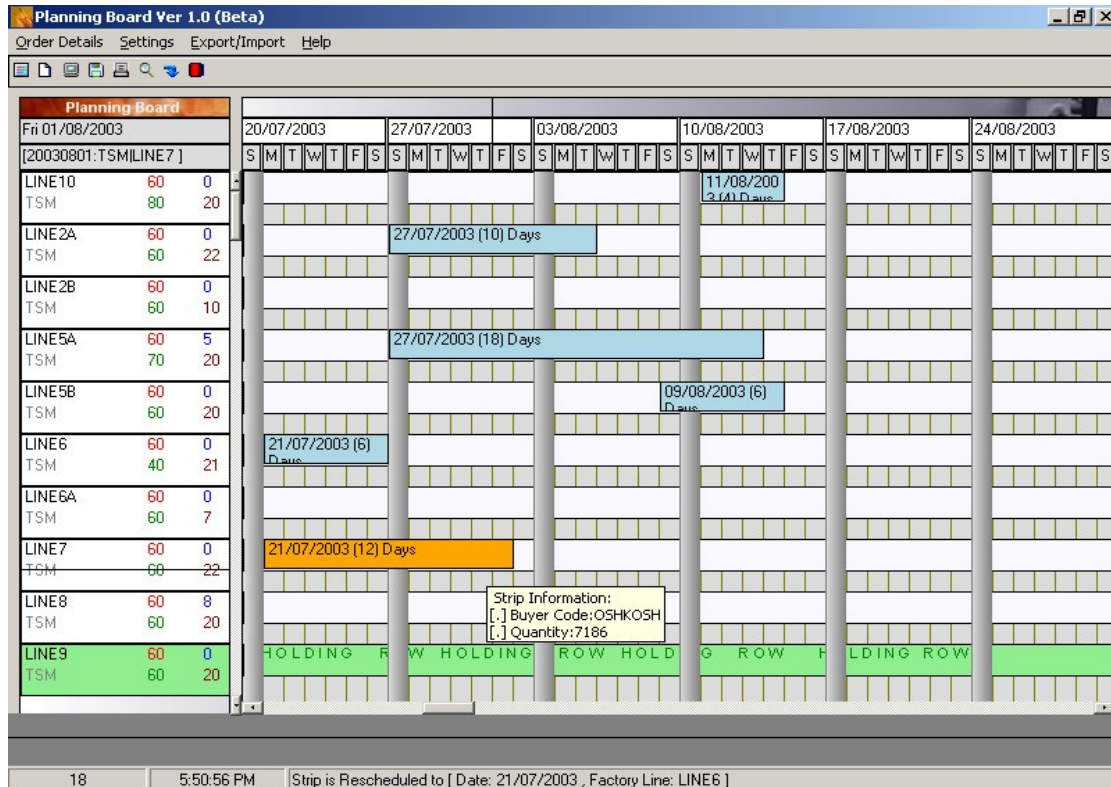


TOPS Planning Board

TOPS Planning board is a GUI based planning tool to plan/schedule the production. The Planner is suitable for Apparel industry to plan its production activities on a planning board. This visual representation of the core activity of the apparel business makes planning an intuitive process.



Once an order is received from your customer, you can load the order into the planning board and start planning the production. Using the planning board you can assign the factory and the line in which the production is being planned. You can define any number or production areas (factories) and any number of production lines for each Production area.

When an order is loaded into the planning board, the Planning board will automatically calculate the duration of the production depending on the following factors

- SMV of the style being produced
- Factory production line capacity
- Efficiency % of the line
- Absentism % in the line
- Learning curve
- Calendar (working days/holidays)

Features of Planning Board

- Graphic planning board
- Any number of factories or production areas can be defined. Similarly any number of production lines within the factory can be defined..
- Flexible calendar. You may define any number of calendars so that the calendar can be applied to the factory, or to the production line or even to a specific order style
- No. of operators or machines can be defined at the production line level or to a particular order style.
- Unlimited number of learning curves or startup allowance can be defined and applied to an order style.
- Split one order quantity into multiple production quantities
- Group multiple order styles quantities as single production unit so that single planning can be done for a group of similar order styles
- Combined view of all the planned process for an order style (Not yet done)
- Comparison between planned and actual production
- Automatic calculation of number of days required for production based on following details .
 - SMV of the style being produced
 - Factory production line capacity
 - Efficiency % of the line or the product
 - Absentism % in the line
 - Learning curve
 - Calendar (working days/holidays)

