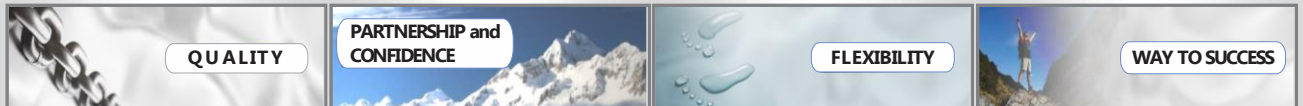
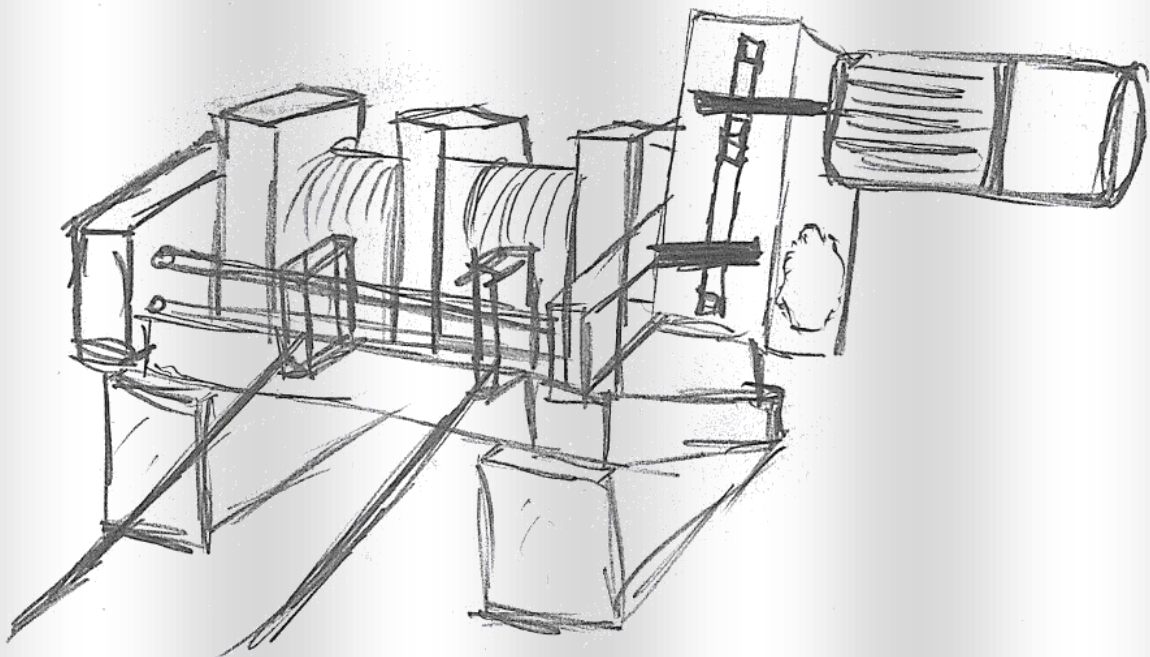


ELECTRICAL WINCHES



1. INTRODUCTION

Family special winches load from 5 to 30 kN (or more with agreement) is built according to EN 14692 type 2m and provides all the criteria for marking under CE.

They have been developed for special working conditions (eg load carrying rails, plastic rails with a length between 50 and 350 m. Useful specifically for towing on the runway at the jumps and landing area. Towing speed can be adjusted between 0,0m/s to 1,5 m/s or according to the customer' request.

Main winches characteristic:

- **Pull power:** from 5kN till 30kN or agreement with Investor
- **Speed:** od 0m/s do 1,5m/s or agreement with Investor
- **Rope direction:** with or without system for winding
- **Manage:** with cable unit or radio control unit
- **Positioning:** +/- 0,1% length, monitoring of momentary position of load
- **Standard:** EN 14692 type 2m, CE certificate
- **Construction:** steel robust construction,
- **Control operation:** control of operation with internet and online managing of winch
- **Protection:** mechanical equipment IP54, IP55, IP67
protection with special linen for winch

Typical parameters for determining the size of the special winch

Pull force (kN)	Length of rope on drum (effective length with respect to the safety of lengths at the beginning and end)						Ordering options
	80m	120m	160m	200m	250m	320m	
5	✓	✓	✓	✓			all
10	✓	✓	✓	✓	✓		all
15	✓	✓	✓	✓	✓	✓	all
20		✓	✓	✓	✓	✓	all
25		✓	✓	✓	✓	✓	all
30			✓	✓	✓	✓	all

Remarks:

- Maybe there are also other lengths, but it is necessary to specify particular, because the limitation of the height 5 of the threads on the drum in accordance with the standard EN 14692.
- Additional equipment Investor chooses free and it's not depending on type of electric winch.

