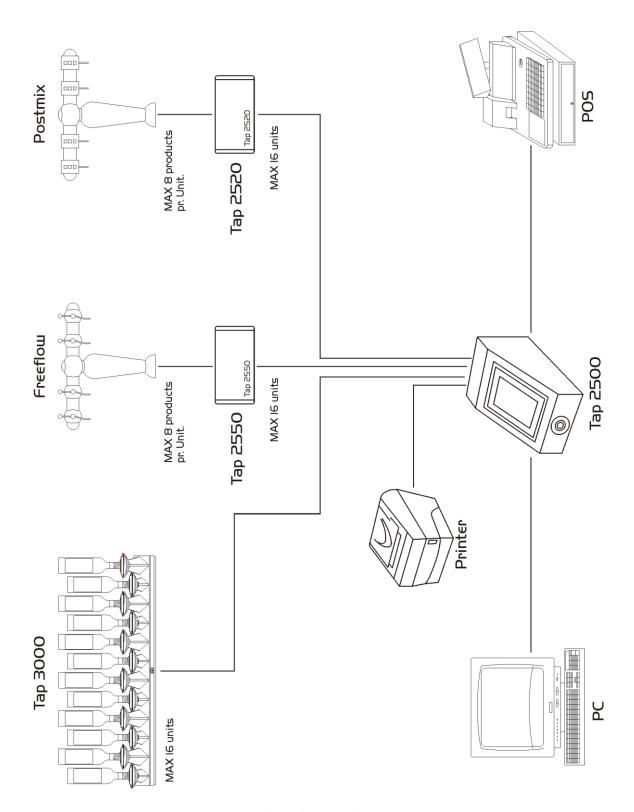


#### **Index**

Wall racks **Tap 2500 PC** Connectors Tap 2500.......27 Data transfer 30 Display 68 **Tap 2520 Tap 2500** Tap 2500 Touch screen diagram ......81 Miscellaneous Recommended spirits sizes in oz......90 Trouble shooting 92 Cables and connectors .......94 





**Installation of non drip wall racks** 

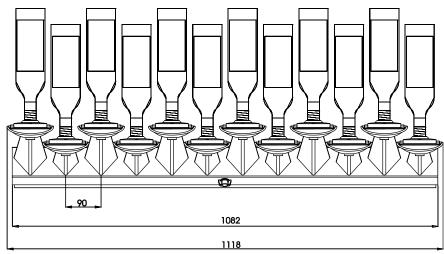


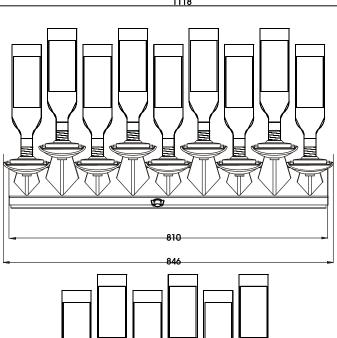
- ✓ Make sure to have sufficient wall space (see sizes fig.1).
- ✓ Mount a loop cable from Tap 2500 and a power cable from the power supply to the first wall rack. Next racks are connected after mounting them.
- ✓ Use the templates provided by TAP Systems to mount the racks. Alternatively use the back of the racks with mounted brackets to mark drilling hole positions.
- ✓ Templates/Back panels are placed according to instructions in fig's. 2 and 3.

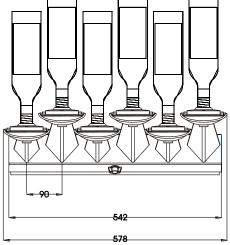
  Apply min. 13 to 15 mm distance between two templates/back panels when 2 racks are to be placed tightly together. This will result in a 3-5mm distance between ready mounted racks.
- ✓ Firmly affix all wall brackets.
- ✓ If racks are to be placed in two levels, follow instructions as to fig. 3, making sure to have the upper rack 10cm from the wall.
- ✓ After mounting all brackets, ensure that the bottle locks are OPEN before mounting the racks. (Wall brackets are to easily slide in under the lock shins when mounting!). Pulling the racks a few centimeters off the wall whilst resting on the brackets provides easier cabling on top of the racks.
- ✓ Follow instructions in Fig. 4 to mount connectors on the loop cable from TAP2500 and on the power cable from the power supply.
- $\checkmark$  Remember to mount a 124  $\Omega$  resistor on both ends of the (entire) loop.
- ✓ Mount the connector lids and affix the racks onto the brackets with 2 screws (bottom) and 2 Allen bolts (top).
- ✓ Rack power supplies are connected to Main 230VAC & ground.
- ✓ Program the racks as described in section RACK Programming. It is important that rack addresses go from left to right, as shown in fig. 5
- ✓ Products, prices and sizes for each non drip arm are programmed in the TAP 2500 unit or in the PC program.
- ✓ Labeling each arm with product names is recommended. Use "Brother TZ" (or similar) tape 6mm white texts on black background).



Non drip wall racks for 12, 9 & 6 bottles

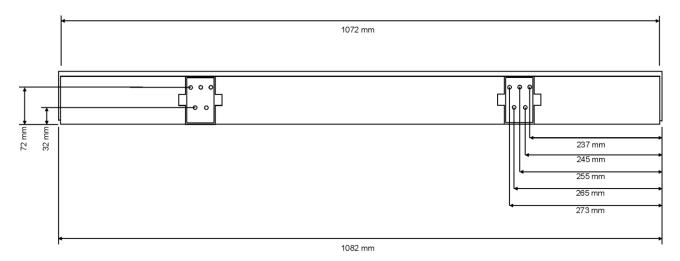


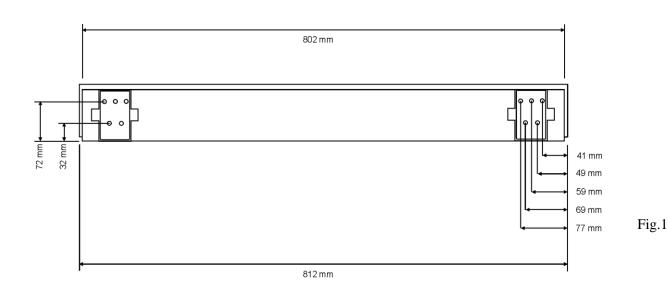


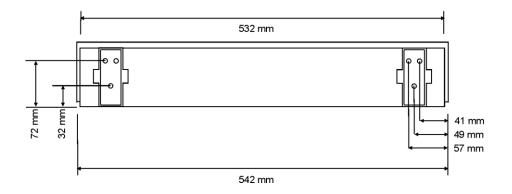




## Mounting holes for wall brackets







Non drip wall racks in 2 levels



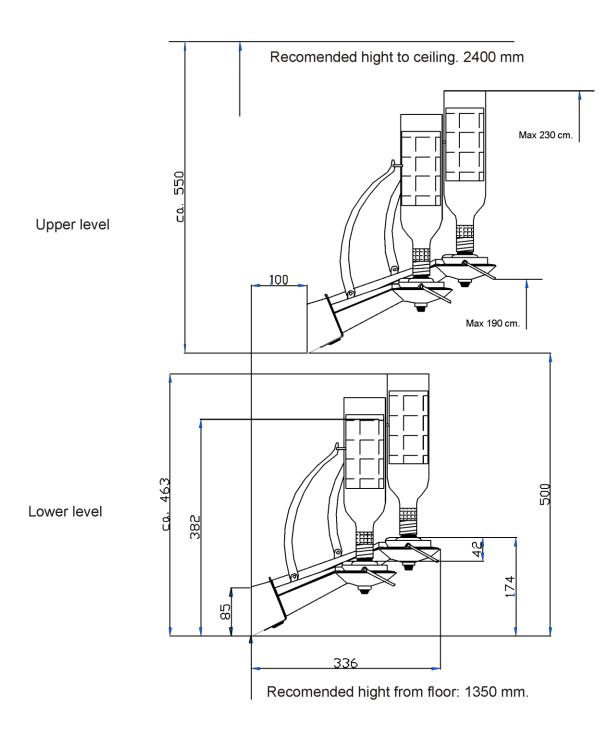
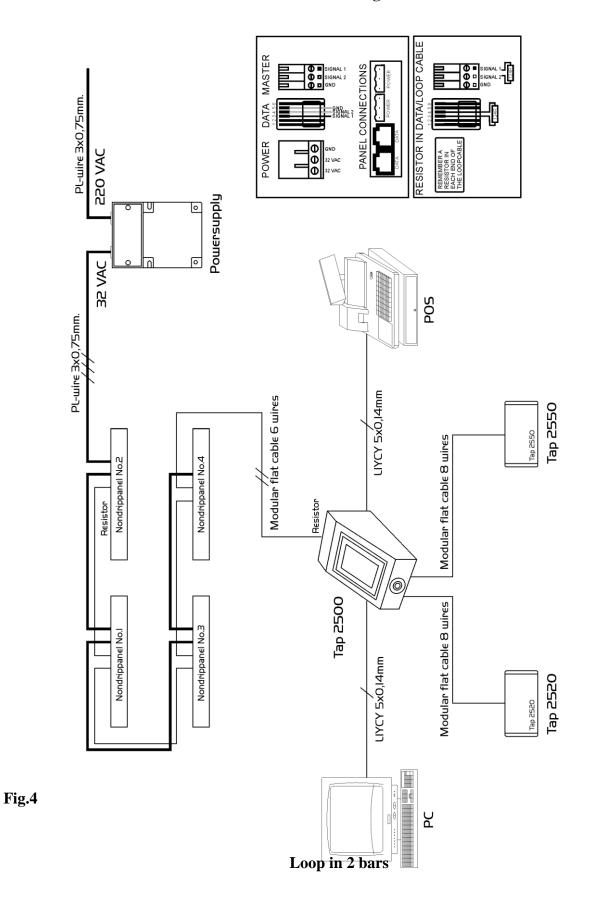


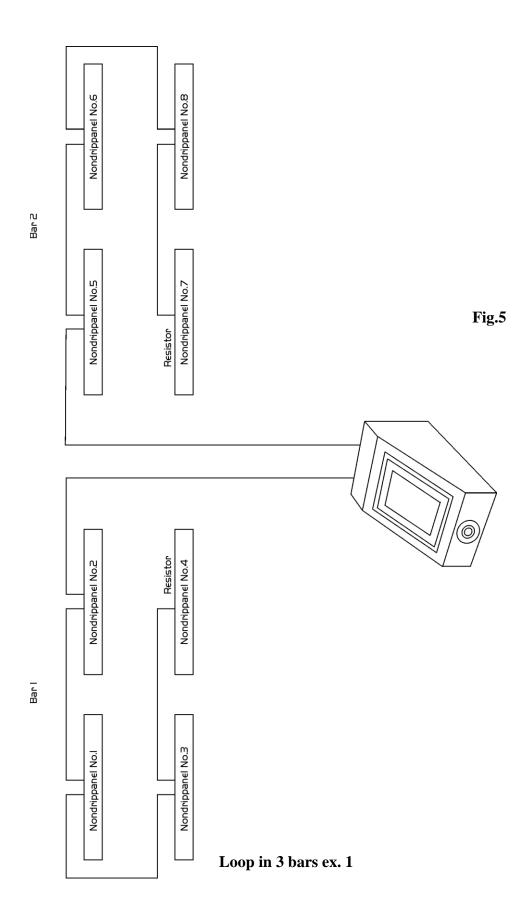
Fig.3



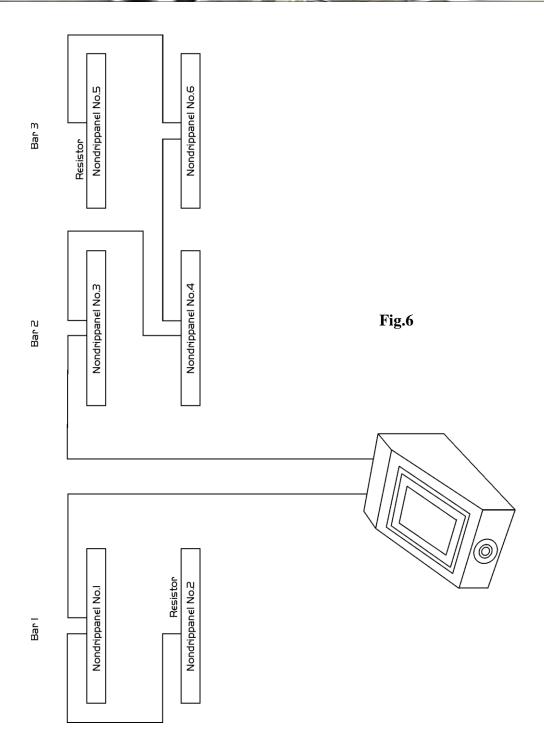
## **Installation diagram**





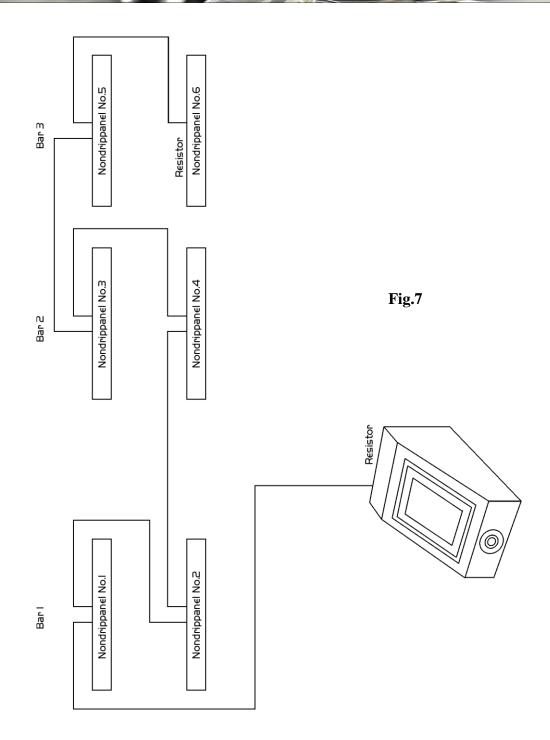




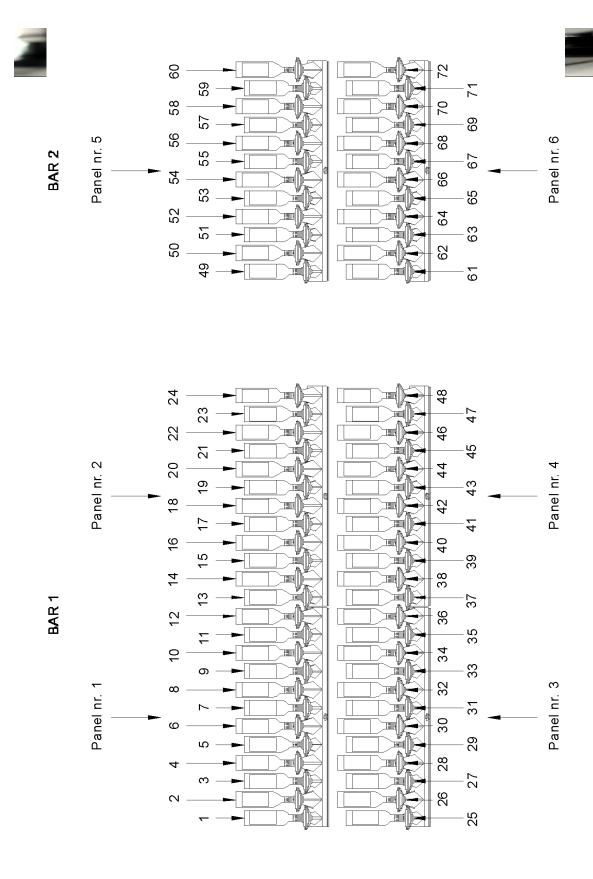


Loop in 3 bars ex. 2





Racks & arms numbers





# Mounting racks on the brackets

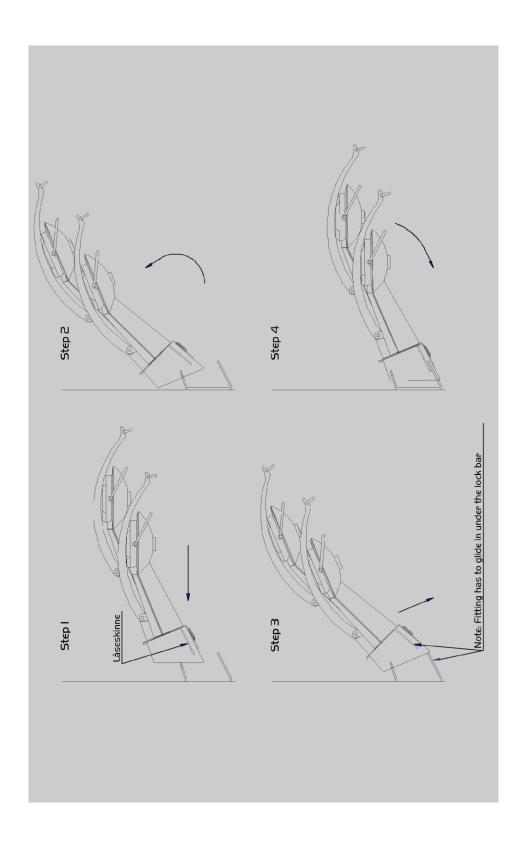


Fig. 8



### **Rack Programming**

Follow sequences below for each individual rack.

