SCRL SERIES

SPRING CABLE REEL MARINE

IP67

MARINE SAFETY

SPM SPECIAL MACHINE.
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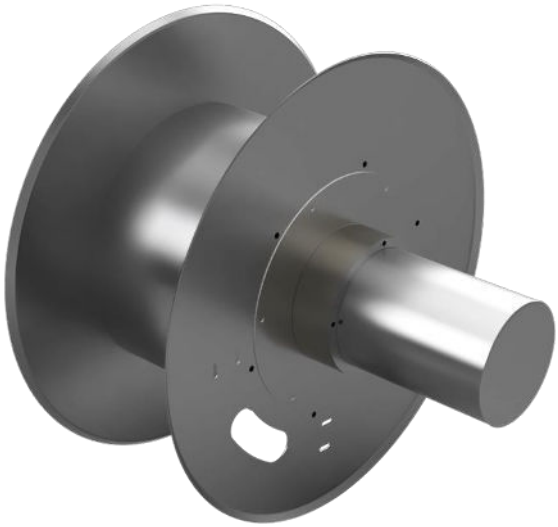
Spring-driven cable reels - general technical data

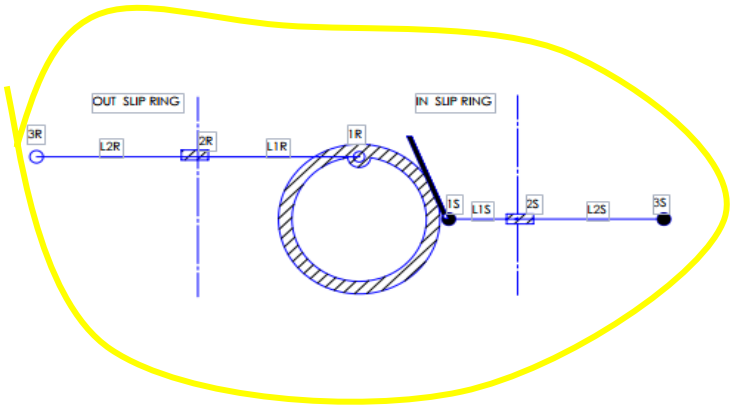
The spring cable reels marine SCRL are used for the winding and unwinding of power and control cables, mainly in the lifting sectors, process machines, and water treatment plants.
The operation of the device consists of a steel drum inside which we have spiral springs which are unwound and wound by the towing of the mobile vehicle.



Slip ring assembly

The slip ring assemblies are designed for an operational voltage of max. 400 / 1000 V.
Depending on the size and the application of the spring-driven cable reel both sliprings for the data transmission
(mA-range / data bus systems) and sliprings for power transmission (up to max. 80 A) can be used.
The individually admissible amperages of the slipring assemblies can be gathered from the selection list.
The material of the spring cable reeis is steel stainless steel AISI 316L
Correspond to protection class IP67

The leaf foil brush system is a particular brush that slides on a surface of a brass or bronze ring.
It has the function of transmitting power electricity, analog and digital signals from a fixed point (brush) to a rotating mobile one (ring) (input = ring / output = brush)

