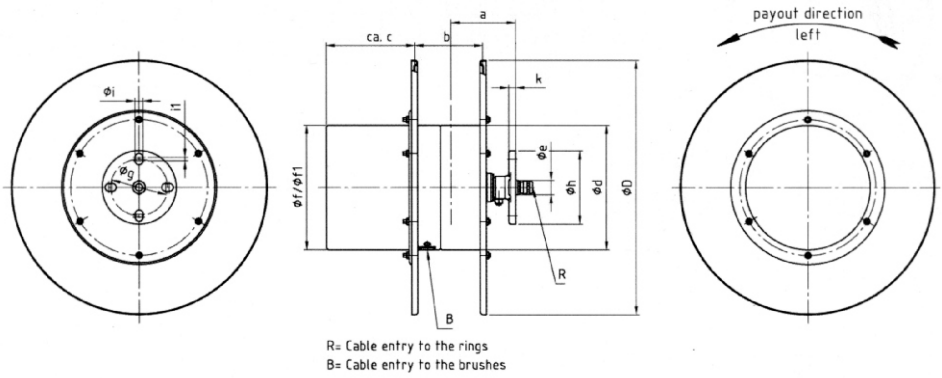
4.1 SPRING DRIVEN CABLE REELS

Type Series	Drawing No.	Ø d	Ø D	a	b	Ø e	Ø f	Ø f1	Ø g	Ø h	Ø i	i1	k
LT155	01-95-00-0-3	155	260	101	110	35	155	--	65	85	4 x Ø 9	--	5
LT180	01-95-00-0-3	180	300	109	130	35	180	--	65	85	4 x Ø 9	--	5
LT220	01-95-00-0-3	220	400	114	120	35	220	--	100	130	4 x Ø 13	6	12
LT221	01-95-00-0-3	220	450	129	150	35	220	--	100	130	4 x Ø 13	6	12
LT222	01-95-00-0-3	220	450	139	170	35	220	--	100	130	4 x Ø 13	6	12
LT300	01-95-00-0-3	300	550	165	190	50	300	--	100	135	4 x Ø 13	5	20
LT301	01-95-00-0-3	300	550	213	285	50	300	--	100	135	4 x Ø 13	5	20
LT420	01-95-00-0-3	420	680	200	240	60	420	--	135	178	4 x Ø 17	5	20
LT421	01-95-00-0-3	420	770	200	240	60	420	--	175	215	4 x Ø 17	5	20
LT530	01-95-00-0-3	530	900	260	310	70	420	--	185	250	4 x Ø 18	15	23