Mind ..

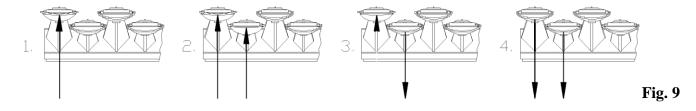
If TAP2400 Master Control is used, this is to be switched OFF during programming the racks.

Activate the rack menu by clicking levers 1 and 2 (first 2 from the left) as described here:

### **Programming sequence**

In order not to activate the menu accidentally:

- 1. Switch OFF power to the rack.
- 2. Switch ON power to the rack.
- 3. Follow the sequence shown below within 2.5 seconds after powering:



- 1. Activate arm no. 1. And keep it "UP".
- 2. Activate arm no. 2 whilst arm no. 1 is kept "UP".
- 3. Release arm no. 2 whilst keeping arm no. 1 "UP".
- 4. Release arm no. 1

The light indictor in arm no. 1 now blinks and the menu is active.

#### Rack menu



When the Rack Menu is active, the light indicator in arm no. 1 blinks during the entire programming session. At step 5 & 6 (Dual size) however, the indicator in arm no. 1 will light permanently.

Moving from step 1 to 6 is done by clicking arm no. 1.

- Step 1. Rack address.
- Step 2. Delay before dispense.
- Step 3. Not used.
- Step 4. Set Stand Alone and block refill for UK version spout.
- Step 5. Delay between size 1 and 2.
- Step 6. Delay between size 2 and "off" and "One size only".

#### **Step 1: Rack address**

Each rack is programmed with an individual address: 1,2,3,4 etc., to max. 16. reading direction (L to R) is recommended (fig. 5).

Using

ADDRESS	ND1	ND2	ND3	ND4	ND5	ND6
1	BLINK	ON	OFF	OFF	OFF	OFF
2	BLINK	OFF	ON	OFF	OFF	OFF
3	BLINK	ON	ON	OFF	OFF	OFF
4	BLINK	OFF	OFF	ON	OFF	OFF
5	BLINK	ON	OFF	ON	OFF	OFF
6	BLINK	OFF	ON	ON	OFF	OFF
7	BLINK	ON	ON	ON	OFF	OFF
8	BLINK	OFF	OFF	OFF	ON	OFF
9	BLINK	ON	OFF	OFF	ON	OFF
10	BLINK	OFF	ON	OFF	ON	OFF
11	BLINK	ON	ON	OFF	ON	OFF
12	BLINK	OFF	OFF	ON	ON	OFF
13	BLINK	ON	OFF	ON	ON	OFF
14	BLINK	OFF	ON	ON	ON	OFF
15	BLINK	ON	ON	ON	ON	OFF
16	BLINK	OFF	OFF	OFF	OFF	ON
Illegal	BLINK	Other combinations				



Step 2: Delay before dispense

Delay between clicking the lever and starting the actual dispense. See table below. If there is a risk of accidental activation of a dispense - a delay will be useful. Factory default is 170 ms.

ND DELAY	ND1	ND2	ND3	ND4	ND5	ND6
0ms	BLINK	OFF	OFF	OFF	OFF	OFF
10ms	BLINK	ON	OFF	OFF	OFF	OFF
20ms	BLINK	OFF	ON	OFF	OFF	OFF
30ms	BLINK	ON	ON	OFF	OFF	OFF
40ms	BLINK	OFF	OFF	ON	OFF	OFF
50ms	BLINK	ON	OFF	ON	OFF	OFF
60ms	BLINK	OFF	ON	ON	OFF	OFF
70ms	BLINK	ON	ON	ON	OFF	OFF
80ms	BLINK	OFF	OFF	OFF	ON	OFF
90ms	BLINK	ON	OFF	OFF	ON	OFF
100ms	BLINK	OFF	ON	OFF	ON	OFF
110ms	BLINK	ON	ON	OFF	ON	OFF
120ms	BLINK	OFF	OFF	ON	ON	OFF
130ms	BLINK	ON	OFF	ON	ON	OFF
140ms	BLINK	OFF	ON	ON	ON	OFF
150ms	BLINK	ON	ON	ON	ON	OFF
160ms	BLINK	OFF	OFF	OFF	OFF	ON
170ms	BLINK	ON	OFF	OFF	OFF	ON
180ms	BLINK	OFF	ON	OFF	OFF	ON
190ms	BLINK	ON	ON	OFF	OFF	ON
200ms	BLINK	OFF	OFF	ON	OFF	ON
210ms	BLINK	ON	OFF	ON	OFF	ON
220ms	BLINK	OFF	ON	ON	OFF	ON
230ms	BLINK	ON	ON	ON	OFF	ON
240ms	BLINK	OFF	OFF	OFF	ON	ON
250ms	BLINK	ON	OFF	OFF	ON	ON
260ms	BLINK	OFF	ON	OFF	ON	ON
270ms	BLINK	ON	ON	OFF	ON	ON
280ms	BLINK	OFF	OFF	ON	ON	ON
290ms	BLINK	ON	OFF	ON	ON	ON
300ms	BLINK	OFF	ON	ON	ON	ON
310ms	BLINK	ON	ON	ON	ON	ON



Step 3 Do NOT USE (Normal = OFF).

DEFAULT	ND1	ND2	ND3	ND4	ND5	ND6
KEY CODE						
0	BLINK	OFF	OFF	OFF	OFF	OFF
1	BLINK	ON	OFF	OFF	OFF	OFF
2	BLINK	OFF	ON	OFF	OFF	OFF
3	BLINK	ON	ON	OFF	OFF	OFF
4	BLINK	OFF	OFF	ON	OFF	OFF
5	BLINK	ON	OFF	ON	OFF	OFF
6	BLINK	OFF	ON	ON	OFF	OFF
7	BLINK	ON	ON	ON	OFF	OFF
8	BLINK	OFF	OFF	OFF	ON	OFF
9	BLINK	ON	OFF	OFF	ON	OFF
10	BLINK	OFF	ON	OFF	ON	OFF
11	BLINK	ON	ON	OFF	ON	OFF
12	BLINK	OFF	OFF	ON	ON	OFF
13	BLINK	ON	OFF	ON	ON	OFF
14	BLINK	OFF	ON	ON	ON	OFF
15	BLINK	ON	ON	ON	ON	OFF
16	BLINK	OFF	OFF	OFF	OFF	ON
17	BLINK	ON	OFF	OFF	OFF	ON
18	BLINK	OFF	ON	OFF	OFF	ON
19	BLINK	ON	ON	OFF	OFF	ON
20	BLINK	OFF	OFF	ON	OFF	ON
21	BLINK	ON	OFF	ON	OFF	ON
22	BLINK	OFF	ON	ON	OFF	ON
23	BLINK	ON	ON	ON	OFF	ON
24	BLINK	OFF	OFF	OFF	ON	ON
25	BLINK	ON	OFF	OFF	ON	ON
26	BLINK	OFF	ON	OFF	ON	ON
27	BLINK	ON	ON	OFF	ON	ON
28	BLINK	OFF	OFF	ON	ON	ON
29	BLINK	ON	OFF	ON	ON	ON
30	BLINK	OFF	ON	ON	ON	ON
31	BLINK	ON	ON	ON	ON	ON



#### Step 4: Set Up

#### 1. Standalone:

A: USE if racks are to dispense only – and NOT register / report to a Master Unit: Connect a Master Unit only to set volumes. Click levers on each arm once and the rack will "remember" all sizes when removing the Master Unit. The light diode on the right (bottom side of the rack) will be off.

B: A Master Unit is used, but dispensing is to continue even if the signal disappears. If the Loop signal is cut off for either reason, the rack will still dispense, but no registration takes place. (The right diode lights RED.)

2: Block dispensing whilst sight glass refills (UK spouts ONLY).

MISC. SETUP	ND1	ND2	ND3	ND4	ND5	ND6
	BLINK	MS	DAP	X	X	X

MS = Master / Stand alone (OFF = Normal / ON = Stand alone) DAP = Block dispense during refilling sight glass of UK spouts. (OFF = Normal / ON = Delay) X = OFF

UK version: Set DAP "ON" and Step 6 "OFF" (One Size Only).

Step 5: Delay between size 1 and 2



Is used to set the time between the constant lighting of an arm whilst dispensing the first size - to the blinking light that indicates that size 2 can be dispensed.

• = Factory default (For DUAL size dispensing only).

SIZE 1	ND1	ND2	ND3	ND4	ND5	ND6
TIME						
Os	ON	OFF	OFF	OFF	OFF	OFF
0.16s	ON	ON	OFF	OFF	OFF	OFF
0.32s	ON	OFF	ON	OFF	OFF	OFF
0.48s	ON	ON	ON	OFF	OFF	OFF
0,64s	ON	OFF	OFF	ON	OFF	OFF
0.80s	ON	ON	OFF	ON	OFF	OFF
0.96s	ON	OFF	ON	ON	OFF	OFF
1.12s	ON	ON	ON	ON	OFF	OFF
• 1.28s	ON	OFF	OFF	OFF	ON	OFF
1.44s	ON	ON	OFF	OFF	ON	OFF
1.60s	ON	OFF	ON	OFF	ON	OFF
1.76s	ON	ON	ON	OFF	ON	OFF
1.92s	ON	OFF	OFF	ON	ON	OFF
2.08s	ON	ON	OFF	ON	ON	OFF
2.24s	ON	OFF	ON	ON	ON	OFF
2.40s	ON	ON	ON	ON	ON	OFF
2.56s	ON	OFF	OFF	OFF	OFF	ON
2.72s	ON	ON	OFF	OFF	OFF	ON
2.88s	ON	OFF	ON	OFF	OFF	ON
3.04s	ON	ON	ON	OFF	OFF	ON
3.20s	ON	OFF	OFF	ON	OFF	ON
3.36s	ON	ON	OFF	ON	OFF	ON
3.52s	ON	OFF	ON	ON	OFF	ON
3.68s	ON	ON	ON	ON	OFF	ON
3.84s	ON	OFF	OFF	OFF	ON	ON
4.00s	ON	ON	OFF	OFF	ON	ON
4.16s	ON	OFF	ON	OFF	ON	ON
4.32s	ON	ON	ON	OFF	ON	ON
4.48s	ON	OFF	OFF	ON	ON	ON
4.64s	ON	ON	OFF	ON	ON	ON
4.80s	ON	OFF	ON	ON	ON	ON
4.96s	ON	ON	ON	ON	ON	ON

Step 6. Delay between size 2 and "Off"



Set the time between dispensing size 2 (diode blinks) and cancelling the action. (diode OFF). If this is set at 1, only one size can be dispensed.

After this step, the Rack Menu is ended

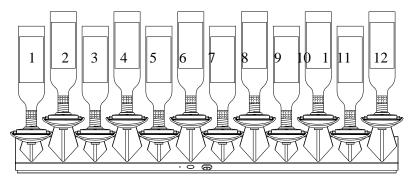
• Default factory setting (At Dual Size).

For UK. Use setting "ALL OFF" (1 size only)

SIZE 2 TIME	ND1	ND2	ND3	ND4	ND5	ND6
1 SIZE/UK	OFF	OFF	OFF	OFF	OFF	OFF
• 2.56s	ON	OFF	OFF	OFF	OFF	ON
2.72s	ON	ON	OFF	OFF	OFF	ON
2.88s	ON	OFF	ON	OFF	OFF	ON
3.04s	ON	ON	ON	OFF	OFF	ON
3.20s	ON	OFF	OFF	ON	OFF	ON
3.36s	ON	ON	OFF	ON	OFF	ON
3.52s	ON	OFF	ON	ON	OFF	ON
3.68s	ON	ON	ON	ON	OFF	ON
3.84s	ON	OFF	OFF	OFF	ON	ON
4.00s	ON	ON	OFF	OFF	ON	ON
4.16s	ON	OFF	ON	OFF	ON	ON
4.32s	ON	ON	ON	OFF	ON	ON
4.48s	ON	OFF	OFF	ON	ON	ON
4.64s	ON	ON	OFF	ON	ON	ON
4.80s	ON	OFF	ON	ON	ON	ON
4.96s	ON	ON	ON	ON	ON	ON

**Last drink detection.** 





<u>All</u> dispense arms are to be programmed stating the total possible servings (smallest size if 2 sizes are selected) from the bottle type used. Maximum no. Of servings pr arm is 63.

In order NOT to reprogram often, TAP Systems recommends using ONE and the same bottle size pr. Arm ONLY.

As an example we describe setup for a 70 cl. Bottle. And a (smallest) serving size of 2cl.

This means a total of 34 servings is set up.

Arms 1 to 6 are used to program the number of "shots" pr. bottle. Each arm is given it's own "Value" for this purpose.

If a value is needed which is on the same arm that needs programming, the led indicator of this arm will flash with double speed.

Arm no.1	Arm no.2	Arm no.3	Arm no.4	Arm no.5	Arm no.6
Value 1	Value 2	Value 4	Value 8	Value 16	Value 32

Is a bottle to dispense 23 shots, activate arms no. 1, 2, 3 and 5 reaching a total value of 23.

#### **Programming the rack:**

Activate the button on the bottom of the rack and keep it pushed whilst switching on the power. The light diode under the panel blinks red and green and arm No. 1 is blinking.

Arm no.1 is now ready to be programmed:

Arm no.1 is to be programmed for 23 shots. (Example). Click arms 1, 2, 3 and 5. Push the button underneath the rack and now arm 2 is blinking to be programmed.

