

INSTALLATION

1. SHIPMENT

DELACHAUX cable reels are shipped on a transport frame for easy handling by fork lift truck.

All accessories and spools delivered in kit form are shipped on a wooden pallet

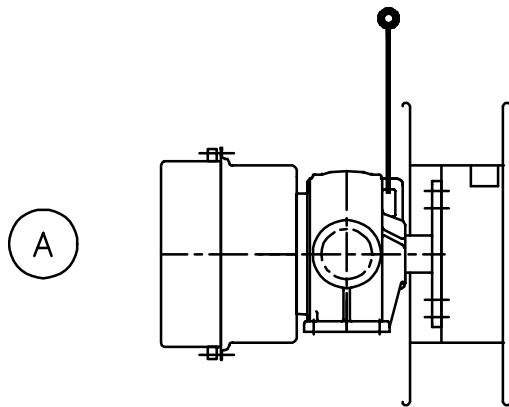
Spools assembled in two parts are delivered in open-sided crates.

2. ERECTION OF THE CABLE REEL

2.1. Handling

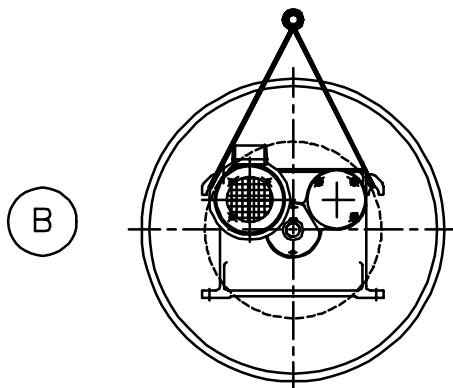
The main gear-box has a special opening to pass a lifting sling through.

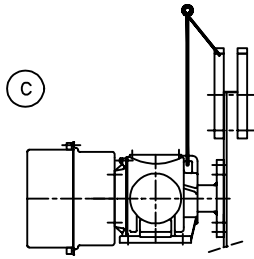
The basic gear box type P1 has 2 lifting lugs.



2.1.1. Small cable reel with semi-wide spool (see sketch A and B)

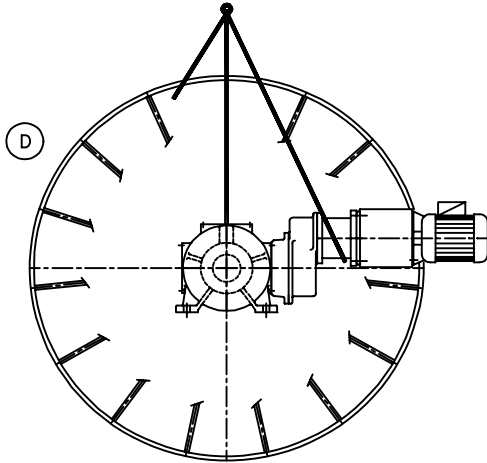
A single lifting sling is sufficient.



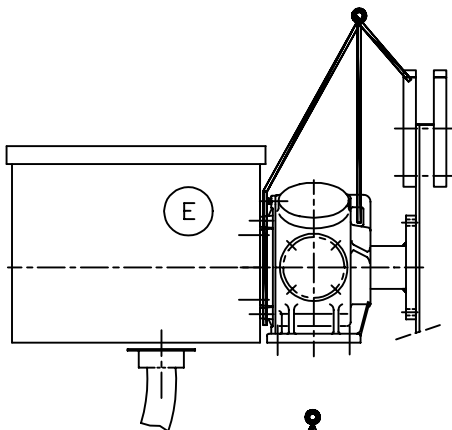


2.1.2. Larger cable reel with monospiral spool (see sketch C)

* Two lifting slings are required. One is hooked onto the spool and is used to stabilize the reel.

