CANECO IMPLANT

Implantation of electrical devices and cable layout

REFERENCE MANUAL

Reference manual

CANECO IMPLANTATION

Version 2.5

Laying out electrical equipment and automatic wiring

www.caneco.eu August 2010

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2 Introduction

2.1 Overview

The reference manual is intended to describe the installation, operation, use of commands and menus of Caneco Implantation software.

2.2 Required knowledge

This manual is intended for "senior electricians with a good knowledge of AutoCAD environment." However, software training is highly recommended. It allows you to use the software to the best of its features. You need to be familiar with the use of commands, menus, dialogue boxes and standard elements of the Windows environment. You must know how to access a file that has been created.

2.3 Annotations

The manual contains descriptions of five types of annotations:

 Means information

 Means Caution

 Means See also

 Means a tip

→ Means an operation to be performed

3 Installing, starting and uninstalling software

3.1 Installing and starting software

To install and run Caneco Implantation software, please refer to:

 "Software Installation Guide".

3.2 Uninstalling software

To uninstall the software:

→ Go to "Start" in the Windows menu.
→ Go to "Parameters".
→ Go to "Control Panel".
→ Go to "Programs and Features" or "Add/Remove Programs."
→ Select Caneco Implantation Vx.xx and click on "Uninstall/Edit".
→ Select Caneco Implantation Vx.xx and click on "Uninstall/Edit".

For Alpi "France" customers with Caneco Implantation OEM 2008 engine.
→ Select Caneco Implantation 2008 and click on "Uninstall/Edit".

For Alpi "France" customers with Caneco Implantation OEM 2011 engine.
→ Select Caneco Implantation 2011 and click on "Uninstall/Edit".

4 Principles of Caneco Implantation

Caneco Implantation was developed to provide automatic recognition of Caneco electrical object drawings in order to calculate an electrical installation on a standalone basis with minimal user input.

4.1 Convention and definition

Most of the terms used by Caneco Implantation belong to the standard terminology of AutoCAD and Windows. However, some specific concepts deserve further study.

4.1.1 Distribution

A distribution contains one or more circuits.

4.1.2 Equipment

A Caneco Implantation equipment is an electrical consumer which is defined by electrical characteristics.

4.1.3 Terminal

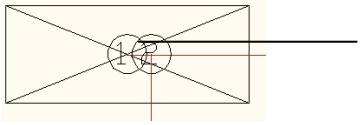
A terminal represents a break within a cable between distribution and equipment. From cable upstream of the terminal, it can derive one or more downstream cable portions.

4.1.4 Circuit

Functional unit intended to electrically supplying power equipment. A circuit is from a power distribution and consists of:

- A device which is protective or not depending on the type of use (strong current or weak current).
- A link made up of one or more cables.
- One or more equipment or terminals.

Each circuit can be assigned to an original number of distributions depending on the type of use.



Original numbers

The original numbers are essential in the case of a link from a track to the distribution. This will ensure the smooth running of cables through the track and enable creating the vertical lift of the track.

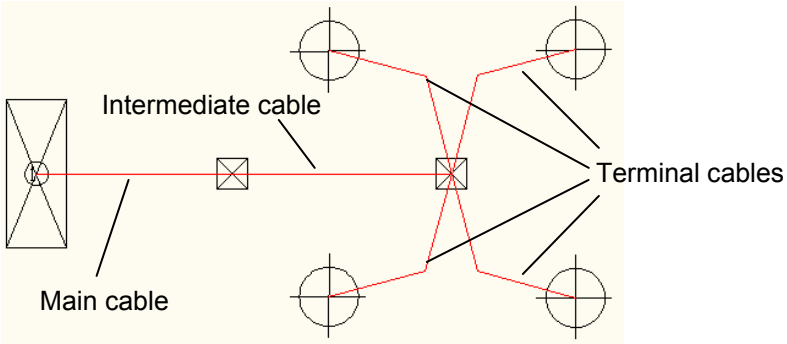
4.1.5 Link

The link consists of one or more cable portions connecting power distribution to the equipment, directly or through terminals or control unit.

4.1.6 Main, intermediate and terminal cable

The different cable portions of the same circuit are divided into 3 categories with different properties:

- Main cable: cable portion connecting the circuit of the board object to the first object (equipment or terminal) of the circuit.
- Intermediate cable: any cable portion connecting the terminals of one circuit between them.
- Terminal cable: any cable portion supplying equipment (excluding main cable).



4.1.7 Track

It designates the tracks through which only the main, intermediate and terminal cables are running. These tracks represent cable trays, ducts, gutters, mouldings, baseboards, nozzles or ducts.

4.1.8 Altitude

"Altitude" refers to the Z value in the general ref mark for the position of an object.

4.1.9 Height

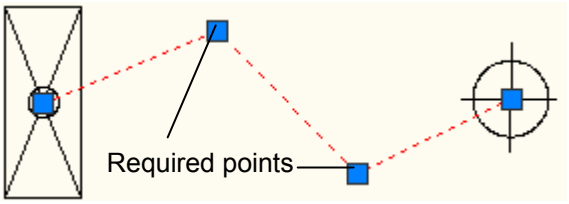
"Height" refers to the Z value of position of an object relative to the altitude of the current working plan.

4.2 Principles governing drawing

The electrical components of an installation are represented by a symbol named block. Each block has a handle to move it. This handle is also the attachment point for the drawing of the main cable, intermediate cable, terminal cable or track.

4.2.1 Required points

These are added handles on a cable in order to change its plotting.



4.3 Principle governing device positioning

All devices located on a plan are dimensioned in z:

- Either relative to the altitude of the work plan: height.
- Or relative to the general ref mark.: altitude.

This principle enables 3-dimensional measurements of cables and tracks.

4.4 Principle governing wiring

The wiring of a circuit can be done in two ways selected when creating the circuit (with and without track):

- Wiring using "nearest" method
- "Sequential" wiring.

Selection is made using the "wiring method" property of the circuit.

4.4.1 Wiring using "nearest" method

The wiring of a circuit starts from the origin of the distribution that supplies it, and then reaches the object of this circuit which is the nearest to that distribution, finally connecting consecutively each of the other objects of the circuit by selecting each time the nearest.

At each terminal met and when the terminal is wired "nearest", wiring resumes from each origin of the terminal, then reaches the nearest object connected to this origin, then finally connecting consecutively each of the other objects attached to this origin each time selecting the nearest.

Between each object, by default, the cable portion will go back up to the track altitude selected when creating the circuit or modified by the user.

If one of the circuit objects is moved, the wiring sequence could be changed and all the wiring of the circuit would be affected.

4.4.2 "Sequential" wiring

The "sequential wiring" means that the wiring between the equipment occurs according to the selection sequence for the equipment in the plan.

The wiring of a circuit starts from the origin of the distribution that supplies it, and then reaches the first object of this circuit, finally connecting consecutively each of the other objects of the circuit by selecting each time the next in the plan.

At each terminal met and when the terminal is "sequentially" wired, wiring resumes from each origin of the terminal and then reaches the first object of this origin, then finally connecting consecutively each of the next objects attached to this origin. When an object is inserted, it is placed in the rear.

If the equipment of a circuit is moved, the wiring sequence remains unchanged.

4.4.3 Cable properties

Each cable portion can be described using either following methods:

- Method 1: Where properties are identical to the properties of the portion called "main" which is the first portion of the circuit. The property set is attached to the circuit.

- Method 2: Where the properties are specific to each portion. The property set is attached to the equipment supplied by the cable portion.

As part of a circuit calculated in LV, Method 2 should not be used because the results of Caneco LV calculations will be ignored for this cable portion. Only properties of the main cables are considered in Caneco LV. Properties of the main cable of the circuit shall be used.

4.5 Caneco Implantation / Caneco LV interface

4.5.1 Principle governing Caneco Implantation / Caneco LV interfacing

This interfacing allows data exchange between Caneco Implementation and Caneco LV. The goal is to recover the distribution of energy achieved on one or the other software, as well as the calculation of lengths and sections of the study cables.

This interfacing can be achieved in both directions regarding the implementation of the structure of the electric network: Caneco Implantation to Caneco LV or Caneco LV to Caneco Implantation.
The update of the cable sections calculated by the Caneco LV software will be made in Caneco LV to Caneco Implantation direction.

Compatibility of the components of a network between Caneco LV and Caneco Implantation:

Supply:
Starting point of the network, the electrical parameters of which will be taken into account for the calculation. In Caneco Implantation, the user must enter a unique supply ref mark, identical to one of those existing in the Caneco LV project used for calculation. By convention, and to allow simplified recovery of the network with Caneco LV, the starting point of this network will be called by default "SUPPLY". However this designation may be changed by the user.

Main board:
The main board of an electrical network must have a single ref mark which is identical to that of an existing board in the Caneco LV project used for calculation.
By convention, and to allow simplified recovery of the network structure using Caneco LV, the main board will be called by default MSB (main switchboard). However this designation may be changed by the user.

Distribution circuit:
For Caneco LV, the term "distribution circuit" refers to cable + protections system supplying a sub-board.
For Caneco Implantation, a distribution circuit represents the connection cable from a board to a sub-board electrically located downstream, and ignores the protection. A distribution circuit can supply only one sub-circuit to the exclusion of any other element.

Terminal circuit:
For Caneco LV, the term "terminal circuit" refers to all objects making up the circuit (cable + protection + equipment).
For Caneco Implantation, circuit protective devices are ignored. A terminal circuit represents the link made up of one or more cable portions connecting one board to one equipment or a group of equipment.

Equipment:

Caneco LV, unlike Caneco Implantation, does not unitarily support equipment. Only the amount of equipment and the electrical information accumulated by circuit will be used by Caneco LV.

Junction box:
The terminals are used primarily to connect multiple equipment to a cable through a point. Caneco LV does not recognize terminals, but uses the resulting minimum and maximum length when calculating sections.

4.5.2 Calculating circuits with Caneco LV

In Caneco Implantation, we must define a starting point by distribution network.
A starting point is made up of a "Supply" supplying a "main distribution".

When importing into Caneco LV, the "Supply + main distribution" starting point and the structure connected downstream will be imported where the user has entered similar ref marks.

Caneco Implantation circuits will then be added to the corresponding board.

4.5.3 Single electrical network made up of several separate DWG plans

The method is to create a master project in Caneco LV which contains the structure of distributions: A supply supplying a main board that supplies section boards.

In Caneco Implantation, import the board(s) corresponding to the DWG level plan. Make the wiring of electrical devices and then import the distribution network of each plan into Caneco LV to recover and create the downstream structure of distributions.

4.6 Track sizing

The software can determine consecutively for each track segment (A segment is a portion of the cable tray along which there is no change in the number of cables):

Its width required, space needed by cables running through it, is calculated using two methods (one-layer width and two-layer width):
- Its load required, weight of cables running through it, in kg/m.
- Its height required, the greater height of the cables running through it.

These features allow it to select, from a library of manufacturers, the track that meets these conditions:
- Reserve.
- Width.
- Height.
- Load.

4.7 "Unique identifier" GUID

The software automatically assigns a "Unique identifier" GUID TO Caneco objects. This identifier is an internal value, unique to the Caneco object. It ensures exchanges between Caneco LV and Caneco Implantation. For example, a circuit in Caneco LV and a circuit in Caneco Implantation containing the same identifier are automatically identified in both programs; the user can modify the object data without risk of non-recognition.

5 Caneco Implantation commands

5.1 Commands

The command groups below are found in tool palettes, toolbars, drop-down menu and Caneco ribbon.

5.1.1 "Configuration" Group

	General Parameters	 "Chap.9".	Version START
	Load Menu and Caneco Toolbar	 "Chap.5.4".	Version START
	Unload Menu and Caneco Toolbar	 "Chap.5.4".	Version START
	Minimize Caneco tool palette in task bar	 "Chap.5.2".	Version START
	Show or hide Caneco Ribbon	 "Chap.5.3".	Version START
	Change 'Base' directory path	 "Chap.6.2".	Version START
	About...	 "Chap.28.1".	Version START

5.1.2 "Layout" Group

	New distribution	 "Chap.10".	START Version
	New circuit	 "Chap.11".	START Version
	New equipment	 "Chap.13".	START Version
	New terminal	 "Chap.14".	START Version
	New cable tray	 "Chap.17".	START Version
	New premises	 "Chap.22".	Version PRO
	New BBTS	 "Chap.16".	START Version
	New system	 "Chap.20".	Version PRO
	New junction box		START Version
	New support		Version PRO

5.1.3 "Modification" Group

	Properties		START Version
	Delete electrical properties	"Chap.28.8".	START Version
	Pick up the Caneco layers name	"Chap.28.10".	START Version
	Create block attributes from Caneco properties	"Chap.**28.6**".	START Version
	Delete Caneco block attributes	"Chap.**28.7**".	START Version
	Blocks Range	"Chap.**28.5**".	START Version
	Cancel	"Chap.**28.2**".	START Version

5.1.4 "Wiring" Group

	Wire with	"Chap.18.2".	START Version
	Wire downstream	"Chap.18.3".	START Version
	Serial Wire	"Chap.18.4".	START Version
	Unwire	"Chap.18.5".	START Version
	Calculate circuit of cables	"Chap.18.12".	START Version
	Calculate all cables	"Chap.18.13".	START Version
	Equipment wiring order	"Chap.18.10".	START Version
	Assign a circuit to another distribution	"Chap.11.5".	START Version
	Add handles to cables	"Chap.18.7".	START Version
	Manually wire	"Chap.18.8".	START Version
	Delete manual wire	"Chap.18.9".	START Version
	Pick up the properties of the main cable	"Chap.12.3".	START Version

5.1.5 "Cable tray" Group

	New cable tray	"Chap.17.2".	START Version
	New cable tray with identical properties	"Chap.17.14".	START Version
	Cut a cable tray	"Chap.17.5".	START Version
	Turn cable tray at 90 °	"Chap.17.4".	START Version
	Distort cable tray	"Chap.17.6".	START Version
	Split cable tray	"Chap.17.7".	Version PRO
	Project a cable tray section onto another	"Chap.17.8".	START Version
	Join cable trays sections	"Chap.17.9".	START Version
	Connect cable tray section with another	"Chap.17.10".	START Version
	Cable tray segments CSV	"Chap.17.12".	PRO Version

5.1.6 "Sizing" Group

	Cable Information in Cable Tray	"Chap.19".	PRO Version
	Calculate cable tray segments	"Chap.17.11.1".	PRO Version
	Automatically increase size	"Chap.17.11.2".	PRO Version
	Automatically decrease size	"Chap.17.11.3".	PRO Version
	Position of cable segments in the cable tray		PRO Version
	Remove cable segments in the cable tray		PRO Version
	Create all the cuts on the cable trays		EXPERT version
	Delete all the cuts on the cable trays		PRO Version
	Checkout calculation		PRO Version

5.1.7 "Tools" Group

	Caneco explorer	"Chap.7".	START Version
	Display management	"Chap.21".	START Version
	Nomenclature and Legend	"Chap.27".	START Version
	Creation of cable list database		EXPERT version
	Editing cable list		EXPERT version
	Editing section list		EXPERT version
	Editing support list		EXPERT version
	Convert the V2.4.0 old room		PRO Version
	Update the room name of all the equipment	"Chap.22.2".	START Version
	Update all XREF circuits		PRO Version
	Replace a text of all circuit ref marks		PRO Version
	Replace a text of all distribution ref marks		PRO Version

5.1.8 "Import" Group

	Update cables from Caneco LV	"Chap.24.5".	START Version
	Import a Caneco LV file	"Chap.24.6".	START Version
	Import a Dialux file (.stf)	"Chap.23.4".	PRO Version
	Import Caneco system definition	"Chap.20.3".	PRO Version
	Import Caneco project properties		PRO Version

5.1.9 "Export" Group

	Export partial file (.mdb) to Caneco LV	"Chap.24.3".	START Version
	Export Dialux file (.stf)	"Chap.23.3".	PRO Version
	Export DWG containing only AutoCAD entities	"Chap.28.4".	START Version
	Export Electric octopus file (.csv)		START Version
	Export Cable trays segments file (.csv)	"Chap.17.12".	PRO Version
	Export Properties file (.csv)		START Version

5.1.10 "Selection" Group

	Select all distributions		START Version
	Select all cables	"Chap.25.7".	START Version
	Select active circuit cables	"Chap.25.4".	START Version
	Select all equipment	"Chap.25.5".	START Version
	Select active circuit equipment	"Chap.25.2".	START Version
	Select all terminals	"Chap.25.6".	START Version
	Select terminals of the active circuit	"Chap.25.3".	START Version
	Select all cable trays		START Version
	Select all supports		PRO Version

5.1.11 "Labels" Group

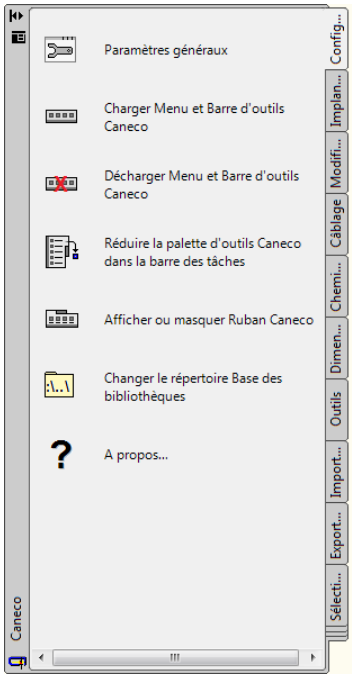
	Select labels		START Version
	Select distribution labels		START Version
	Select active circuit distribution labels		START Version
	Select equipment labels		START Version
	Select active circuit equipment labels		START Version
	Select terminal labels		START Version
	Select active circuit terminal labels		START Version
	Select cable tray labels		START Version
	Select support labels		PRO Version
	Avoid superimposed labels	 "Chap.28.12".	PRO Version
	Reposition labels	 "Chap.8.2".	START Version
	Pick up Caneco layers name of the labels	 "Chap.28.9".	START Version
	XS size		START Version
	S size		START Version
	M size		START Version
	L size		START Version
	XL size		START Version

5.1.12 "Checking" Group

	Database checking		START Version
	Ref marks checking	 "Chap.26.1".	START Version
	Distribution supplies checking	 "Chap.26.2".	START Version
	Circuit checking	 "Chap.26.3".	START Version
	Superimposed equipment checking	 "Chap.26.5".	START Version
	Superimposed cable trays checking	 "Chap.26.6".	PRO Version

5.2 Tool palette

For full versions, the tool palette starts when loading Caneco Implantation. You can load toolbars, dropdown menu, and ribbon.



