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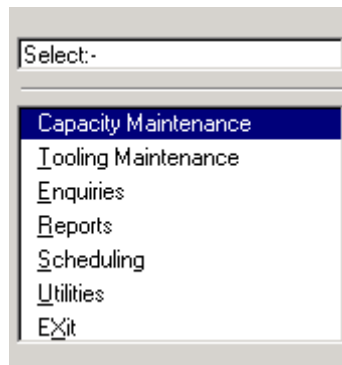
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Introduction



The Capacity Planning module was developed by Economic Data Services (EDS) using the Sage Line 100 Retrieve 4GL language and is completely compatible with other Line 100 modules.

The module provides all the functions to maintain details of Product Routing i.e. the operations required to manufacture a product and to perform rough cut capacity planning. If the Capacity Planning module is present within Sovman, the product routings may be defined within the Sovman Bill of Materials module.

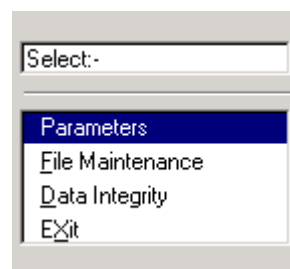
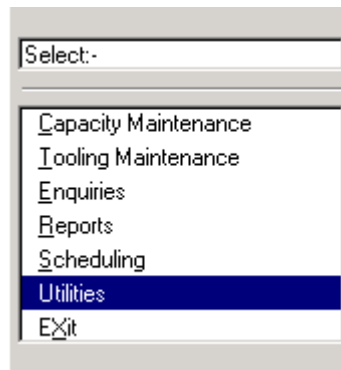
The module runs with the Sovman Bill of Materials (BOM) and Works Order modules and requires the Line 100 stock control module.

Each product must already exist on the Line 100 stock control file and the Sovman BOM file.

Capacity Planning has the following features: -

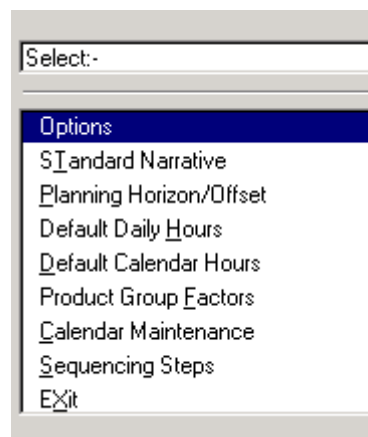
- Work Centres and Operation records.
- Daily calendar with work centre specific calendars.
- Product Routing with serial and parallel operations.
- Product routing with operations across multiple work centres.
- Full costing with setup, machine, labour and overhead breakdown.
- Facility to copy an existing product routing.
- Printing of route cards.
- Mass operation changes or deletions.
- Reverse scheduling with infinite capacity.
- Graphical loading analysis for work centres and operations and drill down feature to display orders loaded.

Parameters



Use this program to set up the options and defaults of your Capacity Planning module before you begin creating routing records. As with all Line 100 modules, the parameters are an important first step that must be taken before any further processing is attempted.

Options



When you select the Parameters option, the screen displays a menu with Options as the first choice.

CAPACITY PLANNING OPTIONS (1 OF 2)

Maintenance Options

Route file maintenance audit trail (Y/N)

Operation file maintenance audit trail (Y/N)

W/Centre file maintenance audit trial (Y/N)

Allow operation creations on the fly (Y/N)

Allow duplicate operations on routes (Y/N)

Allow parallel route operations (Y/N)

Scheduling Run

Forward or reverse scheduling (F/R)

Include setup time in scheduling run (Y/N)

Include movement time in scheduling run (Y/N)

Include queue time in scheduling run (Y/N)

The following options simply require a single response: -

Route File Maintenance Audit Trail (Y/N)	Set to Y - an audit trail will be printed when creating, amending or removing route details. Set to N - no audit trail is produced.
Operation File Maintenance Audit Trail (Y/N)	Set to Y - an audit trail will be printed when creating, amending or removing operation details. Set to N - no audit trail is produced.
W/Centre File Maintenance Audit Trail (Y/N)	Set to Y - an audit trail will be printed when creating, amending or removing work centre details. Set to N - no audit trail is produced.
Allow Operation Creations On The Fly (Y/N)	Set to Y - Operation records can be created when the route is created. Set to N - Operation records must be created through operation maintenance.
Allow Duplicate Operations On Routes (Y/N)	Set to Y - Operation records can be duplicated when the route is created. Set to N - Operation records may only appear once within a route.
Allow Parallel Route Operations (Y/N)	Operations on a route will normally be serial i.e. one operation after another. In some manufacturing cases, operations may take place in parallel. Set to Y - Operation records can be entered as parallel when the route is created. Set to N - Operation records may only be serial within a route.

Forward or Reverse Scheduling (F/R)	<p>Set to F - the capacity planning scheduling run will be based on forward scheduling. This option is currently not available.</p> <p>Set to R - the capacity planning scheduling run will be based on reverse scheduling to infinite capacity. Orders will be loaded from the due date backwards assuming infinite capacity and any overload on capacity will be shown.</p>
Include Setup Time In Scheduling Run (Y/N)	If this is set to Yes, the set up time will be included when loading work centres and operations from works orders within the scheduling run. If set to No, setup time will be ignored.
Include Movement Time In Scheduling Run (Y/N)	If this is set to Yes, the movement time will be included when loading work centres and operations from works orders within the scheduling run. If set to No, movement time will be ignored.
Include Queue Time In Scheduling Run (Y/N)	If this is set to Yes, the queue time will be included when loading work centres and operations from works orders within the scheduling run. If set to No, queue time will be ignored.

CAPACITY PLANNING OPTIONS (2 OF 2)

Printing Options

Print routing sheets when P/L printed (Y/N)

Print extra descriptions (none blank) (Y/N)

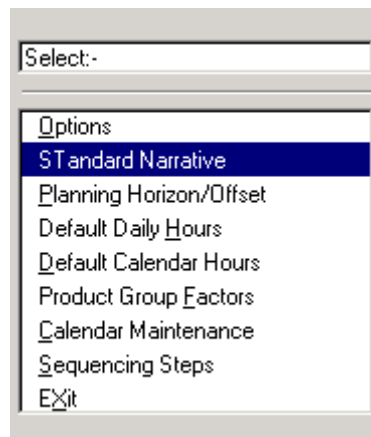
Line separator required (Y/N)

Print tool references (none blank) (Y/N)

Print routing comments (Y/N)

Print route sheets when P/L printed (Y/N)	<p>This parameter determines if route sheets are printed with the Works Order Picking list within the Sovman works order module.</p> <p>Set to Yes - route sheets are printed with the works order picking list</p> <p>Set to No - route sheets are printed from within capacity planning and are separate from works orders.</p>
Print extra descriptions (none blank) (Y/N)	This parameter determines whether the second line of the description is printed on the route sheet. It is ignored if blank.
Line separator required (Y/N)	This parameter determines whether a blank line is printed between each line of routing.
Print tool references (none blank) (Y/N)	This parameter determines whether the tool references are printed on the route sheet. They are ignored if blank.
Print routing comments (Y/N)	This parameter determines whether the comments within the product routings are printed on the route sheet.

Standard Narrative

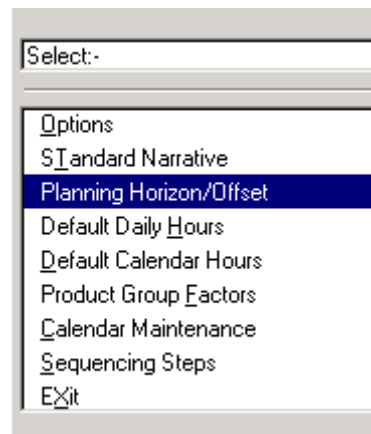


When creating product routings, text or comment lines may be added through the Capacity Maintenance function. Standard text may be included from this standard narrative file. This option enables you to create lines of standard text.

The text may also be included when the BOM is created within the Sovman BOM module.

Each line of text is given a number or code. This text may subsequently be included within the maintenance function with the use of the '/' command (see Capacity Maintenance).

Planning Horizon/Offset



Capacity Planning
Horizon

When a Schedule Loading run is performed, all inputs (sales orders, works orders etc) within the planning horizon are loaded onto operations and work centres.