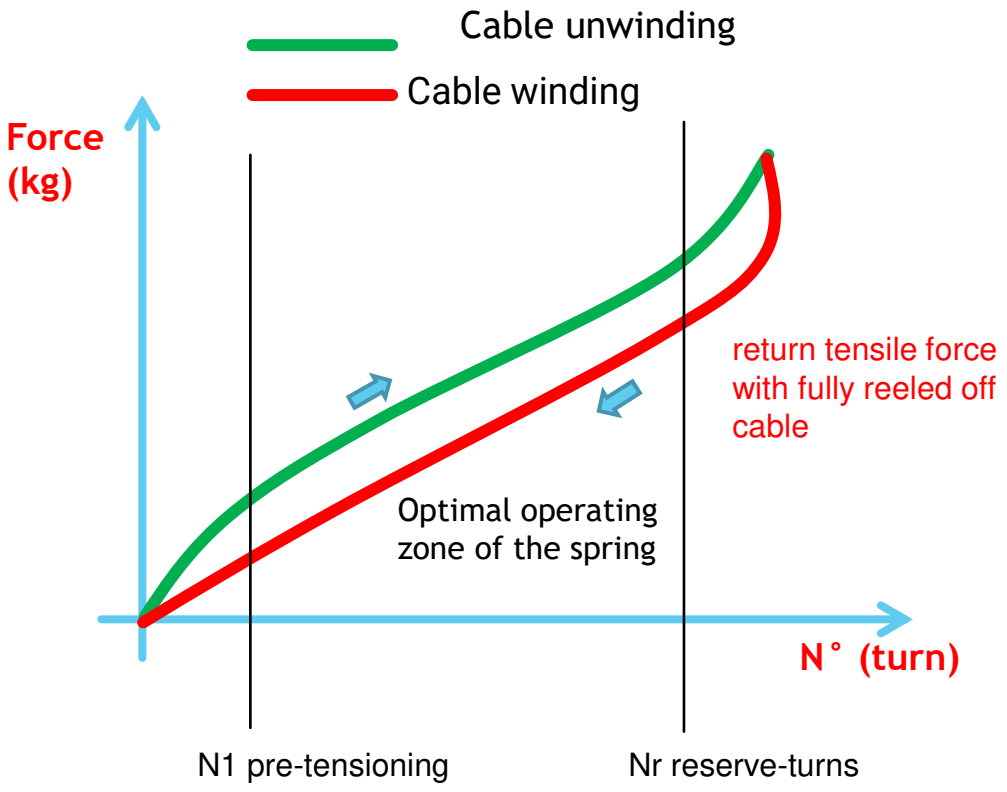


The main advantages of the system are:

1) Compactness and constructive simplicity;
2) Ease of maintenance;
3) Low electrical resistivity values (0.2 <R <6 mohm)
4) Good values of the characteristic impedance of the ring / brush system
5) Low friction value (Good ring / brush smoothness).
7) Low overheating at the contact point.
8) Low overtemperature values of the terminals in case of failure
9) Rapid cooling in case of failure at the contact point

Springs

Springs of high-quality texture-roller spring steel with a long lifespan are used.
The springs conduct as shown in the diagram.
The spring forces indicated in the selection list are the max. achievable forces F (referred to the corresponding reel body core).
The pre-tensioning-, working- and reserve-turns to be observed during commissioning are indicated on the type plate of the reel.



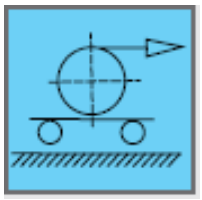
Cable selection

On page 7 you will find a selection of cables for which our spring-driven cable reels are suitable.
When selecting the cable to be reeled the information of the cable supplier and the corresponding regulations
have to be observed.
The spring-driven cable reels in this list are cylindrically uncontrolled-winding reels. Thus, especially with long winding
lengths the number of layers on the reel body has to be observed when the core-cross section is determined

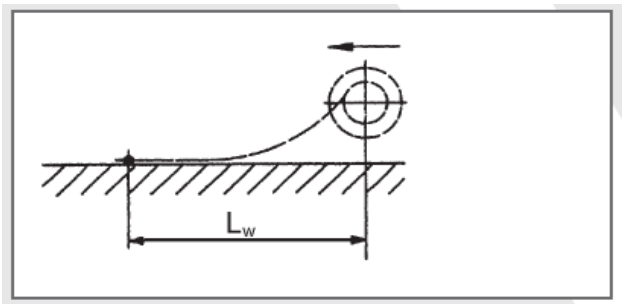
General basic principles for determination of the cable length

When determining the complete cable length to be reeled the following has to be observed:
- only put as much cable on the reel body as is required for the winding (LW) + 2 additional windings as tension
relief which have to stay on the reel body when the cable is completely pulled off
- connection length for the connection to the brush holders
- connection length for the connection within the feeding point
- length for the mounting height h (horizontal cable pay-off)
- length for L0 (vertical cable pay-off)

