
P C - T O P P M A N U A L

The Machine Terminal (DOS)

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The Machine Terminal Program (DOS)

By clicking on "Click for Machine Terminal Program" (on top to the left), the following screen appears:

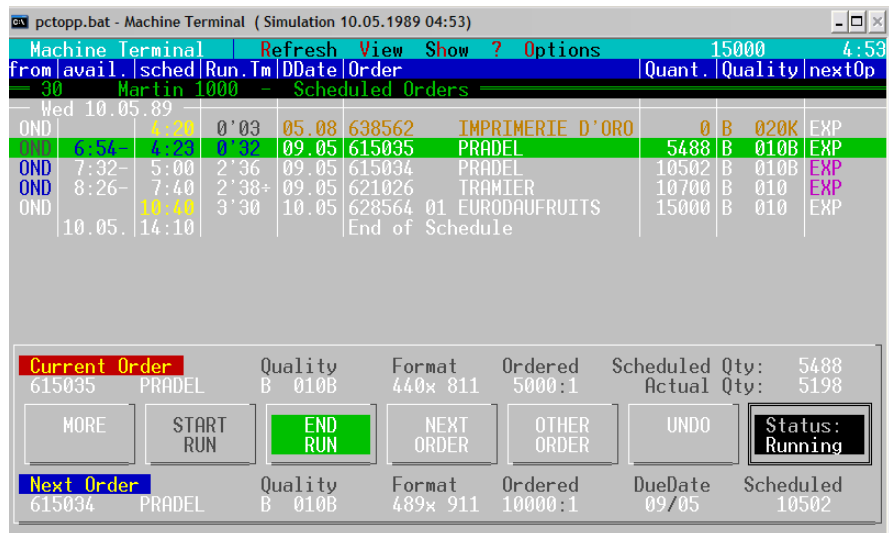


Fig. 1

The Screen

Located in the upper part of the screen you can see a window containing the conversion schedule, at the bottom a pushbutton menu with the different functions. (Here the green Order Menu including START RUN and END RUN as well as job options like NEXT ORDER, OTHER ORDER etc. The menu functions will be described below.)

In our example above, the machine 30 is running (indicated by the status window to the right of the pushbutton menu). Besides, the END RUN button is highlighted: built-in intelligence suggests the right next action automatically, making the terminal very easy to use.

Production History: The display shows a part of the conversion schedule containing the order number, the customer name, and the scheduled quantity to produce etc.

The machine has produced 5198 of the scheduled quantity of 5488 sheets (see counter reading to the right). In the lower part of the screen the data of the current order and the next order is displayed.

The Menus

Most of the users' input at the PC-Topp Machine Terminal is done via push button menu. With the ARROW KEYS on the keyboard the desired buttons can be selected, pressing ENTER confirms a selected button.

Using the MORE button you can switch between the different menus.

Active and inactive buttons: The active buttons are displayed in white, the inactive buttons are displayed in dark gray. In dialog windows the buttons at the bottom are black if the cursor is located in an input field. This means that you can't use the ARROW keys, ← and →, before leaving the field.

◆ **What to do if...?**

If you cannot move the cursor to the left or to the right in the pushbutton menu, it is located in an input field.

Green Menu: Order Menu

MORE	Access to the Downtime Menu		
START SETUP	Confirms that the order displayed as NEXT ORDER has already been started.	Only displayed during an order change	Setup is automatically recognized.
START RUN	Marks the end of the setup time and the beginning of production	Only displayed during setup time	The beginning of production is automatically recognized.
END RUN	Marks the end of production	Only displayed during production	The end of the run is automatically recognized.
NEXT ORDER	Selects the currently highlighted order as NEXT ORDER	Orders that are already completed can also be selected (Producing parts of an order once again).	
OTHER ORDER	Enables the selection of an order from another machine as NEXT ORDER.	Allows the access to orders of this machine that have not yet been scheduled or the access to rest quantities after an order has been stopped.	
UNDO	Allows to cancel a data input in particular situations		

Red Menu: Downtime Menu

MORE	Access to the Personnel Menu.		
DOWNTIME START	Capture of the beginning of a downtime.	Doesn't appear <i>during</i> a downtime	Only used for downtimes during setup; a downtime during production is automatically recognized.
DOWNTIME END	Capture of the end of a downtime; it is possible to modify the times of the beginning and the end of the downtime	Only appears in case of a downtime	Only used for downtimes during setup; the beginning or re-start of production is automatically recognized.
DOWNTIME CAUSE	Selection respective change of the downtime cause.	Only appears in case of a downtime	
CANCEL BREAK	Cancels a break	Only appears during a downtime	
START BREAK	Captures the beginning of a break.	Doesn't appear <i>during</i> a break.	Breaks scheduled in the timetable are recognized automatically.
END BREAK	Captures the end of a break.	Only appears during a break	Breaks scheduled in the timetable are recognized automatically.