To reduce the tool palette in the task bar, click on:

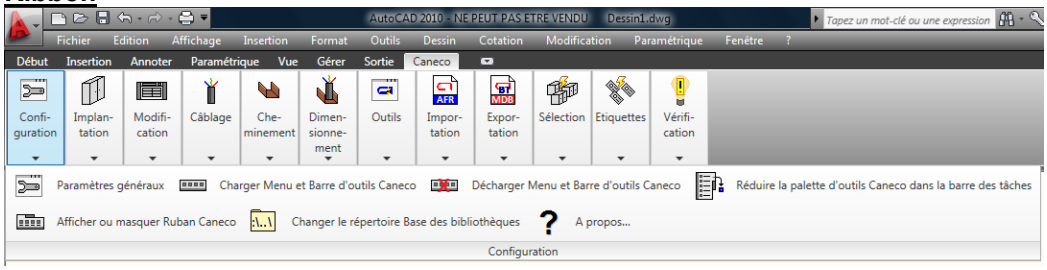
Click on the icon to enlarge the tool palette.

5.3 Ribbon

Only for the full versions above AutoCAD 2010, it is the ribbon may be uploaded to / downloaded from the "Configuration" group.

To upload / download, click on:

Ribbon



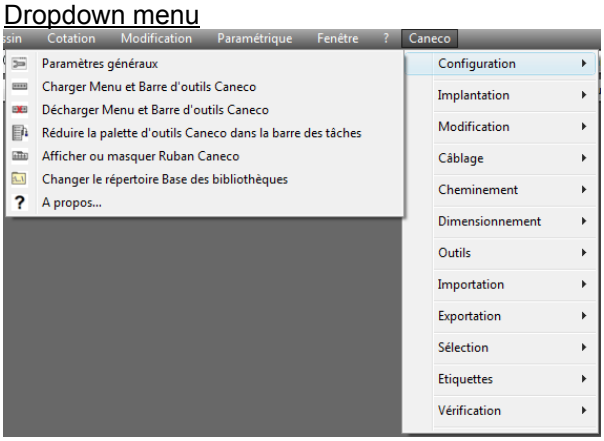
5.4 Toolbars and dropdown menu

To upload, click on:

To download, click on:

Toolbar

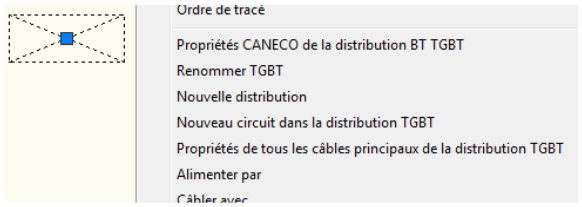
Dropdown menu



5.5 Pop-up menu

Other commands are found in pop-up menus for Caneco objects.

To access the pop-up menu of a Caneco object:
Select the Caneco object and right click with the mouse.



6 Directory and database files

This directory contains editable files according to the organization and layout patterns of the company.
Manufacturers, models, equipment libraries can be added, edited in the .csv files, DWG symbols.

.csv files are spreadsheets containing data on each row separated by a delimiter (usually a comma or a semicolon).
It is recommended to read and write these files with Excel. Advanced users can do so with the "Notepad".

6.1 Knowing the location of the base directory

To locate the base directory, click on:

6.2 Creating/Modifying the location of the 'base' directory

→ Create a Base directory on another drive or company network drive, such as "z:\Common Base\".
→ Copy the ".\Base" directory to the directory created, such as "z:\Common Base\Base".
→ To set the base directory location on the software, click on:

→ The dialogue box of the "Base Directory" opens and then click on the "Edit" button.
→ Select the directory location, e.g., "z:\Common Base\Base".
→ Open.
→ Validate

6.3 Picking up the default base directory

→ To pick up the default base directory of the software, click on:

→ Click on Default.
→ Validate.

6.4 Editing/Modifying manufacturers and models in the ".CSV" files

6.4.1 Manufacturer board

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory "Chap.6.1".
→ ".\Base\tableaux\TableauFabricant.csv".

	A	B
1	Fabricant	Modèle
2	Générique 1	G11
3	Générique 1	G12
4	Générique 1	G13
5	Générique 1	G14
6	Générique 2	G21
7	Générique 2	G22
8	Générique 2	G23
9	Générique 2	G24

6.4.2 Manufacturer cable

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory "Chap.6.1".
→ ".\Base\câble\CableFabricant.csv".

	A	B	C	D	E	F	G
1	Fabricant	Type de câb	Type Canecc	Largeur	Hauteur	Poids	Section
2	Nexans	U1000 R2V	U1000R2V				
3	Nexans	U1000 AR2V	U1000R2V				
4	Nexans	H07RN-F	H07RN-F				
5	Nexans	U1000 RGPFV	PVC				
6	Nexans	U1000 RVFV	U1000RVFV				
7	Nexans	U1000 ARVFV	U1000RVFV				
8	Nexans	HO7VU	PVC				
9	Nexans	HO7V-R	PRC				
10	Nexans	HO5V-K	PVC				
11	Nexans	HO7V-K	H07V				
12	Nexans	PYROLYON	CR1/PRC				
13	Nexans	HO5VV-F	PVC				
14	Nexans	CNOMO	PRC				
15	Nexans	K25	U1000R2V				
16	Pirelli	U1000 R2V	U1000R2V				
17	Pirelli	U1000 AR2V	U1000R2V				
18	Pirelli	H07RN-F	H07RN-F				
19	Pirelli	U1000 RGPFV	PVC				
20	Pirelli	U1000 RVFV	U1000RVFV				
21	Pirelli	U1000 ARVFV	U1000RVFV				
22	Pirelli	HO7VU	PVC				
23	Pirelli	HO7V-R	PRC				
24	Pirelli	HO5V-K	PVC				
25	Pirelli	HO7V-K	H07V				
26	Pirelli	HO5VV-F	PVC				
27	Pirelli	CNOMO	PRC				
28	Pirelli	K25	U1000R2V				
29	Gorse	U1000 R2V	U1000R2V				
30	Gorse	U1000 AR2V	U1000R2V				
31	Gorse	H07RN-F	H07RN-F				
32	Gorse	U1000 RGPFV	PVC				
33	Gorse	U1000 RVFV	U1000RVFV				
34	Gorse	U1000 ARVFV	U1000RVFV				
35	Gorse	HO7VU	PVC				
36	Gorse	HO7V-R	PRC				
37	Gorse	HO5V-K	PVC				
38	Gorse	HO7V-K	H07V				
39	Gorse	PYROGORCE	CR1/PRC				
40	Gorse	HO5VV-F	PVC				
41	PHOENIX	FLCAT5FLEX	ETHERNET	6	6	0.043	2x2x0.14
42	IGUS	CF14-02-02-0	COPPER	7	7	0.043	2x2x0.25
43	IGUS	CF14-02-04-0	COPPER	10	10	0.101	2x2x0.25

- Width, Height, Weight, section columns are not filled out for cables of circuits which are calculated by LV.
- Width, Height, Weight, section columns shall be filled out for cables of free circuits (which are not calculated by LV). Generally, cables for circuits intended for weak current.

6.4.3 Manufacturer equipment

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory "Chap.6.1".
→ ".\Base\recepteur\RecepteurFabricant.csv".

	A	B	C	D	E	F	G
1	Fabricant	Type	Modèle				
2	Luminox	Balisage	bloc débrochable standard 60 lm/5mn NP (A)				
3	Luminox	Balisage	bloc débrochable standard 300 lm/5mn NP (C)				
4	Luminox	Balisage	bloc débrochable standard 340 lm/5mn P (C)				
5	Luminox	Balisage	bloc débrochable standard 60 lm/5mn NP étanche (F)				
6	Luminox	Balisage	bloc débrochable standard 400 lm/5mn NP étanche (F)				
7	Atlantic	Chauffage	Delta 15 étroit blanc 750 W				
8	Atlantic	Chauffage	Delta 15 étroit blanc 1000 W				
9	Atlantic	Chauffage	Delta 15 étroit blanc 1250 W				
10	Atlantic	Chauffage	Delta 15 étroit blanc 1500 W				
11	Atlantic	Chauffage	Delta 15 étroit blanc 2000 W				
12	Atlantic	Chauffage	Delta 15 étroit blanc 2500 W				
13	Airelec	Chauffage	convecteur mécanique Enduroc M 500w				
14	Airelec	Chauffage	convecteur mécanique Enduroc M 750w				
15	Airelec	Chauffage	convecteur mécanique Enduroc M 1000w				
16	Airelec	Chauffage	convecteur mécanique Enduroc M 1250w				
17	Airelec	Chauffage	convecteur mécanique Enduroc M 1500w				
18	Airelec	Chauffage	convecteur mécanique Enduroc M 1750w				
19	Airelec	Chauffage	convecteur mécanique Enduroc M 2000w				
20	Airelec	Chauffage	convecteur mécanique Enduroc M 2500w				

6.4.4 Manufacturer track

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory  "Chap.6.1".
→ ".\Base\chemincable\CheminCableFabricant.csv".

	A	B	C	D	E	F	G	H
1	Fabricant	Type	ModŠle ALPI	Hauteur(mm	Largeur(mm	Forme	Longueur(m	Charge utile
2	CABLOFIL	Chemins de	CF30/50	30	50	Rectangulair	3	3
3	CABLOFIL	Chemins de	CF54/50	54	50	Rectangulair	3	6.1
4	CABLOFIL	Chemins de	CF30/100	30	100	Rectangulair	3	7.5
5	CABLOFIL	Chemins de	CF54/100	54	100	Rectangulair	3	14.3
6	CABLOFIL	Chemins de	CF30/150	30	150	Rectangulair	3	12.6
7	CABLOFIL	Chemins de	CF54/150	54	150	Rectangulair	3	22.6
8	CABLOFIL	Chemins de	CF30/200	30	200	Rectangulair	3	17.6
9	CABLOFIL	Chemins de	CF54/200	54	200	Rectangulair	3	32.6
10	CABLOFIL	Chemins de	CF30/300	30	300	Rectangulair	3	25
11	CABLOFIL	Chemins de	CF54/300	54	300	Rectangulair	3	47.7
12	CABLOFIL	Chemins de	CF54/400	54	400	Rectangulair	3	67.8
13	CABLOFIL	Chemins de	CF54/500	54	500	Rectangulair	3	82.8
14	CES	Chemins de	PS51X27	25	48	Rectangulair	3	4.5
15	CES	Chemins de	PS75X27	25	72	Rectangulair	3	5.3
16	CES	Chemins de	PS99X27	25	96	Rectangulair	3	5.3
17	CES	Chemins de	PS123X27	25	120	Rectangulair	3	5.3
18	CES	Chemins de	PS147X27	25	144	Rectangulair	3	5.3
19	CES	Chemins de	PS195X27	25	192	Rectangulair	3	8.5
20	CES	Chemins de	PS220X27	25	216	Rectangulair	3	8.5
21	CES	Chemins de	PS316X27	25	312	Rectangulair	3	13
22	CES	Chemins de	PS51X51	49	48	Rectangulair	3	8.5

6.4.5 Typical track

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory  "Chap.6.1".
→ ".\Base\chemincable\ CheminCableTypes.csv".

	A	B
1	Chemin de c	0
2	Conduit	1
3	Caniveaux	2
4	Fourreaux	3
5	Goulotte	4
6	Plinthe	5
7	Moulure	6

6.4.6 Purpose track

Warning: changing these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

→ Location of the base directory  "Chap.6.1".
→ ".\Base\chemincable\ CheminCableUsages.csv».

	A	B	C	
1	Basse Tensic	0	6	BT
2	Courants Fai	1	5	CF
3	Informatique	2	54	INF
4	Divers	3	8	DI
5	Haute Tensic	4	20	HT
6	Contrôle Cor	5	3	CC
7	Mesure	6	2	M
8	Réseau	7	4	RLI
9	Détection Al	8	2	DAI
10	Tous usages	-1	0	

- Column A=name
- Column B=number (-1 means all purposes)
- Column C=colour index
- Column D=short name

This file is used by circuit origins for the management of running of cables through the track.

6.5 Creating DWG symbol

Warning: creating DWG symbols may lead to software instability. For proper operation, please carefully comply with certain requirements in the DWG:

- No blocks and AutoCAD dynamic blocks.
- Center of the symbol to the coordinates x=0, y=0, z=0

6.5.1 Forcing the base point of the symbol

In AutoCAD command line, type "_attdef"

In the "attribute" frame, type:

- "Labels": "~"
- "Prompt": "~"
- "Default": "~"

In the "mode" frame, check in addition:

- "invisible"
- "constant"

In the "insertion point" frame:

- Check "specify on screen", for an entry of the point on the plan.

or,

- Uncheck "specify on screen", if the X, Y, Z coordinates are known.

6.5.2 Differentiating the cable point going into and out the symbol

In AutoCAD command line, type "_attdef"

In the "attribute" frame, type:

- "Labels": "+" for the incoming point or "-" for the outgoing point
- "Prompt": "+" for the incoming point or "-" for the outgoing point
- "Default": "+" for the incoming point or "-" for the outgoing point

In the "mode" frame, check in addition:

- "invisible"
- "constant"

In the "insertion point" frame:

- Check "specify on screen", for an entry of the point on the plan.

or,

- Uncheck "specify on screen", if the X, Y, Z coordinates are known.

6.5.3 Adding property keywords associated with Caneco objects

In AutoCAD command line, type "_attdef"

In the "attribute" frame, type:

- "Labels": label keyword "chap.8".
- "Prompt": label keywords "chap.8".
- "Default": label keywords "chap.8".

In the "insertion point" frame:

- Check "specify on screen", for an entry of the point on the plan.

or,

- Uncheck "specify on screen", if the X, Y, Z coordinates are known.

6.6 Adding DWG symbols

Warning: adding DWG symbols may lead to software instability.
For proper operation, please carefully comply with the requirements

- No blocks and AutoCAD dynamic blocks.
- Center of the symbol to the coordinates x=0, y=0, z=0
- Know the symbol unit: millimetre, centimetre and meter.

To add DWG symbols to the software base, copy the DWG symbols from:

- ".\Base\symbol\" for symbols in centimetres.
- ".\Base\symbol\mm" for symbols in millimetres.
- ".\Base\symbol\m" for symbols in meter.