Cover dimension c in mm based on the number of poles

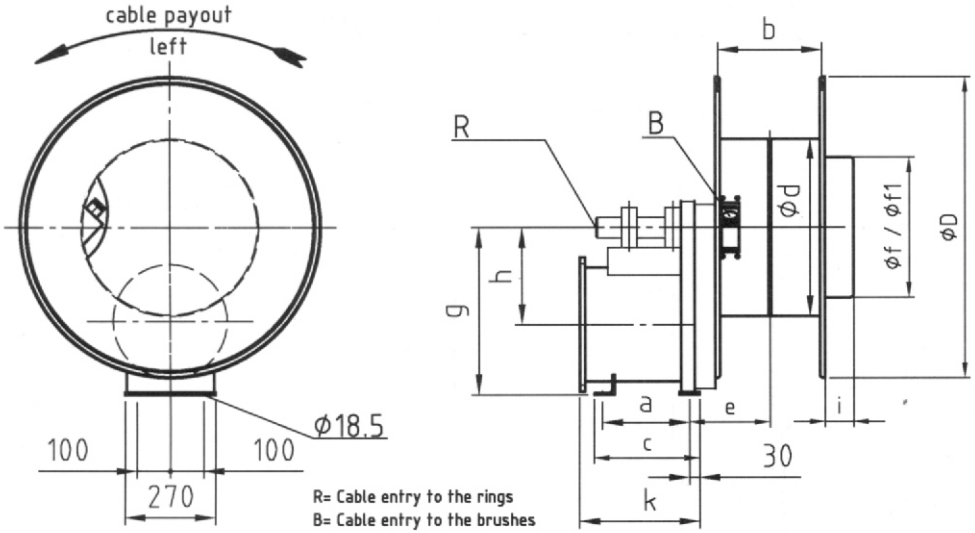
Type Series	3+Earth 26A	3+Earth 36A	3+Earth 40A	3+Earth 42A	3+Earth 60A	3+Earth 125A	3+Earth 150A	3+Earth 220A	4+Earth 26A	4+Earth 36A	4+Earth 40A	4+Earth 42A	4+Earth 60A
LT155	60	--	60	--	--	--	--	--	60	--	90	--	--
LT180	90	--	90	--	--	--	--	--	90	--	90	--	--
LT220	50	100	50	100	100	--	--	--	75	75	75	75	100
LT221	50	75	50	75	75	--	--	--	50	75	50	75	100
LT222	50	35	50	35	35	--	--	--	60	60	60	--	85
LT300	80	80	80	80	80	120	--	--	80	80	80	80	80
LT301	80	80	80	80	80	80	--	--	80	80	80	80	80
LT420	--	85	85	--	85	--	85	--	--	85	--	85	85
LT421	--	85	--	85	85	--	85	--	--	85	--	85	85
LT530	--	85	--	85	85	--	85	85	--	85	--	85	85

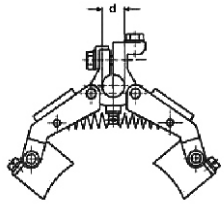


R= Cable entry to the rings
B= Cable entry to the brushes

4.1 SPRING DRIVEN CABLE REELS

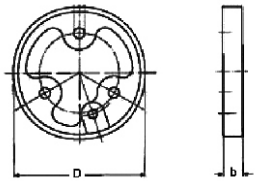
Type Series	Drawing No.	Ø d	Ø D	a	b	e	Øf	Øf1	g	h	c	k
LTAI 420	02-66-00-0-4	420	680	260	240	206	420	300	500	290	320	358
LTAI 421	02-66-00-0-4	420	770	260	240	206	420	300	500	290	315	358
LTAI 530	02-66-00-0-4	530	900	260	310	241	420	300	500	290	315	358
LTAII 530	02-66-00-0-4	530	900	390	310	241	420	300	500	290	445	488
LTAI 701	02-66-00-0-4	700	1200	260	350	255	300	300	500	290	315	358
LTAII 701	02-66-00-0-4	700	1200	390	350	255	300	300	500	290	445	488





BRUSH ASSEMBLIES

AMPS	DIMENSIONS d(mm)		PART NUMBER	
	PHASE	EARTH	PHASE	EARTH
40	10	8	4-BA/40-P	4-BA/40-E
60	13	12	4-BA/60-P	4-BA/60-E
150	16	15	4-BA/150-P	4-BA/150-E
220	17	16	4-BA/220-P	4-BA/220-E



COLLECTOR RINGS

AMPS	DIMENSIONS d(mm)				PART NUMBER	
	D	d		b		
	mm	Ph	E	mm	PHASE	EARTH
40	50	8.5	5.5	10	4-CR/40-P	4-CR/40-E
60	80	11.5	6.5	12	4-CR/60-P	4-CR/60-E
150	130	12.5	8.5	15	4-CR/150-P	4-CR/150-E
220	130	12.5	8.5	20	4-BA/220-P	4-CR/220-E

4.2 SLIP RING PACKS

Hartmann & König
Stromzuführungs AG

SLIP RING PACKS USAGE

FOR POWER TRANSFER FROM STATIONARY SUPPLY TO ROTARY SUPPLY

APPLICATIONS:

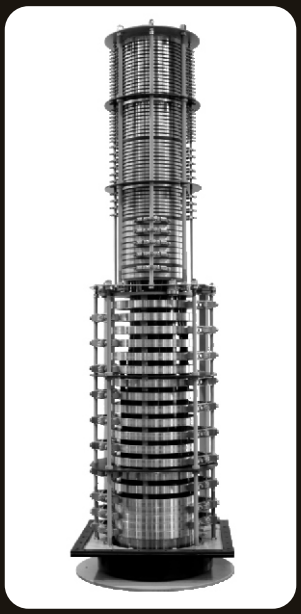
- 360 Jib Cranes
- Stacker Reclaimers for Mining
- Turntables
- Drill Rigs
- Revolving Light Towers

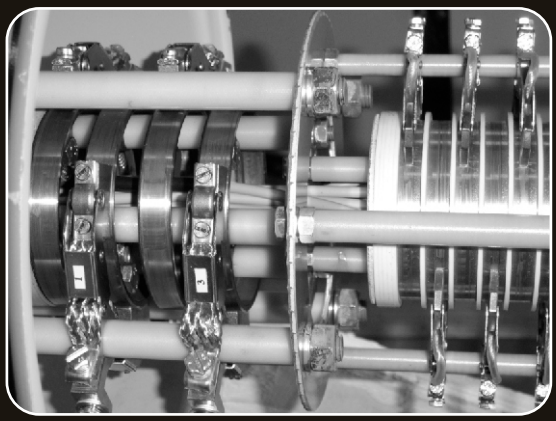
SLIP RING PACKS PRODUCT RANGE

POWER SUPPLY RANGE up to 30,000V ENCAPSULATED IP54

PRODUCTS:

- Block type
- Air Gap type
- Rotary type IP00
- Rotary type IP54
- Gas and Explosion Proof ranges





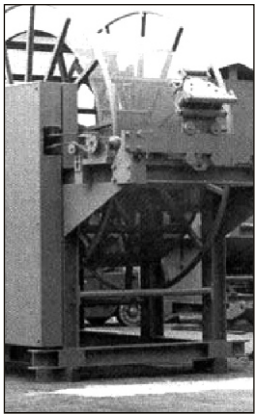
4.3 MOTOR DRIVEN CABLE REELS

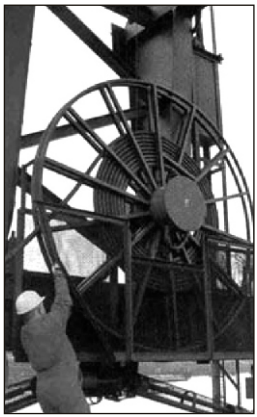
CABLE REELING DRUMS, INDIVIDUALLY DRIVEN WITHOUT COMPROMISE TO QUALITY

Motor Driven Cable Reeling drums

The economical solution forarduousapplications with less maintenance. Our range of motor driven reels can be fitted with different types of drive.

- Permanentmagnetic coupling (Hysteresis coupling)
- Stalled torque motor (Cage or slipring rotors)
- Hydraulic coupling
- Induction coupling (with stator coil)





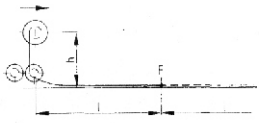
Suitable for use on portal, shipyard and harbour cranes,ship's cranes and tunnel construction applications.

Our cable reels can be used everywhere where live conductors are needed on travelling machinery. Cable is payed on and off the reels while the cable tension remains constant. High integrity data signals are ensured by using silver plated sliprings and silver carbon brushes. Optical waveguides can be used for the transmission of data lines without being influenced by power carrying sliprings.

Hose Reeling Drums
Spring driven hose reeling drums are similar in design to the cable drums but the slipring assembly is replaced with a rotary coupling,suitableforair, gas, water, oil etc. with an operating pressure up to 10 bar. For other medias or pressures we can offer special solutions.

