

# ROMAC SERIES 8 PRODUCTION CONTROL

Version 8.0

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## OPERATOR'S MANUAL

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## **Software License Agreement and Limited Warranty**

The Romac Series 7 Production Control software and documentation is protected by United States copyright laws and also by international treaty provisions. The Production Control software is subject to the following license agreement and limited warranty.

Romac Computer Services, Inc. grants to Purchaser a non-exclusive paid license to use on Purchaser's computer one copy of the software for each license purchased and paid for. Title to the media on which the software is recorded is transferred to the Purchaser, but not title to the software.

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## Overview

The Romac Series 7 Steel Production Control program is designed to manage the “Shop Bill of Material” generally used in the structural steel fabricating and similar industries. Managing of the material list can include keyboard entry of the materials list, import of material lists from other applications, calculation of weights, calculation of surface areas, generating shop cutting list, tracking shop production, tracking shipments to the job site, etc. If the Romac nesting modules are installed, nesting for cutting purposes is also available.

Romac Series 7 Production Control is a Windows program and is compatible with Windows 95, 98, ME, NT4.0, and 2000. The program must be installed onto each user’s workstation. Project data can be shared among users on a network.

This documentation was written for version 7.0.0 of Romac Series 7 Production Control. Later versions of the program may contain features and functions not included in this documentation or may have different implementation methods. Please contact Romac Computer Services, Inc. or refer to our website [www.romacinc.com](http://www.romacinc.com) for information regarding the latest versions of the program and documentation.

## Software Purchase and Registration

Upon installation of this software, you will be given a 45-day evaluation period, which gives you, access to most program features.

You may purchase and register the software at any time during or after the evaluation period. Each registration gives you a license to use a single installation of the software in accordance with the Software License Agreement and Limited Warranty.

Each installation will generate a different serial number. This serial number is required for registration. The serial number will be included on the printed registration form (see Maintenance | Software Registration | Print Registration Form) in each application. The serial number is also available at the Help | About dialog box.

Registration numbers can be entered at the Maintenance | Software Registration | Enter Registration Numbers menu option.

For the Windows NT4.0, Windows 2000 and Windows XP operating system, you must be logged in as a user with administrator (or super user) privileges to run the software in evaluation mode or to run the software prior to registration. If you run the programs using these operating systems prior to registration, the evaluation period will expire and the serial number will change.

Once registered, an operator can run the software with limited user privileges without problems.

A new registration code may be required if you reformat your hard disk or upgrade to a new computer. Romac Computer Services will transfer your registration to another computer at no charge as long as there is no evidence of violation or abuse of the license agreement.

# General Program User Interface

The Romac Series 7 applications generally follow the guidelines published by Microsoft for the user interface. A basic knowledge of the common Windows user interface should be enough to use the programs features.

One deviation from the Windows standard is that our applications can use the ENTER key in addition to the TAB key to exit a data entry field.

For users of our previous steel related applications, we have retained the same methods for entering steel material descriptions and lengths. The redefined fractions keys are still used to enter fractions in descriptions and dimensions.

The Series 7 Fabrication Package programs are multi-user applications. The program internally handles file locks. If a user attempts an operation that is in conflict with what another user is working on, the program will advise and not allow the second user to proceed.

## Start Up

If the default installation was used; click the Start button, then click on 'Programs', next click 'Romac Applications' and finally click 'Series 7 Production Control' to start the program.

# Menu Structure Summary

## File

- New Project
- Open Project
- Delete Project
- Task Lists
- Exit

## Edit

- Job Title
- Shop Bill of Material
- Job Standards
- Shop Standards

## Reports

- Shop Bill of Material
- Master Shipping List
- Sorted Cutting List
- Shipping Piece Status Report
- Shortage Report
- Cumulative Report
- Job Standards Report
- Shop Standards Report

## Tools

- Shop Cutting List
- Task Reporting
- Shipping
- Import Data

## Maintain

- Materials Database
  - Edit Material Database
  - Display Materials Database
  - Synchronize Materials Databases
- Material Specifications
  - Edit Specifications Table
  - Edit Default Specifications
- Start New Period
- Set Configuration
  - Miscellaneous
  - Data Files Location
  - Inventory Interface
- Software Registration
  - Print Registration Form
  - Enter Registration Number

## Help

- Contents
- About

# Menu Options Overview

## File

### New Project

This option is used to create a new Production Control project. A unique job number identifies each project. This job number must be a combination of alpha (A through Z), numeric (0 through 9), or the hyphen characters and can be up to 6 characters in length. Data for an individual production control project is stored in a single folder (or directory). The folder name will be the job number preceded by "FP\_" (such as FP\_999 or FP\_A-999).

### Open Project

This allows you to open and log in a project. A project can be logged in by several users at the same time but locked for access only when a user is working on an option that requires exclusive access. Exclusive access is required by most operations that change the data files such as bill of material entry, creating cutting list, posting shipping tickets, etc. An individual user can have only one production control project logged in at a time.