2. TYPE of WINCHES

2.1. WINCH with WINDING SYSTEM FOR ONE STEEL ROPE

Technical data of winch:

- pull force 5 kN,
 - diameter of rope $\phi 7$ mm (6 x19), length 115 m,
 - manual or remote control,
 - automatic winding rope onto the drum,
 - fully automatic,
 - upgrade option with certain functions, etc.
- (FALUN K90, 2013)

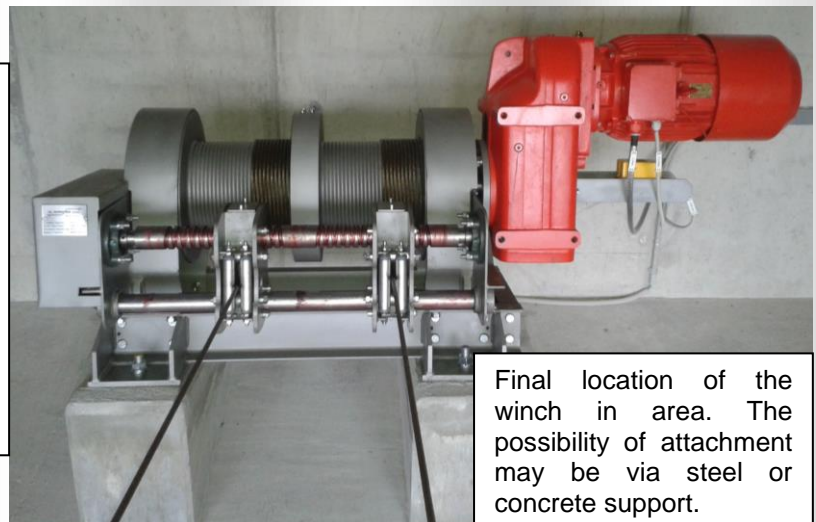


Final location of the winch in area. The possibility of attachment may be via steel or concrete support.

2.2. WINCH with WINDING SYSTEM FOR TWO STEEL ROPE

Technical data of winch:

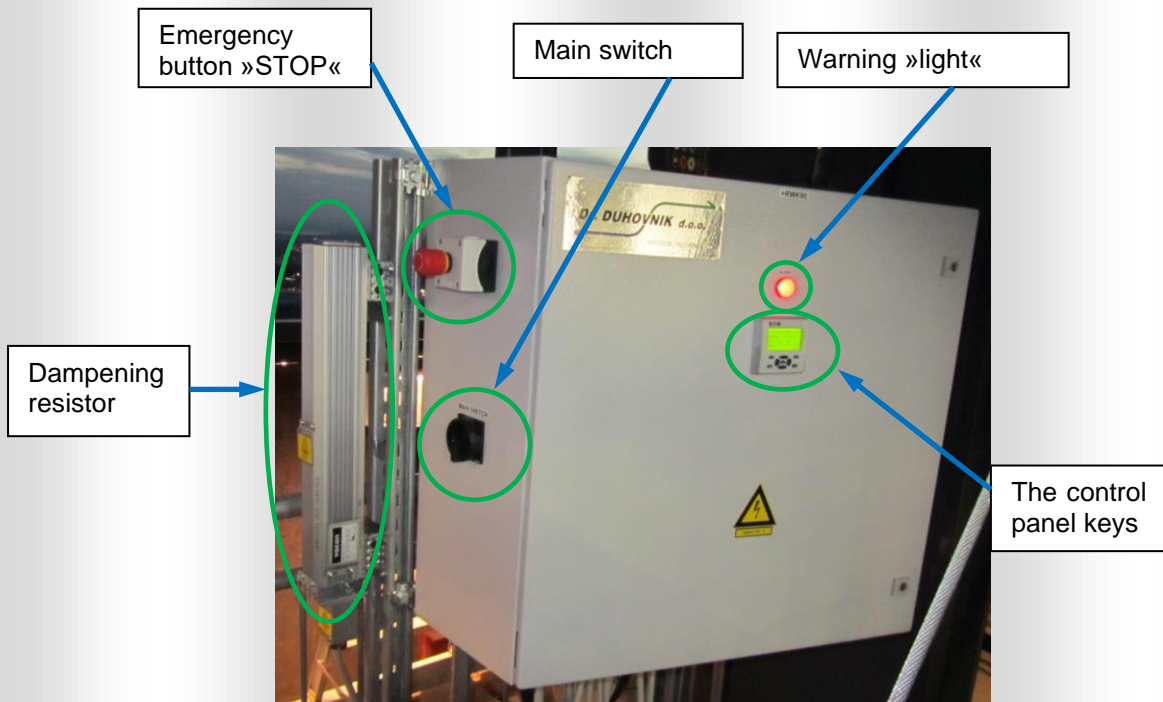
- pull force 15 kN,
 - double rope, diameter of rope $\phi 10$ mm, length 115 m,
 - manual or remote control,
 - automatic winding rope onto the drum,
 - fully automatic,
 - upgrade option with certain functions, etc.
- (PLANICA K139, 2014)