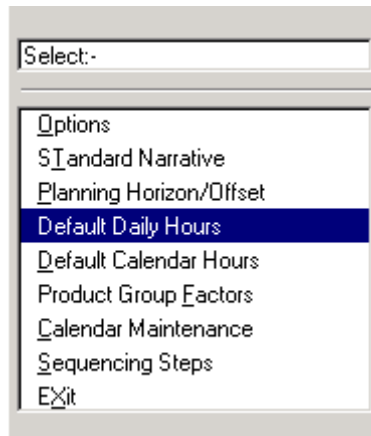
This option determines the horizon for the selection of the orders to be loaded. Thus a horizon of 14 days will select all works orders with a due date within the next 14 days. When a scheduling run is selected, this horizon is used to create the default start and finish date. These can then be amended for the run.

Despatch Offset

When works orders are loaded within the scheduling run, the works order due date is taken as the day the order is required. You may offset this date to allow for time to despatch the order. This time may include packing etc. The offset period may be specified in both days and hours.

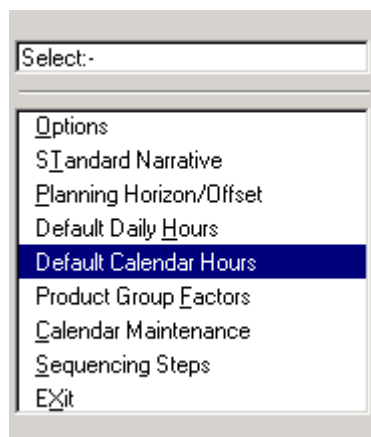
Warning Overload Percentage The results of the scheduling run can be viewed on screen and overloads are displayed where the capacity exceeds this overload percentage. This default percentage may be amended at work centre level.

Default Daily Hours



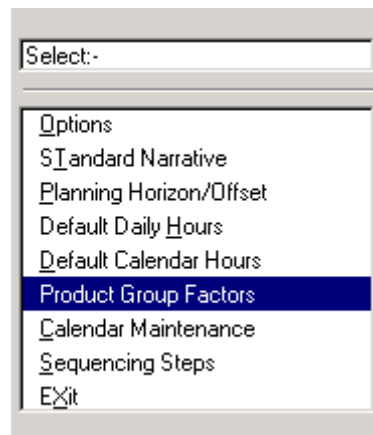
The Capacity Planning module utilises a calendar to determine the capacity of each work centre. This option determines the default number of hours available in a working day when the default calendar is created.

Default Calendar Hours



The default calendar determines the number of available hours for each day of the week. The default daily hours (2.4 above) is used but may be amended for each day.

Product Group Factors

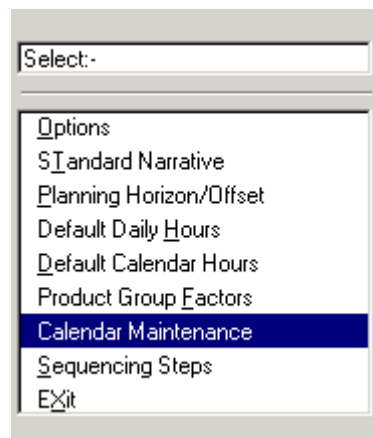


When a work centre is created, a % on cost factor may be input. This can be used for estimating to determine an appropriate selling price. The % factor is a mark up on cost.

This option will allow you to set a default % factor for each stock product group. When a route is created for a product, the default % factor will be picked up from this file based on the product group of the assembly.

When this option is selected, the appropriate product group (from Line 100 stock control) may be selected. Upon selection, the on cost % may be entered.

Calendar Maintenance



The Capacity Planning module utilises a daily calendar to determine capacity available. This option enables you to maintain the default calendar. Any number of years may be entered.

To create a year select a blank entry and press the enter key. You can then enter the year number in the format YYYY e.g. 1998. To delete a year, simply delete the year characters.

You will then be prompted to create the periods automatically. If you select Yes, the default hours are displayed for each day of the week. These may be over-ridden or accepted. The calendar will now be created and each month displayed with the total capacity in hours. If you respond No to create periods automatically then you will have to create all entries manually.

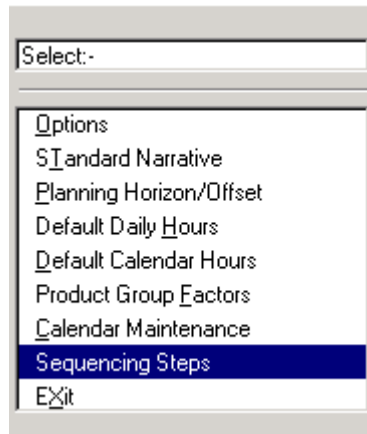
You may select a month and the calendar for that month is displayed. This shows each day and the available capacity. This can be amended to reflect, for instance, bank holidays, machine maintenance. The calendar is not linked to the calendar within the Materials Planning module.

Any year may also be amended using the same function.

When a month is selected, you are given the following options: -

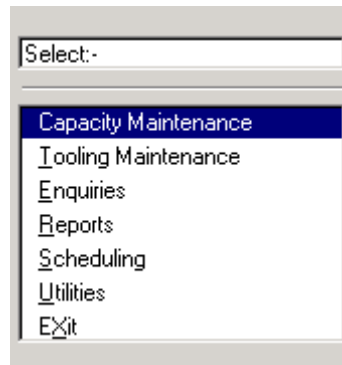
Accept	This will accept the amendments for this month.
Renter	This will enable you to re-enter and amend the month.
Discard	Any amendments made will be discarded or ignored.
Set Defaults	The default calendar hours for each day will be used to create a default calendar for the month.

Sequencing Steps

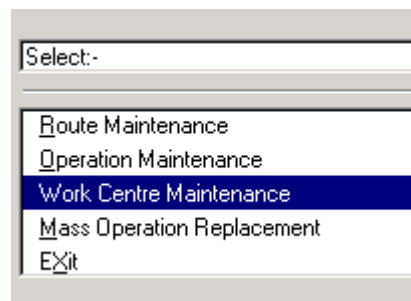


When a route is created, the sequence number determines the order of the operations within the route. Using the sequence number, it is possible to insert additional operations within the sequence of the route structure or change the sequence. The sequence number is usually incremented in steps of one hundred. This factor may be changed using this parameter.

Capacity Maintenance



Work Centre Maintenance



Use this function to create and maintain the work centres within your routing. A work centre has two purposes: -

- It is used to cost the routing for a product. Unit cost rates may be set at work centre level.
- It is also used to determine the capacity and current loading of orders by work centre.

A work centre may be defined as a machine or type of labour. This will be costed at a rate per hour e.g. milling machine, £70 per hour, or Fitter, £10 per hour.

For capacity planning purposes, a work centre may be an individual machine or operative or a group of machines or operatives e.g. a work centre may be milling machine 1 or a group of 4 milling machines.

Work centres may also include sub-contract operations.

The screen displays a form for input of work centre details: -

Work Centre <input type="text"/> C <input type="text"/> DP <input type="text"/>		Sub Contract <input type="text"/>
Description <input type="text"/>		Record Type <input type="text"/>
		Depot <input type="text"/> / <input type="text"/>
Hourly Rates	Cost	Charge
Standard Rate <input type="text"/>	<input type="text"/>	<input type="text"/>
Set Up Rate <input type="text"/>	<input type="text"/>	<input type="text"/>
Std Overhead % Factor <input type="text"/> %		Other Details
Setup Overhead % Factor <input type="text"/> %		
On Cost % Factor <input type="text"/> %		
		No of Units <input type="text"/>
		Norml Capacity <input type="text"/> Hrs in a Day <input type="text"/>
		Dflt Capacity <input type="text"/> for <input type="text"/>
		Dflt Set Up <input type="text"/> Hrs
		Warning Overload Percentage <input type="text"/> %
		W/Centre Specific Calendar? <input type="text"/>

Work Centre/CC/DP This is the code by which work centres are identified. Work Centres may also have a cost centre and department code for analysis. These are the standard Line 100 cost centres and departments as used within the nominal ledger and accounting system manager.

The Line 100 '/' facility is available to search the work centre file for existing records. If the search facility is selected, the work centres are listed and may be selected for amendment.

If a work centre, cost centre and department code is entered that does not exist, you are prompted to create the work centre, reenter the code or exit the function.

Description There are two lines of description for each work centre.

Sub Contract Entering Yes or No in this field may designate a work centre as a sub-contractor.

Record Type Work centres may be Machines or Labour.

Depot This field is used by the Sovman tracking module to link stock to works orders through the product routings. You may select a depot using the search function.