Horizontal cable pay-off

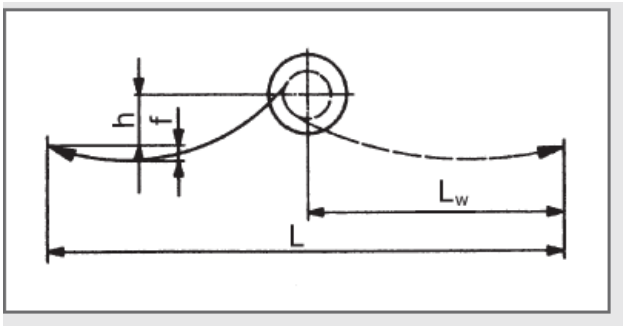


a)



Cable pay-off to 1 direction

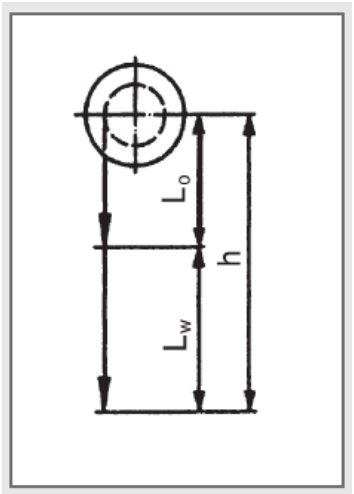
b)



Cable pay-off to 2 directions

Vertical cable pay-off downwards

c)



TAB1 Cable data for cable standard

SLIP RING	Cross section	Weight (kg/m)	Ø [mm]
4X20A	4G2,5	0,2	14
4X40A	4G4	0,28	15,3
4X40A	4G6	0,39	16,9
4X60A	4G10	0,61	18,9
4X80A	4G16	0,94	22,5
5X25A	5G2,5	0,24	15,1
5X40A	5G4	0,34	16,6
5X40A	5G6	0,49	18,4
5X60A	5G10	0,72	21,4
5X80A	5G16	1,12	24,7
7X20A	7X1,5	0,21	13
7X20A	7X2,5	0,35	16
12X20A	12X1,5	0,41	17
12X20A	12X2,5	0,7	21
18X20A	18X1,5	0,43	17,4
18X20A	18X2,5	0,76	21,8
24X20A	24X2,5	0,7	20,3
24X20A	24X2,5	1,07	25,8
36X20A	36X1,5	0,92	22,4
36X20A	36X2,5	1,45	28,8
42X20A	42X2,5	1,52	30,9

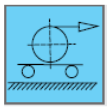
TAB2 TYPE SPRING CABLE REEL SCRL

CODE 1	CODE 2		
SCRL02	352212	402212	
SCRL03	453021	573021	573026
SCRL04	573630	703630	

TAB3 Horizontal cable pay-off

Length (m)

D(mm)	W (Kg)	10	15	20	25	30
5-7,	0,05-0,08.	SCRL02				
8-10.	0,08-0,15	SCRL02	SCRL02			
10-13,	0,15-0,2	SCRL02	SCRL02	SCRL03	SCRL03	SCRL03
13-16	0,2-0,3	SCRL02	SCRL02	SCRL03	SCRL03	SCRL03
16-19	0,3-0,6	SCRL03	SCRL03	SCRL03	SCRL03	SCRL03
19-22	0,6-0,75	SCRL03	SCRL03	SCRL03	SCRL03	SCRL03
22-25	0,75-1,1	SCRL03	SCRL03	SCRL04	SCRL04	SCRL04
25-28	1,1-1,4	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04
28-31	1,4-1,6	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04
32-36	2-2,5	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04



TAB4 Vertical cable pay-off downwards

Length (m)