Final location of the winch in area. The possibility of attachment may be via steel or concrete support.

3. BASIC EQUIPMENT

3.1. MAIN ELECTRICAL BOX

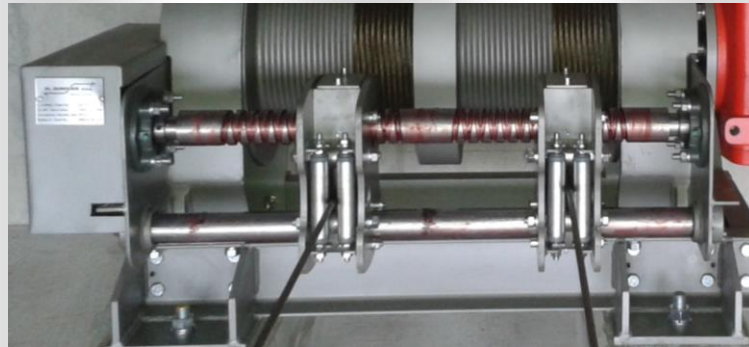


The external appearance of the electrical box. FALUN 2013.



The internal appearance of the electrical box and remote control, FALUN 2013.

3.2. SYSTEM FOR WINDING ROPE



Automatic steel rope winding system.

3.3. ELECTRICAL BOX with WIRE UNIT



External view on electric box.



Internal view of electric box with wire control unit and different length of electric cable.

3.4. MECHANICAL ALIGNMENT of END and INTERMEDIAT POSITION

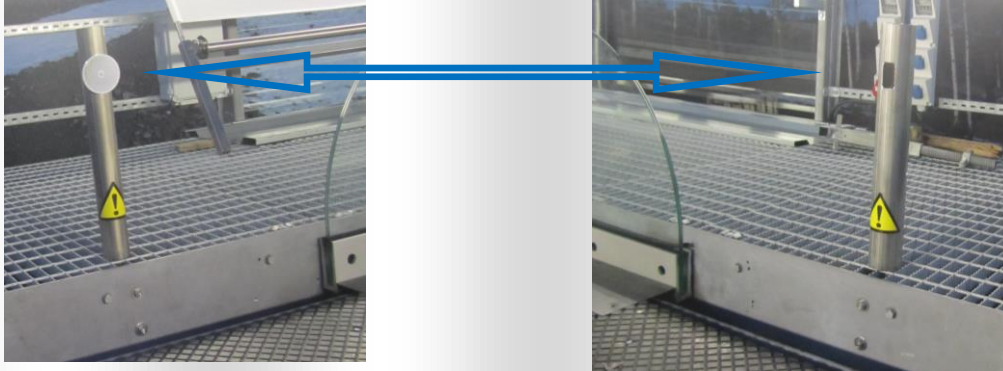


Counter, which allows you to set the upper and lower end position and intermediate position.