Arm 2 needs 21 shots: Therefore push levers of arms 1, 3 and 5.

Another push of the button underneath the rack... and go to arm no. 3

After programming all arms, the button is kept pushed in for 5 seconds to finalize the setting session and the diode now lights green.

If a number of shots is set as 0, the arm will continue serving without warnings or stopping.

After an arm has reached the number of programmed shots, the arm stops dispensing and registering clicks ... A flashing light indicates that a bottle change is required.

In order to start dispensing from a new bottle in this arm, it needs to be reset as follows:

(Reset before inserting a new bottle!)

Click the dispense lever and keep it up, Push the reset button and keep it pushed. After approx. 5 seconds, release the lever and then the button. The arm is now ready to dispense again and a new bottle is inserted.



#### **Installation of PC software Tap 2500 (X3)**

Insert the install CD into your CD drive.

#### **Installtion of Setup 1.**

Click Setup 1 to install the basis program.

A security prompt appears. Click Run

In the next window choose language. Select English Click OK

An installation guide appears. Click Next

Click Install

If the program is to be installed in C:\programs: Click OK

A new box appears, saying "Confirm". Click  $\overline{\text{Yes}}$ 

The program is now installed. Click Done

#### <u>Installation of UPDATE 155.7.</u> (or whichever latest update is provided)

Click UPDATE 155.7

A security prompt appears. Click Run

"Install Shield wizard" appears (in German). Click Weiter>

And Weiter again.

And Weiter once more.

Now click Installieren

After installation, click Fertigstellen

The software is now installed and an icon (DCont with the latest update number) is found on your desktop.

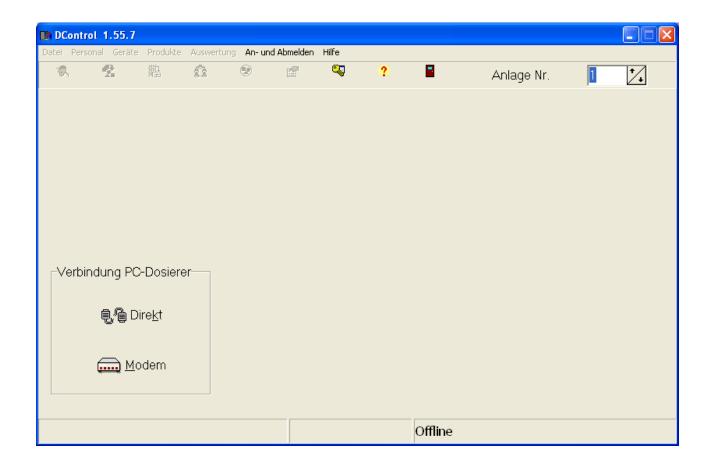
### PC program.

#### Set language

Click icon "Dcont-1.55.7" on the desktop.

At first time opening, a prompt appears in German. Click OK and this window appears:





Click "An-und Abmelden" and see this warning in German when using the program the first time:



Click OK

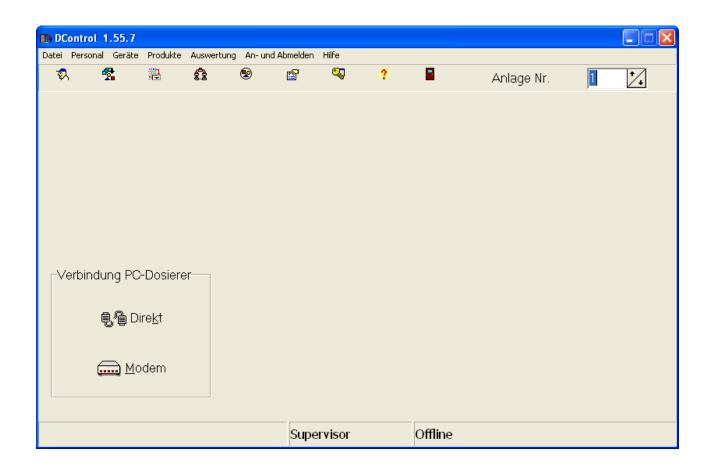




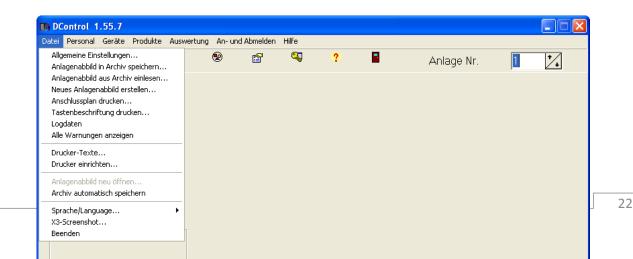
Enter a **username** and **password** to log in.

By default both boxes are filled in with "Super"

Click **OK** 

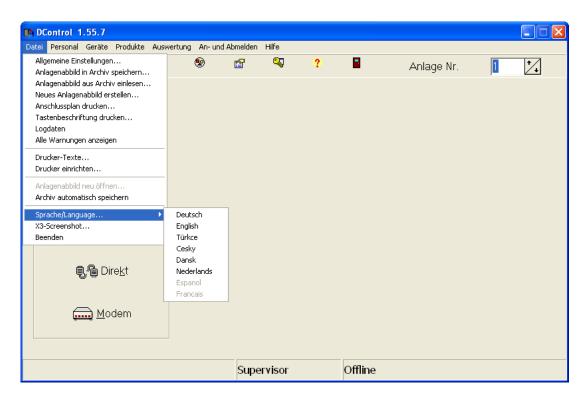


To change language: Click "Datei".





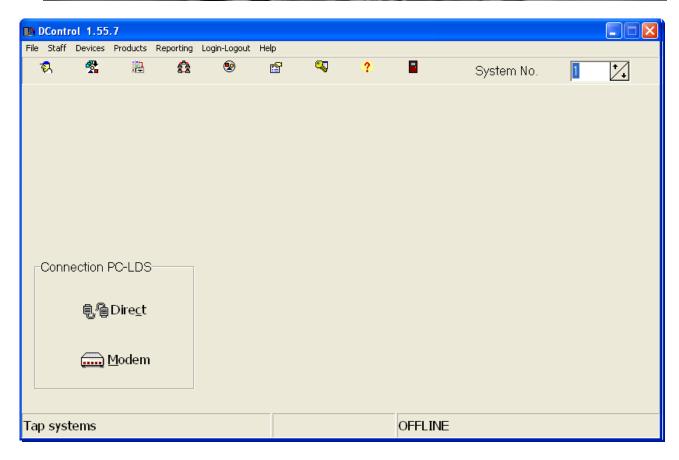
## Scroll down to "Sprache/Language..."



Select "English".

Now you can access all pages in English.





Close the program

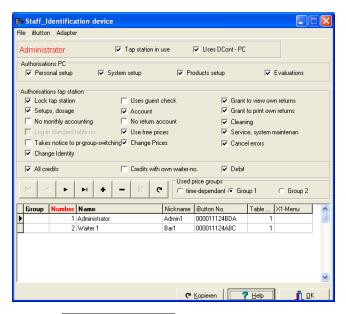
## **Username & Password**

To log in you must enter a "Username" and a "Password". Write "Super" in both boxes and click  $\overline{OK}$ 





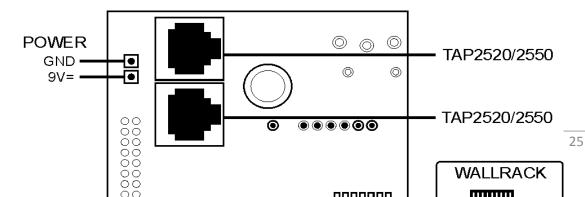
To change your"Username" click"Staff". In the box under"Nickname" enter for example "admin1" in stead of "Super" Now the new username is "admin1"



To change the "Password" click on Change password and type a new password in the boxes as shown here.



**Connections Scheme Tap 2500.** 

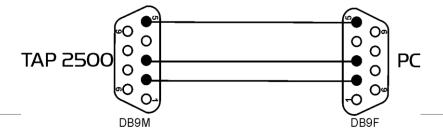




## **Connect Tap 2500 to PC:**

Use a cable as described below:.

 $1\ x\ Sub\ D\ 9pol.$  Male connector,  $1\ x\ Sub\ D\ 9pol.$  Female connector & 2 m. LIYCY 5 x 0,14 mm cable. Connect as shown here:



26



Power TAP2500 AFTER connecting the unit to the PC.

If the PC has NO serial connection, use a USB/Serial adapter as shown below (remember to download the driver for this device before connecting it).



Click the Program icon on the desktop.

Click "Login-Logout".

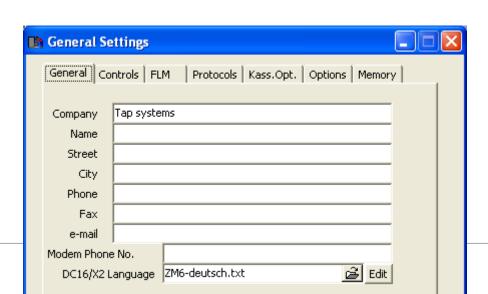
Write "Super" in both boxes to log on.

Click **OK** 

Click "file" in the toolbar.

Go to "General Settings".

In "General Settings" adjust the "Com Port Direct" to match the COM port on the PC which was selected for this connection.





In case that transmission problems occur between TAP 2500 and the PC, please change "**Stopbits**" from **2** to **1**. In this window you also select VAT Values. Go to the box next to "Group 1" and enter your VAT %. Click  $\overline{OK}$ 

### **Transfer of data:**

Data transfers should be made after every change in the program software, incl. setting the clock, or updating the software version.

Click Direct

The Pc software and the TAP2500 unit should now be connected and a text appears on the bottom right of the screen, saying "connected"

Click **Transfer data** 





Click on 32 X3TAP 1.55 in the box and click All next to "Load all devices again".



The system now transfers all data/updates to the TAP2500 unit and all changes are made.

To change or correct the time on the unit, click **Direct / Transfer data** and the **OK** next to the actual time.

To update "Firmware"

Click **Direct** 

Click **Transfer data** 

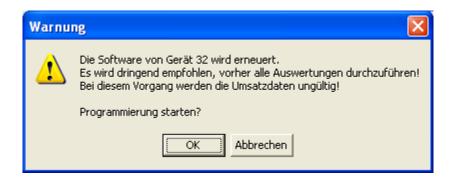
Click 32 X3TAP 1.55

Click **Start** in **"Firmware-Update"** 





When seeing a warning prompt, click **OK** 



Find folder **DCont-(version...)** and double click it.

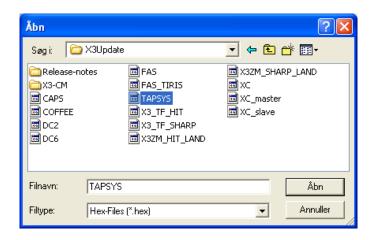


Double click the folder X3Update.



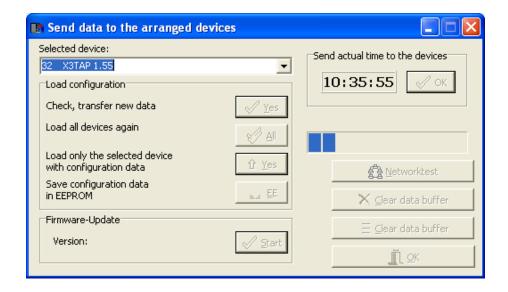


Select **TAPSYS** and click **Open** 



The program now starts installation of the latest firmware update.

Duration: 3-4 minutes.



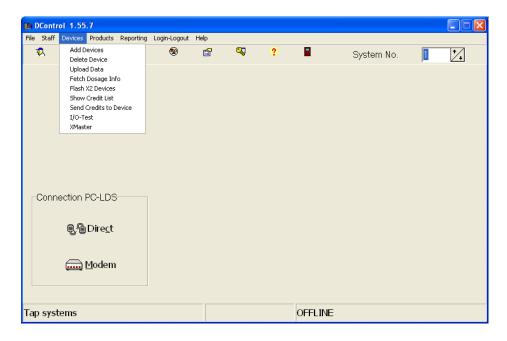


Click  $\overline{\mathbf{OK}}$  when the update finishes.

### **Setup Device Tap 2500 (X3):**

Click "Devices".

Click "Add a device".



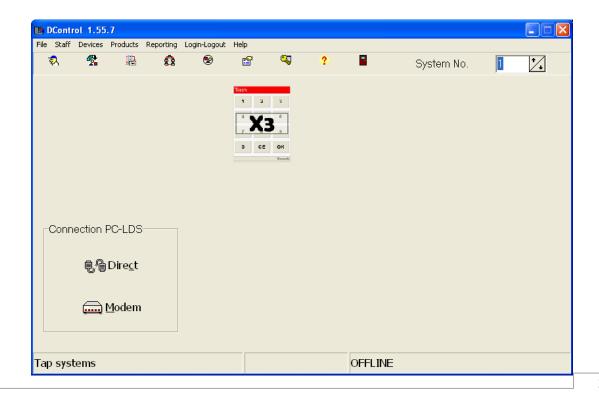


Select "X3 TAP-Systems"

Add new device						
Auswahl Geräte-Typ						
© DC14/DC16	C X3 Bottle					
C X1-Serielle Schnittstelle						
C X1-MiniBon	C X3 Coffee					
C X1-Zentralmodul	C X3 DC6					
C X1-Multi (DM,CSI,Bezzera,Bistro,etc)	C X2 RFID					
C X1-WMF-Interface	C X3 Zentralmodul					
C X1-GSM-Modul	C X3 Cocktailmaschine					
C X1-Durchflussmessturbinen	C X2 FreeFlow					
C X1-Automateninterface	○ TableTap					
C XA16-Zusatzausgänge	C XC Coldroom					
C XE24 und X2-Durchflussmessturbinen	○ X3 DC2					
C XE24 Leermeldungen						
The new device is added with device-ID 32 12						
The new device is added with device-ID 32 24						
Training continuing common coloring device	Close					

## Create Device Tap 2500 (X3):

Click Create Device
Click Create

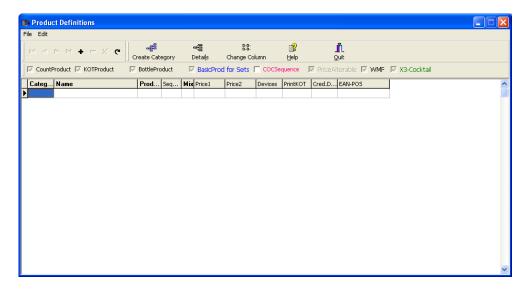




Tap 2500 (X3) is now created and ready for the next step.

### **Create Product List:**

Click "Products"
Click "Product List"

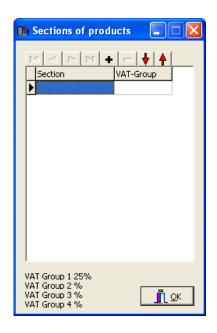


In order to create a product list, a category must be created first.

In the Category window you can create preferred groups like: "Vodkas", "Whiskies", "Single Malts" or just "Spirits" and "Draught beers" or even "Sodas".



Click "Create Category"



### **Create Product List:**

Click in the first box and write "Spirits".

Click in the next box and write "1" for VAT Group 1.

Click "+"; A new line appears to enter a new category.

Click the first box in this line and write "Cocktail".

Click the next box and write "1" for VAT Group 1.

Continue like this to create more categories.

