-01-000	30	79
UDQ III	13-72-01-000	40	110
UDQ IV	13-73-01-000	52	136

Type UDQ



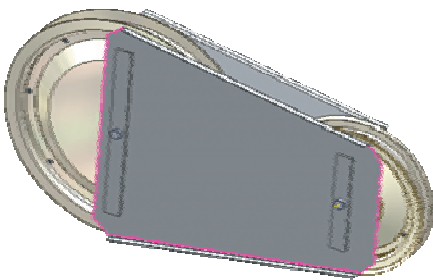
Accessories Double Cable Deflector Sheave, Type UD and UDQ



Type	a mm	b mm	c mm	Ø d mm	Ø D mm	n mm	p mm
UDQ I	455	70	47,5	350	450	447	301
UDQ II	655	70	50	530	650	640	386
UDQ III	785	70	70	660	780	770	486
UDQ IV	925	70	70	780	900	910	600

Type L

The guide and deflection sheave (without cross roller) is used for spiral coiling drums that are positioned laterally to the deflection direction. The drum is mounted such that the large roller deflects the cable whilst the small roller serves only as stabiliser sheave.

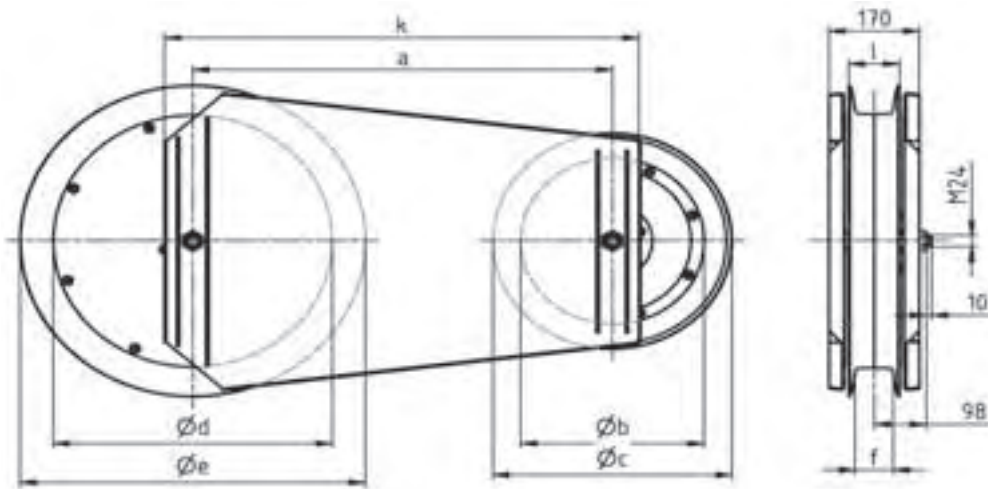


Type L

Type	Drawing No.	max. Cable-Ø mm
L I	13-67-00-000	30
L II	13-68-00-000	40



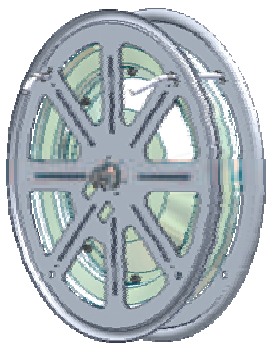
Accessories



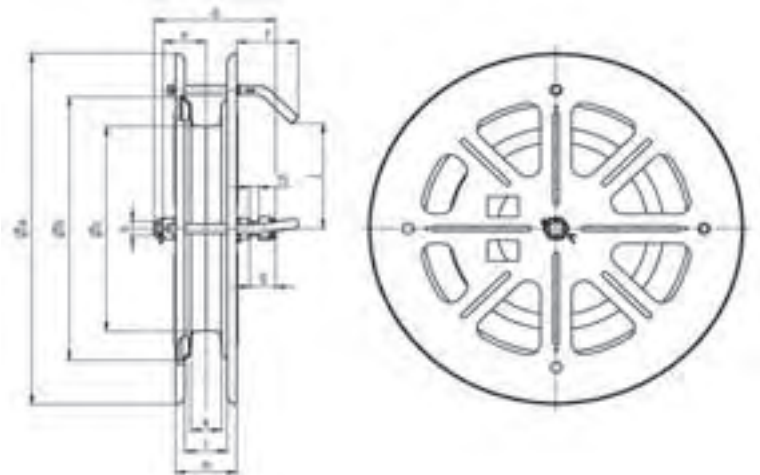
Type	a	Ø b	Ø c	Ø d	Ø e	f	k	l
	mm	mm	mm	mm	mm	mm	mm	mm
L I	790	350	450	530	650	~70	893	96
L II	860	350	450	660	770	~70	943	97

Deflector and Guide Pulleys

These are used when the cable payout cannot occur directly from the drum. The pulley diameter must directly correspond to minimum 15 x of the cable diameter.



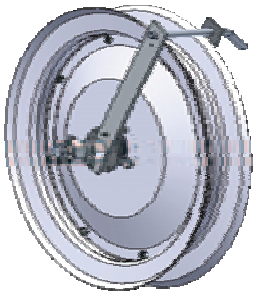
Type URN



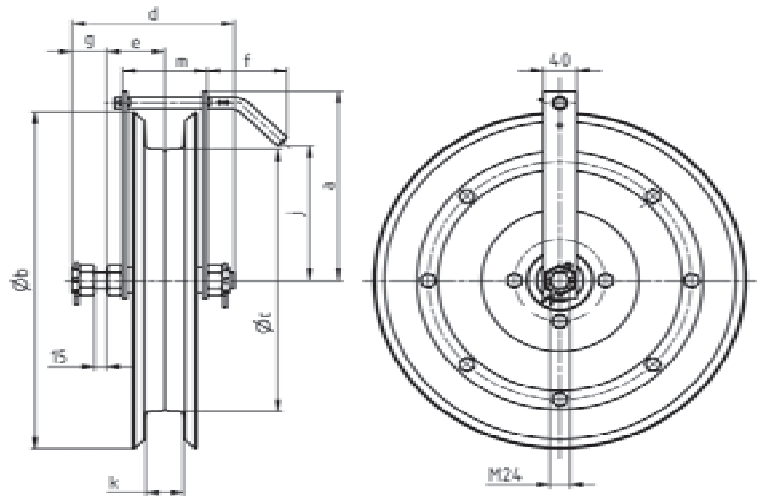
Type	Drawing No.	Weight kg	Ø a	Ø b	Ø c	d	e	f
URN 350	13-30-01-000	23	600	450	350	195	60	99
URN 500	13-32-00-000	42	800	650	530	240	84	85
URN 660	13-33-00-000	52	900	780	660	240	86	75
Type	Drawing No.	Weight kg	g	h	j	k	l	m
URN 350	13-30-01-000	23	42	M 20	180	50	58	98
URN 500	13-32-00-000	42	57	M 30	280	50	82	112
URN 660	13-33-00-000	52	55	M 30	344	70	90	120



