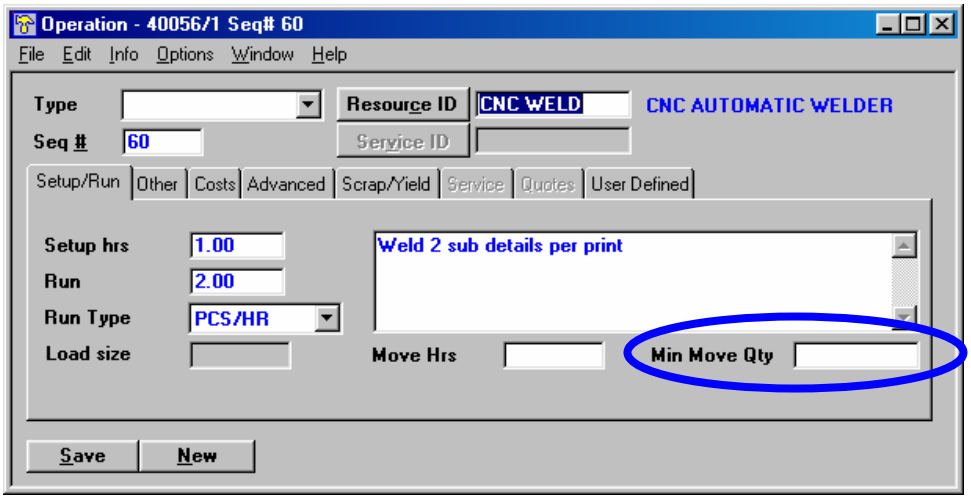
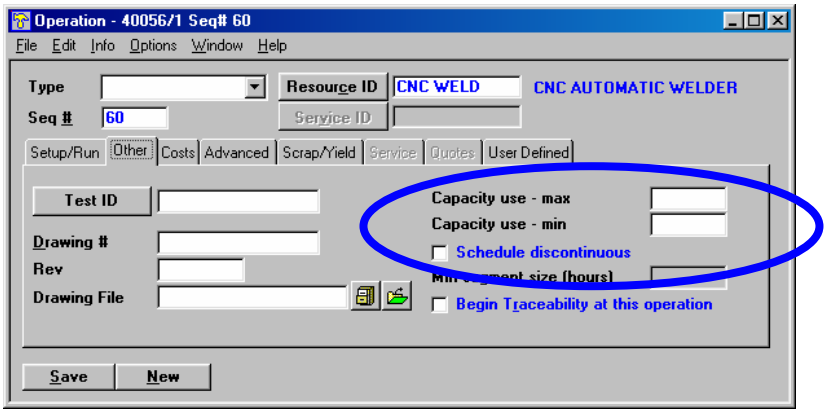
1. *The Scheduling Window is telling me to run some jobs first even though they are not the ones we need.* This is most commonly caused by improper want dates on Work Orders. The Global Scheduler prioritizes work orders by want date. Those Work Orders with the earliest want date will use up available capacity first. Work Order want dates must be kept current for the Schedule to work. If an order is put on hold, then the date should be moved out. Old orders should be closed or cancelled if they are not going to be produced. See Auditing Work Order Dates for further instructions on keeping Work Order information correct.

2. *There are a lot of little jobs that the Scheduling Window says I should be completing even though they are done.* This is because partially completed work orders are not closed or rescheduled. A Work Order will close if the received quantity is equal to or greater than the desired quantity. A Work Order with a received quantity of 98 against a desired quantity of 100 will not close automatically. If the remaining 2 pieces are not going to be produced then the Work Order must be closed manually. See Auditing Work Order Quantities for further instructions on keeping Work Order information correct.