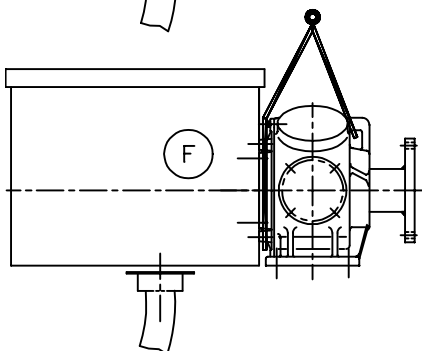


* If the cable reel is equipped with only one drive, use an extra sling to counteract the lateral weight (see sketch D).



2.1.3. Reel with large slipping (see sketch E)

Balance the load with a sling hooked between the gear box and the slipping.



2.1.4. Reel delivered without spool but with a large slipping (see sketch F)

Balance the load with a sling hooked between the gear box and the slipping.

☞ Note : Do not use metallic slings or chains which may damage the cable reel paint.

2.2. Installation of the reel

2.2.1. Checking

Check the base support of the reel i.e.

- * flatness of the base plate
- * dimensions and distance of the fixing holes

2.2.2. Installation of the reel

Use fasteners of at least class 8.8, adapted to the diameter of the holes in the gear box.

2.3. Spools not mounted on the gear box

2.3.1. Preparation

See specific instructions :

- Monospiral spool delivered in two parts
- Monospiral spool delivered in kit form
 - . with tubular arm
 - . with profiled arm
- Monospiral spool delivered in two parts with connection box on gear box.
-



**For spool with spiral ferrule, check the winding direction of the cable.
(See specific spool mounting instructions).**

2.3.2. Fitting the spool onto the reel

It is **ESSENTIAL** to use the **bolts** provided on the hub **with safety nuts**.

Follow precisely the instructions concerning the position and tightening torque as indicated on tick-on label.

- nut on gear box side
- tightening torque for M18 = 23 mdaN
- tightening torque for M20 = 33 mdaN

Tighten crosswise with :

- initial tightening at half the maximum torque
- final tightening at maximum torque

2.3.3. Checks

- Maximum out of round on the outside flange = ± 5 mm
- Maximum out of flatness of the outside flange = ± 5 mm
- Distance between two flanges = test spacer +0 to -2mm

3. FITTING OF GUIDING AND ANCHORING DEVICES



When fitting a cable guide, return cable guide or anchoring device, make sure that these accessories are in the same plane as the spool.

4. INSTALLING CABLE ON REEL

4.1. Preparation



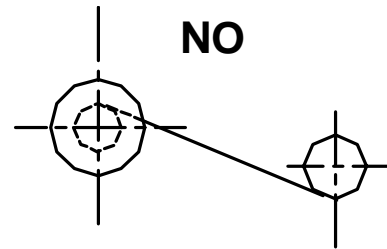
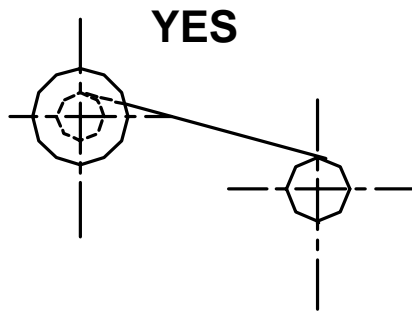
Check that the diameter of the cable complies with the specifications.
If difference larger than ± 2 mm, contact the Delachaux agency