- Integrated with TOPS/erp
- Use of color highlighting of order strip to show its properties

Sample Screens

Order Details Help

Planning Board

Sat 06/12/2003 30/11/2003 07/12/2003 14/12/2003 21/12/2003 28/12/2003 04/01/2004 11/01/2004 18/01/2004

[20031206:E-SOFTLINE01] S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S

Load Allocated Styles to PB!

Buyer Code	Our Style	Buyer Style	Boc.Type	Boc.No	Del.Date	Quantity	Smv	Comp.Code	Style.Sit.No	Location.Cod	split_no
A & E	5555-9	5555-9	NEO	4444	12/23/04	7956	0	E-SOFT	9	E-SOFT	0
A & E	5555-10	5555-10	NEO	4444	12/23/04	12456	0	E-SOFT	10	E-SOFT	0
A & E	COBRA-666	COBRA2	NEO	6666	12/5/04	15000	51	TREND	3	E-SOFT	0
A & E	5555-9	5555-9	NEO	5555	12/23/04	7956	0	E-SOFT	9	E-SOFT	0
A & E	5555-10	5555-10	NEO	5555	12/23/04	12456	0	E-SOFT	10	E-SOFT	0
A & E	5555-9	5555-9	NEO	3333	12/23/04	7956	0	E-SOFT	9	E-SOFT	0
A & E	5555-10	5555-10	NEO	3333	12/23/04	12456	0	E-SOFT	10	E-SOFT	0

* For selecting a record click on the left most button in the grid and to select multiple records hold the Ctrl and Shift keys pressed