Accessories Deflection and Guide Pulleys



Type LRN

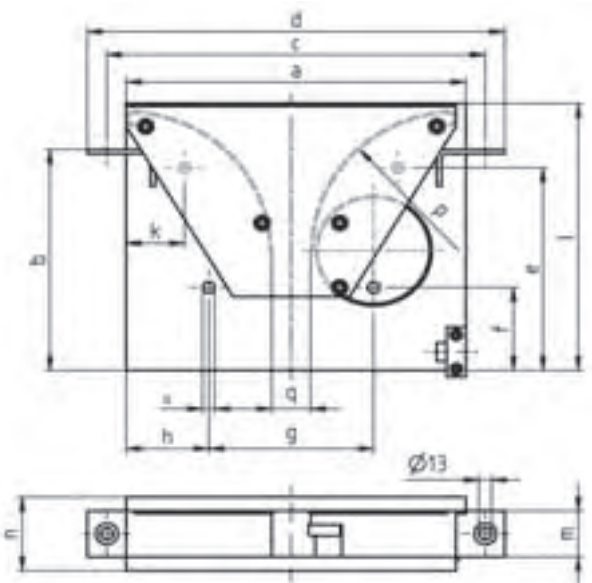
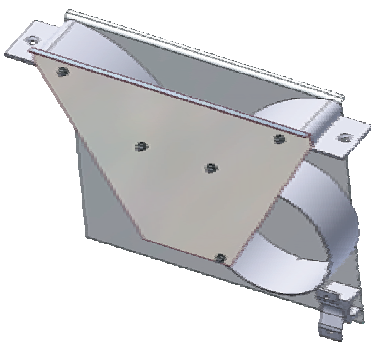


Type	Drawing No.	Weight kg	$\varnothing a$	$\varnothing b$	$\varnothing c$	d	e	f
LRN 350	13-30-00-000	16	253	450	350	183	70	97
LRN 500	13-32-01-000	24	360	650	530	240	82	88
Type	Drawing No.	Weight kg	g	h	j	k	l	m
LRN 350	13-30-00-000	16	45	M 24	180	45	-	105
LRN 500	13-32-01-000	24	59	M 30	280	50	-	116

Cable Centre Feed Funnel

Type ULTV

For cable entry and strain relief at the feed-in point. Up to max. 1 kV cables.



Type	Drawing No.	max. Cable- \varnothing mm
ULTV - I	13-52-00-000	20
ULTV - II	13-47-00-000	22
ULTV - III	13-41-00-000	30
ULTV - IV	13-42-00-000	40
ULTV - V	13-44-00-000	60
ULTV - VI	13-49-00-000	80

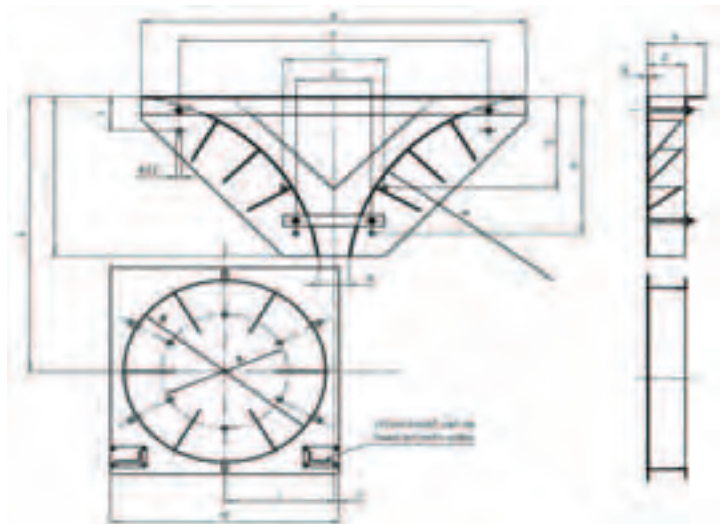


Accessories

Type	a	b	c	d	e	f	g	h
	mm	mm	mm	mm	mm	mm	mm	mm
ULTV - I	350	240	390	430	220	90	170	85
ULTV - II	425	270	465	505	220	78	202	98
ULTV - III	540	495	670	720	405	310	300	360
ULTV - IV	820	650	920	970	550	200	400	210
ULTV - V	1220	850	1290	1340	780	200	600	180
ULTV - VI	1900	1200	1970	2020	1100	175	800	400
Type	i	k	l	m	n	o	p	q
	mm	mm	mm	mm	mm	mm	mm	mm
ULTV - I	220	60	290	50	80	12,5	150	40
ULTV - II	360	20	300	70	110	12,5	175	40
ULTV - III	400	70	530	100	140	12,5	270	55
ULTV - IV	740	40	700	140	180	16,5	400	80
ULTV - V	900	30	900	200	244	16,5	500	100
ULTV - VI	1700	100	1300	200	280	16,5	750	100

Type ULTV

For medium voltage cable up to 24 kV.



Type	Drawing No.	max. Cable-Ø
		mm
ULTV - H 800	13-60-00-000	65
ULTV - H 1200	13-60-01-000-00	100

Type	a	b	c	d	e	f	g	h
ULTV-H	mm	mm	mm	mm	mm	mm	mm	mm
800	1520	1220	400	300	120	150	400	600
1200	2400	2200	800	500	150	175	600	1050
Type	i	k	l	m	n	o	p	q
ULTV-H	mm	mm	mm	mm	mm	mm	mm	mm
800	700	1200	430	900	20	230	150	800
1200	1200	1900	650	1350	25	300	200	1200



Accessories

Further accessories is available as follows:

➤ Limit switch

For controlling the drum positions “full” and “empty” or other monitoring functions. The cams are dimensioned for max. 5 A and 250 V. The limit switch sits either inside the slip ring housing or outside in its own housing (driven via a stainless steel chain). Alternatively, also other limit switches/proximity switches or transducers can be installed. The cam limit switch does not serve as a safety switch.



➤ Heating

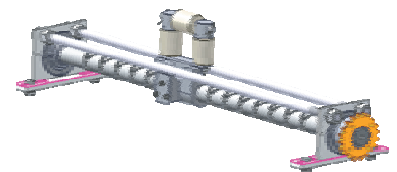
Thermally regulated standstill heaters with different power stages. Installed in an insulation inside a slip ring housing. The installation of a heater for low temperatures or large temperature fluctuations (within a short time) is recommended.

➤ Fibre-Optic Cable Transmitter

Fibre-optic cable is used for the transmission of optical signals. The transition between rotating (drum body) and stationary part is thereby assumed by the so-called fibre-optic cable transmitter. This is adapted to the coiling length of the cable as well as the number of fibre-optic cables. The connection occurs via plug connections. The transmitter is either finally attached to the slip ring body or it sits in its own housing, respectively in a heated space.

➤ Spooling device

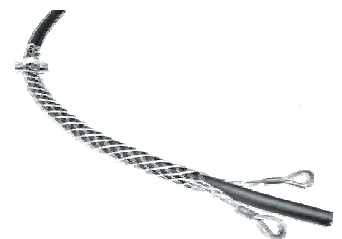
This is recommended for positionally accurate coiling for a cylindrical coiling drum body with great cable lengths. Mechanical function via a cross-threaded spindle or for large drums (type HP) via a roller chain with a running slide.



Type SP

➤ Cable strain-relief

To protect the cable at the feed-in point, cable pulling means or strain relief apparatus are used.