D(mm)	W (Kg)	4	8	12	16	20
5-7,	0,05-0,08.	SCRL02	SCRL02			
8-10.	0,08-0,15	SCRL02	SCRL02	SCRL02		
10-13,	0,15-0,2	SCRL02	SCRL02	SCRL02	SCRL03	SCRL03
13-16	0,2-0,3	SCRL02	SCRL02	SCRL02	SCRL03	SCRL03
16-19	0,3-0,6	SCRL03	SCRL03	SCRL03	SCRL03	SCRL03
19-22	0,6-0,75	SCRL03	SCRL03	SCRL03	SCRL03	SCRL03
22-25	0,75-1,1	SCRL03	SCRL03	SCRL03	SCRL03	SCRL03
25-28	1,1-1,4	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04
28-31	1,4-1,6	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04
32-36	2-2,5	SCRL04	SCRL04	SCRL04	SCRL04	SCRL04

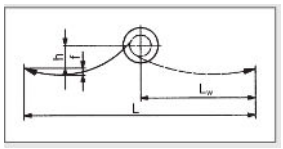
TAB5 Type Springs

SERIES	SIZE	CODE SPRING	TYPE SPRING	H	V
SCRL	SCRL02	B	40X0,6 Ø 190 øi 25 L=15	1	
SCRL	SCRL03	H	40X1,1 Ø 265 øi 45 L=18	1	
		J	40X1,35 Ø265 øi 45 L=15	2	
SCRL	SCRL04	P	**40X1,35Ø320 øi 55L=18 MT**	2	

CHOICE SPRING CABLE REEL

EXEMPLE 1

Horizontal



Cable pay-off to 2 directions
Lw =25m
h =1 m

Cable 4G16

Research

TAB1 Cable data for cable standard

SLIP RING	Cross section	Weight (kg/m)	Ø [mm]
4X80A	4G16	0,94	22,5

TAB3 Horizontal cable pay-off

D(mm)	W (Kg)	10	15	20	25	30
22-25	0,75-1,1	SCRL03	SCRL03	SCRL04	SCRL04	SCRL04

TAB1

SCRL	SCRL04	603620

Code spring cable reel

SCRL04-603620-2P-3L4A80A

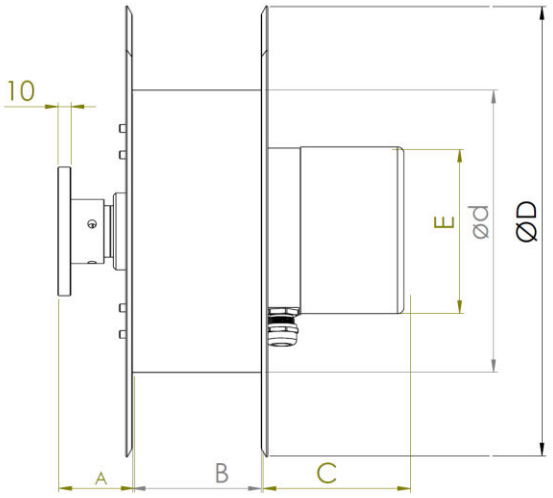
SERIES SPRING CABLE REEL AISI 316L

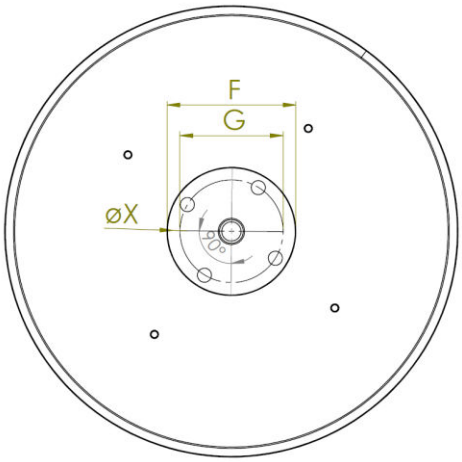
DRUM DIMENSION
D= 600 mm
D= 360 mm
L=20mm