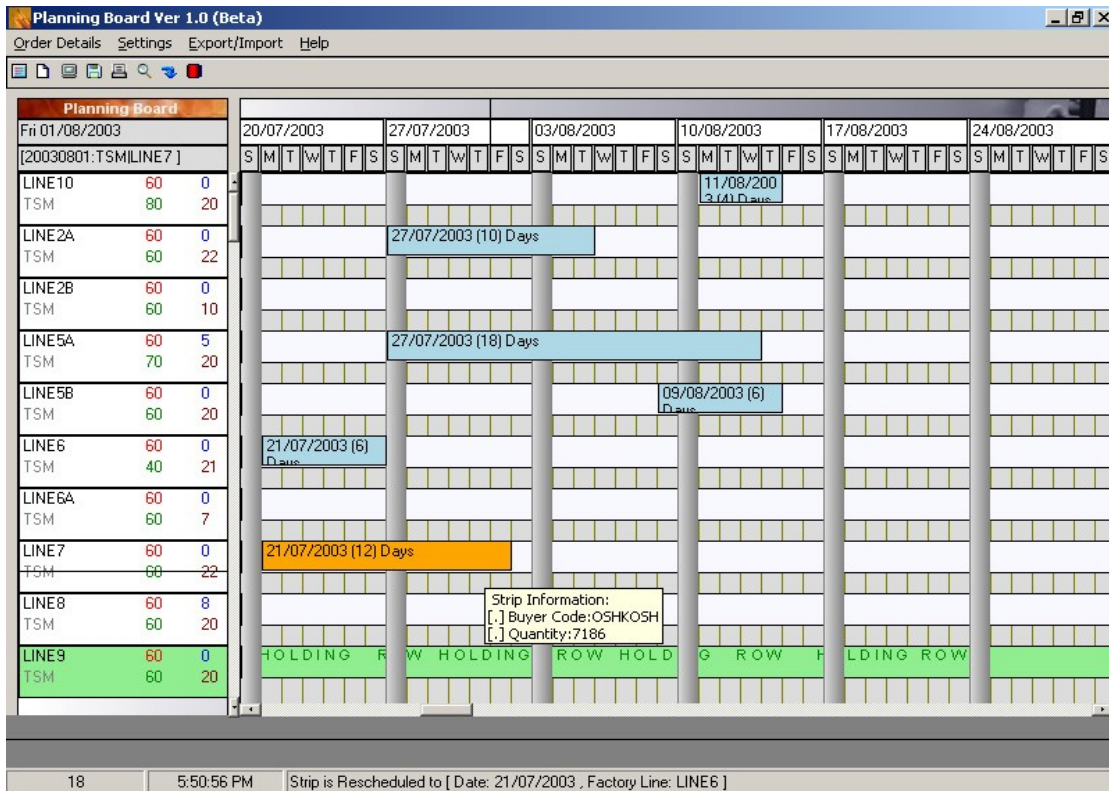
Load... Cancel

Line Efficiency
No Of Operators

Buyer Code	Our Style	Buyer Style	Delivery Date	Quantity	Start Date	Start Hour	Factory Line	End Hour
No. Of Days	Statup Allow. ID	Statup Location	Smv	No.Of.Workers	Attendance Ratio	Split No	Capacity per Hour	

The above screen shows loading orders to planning board. You can select the orders which needs to be loaded on to planning board for scheduling the production.

You may plan all processes involved in making a garment from cutting onwards to finishing and packing.