4.2. Installing cable on the reel

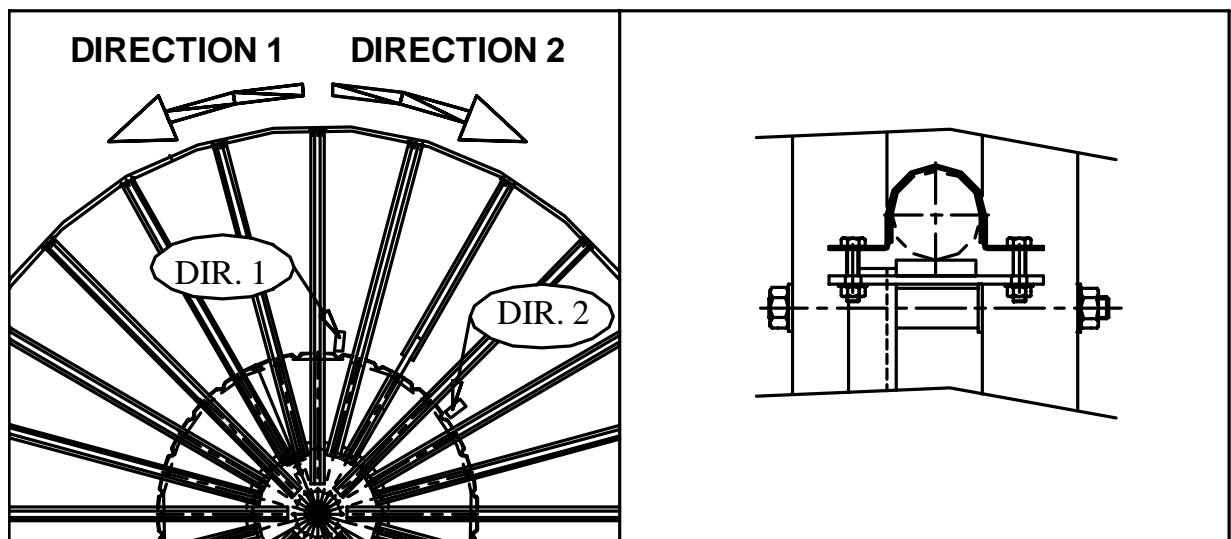
It is essential to comply with the following :

1- Winding direction : It is the direction of the spool when motor(s) turned in the direction indicated by the arrow fixed on the motor(s)

2 - Positionning of the cable drum as per sketch



4.3. Fixation of the cable to the moving part



- Bring the end of the cable to the slipping
- Fix the cable gland and collar

4.4. Winding on of the cable

- * Connect the drive motor(s) to wind the reel onto the spool
- * The cable drum must be unwound manually to avoid any damage on the cable (caused by excessive load or twisting).

5. CONNECTION OF THE CABLE TO THE MOTOR REEL

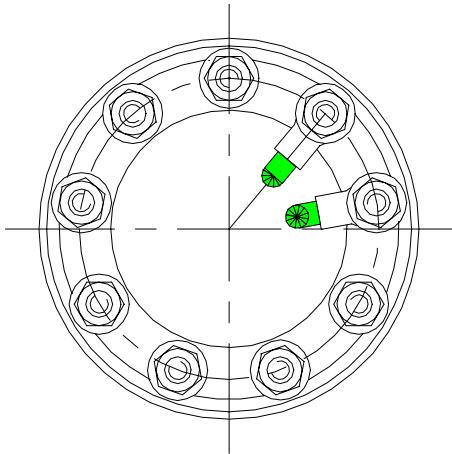
5.1. Low Voltage slipping

5.1.1. Onto the rings

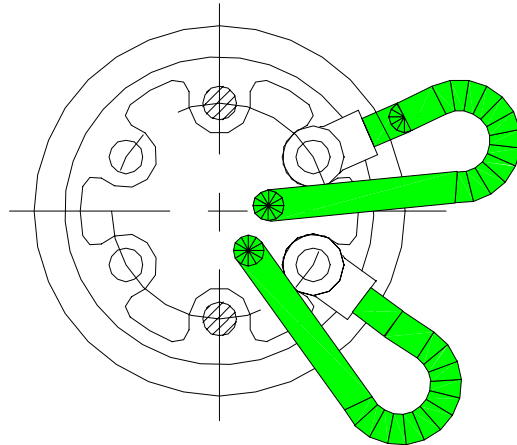
- Push cable through the shaft of the reeling drum
- Allow a sufficient length of cable coming out of the slipping ($\approx 300\text{mm}$).
- Tighten the cable gland and the tie wrap on the spool (if BNA).

- Strip the cable back and prepare the ends according to the table «Connections».
- Connections by : * Core lead terminal on C type Sliprings ;
* Stud fixing on P type Sliprings :
- Position the terminals according to the below sketches,
- Secure the terminals with nut and washer.