3. *Operations are not scheduled to run concurrently.* By default, the Global Scheduler will assume that one operation must finish completely before the subsequent operation can begin. This does not always reflect the way a Work Order moves through the shop. To have operations run concurrently it is necessary to set the Min Move Qty on the first operation to the allow the second operation to be scheduled concurrently. The Min Move Qty should be set to the amount of product that needs to be completed at the first operation before the second operation can begin. In an “assembly line” this quantity is 1. It can also represent a skid or bin quantity if that is how product is moved between the operations.

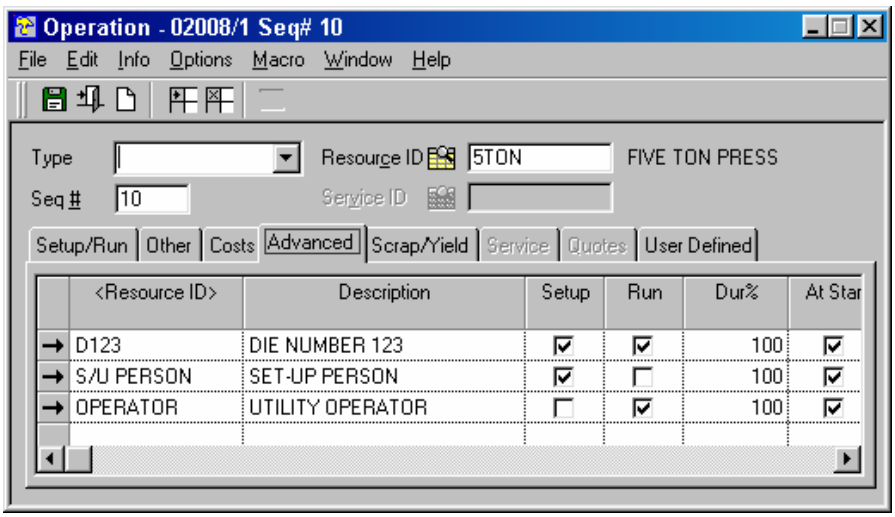


4. *I have four welders but the job only uses one even though it could use all four.* If there is a resource with more than one unit of capacity (in Shop Resource Maintenance) then any Work Order can be set to use multiples of this resource in an attempt to complete the Work Order on time. To do this, set the Capacity use-max to be greater than 1 on the Other tab of the operation card. This will allow the Global Scheduler to use multiple units of capacity if required to have the Work Order complete on time. The Capacity use-min is assumed to be 1 if it is left blank. If a minimum multiple is always employed for a job then the Capacity use-min should also be set.

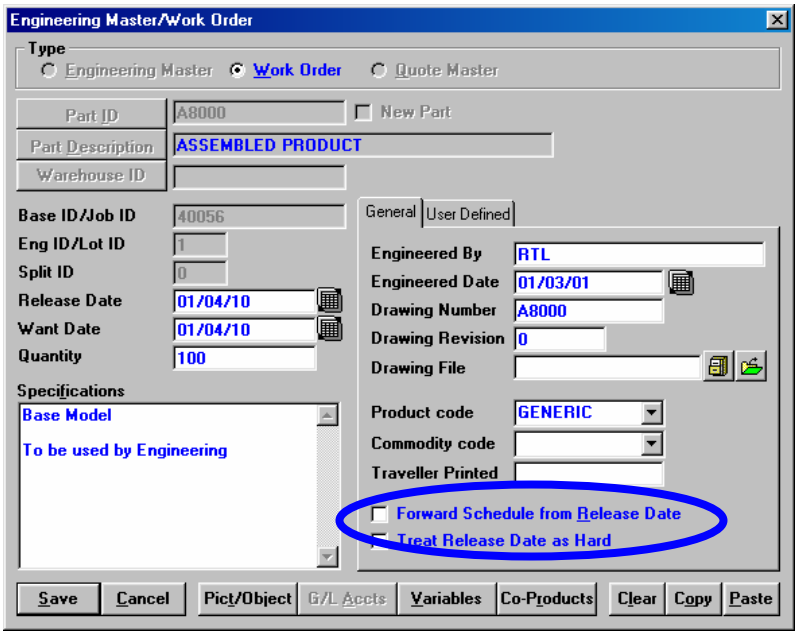


5. *For some operations I need to schedule more than one resource. For instance I may need to schedule the press and the tooling at the same time.* To schedule more than one resource at a time you can use the Advanced tab on the operation card to add additional

resources. The capacity availability of these concurrent resources will be check to ensure that every resource is available for the job. Concurrent resources from the Advanced tab will also print on the dispatch report to tell the operators which tool or other resource to have available for the job.