Hourly Rates	Standard Rate - Cost	A rate per hour may be entered that is used to cost operations performed on this work centre.
	Standard Rate - Charge	A rate per hour may be entered that is used to charge out operations performed on this work centre. This is currently unused but will be the basis of estimating/quotations.
	Set Up Rate - Cost	A rate per hour may be entered that is used to cost the set up time for operations performed on this work centre.

	Set Up Rate - Charge	A rate per hour may be entered that is used to charge out the set up time for operations performed on this work centre. This is currently unused but will be the basis of estimating/quotations.
Std Overhead % Factor		The overhead cost may be calculated as a percentage of the work centre standard cost.
Setup Overhead % Factor		The overhead cost may be calculated as a percentage of the work centre setup cost.
On Cost % Factor		A percentage factor on cost may be input to calculate the charge out value of operations performed on this work centre. This is currently unused but will be the basis for estimating/quotations for jobs.
Other Details		
No of Units		This is the number of individual units within this work centre e.g. 5 labour operatives or 3 machines. Each of the items below is defined for a single unit.
Normal Capacity		The normal capacity of this work centre may be input. This is used for capacity planning purposes. The capacity is expressed as the total number of hours and minutes this work centre is available within a working day. The default daily hours is used from the options settings. Where there are several units per work centre, this capacity is the capacity of one unit.
Default Capacity		The default capacity of this work centre may be input. This is used for capacity planning purposes. The capacity is expressed as the total number of hours, minutes and seconds for this work centre to make so many units e.g. 50 units in 1 hour. This is subsequently used as the default capacity for operations linked to this work centre.
Default Set Up Time		The default set up time of this work centre may be input. This is used for capacity planning purposes. The set up time is expressed as the total number of hours, minutes and seconds.
Warning Overload Percentage		The default overload percentage factor specified in the parameters section may be amended for this work centre.
W/Centre Specific Calendar? Yes/No		Each work centre may be linked to a specific calendar identifying actual availability and capacity for each day. If this is set to No, the default calendar created within parameters is used. If this is set to Yes, you are prompted to amend the calendar. If the calendar has not already been created, you will be able to amend the default calendar. If the specific calendar already exists, you may amend this calendar. The amendment of the calendar is identical to the default calendar within the calendar maintenance function within parameters.

Operation Maintenance

Select:-

- Route Maintenance
- Operation Maintenance**
- Work Centre Maintenance
- Mass Operation Replacement
- Exit

Use this function to create and maintain the operations within your routing. An operation is a function or process that takes place on a work centre e.g. an operative may be a work centre with operations for inspection, cleaning, maintenance etc. A machine may be a work centre with operations for cutting, drilling etc.

For costing purposes, operations are costed at the unit rates of the work centre.

For capacity planning purposes, the capacity will be shown at both work centre and operation level.

Operations may involve up to 10 different work centres e.g. cutting steel may require a machine and a supervisor.

An operation may specify the number of units of the work centre that are required.

The screen displays a form for input of operation details: -

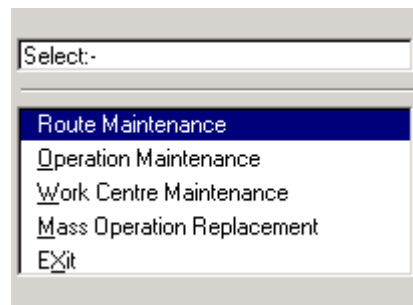
Operation	<input type="text"/>		
Description	<input type="text"/>	Alternative	<input type="text"/>
	<input type="text"/>	Unit Capacity	<input type="text"/>

Work Centre	CC	DP	Description	Type	Run Time

Basic Timing Details					
No of Units	<input type="text"/>				
Run Time	<input type="text"/>	<input type="text"/>	<input type="text"/>	Hrs	Movement Time
Set Up Time	<input type="text"/>	<input type="text"/>	<input type="text"/>	Hrs	Queue Time
					<input type="text"/>
					Hrs

Operation	<p>This is the code by which operations are identified.</p> <p>The Line 100 '/' facility is available to search the operation file for existing records. If the search facility is selected, the operations are listed and may be selected for amendment.</p> <p>If an operation code is entered that does not exist, you are prompted to create the operation, reenter the code or exit the function.</p>
Description	There are two lines of description for each operation.
Alternative	An alternative operation may be specified. This is for information only. Where there is no capacity on this operation, an alternative operation may be shown. The '/' facility can be used to select operations.
Unit Capacity	This is a default factor that may be defined for an operation in calculating run times etc. The unit capacity defaults to 1 but may be set to any other factor. Any computed run times are divided by this factor. The purpose is to relate operation units to work centre units.
Work Centre/CC/DP	<p>Each operation is performed on a work centre. Up to 10 work centres may be linked to an operation, although in most cases there will be only one. Multiple work centres may be used to consider situations where several resources are required for the operation e.g. an operative to supervise a machine.</p> <p>This is the code by which work centres are identified. Work Centres may also have a cost centre and department code for analysis. These are the standard Line 100 cost centres and departments as used within the nominal ledger and accounting system manager.</p> <p>The Line 100 '/' facility is available to search the work centre file for existing records. If the search facility is selected, the work centres are listed and may be selected.</p> <p>If a work centre, cost centre and department code is entered that does not exist, you are prompted to create the work centre, reenter the code or exit the function.</p>
Description	The first line of description for each work centre is displayed.
Type	The type of work centre is displayed e.g. Machines or Labour.
Run Time	The run time for this operation on this work centre. This is taken from the default capacity for the work centre.
No of Units	The number of units of the work centre that are required for this operation. This is information only and is not used in calculating scheduling times.
Run Time	The run time for this operation on this work centre. This is taken from the capacity specified for the work centre.
Set Up Time	The set up time for this operation on this work centre. This is taken from the setup time specified for the work centre.
Movement Time	The movement time for this operation on this work centre.
Queue Time	The queue time for this operation on this work centre.

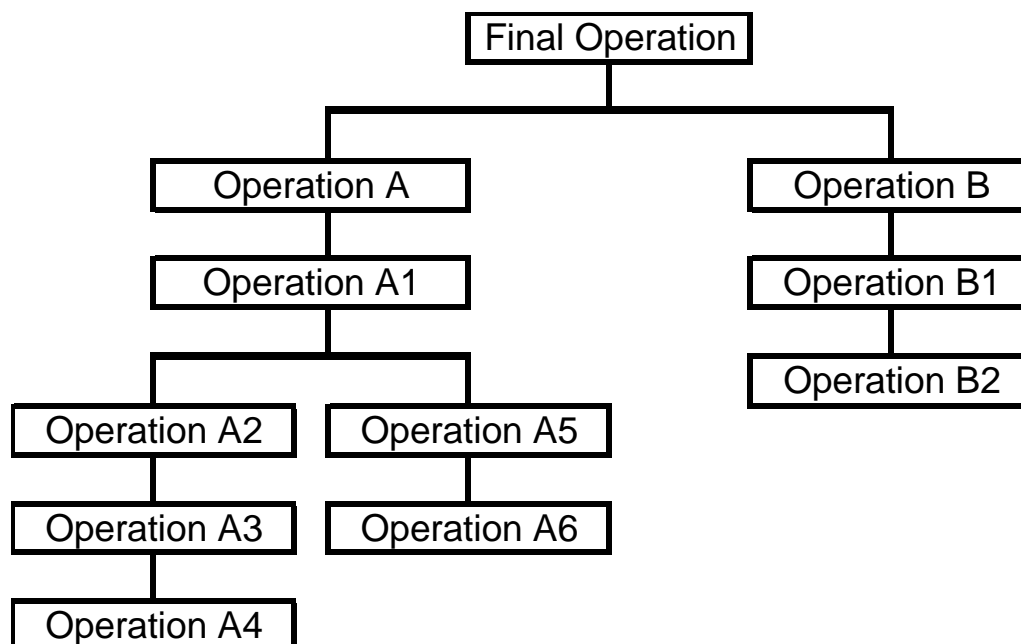
Route Maintenance



Use this function to create and maintain the routings for your products. A routing is attached to a product that is manufactured. The product must therefore exist on the Line 100 stock control file and also the Sovman Bill of Material file.

Serial Routing The simplest routing structure is where operations take place serially, one operation after another. In this case there will only be one series. The system will create a series number of '10' for each operation.

Parallel Routing / Network Structure It is possible to have more complex routing structures that allow for several operations to take place in parallel. Thus network structures can be handled by creating additional series. The system will generate series numbers in increments of 10 to handle the structure.



In the above example, the first operation to be created will be 'Final Operation', with a series of '10'.

Operation A can then be created, as a new series. The system will generate a series of '20'.