Blue Menu: Personnel- and Shift-Menu

MORE	Access to the Order Menu (or to the Interruption Menu)		
SHIFT BEGIN	Logging in of the shift leader when production starts.	Doesn't appear <i>during</i> the shift.	Highlighted when production starts
SHIFT END	Closing of the running shift when work is finished.	Only appears after beginning of the shift.	Only necessary when there is shift end during setup or downtime; is automatically recognized when production is finished.
SHIFT CHANGE	Closes the running shift, logs in of the crew that is following immediately.	Only appears after shift begin	The end of production is automatically recognized when work is finished.
COME	Entry of the personnel number to log in at the machine		
LEAVE	Entry of the personnel number to log out		
TERMINAL OFF	Creates a status where the Machine Terminal can be switched off without danger.	For maintenance it can be used also during production (without Shift End)	



Orange Menu: Interruptions of Production

MORE	Access to the Order Menu		
BREAK DOWN	Allows the selection of a downtime cause.		Mini-Downtime resp. error if there is no input.
COFFEE BREAK	Coffee break or scheduled downtime because of maintenance.	Automatically highlighted within a scheduled break.	Break automation if there is no input.
SHIFT END	End of production because of shift end.	Automatically highlighted if the shift already lasts more than about 7-7½ hours.	
END OF ORDER	Allows the capture of the produced quantities and also the change of the order.	Automatically highlighted if the expected quantity has almost been produced.	Shift end automation if shift end is reached at the same time.
ABANDON ORDER	End of the current order, registration of the produced quantities, split orders are automatically created.		

Violet Menu: Quality Check

OTHER MENU	Access to the Order menu
QUALITY CHECK	Carrying out a quality check in dialogue. The sort of the quality check can be selected.
INTERNAL COMPLAINT	Carrying out an internal complaint by choosing the type of complaint from a list. The internal complaints are saved in the shift reports.
ENTER COMMENT	Captures a comment for the quality check.
SHIFT REPORT	Display of the shift reports (Display according to your choice with or without breaks, downtimes, personnel and quality checks).

Turquoise Menu: Display Information

OTHER MENU	Access to the order menu
SHOW ORDERS	Display of the order data (detail)
SHOW DRAWING	Display of the graph of an article (if a special batch file has been created)
FIND ORDER	Display of the order data after input of the order number
SHOW PERSONNEL	Display of the personnel data
HIDE PERSONNEL	Removes the display of personnel data. Appears after SHOW PERSONNEL has been pressed.

Usual Process of Production

Order Change

The usual order's production progress starts in the status *ORDER CHANGE*: The display *RUNNING ORDER* is empty and a blinking message prompts the operator to start the next order. The next order scheduled to be run appears on the bottom of the screen below *NEXT ORDER*.

Setup

By pressing the *START SETUP* button the next order moves one line upwards to the field *RUNNING ORDER*. The Machine Terminal switches to the status *SETUP* and - below *NEXT ORDER* - the following order appears on the screen.

- ◆ **Automation:** Referring to the first order, the setup start time corresponds with the beginning of the shift. After that, the start time corresponds with the end time of the previous order.
- ◆ **Automation:** If the *START SETUP* button has not been pressed, the Machine Terminal will automatically do it as soon as the machine starts running. The status *SETUP* is skipped and the Terminal directly switches to the status *RUNNING*.

This allows quick changes of two orders that immediately follow each other. A slight disadvantage: During the time of changing, instead of *SETUP* the status *ORDER CHG* will be displayed in the status window to the right. The Machine Terminal does not know, of course, if there is another order running instead of the scheduled one.

During the setup procedure any number of single sheets may run through the machine for adjusting - the Machine Terminal won't leave the status *SETUP*. If a certain number of sheets (a default value in the parameter setting) is immediately counted one after another, the Machine Terminal will switch to the status *RUNNING*. If production stops after the first sheet within a certain time, the Machine Terminal returns to the *SETUP* status. (You'll find more information about the exact number of sheets or seconds in the last chapter, "Parameter Settings").

Production

The *START RUN* button can be used to mark the end of setup and also the start of the actual production. Under normal circumstances, however, this button is not necessary because the transition is made automatically.

- ◆ **Automation:** Whenever the counter reading changes, the Machine Terminal automatically notices the start of production as soon as a certain number of sheets is directly counted one after the other. Afterwards the Terminal switches to the status *RUNNING*.

During production, the actual counter reading and the approximate production speed is continuously displayed. Besides, the Terminal realizes possible interruptions of production and reacts accordingly.

Following you will find some explications about the calculation of the duration time.

Duration of Production

The probable duration the Machine Terminal calculates for an order depends on two factors: The speed observed during the run, and possible interruptions.

*The program step by step adapts the starting time of the following orders as soon as it differs more than 10 minutes from the estimated end run.
(Exception: Whenever there is a gap after the end of the run, the starting time of the following orders will not change).*

Having exceeded the expected setup time, the entire duration of the order will extend in 1-minute-steps until the actual run starts.

Starting a run, the actual setup time will be compared with the estimated setup time. If the setup took less time than expected, the total duration of the order will be accordingly reduced.

During the run, the Machine Terminal continuously compares the actual average production speed with the estimated speed, calculating with increasing precision when end run will be reached. Starting production, this estimation completely relies on the estimated machine speed. During production, it's the speed observed up to now that is increasingly taken into account, so that the estimation will be more and more precise towards the end of the run.