6. *The schedule seems to want to start my first job last.* By default, the Global Scheduler will backward schedule. If two jobs are due on the same date, the first job (alpha-numerically) will be scheduled to finish on that date. The second job will be scheduled to use earlier capacity if it is available. This can lead to a last-in/first-out schedule if there is idle capacity. Work Orders and Engineering Masters can be set to forward schedule. This is set on the main header card for the Order/Master. Setting Orders to forward schedule will ensure that jobs start in the shop earlier and in a first-in/first-out manner.



7. *There is lots of idle time on my schedule even though jobs are late.* This can be caused by the way that the Global Scheduler prioritizes jobs for the schedule. By default, the Global Scheduler will prioritize based on the Work Order want date. For simplicity this example will be of a shop that has only one resource on one shift and only three Work Orders need to use the resource. All the operations have a run rate 8 Hrs/Pc for each Work Order. Work Order 100 is due on Wednesday for a desired quantity of 1 and will take 8 hours on the resource. Work Order 200 is due on Thursday for a desired quantity of 1 and will take 8 hours on the resource. Work Order 300 is due on Friday for a desired quantity of 3 and will take 24 hours on the resource. Using the defaults for the Global Scheduler, the Work Orders will be backward scheduled according to their want dates. Thus Work Order 100 will be scheduled first and will use the Wednesday shift. Work Order 200 will be scheduled next and will use the Thursday shift. Work Order 300 will try to schedule to be completed on Friday but since it needs three consecutive shifts it cannot find room in the current week and will be scheduled to run on the resource on the Friday shift of this week and the Monday and Tuesday shifts in the following week. This will create a schedule with a late order and idle time on the resource. The solution is to reset the way that the Global Scheduler prioritizes order in which the work orders are applied to the schedule. This is set in the Global Scheduler under Options\Preferences. Set the Sort by to be Priority, want date and Save. In the main Global Scheduler window, highlight the Standard schedule. Select File\Work Order Priorities. This will bring up a listing of all the Work Orders to be scheduled. Under Options\Edit Columns add the

Desired Qty to the search window. Click once on the header for the Desired Qty column (click right on the name) and this will sort the Work Orders by size. Now set a lower priority for larger order sizes. This will ensure that those Work Orders with longer run rates will be scheduled first. In the previous example, if the priority for Work Order 300 is set to 40 then it will be scheduled ahead of the other two Work Orders. This means that Work Order 300 will be scheduled on the Wednesday, Thursday, and Friday shifts. Work order 100 will try to schedule on Wednesday and find Work Order 300 there but will continue looking until it schedules on Tuesday. Work Order 200 will try to schedule on Thursday and will also find Work Order 300 there but will continue to look until it schedules on Monday. In this scenario all three Work Orders are scheduled to complete on time and there is no idle time on the resource. Adding other search criteria than the desired quantity can refine the setting of priorities. Using the Edit Columns feature, you could limit your display of Work Orders by Product Code or any other field from the Work Order table.