Operation A1 can then be created and added to the existing series for operation A, i.e. '20'.

Operation A2 can be created as a new series. The system will generate a series of '30'.
 Operation A3 can then be created and added to the existing series for operation A2, i.e. '30'.

Operation A4 can then be created and added to the existing series for operation A2, i.e. '30'.

Operation A5 can be created as a new series. The system will generate a series of '40'.
Operation A6 can then be created and added to the existing series for operation A5, i.e. '40'.

Operation B can then be created, as a new series. The system will generate a series of '50'.
Operation B1 can then be created and added to the existing series for operation B, i.e. '50'.
Operation B2 can then be created and added to the existing series for operation B, i.e. '50'.

The resultant structure will be: -

Series	Operation
010	Final Operation
020	Operation A
020	Operation A1
030	Operation A2
030	Operation A3
030	Operation A4
040	Operation A5
040	Operation A6
050	Operation B
050	Operation B1
050	Operation B2

To create or amend a routing the assembly details screen is displayed. The assembly number must be entered or selected. This must be an existing BOM. Use of the '/' facility will display existing BOM assemblies. Upon entering or selecting the assembly number, the assembly details are displayed.

You are then prompted for the first operation code on this routing. The '/' command will prompt you for: -

Operation	This will display the existing operations within the route in series sequence. If there is only one series, i.e. the routing is a serial route, then this option is not displayed.
Routes	This will display existing operations specified on this routing in operation code sequence.

If you select an item that does not exist within the route, you are prompted to create the operation. If selected, you are prompted to add the item to an existing series or a new series.

Existing Series This will allow you to add the operation selected to an existing series. If selected, you are prompted to select the finishing operation/product for the series.

New Series This will allow you to create a new series to add this operation to. If selected, you are prompted to select the finishing operation/product for this new series. A new series number will be generated and the operation added to this series.

When creating the operation detail, the following fields are displayed: -

No of Ops	This is the number of operations that can be performed within a time in hours, minutes and seconds. This is picked up from the operation master.
Elapse Time	This is displayed only and is calculated from the number of ops and the operation run time.
Sequence No	This is the sequence number of the operation within the route. The system will generate the next number but this can be amended.
Milestone	A milestone operation is one that has to be formally completed before the next operation can take place. If the operation is not designated as a milestone operation, it need not be formally 'booked in' to the system when recording the progress of works orders through the Sovman Works Order Tracking module.
Tool Ref	A tooling reference may be specified for each operation. The search command will display the tool references from the Tooling Reference file. If the tool reference does not exist, you are prompted to create it 'on the fly'
Yield %	A percentage yield may be specified. This is currently not used in the scheduling.
Effective Dates	The start and stop effective dates can be entered to control the phasing of particular operation changes.
Comments	Unlimited lines of 75 characters of text can be input for each operation detail. Text can also be selected from the standard narrative file within parameters.

If you select an operation that already exists within the route, you are prompted to: -

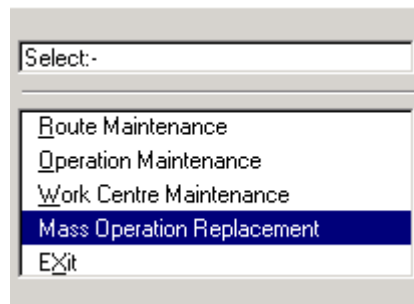
Select This Item	This operation may now be amended.
Change Flow	<p>This function is only displayed if there is more than one series within the route i.e. there are parallel operations (see above). Operations are linked together using the series number. Each series of operations is linked to a finishing operation or the product that is manufactured.</p> <p>This function allows you to change the finishing operation/product that a series is linked to. The series to be changed is first selected by selecting any operation within the series. Having chosen task flow change, you are then prompted to select the finishing operation that this series is to end at.</p> <p>Note that to change the existing series number of an operation within the route, you must delete the operation and re-create it.</p>
Duplicate	This option is only displayed if you have set the parameter to allow duplicate operations within a route. If you choose to duplicate this item, you are prompted to add the item to an existing series or a new series. See below for a description of this function.

If you enter an operation code that does not exist, and the parameter has been set to create operations on the fly, you will be prompted to create the operation record. If you choose to create

the operation, you will be passed to the operation maintenance function (see above). The work centres may also be created on the fly within the operation maintenance function. When you have created the operation detail, you are prompted to select "Another Operation", "Resequence", "Remove" or "Exit" the function.

Another Operation	User may select another operation.
Resequence	This function will re-sequence the operation records within the route and generate new sequence numbers in increments of 100. You are prompted to confirm the function.
Remove	User may select an operation for removal.

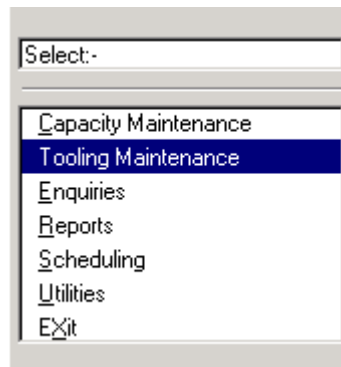
Mass Operation Replacement



Use this function to replace one operation by another throughout all the routings. You are first prompted for the operation to be replaced. You are then prompted for the operation to replace it. You are then asked for: -

Qty Multiplication Factor	This factor will be used to multiply the number of operations required in the replacement operation, the default is one for one.
Add Standard Comment	If this is set to Yes, a standard message is added to the operation detail comments to indicate the operation code that has been replaced.

Tooling Maintenance

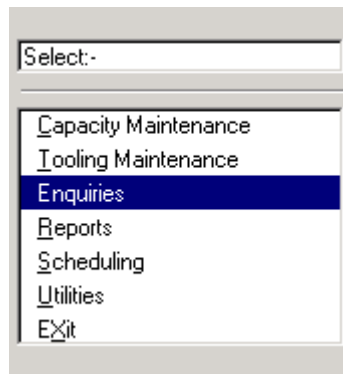


You may create tooling details within a tooling reference file. The tooling details may then be linked to an operation within the product routing.

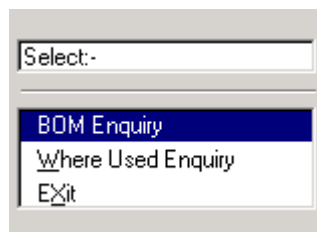
You are prompted to enter the tooling reference. The search command can be used to access the tooling records. You can then create or amend the following details: -

Description	A description of the tool. Additional lines of text may be entered for the tool.
Creation	The date of creation of the tool record. This defaults to today's date.

Enquiries

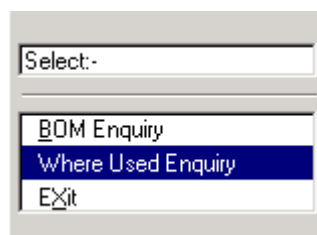


BOM Enquiry



This function takes you into the Sovman BOM enquiry for a particular product. You may then view the BOM details or the product routing (see the Sovman BOM manual).

Where Used Enquiry

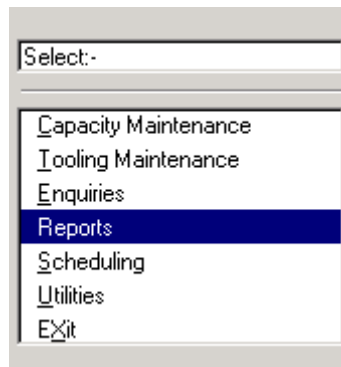


This function will display all routes that an operation is used on. You are prompted to enter the operation code. Use of the '/' command will display all operations from the operation file.

After selection of the operation, the assembly numbers that have this operation within their route are displayed.

Selection of an assembly number will display the assembly details from the Sovman BOM file.

Reports

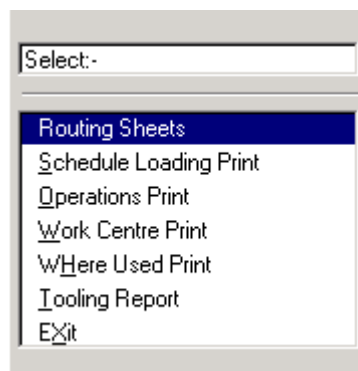


Use this section of Capacity Planning to produce print outs, including details of the data stored in the work centre and operation files.

When a report is selected, a report template will be displayed. This works in exactly the same way as the standard Line 100 templates and allows selection and sequencing for the particular report.

The mask facility may also be used to select specific characters within the appropriate field.