This way a production speed extremely differing from the estimated speed in the beginning will not cause big vacillations as far as the estimated duration concerned.

Shift Start

When production starts in the morning (or after a long break) the Machine Terminal is in the status *CLOSED* after being started. The blue Shift Menu appears.

This is a good moment for the personnel to log in (by pressing the button COME). This procedure, however, can be done at any time.

The SHIFT BEGIN button opens a dialog box that asks for the name of the shift leader. Once the name is entered, the TAB key leads to the field "crew". Pressing ENTER closes the dialog box. The green Order Menu appears and work can start.

◆ **Modifications:**

In the upper part of the dialog box, the date and time of the shift begin appear - the Terminal automatically registers the current time - as well as the crew code and the shift end of the previous shift. These values might be changed, they are password-protected.

- ◆ **Automation:** Whenever a machine starts running *before* the button SHIFT BEGIN has been pressed, the dialog box automatically appears, asking for the name of the shift leader. The default shift begin is the moment the Machine Terminal has detected the first change of the counter reading.

Attention: The other automatic functions of the Machine Terminal are blocked as long as this dialog box is open.

- ◆ **Other functions:** As long as SHIFT BEGIN has not been pressed, no other button is active. Only the functions COME, LEAVE and TERMINAL OFF are at one's disposal.

Shift Change

A first, the button SHIFT CHANGE closes the running shift (as described below SHIFT END) and immediately starts the next shift.

Shift changes can be executed at any time, even if the machine is running or during a downtime.

- ◆ **What to do if?** If by mistake SHIFT CHANGE has been pressed instead of SHIFT END, the dialog box can be left with ESC.

Modification of the Sort Order

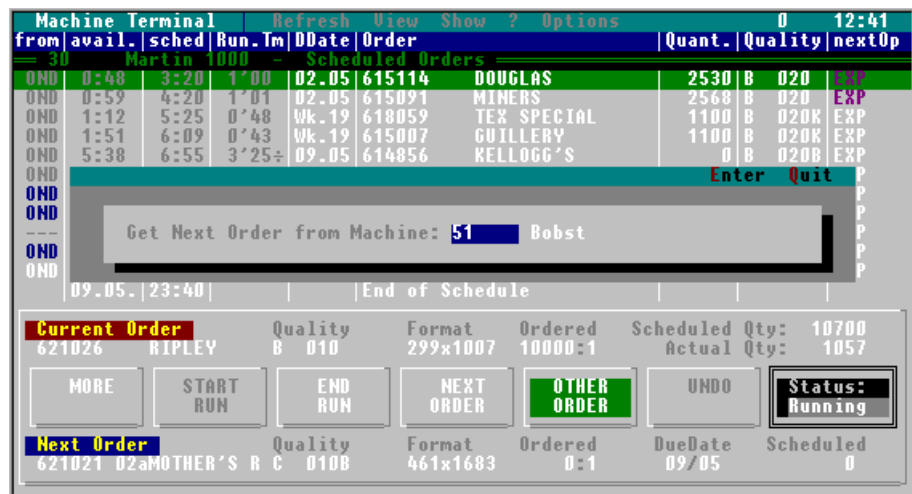


Fig.2

Pressing the button OTHER ORDER will modify the sort order: A window opens and the machine code of another machine can be entered. After that, PC-Topp displays the conversion schedule of the new machine. The desired order can be selected and integrated in the original schedule.

It is also possible to modify the sort order by marking another order than the originally scheduled one. After that press NEXT ORDER.

Personnel's Logging in

Pressing the buttons COME and LEAVE in the blue Personnel Menu allows to log in and out. A dialog box opens to enter the personnel number and name.

Interruptions of Production

"Interruption of production" covers all situations the machine doesn't run, and the normal production progress has been stopped. This term summarizes different situations such as downtimes, breaks, maintenances etc.

Downtimes

Summary of all sorts of *non-scheduled* interruptions of work like breakdowns and comparable malfunctions.

Basic Steps

Whenever a downtime occurs, the personnel has to press the DOWNTIME START button. After that, the DOWNTIME CAUSE button is highlighted. Now you can either enter a downtime cause manually or select it from a parameter list. Pressing DOWNTIME END allows to correct the downtime's start and end times afterwards.

(Whenever the DOWNTIME START button has been pressed by mistake, it can be canceled with DOWNTIME CANCEL).

Downtime during Setup

In any case, a breakdown during the setup procedure must be entered manually because the downtime can't be recognized by observing the counter reading. The buttons required for the entry: DOWNTIME BEGIN, DOWNTIME CAUSE and DOWNTIME END in the red Downtime Menu.

Downtime During the Run

A downtime during the run is automatically registered by the Machine Terminal.

- ◆ **Automation:** If the Terminal has not counted any sheet for i.e.15 seconds (depending on the parameter settings) after the last change of the counter reading, the Machine Terminal switches to the status *STOPPED*. The cause of a non-scheduled downtime can be entered with the BREAKDOWN button. Mostly, BREAKDOWN automatically is default.

Without manually entering any downtime cause, the downtime will be registered as mini-downtime (without downtime cause) when the machine starts again within for example 180 seconds (depending on the parameter settings). After this period of time, the Machine Terminal enters a default downtime cause.