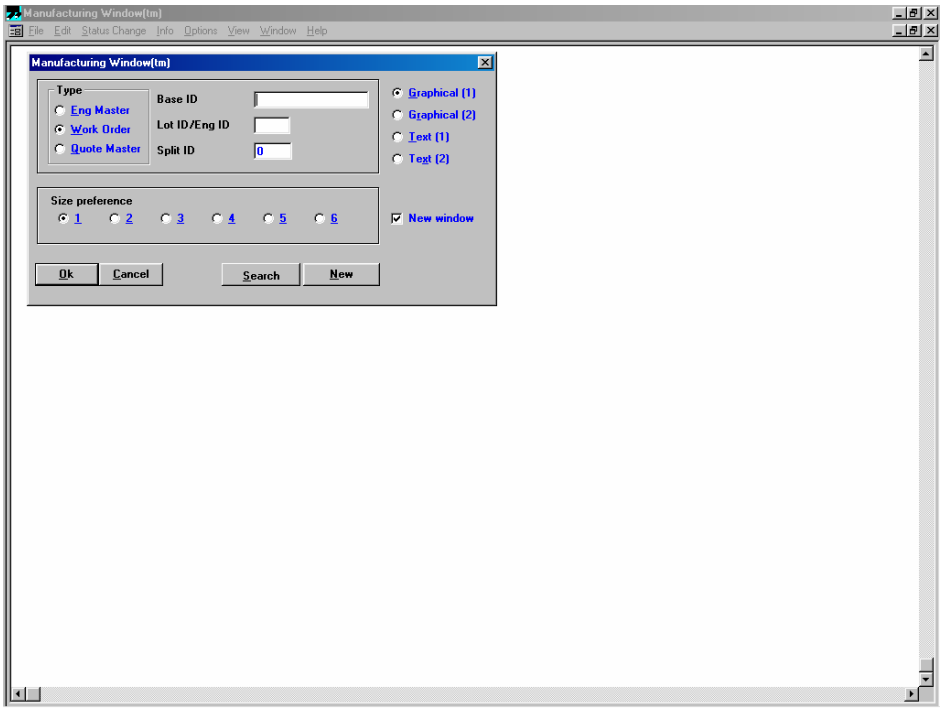
8. *There are so many resources on my Scheduling Window display that I have to scroll up and down to see what I need to see for my department.* Use Shop Views to limit what you are looking at in the Scheduling Window. Shop Views can be set up in either Shop Resource Maintenance (Edit\Shop Views) or the Scheduling Window (Edit\Shop Views). You can have as many Shop Views as you like. They can be used to group resources by department. The resources can be presented in any order you choose. It doesn't have to be alpha-numeric.

9. *I have so many resources to schedule that I don't seem to have time to review them all.* It is important in any schedule to focus on the bottlenecks. First set up a Shop View for the bottlenecks in the shop. These will change over time or as product mix changes but generally it is between a quarter and a third of all the resources. For those resources that are not bottlenecks operations, turn off the Schedule Normally check box in Shop Resource Maintenance. This will allow the bottlenecks to schedule for maximum output. This is based on the Theory of Constraints. The total output of any shop is determined by the bottleneck operations. All other resources, by definition, have more than enough capacity to feed the bottleneck. The schedule for these resources is simply to keep the bottlenecks supplied so that the maximum output can be achieved. The schedule for all resources after the bottleneck is simply to produce what the bottlenecks deliver. They also, by definition, have more than enough capacity to do this. This simple setup will allow you to focus on what is important for the shop as a whole. Just control the amount of inventory in front of the bottlenecks. There should be a buffer to ensure that the bottleneck never shuts down but it should be controlled or the extra capacity at the pre-