Routing Sheets

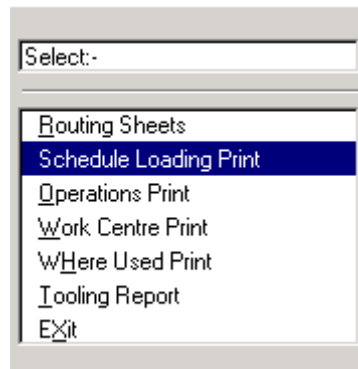


This function will print the routing information for an assembly or a range of assemblies. The template allows selection or sequencing by Assembly number, Product Group, Description, Drawing Number and Planner.

You are also given the options to print the comments associated with the routing and to sequence the operations either by sequence number or operation code.

Routing sheets can also be printed with the Works Order Picking list using the Sovman works order module (see parameters).

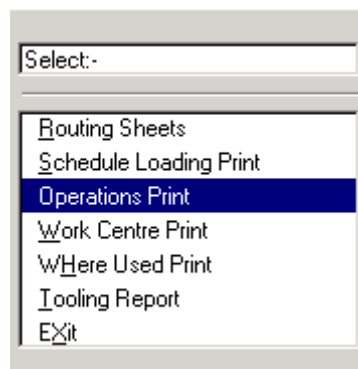
Schedule Loading Print



This function will print the schedule loading information from the results of the Schedule Loading run. The template allows selection or sequencing by Work Centre, Cost Centre, Department, Operation Code, Operation Description or Date Range.

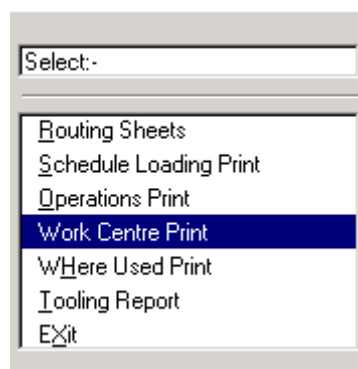
The report shows the loading on each work centre in date sequence. The orders loaded are printed together with the operations required.

Operations Print



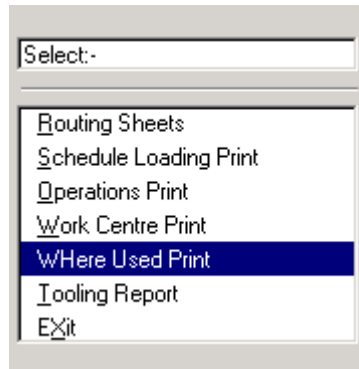
This function will print the operation details from the operation file. The template allows selection or sequencing by Operation Code, Work Centre, Cost Centre, Department and Description.

Work Centre Print



This function will print the work centre details from the work centre file. The template allows selection or sequencing by Work Centre, Cost Centre, Department and Description.

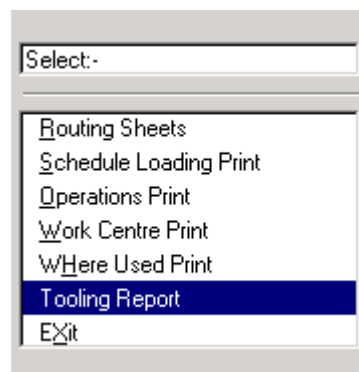
Where Used Print



This function will print, for a particular operation, the assembly numbers that have this operation within their routing. The template allows selection or sequencing by Operation Code, Work Centre, Cost Centre, Department and Description.

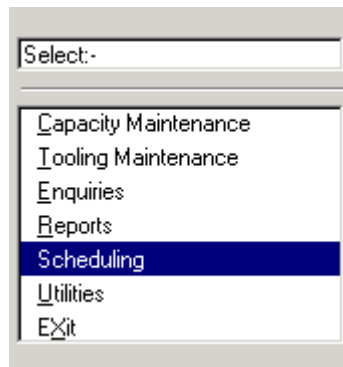
You are also given the option to print the operations consecutively (packed) or print a separate operation per page (one per page).

Tooling Report



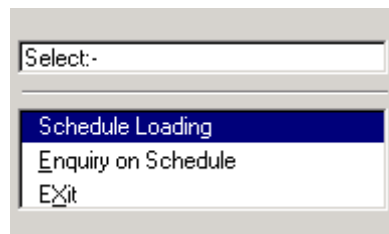
This function will print the records from the Tool Master file. You can select a range of tool references.

Scheduling



Use this section of Capacity Planning to show the loading of work for each operation and work centre.

Schedule Loading



This function will calculate the loading requirements from a range of inputs including sales orders from Line 100, suggested orders from the Sovman materials planning module, sales forecasts from the Sovman sales forecast module, production plan from the Sovman materials planning module or works orders raised within the Sovman Works Orders module. These works orders may have been raised to manufacture for stock or released into the works order system from Line 100 sales orders for customers. Only Line 100 sales orders with To Follows are processed.

Only works orders that have been released but not completed are considered for loading.

As the scheduling run may take some time (depending on the number of orders and routings within the system), you are asked to confirm the scheduling run.

You are prompted to select the following file inputs: -

Works Orders To select from Sovman works orders that have not been completed.

Works Suggestions To select from Sovman suggested orders. These are requisitions for manufactured items that have been raised through the Sovman materials planning module.

If you select Yes, you are requested to answer yes to one of the following: -

Quantity Required The actual quantity required.

Quantity recommended The quantity recommended i.e. the requisition quantity. This may be different to the quantity required due to re-order quantities and re-order levels.

Forecast Master	To select sales forecast entries for manufactured generated from the Sovman sales forecasts module. Forecasts are displayed under requirements (marked with an f) on the materials planning screen display.
Planned Inputs	To select production plan entered through the Sovman materials planning module.
Sales Orders	To select Sage Line 100 sales orders. Only orders entered in 'to follows' are processed.
Schedule Start Date	The start date for the scheduling run. This defaults to the last start date used. Only works orders with a due date greater than, or equal to, this start date will be selected for loading.
Schedule Finish Date	The finish date for the scheduling run. This is calculated from the start date plus the capacity planning horizon set within the utilities. Only works orders with the valid status and a due date less than or equal to the schedule finish date are selected for scheduling.

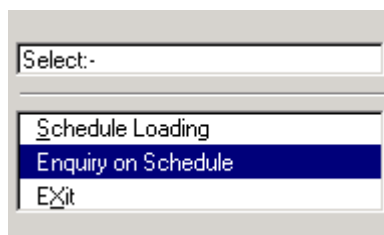
Processing is completed as follows: -

- The inputs are selected, for each input.
- Each operation on the routing for the order or input is taken in reverse order i.e. the final operation is taken first. This is done by selecting the operations in sequence number order.
- For each operation, the total set up time is calculated, if the parameter is set to include set up in scheduling.
- The total operation time is calculated by multiplying the works order quantity by the number of operations required by the operation time.
- If the parameter has been set to include movement time and queue time in the scheduling, these are added to the total time for the operation.
- The total time is subtracted from the capacity for the operation and work centre. If this is the final operation on the routing, this is subtracted from the capacity for the due date of the order. If there is a work centre specific calendar, the capacity is taken from this, otherwise the default calendar is used. This gives a finish date and time for the next operation. Thus if the capacity of the work centre is 8 hours per day, and the due date of the order is day 22, the total time required for the final operation is 12 hours, then the penultimate operation must finish on day 21 when there is still 4 hours capacity available.
- Each subsequent operation is loaded in the same way, calculating the start date/times and finish dates/times for each operation.
- The process continues until all orders are processed.

If multiple units are specified at work centre or operation level, the following processing is performed: -

- For the work centre, the total capacity per day is the capacity of the work centre times the number of units e.g. a machine may be specified as a work centre with a capacity of 8 hours per day, if there are 4 units per work centre, i.e. 4 similar machines, the total capacity is 32 hours.
- When loading an operation, the number of units required for the work centre on an operation is used to determine capacity e.g. a labour work centre may be specified for 'packers'. A particular operation to pack may require 3 packers and take 1 hour to pack a unit. The work centre may have 10 packers available. If the default capacity of the work centre is 8 hours, the total packing capacity is 80 hours per day. If an order requires 1 packing operation, this will take up 3 hours of the 80 hours capacity of the work centre. The actual operation, however, will only take 1 elapsed hour for scheduling.

Enquiry on Schedule



This option will display the loading on work centres with a drill down function to view the loading on operations and the actual orders loaded.

When you first enter the screen, you are prompted for: -

Order Numbers	When selected this displays details of all orders and operations loaded. The start date and time is displayed with the unit run time and number of operations.
Work Centres	When selected, the work centre loading screen is displayed. Each work centre, with the appropriate cost centre and department codes is shown on the left of the screen. The percentage loading on each work centre is displayed as a bar to the right of the work centre, with the percentage load displayed on the right of the screen.