- ◆ **Automation:** Whenever the machine starts again after a downtime, the Machine Terminal automatically switches to the status *RUNNING*. It is possible that not only the downtime but also the setup time will be finished when starting the machine.

Downtime without Order

As soon as the Machine Terminal is in the status *ORDER CHANGE*, it is not possible to enter a downtime.

A downtime should also be entered for lack of orders. The order scheduled next has to be started at first with the button *BEGIN SETUP*.

Whenever production starts with another order, the wrong "Running order" has manually to be finished with *BEGIN RUN* and *END RUN*. Please don't enter any produced quantity in the dialog boxes appearing afterwards. You have to split the order in question to make it available for later production.

Mini-Downtimes

A short interruption of work (for example 180 seconds, depending on the parameters), usually should not be registered as a downtime with detailed description. The Machine Terminal captures such downtimes as mini-downtimes, pointing out possible accumulations of such downtimes in the production report.

If a downtime cause manually was entered for a short downtime, it doesn't belong to the mini-downtime category any more but it is treated as downtime of a longer duration.

◆ Automation:

Input forgotten. Whenever the machine starts running after a downtime *before* a downtime cause has been entered, the Machine Terminal automatically registers a downtime cause pre-defined at the *SETTINGS*. It should have the term "Input forgotten".

Entering a Downtime Cause

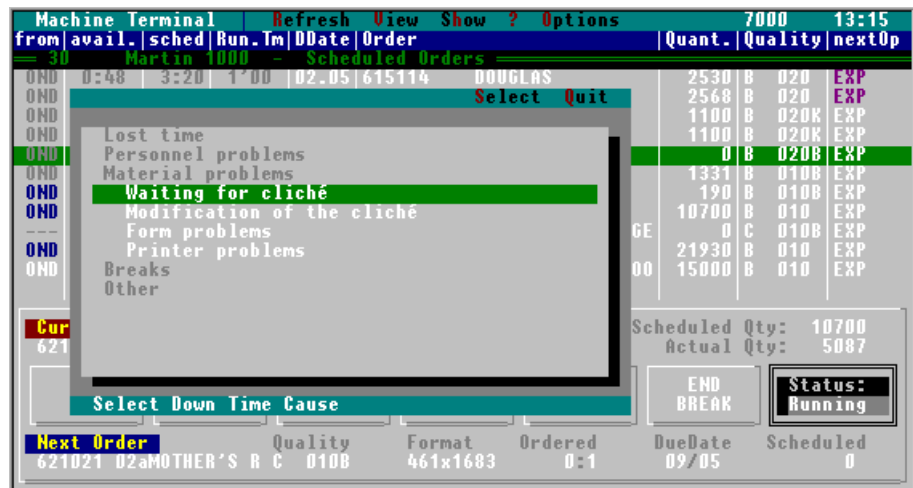


Fig. 3

As soon as possible, however, the personnel should enter a downtime cause registered in the production report and in the other statistics and transferred as well the Plant Overview.

Whenever a downtime takes place during the setup procedure, you can enter its cause by using the DOWNTIME CAUSE button in the red Downtime Menu.

If the machine stops during production, the Machine Terminal automatically recognizes it and the orange Interruption Menu appears. Pressing the BREAKDOWN button the downtime cause can be entered.

After that, a list containing several downtime categories appears. With the ARROW KEYS and ENTER the desired line is selected and the downtime causes belonging to this category appear, the desired cause can be selected.

Modifying a Downtime Cause

CANCEL BREAK cancels a downtime entered in the Red Menu (during setup). With the button CANCEL BREAK it is possible to return to the previous status. Afterwards another choice can be made.

Also CANCEL BREAK corrects an erroneous input in the Orange Menu. If - for example - the BREAK button in the Orange Menu has been pressed by mistake, then CANCEL BREAK must be pressed. Afterwards, the Orange Menu appears again and the right cause might be selected.

Interruptions of Work

Breaks

All *scheduled* interruptions are breaks, all *non-scheduled* interruptions are downtimes. This distinction is useful, because only the non-scheduled interruptions (= downtimes) have negative results on the actual capacity. Compared with non-scheduled downtimes (breakdowns etc.), usual breaks are not considered as working hours. If only 12.000 sheets have been produced in a shift of 8 hours due to a two-hours-break for maintenance, nevertheless in this shift 2.000 sheets have been produced per hour.

It is important correctly to enter breaks to find out the real machine and crew capacity. Otherwise, inferior numbers will appear in the statistic reports that are falsified by breaks.

The beginning of a break is highlighted by the button BEGIN BREAK in the red Downtime Menu. The Machine Terminal switches to the status *CLOSED*. At the end of the break the END BREAK button leads to the previous status of the Machine Terminal. After the end of the break the begin and the end of the break are registered in the machine timetable.

◆ Automation:

Whenever the machine stops within a break that is scheduled according to the timetable, the BREAK button automatically is default in the orange Interruption Menu.

Pressing the button registers the beginning of the break in the timetable. The machine is closed until the next scheduled start of the machine. No button pressed, the exact duration of the break is only entered by starting the machine again.