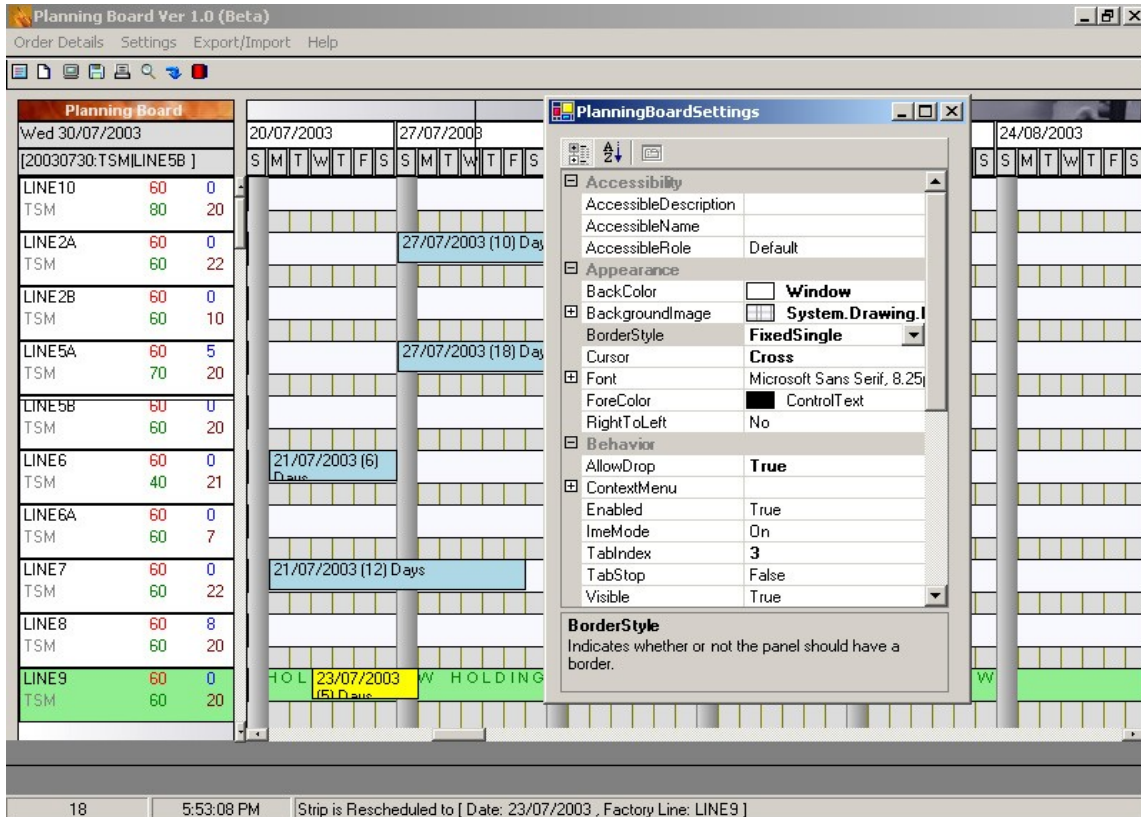
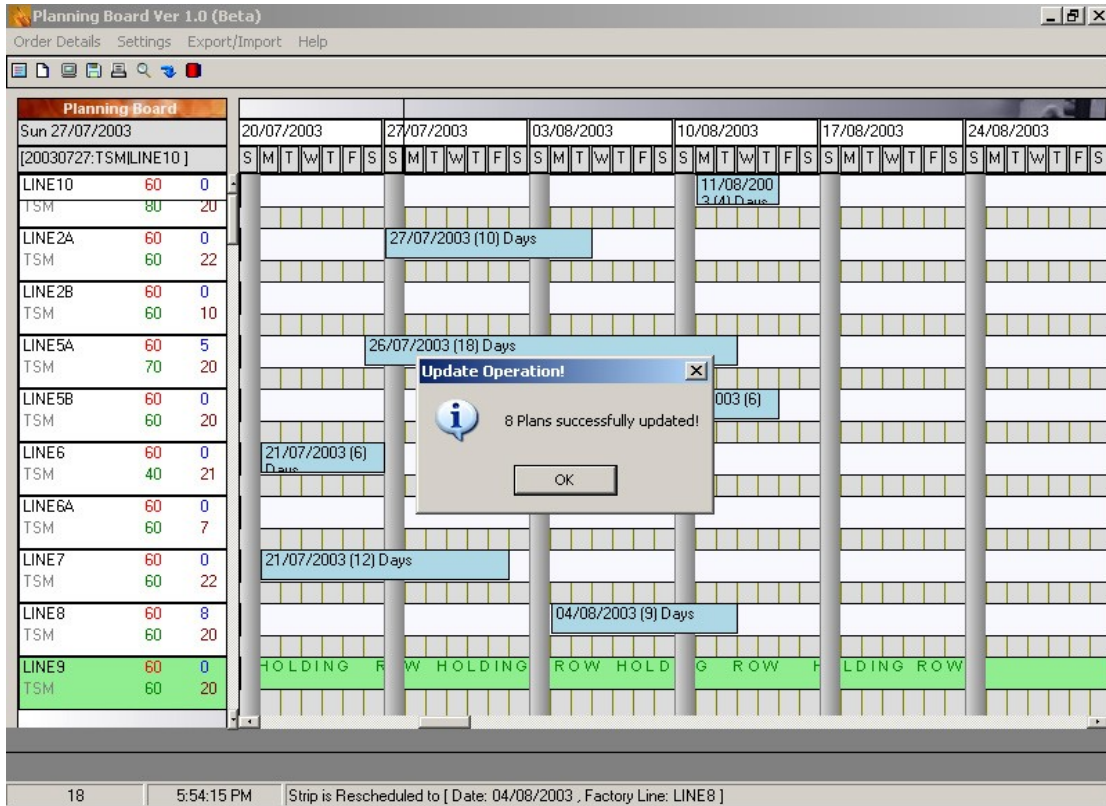


The above screen shows the orders (blue and yellow color strips) which are being planned. The strip colors can be set to indicate various properties of the order. The order strip can also display details such as buyer, order quantity, the delivery date of the order, number of days it takes to produce the ordered quantity etc.

The left pane shows the Production lines in the factory. The right pane shows the calendar and the orders being planned.

You may split each order into multiple lines or multiple production dates within the same line.

Re-scheduling is as simple as dragging an order strip from one line and placing it on another line or moving it from a start date to another start date.



Order details with daily production qty

The screenshot shows the 'Order Details' dialog box in the 'DailyProductionfrm' window. The dialog contains the following fields:

- Buyer Name: A & E
- Buyer Style: 5555-7
- Our Style: 5555-7
- Quantity: 8000
- Expected Start Date: 12/1/03 12:00
- Split Number: 0
- Smv: 40

Below the fields are radio button options for 'Stripwise' and 'Orderwise', and another set for 'Daily', 'Weekly', and 'Monthly'. A 'Close' button is at the bottom right.