Click Fertig (done)

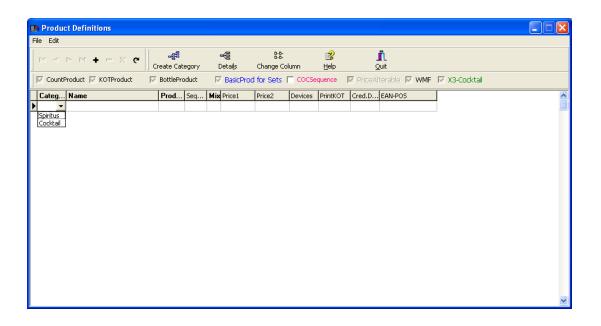


Now you can create product lists.

Put your curser in the empty box under "Category" and click the arrow.



Click the "Spirits" box.



Enter the empty box under "Name" and enter the first PLU product name.

Enter the empty box under "Prod" and write 10 (Wich is the first possible PLU number).

Enter the empty box under "Price 1" and enter the default price for this product.

Enter the empty box under "Price 2" and enter a second (happy hour?) price for this product.

Tick the box called "Bottle product".

Click "+" on the toolbar and a new line appears.

Enter the empty box under "Name" and enter the second PLU product name.

Enter the empty box under "**Prod**" and write 11 (Consecutive PLU number).

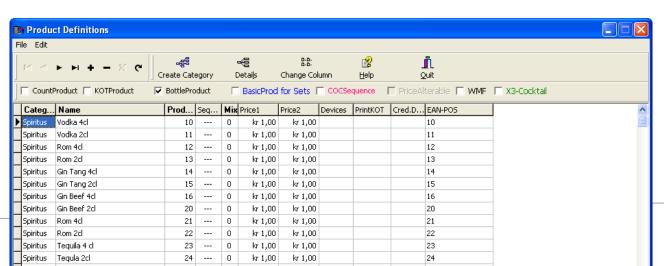
Enter the empty box under "Price 1" and enter the default price for this product.

Enter the empty box under "Price 2" and enter the second price (happy hour?) for this product.

Tick the box called "Bottle Product".

Proceed like this until the entire PLU list has been created.

Mind that each size of the same product is to be given its individual line (PLU Number) in the menu! (See image below.)





#### **Cocktails are configured as shown below:**

Enter the empty box under "Category" and click on the arrow.

Click the "Cocktail" box.

Enter the empty box under "Name" and enter the name of the cocktail you wish to configure.

Enter the empty box under "**Prod**" and write **200.** (In order to create a proper distance from previous category)

Enter the empty box under "Price 1" and enter the default price of this cocktail.

Enter the empty box under "Price 2" and enter the second (happy hour?) price of this cocktail.

Tick the box"KOT Product" and the box "X3 Cocktail".

Click the"+" on the toolbar and a new line appears.

Enter the empty box under "Name" and write the name of the second cocktail.

Enter the empty box under "Prod" and write 201.

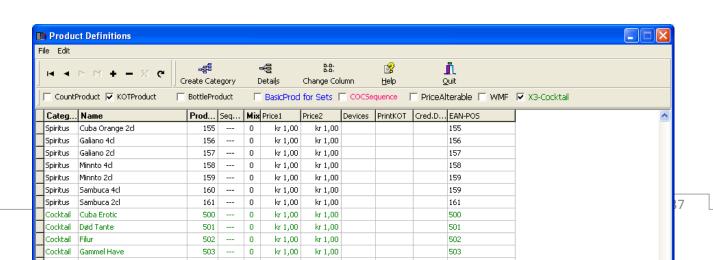
Enter the empty box under "Price 1" and write the price of this cocktail.

Enter the empty box under "Price 2" and write the second (happy hour?) price of this cocktail.

Tick boxes "KOT Product" and "X3 Cocktail".

Proceed like this until the entire cocktail list has been created.

Click Done



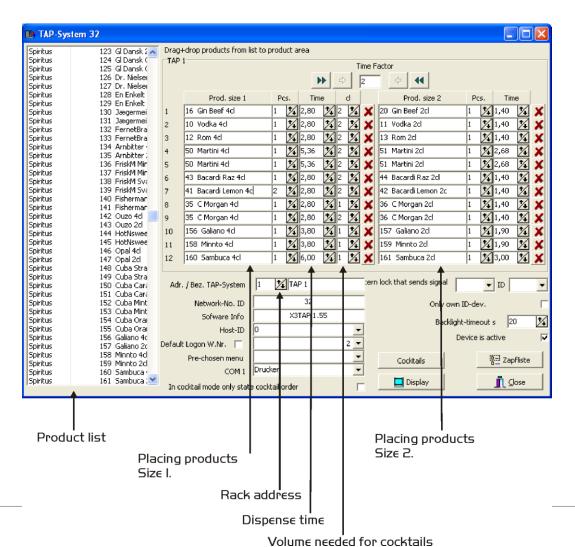


### **Placing products:**

All products will now be given an address on the wall racks.

Click on the "X3" icon.







Starting with wall rack no. 1, select the product in the product list which should be on arm no. 1. Drag and drop the product from the list into the box next to no. 1, under "Product size 1".

Continue like this until all available arms of the first racks have been allocated to a product. Mind that if a six rack is used, only the upper six boxes are filled in.

To place products on rack no. 2, click the small arrows up/down to select the rack.

Continue as described above until all racks have been "filled" with products.

In case that 2 sizes pr dispense arm are required, the second size of easch product is placed in the column under "**Product size 2**"

Remember to use the second size PLU number from the product list.

Now the time of the dispense / volume for each drink is set.

Volumes are depending on product viscosity. As an example, 2cl of Baileys takes more time to pour than 2cl of vodka. Therefore every arm must be calibrated individually to set the correct time.

As a guideline, 2cl of vodka requires a time setting of 1,50. (Please see the scheme in the back of this manual to find recommended settings for commonly used spirits).

The "cl" column is used only, if the racks are used to serve cocktails as well:

If a cocktail ingredient is 4 cl of vodka, use the small up/down arrows to scroll and set at value 4.

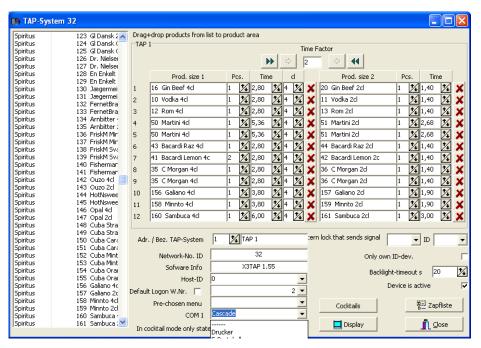
If 2cl is needed, scroll to digit 2.

This function is used to serve the correct quantity of a product for any cocktail required.

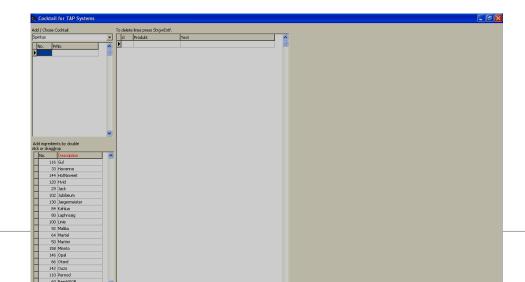


### **Creating cocktails:**

If the cocktail feature is desired, this is how recipes are created.



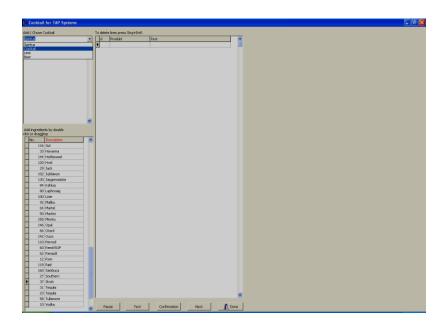
Click Cocktails



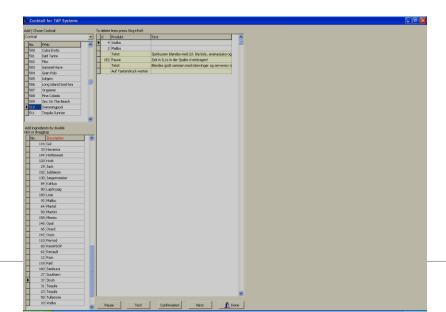


Click the arrow in front of the "Spirits" box.

# Select "Cocktail"

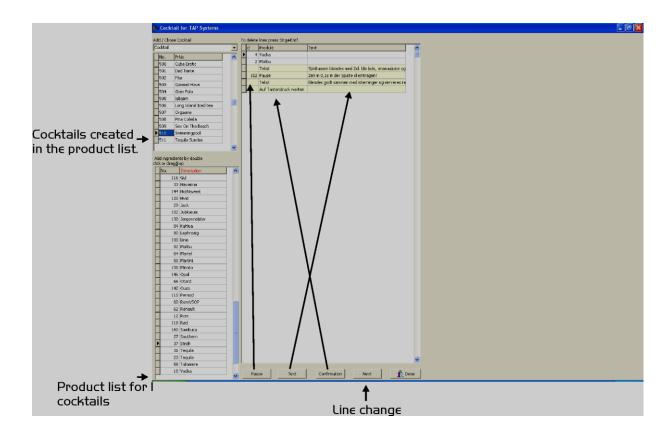


The cocktail menu created in the " $\mbox{\bf Product list}$ " now appears.





## Cocktail menus are created.



Here all menus for each cocktail in the product list are created.

Click on a cocktail name. In the box to the right we drag and drop all products needed for the specific cocktail and a list of other products, type of glasses, ice and condiments is created.

Click on the product in the product list and drag and drop it to the first line of the box to the right.

Click the box under "cl" and enter the volume in cl needed of this product.

After all products have been added with the correct volumes in cl, a text can be written.

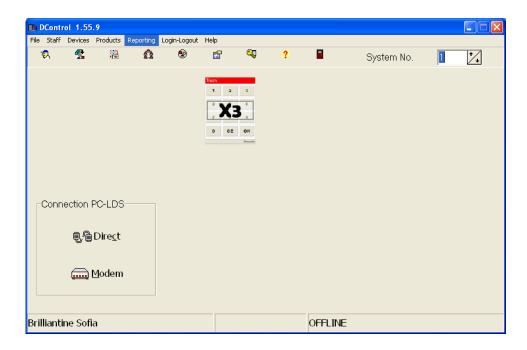


Enter **Text** so a yellow line appears. Write any free text here: Type of glass, ice, condiments etc. If there is no sufficient space, add another line by clicking **Pause** and put in a break to add text line no 2. Onto the screen of the TAP2500 unit. Click on text again to add line number 2 on the screen.

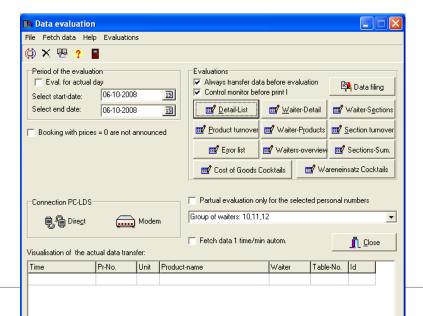
Click **Confirm** and then touch the OK button on the touch screen to make the recipe disappear. After all products and working methods have been entered, click **Done** 

### **Reporting:**

If you wish to save or print reports of turnovers, results, errors, etc., click on Reporting.

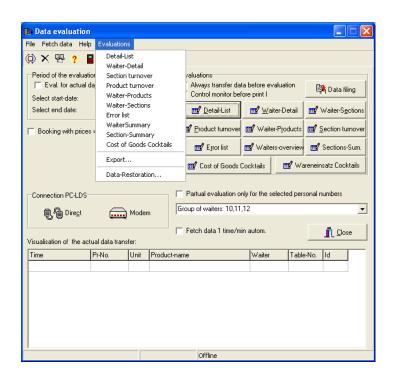


In the "Data Evaluation" window, select which reports are to be displayed, printed or transferred to MS Excel. Select a "start date" and a "end date"

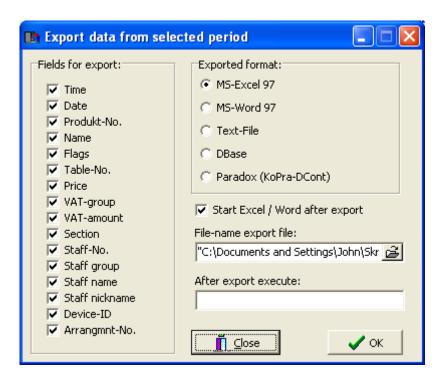




#### Click: "Evaluations"



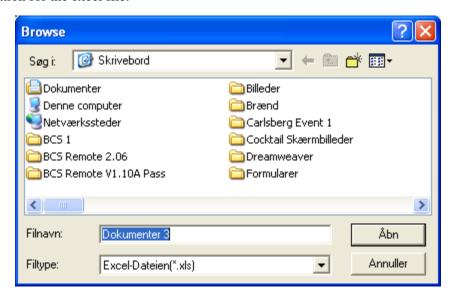
## Click "Export"



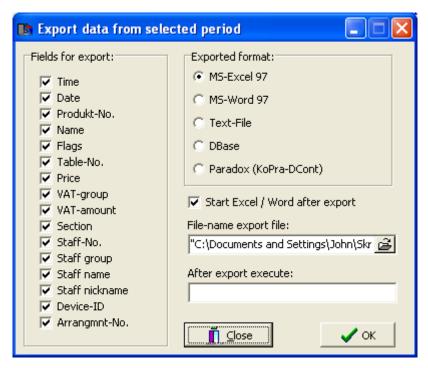


Click the folder icon in the browser window.

Select a destination for the excel file.



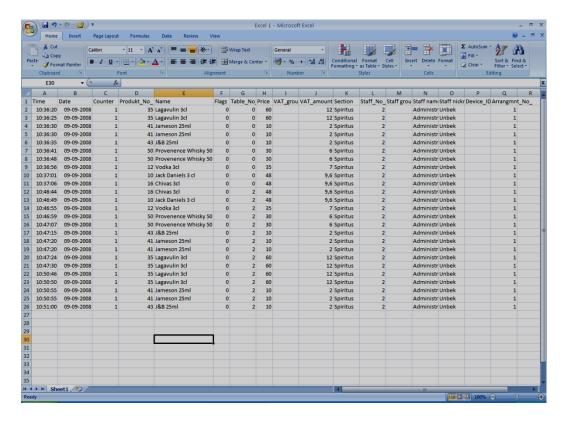
Give the Excel file a name. F.ex. Documents 3 and click Open



Click OK and the Excel file is exported to its destination.



Open the excelfile at its destination.



The Spreadsheet now shows all dispense data from the system.

If a more detailed report is desired, go back to the "Data Evaluation" window.