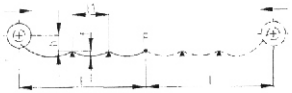
4.4 CABLE REELS - Examples of Arrangements

Drawing A



Drawing B

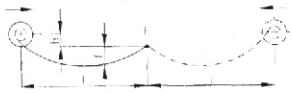
Drawing A and B
Cable drum on travelling device. Cable deposit on the ground or continuous deposit. Cable payout horizontal in one or two directions. Drawing B over deflector sheaves.



Drawing C

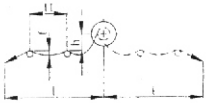
Drawing D

Drawing C and D
Cable drum on travelling device. Cable deposit on supports for l_1 up to 1 m. For l_1 over 1 m up to max. 3 m deposit on rollers or rounded level supports. Drawing D over deflector sheaves.



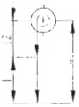
Drawing E

Drawing E
Cable drum on travelling device or fixed.
Cable payout horizontal in one or two directions.
(f is dependent on cross-section of cable and on pull of cable).



Drawing F

Drawing F
Cable drum fixed.
Cable payout horizontal in one or two directions. Cable deposit like drawings C and D but over deposit rollers.



Drawing G

Drawing G
Cable payout vertically downwards or at an angle.
l = lifting height or payout length
L =cable length = $l + l_2$ + 2 safety windings.

Drawing H

Drawing H
Cable payout vertically upwards, otherwise like drawing G.

l = max. payout length of cable in m
(for cable payout in two directions = 1/2 travelling length)
h = mounting height = distance from cable deposit or cable centre point
F = cable centre point
f = sag of cable in m
l_1 = distance of rollers or supports in m
l_2 = hanging cable in m see text l_2 for this

4.5 CABLE REELS - Quote Request Sheet

1. Length of travel

   L= _____ m

2. What length of cable should be coiled onto the cable drum?

   l= _____ m

   (if the cable centre point is in the middle of the track, the length of cable must be half the length of the track)

3. Type of coiling:

   ☐ spiral
   ☐ cylindrical
   ☐ 3.2.3 winding

4. Type and size of cable cross-section

   _____ mm²

   Cable diameter Ø _____

   _____ mm

   Cable weight _____

   _____ kg/m

5. Power and current requirements

   _____

   _____ kW

   _____ A

6. How much % of duty circle?

   _____

   _____

7. How many insulated sliprings are required?

   _____

   _____

   (our cable drums are always equipped with a non-insulated earth ring PE)

8. For which device will the cable drum be used?

   _____

   (e.g. crane, tower crane, sliding platform etc.)

9. Does the cable drum have to ☐
   be fixed (stationary) or mounted
   on a travelling device? ☐

10. Cable payout

    horizontal ☐
    vertical ☐
    hanging design ☐
    (see arrangement examples)

11. Mounting height

    _____

    _____ m

    (from centre of cable drum to deposit of cable)

12. Drive of cable drum by springs ☐
    counterweight ☐
    electric motor ☐

13. Operating voltage and type of current for drum motor

    _____

    _____ V

14. How often does the device travel per hour?

    _____

    _____ /h

15. Working (operating) time in hours per day

    _____

    _____ /h

16. Travelling or lifting speed

    _____

    _____ m/min

17. Acceleration

    _____

    _____ s

18. Deposit of cable
    between the tracks ☐
    outside the tracks ☐

19. Direction of pay out
    to the right ☐
    to the left ☐
    (always seen from slipring body)

20. Arrangement of the cable drum (drawings see page 41)

A	☐	E	☐
B	☐	F	☐
C	☐	G	☐
D	☐	H	☐

21. Extraordinary surrounding influences

    Mounting height more than 1000m above sea level NN _____
    or in mines _____
    humidity _____ %
    strong vibration yes ☐
    Explanation _____
    _____
    no ☐