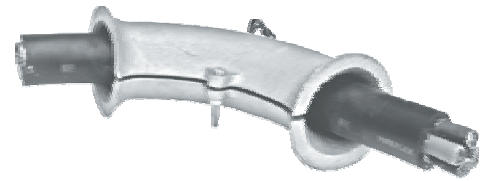




Accessories

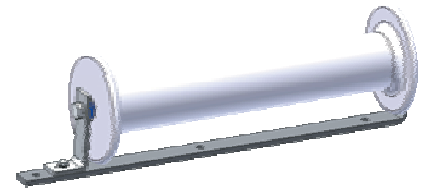
➤ Deflection horn

The deflection horn prevents the cable from kinking when passing over fixed points. The arrangement is horizontal and outside the track mid-point such that it can be folded without obstruction. The arrangement must occur in the middle of the cable drum. The installation of deflection horn can only occur when neither the spooling device nor member chain finds application.



➤ Cable deposit rollers

With the help of a cable deposit roller permanent contact of the cable with the ground is minimised. This prevents the cable from becoming dirty or damaged.



Type	Drawing No.	Width
KL 1	13-51-00-000	200 mm
KL 2	13-51-01-000	300 mm
KL 3	13-51-02-000	400 mm
KL 4	N-030-00A	800 mm



Arrangement Examples

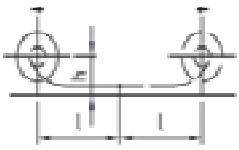


Figure A

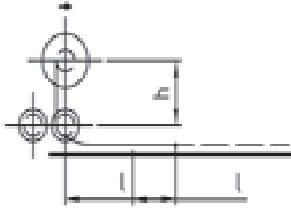


Figure B

Figure A and B

Drum on mobile device.

Cable deposit on the ground or on a continuous deposit. Cable payout horizontal towards one or two sides.

Figure B above the deflection roller.

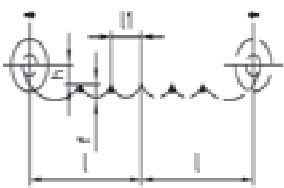


Figure C

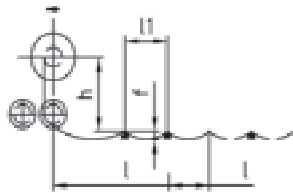


Figure D

Figure C and D

Drum on mobile device.

Cable deposit on supports for l_1 up to 1m. For l above 1 m to max. 3 m, deposit on drums or supports that remain smooth, rounded upwards.

Figure D via deflection rollers.

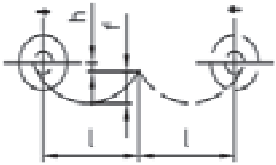


Figure E

Figure E

Drum on mobile device or locally fixed. Cable payout horizontal towards one or two sides (f is dependent upon cable cross-section and upon cable tensile force).

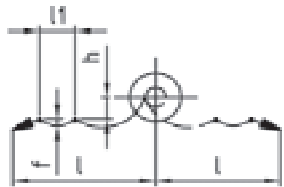


Figure F

Figure F

Drum attachment is locally fixed.

Cable payout horizontal towards one or two sides, cable deposit as depicted in the Figures C and D, however, above deposit rollers.

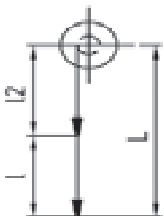


Figure G

Figure G

Cable payout vertical or nearly downwards.

l = Stroke height or payout length

L = Cable length = $l + l_2 + 2$ safety windings

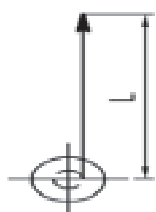


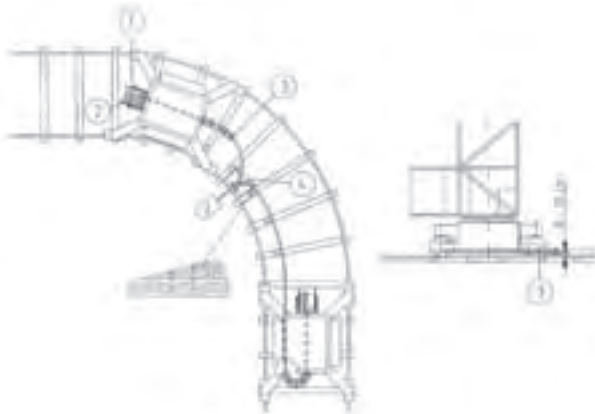
Figure H

Figure H

Cable payout vertically upwards, otherwise as depicted in Figure G.



Arrangement Schemes

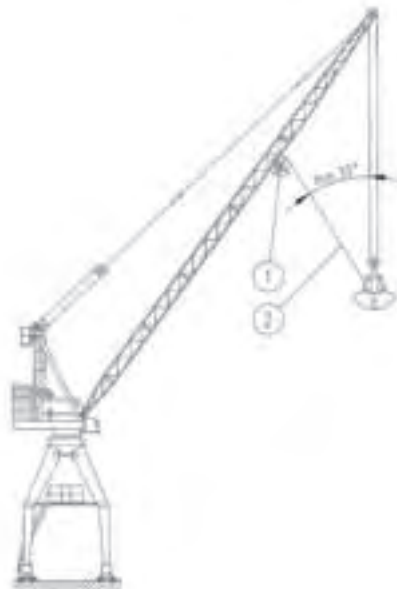


Arrangement Scheme I

For cylindrically coiling cable reeling drums with cable entry or spooling apparatus when moving along a curve or round tracks. When the cable reeling drums are used for moving along curved tracks, the following additional devices are required:

Up to 75 m coiling length, position 1, 3 and 4.
Above 75 m coiling length, position 1, 2, 3 and 4.

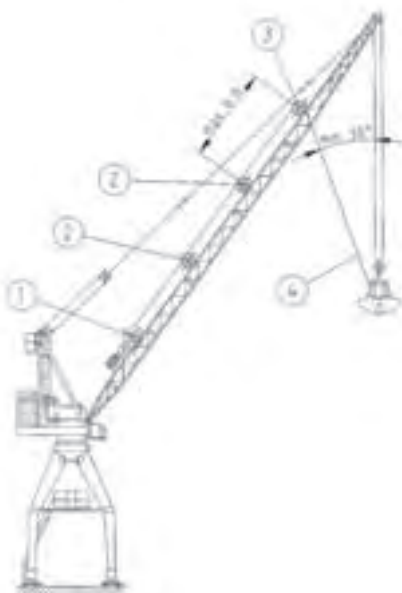
- 1 Cable reeling drum
- 2 Spooling apparatus
- 3 Link chain
- 4 Cable feed funnel ULT



Arrangement Scheme II

Cable reeling drums in the top jib, cable payout directly from the drum.

- 1 Cable reeling drum
- 2 Cable



Arrangement Scheme III

Cable reeling drum in the bottom jib, cable deflection via deflector pulleys.

- 1 Cable reeling drum
- 2 Guide rollers
- 3 Deflector pulleys
- 4 Cable

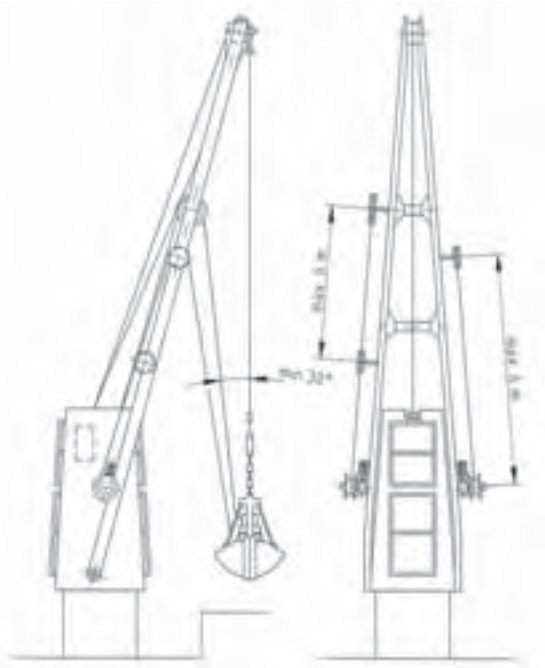


Arrangement Schemes

Arrangement Scheme IV

Cable and rope reeling drum in the bottom jib, cable and rope deflection via deflector pulleys.