6.7 Creating/Modifying equipment library files

Warning: creating or modifying these ".csv" files may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

To add or edit equipment library files:
→ Go to ".\Base\recepteur\Bibliotheques\".
→ Edit the ".csv" file or create the ".csv" file.

Each ".csv" file corresponds to a topic in the equipment dialogue box.

Equipment library may also be created or edited in the software from equipment dialogue box menu.

6.8 Adding/Modifying DWG label blocks of Caneco objects

Warning: adding or modifying DWG label blocks of Caneco objects may lead to software instability. For proper operation, please carefully comply with and keep the same structure and logics for the content of these files.

To add or edit DWG label blocks of Caneco objects:
→ Go to ".\Base\Etiquette\".
→ Edit the ".dwg" file or create the ".dwg" file.

6.8.1 Adding property keywords associated with Caneco objects

"Chap.6.5.3".

7 Caneco Explorer

This tool displays information about the various components of your electrical installation. It was designed to view and control the whole electrical installation.

7.1 "Explorer" dialogue box

7.1.1 Expanding/Reducing the explorer

To expand or reduce the explorer, click on:


7.1.2 Header bar

- Distribution: Ref mark of the distribution which supplies the circuit.

- Circuit: Circuit ref mark which corresponds to the selected object. It is the active circuit.

- Wiring sequence: Define the circuit wiring sequence.
- Nearest: "Chap.4.4.1".
- Sequential: "Chap.4.4.2".

- Distribution type: "Chap.10.1.2".

- Circuit type:
- Caneco LV: The circuit will be taken into account by Caneco LV for sizing circuit cables. The cable section must be determined by Caneco LV.
- Not calculated: The circuit will be ignored by Caneco LV. The entry of the cable is freely accessible to the user.
- Associated: The circuit is combined with another circuit.

- Designation: Designation of circuit which corresponds to the selected object.

- Origin: Original number of board used for the circuit.

- Busbar: Name of busbar of circuit selected, if any.

- Content: Default content of the circuit cable.

- Height: Default circuit wiring height.

7.1.3 "Distributions" tab

Only the distributions and circuits which are supplying a distribution are included in the list.

7.1.4 "Circuits" tab

All distributions and all circuits are included in the list.

7.1.5 "Installation" tab

All objects in the installation are included in the list.

7.1.6 "Properties" tab

Displays the properties of object(s) selected from the list.

7.1.7 "Search" tab

Enables searching and selecting Caneco objects.

The window is split into two panes:
- Right: enables to select criterion(ia) from the list of object types and existing properties.
- Left: the list of objects that meet the criteria of the right pane.

To select from DWG plan all objects of the left pane:

In the right pane:
→ In the “selection" criterion, select "New graphical selection".

7.1.8 "Selection from the plan" button

Selects from the DWG plan, the selected object(s) checked in the list.

7.1.9 "Deselect all" button

Deselects all objects from the circuit tree structure by cancelling their tick.

7.1.10 "Zoom on active line" button

Enables to re-focus in the DWG plan on the object whose line is active in the tree structure. The scale of the drawing remains unchanged.

7.1.11 "Reach inaccurate object" button

Enables to directly reach an object, cable or device, whose symbol or data are inaccurate.

7.1.12 "Powers or Explorer" button

When clicking on this button:
- "Powers" button: the installed powers are displayed in the board area.
- "Explorer" button: default display of the explorer.

7.2 Displaying Caneco explorer

To display Caneco explorer:

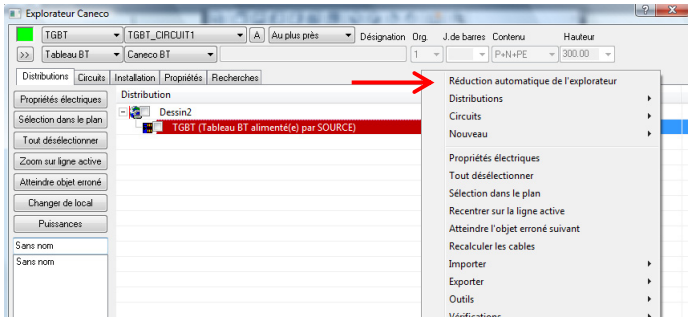
→ Click on:

7.3 Caneco explorer pop-up menu

Other commands are found in the explorer pop-up menu.

To display the explorer pop-up menu:

→ Display Caneco explorer "Chap.7.2".
→ Click on the upper greyed section of Caneco Explorer.



7.4 CSV export from explorer

To export the board area as a file (.csv):

→ Display Caneco explorer "Chap.7.2".
→ Choose one of the tabs to be displayed.
→ Click on "power" or "Explorer" tab "Chap.7.1.12".
→ Caneco explorer pop-up menu "Chap.7.3"
→ "Export" sub-menu.
→ Select "Caneco explorer CSV"
→ Display of "Save" dialogue box
→ Select the directory and enter the name of the destination file.
→ Click on the "Save" button

8 Labels

Each Caneco object has a label containing information on properties of the object. Labels are generated automatically and are customizable according to the work organization.

The object properties are represented by codes with two or three characters identified by two brackets "[XX].

When wiring Caneco objects, codes are replaced by the value of each property.

It is also possible:

- To use DWG label blocks of Caneco objects ☞ "chap.6.8 by code "[BLK=XXX]" where "XXX" is the filename of the DWG label block.
- To add property keywords associated with Caneco objects symbol DWG ☞ "chap.6.5.3".

8.1 "Label" frame of Caneco objects

8.1.1 Keywords associated with Caneco objects

To access the keyword list of Caneco objects:
→ Object dialogue box.

→ Button  located in the "label ..." frame.
→ List of keywords, see glossary of keywords "chap.29"

8.1.2 Keyword check marks

In each Caneco objects dialogue box, there are check marks "☑ TA" corresponding to the keywords associated with Caneco objects, that will activate or not the keyword of label fields.

8.1.3 Label codes

Code [AXIS=1] displays the label in the track axis.
Code [NOARR=1]: does not display the hyphen between object and label.
Code [NOBOR=1]: does not display the line of the label frame.
Code [CLR=XXX]: displays an index background colour, value between 0 and 255.
Code [CLT=X, Y, Z]: Displays a RGB background colour, X=red value between 0 and 255, Y=green value between 0 and 255, Z=blue value between 0 and 255.

8.2 Repositioning labels

To reposition the Caneco object labels:

→ Select label(s).
→ Click on:

or,

→ Select label(s).
→ Pop-up menu ☞ "Chap.5.5".
→ Select "Reposition".

9 General Parameters

When first laying out a Caneco object, the "General parameters" dialogue box opens automatically or otherwise click on:

9.1 "Units and heights" tab

This tab lets you configure the different layout heights.

9.1.1 "Plan" frame

- Plan unit

Define the plan unit to millimetre, centimetre or meter.

If you do not know the unit, type "Distance" in the command line to measure the distance of a door.

- Working altitude in the plan

Set the layout height for the different elements (Equipment, Tracks, Terminals, etc ....) relative to a reference altitude specified by the user.

9.1.2 "Heights of equipment or terminals" frame

Set the different heights of the equipment or terminals placed on the ceiling, walls, floor and post.
Set clearance for specific equipment (e.g., fire detector).

9.1.3 "Wiring height" frame

Set different default heights for circuit wiring:

- Wiring up: the height of the cables will take this value for all equipment located at a height.
- Wiring down: the height of the cables will take this value for all equipment located on the ground.

9.1.4 "Cable tray height" frame

Set default layout height for tracks.
Each type of plotted track will be assigned to that height.

9.2 "General" tab

This tab allows you to configure information about the project, client, Caneco LV project, floor altitude.

- Caneco LV project (.afr)

Double click the value to associate the Caneco LV project. This enables to import editable styles created in Caneco LV.

- Default options

Value:

- "Yes": For each dialogue box, the parameters are automatically saved and reused later.
- "No": For each dialogue box, the parameters will be saved after ticking "Default options" "Chap.9.4.1".

- Interface LV 5.3

Value:
- "Yes": Creating the ".mdb" file for Caneco LV 5.3.
- "No": Creating the ".imp" file for Caneco LV 5.2.

- Calculation of the cables

Value:
- "Yes": Recalculates the cables after saving the file.
- "No": Does not recalculate the cables after saving the file.

- Room name only in the description of circuit:

Value:
- "Yes": Displays only the name of the room in the circuit.
- "No": Displays the details of the room (name, floor, building, etc.).

- Automatic creation of vertical tracks:

Value:
- "Yes": Creation of the vertical lift between the track and the board origin.
- "No": No creation of the vertical lift between the track and the board origin.

- Floor altitude

Indicate the floor altitude in millimetres, centimetres and metres. When attaching this plan to another plan as an external reference, the plan and the Caneco objects will automatically default to the value specified

- Ref mark prefixes

Ref mark prefix enables to have a ref mark, an identifier specific to each Caneco object. It is automatically generated when saving the plan.

9.3 "Layer management" tab

In this tab, the layer names are generated according to the configuration specified by the user in relation to its work organization.

Do not freeze or lock layers used by Caneco

The software generates separate layers for located elements and its labels.

For elements of the same type (distribution, equipment, terminals, etc.), the software can also create multiple layers from variables.

Double click on the value of the element to edit its layer management.

In the option, adding/removing of dependencies often used (Depending on the name of the distribution, depending on the name of the circuit, depending on the circuit style name).

Option for manually adding other dependencies that match the label keywords "chap.8.1.1" or glossary of key words see "chap.29".

Example: CAN_RECEPT_ [TA] _ [NU]

9.3.1 Do not change the name of the AutoCAD block layer.

In the "AutoCAD layers" frame of equipment, terminals, distribution, track dialogue boxes, there is a checkmark "Do not change AutoCAD block layer":

- If this box is checked, the software does not automatically generate the layer according to layer management and the object will be located on the current layer.
- If this box is unchecked, the software will generate the layer of the object according to options set in the layer management.

9.4 "Default values" tab

In this tab, you can set by default all data contained in dialogue boxes: Equipments, terminals, distribution, track, main cable, circuit.

Select the different Caneco "objects" (distribution, circuit, etc.) and set various data: colour, label size, content, etc.

9.4.1 Default options for Caneco objects dialogue boxes

Ability to directly set the default content of a dialogue box by selecting "default option".

10 Distribution

10.1 "Distribution" dialogue box

10.1.1 Titlebar

Indicates whether it is creating a new distribution or editing properties of one or several existing distributions.

10.1.2 "Distribution" frame

- Designation: name of the distribution
- Manufacturer: Manufacturer's name. Ability to add or edit "Chap.6.4".
- Model: model name. Ability to add or edit "Chap.6.4".
- Ref mark: unique ref mark name.
- Supplied by: Supply name or name of the circuit supplying the distribution.
- Type:
  - BBTS LV comb: Distribution busbar trunking system calculated on Caneco LV. To create "Chap.16".
  - BBTS LV transport: Transport distribution busbar trunking system calculated on Caneco LV. To create "Chap.16".
  - BBTS free: Busbar trunking system not calculated by Caneco LV. To create "Chap.16".
  - LV Grid: For this distribution to be a grid (unprotected board) calculated on Caneco LV.
  - LV board: For this distribution to be a board calculated on Caneco LV.
  - Free board: For this distribution to be a board ignored by Caneco LV, typical use: weak current.
  - Transformer: For this distribution to be a transformer calculated on Caneco LV (from Caneco LV version 5.4)
- Symbol: name of the block which represents the distribution.
- Colour: colour index (only for projects created with versions prior to 2.3).
- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.
- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1".
- Altitude: Z elevation of the device relative to the general ref mark.

10.1.3 "Label" frame

- Text field: labels "Chap.8".
- Button  : List of keywords "Chap.8.1.1".
- Size: size of the label.
- Rotation: rotation of label in degrees.
- Colour: colour index of the label.
- Style: style of the text of the label.

10.1.4 "Cable" frame

- Forcing the cable length to: If this field is not blank, the numerical value is taken for the length of the cable portion using the current unit. This is the value taken for calculation in Caneco LV.

10.1.5 "Preview" frame

- Display of the block drawing which represents the distribution.
- Displaying the name of the block.

10.1.6 "Track" frame

- The cable portion supplying the distribution must run through the cable trays: if checked, the cables between two distributions will not run through the cable trays.
- By default ignore tracks below: if checked, the cables will not run through the tracks below the altitude of the distribution.

10.1.7 "AutoCAD layers" frame

- "Chap.9.3.1 ".

10.1.8 Checkmark of keywords associated with the object

- "Chap.8.1.2".

10.1.9 Default option

- "Chap.9.4.1".

10.2 Laying out of a new distribution

To lay out a new distribution, open the "distribution" dialogue box by clicking on:

→ Display of "Distribution" dialogue box
→ Enter parameters of the dialogue box see "chap.10.1"
→ Validate
→ Display of "Layout" dialogue box, ability to
- Edit length
- Edit width
- Degree rotation.

→ Position the board on the plan.

10.3 Editing/Modifying properties of distribution(s)

To edit or modify the properties of one or more distributions:

→ Select distribution(s).
→ Click on:

or,

→ Select distribution(s).
→ Pop-up menu "Chap.5.5".
→ Select either:
- "Caneco properties of distribution XXX" where XXX is the type and the name of distribution the object: for 1 selected equipment.
- "Caneco properties of distributions" for multiple equipment selected.

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Circuit" tab "Chap.7.1.4".
→ Check distribution(s).
→ "electrical properties" button

11 Circuit

11.1 "Circuit" dialogue box

11.1.1 Titlebar

Indicates whether it is creating a new circuit or editing properties of one or several existing circuits.

11.1.2 "Circuit" frame

- Circuit ref mark: unique circuit ref mark.

- Conductors:
- 3P+PE
- 3P+N+PE
- 3P
- 3P+N
- P+N+PE
- P+N
- 3P+PEN
- 2P
- 2P+PE

- Protective ref mark: protection ref mark (active only from LV 5.4).

- Description: short text describing the circuit.

- "Style" button: Displays styles of Caneco LV circuit. If the style is empty, Caneco LV will use the style most suitable according to the equipment.

- CANECO processing:
- Caneco LV: the circuit is exported and processed by Caneco LV. Once calculated under Caneco LV, information relating to the cables of this circuit will be updated when importing into Caneco Implantation.
- Not calculated: the circuit is not exported nor processed by Caneco LV. Information relating to the cables of this circuit is the responsibility of the user.

- Total consumption in W: indicates the total consumption in W of equipment in this circuit.

- "Fixed" check mark Enables to freeze consumption on Caneco LV, consumption on Caneco Implantation is not taken into account when exporting to Caneco LV. However, the length of the cable is taken into account.

11.1.3 "Cable" frame

- Main cable:
- Running through the cable trays: the main cable (one cable) runs through the cable trays, other portions may also run through the cable trays.
- Not running through the cable trays: None of the circuit cables will run through the cable trays.

- Closure:
- With closure: a cable portion is added between the last device of the circuit and distribution.
- Without closure: no cable portion is added between the last device of the circuit and distribution.

- Wiring method :
- Nearest: "Chap.4.4.1".
- Sequential: "Chap.4.4.2".

- Cable ref mark prefix: All cable portions of the circuit are automatically identified. The ref marks will be built based on the chosen prefix followed by a sequence number in the database.

- Equipment ref mark prefix: All equipment of the circuit is automatically identified. The ref marks will be built based on the chosen prefix followed by a sequence number in the database.

- Cable type: matching those of Caneco LV.
- U1000R2V
- H07RN-F
- H07RN-F/PR
- 1000RVFV
- EN-N05 VVU
- H07V
- CR1/PVC
- CR1/PRC
- PVC
- PRC
- XLPE
- EPR
- VPE

- Pole: matching those of Caneco LV.
- Multi
- Multi+PE
- Uni S>Max
- Uni Clover
- Uni jointed
- Uni Separate

- Busbar: enables creating busbar ref mark upstream of the circuit which will be taken into account on Caneco LV.

- Extra length of connection to the distribution: enables to add an extra length to the cable.

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, track altitude and track height will be automatically updated.

- Track height: difference between track altitude and working altitude in the plan provided in the general parameters "Chap.9.1.3".

- Track altitude: Z elevation of equipment relative to general ref mark of cable portions outside cable trays.

- Minimum track length: If the distance between two devices is less than or equal to the value of this field, the cable connecting the two devices will be direct and track altitude will be ignored for this portion.