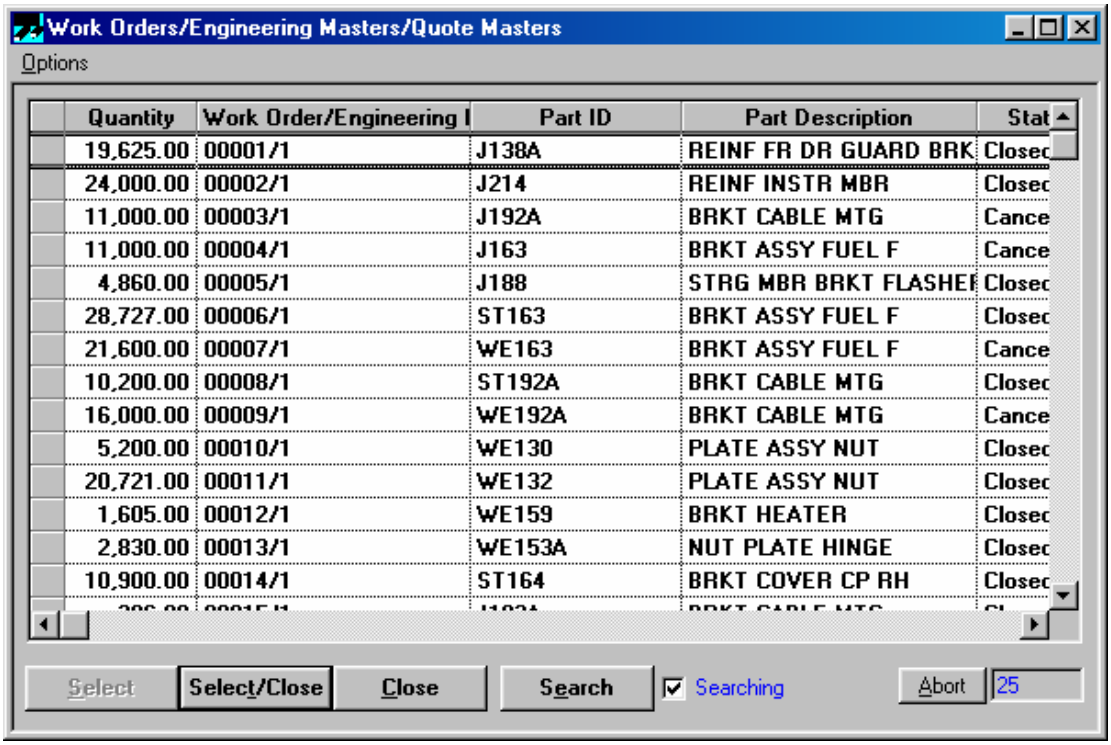
bottleneck resources will be used to create inventory that cannot be processed in a timely manner.

AUDITING WORK ORDER DATES

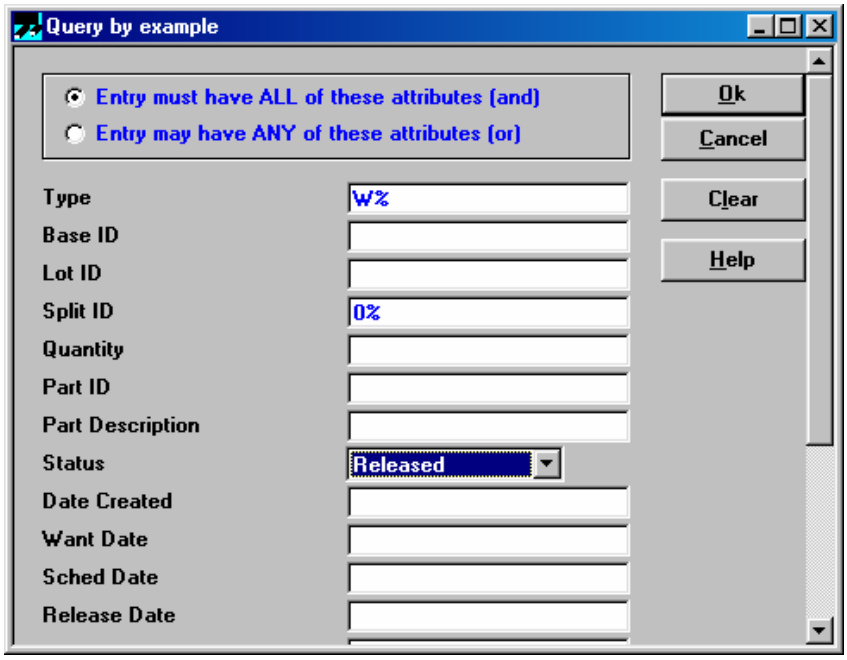
Open the Manufacturing Window. Click on the Search button.