If the percentage loading exceeds the warning overload percentage for the work centre, the percentage load column will flash in red.

As you scroll through the work centres, the following details for that work centre are displayed above the screen: -

Units	The number of units of the work centre available.
Set Up	The total set up time loaded onto this work centre.
Movement	The total movement time loaded onto this work centre.
Queue	The total queue time loaded onto this work centre.
Machine/Labour	The total run time loaded onto this work centre. This is displayed as machine or labour depending on the type of work centre.
Total Time	The total time loaded onto this work centre.
Available	The available capacity in hours and minutes for this work centre for the scheduling period.
%Load	The percentage loading on this work centre for the scheduling period.

When you select a work centre you are presented with three options: -

- Operation Summary
- Daily Summary
- Print W/C Loading

Operation Summary

When you select this function, the following details are displayed for each operation on the work centre: -

%Load	The percentage loading on this operation for the scheduling period.
Set Up	The total set up time loaded onto this operation.
Movement	The total movement time loaded onto this operation.
Queue	The total queue time loaded onto this operation.
Machine/Labour	The total run time loaded onto this operation. This is displayed as machine or labour depending on the type of work centre.
Each	The total time scheduled on each operation divided by the total outstanding quantity of all works orders i.e. the average time per unit quantity on this operation.
O/S	The total quantity outstanding of all works orders on this operation.
WIP	This field is currently not used.

If you select an operation by pressing the enter key, the works orders loaded onto that operation are displayed in order number sequence. The following details are displayed for each order: -

Order Number	The works order number.
Assembly Number	The assembly number manufactured on the works order.
L	This field indicates if this operation on this works order is linked to other work centres. The other work centres may be viewed by selecting the breakdown of loading for the order.
Due Date	The due date of the works order.
Quantity	The quantity outstanding on the works order.
Unit Time	The total time required for this works order on this operation.
No	The number of operations required for this works order.

If you select a works order, the following options are displayed: -

Break Down	This option gives a detailed breakdown of the individual operations on this order. Operations are displayed in operation number sequence. The start date and time for each operation is displayed. Times are expressed from the beginning of the working day at 0:00. The unit time and number of operations required for each operation is also displayed.
Revised Due Date	This option allows you to amend the due date of the works order for re-scheduling purposes. The original due date is always maintained. If you amend the due date of a works order, you are prompted to amend the due dates on any sub level orders.

Daily Summary

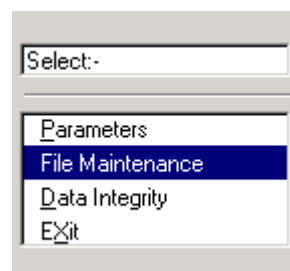
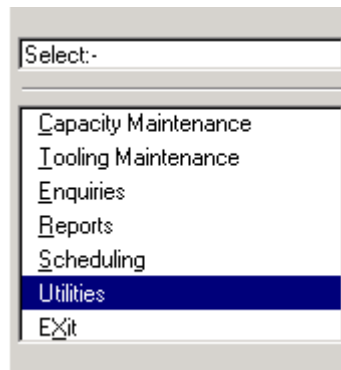
This function gives a breakdown of capacity by day within the schedule period for the work centre.

A drill down for each day will display the orders loaded for that day. When you select a day, the times displayed on the top of the screen relate to the loading on that day.

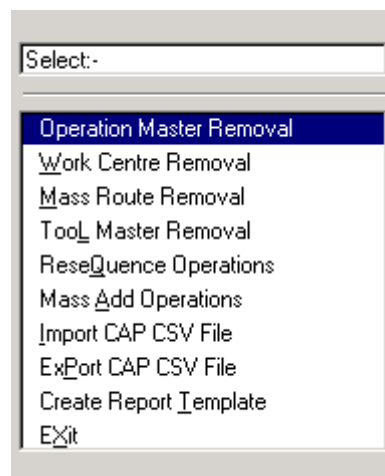
Print W/C Loading

This option will print the work centre loading report for this work centre.

File Maintenance



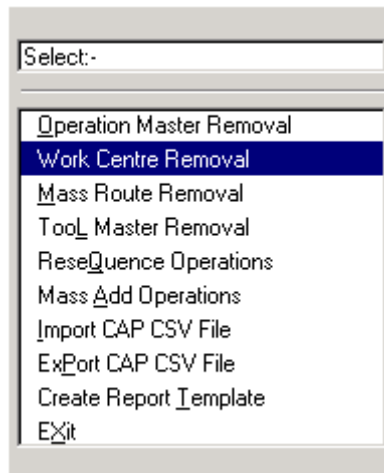
Operation Master Removal



Use this utility to delete operations from the operation master file.

- Enter the operation code or use the search facility to locate the operation to be deleted.
- The operation information is displayed.
- Once the operation has been identified, confirm to delete or exit to ignore.
- The option is then displayed to delete another operation or return to the menu.

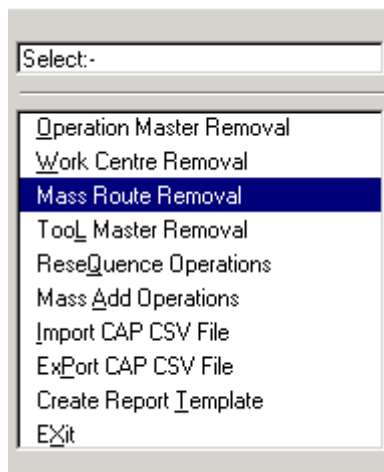
Work Centre Removal



Use this utility to delete work centres from the work centre master file.

- Enter the work centre code or use the search facility to locate the work centre to be deleted.
- The work centre information is displayed.
- Once the work centre has been identified, confirm to delete or exit to ignore.
- The option is then displayed to delete another work centre or return to the menu.

Mass Route Removal



Use this function to delete an operation from all routings it occurs in.

- Enter the operation code or use the search facility to locate the operation to be deleted.
- The operation information is displayed.

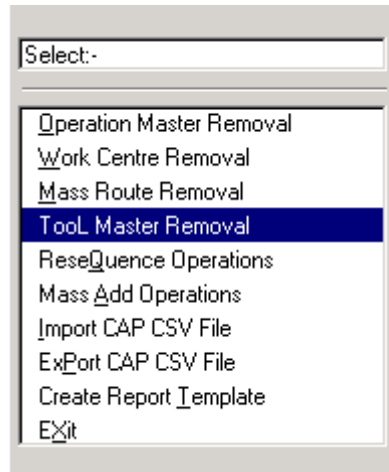
You are then given two options: -

Remove Assembly Headers If No Operations	If there are no remaining operations on a route and there are no components on a BOM for this product, the assembly header will be automatically deleted for this product if this option is set to Yes.
------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Resequence Operations After Removal If this option is set to Yes, then the remaining operations on each route will be resequenced.

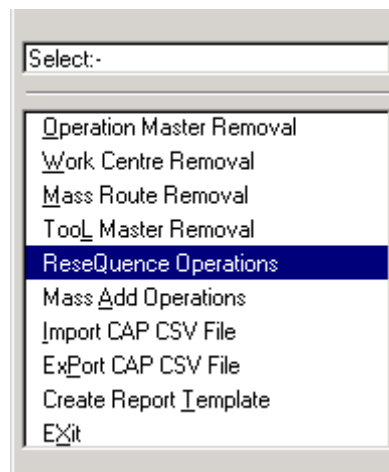
Once the operation has been identified, accept to delete, reenter or discard.

Tool Master Removal



This function allows you to delete a tool record. You cannot delete a tool record if it is used on a product routing. You must first remove the tool reference from the routing.

Resequence Operations

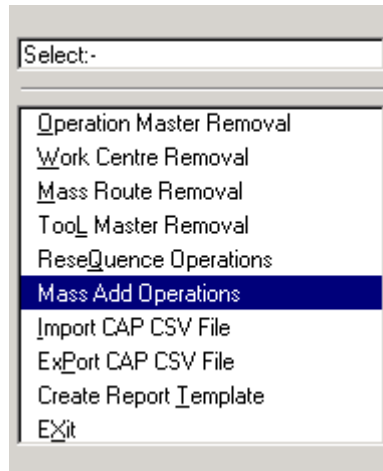


This function will automatically resequence all operations on routes. Sequence numbers will be generated in increments determined by the sequencing steps parameter. This will be displayed and can be amended at this point.