- "Track" dropdown list
- All tracks: the cables run through all tracks
- Ignore those below devices: cables do not run through the tracks below the altitude of the equipment.
- Ignore those outside the device rooms: cables do not run through the tracks outside of device rooms.

- "First device" dropdown list:
- Nearest to tracks: the first device of the circuit will be the one nearest to tracks.
- Nearest to distribution and tracks: the first device of the circuit will be the one nearest to distribution and tracks.

- Extension of cable to the centre of the distribution: add a piece of cable between the centre of the board and the origin of the circuit.

  - Original number: "Chap.4.1.4".

  - "Type of purpose" dropdown list:
  - "All purposes" means that all tracks can be used independently of their purposes.
  - "Others" mean that the tracks can be assigned to a type of purpose.

  - Cable properties: enables to select the properties of the main cable "Chap.11.5".

11.1.4 "Equipment" frame

- Numbering of equipment from: enables to start equipment numbering from the number specified.

- Number of connected equipment: indicates the number of equipment connected to that circuit.

11.1.5 "Factors" frame

- Use factor: Use factor that is automatically reported in the circuit equipment and processed by Caneco LV.

- Diversity factor: Diversity factor that is automatically reported in the circuit equipment and processed by Caneco LV.

11.1.6 Quantity to be created

- When in circuit creation mode, it enables to create several similar circuits after validation. The circuit ref mark is automatically incremented.

11.1.7 Default option

- "Chap.9.4.1".

11.2 Creating a new circuit

To create a circuit, open the "distribution" dialogue box by clicking on:

→ Display of "Circuit" dialogue box
→ Enter parameters of the dialogue box see "chap.11.1"
→ Validate

11.3 Deleting a circuit

To delete one or more circuits:

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Circuit" tab "Chap.7.1.4".
→ Check the circuit(s) to delete.
→ Right click and select "Delete."

11.4 Editing/Modifying properties of the circuit

To edit or modify the properties of one or more circuits:

→ Select one of the equipment wired on the circuit.
→ Click on:

or,

→ Select one of the equipment wired on the circuit.
→ Pop-up menu "Chap.5.5".
→ Select "Circuit XXX" where XXX is the name of the circuit.
→ Select "Caneco properties".

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Circuit" tab "Chap.7.1.4".
→ Check circuit(s).
→ "electrical properties" button

11.5 Assigning a circuit to another distribution

To assign a circuit to another distribution:

→ Select equipment wired on the circuit.
→ Click on:

→ dialogue box opens.
→ Select the active line of the distribution
→ Validate

or,

→ Select equipment wired on the circuit.
→ Pop-up menu "Chap.5.5".
→ Select "Circuit XXX" where XXX is the name of the circuit.
→ Select "Change distribution".
→ confirmation dialogue box opens.
→ Select the active line of the distribution
→ Validate

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Circuit" tab "Chap.7.1.4".
→ Select the active line of circuit
→ Right click and select "Change distribution."
→ confirmation dialogue box opens.
→ Select the active line of the distribution
→ Validate

11.6 Renaming a circuit

To rename one or more circuits:

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Circuit" tab "Chap.7.1.4".
→ Select the active line of circuit
→ Right click and select "Rename."

12 Cable properties

12.1 "Cable properties" dialogue box

12.1.1 Titlebar

Indicates the type of link "Chap.4.1.5".

12.1.2 Determining the cable

In this field:
- "Caneco LV calculation" means that the circuit of this cable will be exported and then processed by Caneco LV, then sections resulting from the calculation on Caneco LV will be updated in Caneco Implantation.
- "Free" means that the circuit of this cable will not be exported to Caneco LV. Sections must be filled out by the user.

12.1.3 Status

In this field:
- "To be recalculated" means that the sections are not defined and shall be imported from Caneco LV.

12.1.4 "Characteristics" frame

- Ref mark: unique ref mark name.

- Manufacturer: Manufacturer's name. Ability to add or edit "Chap.6.4.2".

- Model: model name. Ability to add or edit "Chap.6.4.2".

- Caneco LV type: cable type corresponding to those of LV Caneco.
  - U1000R2V
  - H07RN-F
  - H07RN-F/PR
  - 1000RVFV
  - EN-N05 VVU
  - H07V
  - CR1/PVC
  - CR1/PRC
  - PVC
  - PRC
  - XLPE
  - EPR
  - VPE

- Pole: matching those of Caneco LV.
  - Multi
  - Multi+PE
  - Uni S>Max
  - Uni Clover
  - Uni jointed
  - Uni Separate

- Content: matching Caneco LV conductors:
- 3P+PE
- 3P+N+PE
- 3P
- 3P+N
- P+N+PE
- P+N
- 3P+PEN
- 2P
- 2P+PE

- Family: is the family of the cable.

- Colour: colour index of the cable.

- Additional point: Adds an additional checkpoint to the cable path.

- Wiring: Rigid or Flexible "Chap.18.6.

- Ends:
- Free: the two ends of the cable are not connected to beginning and ending.
- On outgoing connection: the end of the cable remains attached to the beginning.
- On incoming connection: the end of the cable remains attached to the ending.
- On outgoing and incoming connection, the two ends of the cable remain attached to the beginning and ending.

- Length: Length in the current unit.

12.1.5 "Label" frame

- Text field: labels "Chap.8".

- Button  : List of keywords "Chap.8.1.1".

- Size: size of the label.

- Rotation: rotation of label in degrees.

- Interrupted: only useful if the checkmark "splines" is enabled. In this case, only spline vectors ending on equipment allow the display of cable labels.

- Spline: All the equipment supplied by the circuit can be linked by vectors. To do so, the checkmark must be enabled and the label field must not be blank.

- "Spline" dropdown list: defines the amplitude of the vector.
- Low.
- Medium
- High.

- N points: defines the number of handles ("Chap.4.2.1") between Caneco objects

- "Points" dropdown list: defines the position of the spline.
- Left.
- Right.

- Colour: colour index of the label.

- Style: style of the text of the label.

- Size: size of the label.

- Rotation: rotation in degrees of the label.

12.1.6 "Section" frame

- Cable or phase: number and cable type of cable or phase.
- Separate neutral: number and cable type for separate neutral.
- Separate PE: number and cable type for separate PE.
- Width: cable width in mm. Ability to add or edit "Chap.6.4.2".
- Height: cable height in mm. Ability to add or edit "Chap.6.4.2".
- Weight: cable weight in kg/m.
- Core: cable core
  - Cu
  - Al
  - Cu/Al
  - Al + PECu
- Extended data: enables to attach free information to the cable.

12.1.7 "Upstream circuit" frame

- Distribution: displays the name of the distribution.
- Circuit ref mark: displays the circuit ref mark.

12.1.8 Checkmark of keywords associated with the object

- "Chap.8.1.2".

12.1.9 Default option

- "Chap.9.4.1".

12.2 Editing/Modifying properties of the cable

Warning: Type of link "Chap.4.1.5" must be known.
Modifying links can lead to changes in Caneco LV calculation:

- Modifying main cables of the selection: the other cable portions of the circuit will recover the properties of the main cable and cause an update of the cables after processing on Caneco LV.
- Modifying cables selected: the other cable portions of the circuit will not recover the properties of the main cable and will not cause an update of the cables after processing on Caneco LV. Pick up the properties of the main cable of circuit in order to perform an update after processing on Caneco LV.

Some modifications may cause forcing of cable properties.

To edit or modify properties of one or more cables:

→ Select one of the circuit cables.
→ Click on:

or,

→ Select one of the circuit cables.
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".
→ Select either:
- main cables of the selection.
- selected cables.
- all the main cables.

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Installation" tab "Chap.7.1.5".
→ Check link(s) "Chap.4.1.5".
→ "electrical properties" button

12.3 Picking up properties of the main circuit cable

Warning: Type of link "Chap.4.1.5" must be known.

To pick up properties of the main circuit cable and cancel forcing of cable properties in order to make an update after processing on Caneco LV:

→ Select one of the "non main" circuit cables.
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".
→ Select "Pick up properties of the main circuit cable".

13 Equipment

13.1 "Equipment" dialogue box

13.1.1 "Equipment" frame

List of equipment library. Ability to create or modify the equipment library "Chap.6.7".

13.1.2 "Characteristic" frame

- Name: Text describing the equipment.
- Manufacturer: Name of the manufacturer. Ability to add or edit "Chap.6.4.3".
- Model: Model name: Ability to add or edit "Chap.6.4.3".
- Caneco LV type:
  - (None): not calculated in Caneco LV.
  - Heating: matching Caneco LV style.
  - Capacitor: matching Caneco LV style (available 5.4.)
  - Low current: not calculated in Caneco LV.
  - Miscellaneous: matching Caneco LV style.
  - Lighting: matching Caneco LV style.
  - IT: not calculated in Caneco LV.
  - Motor: matching Caneco LV style.
  - Socket: matching Caneco LV style.
  - Transformer: matching Caneco LV style (available 5.4.)
- Nature: specifies the nature of equipment.
- Consumption: consumption in watts.
- Consumption button: Displays a help tool for the entry of consumption. The power is reported in the "Equipment" dialogue box.

Warning: Please carefully check Cos Phi, Use factor, Diversity factor in the equipment and circuits. This may lead to malfunctions when exporting project to Caneco LV .

- Cos Phi: power factor. Value between 0.1 and 1
- Use factor : Displays the use factor. Ability to change in "Circuit" dialogue box "Chap.11.1.4".
- Diversity factor: displays the diversity factor. Ability to change in "Circuit" dialogue box "Chap.11.1.4".
- Room name: name of the room containing the equipment. This name is automatically updated by the software if it is blank. If no room is found, the data "no name" is inserted.
- Desc: "Description" field, you can add free text.

- Supply: matching Caneco LV conductors.
  - 3P+PE
  - 3P+N+PE
  - 3P
  - 3P+N
  - P+N+PE
  - P+N
  - 3P+PEN
  - 2P
  - 2P+PE

- Layout: Enables to automatically assign the attitude based on values entered into the general parameters "Chap.9.1.2".

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.

- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1.2".

- Altitude: Z elevation of the device relative to the general ref mark.

- Library: DWG file name containing the block of the object. Ability to add DWG symbols "Chap.6.6".

- Electrical blocks: list of AutoCAD blocks existing in the DWG plan which represents Caneco object(s).

- Add a terminal: Enables to add a terminal. "Chap.14.1".

- Properties: properties of the terminal if "Add a terminal" is checked. "Chap.14.1".

- Laying method: allows you to assign for information the equipment laying method.

13.1.3 "Preview" frame

- Display of the block drawing which represents the distribution.
- Display of the name of the block.

13.1.4 "Label" frame

- Text field: labels "Chap.8".

- Button  : List of keywords "Chap.8.1.1".

- Size: size of the label.

- Rotation: rotation of label in degrees.

- Colour: colour index of the label.

- Style: style of the text of the label.

13.1.5 "Cable" frame

- ZY=Caneco LV type: enables to display in the label the Caneco LV type of the cable supplying the device.
- ZP=Cable or phase: enables to display in the label the phase of the cable supplying the device.
- ZS=Neutral separated: enables to display in the label the neutral separated of the cable supplying the device.
- ZE=separate PE: enables to display in the label the separate PE of the cable supplying the device.
- Conductor: enables to detail the conductor colours.
- Forcing the length to: If this field is not blank, the numerical value is taken for the length of the cable portion using the current unit. This is the value taken for calculation in Caneco LV.
- Track alt:
  - Circuit altitude: the altitude of cable altitude is the one given in the "Track altitude" field of the circuit dialogue box "Chap.11.1.3".
  - Object altitude: cable track altitude is identical to the altitude of the object where the cable ends (the ending).
  - Previous altitude: cable track altitude is identical to the altitude of the object from where the cable runs (the beginning).
- Run on the cable tray: if checked, the cable will run through the nearest cable tray that meets the track criteria.
- See label on upstream cable:
  - If the "Splines" mode of upstream cable is not activated:
    - If checked, label of upstream cable is displayed.
  - If the "Splines" mode of upstream cable is activated:
    - If the "Interrupted" mode of upstream cable is activated:
      - If checked, the vector of the label corresponding to the upstream cable is displayed.
      - If unchecked, the vector of the label corresponding to the upstream cable is not displayed.
    - If the "Interrupted" mode of upstream cable is not activated: the vector of the label corresponding to the upstream cable is displayed.

13.1.6 "Ref mark" frame

- Distribution: displays the ref mark of distribution which supplies the device.
- Circuit: displays the ref mark of circuit which supplies the device.
- Device: unique equipment ref mark. Automatically generate when saving. Configure in the ref mark prefixes in the "General Parameters" dialogue box "Chap.9 ".
- Sequence number: displays the device number in the circuit.
- Cable prefix: Enables to assign a specific cable ref mark.

13.1.7 "AutoCAD layers" frame

- "Chap.9.3.1 ".

13.1.8 Checkmark of keywords associated with the object

- "Chap.8.1.2".

13.1.9 Default option

- "Chap.9.4.1".

13.2 Laying out of a new equipment

To lay out equipment, open the "Equipment" dialogue box by clicking on:

→ Display of "Equipment" dialogue box
→ Enter parameters of the dialogue box, see "chap.13.1"
→ Validate
→ Display of "Layout" dialogue box, ability to
- Edit length
- Edit width
- Degree rotation.

→ Position the equipment on the plan.

13.3 Editing/Modifying properties of equipment

To edit or modify the properties of one or more equipment:

→ Select equipment.
→ Click on:

or,

→ Select equipment.
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".
→ Select either:
- "of equipment XXX selected" where "XXX" is the name of the object: for equipment selected.
- "of equipment selected": for multiple equipment selected.

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Installation" tab "Chap.7.1.5".
→ Check equipment.
→ "electrical properties" button

14 Terminal

14.1 "Terminal" dialogue box

14.1.1 "Terminal" frame

- Name: name of the terminal
- Type: type of terminal.
- Symbol: Name of DWG file containing the block of the object. Ability to add DWG symbols "Chap.6.6".
- Downstream wiring: equipment downstream of a terminal can be either "sequential" or "nearest" regardless of how the circuit is wired.
  - Nearest: "Chap.4.4.1".
  - Sequential: "Chap.4.4.2".
- Wiring angle: wiring angle in degree between terminal and equipment.
- Room name: name of the room containing the terminal. This name is automatically updated by the software if it is blank. If no room is found, the data "no name" is inserted.
- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.
- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1.2".
- Altitude: Z elevation of the device relative to the general ref mark.
- Automatic altitude setting: if checked, the altitude will be forced.
- Connection: method for connecting cables to terminal
- Distribution: method for distributing cables on the terminal
- In the box: name of the junction box that contains the terminal.

14.1.2 "Label" frame

- Text field: labels "Chap.8".
- Button  : List of keywords "Chap.8.1.1".
- Size: size of the label.
- Rotation: rotation of label in degrees.
- Colour: colour index of the label.
- Style: style of the text of the label.

14.1.3 "Cable" frame

- ZY=Caneco LV type: enables to display in the label the Caneco LV type of the cable supplying the device.
- ZP=Cable or phase: enables to display in the label the phase of the cable supplying the device.
- ZS=Neutral separated: enables to display in the label the neutral separated of the cable supplying the device.
- ZE=separate PE: enables to display in the label the separate PE of the cable supplying the device.
- Conductor: enables to detail the conductor colours.
- Forcing the length to: If this field is not blank, the numerical value is taken for the length of the cable portion using the current unit. This is the value taken for calculation in Caneco LV.
- Track alt:
  - Circuit altitude: the altitude of cable altitude is the one given in the "Track altitude" field of the circuit dialogue box  "Chap.11.1.3".
  - Object altitude: cable track altitude is identical to the altitude of the object where the cable ends (the ending).
  - Previous altitude: cable track altitude is identical to the altitude of the object from where the cable runs (the beginning).
- Run on the cable tray: if checked, the cable will run through the nearest cable tray that meets the track criteria.
- See label on upstream cable:
  - If the "Splines" mode of upstream cable is not activated:
    - If checked, label of upstream cable is displayed.
  - If the "Splines" mode of upstream cable is activated:
    - If the "Interrupted" mode of upstream cable is activated:
      - If checked, the vector of the label corresponding to the upstream cable is displayed.
      - If unchecked, the vector of the label corresponding to the upstream cable is not displayed.
    - If the "Interrupted" mode of upstream cable is not activated: the vector of the label corresponding to the upstream cable is displayed.