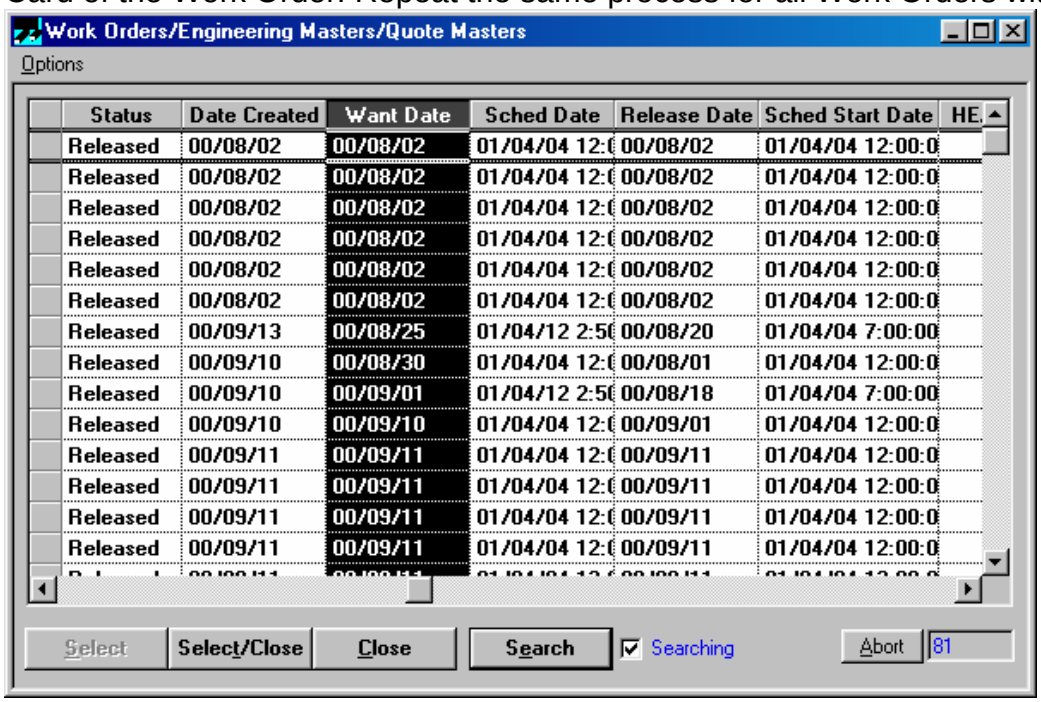
From the Search window, click on the Search button.



Select all Work Orders with a status of Released.