#### And select:

**Detail list** 

Waiter Turnover

**Total Waiter Turnover** 

**Turnover pr Product** 

Waiter / Product turnover

**Section Turnover** 

**Error List** 

**Waiter Overview** 

**All Sections Total** 



# **Detail list**

Ti	Co	Pr	turn from Name	Sectio	.2008 - 9,09,, VAT-Grp. VAT		Waiter	Pr.Grp.Table-	Tap sy Dev.N Error	
10:36	1	35	Lagavuin 3cl	Spiritus	kr 12.00		Unbek	1 0		Ct.
10:36	1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00		1 0		
10:36	1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	Unbek	1 0		
10:36	1	41	Jameson 25nf	Spiritus	kr 2,00	kr 10,00	Unbek	1 0		
10:36	1	43	J&B 25ml	Spiritus	kr 2,00		Unbek	1 0		
10:36	1	50	Provenence Whisky 50	Spiritus	kr 6,00		Unbek	1 0		
10:36 10:36	1	50 12	Provenence Whisky 50 Vodka 3d	Spiritus Spiritus	kr 6,00 kr 7,00	,	Unbek	1 0		
10:37	1	10	Jack Daniels 3 cl	Spiritus	k: 9,60	kr 48,00	Unbek	1 0		
10:37	1	16	Chivas 3cl	Spiritus	kr 9,60	,	Unbek	1 0		
10:46	1	16	Chivas 3cl	Spiritus	kr 9,60	,	Unbek	1 2		
10:46	1	10	Jack Daniels 3 cl	Spiritus	kr 9,60	kr 48,00	Unbek	1 2		
10:46	1	12	Vodka 3d	Spiritus	kr 7,00	kr 35,00	Unbek	1 2		
10:46	1	50	Provenence Whisky 50	Spiritus	kr 6,00		Unbek	1 2		
10:47	1	50	Provenence Whisky 50	Spiritus	kr 6,00		Unbek	1 2		
10:47	1	43	J&B 25ml	Spiritus	kr 2,00		Unbek	1 2		
10:47 10:47	1	41 41	Jameson 25nf Jameson 25nf	Spiritus Spiritus	kr 2,00 kr 2,00		Unbek	1 2		
10:47	1	35	Lagavuin 3cl	Spiritus	kr 12.00		Unbek	1 2	-	
10:47	1	35	Lagavuin 3cl	Spiritus	kr 12,00		Unbek	1 2		
10:50	1	35	Lagavuin 3cl	Spiritus	kr 12,00		Unbek	1 2		
10:50	1	35	Lagavuin 3cl	Spiritus	kr 12,00		Unbek	1 2		
10:50	1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	Unbek	1 2		
10:50	1	41	Jameson 25ml	Spiritus	kr 2,00		Unbek	1 2		
10:51	1	43	38/B 25ml	Spiritus	kr 2,00	kr 10,00	Unbek	1 2		
10:59	1	43	38/B 25ml	Spiritus	kr 2,00		Unbek	1 2		
10:59 10:59	1	41 41	Jameson 25nf Jameson 25nf	Spiritus Spiritus	kr 2,00 kr 2,00	kr 10,00 kr 10,00	Unbek	1 2		
10:59	1	35	Lagavuin 3cl	Spiritus	kr 12.00		Unbek	1 2		
10:59	1	35	Lagavuin 3cl	Spiritus	kr 12,00		Unbek	1 2		
11:01	1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	Unbek	1 2		
11:01	1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	Unbek	1 2		
11:01	1	41	Jameson 25nf	Spiritus	kr 2,00	kr 10,00	Unbek	1 2		
11:01	1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00		1 2		
11:02	1	43	38/B 25ml	Spiritus	kr 2,00		Unbek	1 2		
11:51	1	10 16	Jack Daniels 3 cl Chivas 3cl	Spiritus Spiritus	kr 9,60 kr 9,60		Unbek	1 2		
12:05	1	10	Jack Daniels 3 cl	Spiritus	k: 9,60	kr 48,00	Unbek	1 2		
12:05	1	12	Vodka 3d	Spiritus	k: 7,00	kr 35.00		1 2		
12:06	1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	Unbek	1 2		
12:06	1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	Unbek	1 2		
12:06	1	43	38/B 25ml	Spiritus	kr 2,00	kr 10,00	Unbek	1 2		
12:06	1	41	Jameson 25nf	Spiritus	kr 2,00		Unbek	1 2		
12:06	1	41	Jameson 25ml	Spiritus	kr 2,00		Unbek	1 2		
12:06	1	35 35	Lagavuin 3cl	Spiritus	kr 12,00		Unbek	1 2		
12:06 <b>Sums:</b>	1	33	Lagavuin 3cl	Spiritus	kr 12,00 kr 304,20 kr		Unbek	1 2		
			10:36 bis: 9.9.2008 12:0					POS T=table bill printed	Page	



# **Waiter Turnover**

T1 Co.	Pr		9,09,2008 - 9,0 Sectio VAT-Grp.	9,2000 VAT	Price	PriceGrp.	Table	Tap syst Dev.N Error
			Sectio VAI-Grp.	VAI	Price	Pricegrp.	rable-	Dev.N Error
Waiter N	10. 2	? Unbek						
10:36 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	0	
10:36 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	0	
10:36 1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	1	0	
10:36 1	41	Jameson 25mf	Spiritus	kr 2,00	kr 10,00	1	0	
10:36 1 10:36 1	43 50	J&B 25ml	Spiritus	kr 2,00	kr 10,00	1	0	
	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	1	0	
10:36 1 10:36 1	12	Provenence Whisky 50 Vodka 3d	Spiritus Spiritus	kr 6,00 kr 7,00	kr 30,00	1	0	
10:30 1	10	Jack Daniels 3 cl	Spiritus	kr 9,60	kr 35,00 kr 48,00	1	0	
10:37 1	16	Chivas 3cl	Spiritus	kr 9,60	kr 48,00	1	0	
10:46 1	16	Chivas 3cl	Spiritus	kr 9,60	kr 48,00	1	2	
10:46 1	10	Jack Daniels 3 cl	Spiritus	kr 9,60	kr 48,00	1	2	
10:46 1	12	Vodka 3d	Spiritus	kr 7,00	kr 35,00	1	2	
10:46 1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	1	2	
10:47 1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	1	2	
10:47 1	43	38B 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
10:47 1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
10:47 1	41	Jameson 25nf	Spiritus	kr 2,00	kr 10,00	1	2	
10:47 1	35	Lagavulin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
10:47 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
10:50 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
0:50 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
10:50	41	Jameson 25mi	Spiritus	kr 2,00	kr 10,00	1	2	
0:50 1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
0:51 1	43	3&B 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
10:59	43	38B 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
10:59 1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
10:59 1	41	Jameson 25mi	Spiritus	kr 2,00	kr 10,00	1	2	
10:59 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
10:59 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
11:01 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
11:01 1	35	Lagavuin 3cl	Spiritus	kr 12,00	kr 60,00	1	2	
11:01 1	41	Jameson 25nf	Spiritus	kr 2,00	kr 10,00	1	2	
11:01 1	41	Jameson 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
11:02 1	43	3&B 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
11:51 1	10	Jack Daniels 3 cl	Spiritus	kr 9,60	kr 48,00	1	2	
12:05 1	16	Chivas 3cl	Spiritus	kr 9,60	kr 48,00	1	2	
12:05 1	10	Jack Daniels 3 cl	Spiritus	kr 9,60	kr 48,00	1	2	
12:06 1	12	Vodka 3d	Spiritus	kr 7,00	kr 35,00	1	2	
12:06 1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	1	2	
12:06 1	50	Provenence Whisky 50	Spiritus	kr 6,00	kr 30,00	1	2	
12:06 1	43	J&B 25ml	Spiritus	kr 2,00	kr 10,00	1	2	
12:06 1	41	Jameson 25nf Jameson 25nf	Spiritus	kr 2,00	kr 10,00	1	2	
12:06 1 12:06 1	41 35		Spiritus		kr 10,00		2	
		Lagavuin 3cl	Spiritus		kr 60,00		2	
		Lagavuin 3cl	Spiritus	kr 12,00		1	2	
12:06 1 <b>ProdSu</b> r	256.5			kr 304,20 ki	4 634 00			



kr 1.521,00 kr 0,00 kr 0,00 kr 304,20 kr 1.521, kr 1.521,00 kr 0,00 kr 0,00 kr 304,20 kr 1.521,	Mo. 2 Spiritus	Unhek				
kr 1.521,00 kr 0,00 kr 0,00 kr 304,20 kr 1.521,	Spritus		1 - 4 - 53 4 - 65			 
			·	T T	r ·	
	Total Sums:					

Page

# Total turnover pr. product

Sur	nmai	ry products fi	om:	9.09.	2008 - 9 <sub>2</sub>	09.2008		Tap systems
Coun	Pr.No.	Name	VAT-grp.	Sum PrGrp.1	Sum PrGrp.2	Sum	VAT total	Sum total
4	10	Jack Daniels 3 cl		kr 192,00	kr 0,00	kr 0,00	kr 38,40	kr 192,00
3	12	Vodka 3cl		kr 105,00	kr 0,00	kr 0,00	kr 21,00	kr 105,00
3	16	Chivas 3cl		kr 144,00	kr 0,00	kr 0,00	kr 28,80	kr 144,00
12	35	Lagavufin 3d		kr 720,00	kr 0,00	kr 0,00	kr 144,00	kr 720,00
12	41	Jameson 25ml		kr 120,00	kr 0,00	kr 0,00	kr 24,00	kr 120,00
6	43	38/B 25mf		kr 60,00	kr 0,00	kr 0,00	kr 12,00	kr 60,00
6	50	Provenence Whisky 50		kr 180,00	kr 0.00	kr 0,00	kr 36,00	kr 180,00



## Waiter / Product turnover

Still	nmai	ry waiter / pr	roducts h	om:	9,09,200	8 - 9,09,2	008	Tap system
Coun	Pr.No.	Name	VAT-grp.	Sum PrGrp.1	Sum PrGrp.2	Sum	VAT total	Sum total
Ma	2	1 Inhah						
4	10	Jack Daniels 3 cl		kr 192,00	kr 0,00	kr 0,00	kr 38,40	kr 192,0
3	12	Vodka 3cl		kr 105,00	kr 0,00	kr 0,00	kr 21,00	kr 105,0
3	16	Chivas 3cl		kr 144,00	kr 0,00	kr 0,00	kr 28,80	kr 144,0
12	35	Lagavuin 3d		kr 720,00	kr 0,00	kr 0,00	kr 144,00	kr 720,0
12	41	Jameson 25ml		kr 120,00	kr 0,00	kr 0,00	kr 24,00	kr 120,0
6	43	3&B 25mf		kr 60,00	kr 0,00	kr 0,00	kr 12,00	kr 60,0
6	50	Provenence Whisky 50		kr 180,00	kr 0,00	kr 0,00	kr 36,00	kr 180,0
		·		kr 1.521,00	kr0,00	kr 0,00	kr304,20	kr 1.521,0
Total	Sums:			kr 1.521,00	kr0,00	kr 0,00	kr304,20	kr 1.521,0



## **Section Turnover**

Retu	rn b	n by sections from: 9.09.2008 - 9.09.2008					Tap systems		
Ti	Pr	Name	Waiter	VAT-Grp.	VAT	Price	PriceGrp	. Table-	Dev.N Error
Section	n 90	niritus							
10:36	35	Lagavulin 3cl	Unbek		kr 12,00	kr 60,	00 1	0	
10:36	35	Lagavulin 3cl	Unbek		kr 12,00	kr 60,	00 1	0	
10:36	41	Jameson 25ml	Unbek		kr 2,00	kr 10,	00 1	0	
10:36	41	Jameson 25ml	Unbek		kr 2,00	kr 10,	00 1	0	
10:36	43	J&B 25ml	Unbek		kr 2,00	kr 10,	00 1	0	
10:36	50	Provenence Whisky 50	Unbek		kr 6,00	kr 30,	00 1	0	
10:36	50	Provenence Whisky 50	Unbek		kr 6,00	kr 30,	00 1	0	
10:36	12	Vodka 3d	Unbek		kr 7,00	kr 35.	00 1	0	
10:37	10	Jack Daniels 3 d	Unbek		kr 9,60	kr 48,	00 1	0	
10:37	16	Chivas 3d	Unbek		kr 9,60	kr 48,	00 1	0	
10:46	16	Chivas 3d	Unbek		kr 9,60	kr 48,	00 1	2	
10:46	10	Jack Daniels 3 d	Unbek		kr 9.60	kr 48.	00 1	2	



## **Waiter Overview**

Summary waiters from:		9.09.20	08 - 9.09.2	008	Tap systems
Waiter- Nam VAT-grp.	Sum PrGrp.1	Sum PrGrp.2	Sum	VAT total	Sum total
2 Unbek	kr 1.521,00	kr 0,00	kr 0,00	kr 304,20	kr 1.521,00
Total Sums:	kr 1.521,00	kr 0,00	kr 0,00	kr 0,00	kr 1.521,00



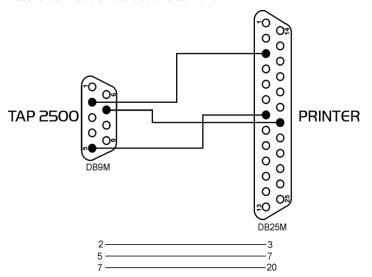
## **Section totals**

Canno.	icii y s	sections	n onn		310312	.000 3	.09.2008		Tap system
VAT-grp.		VAT PrGrp.1	Sum PrGrp.1	VAT PrGrp.2	Sum PrGrp.2	VAT PrFree	Summe PrFrei	VAT total :	Sum total
Spiritus	1	kr 304,20	kr 1.521,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 304,20	kr 1.521,0
MWStGr	25%	kr 304,20	kr 1.521,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 304,20	kr 1.521,00
MWStGr	%	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00
MWStGr	%	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00
MWStGr	%	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 0,00
Sums:		kr 304,20	kr	kr 0,00	kr 0,00	kr 0,00	kr 0,00	kr 304,20	kr



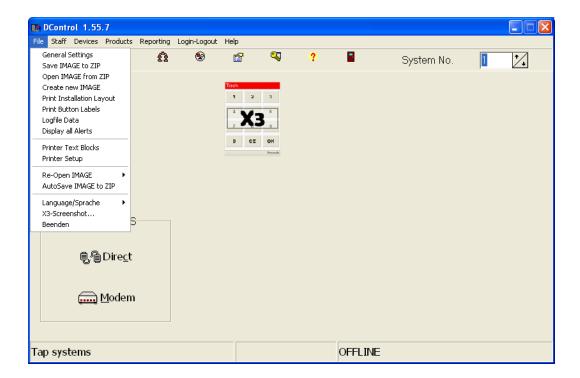
# **Connecting a Printer:**

Please ensure to have a cable connection as described here:

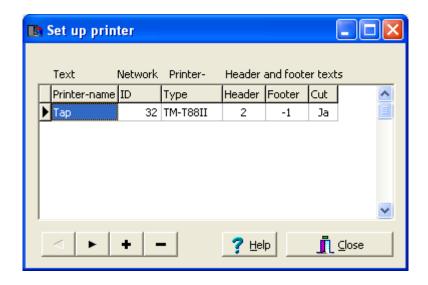




## Click "file".



# Click "Printer Setup".





Enter a printer name under" Printer-name".

In the "ID" box, enter "32", being the network number of TAP2500, which you establish connection to.

TAP Systems recommends to use any type of receipt printer. The example below describes a printer by "Orient" (Type BTC-2002CP11), for which the number TM-T8811 is entered into the box under "Type".

Under "Kopf" we enter 2 as an example, indicating that the text of the **header** on a printout has box no.2 as address, when a text is entered in "**Printer text**".

Under "Fuss" we enter 1 as an example, indicating that the text of the footer has box no 1, when a text is entered for the footer of the printout.