14.1.4 "Ref mark" frame

- Distribution: displays the ref mark of distribution which supplies the device.
- Circuit: displays the ref mark of circuit which supplies the device.
- Device: unique device ref mark. Automatically generate when saving. Configure in the ref mark prefixes in the "General Parameters" dialogue box  "Chap.9 ".
- Sequence number: displays the device number in the circuit.
- Cable prefix: Enables to assign a specific cable ref mark.

14.1.5 "AutoCAD layers" frame

-  "Chap.9.3.1 ".

14.1.6 Checkmark of keywords associated with the object

-  "Chap.8.1.2".

14.1.7 Default option

-  "Chap.9.4.1".

14.2 Laying out of a new terminal

To lay out a terminal, open the "Terminal" dialogue box by clicking on:

→ Display of "Terminal" dialogue box
→ Enter parameters of the dialogue box, see "chap.14.1"
→ Validate
→ Display of "Layout" dialogue box, ability to
- Edit length
- Edit width
- Degree rotation.

→ Position the terminal on the plan.

14.3 Editing/Modifying properties of equipment

To edit or modify the properties of one or more terminals:

→ Select equipment.
→ Click on:

or,

→ Select equipment.
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".
→ Select either:
- "of terminal XXX selected" where "XXX" is the name of the object: for one terminal selected.
- "of terminals / or supply of BBTSs selected": for several terminals selected.

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Installation" tab "Chap.7.1.5".
→ Check terminal(s).
→ "electrical properties" button

15 Conversion of blocks into Caneco objects

15.1 Converting one AutoCAD block into "Equipment" Caneco object

To convert one AutoCAD block into "Equipment" Caneco object

→ Select AutoCAD block(s).
→ Pop-up menu "Chap.5.5".
→ Select "Convert N blocks into Caneco equipment" where N is the number of selected blocks.
→ Display of "Equipment" dialogue box
→ Enter parameters of the dialogue box, see "chap.13.1"
→ Validate

15.2 Converting one AutoCAD block into "Terminal(s)" Caneco object

To convert one AutoCAD block into "Terminal(s)" Caneco object

→ Select AutoCAD block(s).
→ Pop-up menu "Chap.5.5".
→ Select "Convert N blocks into Caneco terminal(s)" where N is the number of selected blocks.
→ Display of "Terminal" dialogue box
→ Enter parameters of the dialogue box, see "chap.14.1"
→ Validate

15.3 Converting one AutoCAD block into "Distribution(s)" Caneco object

To convert one AutoCAD block into "Distribution(s)" Caneco object

→ Select AutoCAD block(s).
→ Pop-up menu "Chap.5.5".
→ Select "Convert N blocks into Caneco distribution(s)" where N is the number of selected blocks.
→ In command line, type the prefix of the ref mark.
→ Display of "Distribution" dialogue box
→ Enter parameters of the dialogue box, see "chap.10.1"
→ Validate

15.4 Converting one AutoCAD block into "System(s)" Caneco object

To convert one AutoCAD block into "System(s)" Caneco object

→ Select AutoCAD block(s).
→ Pop-up menu "Chap.5.5".
→ Select "Convert N blocks into Caneco System(s)" where N is the number of selected blocks.
→ Display of "System" dialogue box
→ Enter parameters of the dialogue box, see "chap.20.1"
→ Validate

16 Busbar trunking system (BBTS)

16.1 "BBTS" dialogue box

16.1.1 Titlebar

Indicates whether it is a Busbar trunking system of the type:
- Distribution: Regarded as a distribution. To create, see "Chap.10".
- Terminal: Regarded as equipment.

16.1.2 "Characteristics" frame

- Name: name of busbar trunking system

- Type: not used.

- Manufacturer: Manufacturer's name.

- Model: model name.

- Layout:
- 1 Standard
- 2 Perpendicular
- 3 Vertical

- Symbol: rectangular or circular symbol of cross-section.

- Width: slab width in millimetres.

- Height: slab height in millimetres.
- Cable:
- No cable along the BBTS: the cable will run from the equipment to the BBTS.
- Creation of cables along the BBTS: the cable will run from the equipment to the BBTS, then will travel along the BBTS to its supply.

- Rotation: rotation of the BBTS in degree.

- Radius of curvature: to create rounded angles.

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.

- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1.2".

- Altitude: Z elevation of the device relative to the general ref mark.

- Forced:
- If checked: all the peaks of the portion entered will be forced to indicated altitude.
- If not checked: the peaks keep the altitude entered by the user.

For a 3D input, consider unchecking this option.

- Axis drawing: the axis of the portion will be drawn on the plan.

- 3D drawing: the section of the portion will be drawn on the plan.

- Colour: colour index of the BBTS

- Length: BBTS length

16.1.3 "Label" frame

- Text field: labels "Chap.8".

- Colour: colour index of the label.

- Size: size of the label.

- Style: style of the text of the label.

- Rotation: rotation of label in degrees.

16.1.4 "Automatically creating equipment" frame

For busbar trunking systems of the "terminal" type , it is possible to automatically create equipment associated with the BBTS:

- "Change equipment" button: select the equipment from the dialogue box "Chap.13.1"

- Option:
- Automatic modification: the equipment will be automatically updated after changing the parameters of this frame or modifying the drawing.
- No automatic modification: the equipment will remain unchanged after changing the parameters of this frame or modifying the drawing.

- Spacing:
- Fixed: the value of this parameter has priority over others.
- Calculated: the value of this parameter is calculated based on the others.

- Residual:
- Fixed: the value of this parameter has priority over others.
- Calculated: the value of this parameter is calculated based on the others.

- Number:
- Fixed: the value of this parameter has priority over others.
- Calculated: the value of this parameter is calculated based on the others.

- Rotation:
- Relative: to the direction of the BBTS on which equipment is located.
- Absolute: angle of rotation is fixed relative to the axis X, Y of general ref mark SCU AutoCAD.

16.1.5 "Ref mark" frame

- Distribution: ref mark of distribution which supplies the device.

  - Circuit ref mark: ref mark of circuit which supplies the device.

16.1.6 "AutoCAD layers" frame

- "Chap.9.3.1 ".

16.1.7 Checkmark of keywords associated with the object

- "Chap.8.1.2".

16.1.8 Default option

- "Chap.9.4.1".

16.2 Laying out of a new BBTS

To lay out a BBTS, open the "BBTS" dialogue box by clicking on:

→ Display of "BBTS" dialogue box
→ Enter parameters of the dialogue box see "chap.16.1"
→ Validate
→ Place the endpoints of the BBTS on the plan.

16.3 Editing/Modifying properties of BBTS(s)

To edit or modify the properties of one or more BBTSs:

→ Select BBTS(s).
→ Click on:

or,

→ Select BBTS(s).
→ Pop-up menu "Chap.5.5".
→ Select either:

- "Caneco properties of distribution BBTSs" for one or more BBTSs of the "Distribution" type selected.
- "Caneco properties of terminal BBTSs" for one or more BBTSs of the "Terminal" type selected.

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Installation" tab "Chap.7.1.5".
→ Check BBTS(s).
→ "electrical properties" button

17 Track

17.1 "Track" dialogue box

17.1.1 "Characteristics" frame

- Manufacturer: Manufacturer's name. Ability to add or edit "Chap.6.4.4".

- Model: model name. Ability to add or edit "Chap.6.4.4".

- Ref mark: unique track ref mark. Automatically generate when saving. Configure in the ref mark prefixes in the "General Parameters" dialogue box "Chap.9 ".

- Type: Type of track Ability to add or edit "Chap.6.4.5".
- "Cable tray"
- "Conduit"
- "Trenches"
- "Tubes"
- "Troughs"
- "Baseboard"
- "Moulding"

- Use: Use of the cable tray. Ability to add or edit "Chap.6.4.6".

- Laying method: corresponding to Caneco LV laying methods.

- Symbol: cross-section symbol rectangle open, closed rectangle, circle.

- Width: slab width in millimetres.

- Height: slab height in millimetres.

- Reserve: Reserve as a percentage of the minimum section calculated.

$$\text{Largeur avec réserve} = \text{largeur sans réserve} * \left(\frac{1 + \text{Réserve}}{100}\right)$$

- Max load: maximum load in kg/m

- Number of cable layers: the maximum number of cable layers allowed on this portion. Calculation of slab widths depends on this value.

- Maximum height of cables spread in a layer: the cables that have a height equal to or greater than this value will be automatically spread on a layer.

- Skip heights when selecting models: if this box is checked, the width of the cable tray selected by the software will be at least equal to the value required, the height will be selected closest to the required value.

- Shape: Shape of track

- Rotation: rotation in degree of track.

- Radius of curvature: to create a rounded drawing of angles in a portion.

- Radius of curvature: to create rounded angles.

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.

- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1.2".

- Altitude: Z elevation of the device relative to the general ref mark.

- Forced:
- If checked: all the peaks of the portion entered will be forced to indicated altitude.
- If not checked: the peaks keep the altitude entered by the user.

For a 3D input, consider unchecking this option.

- Line colour: colour index of the portion.

- Line thickness: line thickness of the portion.

- Length: portion length

- Colouring: Colouring of the track.

- Loss: Track loss.

- Axis drawing: the axis of the portion will be drawn on the plan.

- Rise direction: Track rise direction.

- 3D drawing: the section of the portion will be drawn on the plan.

- Room name: Display of the room name.

- Slab ref mark: Display of the slab ref mark

- Locked ref mark: Enables to lock the ref marks.

17.1.2 "Label" frame

- Text field: labels "Chap.8".

- Button : List of keywords "Chap.8.1.1".

- Size: size of the label.

- Rotation: rotation of label in degree.

- Colour: colour index of the label.

- Style: style of the text of the label.

17.1.3 "Distributions excluded or only authorized" frame

- List to the left:

"Excluded": list to the right of distributions or distribution origins the cables of which will not run through the track portion.
"Only": list to the right of distributions or distribution origins the cables of which will run only through the track portion.

- "Remove" button: removes distribution or distribution origin displayed from the list.

- Distributions: list of distributions and distribution origins of included in the project. A selection from this list will fill the list "Excluded" or "Only" of distributions excluded.

17.1.4 "Calculated characteristics" frame

- Force track dimensions: Enables to freeze the dimensions of the track and not to consider them for automatic resizing.

17.1.5 "AutoCAD layers" frame

- "Chap.9.3.1 ".

17.1.6 Checkmark of keywords associated with the object

- "Chap.8.1.2".

17.1.7 Default option

- "Chap.9.4.1".

17.2 Laying out of a new track

The original numbers are essential in the case of a link from a track to the distribution. This will ensure the smooth running of cables through the track and enable creating the vertical lift of the track.

To get an original number in the distribution, wire equipment on one of distribution circuits.

To lay out a track, open the "Track" dialogue box by clicking on:

→ Display of "Track" dialogue box
→ Enter parameters of the dialogue box see "chap.17.1"
→ Validate
→ Position the endpoints of the track on the plan.

17.3 Editing/Modifying properties of track(s)

To edit or modify the properties of one or more tracks:

→ Select track(s).
→ Click on:

or,

→ Select track(s).
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".

or,

→ Display Caneco explorer "Chap.7.2".
→ Click on the "Installation" tab "Chap.7.1.5".
→ Check track(s).
→ "electrical properties" button

17.4 Cutting a track

To cut a track at one point:

→ Click on:

→ Click on a point of the track.

17.5 Rotating 90 degrees a track

When laying out the track, it is randomly rotated 90°. Use this command to rotate to the desired position.

To rotate 90 degrees a track:

→ Select track(s).
→ Click on:

17.6 Distorting a track

To distort a track:

→ Click on:

→ Follow the instructions on the command line.

17.7 Exploding a track

To explode a track

→ Select track(s).
→ Click on:

17.8 Projecting a track portion on another one

To project (extend) a track on another one:

→ Select the track to be projected
→ Click on:

→ Select the track on which the projection will be made.

17.9 Joining track portions

To join track portions:

→ Click on:

→ Select two or more tracks to be joined.

17.10 Join a track portion to another one

To join (extend perpendicularly) a track to another one:

→ Select the track to be joined
→ Click on:

→ Select the track on which the junction will be made.
→ Follow the instructions on the command line.

17.11 Track sizing

See principles of track sizing "Chap.4.6"

17.11.1 Calculating track segments

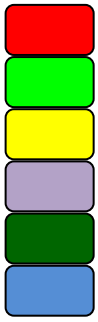
To calculate track segments depending on wiring through the track. Cables shall have a non-zero width and height. To get the width and height of the cable, either:

- Update cables from Caneco LV " Chap.24.5".
- Edit cable properties (for uses other than strong current) "Chap.12.2". If the width and height are greyed, double-click to enter a value.

To calculate track segments:

→ Click on:

→ If there are cables without width and height, display of the dialogue box listing the cables with zero width and height.
→ On the DWG, display of labels with colours:



Red label: Segments are undersized in width.

Green label: Segments are properly sized.

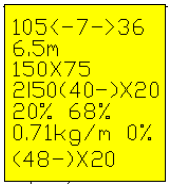
Yellow label: Segments are oversized in width.

Purple label: Segments are undersized in height.

Dark green label: Segments are oversized in blue.

Blue label: Segments are undersized in max load.

Model of a label after calculation:



- 105< -7->36:
- 105: number of start peak of the segment.
- 7: number of cables on this segment
- 36: number of incoming peak of the segment.

- 6.5 m: Segment length in meters.

- 150x75:
- 150: portion width in millimetres in the drawing.
- 75: height width in millimetres in the drawing.

- 2|50(40-) x20
- 2: number of layers
- 50: maximum height of cables.
- 40: width recommended after calculation (without reserve).
- 20: height recommended after calculation.

- 20% 68%
- 20%: percentage of reserve on width.
- 68%: percentage of reserve on height.

- 0.71kg/m 0%
- 0.71kg/m: load in kilograms per meter (kg/m).
- 0%: percentage of reserve on load.

- (48-) x20
- 48: width recommended after calculation (with reserve).
- 20: height recommended after calculation.

17.11.2 Automatically increase dimensions

To automatically increase, if the manufacturer in the track has not been entered, edit the properties of track "Chap.17.3".

To automatically increase dimensions

→ Select track(s).
→ Click on:

17.11.3 Automatically reduce dimensions

To automatically reduce, if the manufacturer in the track has not been entered, edit the properties of track "Chap.17.3".

To automatically reduce dimensions

→ Select track(s).
→ Click on:

17.12 Exporting file (.csv) of cable tray segments

To export a file (.csv) of cable tray segments:

→ Calculate track segments "Chap.17.11.1".
→ Click on:

→ Display of "Save" dialogue box
→ Select the directory and enter the name of the destination file.
→ Click on the "Save" button

17.13 Recalculating

To recalculate and refresh the track cables:

→ Click on:

17.14 New track with identical properties

To lay out a new track with same properties as another path on the DWG plan:

→ Select a track
→ Pop-up menu "Chap.5.5".
→ Select "New with identical properties".
→ Position the endpoints of the track on the plan.

or,

→ Click on:

→ Select a track
→ Position the endpoints of the track on the plan.

17.15 Converting "Line", "Polyline" into track

To convert an AutoCAD "line" or "polyline":
→ Select a "line" or "polyline".
→ Pop-up menu "Chap.5.5".
→ Convert into Caneco track.

18 Auto wiring

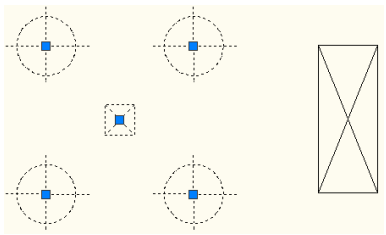
18.1 Supply by

See wiring principle "Chap.4.4".

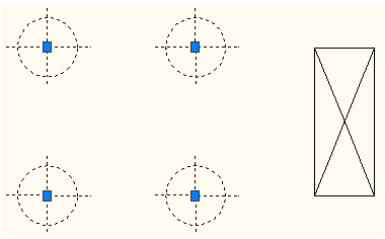
For wiring and supplying Caneco objects laid out on the DWG plan:

→ Select equipment with or without terminal(s) to wire.

With terminal



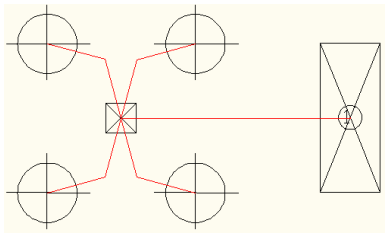
Without terminal



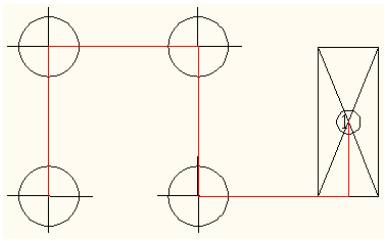
→ Pop-up menu "Chap.5.5".
→ Select "Supply by".
→ Select "XXX" where XXX is the distribution(s).
→ Select either:

- "a new circuit": Display of "Circuit" dialogue box for creating circuit "Chap.11.2".
- "XXX_XXX" where XXX_XXX is/are circuit(s) already created.