You are asked to confirm the resequencing run.

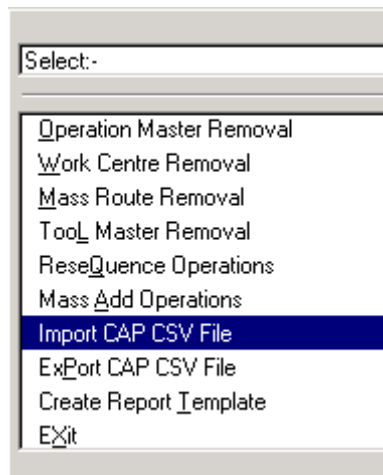
You are then given a template to enable you to select by assembly, product group, description, drawing number or planner.

Mass Add Operations

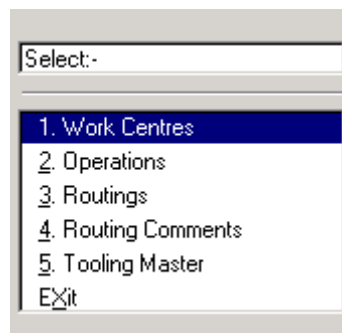


This function allows you to create an operation record across a range of product routings. You are asked to confirm and then select or enter an operation to create a routing record. You are asked to confirm if you wish to re-sequence routings affected. You are then given a template to select a range of assemblies for which you wish to add this routing record.

Import CAP CSV File

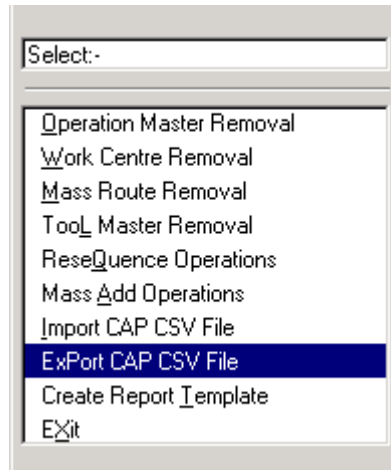


The user is prompted to select the following: -

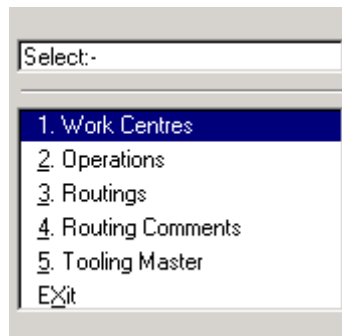


Please see appendices for file layouts.

Export CAP CSV File

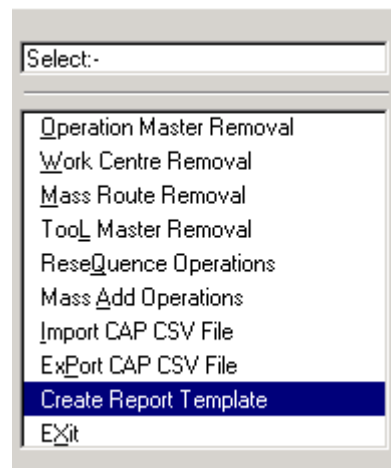


The user is prompted to select the following: -



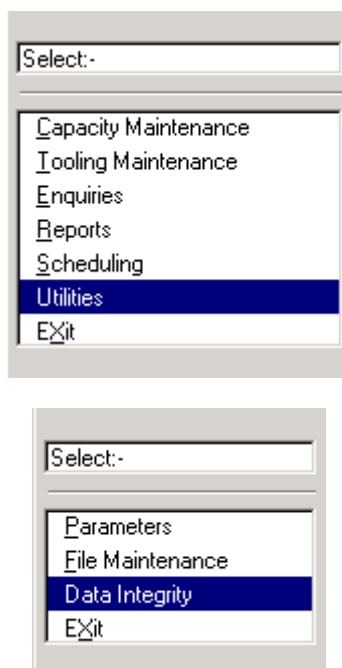
Please see appendices for file layouts.

Create Report Template



If the report templates that allow selection and sequencing of reports have been corrupted, this function will re-generate all the standard report templates. This function may also be required if Capacity Planning has been added to the system at a later stage.

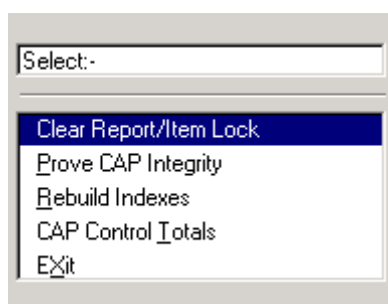
Data Integrity



This section deals with the housekeeping utilities that are provided to ensure the integrity of your data files is maintained.

The functions include facilities to check the capacity planning's data files, to ensure that they contain data that properly balances, and special utilities for recovering from circumstances that might otherwise leave the data files inaccessible, perhaps as a result of a computer or power failure during processing.

Clear Report/Item Lock



Use this function to clear locks on files for reports and capacity planning item records.

Locking facilities are built into Sage Line 100 for multi-user purposes, though they may be encountered while using the system in single user mode if it is interrupted by hardware or power failure while the Capacity Planning module is in use.

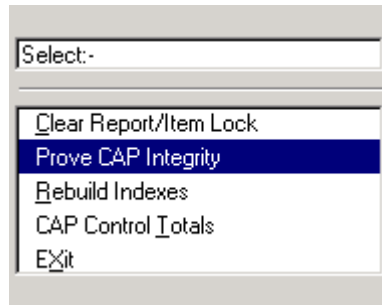
When the option is selected, the user is asked to confirm that no other users are accessing the report concerned. If you are sure that there are no other users of the system enter 'Y' to confirm. You will be asked to confirm again to proceed.

The screen then prompts to confirm that no one is updating items and to confirm again.

Finally you are asked to confirm that no one is running a costing run and to confirm again.

The system will automatically reset the lock flags on all files concerned and, when complete, will display the Data Integrity menu.

Prove CAP Integrity



Use this program to ensure that all the data stored for the Capacity Planning module is intact and has not become corrupted in any way. It is good practice to run this operation on a regular basis, as a preventative measure, to detect whether or not your computer is recording information properly. If corruptions do occur and are left undetected, you may find that all back-up disks are similarly affected.

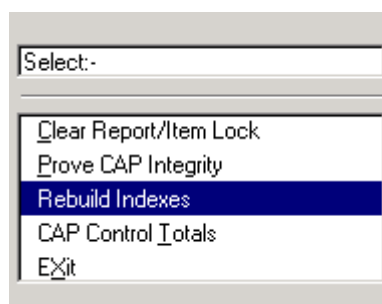
When the option is selected, the screen warns you that you can only run this routine in single user mode i.e. there must be no other users on the system. You are asked to confirm that you are the only user.

Having ensured that there are no other users, the screen displays a box informing you of the process about to be performed.

To proceed simply enter Y.

The system will print a reconciliation report.

Rebuild Indexes

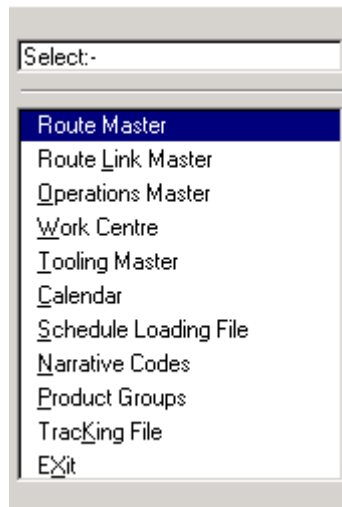


Use this program to recreate a corrupt capacity planning index file. A symptom of a corrupt file may be one of the following error messages being displayed on the screen: -

- Index has not been created
- Index key not deleted
- Index key not found
- Index not positioned at a record

The routine will delete all or selective indexes and create new ones from existing data files.

When the option is selected, the screen will display a list of the capacity planning files for which indexes may be corrupted: -



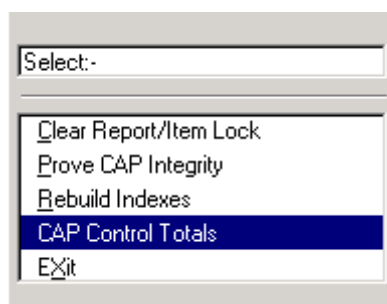
Simply select the file(s) to be re-indexed or exit to the menu.

Once the file has been selected, the screen will display a list of index names for that file. At the foot of the screen, the options are displayed to create all indexes or specified indexes only.

If you choose to recreate all indexes, the system will work sequentially through the index files, displaying each one as initialised when complete.