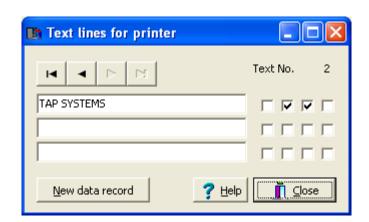
In "Schneiden" we enter YES, if the ticket/printout is to be cut and NO if it is to remain attached to the printer.

Click Close

Now the printer texts can be written

Click "file".

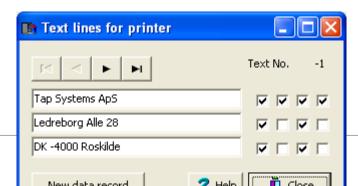
Click "Printer text".



This shows the second box (Kopf) in which the header text is written.

By ticking the boxes on the right, text sizes are set.

Write a text and click on an arrow to move to window/box no. 1.





Type the Header Text for the ticket / printout and remember to adjust printing sizes as required.

Click Close

Finally, set the printer to Com-port 1.

Click "X3".

Scroll down to "COM 1". Click the arrow and select "Drucker" (German for "Printer") by clicking it.

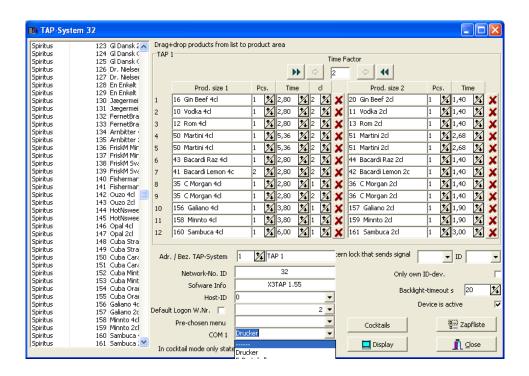
Click Close

Your printer is set up.

#### **Connecting to POS:**

Please first make sure to use the correct type of cable (depending on POS brand & protocol used).

As a rule, the same cable that connects to a PC can be used. Click "X3".





Scroll down to COM 1 and click the arrow.

Select for example Cascade by clicking it.

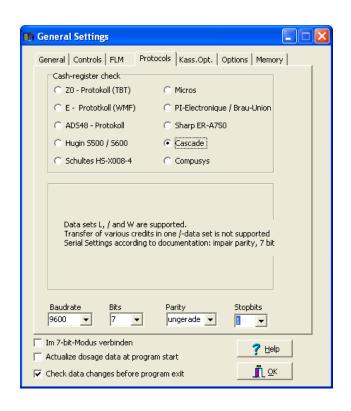
Click Close

You have now selected a COM port.

Click "file".

Click "General settings"

Click the "Protocol label".



Select "Cascade".

All values in "Baudrate" – "Bits" – "Parity" & "Stopbits" are to be set by the POS partner who installs the cash register..

Click OK



#### Tap 2500 now connects to POS.

A more specific set up guide for Vectron has been attached to this manual. (next 5 pages).

If you choose to connect TAP2500 to a POS device, this document is to help you with settings.

First, make sure to set DIP-Switch number 8 in TAP2500 to "ON". Restart the unit so the setting will be recognized.

If any other dispensing equipment is connected on the same "loop", on ONE of the devices the DIP-Switch no.8 has to be "ON" and thus function as a Router (also called Multiplexer) for the other dispensing devices.

Settings for VECTRON:

On the POS, enter/start protocol No. 10.

In the dialog box in TAP2500 Software / File /General Settings / protocols select E-protocol. (fig.1)

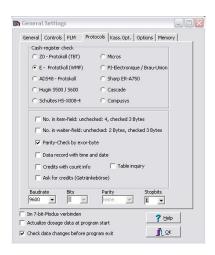


fig.1

It is advised to activate the "check Parity" function. Other than that, default settings are valid.



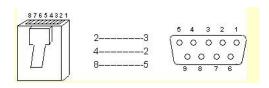


Fig. 2

#### **IMPORTANT**

Several connection cables may exist.

The configuration shown ought to result in flawless connections.

#### $The \ E\text{-}Protocol\ (WMF\text{-}protocol)$

In this mode, the dispensing equipment connected to POS, simulates the ISB-Box. (WMF-product)

So it operates as a concentrator for all dispensing units in the CAN-Bus loop. The setting options of the ISB-Box are replaced by check-boxes.

If "Table request" is activated, the dispensing device will wait for a confirmation by the E-POS after entering the table number!

#### The following commands are supported:

If not described differently, the following settings apply

Waiter-Id with 3 Byte

No Parity check

Record without time or date

Credit quantity activated

Table request not activated

Product Line: TAP-M200 Version: TAP-01.01

Rewritten 2008-05-30

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#### 1. Physical interface

Connector: Male DB-9 (sub D)

Pin3 = RxDPin2 = TxD

Pin5 = GND



Transmission: RS232 – Serial asynchronous

Data Format: 8 data bits(ASCII codes), no parity, 1 stop bit, 9600,4800 or 2400 bauds

2 Dataflow

#### 2.1 Data Communication from POS to TAP2500

2.1.1 Polling TAP2500 for Data

Data Length 1 character (ASCII)

Character E

Explanation With this dataset the POS polls TAP2500 in order to receive new information

2.1.2 Error in Received Data

Data Length 1 character (ASCII)

Data Set F

Explanation The data received is in error

2.1.3 Data Properly Received

Data Length 1 character (ASCII)

Data Set R

Explanation With this dataset the POS acknowledges proper receipt of data

2.1.4 Debit Operator Release

Data Length 4 character (ASCII)

Data Set Axxx

Explanation Whereby xxx indicates the operator number. Normally every time the POS

terminal is powered on, the POS application will transmit one data set for all **DEBIT** operator (as programmed in the POS application) numbers to TAP2500,

after it finishes locking all operators).

Example: 5 operators are defined in the POS database. After the system unit is

powered up the following data sequence is transmitted to TAP2500

POS		TAP250
A001		
		R
A002		
		R
A003		
		R
A004		
		R
A005		
	П	R

2.1.5 General Operator Lock

Data Length 4 character (ASCII)

Data Set Bxxx

Explanation Whereby xxx indicates the operator number. Normally every time the POS

terminal is powered on, the POS application will transmit this dataset lock all

available operators on the TAP2500 side.

Example:

POS	TAP2500
B001	
	R
B002	
	R
B003	
	R

	B063		
			R
2.1.6 Reset all	Credits		
	Data Length	4 character	(ASCII)
	Data Set	C000	
	Explanation	Will clear a TAP250	ll outstanding credits of all operators and reset the daily report on
	Example:		
	POS		TAP2500
	C000		
			R
2.1.7 Credits			
2.1.7.1 Menu I	tem Credit		
	Data Length	5 character	(ASCII)
	Data Set	Kxxxx	
	Explanation	Whereby xx	xx indicates the menu item number. Every time a TAP credit
		operator	ings a TAP2500 defined menu item this dataset will be transmitted for
		every me TAP2500	nu item to the TAP2500 to allow pouring of the corresponding item on the system.
	Example: Menu	Item 1 is posted	on the POS
	POS		TAP2500
	K0001		
			R
2.1.7.2 Multi N	Ienu Item Credit		
	Data Length	9 character	(ASCII)
	Data Set	Kxxxxyyyy	
	Explanation	two or more	xx indicates the number of menu items and yyyy the menu item number. Every time an operator ring of the same TAP2500 defined menu item this dataset will be transmitted for every menu item to allow pouring of the corresponding item on the TAP2500 system.
	Example: Menu		5 times on the POS
	POS	•	TAP2500
	K00050001		
			R
2.1.7.3 Void M	enu Item Credit		
	Data Length	5 character	(ASCII)
	Data Set	Sxxxx	
	Explanation	Whereby xx send to TAI	xx indicates the menu item number. In case a rung up menu item is voided on the POS this dataset in 2500.
	Example: Menu	Item 1 is voided	on the POS
	POS		TAP2500
	S0001		
			R
2.1.7.4 Void M	lulti Menu Item Cre		
	Data Length	9 character	(ASCII)
	Data Set	Sxxxxyyyy	
	Explanation	-	xx indicates the number of menu items and yyyy the menu item. In
			o or more of the same rung up menu item is voided on the POS this
			s send to TAP2500.
	Example: Menu	Item 1 is voided	
	POS	_	TAP2500
	S00050001		
			R

### 2.1.7.5 Menu Item Credit by Operator



Data Length 8 character (ASCII) Data Set Qxxxyyyy Explanation Whereby the xxx indicates the operator number and yyyy the menu item number. Example: Operator 1 posts Menu Item 2 on the POS POS **TAP2500** Q0010002 R 2.1.7.6 Multi Menu Item Credit by Operator Data Length 12 character (ASCII) Data Set Qxxxxyyyzzzz Whereby the xxxx indicates the quantity of menu items, yyy the operator Explanation number and zzzz the menu item number. Example: Operator 1 posts 5 times Menu Item 2 on the POS POS **TAP2500** Q00050010002 R 2.1.7.7 VOID Menu Item Credit by Operator Data Length 8 character (ASCII) Data Set qxxxyyyy Explanation Whereby the xxx indicates the operator number and yyyy the menu item number. Example: Operator 1 voids Menu Item 2 on the POS POS **TAP2500** q0010002 R 2.1.7.8 VOID Multi Menu Item Credit by Operator Data Length 12 character (ASCII) Data Set qxxxxyyyzzzz Explanation Whereby the xxxx indicates the quantity of menu items, yyy the operator number and zzzz the menu item number. Example: Operator 1 voids 5 times Menu Item 2 on the POS POS **TAP2500** q00050010002 R 2.2 Data Communication from TAP2500 to POS **2.2.1 Debits** 9 character (ASCII) Data Length xxyyyyzzz Data Set Explanation Whereby the xx indicates the operator number, yyyy the menu item number and zzz the table number. Please note that debit data sets are always read twice. Example: Operator 1 pours menu item 2 on TAP2500 for table 5  $\,$ POS **TAP2500** Е 010002005 E 010002005 R 2.2.2 No Data to Transfer

Data Length

9 character (ASCII)

63



	Data Set	000000000		
	Explanation		dy for transmission from TAP2500, this dataset will be send or data transmission ("E" request from POS).	
	Example:			
	POS		TAP2500	
	E			
			00000000	
	R			
2.2.3 VOID reject				
	Data Length	1 character (ASCI		
	Data Set	f		
	Explanation		ned to the POS in case a void can not be validated (i.e. the d has already been poured)	
	Example: Operator	1 tries to void item (		
	POS		TAP2500	
	q0010005		111 2000	
	40010003		f	
			1	
2.2.4 VOID not po				
	Data Length	1-n character(s) (A	ASCII)	
	Data Set t			
	Explanation	This dataset is return	med to the POS in case void is not possible.	
	Example: Operator	1 tries to void item (	0005	
	POS		TAP2500	
	q0010005			
			t	
	Operator 1 tries to void two items 0005			
	POS	TAP2500		
	q00020010005 🗆			
			tt	
2.2.5 Error in Reco	eived Data			
2,2,0 Biror in 1000	Data Length	1 character (ASCII)		
	Data Set	F		
	Explanation		rned to the POS in case TAP2500 receives a non defined	
	2.1p.m.m.com	dataset from the POS. Normally the POS will send this message three times in		
		total.	,	
	Example:			
	POS		TAP2500	
	z11z0010005			
			F	
	z11z0010005			
			F	
	z11z0010005			
			F	
2.2.6 Data Properly Received				
	Data Length	1 character (ASCII)		
	Data Set	R		
	Explanation	With this dataset th	e BCS acknowledges proper receipt of data	
2.2.7 Multiple "D"	and "f" after VOI	D multinle menu ite	em credit	
uupic IX	101	pic menu m		

Data Length

2-n characters (ASCII)



Data Set Variable: RRRff

Explanation In case more voids are entered on the POS than items available in TAP2500, this will return as many "R" values

in the dataset as were

successfully voided and as many "f" values for unsuccessful voids (i.e. items not available)

Example: 3 menu items 0005 is available. The operator voids four menu items 5.

POS	TAP2500
S00040005	
	RRRf

#### 3 Notes

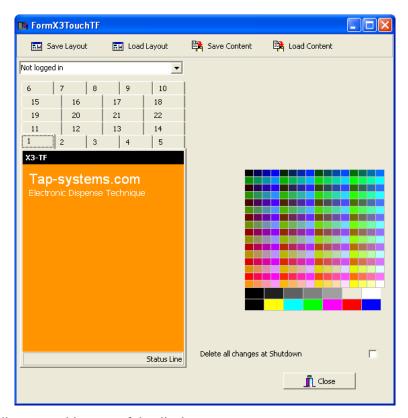
Please note that the table number from TAP2500 is fixed to a pre defined value between 0 and 99. Not all POS's accept table number 0 (i. e. use 1 to 99).

Operater number from TAP2500 is fixed to a pre defined value, if a waiter key is not used.

### **Display:**

To change the texts and layouts on the touch screen of TAP2500 enter the "Display" menu. Click "X3".

#### Click Display



Use this window to edit texts and layouts of the display.

Mark the area with your curser to pick a color from the choice panel on the right and double click texts to translate them. (A translation box appears when double clicking text areas).



All numbered pages can be marked and edited.

Please load and/or save changes in both content and design using the four buttons on the top of this page.

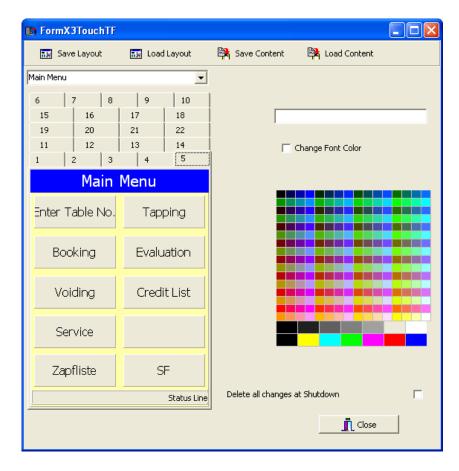
Open e.g. menu page 5

Renaming buttons and editing layout

Choose for example: "Table Number"

In the textbox to the right you can enter a new text.

As long as "Table Number" is active, you can change colors of texts as well as the entire button by pacing your curser in them and choose a new color from the choice pad to the right.



All active areas like frames, lines and buttons can be changed as described above.



After editing, plse "save content" and "save layout".

You can also "load" Layout as well as Content the were previously saved in any accessible location Click Schliessen to exit.

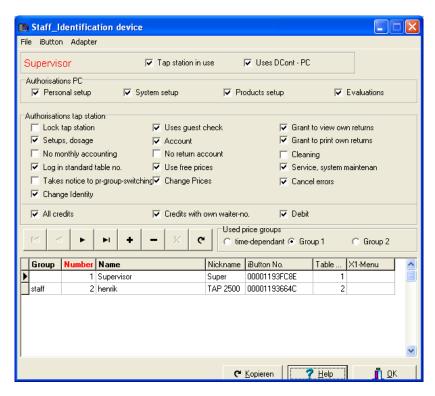
## **Waiter Keys:**

The first time TAP2500 is used, a waiter key is inserted in the slot on the front of the unit. On the bottom of the screen, a code of digits is displayed, which is to be used by the system administrator. Please note this code as it will be needed later.

If other users / waiters are to be working with keys to log on to the system, mark the keys pr user, insert them into the slot and note all codes for later registration.

#### Click "Staff".

A window appears which is used to allocate individual authorizations for all keys in use.