With terminal



Without terminal



18.2 Wire with

To wire a Caneco object with another Caneco object:

→ Select Caneco object.
→ Click on:

→ Select the other Caneco object.

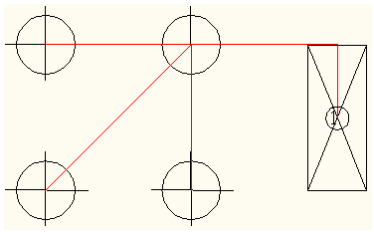
or,

→ Select Caneco object.
→ Pop-up menu "Chap.5.5".
→ Select "Wire with."
→ Select the other Caneco object.

18.3 Wiring downstream

To wire downstream:

→ Select Caneco object.
→ Pop-up menu "Chap.5.5".
→ Select "Wire downstream".
→ Select the other Caneco object.

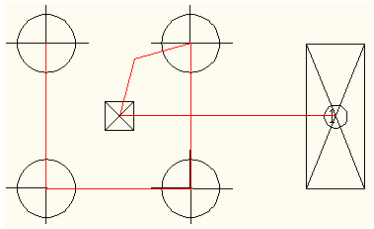


18.4 Serial wiring

See wiring principle "Chap.4.4".

To wire serially:

→ Select at least 2 or more equipment.
→ Pop-up menu "Chap.5.5".
→ Select "Serial wire".
→ Select the terminal.



18.5 Unwiring Caneco objects

To unwire Caneco objects laid out and wired on the DWG plan:

→ Select equipment with or without terminal(s) to unwire.
→ Click on:

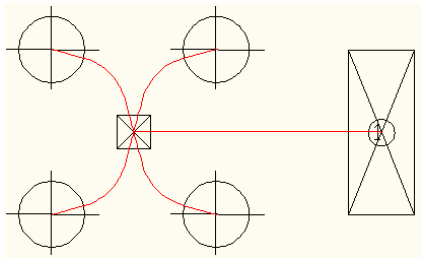
or,

→ Select equipment with or without terminal(s) to unwire.
→ Pop-up menu "Chap.5.5".
→ Select "Unwire from XXX_XXX" where XXX_XXX is the name of the circuit.

18.6 Plotting with rigid or flexible cable

18.6.1 Flexible cable

To plot with flexible cable:
→ Edit the properties of the main cable "Chap.12.2".
→ In the dialogue box of the main cable, select "flexible" wiring "Chap.12.1.4".
→ Validate

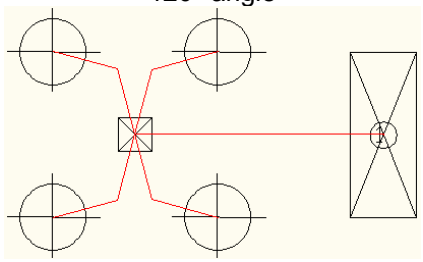


18.6.2 Rigid cable

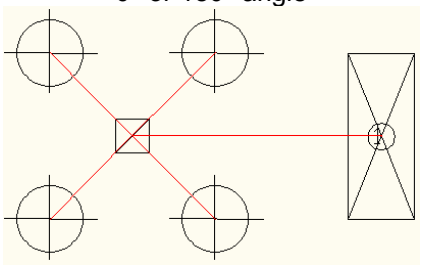
To plot with rigid cable:
→ Edit the properties of the main cable "Chap.12.2".
→ In the "Main cable" dialogue box, select "rigid" wiring "Chap.12.1.4".
→ Validate

To change the wiring angle:
→ Edit terminal(s) "Chap.14.3".
→ In the "Terminal" dialogue box, select the angle "Chap.14.1.1".
→ Validate

120° angle



0° or 180° angle



18.7 Adding a handle to the cable

To add a handle to the cable:

→ Select a cable
→ Click on:

→ Select a point on the cable.

or,

→ Select a cable
→ Pop-up menu "Chap.5.5".
→ Select "Distort".
→ Select "Add a handle."
→ Select a point on the cable.

18.8 Changing the route of a cable

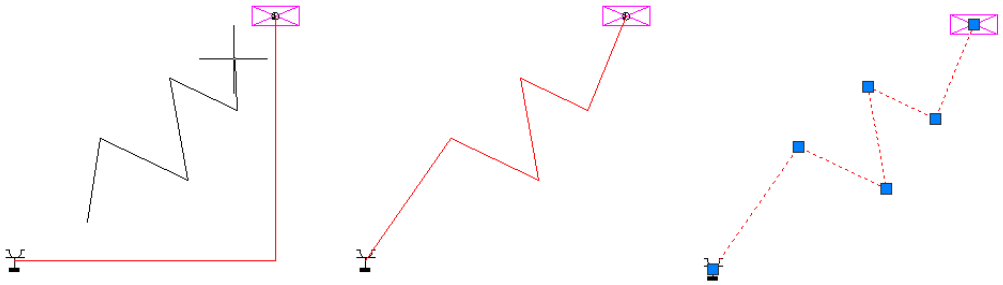
To change the route of a cable:

→ Select a cable
→ Click on:

→ Plot the cable route.
→ Validate by pressing "Enter".

or,

→ Select a cable
→ Pop-up menu "Chap.5.5".
→ Select "Distort".
→ Select "Routing points".
→ Plot the cable route.
→ Validate by pressing "Enter".



18.9 Deleting the manual tracing

To delete the manual tracing and return to automatic tracing, i.e.:

- "Adding handle" "Chap. 18.7 .
- "Changing route" "Chap. 18.8 .

→ Select a cable
→ Click on:

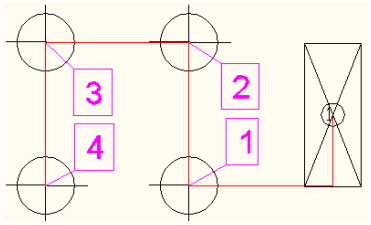
→ A confirmation dialogue box opens.
→ Validate

or,

→ Select a cable
→ Pop-up menu "Chap.5.5".
→ Select "Distort".
→ Select "Cancel deformations".
→ A confirmation dialogue box opens.
→ Validate

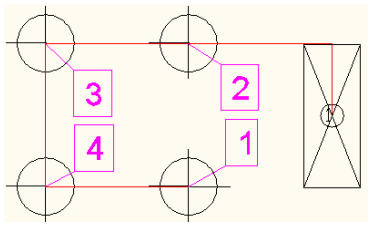
18.10 Changing the wiring sequence of equipment.

To change the wiring sequence of equipment:



→ Click on:

→ Select the 1st equipment, and then select the others one after another.
→ Validate
→ A confirmation dialogue box opens.
→ Validate



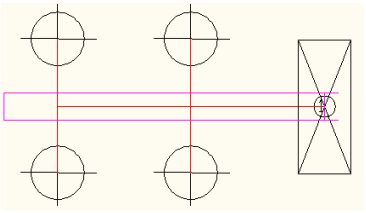
18.11 Plotting the cable through a track

To plot the cable of equipment/terminal(s) through a track:

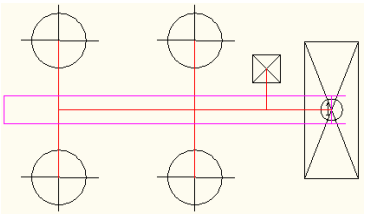
Equipment:
→ Edit equipment properties "Chap.13.3"
→ Check "Run on the cable tray".
→ Validate

Terminal:
→ Edit properties of terminal(s) if any "Chap.14.3"
→ Check "Run on the cable tray".
→ Validate

Without terminal



With terminal



18.12 Calculating circuit wires

To calculate circuit cables and refresh circuit cable runs:

→ Click on:

18.13 Calculating all cables

To calculate all the cables and refresh runs of all cables:

→ Click on:

19 Track cable information

19.1 "Track cable information" dialogue box

19.1.1 "Track dimension" frame

- Manufacturer: manufacturer name, entry in the properties of tracks "Chap. 17.3 .
- Model: model name, entry in the properties of tracks "Chap.17.3".
- No. of layers: The number of layers.
- Maximum height of cables spread in a layer: Cables that have a height equal to or greater than this value will be spread on a single layer, ordered by decreasing height.
- Overall height (mm): Maximum height of cables running through this point of the track. The value of the third column is the height of the cable tray in the plan. This value can be changed and will be updated in the drawing.
- Width (mm) with and without reserve: Width of the track calculated by taking into account a distribution of cables based on the number of layers and the maximum height of cables spread on a layer. The value of the third column is the width of the cable tray in the plan. This value can be changed and will be updated in the drawing.
- Weight (kg/m): Accumulated weight by meter of all cables running through this point of the track.

19.1.2 "Drawing of the section" frame

- Create label: If enabled, adds the drawing of the section in the DWG plan.
- Auto rotate: Rotation angle in degree of the label.
- Drawing of the effective section: Section without reserve is drawn red.
- Drawing of the effective section with reserve: Section without reserve is drawn green.
- Writing the information table: adds the drawing of the section with the "Cable information" table "Chap.19.1.3" in the DWG plan.

19.1.3 "Cable information" frame

- Keyword field: Keyword text.
- Button ">>": List of keywords "Chap.8.1.1".
- "Cable information" table Each line corresponds to a layer. Each column corresponds to a cable named by its keyword.

19.1.4 "Track cable list" frame

- Distribution: Name of distribution which supplies circuit where the cable portion is located.
- Circuit: Name of circuit where the cable portion is located.
- Type: Cable type.
- Cable or Phase: Designation of the cable portion, or designation of the phase conductor(s) for wires and multicore cable portions.
- Neutral: Designation of the cable portion, or designation of the neutral conductor(s).
- PE: Designation of the cable portion, or designation of the PE conductor(s).
- Cable width: Link width in mm.
- Cable height: Link height in mm.
- Cable weight: Link weight in kg/m

19.1.5 Default option

- "Chap.9.4.1".

19.1.6 "CSV file" Button

- Enables to export as a file (.csv) the table of the "list of track cables" frame "Chap.19.1.4".

19.2 Track cable information

When entering cable track information, cables with zero width or height are ignored. To be considered, cables shall have a non-zero width and height. To get the width and height of the cable, either:

- Update cables from Caneco LV " Chap.24.5".
- Edit cable properties (for uses other than strong current) "Chap.12.2". If the width and height are greyed, double-click to enter a value.

To view track cable information:

→ Click on:

→ Select a point on the track.

or,

→ Select a track.
→ Pop-up menu "Chap.5.5".
→ Select "Section".
→ Select a point on the track.

20 System

A system is a Caneco object which contains equipment with their own circuit.

20.1 "System" dialogue box

20.1.1 "Characteristics" frame

- System: name of the system definition, if the system is imported into the Caneco project. Otherwise "No system has been imported"

- Name: System name which corresponds to the name of the distribution defined in the system

- Manufacturer: Manufacturer name.

- Model: Model name:

- Prefix: Name added to each device name present in the system. This prefix will enable to distinguish in the key between the devices present in the systems and others.

- Library: DWG file name containing the object block. Ability to add DWG symbols "Chap.6.6".

- Electrical blocks: list of AutoCAD blocks existing in the DWG plan which represents Caneco object(s).

- Room name: name of the room containing the system. This name is automatically updated by the software if it is blank. If no room is found, the data "no name" is inserted.

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, altitude and height will be updated.

- Height: difference between altitude and working altitude in the plan provided in the general parameters "Chap.9.1.2".

- Altitude: Z elevation of the device relative to the general ref mark.

- Automatic altitude setting: Automatic altitude setting according to altitude.

- Positions: options for automatic set up of objects belonging to a system definition.
- Free position and altitude: the position and altitude of objects from a system definition are not linked to those of the system.
- System position and free altitude: the altitude of objects from a system definition is not linked to the one of the system. Position remains linked.
- Free position, system altitude: The position of objects from a system definition is not linked to the one of the system. Altitude remains linked (name implement).
- System position and altitude: the position and altitude of objects from a system definition are linked to those of the system.

- Displays: options for displaying objects from a system definition.
- Display system objects: Objects from a system definition are displayed.
- Do not display system objects: Objects from a system definition are hidden.

  - Distributions:
- Do not include distributions: only equipment from a system definition is inserted in the project.
- Include distributions: Objects from a system definition are inserted in the project. Distributions and circuits are automatically renamed, equipment is wired according to wiring in the definition.

20.1.2 "Label" frame

- Text field: labels "Chap.8".
- Colour: colour index of the label.
- Size: size of the label.
- Style: style of the text of the label.
- Rotation: rotation of label in degree.

20.1.3 "AutoCAD layers" frame

- "Chap.9.3.1 ".

20.1.4 Checkmark of keywords associated with the object

- "Chap.8.1.2".

20.1.5 Default option

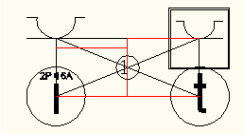
- "Chap.9.4.1".

20.2 Creating a system definition

A system definition is done by creating a Caneco Implantation project.
Knowing the project unit in the "General parameters" dialogue box "Chap.9.1".
It must contain at least one distribution and one or more equipment supplied by their own circuit or circuits in common according to use.

To create a system definition:

→ Create a "new project".
→ General parameters: the system unit must match the project unit.
→ Create and lay out a new distribution "Chap.10.2". Set the height to 0.
→ Create and lay out one or more new equipment "Chap.13.2". Set the height to 0. Insert the equipment close to the distribution.



→ Select all equipment.
→ Pop-up menu "Chap.5.5".
→ Select ""Supply by N new circuits in XXX" where N is the number of equipment and XXX the name of the distribution.
→ Select the labels and then delete.
→ Save DWG project containing the system definition.

20.3 Importing a system definition

If the system definition file was changed, re-import the system definition below.

To import a system definition:

→ Click on:

→ Select the file (.rdb) with the same name as the file (.dwg) of the system definition.
→ Open.

20.4 Laying out a system

To lay out a system

→ Import a Caneco system definition "Chap.20.3" if that was not already done.

→ Click on:

→ Display of "System" dialogue box
→ Please carefully select the system definition and symbol.
→ Enter parameters of the dialogue box see "chap.14.1"
→ Validate
→ Display of "Layout" dialogue box, ability to
- Edit length
- Edit width
- Rotation in degree.

→ Position the terminal on the plan.

20.5 Editing/Modifying properties of system(s)

To edit or modify the properties of one or more systems:

→ Select system(s).
→ Click on:

or,

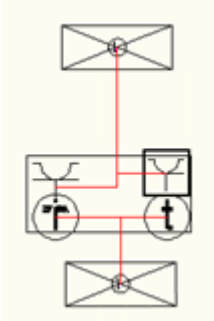
→ Select system(s).
→ Pop-up menu "Chap.5.5".
→ Select "Caneco properties".
→ Select either:
- "of system XXX selected" where "XXX" is the name of the object: for 1 system selected.
- "of systems selected": for multiple systems selected.

20.6 Connecting a system

If no distribution has been created, lay out one or distributions "Chap.5.5 ", and then connect the system.

→ Select the system.
→ Pop-up menu "Chap.5.5".
→ Select "Connect system XXX" where XXX is the name of the system.
→ Display of "System connection" dialogue box
→ Select either:

- The distribution and circuit for each equipment to be connected, when distribution(s) was(were) created with its circuits.
- Distribution and "new circuit" "Chap.5.5" to create for each equipment to be connected, when distribution(s) was(were) created without circuit(s).



20.7 Dissociating a system

To dissociate the system (breaking down into equipment):

→ Select the system.
→ Pop-up menu "Chap.5.5".
→ Select "Dissociate the system."
→ Display of confirmation dialogue box
→ Validate

20.8 Moving a system

To move the system:

→ Select the system.
→ Pop-up menu "Chap.5.5".
→ Select "Move system XXX" where XXX is the name of the system.
→ Select "Translation".
→ Enter 2 points of the translation vector.

20.9 Copying a system

To copy the system:

→ Select the system.
→ Pop-up menu "Chap.5.5".
→ Select "Copy system XXX" where XXX is the name of the system.
→ Enter 2 points of the translation vector for copying.