4. ADDITIONAL EQUIPMENT

4.1. The optimal setting of final positions (top - bottom)

Optics alignment (use of photocells)



Mechanical alignment (mechanical switch)



Electrical cable winch drum - »powering of the towed object (for example, the wheelchair)«



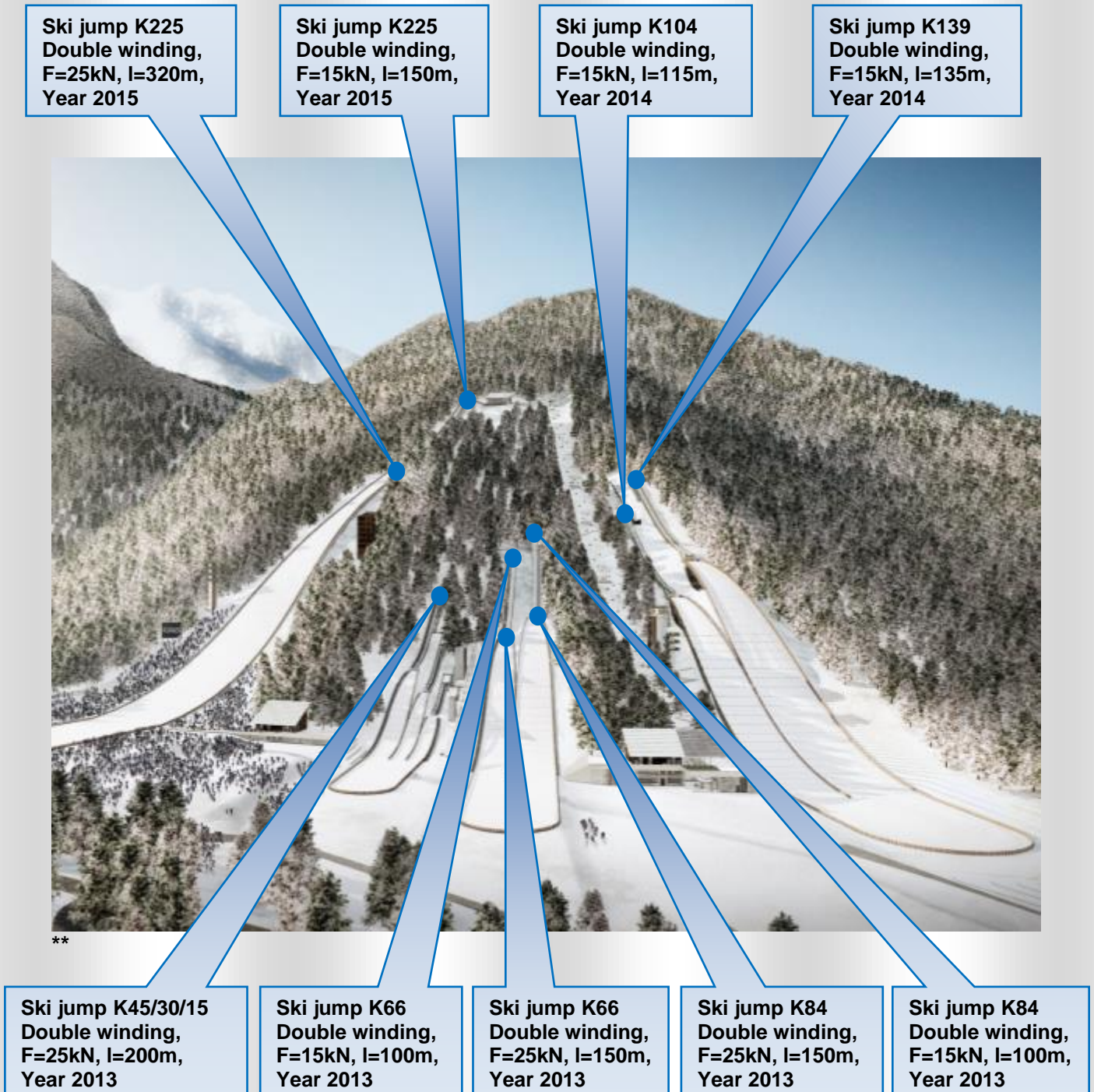
Electric cable 5 x 4mm²,
L=135m (length is optional).

Electric cable winch
drum, FALUN 2013

Our company also offers other innovative solutions are developed according to the needs of the Investor / Client!

5. REFERENCES

5.1. Nordic center PLANICA, Slovenia



5.2. Nordic center LUGNET FALUN, Sweden

Ski jump K120
One winding,
F=5kN, l=135m,
Additional:
Electric cable drum
Year 2013

Ski jump K90
One winding,
F=5kN, l=115m,
Additional:
Electric cable drum
Year 2013



**Winch, and associated accessories are protected and may not be copied or produce without the owner's consent
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