Whenever a scheduled break (or the end of work) is ignored, the Machine Terminal continuously adapts the timetable to reality (in steps of five minutes), according to the situation the scheduled beginning or end of work will be postponed. Starting the run *before* the scheduled end of a break, the machine will automatically be opened for the time left up to the scheduled start.

Scheduled Downtime

Generally, a scheduled downtime is used for the machines' maintenance. The maintenance of a machine is a break, e.g. it does not belong to the run time of the machine and must be entered correctly. Hours of maintenance are entered in the Red Menu.

Shift End

The button SHIFT END in the blue Personnel Menu is only used if another shift does not directly follow the currently ending shift (in this case SHIFT CHANGE has to be used!) and if shift end was reached during setup or downtime.

◆ **Automation:**

Whenever a running machine is stopped to finish the shift, the Orange Menu INTERRUPTIONS OF PRODUCTION appears. Usually the end of the shift is recognized and the SHIFT END button is highlighted. The time of the last change of the counter reading is registered as the time of the shift end.

After pressing SHIFT END, the same dialog box as in the beginning of the shift will appear, but now the *time* of the shift end will be registered. Hitting ENTER confirms the displayed values and the closes the dialog box.

Immediately after that, the Machine Terminal asks for the produced quantities of the running order to calculate the remaining quantity left for the current shift. The dialog box is the same as the box appearing at the end of the run.

◆ **Modifications:**

The values of the shift end dialog box can be modified. (They are password-protected).

Enabling and Disabling the Machine Terminal

You can enable and disable the Machine Terminal by using TERMINAL OFF and END BREAK.

Interruptions of Running

Function of the Orange Menu

Whenever a downtime or an interruption of production occurs, the Orange Menu appears. According to the probability of the downtime cause, one of the following buttons will be highlighted: END RUN, END ORDER, SHIFT END, BREAK or BREAKDOWN.

END RUN is highlighted if the number of sheets corresponds to the expected quantity (minus the range of tolerances entered at the parameters as default, such as over- and under-production in % etc.)

SHIFT END is highlighted if the downtime occurs one hour or less before the default shift end in the timetable.

COFFEE BREAK is highlighted if the downtime happens within 15 minutes before the start and 15 minutes after the end of the break default in the timetable.

In all the other cases of downtimes BREAKDOWN will be considered as the most probable reason.

Without confirming the highlighted reason, a message will appear on the screen after a certain time (longer than a mini-downtime). It will remain until the highlighted button is confirmed or until the real downtime reason is selected. Following you can see the message:

The screenshot shows a machine control interface with a schedule table and a breakdown menu. The schedule table lists orders with their start and end times, and the breakdown menu offers options like MORE, BREAK DOWN, COFFEE BREAK, SHIFT END, END OF ORDER, and ABANDON ORDER. A status box indicates the machine is stopped.

Machine	Terminal	Refresh	View	Show	?	Options	0	12:29
from	avail.	sched	Run. Tm	DDate	Order	Quant.	Quality	nextOp
3D	Martin	1000	-	Scheduled Orders				
OND	5:38	6:55	3'25"	09.05	614856		RELLOGG'S	0 B 020B EXP
OND	6:54	11:23	0'17"	09.05	615035	1331	B 010B EXP	
OND	7:32	11:40	0'04"	09.05	615034	190	B 010B EXP	
OND	8:26	12:16	2'21"	09.05	621026	10700	B 010 EXP	
OND	10:44	14:40	4'53"	09.05	621027	21930	B 010 EXP	
OND	09.05.	23:05	3'30"	10.05	628564 01	15000	B 010 EXP	
End of Schedule								

Machine stopped since 12:27:41

To confirm a breakdown press BREAKDOWN

This message will not disappear until you choose an option, even if the machine starts running again!

If this is NOT a breakdown, please choose a different option NOW!

Current Order	Machine	- please select cause			uled Qty: 10700
621026	RIPLEY	B	010	299x1007 10000:1	Actual Qty: 220
MORE	BREAK DOWN	COFFEE BREAK	SHIFT END	END OF ORDER	ABANDON ORDER
Next Order	Quality	Format	Ordered	DueDate	Scheduled
621027	PACINO	B 010	299x1007	20000:1	09/05 21930

Status: Stopped

Fig.4

The possible downtime reasons are summarized in a matrix:

Most probable reason	END RUN	SHIFT END	BREAK	BREAKDOWN
Proposed if:	Number of produced sheets = scheduled quantity (+/- tolerance range)	Up to one hour before the scheduled shift end	Within 15 minutes before the beginning resp. after the end of a scheduled break.	In any other situation
Duration of the downtime < mini-downtime	Mini-downtime			
Duration of the downtime > mini-downtime	Program waits for the decision of the operator		Break	Default downtime cause

Downtime at the End of the Run

If you want to assign the setup time to the finished order you have to press the BREAKDOWN button instead of the END RUN button at the end of the run. It is the same for the Machine Terminal having highlighted the END RUN button because the expected quantity has almost been reached. In reality, however, there are still further sheets to produce after removing the breakdown.

You manually have to press the END RUN button if the downtime is finished at the end of the order and the next order should start.