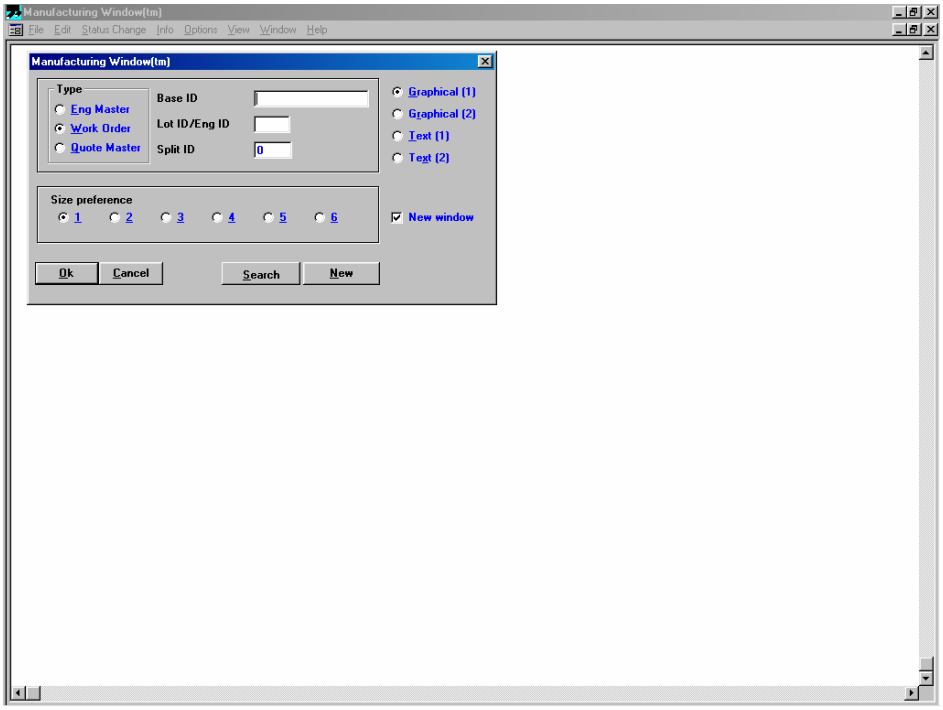


The search window will return all released Work Orders. Click on the header of the Want Date column (click right on the name). This will sort all Released Work Orders by Want Date, showing the oldest order first. Review these orders to ensure that the order want dates are correct. Open any Work Order with an incorrect date and change the Want Date on the Header Card of the Work Order. Repeat the same process for all Work Orders with a status of Firmed.

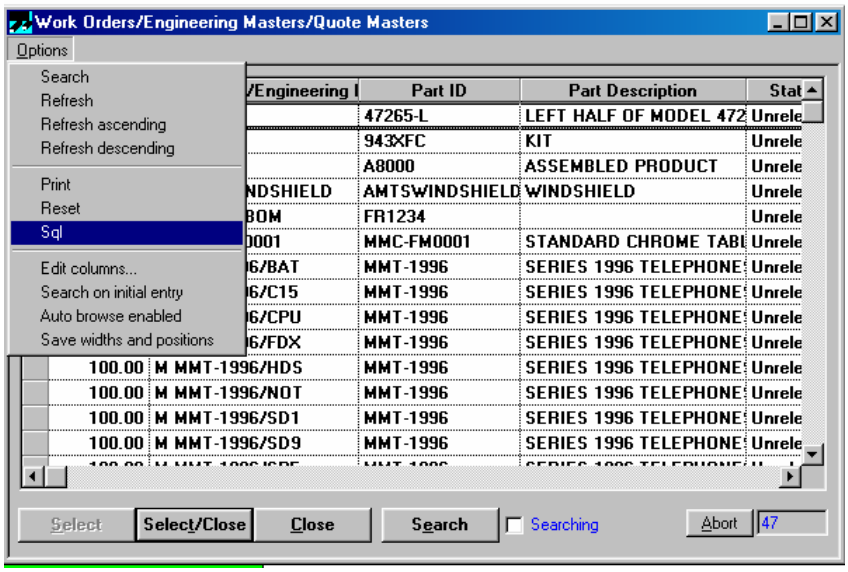


AUDITING WORK ORDER QUANTITIES

Open the Manufacturing Window. Click on the Search button.



From the Search window, choose Options\Sql.



A dialogue box will appear.

Enter the following script into the dialogue box and click the Save as default button.

WORK_ORDER.RECEIVED_QTY>(.89*WORK_ORDER.DESIRED_QTY) AND
WORK_ORDER.PART_ID=PART.ID(+) AND WORK_ORDER.STATUS='R'

Click on the Ok button and all Released Work Orders with at least 90% of the desired quantity received will be displayed. Review each of these orders to determine if the balance will be produced and when. If the balance will not be produced then close the Work Order. If the balance will be produced then check the desired want date to ensure that it is correct for the balance of the order.

The script in the Sql dialogue box has been saved so that it will be available anytime you choose to execute it.