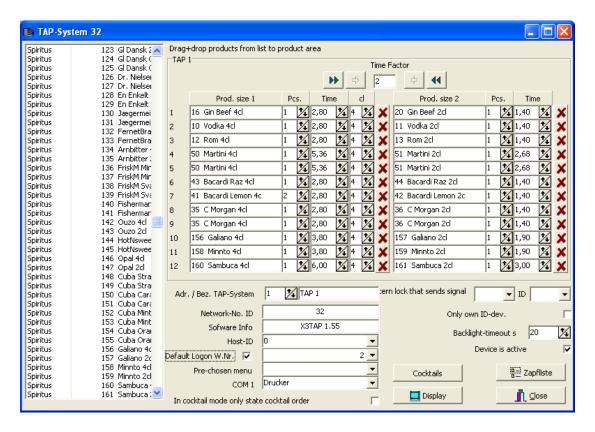
As No. 1, set the Administrator of the system, now registered as "Supervisor" with the abbreviation "Super" and waiter key no. **00001193FC8E.** The administrator ought to have Master Authorization, ticking ALL boxes in this window.

In the same way, authorization is given to all staff members who are to operate the system with a waiter key.



If the administrator is the only person to have access with a key, this is the only authorization (setting) required.

If you wish to operate TAP2500 without a waiter key inserted in the slot, you can disable this function by Clicking "X3" and tick box "Default Logon W.Nr.".



Click Close



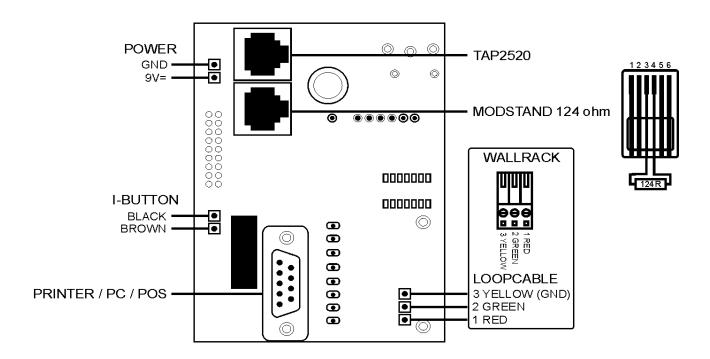
## Connect Tap 2520 to Tap 2500:

Use a 8 core modular cable (below) for this connection.



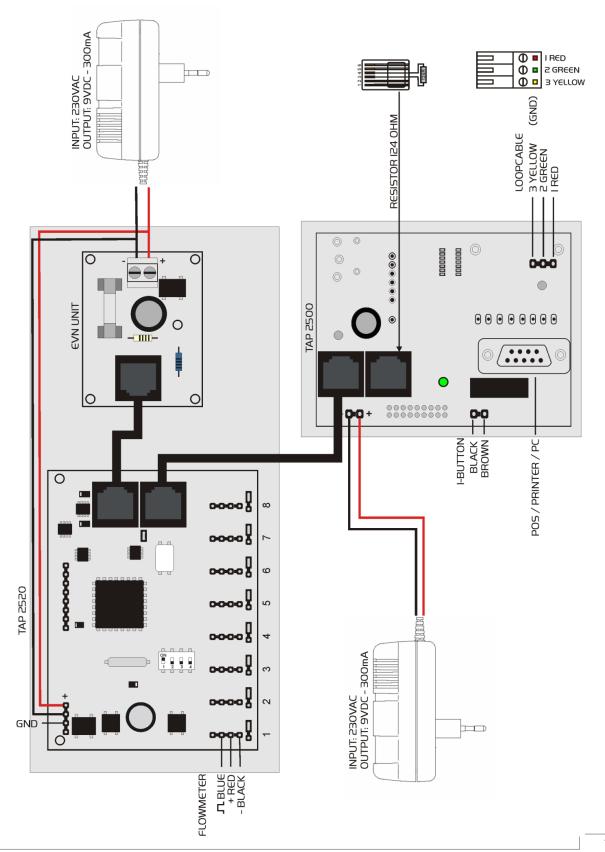
Connect an 8 pole modular connector with a 124  $\Omega$  resistor.

The resistor is to be placed between pin 3 and pin 4.



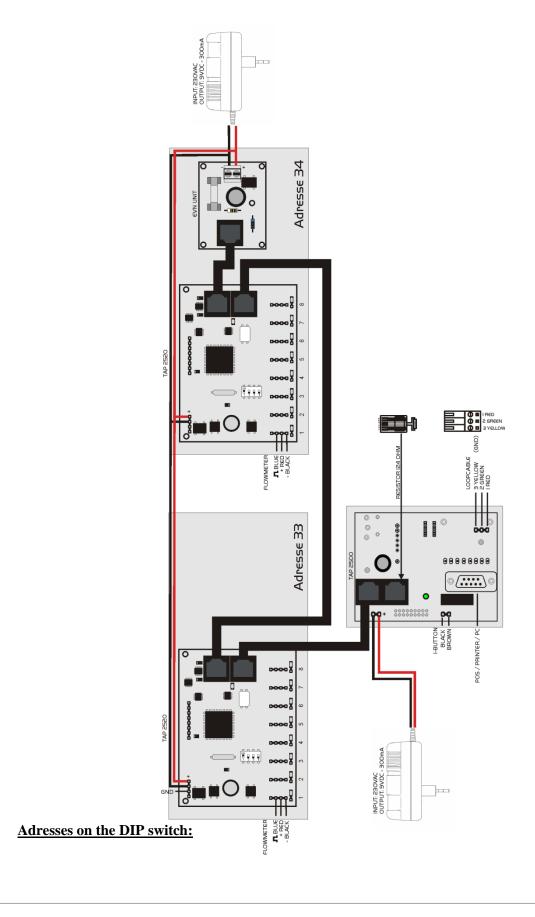


# Diagram of Tap 2520 - Tap 2500:





# **Multiple Tap 2520 units connected:**



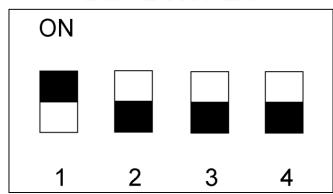


On each Tap 2520 the address is to be set first. The first unit gets no. 33. The next gets 34 and so forth – until all units have been given an address.

DIP Switches are used to give these addresses – as shown below:

# **DIP SWITCH**

# Address 33



Address	DIP 1	DIP 2	DIP 3	DIP 4
33	ON	OFF	OFF	OFF
34	OFF	ON	OFF	OFF
35	ON	ON	OFF	OFF
36	OFF	OFF	ON	OFF
37	ON	OFF	ON	OFF
38	OFF	ON	ON	OFF
39	ON	ON	ON	OFF
40	OFF	OFF	OFF	ON
41	ON	OFF	OFF	ON
42	OFF	ON	OFF	ON
43	ON	ON	OFF	ON
44	OFF	OFF	ON	ON
45	ON	OFF	ON	ON
46	OFF	ON	ON	ON
47	ON	ON	ON	ON

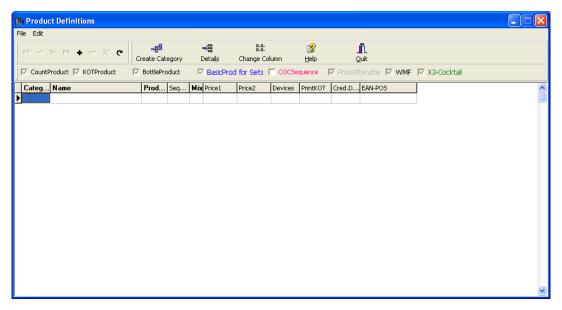
Creating a product list for Tap 2520

Open the Tap 2500 software.

Click "Products"

Click "Product list"

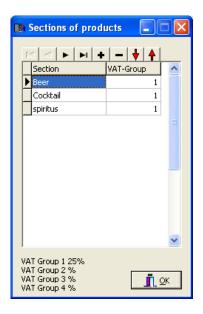




Create a category first.

#### **Create Category**

Name the category "Draught Beer" (Or other free-flow measured products)



Click. Done

Click the empty field under "Category" and enter "Draught Beer"

Click the empty field under "Name" and write the product.

Click the empty field under "Prod" and write 500.

Click the empty field under "Price 1" and write the price.

Click the empty field under "Price 2" and write the price.

Click "+" on the toolbar and a new line appears.



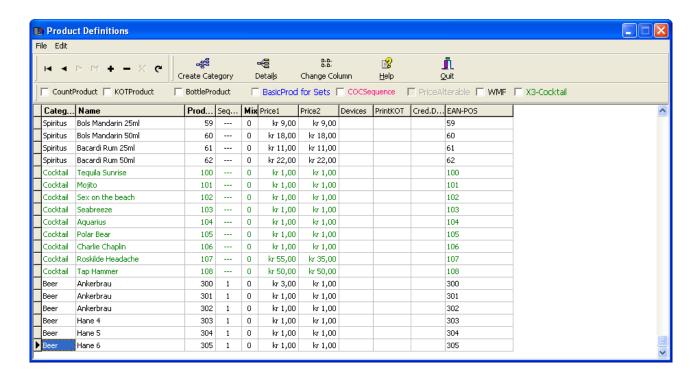
Click the empty field under "Name" and write the product.

Click the empty field under "Prod" and write 501.

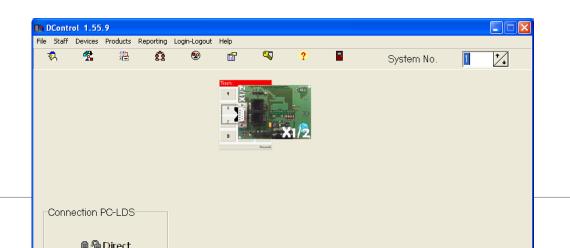
Click the empty field under "Price 1" and write the price.

Click the empty field under "Price 2" and write the price.

Continue like this until all draught products have been entered.



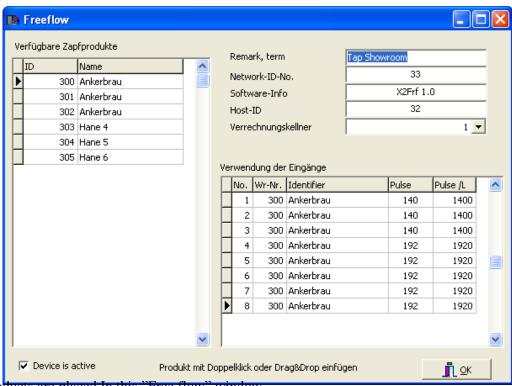
#### Placing products in Tap 2520:



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Click the green "Beer card X1/2".



All beer products are placed In this "Free flow" window.

Drag and drop products of up to 8 beer lines.

In the [Imp/L] box – the pulse pr. Liter value of the flow meters is entered. (Tap flow = 1600 Puls pr. liter.)

In the Impulse box, select accuracy of registration of pulses.. Rightclick the box and select 0,1 L.

The digit **160** appears. The system is set to count deciliters.

In "Name", describe the location of the beer counter, (f.eks. Big Bar or Little Bar).

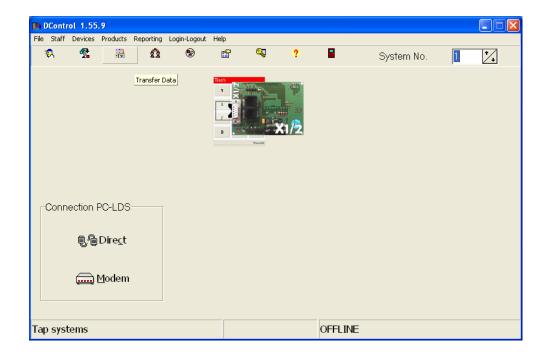
In "Network- Nr. ID" you can see the address of the beer card (as set with the DIP Switches).

In "Software-Info" you can read the software version of the beer card.

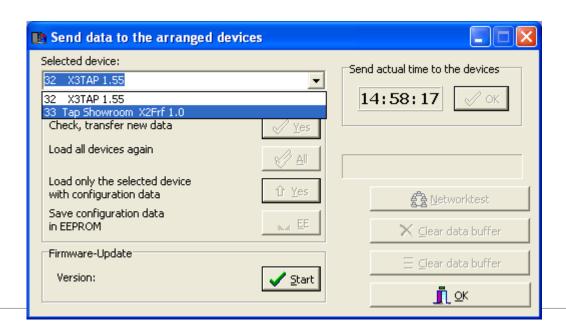
In "Kellner" you can see which waiter is operating the beer card.



Close this window.



Click Transfer Data

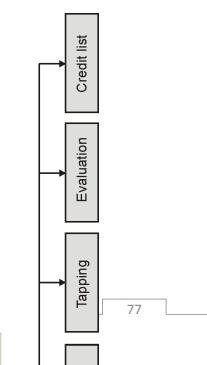




Select a device and transfer new data to Tap 2500 every time you create, add r change anything in Tap 2520 units. Click  $\overline{OK}$  after transfers.

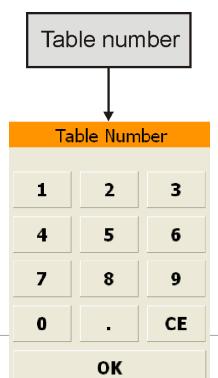
Tap 2520 units are now ready for use.

Tap 2500 Touch screen diagram.