    Force of sound in dB acc. to DIN 45633
    Bl. 1 _____

    Ambient temperature in °C
    from _____
    to _____

    Surrounding air
    Sand dust ☐
    Coal dust ☐
    Salt water ☐

    Other surroundings or areas of installation
    _____
    _____

22. Finish

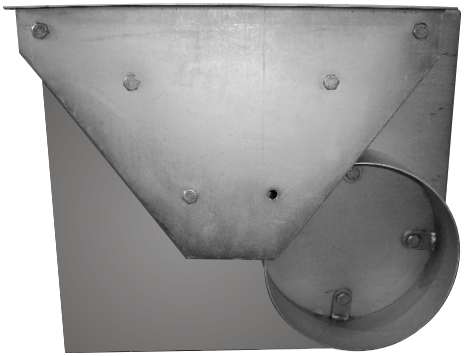
    Primed and finished acc. to RAL 7031 (normal design) ☐
    Hot dip galvanizing ☐
    Sandblasting ☐
    Other surface treatment
    _____
    _____

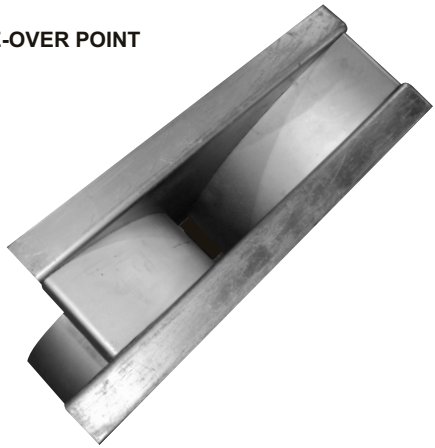
    For larger cable drums and motor drums we ask you to send us a drawing or sketch showing installation and mounting conditions.

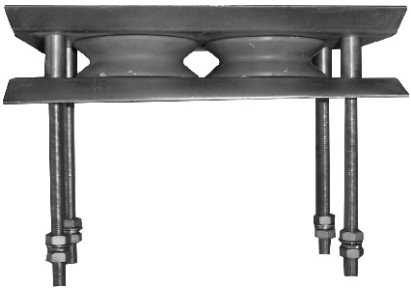
Further questionnaires can be received on request.

4.6 CABLE REELS - Centre Feed and Guides

CENTRE FEED CHANGE-OVER POINT

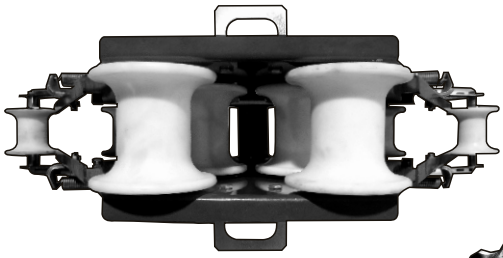




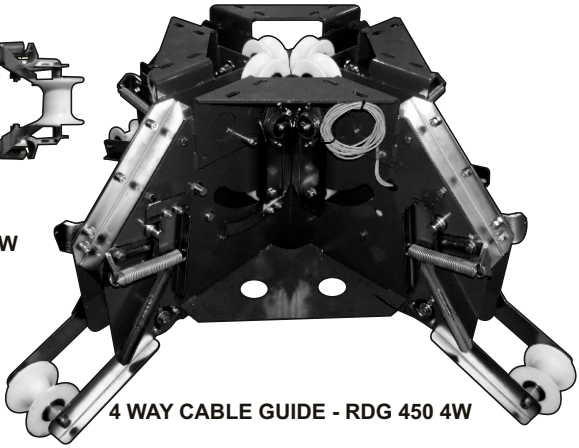


CABLE GUIDE - D100CG (100mm WHEEL)
CABLE GUIDE - D250CG (250mm WHEEL)
CABLE GUIDE - D450CG (450mm WHEEL)

CABLE GUIDE - D600/250CG



2 WAY CABLE GUIDE - RDG 450 2W



4 WAY CABLE GUIDE - RDG 450 4W