To the right of the dialog is a table showing production quantities:

Date	Quantity	No.Of.Hours	Efficiency.Pe
20031201	351	3	0.65
20031202	936	8	0.65
20031203	936	8	0.65
20031204	936	8	0.65
20031205	936	8	0.65
20031206	936	8	0.65
20031207	0	0	0.65
20031208	936	8	0.65
20031209	936	8	0.65
20031210	936	8	0.65
20031211	161	2	0.65

At the bottom of the main window is a table with the following columns:

Buyer Code	Our Style	Buyer Style	Delivery Date	Quantity	Start Date	Start Hour	Factory Line	End Hour
No. Of Days	Setup Allow. ID	Startup Location	Smv	No.Of.Workers	Attendance Ratio	Split No	Capacity per Hour	

Applying Startup Allowance

The screenshot shows the 'frmStartupAllowance' dialog box overlaid on a Gantt chart. The dialog has the following columns:

location_code	startup_allow	from_days	to_days	efficiency_p
HD	STYLETEST	1	2	0.6
HD	STYLETEST	3	999	0.7
HD	NEWSTYLE	1	2	0.6
HD	NEWSTYLE	3	4	0.72
HD	NEWSTYLE	5	6	0.8
HD	NEWSTYLE	7	999	0.9

Below the dialog, a Gantt chart shows production strips for various lines. A text box says: "Point on the Strip You will get the Order Details on the Status bar."

At the bottom of the main window is a table with the following columns:

Buyer Code	Our Style	Buyer Style	Delivery Date	Quantity	Start Date	Start Hour	Factory Line	End Hour
No. Of Days	Setup Allow. ID	Startup Location	Smv	No.Of.Workers	Attendance Ratio	Split No	Capacity per Hour	

Split an order

The screenshot displays the Planning Board Ver 1.0 (Beta) software interface. The main window shows a Gantt chart for a production order. The chart is organized by weeks, with dates ranging from 30/11/2003 to 18/01/2004. The chart shows various production lines (LINE01 to LINE09) and their respective quantities and start/end dates. A dialog box titled "Splitting the Strip..." is open, showing a total quantity of 8000 and options to split by quantity or percentage. The dialog box includes input fields for 10 parts and buttons for "Split" and "Cancel".

Order Details Help

Planning Board#

Tue 16/12/2003 30/11/2003 07/12/2003 14/12/2003 21/12/2003 28/12/2003 04/01/2004 11/01/2004 18/01/2004

[20031216:E-SOFT]LINE02.1 S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S S M T W T F S

LINE01 0 0
E-SOFT 0.8 40
6800 4035 3500 6900 6456 7456

LINE02 0 0
E-SOFT 0.9 40
8000 3511 8456 6143 6138 15000

LINE03 0 0
E-SOFT 0.8 40
6456 8000 4035 3511 7456

LINE04
E-SOFT

LINE05
E-SOFT

LINE06
E-SOFT

LINE07
E-SOFT

LINE08
E-SOFT

LINE09
E-SOFT

Splitting the Strip....

Total Quantity = 8000

By Quantity By Percentage

1st Part [0] 2nd Part [0] 3rd Part [0] 4th Part [0] 5th Part [0]

6th Part [0] 7th Part [0] 8th Part [0] 9th Part [0] 10th Part [0]

Split Cancel

Line Capacity
Absentism
Line Efficiency
No Of Operators

Point on the Strip You will get the Order Details on the Status bar.

Buyer Code	Our Style	Buyer Style	Delivery Date	Quantity	Start Date	Start Hour	Factory Line	End Hour
No. Of Days	Statup Allow. ID	Startup Location	Smv	No.Of.Workers	Attendance Ratio	Split No	Capacity per Hour	

Other related Modules of Planning Board

Planning Board Calendar

Planning board calendar function can be used to define the calendar for a factory or a factory line. The PB calendar will be a record for each day of the year. Each daily record will contain the following information

The day id (dd/mm/yyyy)

Holiday or working day

No. of hours working per day

The very first step to use Planning board is to define a 'Default' calendar. You can work with the default calendar or create a calendar for each factory if the days or no.of hours working differs from factory to factory. Even you can create a calendar for a factory line if any line's working hours or days differs from that of the factory calendar or default calendar. Planning board uses this calendar to find out the number of hours the factory or the line operates on a daily basis. Based on the number of hours working, the capacity is calculated.