# **Table Number**



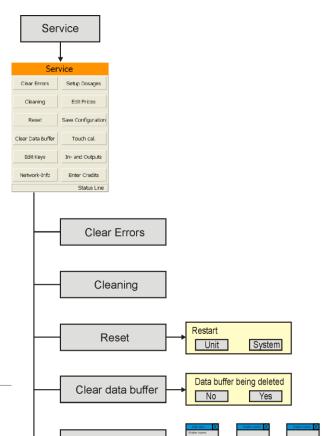


# **Products**





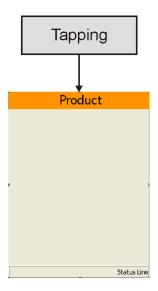
# **Service**



80

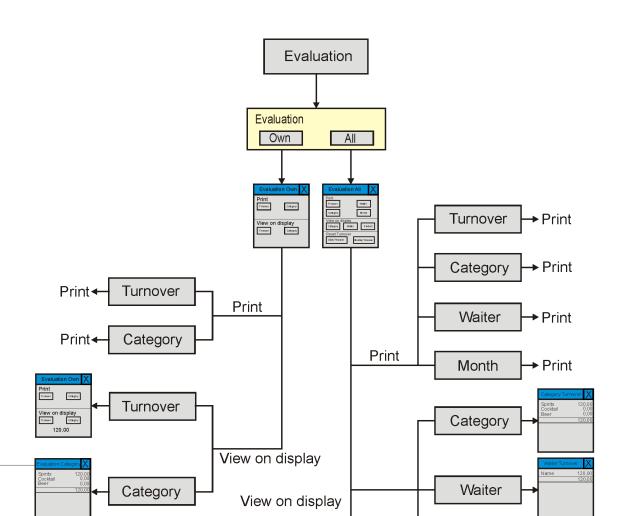


# **Dispensing**



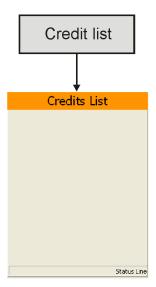


## **Evaluation**





# **Credit List**





## Recommended sizes in cl.

PRODUKT	2cl	2,5cl	3cl	4cl	5cl	6cl
ABSOLUT MANDARIN	1,50	1,87	2,25	3,00	3,75	4,50
ARNBITTER	1,70	2,14	2,55	3,40	4,25	5,10
BACARDI	1,50	1,87	2,25	3,00	3,75	4,50
BACARDI 8 YEAR	1,50	1,87	2,25	3,00	3,75	4,50
BACARDI GOLDEN	1,50	1,87	2,25	3,00	3,75	4,50
BACARDI LEMON	1,50	1,87	2,25	3,00	3,75	4,50
BACARDI RAZZ	1,50	1,87	2,25	3,00	3,75	4,50
BAILEY	3,15	3,94	4,72	6,30	7,88	9,44
BALLENTINES	1,50	1,87	2,25	3,00	3,75	4,50
BEEFEATER	1,50	1,87	2,25	3,00	3,75	4,50
BLUE CURACAO	1,65	2,06	2,47	3,30	4,12	4,94
BLÅ AALBORG	1,50	1,87	2,25	3,00	3,75	4,50
BOLS BANAN	1,60	2,00	2,40	3,20	4,00	4,80
BOLS BLUE	1,60	2,00	2,40	3,20	4,00	4,80
BOLS COCOS	1,60	2,00	2,40	3,20	4,00	4,80
BOLS GIN	1,50	1,87	2,25	3,00	3,75	4,50
BOMBAY GIN	1,50	1,87	2,25	3,00	3,75	4,50
BOONEKAMP	1,70	2,14	2,55	3,40	4,25	5,10
CACHACA	1,50	1,87	2,25	3,00	3,75	4,50
CALVADOS	1,50	1,87	2,25	3,00	3,75	4,50
CAMPARI	1,70	2,14	2,55	3,40	4,25	5,10
CANADIAN CLUB	1,50	1,87	2,25	3,00	3,75	4,50
CAPTAIN MORGAN	1,50	1,87	2,25	3,00	3,75	4,50
CHIVAS REGAL	1,50	1,87	2,25	3,00	3,75	4,50
COINTREAU	1,70	2,14	2,55	3,40	4,25	5,10
COURVOISIER	1,50	1,87	2,25	3,00	3,75	4,50
CREME DE BANANAS	1,65	2,06	2,47	3,30	4,12	4,94
CUBA APRICOT	1,70	2,14	2,55	3,40	4,25	5,10
CUBA CARAMEL	2,50	3,13	3,75	5,00	6,25	$7,50^{-}$
CUBA CURRANT	1,50	1,87	2,25	3,00	3,75	4,50
CUBA MINT	1,70	2,14	2,55	3,40	4,25	5,10



## Recommended sizes in cl.

PRODUKT	2cl	2,5cl	3cl	4cl	5cl	6cl
GORDONS GIN	1,50	1,87	2,25	3,00	3,75	4,50
GRAND MARNIER	1,70	2,14	2,55	3,40	4,25	5,10
GRENADINE	2,00	2,50	3,00	4,00	5,00	6,00
GREY SHOT	1,70	2,14	2,55	3,40	4,25	5,10
HAVANA CLUB	1,50	1,87	2,25	3,00	3,75	4,50
HENNESSY	1,50	1,87	2,25	3,00	3,75	4,50
J & B	1,50	1,87	2,25	3,00	3,75	4,50
JABURN	1,50	1,87	2,25	3,00	3,75	4,50
JACK DANIELS	1,50	1,87	2,25	3,00	3,75	4,50
JAMESON	1,50	1,87	2,25	3,00	3,75	4,50
JIM BEAM	1,50	1,87	2,25	3,00	3,75	4,50
JOHNNY WALKER	1,50	1,87	2,25	3,00	3,75	4,50
JOSE CUERVO	1,50	1,87	2,25	3,00	3,75	4,50
JÆGERMEISTER	1,70	2,14	2,55	3,40	4,25	5,10
KAHLUA	2,20	2,75	3,30	4,40	5,50	6,60
KILBEGGAN	1,50	1,87	2,25	3,00	3,75	4,50
KING GEORGE	1,50	1,87	2,25	3,00	3,75	4,50
LAPHROAIG	1,50	1,87	2,25	3,00	3,75	4,50
MAC ALLAN	1,50	1,87	2,25	3,00	3,75	4,50
MALIBU	1,70	2,14	2,55	3,40	4,25	5,10
MARTELL	1,50	1,87	2,25	3,00	3,75	4,50
NAVY SHOT	1,50	1,87	2,25	3,00	3,75	4,50
NORDCAP VODKA	1,50	1,87	2,25	3,00	3,75	4,50
NORDSØ	1,70	2,14	2,55	3,40	4,25	5,10
OTARD	1,50	1,87	2,25	3,00	3,75	4,50
OUZO	1,60	2,00	2,40	3,20	4,00	4,80
PERNOD	1,60	2,00	2,40	3,20	4,00	4,80
PISANG AMBON	1,60	2,00	2,40	3,20	4,00	4,80
PORT WOOD	1,50	1,87	2,25	3,00	3,75	4,50
RATZEPUTZ	1,65	2,06	2,47	3,30	4,12	4,94
REMY MARTIN	1,50	1,87	2,25	3,00	3,75	4,50 _
ROSE APRICOT	1,60	2,00	2,40	3,20	4,00	4,80
ROSE LIME	1,60	2,00	2,40	3,20	4,00	4,80

2.06 2.47 3.30 4.12 4.94



#### Recommended sizes in oz.

PRODUKT	½ <b>OZ</b>	1 oz	1½ oz	2 oz	2½ oz	3 oz
ABSOLUT MANDARIN	1,06	2,13	3,19	4,26	5,32	6,38
ARNBITTER	1,20	2,41	3,61	4,82	6,02	7,23
BACARDI	1,06	2,13	3,19	4,26	5,32	6,38
BACARDI 8 YEAR	1,06	2,13	3,19	4,26	5,32	6,38
BACARDI GOLDEN	1,06	2,13	3,19	4,26	5,32	6,38
BACARDI LEMON	1,06	2,13	3, 19	4,26	5,32	6,38
BACARDI RAZZ	1,06	2,13	3,19	4,26	5,32	6,38
BAILEY	2,21	4,46	6,67	8,92	11,13	13,34
BALLENTINES	1,06	2,13	3, 19	4,26	5,32	6,38
BEEFEATER	1,06	2,13	3,19	4,26	5,32	6,38
BLUE CURACAO	1,17	2,34	3,51	4,68	5,85	7,02
BLÅ AALBORG	1,06	2,13	3,19	4,26	5,32	6,38
BOLS BANAN	1,13	2,27	3,40	4,54	5,67	6,80
BOLS BLUE	1,13	2,27	3,40	4,54	5,67	6,80
BOLS COCOS	1,13	2,27	3,40	4,54	5,67	6,80
BOLS GIN	1,06	2,13	3, 19	4,26	5,32	6,38
BOMBAY GIN	1,06	2,13	3,19	4,26	5,32	6,38
BOONEKAMP	1,20	2,41	3,61	4,82	6,02	7,23
CACHACA	1,06	2,13	3,19	4,26	5,32	6,38
CALVADOS	1,06	2,13	3, 19	4,26	5,32	6,38
CAMPARI	1,20	2,41	3,61	4,82	6,02	7,23
CANADIAN CLUB	1,06	2,13	3,19	4,26	5,32	6,38
CAPTAIN MORGAN	1,06	2,13	3,19	4,26	5,32	6,38
CHIVAS REGAL	1,06	2,13	3, 19	4,26	5,32	6,38
COINTREAU	1,20	2,41	3,61	4,82	6,02	7,23
COURVOISIER	1,06	2,13	3,19	4,26	5,32	6,38
CREME DE BANANAS	1,17	2,34	3,51	4,68	5,85	7,02
CUBA APRICOT	1,20	2,41	3,61	4,82	6,02	7,23
CUBA CARAMEL	1,77	3,55	5,32	7,10	8,87	10,64
CUBA CURRANT	1,06	2,13	3,19	4,26	5,32	6,38
CUBA MINT	1,20	2,41	3,61	4,82	6,02	7,23
CUBA ORANGE	1,20	2,41	3,61	4,82	6,02	7,23
CUBA STRAWBERRY	1,20	2,41	3,61	4,82	6,02	7,23
CUBA VODKA	1,06	2,13	3,19	4,26	5,32	6,38
– DANZIGER	1,20	2,41	3,61	4,82	6,02	7,23 -
DANZKA	1,06	2,13	3,19	4,26	5,32	6,38
DOUBLE WOOD	1,06	2,13	3,19	4,26	5,32	6,38
DR. NIELSEN	1.17	2.34	3.51	4.68	5.85	7.02



#### Recommended sizes in oz.

SKYY VODKA

PRODUKT	¹⁄₂ <b>oz</b>	1 oz	1½ oz	2 oz	2½ oz	3 oz
GORDONS GIN	1,06	2,13	3,19	4,26	5,32	6,38
GRAND MARNIER	1,20	2,41	3,61	4,82	6,02	7,23
GRENADINE	1,42	2,84	4,26	5,68	7,10	8,52
GREY SHOT	1,20	2,41	3,61	4,82	6,02	7,23
HAVANA CLUB	1,06	2,13	3,19	4,26	5,32	6,38
HENNESSY	1,06	2,13	3,19	4,26	5,32	6,38
J & B	1,06	2,13	3,19	4,26	5,32	6,38
JABURN	1,06	2,13	3,19	4,26	5,32	6,38
JACK DANIELS	1,06	2,13	3,19	4,26	5,32	6,38
JAMESON	1,06	2,13	3,19	4,26	5,32	6,38
JIM BEAM	1,06	2,13	3,19	4,26	5,32	6,38
JOHNNY WALKER	1,06	2,13	3,19	4,26	5,32	6,38
JOSE CUERVO	1,06	2,13	3,19	4,26	5,32	6,38
JÆGERMEISTER	1,20	2,41	3,61	4,82	6,02	7,23
KAHLUA	1,56	3,12	4,68	6,24	7,80	9,36
KILBEGGAN	1,06	2,13	3,19	4,26	5,32	6,38
KING GEORGE	1,06	2,13	3,19	4,26	5,32	6,38
LAPHROAIG	1,06	2,13	3,19	4,26	5,32	6,38
MAC ALLAN	1,06	2,13	3,19	4,26	5,32	6,38
MALIBU	1,20	2,41	3,61	4,82	6,02	7,23
MARTELL	1,06	2,13	3,19	4,26	5,32	6,38
NAVYSHOT	1,06	2,13	3,19	4,26	5,32	6,38
NORDCAP VODKA	1,06	2,13	3,19	4,26	5,32	6,38
NORDSØ	1,20	2,41	3,61	4,82	6,02	7,23
OTARD	1,06	2,13	3,19	4,26	5,32	6,38
OUZO	1,13	2,27	3,40	4,54	5,67	6,80
PERNOD	1,13	2,27	3,40	4,54	5,67	6,80
PISANG AMBON	1,13	2,27	3,40	4,54	5,67	6,80
PORT WOOD	1,06	2,13	3,19	4,26	5,32	6,38
RATZEPUTZ	1,17	2,34	3,51	4,68	5,85	7,02
REMY MARTIN	1,06	2,13	3,19	4,26	5,32	6,38
ROSEAPRICOT	1,13	2,27	3,40	4,54	5,67	6,80
ROSELIME	1,13	2,27	3,40	4,54	5,67	6,80
SAFARI	1,17	2,34	3,51	4,68	5,85	7,02
SAMBUCA	2,13	4,26	6,39	8,52	10,65	12,78
SEAMANS SHOT	1,06	2,13	3,19	4,26	5,32	6,38
SIERRA TEQUILA	1,06	2,13	3,19	4,26	5,32	6,38
01000000	4 0 0	0.40	0.40	4 0 0		

1,06

2,13

3,19

4,26

5,32

6,38



#### **Troubleshooting:**

#### Error

LED 1 off and LED 2 off



Green light in Both LEDs but no dispense



Green light in LED 1 & red light in LED 2



#### **Solution:**

No power to the rack.

Rack PCB can be burnt.

Check if power cable is connected properly.

If 32VAC has been connected to "Ground" (GND), the rack PCB has been damaged.

Check if 2 racks have been given the same address.

Check if all levers click correctly (must make clicking sound)

Check if waiter key is inserted (Remove if not in use).

No contact with TAP2500. Check if unit is "On".

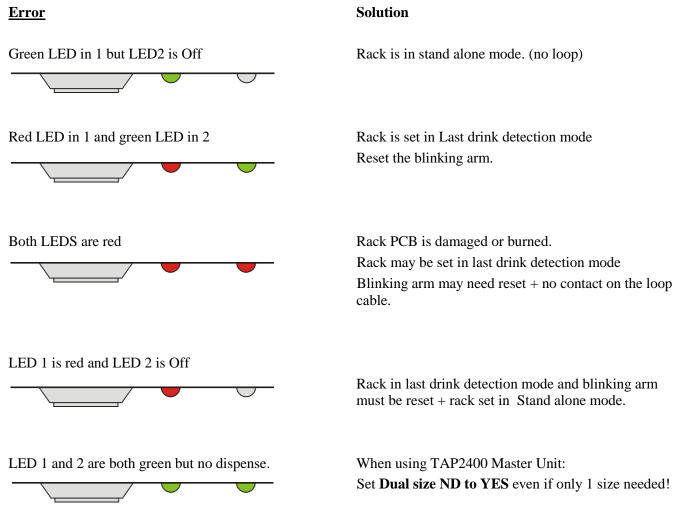
Check loop connection!

Ensure there is a resistor at both loop ends. Check for short circuits on either power- or loop cables.

Check if Waiter Key is missing... & eventually apply one..



#### **Troubleshooting:**



Double lines are printed on the Place list- Set Size 2 to **Not Used** on Tap 2400 Report on Tap 2400 when set for 1 size.



#### **Cables & Connectors:**

#### **Cables:**

Loop cable between Tap 2500 and racks: 6 conductor flat modular cord Loop cable between Tap 2500 and Tap 2520: 8 conductor flat modular cord

PC Cable: Liycy 5x 0,14 mm.

#### **Connectors:**

Loopcable between Tap 2500 and racks: RJ12 Plug 6P6C Loopcable between Tap 2500 and Tap 2520: RJ45 Plug 8P8C PC cable: Weidmüller BL 3.5/3 SN OR + Sub D 9 way female

#### **Resistor:**

Resistor in both LOOP ends: MRS25 1%  $124\Omega$ 

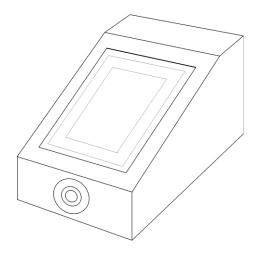


## **Size and weight:**

#### **Tap 2500:**

Length: 150 mm.
Width: 113 mm.
Height: 90 mm.
Weight: 0,630 Kg.

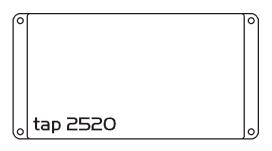
Power: 9V DC 500mA



### **Tap 2520:**

Length: 215mm.
Width: 110 mm.
Height: 60 mm.
Weight 0,360 Kg

Power: 9V DC 500mA



# **Rack Power supplies:**

Length: 65 mm.
Width: 50 mm.
Height: 42 mm.
Weight: 0,230 Kg.

Input: 230VAC 50Hz 4,5W Output: 9V DC 500mA