P080 / P120 / P180

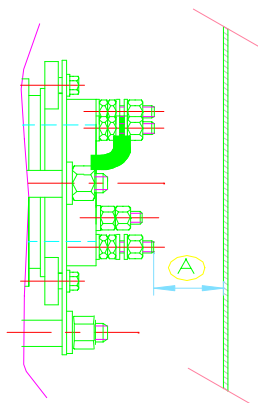


P050

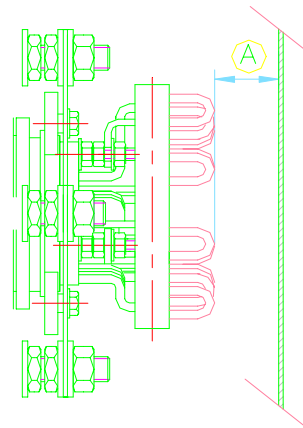


Check that there is a clearance A between the loops of cable and the slipring housing (at least 30mm).

Type P

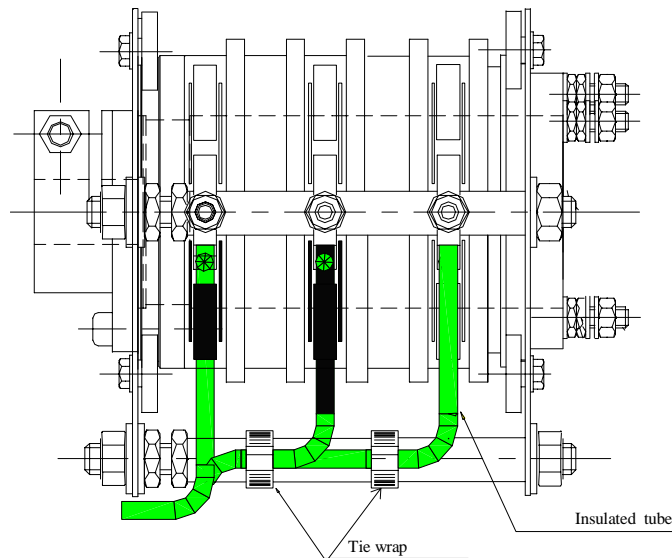


Type C



5.1.2. *Onto the brushes*

- Push the cable through the cable gland of the slipring housing or the semi-wide spool (P1).
- Let a sufficient cable length for the connections onto the brushes (Approx. the length of the sliprings + 200mm).
- Strip back the cable up to the cable gland.
- Attach the cable with the COLSON collar on the insulator rod as per sketch to well organize the cores on the brush-holders.



- Check the tightness and position of the terminals on P type Sliprings.
- Tighten the cable gland.

5.2. High Voltage sliprings

- **Preparation of cable ends :**
FOR HIGH VOLTAGE, THE CHOICE OF COMPONENTS AND THE JOB MUST BE ACHIVED BY CERTIFIED SPECIALISTS.
- **Connection to the rings / brush-holders :**
 According to the schedule of connections.
 The High Voltage housings are fitted with a REMOVABLE PLATE for the cable glands.

OPTION/ TFO (Fibre Optic Transmitter)

Inlet and outlet optical connections (type ST) to be done by a **F.O. specialist**.

A removable plate, fitted on the housing, is designed to accommodate the cable gland. Connection with optical connectors.

Note : It is absolutely essential to read the instructions before attempting the optical and mechanical connections.

6. CONNECTION OF THE CABLE AT THE FEED POINT

* Avoid using any device which pinches the cable

Note : For vertical application use an anchoring device with shock absorber and cable sleeve for the fixation of the cable to the mobile equipment.

7. ELECTRICAL CONNECTION OF THE MOTOR(S)

Connect the motor(s) in accordance with the wiring diagrams

☞ **Important note** : During winding and unwinding, the drive motor turns always in the same direction (winding direction of the cable).