Once the calendar is created, you can attach the calendar to a factory or to a factory line using Factory master function.

Startup Allowance

Every product manufactured will have a different learning curve. You cannot get the same kind of efficiency on every product you manufacture at least for the first few days of

the production. To factor this efficiency you can use the 'Startup allowance' function to define startup allowance records and use these 'Startup allowance' when planning the production. For eg. If you are making jackets, you could define the start up allowance as follows

from 1st day of production you expect on 10% efficiency

from 2nd to 3rd day you expect 30% efficiency

from 4th day onwards you expect 60% efficiency

When an order of Jacket is planned on Planning board, you could choose the above 'Startup Allowance' and Planning board will calculate the daily production based on the above efficiency levels.

Similarly for a Shirt, you may define different efficiency levels

Factory Master

This function helps you to define the factories and its lines. You record the average attendance level while defining the factory and its lines. You can also attach a 'Calendar' (explained earlier) to the factory.

Style Operations

This function helps you to define the operation wise SMVs for a style. You can also record the average efficiency you are expecting, the number of workers etc for the style using this function. Planning board calculates capacity available, capacity utilized all in Minutes.

Calculations

Available Capacity in a factory

In Planning board, you allocate an Order to a factory for production using the 'Allocation' option. In the 'Allocation' screen, you can see a button called 'Show Capacity'. You may use this option to see the capacity available in a factory before allocating an order to the factory. The capacity available shown here is 'approximate'. The calculation of capacity available for a given date range is explained below.

- a) Total capacity of the factory in 'Minutes' = Total of 'No. of hours working' per day as per the Planning board calendar X no. of workers in the factory as per the Factory master X 60 minutes
- b) Capacity already consumed = From the date range the order is being planned as per the Planning board, get the no.of hours working for each day from the Planning board calendar (default calendar or factory calendar) X no.of workers in that line as per the Factory line master X 60 minutes
- c) The difference between the above two will give capacity available.
- d) There may be orders which are allocated to a factory, but not planned. To know the real capacity available, we need to consider these orders as well. These order's

capacity required is calculated as Quantity X SMV of the order. Since these orders are not planned, the orders are selected based on their delivery dates. All orders with delivery dates between the given date range is selected.

e) Then there are orders which are allocated to a factory, but no SMV defined. The total quantity of these orders are also shown. These orders are also selected based on their delivery dates since these orders are not 'Planned'

Calculation of no. of days required for production on Planning Board

The calculation of no. of days required for an order is based on many variable factors. These are explained below

a) The capacity available in 'Minutes' needs to be calculated for each day from the starting day.

a.1 The capacity available is based on the number of hours working per day. This is taken from either the Line calendar if it exist or from Factory calendar or from Default calendar.

no. a.2 The total number of available minutes is calculated by multiplying the of hours per day with 60. This is defined through the 'Factory master' as Capacity per hour

a.3 This value is multiplied by the no. of workers in the line define for the style through 'Style Operations' function. No. of workers also can be defined in the Planning Board Calendar for a particular day if the day wise number of operators needs to increased or decreased

a.4 Efficiency for the day is applied. Efficiency percentage is taken either from 'Startup allowance' if startup allowance is applied for this order or from Style's line efficiency as defined through the 'Style Operations' function.

a.5 Attendance percentage. This is taken from Factory line master defined using Factory master function.

a.6 Multiplying all the above will give you the capacity per day in Minutes

b) Calculate the no. of Pieces which can be made within the Available Capacity per day (see a). Available minutes per day divided by SMV of the style will give the number of pieces that can be manufactured for that day. SMV of the style is defined using the 'Style operations' function.

The above steps 'a' and 'b' is repeated until the total of all daily quantity produced is equal to the order quantity.

System Requirement

Pentium III or above with 256 MB RAM, 40 GB HDD
Windows XP

17" SVGA Monitor
2 MB video memory, Resolution 1024 x 768