21 Display management

21.1 "Display management" dialogue box

- Description: brief description of the view.

- Name: name of the view, may be blank.

- Presentation: List of presentations existing in the plan. If this field is not blank, the display mode will be implemented when selecting this presentation in AutoCAD.

21.1.1 "External references" frame

- Caneco XREF:
- Display Caneco XREFs: Allows the display of XREFs that contain CANECO objects.
- Do not display any Caneco XREF: Prohibits the display of XREFs that contain CANECO objects.

- Object under XREF:
- Display distributions under XREF: Allows the display of CANECO objects from a XREF.
- Do not display any distributions under XREF: Prohibits the display of CANECO objects from a XREF.

21.1.2 "Objects" frame

- Equipment:
- Display all equipment: Allows the display of equipment present in the project.
- Display no equipment: Prohibits the display of equipment present in the project.
- Only those of the active circuit: Prohibits the display of equipment present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of equipment present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of equipment present in the project, except those of the active room.
- Only those who are not supplied: Only allows the display of equipment that is not connected to a circuit.

- Systems:
- Display all systems: Allows the display of systems present in the project.
- Display no systems: Prohibits the display of systems present in the project.
- Only those of the active circuit: Prohibits the display of systems present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of systems present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of systems present in the project, except those of the active room.
- Only those who are not supplied: Only allows the display of systems that are not connected to a circuit.

- System objects:
- Display system content: Allows the display of objects contained in the systems.
- Do not display the content of systems: Prohibits the display of objects contained in the systems.

- Terminals:
- Display all terminals: Allows the display of terminals present in the project.
- Display no terminals: Prohibits the display of terminals present in the project.
- Only those of the active circuit: Prohibits the display of terminals present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of terminals present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of terminals present in the project, except those of the active room.
- Only those who are not supplied: Only allows the display of terminals that are not connected to a circuit.

- Rooms:
- Display all rooms: Allows the display of rooms.
- Display no rooms: Prohibits the display of rooms.

- Junction boxes:
- Display all junction boxes: Allows the display of junction boxes present in the project.
- Display no junction boxes: Prohibits the display of junction boxes present in the project.
- Only those of the active circuit: Prohibits the display of junction boxes present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of junction boxes present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of junction boxes present in the project, except those of the active room.

- BBTSs (busbar trunking systems):
- Display all BBTSs: Allows the display of BBTSs present in the project.
- Display no BBTSs: Prohibits the display of BBTSs present in the project.
- Only those of the active circuit: Prohibits the display of BBTSs present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of BBTSs present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of BBTSs present in the project, except those of the active room.

- Cables:
- Display all cables: Allows the display of cables present in the project.
- Display no cables: Prohibits the display of cables present in the project.
- Only those of the active circuit: Prohibits the display of cables present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of cables present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of cables present in the project, except those of the active room.

- Partial display of cables with forced lengths Allows the partial display of cables present in the project whose lengths are forced.

- Distributions:
- Display all distributions: Allows the display of distributions present in the project.
- Display no distributions: Prohibits the display of distributions present in the project.
- Only those of the active circuit: Prohibits the display of distributions present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of distributions present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of distributions present in the project, except those of the active room.
- Only those who are not supplied: Only allows the display of distributions that are not connected to a circuit.

- Labels:
- Display all labels: Allows the display of labels present in the project.
- Display no labels: Prohibits the display of labels present in the project.
- Only those of the active circuit: Prohibits the display of labels present in the project, except those of the active circuit.
- Only those of the active distribution: Prohibits the display of labels present in the project, except those of the active distribution.
- Only those of the active room: Prohibits the display of labels present in the project, except those of the active room.
- Only those who are not supplied: Only allows the display of labels that are not connected to a circuit.

21.1.3 "Cable trays" frame

- Cable trays:
- Display all cable trays Allows the display of tracks present in the project.
- Display no cable trays Prohibits the display of tracks present in the project.

- Uses:
- All uses: Allows the display of all tracks regardless of their uses.
- Use name: Allows the display of tracks with that use name present in the project.

21.1.4 "Display by altitudes" frame

- Mode:
- Ignore the altitude: the altitude of objects displayed is not included in the display
- View above high altitude: only objects that are located above the high altitude will be visible
- View under low altitude: only objects that are located under the low altitude will be visible
- View strictly between the low and high altitude: only objects that are strictly between the low altitude and low altitude will be visible.
- View under low and above high altitude: only objects that are located under the low altitude and above the high altitude will be visible.
- View between the low and high altitude: only objects that are between the low altitude and the high altitude will be visible.

- High altitude: Value of high altitude in the plan unit.

- Low altitude: Value of low altitude in the plan unit.

- Level: If rooms have been entered into the project, the list will contain the different altitudes of floor levels. When selecting the level, the low altitude will be set to the altitude of the floor, the high altitude will be set to the altitude of the ceiling.

- No display by distribution and cable tray altitude: if checked, the display of distributions and tracks will be independent of altitude.

21.1.5 "Display by circuits" frame

- Circuits:
- Display all circuits: all circuits present in the project will be displayed.
- Display no circuit: not active.
- Display circuits checked: Check the circuits that will be displayed.

21.1.6 "Other options" menu

- Display all Caneco objects: all CANECO objects will be displayed.
- Display no object: no CANECO object will be displayed.
- Display those of the active distribution: Prohibits the display of CANECO objects present in the project, except those of the active distribution.
- Display objects of the active circuit: Prohibits the display of CANECO objects present in the project, except those of the active circuit.
- Display objects contained in the active room: Prohibits the display of CANECO objects present in the project, except those of the active room.
- Save the display mode: saves mode in the project under the name entered into the "Name" field.
- remove the display mode: deletes the mode from the project.

21.2 Displaying display management

To display the display management:

→ Click on:

22 Rooms

The rooms are spaces in 3 dimensions. This allows Caneco objects to be defined in a Caneco area.

22.1 Creating a room

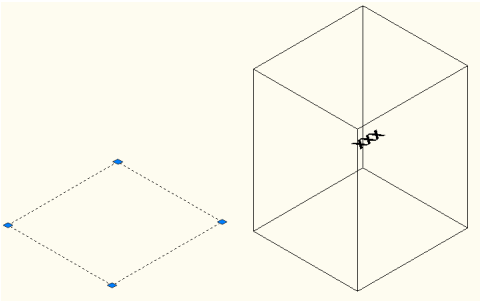
If the room was removed, and when creating the room the room will have the same name as the one deleted. Purge the dwg plan by typing AutoCAD command "_purge".

To create a room:

→ Create an AutoCAD polyline, type in the command line:
- "_line" to manually enter the room points.
- "_boundary. " or "border" to automatically create a polyline in a delimited area.

→ Select the polyline.
→ Click on:

→ Display of dialogue box
→ Enter at least the room name and the room height and validate.



22.2 Inserting room names into Caneco objects

To update room names in Caneco objects:

→ Select room(s).
→ Pop-up menu "Chap.5.5".
→ Select "Update the room name of all the equipment".
→ Display of confirmation dialogue box
→ Validate

22.3 Converting "Polyline" into room

To convert an AutoCAD "line" or "polyline":
→ Select a "polyline".
→ Pop-up menu "Chap.5.5".
→ Convert into Caneco room.

23 DIALux interface

23.1 Exporting a file (.stf) to DIALux in Caneco

To export, at least one room must have been created.

To export a file (.stf) to DIALux in Caneco:

→ Click on:

→ Display of "Exporting a DIALux file" dialogue box .
→ Check the room(s) to export.
→ Click on the "Open" button
→ Display of "Files" dialogue box
→ Select the directory and enter the name of the destination file.
→ Click the "Save" button and close the "Files" dialogue box
→ Click on the "Save" button

23.2 Opening a file (.stf) in DIALux

The user must be familiar with DIALux software.

To open a file (.stf) in DIALux:

→ "Open a project" or menu "File", then select "Open."
→ Display of "Open" dialogue box
→ Select from "File type" "STF files (.stf)".
→ Click on the "Open" button.

23.3 Exporting a file (.stf) to DIALux

The user must be familiar with DIALux software.

To export a file (.stf) to DIALux after lighting design:

→ "File" menu, and then select "Export".
→ In the sub-menu, select "Export a STF file...".
→ Display of "Save as" dialogue box
→ Select the directory and enter the name of the destination file.
→ Click on the "Save" button

23.4 Importing a file (.stf) from DIALux in Caneco

To import a file (.stf) from DIALux in Caneco

→ Click on:

→ Display of "Importing a DIALux file" dialogue box .
→ Click on the "Open" button
→ Display of "Files" dialogue box
→ Select the directory and file name (.stf) to import.
→ Click on the "Open" button and close the "Files" dialogue box
→ Check the room(s) to import.
→ Click on the "Import" button
→ Display of "Library creation" dialogue box
→ Enter a topic name of the library.
→ Display of "Confirmation of block recording in the base directory" dialogue box ☞ "Chap.6.6 ".
→ Validate according to user choice.
→ Display of "Equipment" dialogue box ☞ "Chap.13.1" containing the new topic.
→ Enter parameters of the dialogue box
→ Validate
→ Display of "Confirmation of the new library topic in a file (.CSV) of the base directory" dialogue box ☞ "Chap.6.7".
→ Validate according to user choice.

24 Caneco Implantation / Caneco LV interface

See principles governing Caneco Implantation / Caneco LV interface "Chap.4.5"

24.1 Configuring Caneco LV interface in Caneco Implantation

24.1.1 For users with Caneco LV 5.3:

Enable "Interface LV 5.3" with "Yes" in the General tab of general parameters "Chap.9.2".

24.1.2 For users with Caneco LV 5.2:

Disable "Interface LV 5.3" with "No" in the General tab of general parameters "Chap.9.2".

24.2 Saving the file (.mdb) of the Caneco LV interface

Each time the file (.dwg) is saved, the software will automatically generate a file in Access format (.mdb) containing the same name as the file (.dwg) in the same directory.

This file will be used to import the electrical data into Caneco LV.

24.3 Export a partial file (.mdb) to Caneco LV

Allows you to select some data from the electrical installation for export to Caneco LV.

To export a partial file (.mdb) to Caneco LV

→ Click on:

→ Display of "Export to Caneco LV" dialogue box.
→ Check the circuit(s) or distribution(s) to export.
→ Click on the "Open" button.
→ Display of "Files" dialogue box
→ Select the directory and enter the name of the destination file.
→ Click on the "Open" button and close the "Files" dialogue box
→ Click on the ungreyed "Save" button

24.4 Import a Caneco Implantation file (.mdb) into Caneco LV

To import a Caneco Implantation file (.mdb) into Caneco LV
- Create a source with the same ref mark name in Caneco LV and Caneco Implantation.
- Open a LV project corresponding to the project.

In Caneco LV, to import a Caneco Implantation file (.mdb):

→ "File" menu.
→ "Import/Export" sub-menu.
→ Select "Implantation".
→ Display of "Importing Caneco Implantation" dialogue box.
→ Click on:

→ Display of "Open" dialogue box
→ Select the file (.mdb) "Chap.24.2 " or the partial file (.mdb) "Chap.24.3" of the Caneco Implantation project.
→ Click on the "Open" button.
→ Check/Uncheck options:

Preferably use default checkmarks .
The option "Delete non-imported circuits" is hazardous. Save the project under a different name to recover data in case of accidental loss of circuits.

- Delete circuits not imported: Circuits existing in your Caneco LV project and not present in the DWG plan will be deleted by Caneco LV.
- Creating new circuits: Enable this option to automatically generate circuits which do not exist in the Caneco LV project.
- Modifying existing circuits: Caneco LV automatically modifies existing circuits according to data of circuits located in the DWG plan.
- Synchronizing files:
- By internal references (GUID): sync using the unique identifier of Caneco objects "Chap.4.7".
- By ref marks: sync using the ref mark names of Caneco objects.

→ Click on "OK" button to validate.

24.5 Updating cables from the Caneco LV project

The user must be familiar with calculation in Caneco LV.

To update cables after calculation in Caneco LV:

→ Click on:

→ Display of "Open" dialogue box
→ Select Caneco LV file (.afr).
→ Click on the "Open" button.
→ Display of a confirmation dialogue box specifying the number of updated circuits and possible faults.

Calculate all the cables for updating labels "Chap.18.13".
Refer to cable properties "Chap.12.2" to check updating of cable data.
Refer to cable track information "Chap.19.2" to check updating of cable data.

24.6 Importing a project from Caneco LV

The user must be familiar with project creation in Caneco LV.

To import an entire or partial project from Caneco LV or to partially update cables of certain circuits:

→ Click on:

→ Display of "Sync with Caneco LV" dialogue box.
→ Click on the "Open" button.
→ Display of "Open" dialogue box
→ Select the file (.afr) from Caneco LV project.
→ Click on the "Open" button.
→ The text field indicates the file path (.afr).
→ Click on "Load Caneco LV project" button.
→ Check the circuit(s) or distribution(s) to import or update.
→ Select options from:

"LV project loading options" frame
- Distributions:
- Only load distributions present in the Caneco Implementation project.
- Load all distributions present in Caneco LV.
- Circuits:
- Do not load any circuit from loaded distributions.
- Load all circuits from loaded distributions.
- Load only circuits already present in the Implantation project.

"Project updating options" frame
- Cables:
- Do not update the sections of the cables.
- Update the sections of the cables.
- "editing properties of each distribution before positioning" checkmark:

→ Click on "Project update" button.
→ If:
- Distributions are not present in the DWG plan, position distributions.
- Distributions are present in the DWG plan, cables will be updated.

25 Selection

25.1 Defining an active circuit

To define an active circuit:

→ Click on an object belonging to the circuit to make it active

or,

→ Display Caneco explorer "Chap.7.2".
→ Select the "Circuits" tab.
→ Select the circuit to make it active.

25.2 Selecting the equipment of the active circuit

To select the equipment of the active circuit in the DWG plan:

→ Define an active circuit "Chap.25.1".
→ Click on:

25.3 Selecting the terminals of the active circuit

To select the terminals of the active circuit in the DWG plan:

→ Define an active circuit "Chap.25.1".
→ Click on:

25.4 Selecting the cables of the active circuit

To select the cables of the active circuit in the DWG plan:

→ Define an active circuit "Chap.25.1".
→ Click on:

→ Check option(s).

"Types of cable" Frame:
- Selecting main cables
- Selecting cables supplying terminals.
- Selecting cables supplying equipment.
- Selecting cables supplying distributions.

"Forced cable" frame
- Select only cables with forced properties.
- Select only cables with points required: corresponds to cables with handles "Chap.18.7" or cables with a modified route "Chap.18.8".

→ Click on "OK" to validate.

25.5 Selecting all equipment

To select all equipment in the DWG plan:

→ Click on:

25.6 Selecting all terminals:

To select all terminals in the DWG plan:

→ Click on:

25.7 Selecting all cables

To select all cables in the DWG plan:

→ Click on:

25.8 Selecting from the pop-up menu

To select Caneco objects from the pop-up menu:

→ Select one or more Caneco objects of the same type.
→ Pop-up menu "Chap.5.5".
→ Sub-menu "Select"
→ Select one of the options available.

25.9 Selecting from Caneco explorer

To select Caneco objects from Caneco explorer:

→ Display Caneco explorer "Chap.7.2".
→ "Installation" tab
→ Check one or more Caneco objects.
→ Click on "Selection from the plan" button

To centre the object after being selected from Caneco explorer, click on "Zoom on the active line" button.

25.10 Selecting all labels:

To select all project labels:

→ Select a label.
→ Pop-up menu ☞ "Chap.5.5".
→ Sub-menu "Select labels".
→ Sub-menu "All of those".
→ Select "From the whole project."

25.11 Search and select from Caneco explorer

To search and select Caneco objects from Caneco explorer:

→ Display Caneco explorer ☞ "Chap.7.2".
→ "Search" tab
→ Define the criteria on the right side and check the filter on the left side.
→ Click on the cell ("Selection" row, "Expressions" column)
→ From the drop-down list, select "New graphical selection".

26 Verification

26.1 Verifying ref marks

To verify ref marks of Caneco objects:

→ Click on:

26.2 Verifying distributions

To verify distributions:

→ Click on:

26.3 Verifying circuits

To verify circuits:

→ Click on:

26.4 Verifying database

To verify the database:

→ Click on:

26.5 Verifying superimposed equipment

To verify superimposed Caneco objects:

→ Click on:

→ If verification finds one or more superimposed Caneco objects, they are selected in the DWG plan.