8. ELECTRICAL CONNECTION OF THE ACCESSORIES

Depending on the option chosen :

- * space heater in the collector
- * end limit switch : contact on the end limit switch
- * over pull, under pull switches on the cable guide
- * temperature sensor and motor heating in motor connection box
- * Brake motor : inside terminal box

COMMISSIONING INSTRUCTIONS

1. ENERGIZING THE DRIVE MOTOR(S)

- * Before the drive motor(s) is energized make sure that :
 - there is no slack cable
 - the cable is in the correct position on the spool and guiding device



When drive motor(s) is energized make sure that the motor is rotating in the correct direction (winding direction).

2. LIMIT SWITCH ADJUSTMENT (OPTION)

- * Position the machine at the required point
 - * Adjust the cam to the tripping position
 - * Check that the adjustment is correct (travel through the end limit point several times)
- ☞ Note : When using an under pull switch, the neutralising contact must be adjusted as close as possible to the middle point.



AT THE END OF PAYOUT, WHEN THE SPOOL IS EMPTY, ONE DEAD TURN OF CABLE MUST ALWAYS REMAIN.

3. OVER PULL ADJUSTMENT ONTO GUIDING DEVICE (Option)

See data sheet for guiding devices.

4. MISCELLANEOUS ADJUSTMENTS

4.1. *Change of the cable winding direction*

Reverse the direction of the cable on the drum :

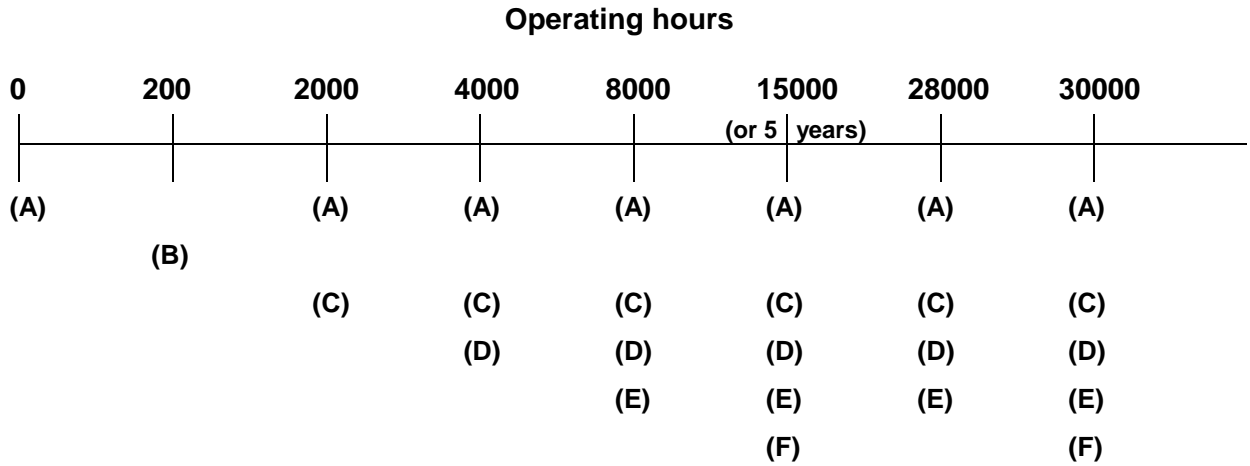
- * Reverse the cable entry (depending on spool type)
- * Reverse the spiral ferrule (if fitted)
- * Reverse the cable clamp
- * Reverse the free wheels
- * Reverse the rotation direction of the drive motors
- * **For TFO option, see specific instructions**

4.2. *Cable of different diameter*

- * Width of monospiral and trispiral spools assembled using nuts and bolts are adjustable.

MAINTENANCE INSTRUCTIONS

1. MAINTENANCE PROGRAMM



BEFORE ANY MAINTENANCE, SWITCH OFF THE POWER ON THE REEL.

2. OPERATIONS

(A) - Spool / Check that the spool is well tightened on the reel.