SEE TAB5
N° = 3 SPRING
Type (P)
= **40X1,35Ø320 øi 55L=18 MT**

SLIP RING
4 RING FOR
In =80 A
VCAmax=80A
COVER TYPE 3L

Spring-Driven-Cable Reels
Technical Details
SCRL02



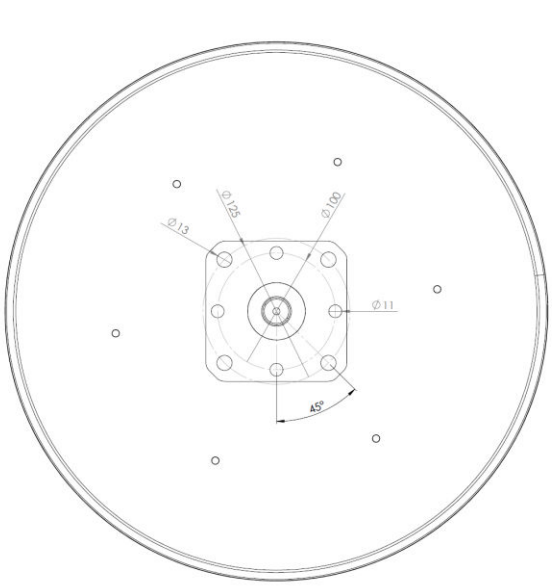


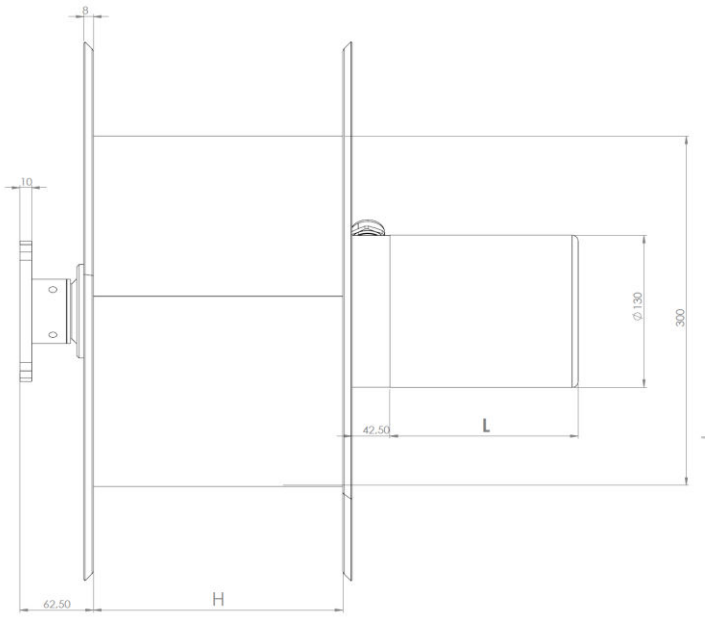
A	B	C	ØD	ød	E	F	G	øX		
58	100	H	D	220	130	100	80	11		

SCR03	D (mm)	H (mm)	CODE CASE SLIP RING
352210	350	115	1L
352210	350	220	2L
352210	350	240	3L
402210	400	115	1L
402210	400	220	2L
402210	400	240	3L