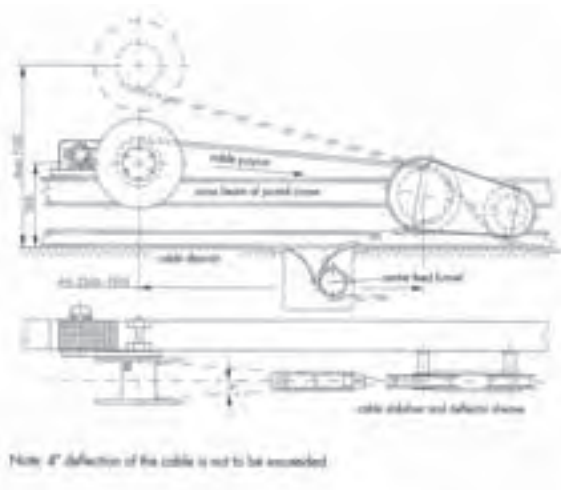
- 1 Cable
- 2 Calming rope
- 3 Cable reeling drum
- 4 Rope drum



Arrangement Scheme V

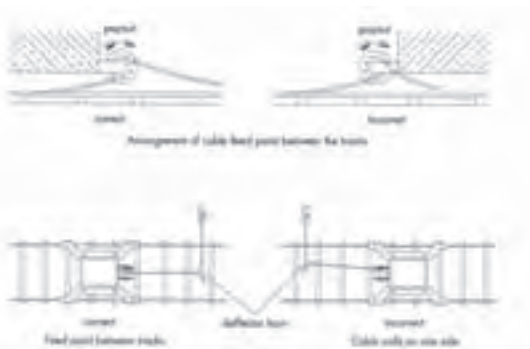
Attention: If the cable reeling drum is positioned with its horizontal middle axis 1.5 m above the cable deposit, then the cable is paid out from the bottom (see dashed line).

If the construction crane passes over the fixed point then the deflection at the fixed point has to be laid low so that cable calming or deflector pulley can pass over it without disturbance.

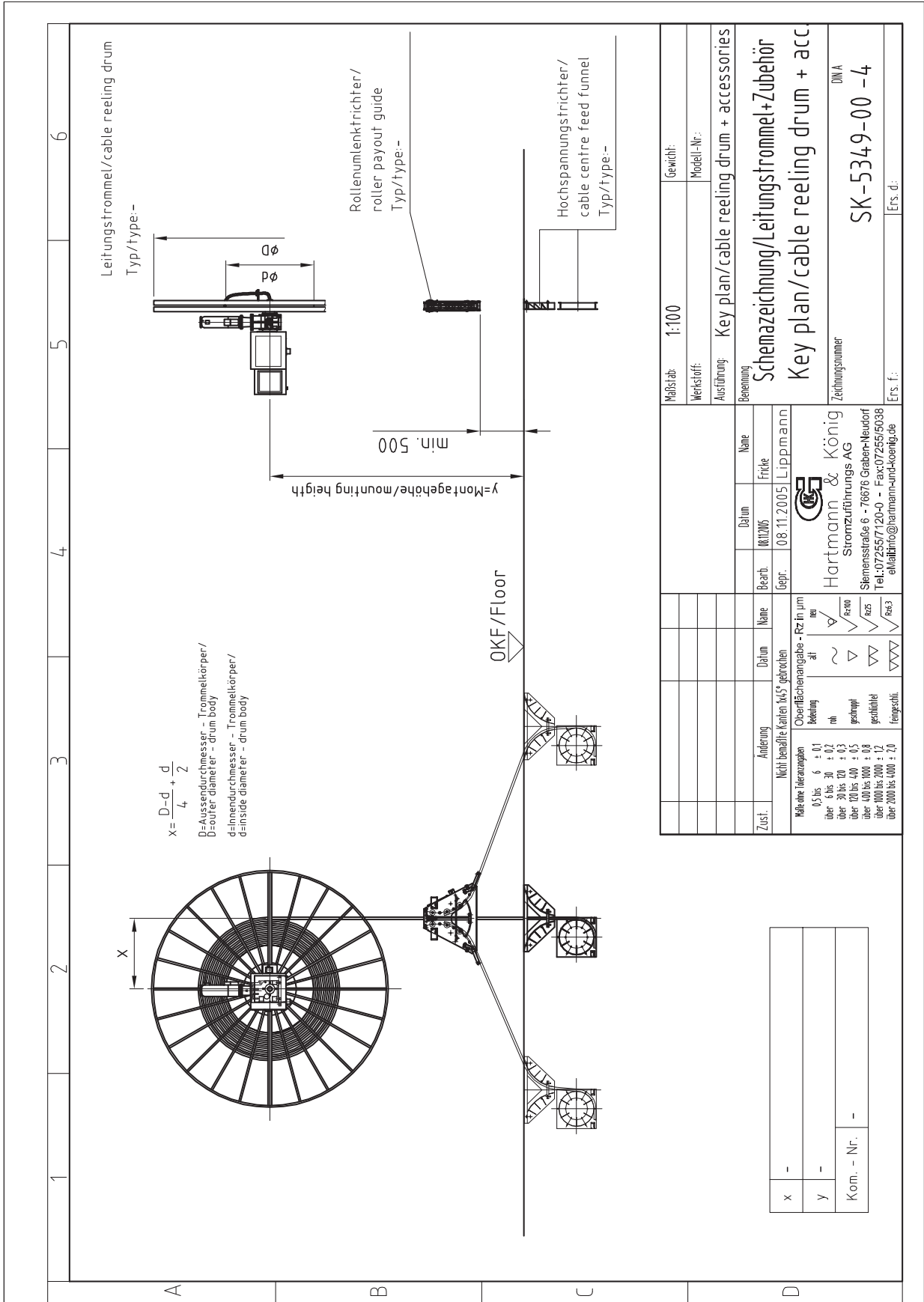


Arrangement Scheme VI

Arrangement of cable reeling drum on the lower carriage of a construction crane.



Cable reeling drum with deflector device and feed-in funnel





Questionnaire

1. Track length of consumer
L = _____ m

2. Which cable length should be wound on the drum?
l = _____ m

(for cable fixed point in the middle of track, cable length is half track length)

3. Coiling type
 spiral
 cylindrical
 3.2.3 coiling

4. For use of intended cable type
_____ mm²
cable Ø _____ mm²
cable weigh _____ kg/m

5. Power to be transmitted and current rating
_____ kW
_____ A

6. What % of installed power comes into application?

7. How many insulated slip rings are needed?

(our drums are always provided with non-insulated earth ring)

8. For which device is the drum used?

(e.g. construction crane, crane bridge, travelling platform, etc.)