(B) - Cable / Any new cables have certain constraints due to the manufacturing process. These constraints must be evacuated in proceeding as follows :

- * Place the reel about 10 m from the anchoring point of the cable
- * Switch off the power, disconnect and release the cable
- * If there are any constraints in the cable, the cable will rotate on itself
- * Re-connect

(C) - Slipping / See data sheet for slippings.

(D) - C Coupler - Coupling ring item 15 / See data sheet for moto- couplers C

(E) - Anti run back bearing Type V - W - C / See data sheet for moto-couplers V / W / C

(F) - Gear boxes greasing : Replacement of the grease.
See data sheet for gear boxes.

CONNECTIONS TABLE

Slipring Type C
Low voltage

		C080 / C120 / C180
RINGS	Type connection	Terminal with Screws (Weidmuller) + End for 2,5 ²
	Maximum cable size Option 6 ² with 6 ² special end	2,5 ²
BRUSH HOLDER	Type connection	FASTON Type 6,35 (not insulated)
	Maximum cable size Option 6 ² with FASTON Type 6,35 special 6 ²	2,5 ²

Slipring Type P
Low voltage

		P050	P080	P120	P180
RINGS	Type connection	Ring terminal insulated* Ø M5	Ring terminal insulated* Ø M6	Ring terminal insulated* Ø M8	Ring terminal insulated* Ø M10
	Maximum cable size	10 ²	25 ²	50 ²	95 ²
BRUSH HOLDER	Type connection	Ring terminal Ø M4	Ring terminal Ø M8	Ring terminal Ø M8	Ring terminal Ø M12
	Maximum cable size	10 ²	25 ²	50 ²	95 ²

Slipring Type P
Low voltage

		P270/1 - /2 - /4	P400/ 1 - /2 - /4
RINGS	Type connection	Ring terminal Ø M12	Ring terminal Ø M12
	Maximum cable size	300 ²	300 ²
BRUSH HOLDER	Type connection	Ring terminal Ø M12	Ring terminal Ø M12
	Maximum cable size	300 ²	300 ²

* Rings terminal should be protected by using heat-shrink sleeving or insulated terminal.

Slipring Type H
High voltage

		H7	H12	H24
R I N G S	Type connection	Ring terminal Ø M12	Ring terminal Ø M12	Ring terminal Ø M12
	Maximum cable size	120 ²	150 ²	150 ²
B R U S H H O L D E R	Type connection	Ring terminal Ø M12	Ring terminal Ø M12	Ring terminal Ø M12
	Maximum cable size	120 ²	150 ²	150 ²

SLIPRINGS AND TERMINALS MARKING

ALL OUR SLIPRINGS AND TERMINALS ARE MARKED.

The same stamping appears :
- on the brush-holder,
- on the connection of the corresponding ring,
- on the terminal.

STAMPING USED

➤ Low Voltage Type P	⇨ P1 - P2 - P3... \perp
➤ Low Voltage Type C	⇨ 1 - 2 - 3 - 4 - 5 - 6 - 7 - 8... \perp
➤ Low Voltage Type C + Silver plated Rings	⇨ 1A - 2A - 3A - 4A - 5A - 6A - 7A... \perp
➤ Low Voltage Type C + Paladium Rings	⇨ 1ML - 2ML - 3ML - 4ML - 5ML... \perp
➤ Low Voltage Type C + Gold plated Rings	⇨ 1D - 2D - 3D - 4D - 5D - 6D... \perp
➤ High Voltage Type H	⇨ L1 - L2 - L3... \perp
➤ C Transmitter	⇨ C1 - C2 - C3 - C4... \perp
➤ M Transmitter	⇨ M1 - M2 - M3 - M4... \perp
➤ Explosion proof <u>Earth</u>	⇨ 1 - 2 - 3 - 4 - 5... \perp <u>Insulated</u>
➤ Optic Transmitters (TFO)	⇨ F1 - F2 - F3 - F4 - F5 - F6

CABLE MARKING

Except otherwise stipulated :

All the CABLES connected to - the rings,
- the brush-holders,
- the terminals

are marked at the cable ends

either by * a number stamped on the outer sheath,
* a mark attached to the cables.