Spring-Driven-Cable Reels
Technical Details
SCRL03

D=ø 500 mm

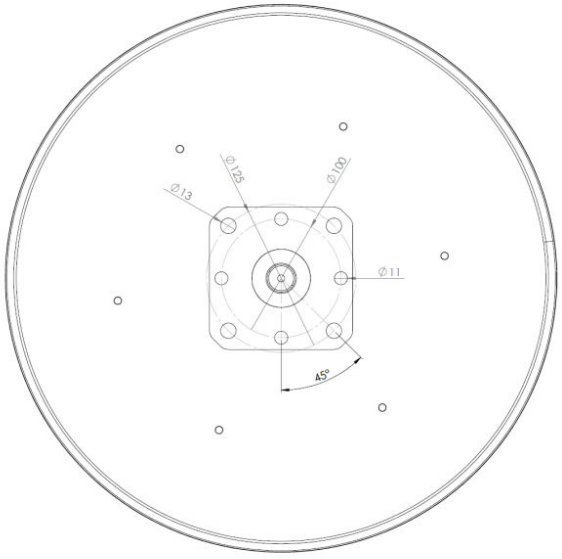


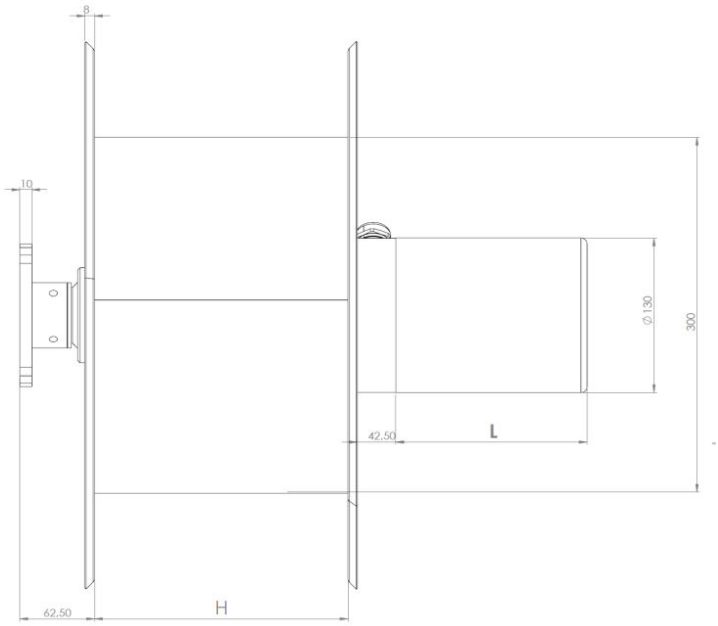


SCR03	D (mm)	H (mm)	L=mm	CODE CASE SLIP RING
503021	500	210	75	1L
503021	500	210	125	2L
503021	500	210	175	3L

Spring-Driven-Cable Reels
Technical Details
SCRL04

D=ø 600 mm





SCR03	D (mm)	H (mm)	L=mm	CODE CASE SLIP RING
603620	600	200	75	1L
603620	500	200	125	2L
603620	500	200	175	3L

Roller guide

QC01-40X40

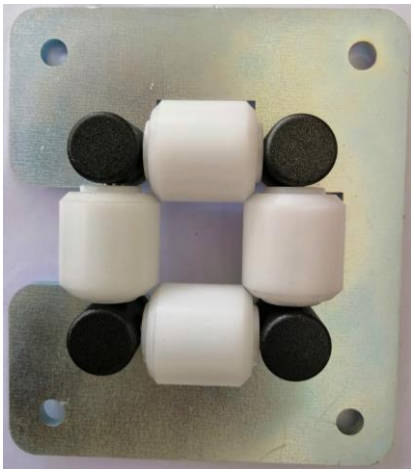
For Diameter cable 10-30mm

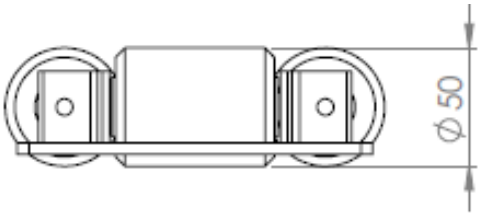
STRUCTURE CONSTRUCTION :