9. Should the drum be fixed or attached to a movable equipment ?

10. Cable payout
horizontal (plane)
vertical (perpendicular)
suspended version
(see arrangement examples)

11. Mounting heigth

_____ m

(from drum middle to the cable deposit)

12. Drum drive by means of springs
Counterweigh
electric motor

13. Operating voltage and type of current for drum motor

_____ V

14. How many times per hour does the equipment move ?

_____ /h

15. Working time in hours per day ?

_____ /h

16. Travelling and stroke speed

_____ m/min

17. Starting time

_____ s

18. Cable deposit
between the tracks
outside the tracks

19. Payout direction
right
left
(always viewed from slip ring)

20. Arrangement of drums
(for Figures, see Page 5)

A	<input type="checkbox"/>	E	<input type="checkbox"/>
B	<input type="checkbox"/>	F	<input type="checkbox"/>
C	<input type="checkbox"/>	G	<input type="checkbox"/>
D	<input type="checkbox"/>	H	<input type="checkbox"/>

21. Extraordinary ambient conditions:

Mounting height for more than 1000 m above sea level _____ or underground _____ humidity _____ %

strong vibrations yes
explanation _____

no

Noise level in db according to DIN 45633
sheet.1 _____

ambient temperature in C°
from _____
to _____

Ambient air
sand dust
coal dust
salty waterr

Other media or application areas

22. Painting

priming and cover coat according to Ral 7031 (normal version)

Hot-dip galvanised
sand blasting
other surface treatments

For larger drums and motor driven drums, please send us a drawing or sketch of the installation or attachment conditions.



Technical Explanation of Current Rating, Conversion Factors, Calculation Formulas

Current Rating

(without consideration of the voltage drop)

Nominal cross section mm ²	Rating in ...% DC			
	100%	60%	40%	20%
1,5	23	23	23	23
2,5	30	30	30	30
4	41	41	42	45
6	53	54	55	62
10	74	76	80	97
16	99	106	115	143
25	131	144	161	208
35	162	183	208	274
50	202	234	270	361
70	250	294	409	467
95	301	361	427	581
120	352	425	506	693
150	404	493	589	811
185	461	567	681	940

The specified values apply to single-layer coiling. The values for 100% rating are found in Table 2 from DIN 57100, Part 523/VDE 0100 and EN60204-0298. They specify the rating of insulated cables according to Group 2 for ambient temperatures of 30°C as well as a permissible conductor temperature of 60°C.

Conversion Factors

For the dependence of current rating on the number of layers on the drum at +30°C							
Number of layer on the drum	1	2	3	4	5		
Conversion factor	0.8	0.61	0.49	0.42	0.34		
For the dependence of rating on ambient temperature Factor							
°C	Factor	°C	Factor				
above 25 to 30	1	above 40 to 45	0.71				
above 30 to 35	0.91	above 45 to 50	0.58				
above 35 to 40	0.82	above 50 to 55	0.41				
for four-wire conductors							
numbers of loaded wires	5	7	10	14	19	24	40
Conversion factor	0.75	0.65	0.55	0.5	0.45	0.4	0.35

The conversion factors for deviating ambient temperatures are based on Table 3 from DIN 57100/VDE0100, Part 523 and EN 60204-0298. The converted values for the intermittent operation are based on experience. Please observe the reduction of current rating of the conductor in the case of multi-layer coiling.

η	(Eta) Efficiency
χ	(Kappa) Conductivity in $\frac{S \times m}{mm^2}$
	e.g. for copper approx. 56
$\cos \phi$	(Phi) Power factor
A	Cross-section of the conductor in mm ²
l	One-way length of the conductor section to be considered in m
t	Time in s (Sekunden)
V max	Traveller speed (horizontal) Stroke speed (vertical) in m/min

Calculation Formulas

Ohm's Law	$U = I \times R$
Current heat	$W = I^2 \times R \times t$
Resistance of a conductor (supply and return)	$R = \frac{2 \times l}{\chi \times A}$
Direct current power	$P = U \times I$
Alternating current – real power	$P = U \times I \times \cos \phi$
Three-phase current - real power	$P = \sqrt{3} \times U \times I \times \cos \phi$
efficiency	$\eta = \frac{P_{ab}}{P_{zu}}$

U	Operating voltage in V (Volt) in two-wire plants between the two conductors, in direct current three-wire plants between two main conductors.
u	Voltage drop in V from the beginning to the end of the conductor
I	Current in a conductor in A (Amper)
R	Resistance in Ω (Ohm)
W	Work in Ws (Wattsekunden)
P	Power in W (Watt)
P_{ab}	Dissipated power in W (Watt)
P_{zu}	Supplied power in W (Watt)

Voltage drop in Volt

for	for direct current Single-phase alternating current (free of induction $\cos \phi = 1$)	for three-phase current
given current	$u = \frac{2 \times l \times I}{\chi \times A} (V)$	$u = \frac{\sqrt{3} \times l \times I \times \cos \phi}{\chi \times A} (V)$
given power	$u = \frac{2 \times l \times P}{\chi \times A} (V)$	$u = \frac{l \times P}{\chi \times A} (V)$

A= Conductor cross-section in mm²

for	for direct current Single-phase alternating current (free of induction $\cos \phi = 1$)	for three-phase current
given current	$A = \frac{2 \times l \times I}{\chi \times u} (mm^2)$	$A = \frac{\sqrt{3} \times l \times I \times \cos \phi}{\chi \times u} (mm^2)$
given power	$A = \frac{2 \times l \times P}{\chi \times u \times U} (mm^2)$	$A = \frac{l \times P}{\chi \times u \times U} (mm^2)$



Reeling Cables

Cordaflex (SMK) (N)SHTÖU.

reeling cables with rubber hose. 0.6/1 kV according to DIN VDE 0250 Part 814..

Temperature range

- a) -35 °C to +80 °C for mobile conduit.
 - b) -50 °C to +80 °C for fixed conduit.
- max. +90 °C operating temperature on conductor

Application as reeling cable for high or very high mechanical load. High tensile and torsional load. Applicable indoors and outdoors. for dry and wet environment. Forced guidance via deflections are permissible (if certain bending radii are observed). Speed up to max. 240 m/min.

Number of wires and cross-section mm ²	Cable diameter mm	Weight kg/m	Permissible tensile force N
5 x 1.5	14.6	0.28	225
7 x 1.5	17.2	0.385	315
12 x 1.5	23.4	0.710	540
18 x 1.5	23.3	0.760	810
24 x 1.5	26.8	0.990	1080
4 x 2.5	14.8	0.305	300
5 x 2.5	15.8	0.355	375
7 x 2.5	18.6	0.510	525
12 x 2.5	25.4	0.920	900
18 x 2.5	25.3	1.005	1350
24 x 2.5	29.2	1.320	1800
30 x 2.5	32.4	1.660	2250
36 x 2.5	32.3	1.720	2700
44 x 2.5	37.1	2.230	3300
4 x 4	18.0	0.455	480
4 x 6	19.4	0.575	720
4 x 10	23.6	0.905	1200
4 x 16	26.7	1.24	1920
4 x 25	31.5	1.85	3000
5 x 4	19.4	0.43	600
5 x 6	21.0	0.69	900
5 x 10	25.4	1.08	1500
5 x 16	29.1	1.50	2400
3 x 35+3 x 16/3	31.5	2.16	3150
3 x 50+3 x 25/3	37.4	2.85	4500
3 x 70+3 x 35/3	42.7	3.92	6300
3 x 95+3 x 50/3	47.3	5.02	8550
3 x 120+3 x 70/3	55.0	6.63	10800
3 x 150+3 x 70/3	57.9	7.69	13500
3 x 185+3 x 95/3	62.9	9.31	16650
3 x 240+3 x 120/3	71.4	12.2	21600
46 x 1 (20 kN)	29.6	1.19	3200
30 x 2.5 (20 kN)	32.4	1.61	4100
44 x 2.5 (20 kN)	37.1	2.16	5100
6 x (2 x 1)C	31.9	1.33	360



NSHTÖu-J

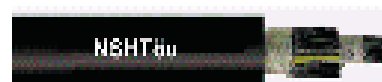
reeling cables with rubber hose. 0.6/1kV according to DIN VDE 0250 Part 814.