2 Downtimes with Different Causes

A downtime might directly be followed by another downtime having another cause: Initially, the stereo had to be repaired, but after re-starting the machine, the paper feeding is causing problems. In this case, the first downtime has to be finished with the DOWNTIME END button and immediately after that a second downtime cause has to be entered in the red Downtime Menu by pressing the DOWNTIME BEGIN and DOWNTIME CAUSE buttons.

Shift End at the End of the Run

Whenever the end of a shift happens at the same time as the end of the run, at first you have to press END ORDER in the Orange Menu. (At first, the order is finished, and then the shift). After that, the Blue Menu automatically appears, while the SHIFT END button is highlighted and has to be pressed.

Break at the End of the Run

Whenever there is a break at the end of the run, the Machine-Terminal automatically switches to the Orange Menu, because the machine does not work any more. In the Orange Menu the END RUN button is highlighted because the scheduled quantity has almost been reached. If there is actually a break, you have to enter it by pressing the corresponding button in the Orange Menu. If the break is over and the order is finished without the machine being started again, the break has manually to be finished (in the Red Menu). After that you can either press END RUN in the Green Menu or just wait a moment: The Orange Menu will appear again and END ORDER is highlighted.

The same applies for downtimes.

The Shift Report

The shift data captured by the Machine Terminal can be modified by using SHIFT REPORT in the Violet Menu. The shift reports are required for the statistics.

According to the button being pressed in the Machine Terminal menu, the corresponding data will be displayed on the screen. The text NO QUALITY CHECK appearing on the screen means that "Quality Check" is currently active, it can be disabled with the NO QUALITY CHECK button.

The picture below shows downtime reasons, personnel, breaks and quality checks in detail.

Pressing the MODIFY button displays the details of the green highlighted bar. They can be modified.



Fig. 5

You can print the shift reports using the statistic program of PC-Topp.NET (by means of the printing assistant).

Parameter Settings for the Machine Terminal

The parameters can be reached by choosing OPTIONS – PARAMETERS (they are password protected). They are arranged on 4 different screens.

◆ The Input

If there are several options for an input field, you can change them by pressing the space bar. Please use the TAB key or the ARROW key ↓ to choose an option and to move to the next field.

General Parameters

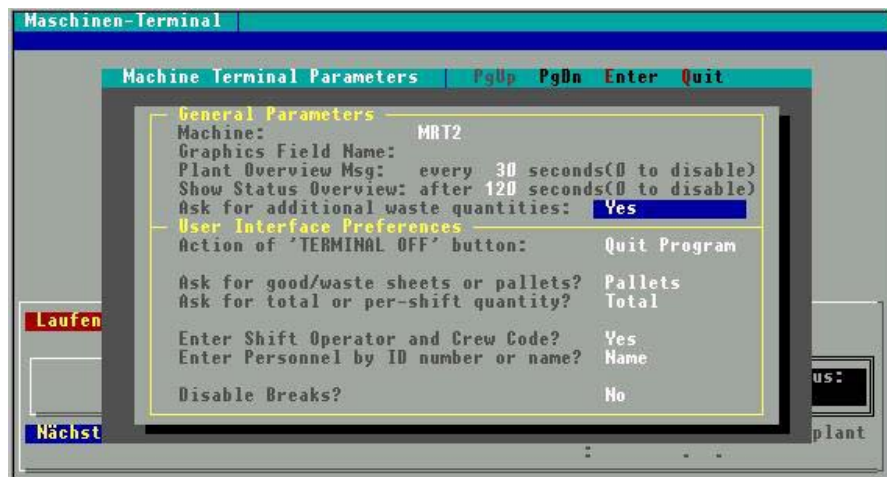


Fig. 6

Machine Code: On this screen you have to enter the machine connected to the Terminal. With CTRL + PGUP/DN you can scroll up and down the existing machines. Using ENTER, the desired machine is chosen.

Plant Overview: Via network, signals can be transferred to the Plant Overview to update it. Here you can specify the interval in which the signals are sent.

◆ Display of Production Data

Show Status Overview after: x seconds: As long as nobody is working at the Machine Terminal and production is progressing without problems (Terminal is in the status RUNNING without any error message on the screen), the production data such as shift duration, average speed per order etc. are displayed on the screen. The interval depends on the value entered at x. By entering x = 0, the display will be disabled.