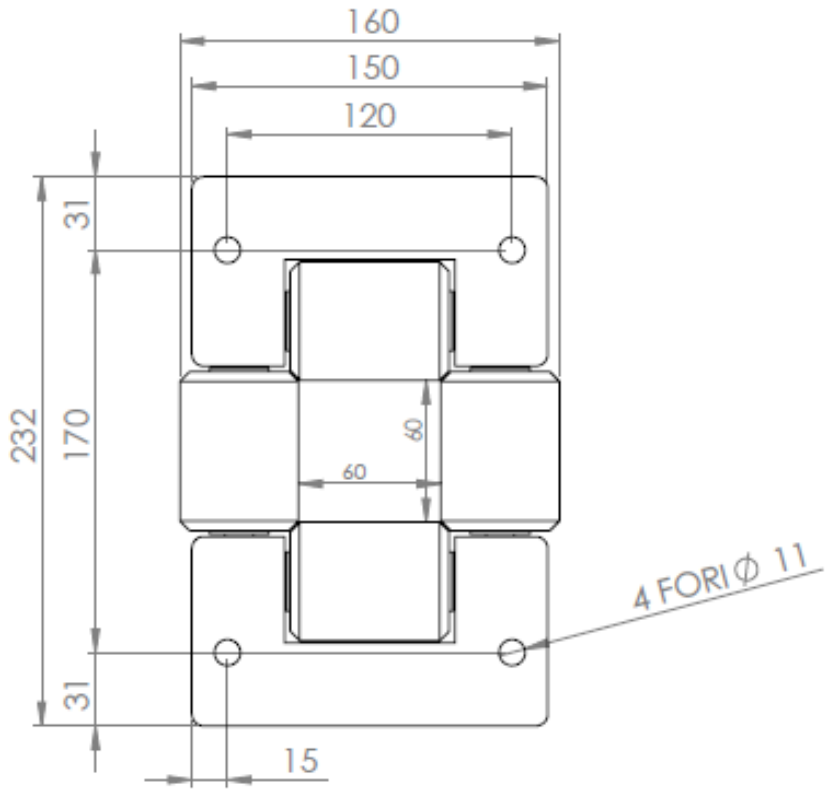
- GALVANIZED STEEL QG01-40X40-Z
- STAINLESS STEEL AISI 304 QG01-40X40-SS

SLIDING ROLLERS

DuPont™ Delrin® POM,







Roller guide

QC01-60X60

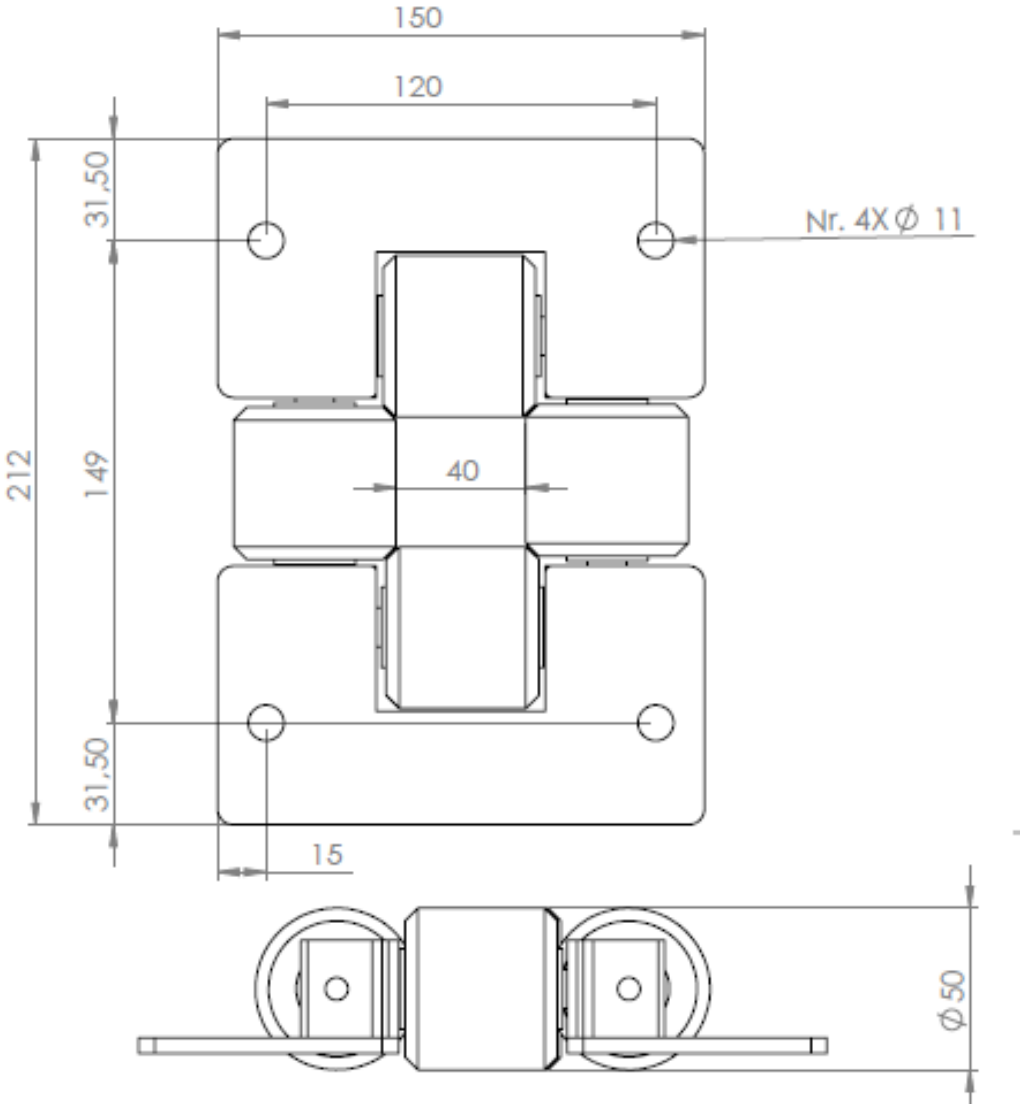
For Diameter cable 30-50mm

STRUCTURE CONSTRUCTION :

- GALVANIZED STEEL QG02-60X60-Z
- STAINLESS STEEL AISI 304 QG02-60X60-SS

SLIDING ROLLERS

DuPont™ Delrin® POM,



Questionnaire for design of spring cable reels

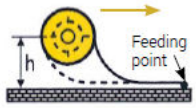
Winding

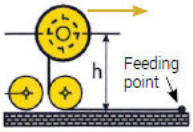
☐ Monospiral ☐ Multispiral

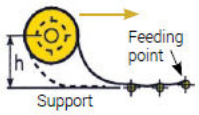
Unwind direction (view from slipring side)

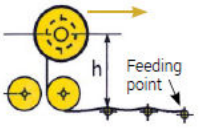
☐ CW ☐ CCW

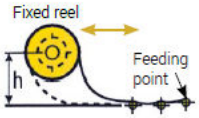
Installation type

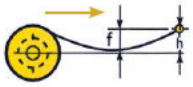
☐ 

☐ 

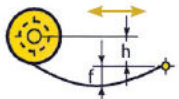
☐ 

☐ 

☐ 

☐ 

f= _____ m

☐ 

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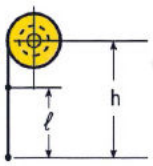
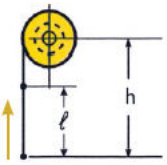
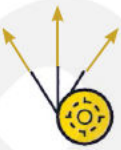
☐ 

☐ 

☐ 

Remarks

Specifications of the application

Application ☐ Horizontal ☐ Vertical

Stroke (m) _____

IP degree _____

Motion speed (m/min) _____

Reel installation height (h)* (m) _____

Operating environment _____

Accelleration time (s) _____

Operating voltage (V) _____

Temperature (°C) _____

ATEX compliant _____

* See the pictures above.

Cable

Supplied with cable Yes No

If Yes, compile cable specifications below

Cable type _____

Cross section (mm²) _____

Cable outer diameter (mm) _____

Cable weight (kg/m) _____

Always winded cable (m) _____

Always unwinded cable (m) _____

Total cable lenght on reel (m) _____

Fixed point cable lenght (m) _____

Slip ring collector

Supplied with slip ring collector Yes No

If Yes, compile slip ring collector specifications below

Rings number _____ Ampere (A) _____

Rings number _____ Ampere (A) _____

Rings number _____ Ampere (A) _____

Rings number _____ Ampere (A) _____

Rings number _____ Ampere (A) _____

Rings number _____ Ampere (A) _____

DRAFT

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