Temperature range mobile load

- 30 °C to +70 °C.
- Permissible tensile force 15 N/mm² copper cross-section.

Application as reeling cable for high mechanical load. Applicable indoors and outdoors. for dry and wet environment. Forced guidance via deflections are permissible (if certain bending radii are observed). Speed up to max. 240 m/min

Number of wires and cross-section mm ²	Cable diameter mm	Weight kg/m
4 x 1.5	16.0	0.290
5 x 1.5	17.5	0.350
7 x 1.5	20.5	0.485
12 x 1.5	23.5	0.650
18 x 1.5	27.5	0.910
24 x 1.5	31.0	1.105
30 x 1.5	33.5	1.305
42 x 1.5	37.0	1.775
4 x 2.5	18.0	0.380
5 x 2.5	20.5	0.370
7 x 2.5	22.5	0.615
12 x 2.5	27.5	0.910
18 x 2.5	30.5	1.195
19 x 2.5	33.0	1.46
24 x 2.5	35.5	1.58
30 x 2.5	37.0	1.85
50 x 2.5	47.5	3.20
4 x 4	21.0	0.535
4 x 6	23.5	0.705
4 x 10	28.5	1.045
4 x 16	31.0	1.335
4 x 25	36.5	1.985
4 x 35	41.5	2.63
4 x 50	48.0	3.655
4 x 70	52.5	4.66
4 x 95	60.0	6.105
4 x 120	64.5	7.45
4 x 150	71.0	9.09
5 x 4	22.5	0.625
5 x 6	26.0	0.885
5 x 10	30.5	1.225
5 x 16	34.5	1.63
25x1.5+5x1.5(c)	39.7	2.15
19x2.5+5x1.5(c)	37.0	1.942
25x2.5+5x1.5(c)	40.0	2.15





Reeling Cables

Trommelflex PUR-HF

Halogen-free reeling cables with polyurethane outer jacket.
0.6/1 kV. based on DIN VDE 0250.

Temperature range

- a) -40° C to +90° C for mobile conduit.
- b) -50° C to +90° C for fixed conduit.
- max. +90° C operating temperature on conductor.

Application as reeling cable for high or extraordinary mechanical load. High tensile and torsional load. Applicable indoors and outdoors. for dry and wet environment. Forced guidance via deflections are permissible (if certain bending radii are observed).

Special features:

- a) small outer diameter.
- b) low specific weight
- c) high tensile stress

Number of wires and cross-section mm²	Cable diameter mm	Weight kg/m	Fracture load of load-bearing element N
4G 1.5	11.2	0.155	1.340
5 G 1.5	11.8	0.178	1.690
7 G 1.5	13.5	0.218	2.150
12 G 1.5	17.0	0.363	2.600
18 G 1.5	18.1	0.459	2.600
24 G 1.5	20.9	0.590	2.800
30 G 1.5	23.0	0.720	2.900
42 G 1.5	28.5	0.980	2.900
4 G 2.5	12.3	0.208	1.345
5 G 2.5	13.0	0.230	2.100
7 G 2.5	14.7	0.315	2.550
12 G 2.5	20.4	0.485	2.900
18 G 2.5	20.5	0.679	3.450
24 G 2.5	23.6	0.860	3.200
30 G 2.5	26.8	1.080	4.200
4 G 4	13.6	0.281	1.690
14 G 4	21.1	0.819	10.000
4 G 6	14.9	0.372	1.860
4 G 10	18.9	0.615	2.300
4 G 16	22.1	0.924	2.800
4 G 25	25.5	1.270	3.300
4 G 35	30.0	1.778	3.300
5 G 4	14.5	0.318	2.500
5 G 6	17.4	0.435	3.000
5 G 10	20.5	0.704	3.000
5 G 16	24.2	1.067	3.000
4G16+2x(4x1.5)C	25.3	1.2	2.110
19G 2.5+5x1.5(C)	23.8	0.850	2.900
3 x (2x1)C	17.0	0.420	1.200
8 x 6G 2.5	43.5	2.485	4.000



Reeling medium voltage hawsers are used by different manufacturers:

- Prysmian
- Nexans
- Draka

Among others, with the following properties:

- Accord to DIN VDE 0250, Part 813
- Operating voltage of 1,8 – 30 kV
- Diverse cable cross-sections
- Small outer diameters through split earth wire
- Temperature
 - 35°C to +80°C for mobile conduit,
 - 50°C to +80°C for fixed conduit,
 - max. + 90°C operating temperature on conductor.
- High mechanical stress (tensile and torsion forces) possible
- High speed permissible
- Optional with fibre-optic cable (6, 12 or 18 fibres with diverse diameters).

For your concrete needs, we request for information of the application or your enquiry.





General Conditions of Hartmann & Köing Stromzuführungs AG (December 2005)

I. GENERAL

1. The scope of deliveries and/or services (hereinafter referred to as „Supplies“) shall be determined by the written declarations of both Parties. General terms and conditions of the Purchaser shall apply only if and when expressly accepted by the supplier or the provider of services (hereinafter referred to as „Supplier“) in writing.
2. The Supplier herewith reserves any industrial property rights and/or copyrights pertaining to its cost estimates, drawings and other documents (hereinafter referred to as „Documents“). The Documents shall not be made accessible to third parties without the Supplier's prior consent and shall, upon request, be returned without undue delay to the Supplier if the contract is not awarded to the Supplier. Sentences 1 and 2 shall apply mutatis mutandis to documents of the Purchaser; these may, however, be made accessible to third parties to whom the Supplier may rightfully transfer Supplies.
3. The Purchaser shall have the non-exclusive right to use standard software, provided that it remains unchanged, is used within the agreed performance parameters, and on the agreed equipment. The Purchaser may make one back-up copy without express agreement.
4. Partial Supplies shall be allowed, unless they are unreasonable to accept for the Purchaser.

II. PRICES AND TERMS OF PAYMENT

1. Prices shall be ex works and exclude packaging; value added tax shall be added at the then applicable rate.
2. If the Supplier is also responsible for assembly or erection and unless otherwise agreed, the Purchaser shall pay the agreed remuneration and any incidental costs required, e. g. travel costs, costs for the transport of tools and equipment, and personal luggage as well as allowances.
3. Payments shall be made free Supplier's paying office.
4. The Purchaser may set off only those claims that are undisputed or against which no legal recourse is possible.
5. On delay of payment we charge interest payable on arrears.