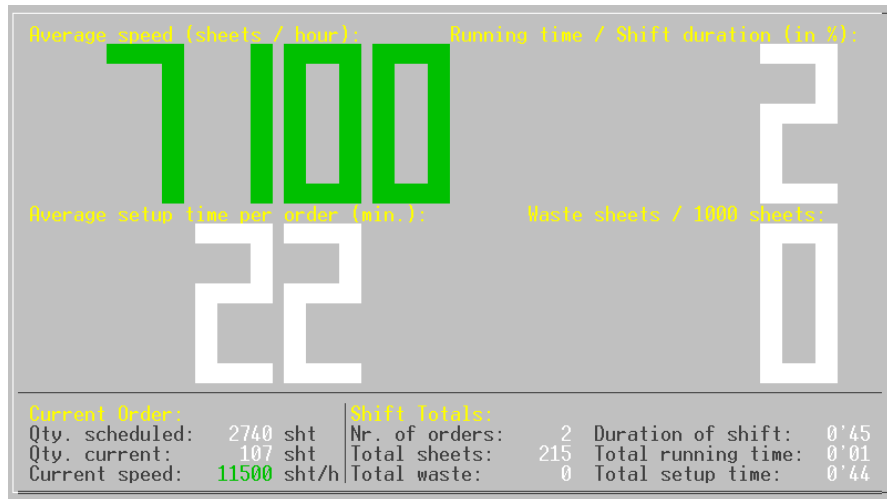


Fig. 7

The screen saver contains status information about the current order (scheduled and actual quantity, current speed) as well as shift totals (number of orders, shift duration, total run time, total setup time, total number of sheets, total waste and average speed).

Ask for additional waste quantities: To use the waste dialogue in the Machine Terminal, the question "Ask for additional waste quantities" has to be answered with "Yes". According to the parameter setting, the waste quantity is displayed in sheets in/out or in finished goods.

The different waste reasons are classified at any conversion machine. The reason for the detailed ("additional") waste entry: The sum *sheets in* + *waste* does not equal the total quantity. The dialog used up to now only counts the sheets passing the sensor. It might occur, however, that damaged sheets are already removed *in advance*, before they are passing the sensor - e.g. they are not counted.

According to parameter setting, the corresponding unit is displayed on top of column.

Once the dialog has been confirmed, the different waste quantities are not compared with the total waste quantity.

PC-Topp.NET allows to create up to 20 individual waste reasons. After finishing a run with END RUN and after entering the number of pallets or quantity, a dialog comparable to the following will appear:

- ◆ Example of a detailed waste dialog



Fig. 8

User Interface

How to quit the Terminal: QUIT PROGRAM / QUIT (PASSW.) DISPLAY MESSAGE. DISPLAY MESSAGE is used for plants with Terminals that should never be switched off. The program will immediately ask the user to switch off the Terminal.

Ask for good / waste sheets or pallets: You can specify whether you prefer an inquiry for the *sheets* (good or waste) or for the *pallets* at the end of an order. According to your input, a corresponding dialog box appears on the screen when END RUN is reached.

An inquiry for pallets makes the following input fields appear: Number of Pallets, Quantity per Pallet and Quantity last Pallet.

Concerning the "Quantity last pallet" field, please keep in mind:

- If there is any difference in the previous shift between the "quantity last pallet" and the "quantity per pallet" PC-Topp.NET "knows" that there is still a certain quantity left or that there is an unfinished pallet remaining in the next shift resulting from the previous shift. This pallet quantity is *automatically* calculated in the next shift.
- The field "Quantity last Pallet" means: How many sheets on the pallet have been produced in the *current* shift? Please note: This value has nothing to do with a remaining quantity eventually produced in the previous shift on their last pallet - *this* quantity is entered in the preceding shift, the current shift does not need to care about it.

PC-Topp.NET automatically calculates the rest quantity of the previous shift by adding the manually entered quantity on the last pallet in the current shift, as the following examples show:

◆ Examples (Piece per Pallet = 100)

Pallet quantity prev. shift	Quant. last pallet prev. shift	Pallet quantity this shift	Quantity last pallet this shift	Total pallets	Total sheets
5	-	2	-	7	700
5	-	2	30	7	630
5	20	10	30	14	1330
5	50	2	-	6	600

(The value "Total pallets" is not displayed on the screen).

Ask for total or per-shift quantity: Refers to the calculation of the produced quantity. The Machine Terminal will call up either the total quantity of an order over all shifts or only the quantity per shift.

Disable breaks: If the breaks function is *enabled*, the users of the Machine Terminal can use the break button at the beginning and at the end of a break. This way the break will be saved in the shift report as a downtime. Whenever the break function is *disabled*, breaks won't be captured.

Quality Checks

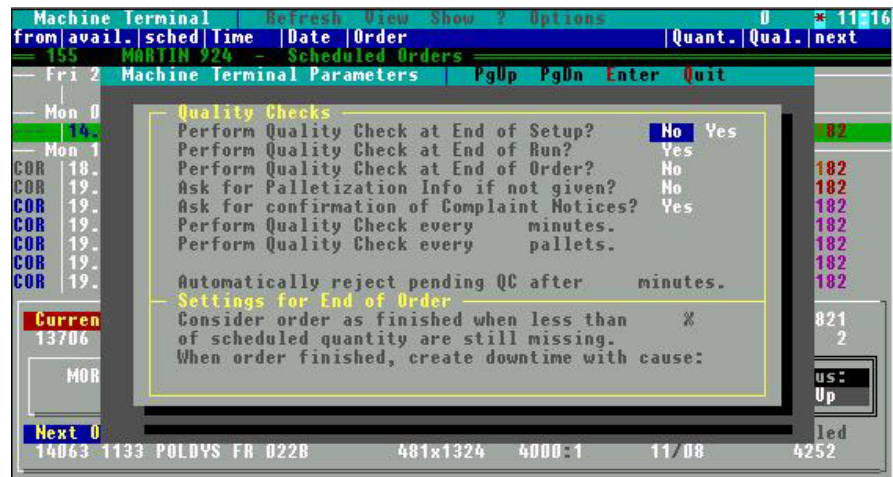


Fig. 9

During production, quality checks may be carried out whenever you like. They are confirmed in the Machine Terminal. The dialog box appearing after a quality control will remain up to a user's input confirming the check with *ok* / *not ok*. The detailed check specifications will be saved in the shift report.