If you choose to recreate selected indexes, the screen will prompt you to reply Y or N against a 'Create?' prompt, displayed alongside each index name in turn. When all selected indexes have been recreated, press the space bar and the Data Integrity menu is redisplayed.

CAP Control Totals



Use this program to display the file total details of the Capacity Planning module, as normally displayed when you exit from the module main menu.

When selected, the screen displays number of records and the % file space used for each of the capacity planning files.

To print the totals, select Print or exit to the menu.

Appendices

CSV file layouts for Bill of Materials import / exports

Assembly Header Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Drawing Number	X(20)	
Issue Letter	X(10)	
Phantom Flag	9	(1 = Yes, 2 = No, Default = 2)
Sub Contract Flag	9	(1 = Yes, 2 = No, Default = 2)
Bulk Completions	9	(1 = Yes, 2 = No, Default = 2)
Assembly Qty	9(10).9(4)	(Cannot be zero, Default = 1)
Reorder/Batch Qty	9(10).9(4)	
Reorder/Batch Top Up Qty	9(10).9(4)	
Labour Time	X(13)	(HHHH:MM:SS.SS)
Machine Time	X(13)	(HHHH:MM:SS.SS)
Setup Up Time	X(13)	(HHHH:MM:SS.SS)
Explosion Type	X	(E = Explode Shortages) (N = Never Explode) (A = Always Explode) (Default = E)
Effective Start Date	X(10)	(DD/MM/CCYY)
Effective Finish Date	X(10)	(DD/MM/CCYY)
Department	X(20)	
Labour Cost	9(10).9(4)	
Machine Cost	9(10).9(4)	
Overhead Cost	9(10).9(4)	
Setup Cost	9(10).9(4)	
Setup Overhead Cost	9(10).9(4)	

Notes

1. Stock control records must already exist or the assemblies will be rejected. This can be achieved by using the Line100 Stock CSV Import feature before running the assembly imports.
2. Records will only be created if no assembly record exists.
3. Drawing numbers that do not exist will be automatically created, therefore the drawing number import (if one exists) must be done before the assembly import.

Assembly Comments Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Narrative Code	9(4)	(Standard Narrative Code, 0000-Non Standard)
Comment Line	X(75)	

Notes

1. Assembly headers must already have been imported before comments can be accepted.
2. Comments will only be imported onto assemblies which do not already have comment lines attached. An override option is available to allow comments to be appended.

Component Detail Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Item Type	9	(1 = Stock item) (3 = Non stock item) (Default = 1)
Component Number	X(20)	(Mandatory)
Item Description 1	X(30)	(Only for non stock items)
Item Description 2	X(30)	(Only for non stock items)
Item Description 3	X(30)	(Only for non stock items)
Item Cost	9(10).9(4)	(Only for non stock items)
Reorder Lead Time	99	(Only for non-stock items. Value in days)
Product Group	X(4)	(Only for non-stock items. Must exist in stock product groups)
Drawing Number	X(20)	(Ignored for non stock items)
Issue Letter	X(10)	(Ignored for non stock items)
Variable/Fixed Qty	9	(1 = Variable) (2 = Fixed) (Default = 2)
Sequence Number	9(6)	
Required Qty	9(10).9(4)	
Average Usage	9(10).9(4)	(Only for variable quantities)
Buying Unit Code	9(2)	(Stock buying unit code)
Effective Start Date	X(10)	(DD/MM/CCYY)
Effective Finish Date	X(10)	(DD/MM/CCYY)
Yield Percentage	9(3).9999	(Values between 0.0001 and 999.9999) (Default = 100%)
Rounding Flag	9	(1 = Yes) (2 = No) (Default = 2) (Ignored for non stock items)
Rounding Value	9(10).9(4)	(Ignored for non stock items)
Bulk Issues	9	(1 = Yes) (2 = No) (Default = 2) (Ignored for non stock items)
Replacement Allowed	9	(1 = Yes) (2 = No) (Default = 2) (Ignored for non stock items)

Notes

1. Stock control records must already exist for stock item components or the items will be rejected. This can be achieved by using the Line100 Stock CSV Import feature before running the assembly imports.
2. Assembly headers must already have been imported before components can be accepted.
3. If duplications are allowed then components will be appended to assemblies. If not then any duplicates found will be rejected.

Component Comments Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Component Number	X(20)	(Mandatory)
Narrative Code	9(4)	(Standard Narrative Code, 0000-Non Standard)
Comment Line	X(75)	

Notes

1. Assembly headers and components must already have been imported before comments can be accepted.
2. Comments will only be imported onto components which do not already have comment lines attached. An override option is available to allow comments to be appended.

Drawing Master Layout (V6.22)

Drawing Number	X(20)	(Mandatory)
Drawing Description	X(30)	
Drawing Description 2	X(30)	
Issue Letter	X(10)	
Issue Date	X(10)	(DD/MM/CCYY - Default to today's date)
Sales Ledger Account Code	X(8)	
Comments	X(30)	
Comments 2	X(30)	
Document	X(20)	

Notes

1. Records will only be created if no drawing record exists.

CSV file layouts for Capacity Planning

Work Centre Layout (V6.22)

Work Centre	X(20)	(Mandatory)
Cost Centre	X(3)	
Department	X(3)	
Description	X(30)	
Description 2	X(30)	
Tracking Depot	X(4)	(Only available for machines)
Tracking Bin	X(5)	(Only available for machines)
Work Centre Flag	9	(1 =Labour, 2 =Machine, Default =1)
Sub Contract Flag	9	(1 = Yes, 2 = No, Default = 2)
Serial/Parallel Flag	9	(1 = Serial, 2 = Parallel, Default = 1)
Default Hours	X(5)	(HH:MM)
Default Unit Time	X(13)	(HHHH:MM:SS.SS)
Default Setup Time	X(13)	(HHHH:MM:SS.SS)
Number of Units	9(4)	(Default = 1)
Standard Rate	9(10).9(4)	
Standard Setup	9(10).9(4)	
On Cost Percentage	9(3).9(4)	
Warning Load Percentage	9(3).9(4)	
Default Unit Capacity	9(10).9(4)	(for and operation, Default 1)
Charge Rate	9(10).9(4)	
Charge Setup	9(10).9(4)	
Std Overhead Percentage	9(3).9(4)	
Setup Overhead Percentage	9(3).9(4)	

Notes

1. Records will only be created if no work centre record exists.

Operation Layout (V6.22)

Operation Code	X(20)	(Mandatory)
Description	X(30)	
Description 2	X(30)	
Alternative Operation	X(20)	
Unit Capacity	9(10).9(4)	
Work Centre	X(20)	(**This block from Work Centre to Queue Time)
Cost Centre	X(3)	(repeats ten times)
Department	X(3)	
Number of Units	9(4)	
Run Time	X(13)	(HHHH:MM:SS.SS)
Setup Time	X(13)	(HHHH:MM:SS.SS)
Movement Time	X(13)	(HHHH:MM:SS.SS)
Queue Time	X(13)	(HHHH:MM:SS.SS)

Notes

1. The first block of work centres must include at least one valid work centre in block one otherwise the item will be rejected.
2. Work Centres must already have been imported before operations can be accepted.

Routing Detail Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Operation Code	X(20)	(Mandatory)
Series Level Number	9(4)	(Default = 10)
Sequence Number	9(6)	
Required Qty	9(10).9(4)	
Tooling Reference	X(20)	
Milestone Flag	9	(1 = Yes, 2 = No, Default = 2)
Effective Start	X(10)	(DD/MM/CCYY)
Effective Stop	X(10)	(DD/MM/CCYY)
Yield Percentage	9(3).9999	(Values between 0.0001 and 999.9999) (Default 100%)
Setup Factored	9	(1 = Yes, 2 = No, Default = 1)

Notes

1. Assembly headers and operation records must already exist or the items will be rejected.
2. If duplications are allowed then operations will be appended to assemblies. If not then any duplicates found will be rejected.

Route Comments Layout (V6.22)

Assembly Number	X(20)	(Mandatory)
Operation Code	X(20)	(Mandatory)
Narrative Code	9(4)	(Standard Narrative Code, 0000-Non Standard)
Comment Line	X(75)	

Notes

1. Assembly headers and operations must already have been imported before comments can be accepted.
2. Comments will only be imported onto operations which do not already have comment lines attached. An override option is available to allow comments to be appended.

Tooling Master Layout (V6.22)

Tooling Reference	X(20)	(Mandatory)
Tooling Description Information	X(30)	
Information 2	X(30)	

Notes

1. Records will only be created if no tooling record exists.

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