III. RETENTION OF TITLE

1. Items pertaining to the Supplies („Retained Goods“) shall remain the property of the Supplier until each and every claim the Supplier has against the Purchaser on account of the business connection has been fulfilled. If the combined value of the security interests of the Supplier exceeds the value of all secured claims by more than 20 %, the Supplier shall release a corresponding part of the security interest if so requested by the Purchaser.
2. For the duration of the retention of title, the Purchaser may not pledge the Retained Goods or use them as security, and resale shall be possible only for resellers in the ordinary course of their business and only on condition that the reseller receives payment from its customer or makes the transfer of property to the customer dependent upon the customer fulfilling its obligation to effect payment.
3. The Purchaser shall inform the Supplier forthwith of any seizure or other act of intervention by third parties.
4. Where the Purchaser fails to fulfil its duties, including failure to make payments due, the Supplier shall be entitled to cancel the contract and take back the Retained Goods in the case of continued failure following expiry of a reasonable time set by the Supplier; the statutory provisions that a time limit is not needed remain unaffected. The Purchaser shall be obliged to surrender the Retained Goods.

IV. TIME FOR SUPPLIES; DELAY

1. Times set for Supplies can only be observed if all Documents to be supplied by the Purchaser, necessary permits and releases, especially concerning plans, are received in time and if agreed terms of payment and other obligations of the Purchaser are fulfilled. Unless these conditions are fulfilled in time, times set shall be extended appropriately; this shall not apply where the Supplier is responsible for the delay.
2. If non-observance of the times set is due to force majeure such as mobilization, war, rebellion or similar events, e. g. strike or lockout, such time shall be extended accordingly.
3. If the Supplier is responsible for the delay (hereinafter referred to as „Delay“) and the Purchaser demonstrably suffered a loss therefrom, the Purchaser may claim a compensation as liquidated damages of 0.5 % for every completed week of Delay, but in no case more than a total of 3 % of the price of that part of the Supplies which because of the Delay could not be put to the intended use.

4. Purchaser's claims for damages due to delayed Supplies as well as claims for damages in lieu of performance exceeding the limits specified in No. 3 above shall be excluded in all cases of delayed Supplies even upon expiry of a time set to the Supplier to effect the Supplies. This shall not apply in cases of mandatory liability based on intent, gross negligence, or due to injury of life, body or health. Cancellation of the contract by the Purchaser based on statute shall be limited to cases where the Supplier is responsible for the delay. The above provisions do not imply a change in the burden of proof to the detriment of the Purchaser.
5. At the Supplier's request the Purchaser shall declare within a reasonable period of time whether the Purchaser cancels the contract due to the delayed Supplies or insists on the Supplies to be carried out.
6. If dispatch or shipment is delayed at the Purchaser's request by more than one month after notice of the readiness for dispatch was given, the Purchaser may be charged, for every month commenced, storage costs of 0.5 % of the price of the items of the Supplies, but in no case more than a total of 5 %. The parties to the contract may prove that higher or, as the case may be, lower storage costs have been incurred.

V. TRANSFER OF RISK

1. Even where delivery has been agreed freight free, the risk shall pass to the Purchaser as follows:
 - a) if the Supplies do not include assembly or erection, at the time when the Supplies are shipped or picked up by the carrier. Upon request of the Purchaser, the Supplier shall insure the Supplies against the usual risks of transport at the expense of the Purchaser;
 - b) if the Supplies include assembly or erection, at the day of taking over in the own works or, if so agreed, after a fault-free trial run.
2. The risk shall pass to the Purchaser if dispatch, shipping, the start or performance of assembly or erection, the taking over in the own works or the trial run is delayed for reasons for which the Purchaser is responsible or if the Purchaser has otherwise failed to accept the Supplies.

VI. ASSEMBLY AND ERECTION

Unless otherwise agreed in writing, assembly/erection shall be subject to the following provisions:

1. The Purchaser shall provide at its own expense and in good time:
 - a) all earth and construction work and other ancillary work outside the scope of the Supplier, including the necessary skilled and unskilled labour, construction materials and tools,
 - b) the equipment and materials necessary for assembly and commissioning such as scaffolds, lifting equipment and other devices as well as fuels and lubricants,
 - c) energy and water at the point of use including connections, heating and lighting,
 - d) suitable dry and lockable rooms of sufficient size adjacent to the site for the storage of machine parts, apparatus, materials, tools, etc. and adequate working and recreation rooms for the erection personnel, including sanitary facilities as are appropriate in the specific circumstances. Furthermore, the Purchaser shall take all measures it would take for the protection of its own possessions to protect the possessions of the Supplier and of the erection personnel at the site,
 - e) protective clothing and protective devices needed due to particular conditions prevailing on the specific site.
2. Before the erection work starts, the Purchaser shall make available of its own accord any information required concerning the location of concealed electric power, gas and water lines or of similar installations as well as the necessary structural data.
3. Prior to assembly or erection, the materials and equipment necessary for the work to start must be available on the site of assembly/erection and any preparatory work must have advanced to such a degree that assembly/erection can be started as agreed and carried out without interruption. Access roads and the assembly/erection site itself must be level and clear.
4. If assembly, erection or commissioning is delayed due to circumstances for which the Supplier is not responsible, the Purchaser shall bear the reasonable costs incurred for idle times and any additional travelling of the Supplier or the erection personnel.
5. The Purchaser shall attest to the hours worked by the erection personnel towards the Supplier at weekly intervals and the Purchaser shall immediately confirm in writing if assembly, erection or commissioning has been completed.



General Conditions

for the supply of products and services of the electrical and electronics industry (May 2003)

6. If, after completion, the Supplier demands acceptance of the Supplies, the Purchaser shall comply therewith within a period of two weeks. In default thereof, acceptance is deemed to have taken place. Acceptance is also deemed to have been effected if the Supplies are put to use, after completion of an agreed test phase, if any.

VII. RECEIVING OF SUPPLIES

The Purchaser shall not refuse to receive Supplies due to minor defects.

VIII. DEFECTS AS TO QUALITY

The Supplier shall be liable for defects as to quality („Sachmängel“, hereinafter referred to as „Defects“) as follows:

1. All parts or services where a Defect becomes apparent within the limitation period shall, at the discretion of the Supplier, be repaired, replaced or provided again free of charge irrespective of the hours of operation elapsed, provided that the reason for the Defect had already existed at the time when the risk passed.
2. Claims based on Defects are subject to a limitation period of 12 months. This provision shall not apply where longer periods are prescribed by law according to Sec. 438 para. 1 No. 2 (buildings and things used for a building), Sec. 479 para. 1 (right of recourse), and Sec. 634a para. 1 No. 2 (defects of a building) German Civil Code („BGB“), as well as in cases of injury of life, body or health, or where the Supplier intentionally or grossly negligently fails to fulfil its obligation or fraudulently conceals a Defect. The legal provisions regarding suspension of expiration („Ablaufhemmung“), suspension („Hemmung“) and recommencement of limitation periods remain unaffected.
3. The Purchaser shall notify Defects to the Supplier in writing and without undue delay.
4. In the case of notification of a Defect, the Purchaser may withhold payments to a reasonable extent taking into account the Defect occurred. The Purchaser, however, may withhold payments only if the subject-matter of the notification of the Defect occurred is justified beyond doubt. Unjustified notifications of Defect shall entitle the Supplier to have its expenses reimbursed by the Purchaser.
5. The Supplier shall first be given the opportunity to supplement its performance („Nacherfüllung“) within a reasonable period of time.
6. If supplementary performance is unsuccessful, the Purchaser shall be entitled to cancel the contract or reduce the remuneration, irrespective of any claims for damages it may have according to Art. XI.
7. There shall be no claims based on Defect in cases of insignificant deviations from the agreed quality, of only minor impairment of usefulness, of natural wear and tear or damage arising after the transfer of risk from faulty or negligent handling, excessive strain, unsuitable equipment, defective workmanship, inappropriate foundation soil or from particular external influences not assumed under the contract, or from non-reproducible software errors. Claims based on defects attributable to improper modifications or repair work carried out by the Purchaser or third parties and the consequences thereof shall be likewise excluded.
8. The Purchaser shall have no claim with respect to expenses incurred in the course of supplementary performance, including costs of travel and transport, labour, and material, to the extent that expenses are increased because the subject-matter of the Supplies was subsequently brought to another location than the Purchaser's branch office, unless doing so complies with the intended use of the Supplies.
9. The Purchaser's right of recourse against the Supplier pursuant to Sec. 478 BGB is limited to cases where the Purchaser has not concluded an agreement with its customers exceeding the scope of the statutory provisions governing claims based on Defects. Moreover, No. 8 above shall apply mutatis mutandis to the scope of the right of recourse the Purchaser has against the Supplier pursuant to Sec. 478 para. 2 BGB.
10. Furthermore, the provisions of Art. XI (Other Claims for Damages) shall apply in respect of claims of damages. Any other claims of the Purchaser against the Supplier or its agents or any such claims exceeding the claims provided for in this Art. VIII, based on a Defect, shall be excluded.

IX. INDUSTRIAL PROPERTY RIGHTS AND COPYRIGHT; DEFECTS IN TITLE

1. Unless otherwise agreed, the Supplier shall provide the Supplies free from third parties' industrial property rights and copyrights (hereinafter referred to as „IPR“) with respect to the country of the place of destination. If a third party asserts a justified claim against the Purchaser based on an infringement of an IPR with respect to the Supplies made by the Supplier and then used in conformity with the contract, the Supplier shall be liable to the Purchaser within the time period stipulated in Art. VIII No. 2 as follows:
 - a) The Supplier shall choose whether to acquire, at its own expense, the right to use the IPR with respect to the Supplies concerned or whether to modify the Supplies such that they no longer infringe the IPR or replace them. If this would be unreasonable to demand from the Supplier, the Purchaser may cancel the contract or reduce the remuneration pursuant to the applicable statutory provisions.
 - b) The Supplier's liability to pay damages shall be governed by Art. XI.
 - c) The above obligations of the Supplier shall only apply if the Purchaser (i) immediately notifies the Supplier of any such claim asserted by the third

party in writing, (ii) does not concede the existence of an infringement and (iii) leaves any protective measures and settlement negotiations to the discretion of the Supplier. If the Purchaser stops using the Supplies in order to reduce the damage or for other good reason, it shall be obliged to point out to the third party that no acknowledgement of the alleged infringement may be inferred from the fact that the use has been discontinued.

2. Claims of the Purchaser shall be excluded if it is itself responsible for the infringement of an IPR.
3. Claims of the Purchaser shall also be excluded if the infringement of the IPR is caused by specifications made by the Purchaser, to a type of use not foreseeable by the Supplier or to the Supplies being modified by the Purchaser or being used together with products not provided by the Supplier.
4. In addition, with respect to claims by the Purchaser pursuant to No. 1 a) above, Art. VIII Nos. 4, 5, and 9 shall apply mutatis mutandis in the event of an infringement of an IPR.
5. Where other defects in title occur, Art. VIII shall apply mutatis mutandis.
6. Any other claims of the Purchaser against the Supplier or its agents or any such claims exceeding the claims provided for in this Art. IX, based on a defect in title, shall be excluded.

X. IMPOSSIBILITY OF PERFORMANCE; ADAPTATION OF CONTRACT

1. To the extent that Supplies are impossible to be carried out, the Purchaser shall be entitled to claim damages, unless the Supplier is not responsible for the impossibility. The Purchaser's claim for damages shall, however, be limited to an amount of 10 % of the value of the part of the Supplies which, owing to the impossibility, cannot be put to the intended use. This limitation shall not apply in the case of mandatory liability based on intent, gross negligence or injury of life, body or health; this does not imply a change in the burden of proof to the detriment of the Purchaser. The right of the Purchaser to cancel the contract shall remain unaffected.
2. Where unforeseeable events within the meaning of Art. IV No. 2 substantially change the economic importance or the contents of the Supplies or considerably affect the Supplier's business, the contract shall be adapted taking into account the principles of reasonableness and good faith. Where doing so is economically unreasonable, the Supplier shall have the right to cancel the contract. If the Supplier intends to exercise its right to cancel the contract, it shall notify the Purchaser thereof without undue delay after having realised the repercussions of the event; this shall also apply even where an extension of the delivery period had previously been agreed with the Purchaser.

XI. OTHER CLAIMS FOR DAMAGES

1. Any claims for damages and reimbursement of expenses the Purchaser may have (hereinafter referred to as „Claims for Damages“), based on whatever legal reason, including infringement of duties arising in connection with the contract or tort, shall be excluded.
2. The above shall not apply in the case of mandatory liability, e. g. under the German Product Liability Act („Produkthaftungsgesetz“), in the case of intent, gross negligence, injury of life, body or health, or breach of a condition which goes to the root of the contract („wesentliche Vertragspflichten“). However, Claims for Damages arising from a breach of a condition which goes to the root of the contract shall be limited to the foreseeable damage which is intrinsic to the contract, unless caused by intent or gross negligence or based on liability for injury of life, body or health. The above provision does not imply a change in the burden of proof to the detriment of the Purchaser.
3. To the extent that the Purchaser has a valid Claim for Damages according to this Art. XI, it shall be time-barred upon expiration of the limitation period applicable to Defects pursuant to Art. VIII No. 2. In the case of claims for damages under the German Product Liability Act, the statutory provisions governing limitation periods shall apply.

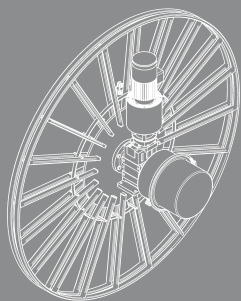
XII. VENUE AND APPLICABLE LAW

1. If the Purchaser is a businessperson, sole venue for all disputes arising directly or indirectly out of the contract shall be the Supplier's place of business. However, the Supplier may also bring an action at the Purchaser's place of business.
2. Legal relations existing in connection with this contract shall be governed by German substantive law, to the exclusion of the United Nations Convention on Contracts for the International Sale of Goods (CISG).

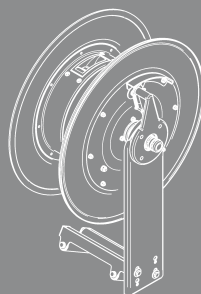
XIII. SEVERABILITY CLAUSE

The legal invalidity of one or more provisions of this contract shall in no way affect the validity of the remaining provisions. This shall not apply if it would be unreasonable for one of the parties to continue the contract.

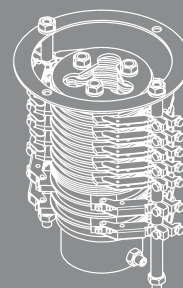
Hartmann & König
Stromzuführungs AG



Motorized cable reels



Spring cable reels



Slip ring bodies

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