26.6 Verifying superimposed tracks

To verify superimposed Caneco tracks:

→ Click on:

→ If verification finds one or more superimposed Caneco tracks, they are selected in the DWG plan.

27 Legend and nomenclature

27.1 "Legend and nomenclature" dialogue box

- "Equipments" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Terminals" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Systems" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Junction box" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "BBTS" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Cables" tab
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Cable tray" tab
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Rooms" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Circuit diagram" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Distributions" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "Circuits" tab:
- Left side: List of checkmarks of Caneco object properties to display.
- Right side: Nomenclature table of properties of Caneco objects that are checked.

- "XML Files" checkmark: create XML files with the project information for each tab in the directory where file is saved (.dwg).

- "CSV Files "checkmark: request for saving CSV files for each tab.

- "Drawing update on the plan" checkmark: create an AutoCAD block corresponding to the nomenclature table of each tab.

- "AutoCAD table" checkmark: create an AutoCAD table corresponding to the nomenclature table of each tab. Combine this option with the "Drawing update on the plan" option.
- "Add objects from a XREF" checkmark: Displays objects from an XREF in the nomenclature table.
- "Add system objects" checkmark: Displays system objects in the nomenclature table.
- Number of lines per page:
- Block size: Numerical value defining the block size.
- Font size: Numerical value defining the font size.
- Style: Text style.
- "Preview" button: Displaying XML files in Internet Explorer (version 8 recommended).

• Default option: ☞ "Chap.9.4.1".

27.2 Editing legend and nomenclature

To edit legend and nomenclature:

→ Click on:

27.3 Synoptic of a circuit

To create a synoptic of a circuit, for example for use synoptic for weak current:

→ Editing of legend and nomenclature ☞ "Chap.27.2".
"Circuit diagram" tab.
→ On the left side, click on the empty cell ("new name" column "circuit name" row).
→ Select circuit from the dropdown list.
→ Check "Drawing update on the plan" option.
→ "Validate" button.
→ Click to insert the first point of the frame onto the DWG plan.
→ Click to insert the second point of the frame onto the DWG plan.

28 Other commands

28.1 About...

To find the version and build of the software.

→ Click on:

28.2 Cancel

The AutoCAD "Cancel" command in the command line "_u" or using the "CTRL + Z" keyboard combination may lead to software instability at Caneco object data level.
Use the Caneco "Cancel" command to ensure cancellation of operations performed.

To cancel the operation performed and restore the previous status:

→ Click on:

28.3 Change all unique identifiers

See principles of the "unique identifier" GUID "Chap.4.7".

Caution: Changing all unique identifiers will finally change the internal data of objects. Save the file under another name before using this command.

To change all the "unique identifiers" GUIDs of Caneco objects:

→ Display Caneco explorer "Chap.7.2".
→ Caneco explorer pop-up menu "Chap.7.3"
→ "Tools" sub-menu.
→ Select "Changing all unique identifiers (GUID).
→ Confirm or not messages from dialogue boxes.

28.4 Exporting DWG containing only AutoCAD entities

AutoCAD DWG export generates a DWG file containing only standard AutoCAD entities. A project carried out on Caneco Implantation is perfectly readable when opening it on AutoCAD without Caneco Implantation, but only the original AutoCAD blocks will be editable. Indeed, some Caneco objects will be read-only. A Caneco Implementation DWG plan can be converted into a DWG plan containing only AutoCAD entities so that it can be modified by a user who does not have Caneco Implantation.

Warning: the file (.dwg) exported/converted contains only AutoCAD entities, the Caneco Implantation database is no longer present, therefore it is not identified as a Caneco Implantation file.
Carefully keep the original files.

To export/convert DWG Caneco Implementation plan into DWG plan containing only DWG AutoCAD entities:

→ Click on:

→ Display of "Save a DWG containing only standard AutoCAD entities" dialogue box.

→ Select option(s):

- "Change" button: to change the destination file directory and name (.dwg).
- "Force Caneco Implantation objects to altitude z=0" checkmark:
  - When checked, all Caneco object altitudes(unless the rooms) will be at the altitude z=0. The plan will be in 2D.
  - If unchecked, all Caneco object altitudes(unless the rooms) will remain. The plan will be in 3D.
- "Export electrical attributes to blocks" checkmark: Enables to retrieve electrical attributes of the object converted from the properties of the block .
- "Do not export objects hidden by Caneco display management" checkmark Allows to export/convert Caneco objects that are visible in the plan. Caneco objects hidden by display management  "Chap.21" will not be exported/converted.
- "Use AutoCAD splines" checkmark.

→ Click on the "Validate" button.

28.5 Block scale

The "Block scale" command only modifies the scale factor in X and Y. For 3D blocks, the scale factor in z is not changed.

To change the scale of one or more Caneco object blocks:

→ Select one or more Caneco object blocks.
→ Click on:

→ In the command line, type the scale factor in X.
→ In the command line, type the scale factor in Y.

28.6 Creating block attributes from Caneco properties

Enables to add Caneco object properties to the AutoCAD block properties.

To create Caneco object block attributes:

→ Select one or more Caneco object blocks.
→ Click on:

→ Display of "Attributes" dialogue box
→ Check attribute(s).
→ Option:

- Default option:  "Chap.9.4.1".

→ Click on the "Validate" button.

To ensure that block attributes are created, either:
→ In command line, type "_properties"
→ Pop-up menu  "Chap.5.5", and then select "Properties" from AutoCAD.

28.7 Deleting Caneco block attributes

Caneco block attributes can only be deleted if Caneco object block attributes are created from Caneco properties "Chap.28.6".

To delete Caneco block attributes

→ Select one or more Caneco object blocks.
→ Click on:

28.8 Removing Caneco object properties

Caneco objects become again AutoCAD blocks when Caneco object properties are deleted.

To remove/delete Caneco object properties:

→ Click on:

28.9 Picking up Caneco layer names from labels

In the case where the dependencies in the layer management "Chap.9.3" have been modified during the project

To pick up Caneco layer names from labels:

→ Select all project labels "Chap.25.10".
→ Pop-up menu "Chap.5.5".
→ Select "Pick up Caneco layer names".

28.10 Picking up Caneco layer names

In the case where the dependencies in the layer management "Chap.9.3" have been modified during the project

To pick up Caneco layer names from cables:

→ Select all project cables "Chap.25.7".
→ Pop-up menu "Chap.5.5".
→ Sub-menu "Caneco properties".
→ Select "Pick up Caneco layer names".

28.11 Importing a Caneco Implantation external reference

Check the original AutoCAD (SCU) coordinates so that the DWG plans can be properly superimposed one above the other.

Set the height of the floor in the general parameters "Chap.9 " of the DWG plan that will be imported as an external reference.

To import an external reference:

→ In command line, type "_XREF"
→ Attach the file (.dwg).
→ Display of "Attach external reference" AutoCAD dialogue box.
→ Set parameters and validate.
→ Display of "Importing data from an XREF" AutoCAD dialogue box.
→ Check the circuit(s) or distribution(s) to import.
→ Validate

Caneco objects from external reference(s) are visible in the Caneco explorer "Chap.7 ". They are highlighted in purple.

28.12 Avoiding label superimposition

To avoid superimposition of Caneco object labels:

→ Click on:

29 Glossary of keywords

29.1 Glossary of distribution label keywords

[.CI] Upstream circuit after '.'
[AL] Altitude
[CF] Information on wires
[CF0] Wire section 0
[CF1] Wire section 1
[CF2] Wire section 2
[CF3] Wire section 3
[CF4] Wire section 4
[CF5] Wire section 5
[CF6] Wire section 6
[CFN] Sheath id
[CFS] Sheath section
[CFT] Sheath cable type
[CI] Name of supply
[DE] Designation of distribution
[HA] Height
[NL] Ref mark of ending room
[NL0] Name of ending room
[NL1] Name of ending area
[NL2] Name of ending floor
[NL3] Name of ending building
[NO] Name of distribution
[PR] Protection
[PX] X coordinate
[PY] Y coordinate
[PZ] Z coordinate
[RE] Name of distribution
[RF] External reference
[SR] Name of supply
[TA] Name of distribution
[TY] Type
[ZAM] Cable core of upstream cable
[ZDA] Cable extended data of upstream cable
[ZE] Separate PE of upstream cable
[ZL] Length of upstream cable or ICT
[ZLC] Corrected length of upstream cable or ICT
[ZP] Cable or phase of upstream cable
[ZRE] Cable ref mark of upstream cable
[ZS] Separate neutral of upstream cable
[ZY] Cable type of upstream cable

29.2 Glossary of cable label keywords

[.CI]	Circuit of circuit after '.'
[AA]	Alphanumeric identifier in the circuit
[AB]	Ending ref mark
[AME]	Core
[CA]	Name of upstream circuit or distribution
[CE]	EP subcircuit
[CF]	Colour index
[CF0]	Wire section 0
[CF1]	Wire section 1
[CF2]	Wire section 2
[CF3]	Wire section 3
[CF4]	Wire section 4
[CF5]	Wire section 5
[CF6]	Wire section 6
[CFN]	Sheath id
[CFS]	Sheath section
[CFT]	Sheath cable type
[CI]	Name of circuit
[CID]	Description of circuit
[CIS]	Style of circuit
[CIT]	Type of circuit
[CO]	Content
[CP]	Cable or phase
[DAT]	Extended data
[DD]	Designation of distribution
[DIH]	Height (mm)
[DIL]	Thickness (mm)
[D_DFN]	Name of drawing
[D_IN2]	Index 2
[D_IN3]	Index 3
[D_IN4]	Index 4
[D_IND]	Index 1
[D_MO1]	Modification 1
[D_MO2]	Modification 2
[D_MO3]	Modification
[D_MO4]	Modification 4
[FA]	Manufacturer
[FAA]	Taking into account alpha
[FM]	Family
[LA]	Circuit LMAX
[LD]	Difference between length and length corrected
[LI]	Circuit LMIN
[LO]	Length of cable
[LOC]	Corrected length in meters
[LOCMM]	Corrected length in millimetres
[LOMM]	Length in meters
[LT]	Total circuit cable length in meters
[LTC]	Total corrected circuit cable length in meters
[LTCMM]	Total corrected circuit cable length in millimetres
[LTMM]	Total circuit cable length in millimetres
[MC]	Number of equipment laying method
[MD]	Equipment laying method
[ME]	EP laying method
[MO]	Model
[MS]	Short name of the equipment laying method
[NA]	Nature of the equipment
[NL]	Ref mark of ending room
[NL0]	Name of ending room
[NL1]	Name of ending area
[NL2]	Name of ending floor
[NL3]	Name of ending building
[NS]	Separate neutral
[NU]	Number in the circuit
[PDS]	Weight (kg/m)
[PE]	Separate PE
[PL]	EP lamp phase
[PO]	Pole

[PR] Protection
[RD] Distribution ref mark
[RE] Ref mark
[RF] External reference
[RL] Corrected length percentage
[SE] Section
[TA] Name of distribution
[TAA] Ending into account alpha
[TE] Beginning ref mark
[TL] Ref mark of beginning room
[TL0] Name of beginning room
[TL1] Name of beginning area
[TL2] Name of beginning floor
[TL3] Name of beginning building
[TY] Type
[TYR] Caneco type of supplied device

29.3 Glossary of equipment label keywords

[.CI] Circuit of circuit after '.'
[AA] Alphanumeric identifier per circuit
[AL] Altitude
[AN] Identifier per circuit
[CE] EP subcircuit
[CF] Information on wires
[CF0] Wire section 0
[CF1] Wire section 1
[CF2] Wire section 2
[CF3] Wire section 3
[CF4] Wire section 4
[CF5] Wire section 5
[CF6] Wire section 6
[CFN] Sheath id
[CFS] Sheath section
[CFT] Sheath cable type
[CI] Name of circuit
[CIS] Style of circuit
[CK0] Consumption in kW
[CO] Consumption
[CP] Cos Phi
[D0] Max distance to distribution in cm
[FA] Manufacturer
[HA] Height
[HM] Height in meters
[IM] Layout
[LO] Name of room
[MC] Number of equipment laying method
[MD] Equipment laying method
[ME] EP laying method
[MO] Model
[NA] Series
[NF] Number in the circuit
[NL] Ref mark of ending room
[NL0] Name of ending room
[NL1] Name of ending area
[NL2] Name of ending floor
[NL3] Name of ending building
[NO] Name
[NU] Position number in the circuit
[PL] EP lamp phase
[PR] Protection
[RE] Ref mark
[RF] External reference
[SI] Simultaneity factor
[SN] Name of symbol
[SY] Name of symbol file
[TA] Name of distribution
[TY] CANECO type
[UT] Use factor
[Z0] Altitude in cm
[Z1] Altitude 1 decimal (0,0)
[Z2] Altitude 2 decimals (0,00)
[ZAM] Cable core of upstream cable
[ZDA] Cable extended data of upstream cable
[ZE] Separate PE of upstream cable
[ZL] Length of upstream cable or ICT
[ZLC] Corrected length of upstream cable or ICT
[ZP] Cable or phase of upstream cable
[ZRE] Cable ref mark of upstream cable
[ZS] Separate neutral of upstream cable
[ZY] Cable type of upstream cable

29.4 Glossary of terminal label keywords

[.CI] Circuit of circuit after '.'
[AA] Alphanumeric identifier per circuit
[AL] Altitude
[AN] Identifier per circuit
[BD] Name of junction box that contains the junction
[CF] Information on wires
[CF0] Wire section 0
[CF1] Wire section 1
[CF2] Wire section 2
[CF3] Wire section 3
[CF4] Wire section 4
[CF5] Wire section 5
[CF6] Wire section 6
[CFN] Sheath id
[CFS] Sheath section
[CFT] Sheath cable type
[CI] Name of circuit
[CIS] Style of circuit
[D0] Max distance to distribution in cm
[DE] Description
[FA] Manufacturer
[HA] Height
[HM] Height in meters
[IM] Layout
[LO] Name of room
[MO] Model
[NA] Series
[NF] Number in the circuit
[NL] Ref mark of ending room
[NL0] Name of ending room
[NL1] Name of ending area
[NL2] Name of ending floor
[NL3] Name of ending building
[NO] Name
[NU] Position number in the circuit
[PR] Protection
[RE] Ref mark
[RF] External reference
[SY] Name of symbol file
[TA] Name of distribution
[TY] CANECO type
[Z0] Altitude in cm
[Z1] Altitude 1 decimal (0.0)
[Z2] Altitude 2 decimals (0.00)
[ZAM] Cable core of upstream cable
[ZDA] Cable extended data of upstream cable
[ZE] Separate PE of upstream cable
[ZL] Length of upstream cable or ICT
[ZLC] Corrected length of upstream cable or ICT
[ZP] Cable or phase of upstream cable
[ZRE] Cable ref mark of upstream cable
[ZS] Separate neutral of upstream cable
[ZY] Cable type of upstream cable

29.5 Glossary of track label keywords

[AL] Altitude
[AL0] Altitude (no decimal)
[AM] Altitude (one decimal)
[AM] Altitude in meters
[CHA] Max load
[CU] Use code
[EP] Thickness
[ERC] Error on load
[ERH] Error on the thickness
[ERL] Error on the width
[FA] Manufacturer
[FO] Shape
[H1M] Distance to ceiling of the room in m
[H1U] Distance to ceiling of the room
[H2M] Distance to floor of the room in m
[H2U] Distance to floor of the room
[HA] Height
[HM] Height in meters
[HMR] Thickness
[HMX] Thickness without reserve
[L1R] Width 1 with reserve
[L2R] Width 2 with reserve
[LA] Width
[LA1] Width 1 with reserve
[LA2] Width 2 with reserve
[LM] Length in meters
[MO] Model
[NA] Series
[NC] Number of cables on segment
[NCH] Maximum height on a layer
[NCO] Number of layers
[NL] Ref mark of ending room
[NL0] Name of ending room
[NL1] Name of ending area
[NL2] Name of ending floor
[NL3] Name of ending building
[NO] Name
[NU] Position number in the circuit
[PDS] Cable weight kg/m
[RE] Ref mark
[RES] Reserve
[SY] Name of symbol file
[TA] Name of distribution
[TY] CANECO type
[US] Use

1, bd Charles de Gaulle
F-92700 COLOMBES - FRANCE
Tel: +33 (0)1 47 52 97 27
Fax: +33 (0)1 47 52 95 60
E-mail : contact@alpi.fr - web : www.caneco.eu