You can specify on the 2nd screen if dialog should appear in regular intervals or at the beginning or at the end of an order. The option is password protected.

The different quality checks options:

Referring to the Order:

- *Perform quality check at end of setup?*
- *Perform quality check at end of run?*
- *Perform quality check at end of order?*
- *Ask for Palletizing Info if not given?* If palletizing information is missing it can be completed in a dialog box.
- *Ask for confirmation of complaint notes:* There is the opportunity to display a message for orders if there has already been a complaint about an article to produce.

Periodical (independent of order progress):

- *Perform quality check every x minutes / pallets:* Frequency (according to minutes or pallets)
- *Automatically reject pending QC after x minutes:* If the program waits x minutes for an input, the quality check will be canceled. A missing input will be saved as well in the shift report.

At SHIFT REPORT (violet Menu), the input is captured at QUALITY CHECK. The different reasons can be displayed by activating SHOW QUALCHECK. For more information see the PC-Topp documentation "*Quality checks and internal complaints*".

End Order

- *Consider order as finished when less than x % of scheduled quality are still missing*
- *When order finished, create downtime with cause ...:* A certain downtime cause can be pre-set as default when an order is finished. This refers to downtimes that regularly happen such as changing the ink colours or cleaning after an order is finished. (They can also be assigned to the setup of the next order). The window containing the downtime causes is opened with ↓ or PDDN.

Automatic Status Transitions

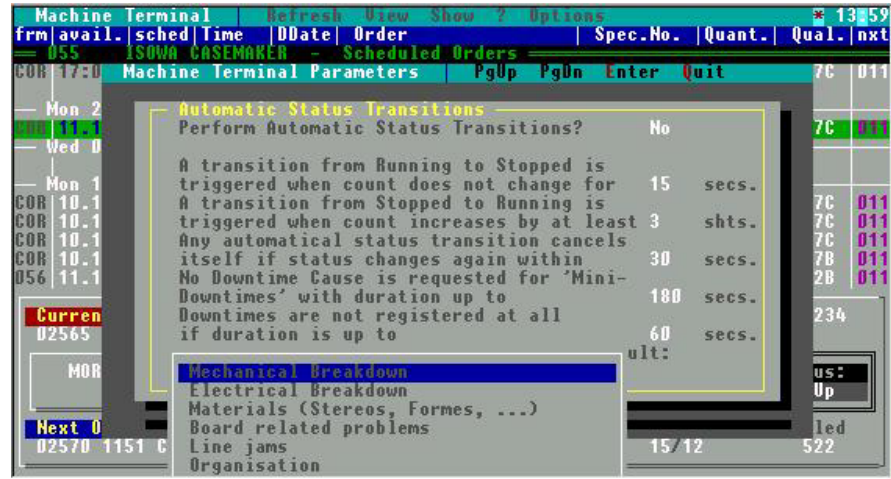


Fig. 10

On the 3rd screen you can see a parameter list specifying the different status transitions (on condition that a counter is installed and the Automation has been activated with Yes (1). To modify the parameters supervisor rights are required.

The Meaning of the Other Values

In the following, the recommended values are indicated in italics.

2. A transition from running to downtime is triggered automatically if the counter reading does not change within a certain number of seconds. That means that the machine has stopped if the counter does not change for at least x seconds. (*15 sec.*)
3. A transition from downtime to running is triggered if the counter counts at least x sheets. The machine is running if the counter reading increases by more than x sheets. Not more than the number of seconds entered at 2.) is passing by between two sheets. (*3 sheets*)
4. Any automatic status transition is canceled if the status changes again within a certain time. This value specifies for how long an automatic status transition can be reversed again. (*30 sec.*)
5. It is *not* necessary to enter a downtime cause for mini-downtimes up to x seconds. This factor specifies up to which length a downtime is considered a mini-downtime. (*180 sec.*)
6. Downtimes are *not registered at all* if duration is up to x secs (60 sec.)

◆ **Relations
between the
parameters**

7. *If no downtime cause entered, use as default:*

If a downtime cause has been entered, it will be preset as default cause when a downtime happens during production. If no downtime cause has been entered, you have to enter a cause: The program will wait until a cause has been entered.

If 1. is set to Yes, inputs are also required at 2. and 3. The other parameters at 4. and 5. can remain empty, in this case nothing will automatically be canceled, or: there are no mini-downtimes.

Communication Settings

The 4th screen offers the possibility to specify the connections for counter and card reader (COM1/2, and NONE).

At the option ASYNCH DEVICE PARAMETERS (PC-Topp.NET / Settings / Basic settings) more device details can be specified such as baud rate, parity etc.

For detailed instructions to connect the counter please consult the PC-Topp.NET documentation "*Instructions for connecting the Counter IVO NE-212 and N 214NE [...]*".