### Delete Project

Once deleted, there is no reliable method to recover the data other than using an archive or backup copy you had made. It is strongly recommended that you make a daily backup of your data files. Also, prior to deleting a project, you may want to make an archive copy onto a CD or some other media.

### Task Lists

This option allows you to enter production milestones. See the separate section for additional information.

### Exit

You can exit the program using this option or by closing the window. In either case, if you have unsaved data, you will be prompted with an opportunity to save the data before exiting.

## Edit

### Job Title

Basic job (project) information such as customer name, shipping address, etc. is entered using this option. Other job parameters such as SBOM data fields, shipping sequences required, production task milestones required, etc. are entered using this option. See the separate section for additional information.

### Shop Bill of Material

The shop bill of material can be manually entered or edited using this option. See the separate section for bill of material entry specifics. Also, a module is available to import bill of material data from select structural steel detailing packages. See the separate data import section for additional information.

### Job Standards

If your project contains common detail parts that are used on multiple drawings, the common details can be entered into the Job Standards table then referenced from the different drawings

using the piece mark only. You will not be required to reenter the description on each drawing saving the entry time and reducing the chance of making a data entry mistake.

### **Shop Standards**

Shop Standards are similar to Job Standards with the exception that they apply to all jobs. Shop standards could be used if you have standard shop connections or similar type standards.

## **Reports**

The reports are designed to print to Windows printers using the Courier New font. Reports will adjust the font size to fit the sheet width using the nearest available size font. If the font size chosen by the program results in a report with characters too small to read, you can change the report to print in landscape mode or in some cases, the report criterion allows exclusion of certain columns in the printout.

Reports will print to the default printer device using the default orientation (portrait or landscape). To print to a printer (or orientation) other than the system default, you have two choices. The system default printer can be changed from the Windows desktop or the printer can be changed from within the program.

To change the selected printer from within the program, after selecting the report to print, click the "Printer Setup" button. The printer you selected will then be used for all subsequent reports printed from that application until you change the selected printer or exit the application. However, the orientation will revert back to the printer's default after each report is printed.

### **Shop Bill of Material**

This option allows printing of the Shop Bill of Material with weight extensions. The material list is printed by drawing number. Other selection criterion is available for this report.

### **Master Shipping List**

This option prints a listing of Shipping Pieces with descriptions, lengths, etc.

### **Sorted Cutting List**

This option allows printing of a previously created Shop Cutting list.

### **Shipping Piece Status Report**

This options prints a listing of Shipping Pieces similar to the Master Shipping List with the addition of production and shipping history for each piece.

### **Shortage Report**

This option prints a listing of Shipping Pieces that have not been completed through a selected production milestone task or a listing of Shipping Pieces that have not been shipped.

### **Cumulative Report**

The Cumulative Report lists bill of material weights, job weights completed through the production milestone tasks, and shipped weights. Weights are broken down into 'life to date' (L-T-D) and 'period to date' (P-T-D) totals.

The program is set to recognize a new period at the beginning of each month. At startup, the program will remind you when a new period is beginning. You must manually select the "Maintain | Start New Period" option to begin the new period. This will give you the chance to complete entry and posting of production tasks and shipments so that weights will be shown in the correct period. Production tasks and shipments for next period can still be entered and posted but they will not show up on the Cumulative Report until you select the "Start New Period" menu option.

The program allows posting to two different periods, the current period and the next period. For example, if the current period has an ending date of July 31, all transactions dated July 31 or earlier will be posted to the current period, all transactions dated after July 31 will be posted to the next period. If a transaction date is more than one month prior to the current period ending date, the transaction will be posted to the current period even though it belongs in an earlier period.

Weights and values posted into the next period are not available for viewing or reporting until the current period is closed. When a period is closed, the period ending date is advanced one month and any values posted into what was the next period will be added to the new current period.

### **Job Standards Report**

This is a listing of Job Standards (materials) for the selected job.

### **Shop Standards Report**

This is a list of Shop Standards.

## **Tools**

### **Shop Cutting List**

A shop cutting is a group of materials selected from the shop bill of material. See the separate section for detailed information.

### **Task Reporting**

Task reporting allows you to enter and post production milestone data into the system. This production data allows tracking the progress of a job through the shop. See the separate section for additional information.

### **Shipping**

This section allows you to enter and post shipping information. Shipping tickets can be printed as well as tracking completion and shipping progress of the job. See the separate section for additional information.

### **Import Data**

Shop Bill of Material data files generated from selected steel detailing programs can be imported into the program. The 'KISS' data standard is used for this import. Any application generating files compatible with this standard should be capable of generating data files that can be imported into the Romac Series & Production Control program. See the separate section for additional information.

## **Maintain**

See the Fabrication Package Operator's Manual for information relating to the following options not expanded upon here.

**Materials Database**  
**Edit Material Database**  
**Display Materials Database**  
**Synchronize Materials Databases**  
**Material Specifications**  
**Edit Specifications Table**  
**Edit Default Specifications**  
**Start New Period**

This option is used at the beginning of each month to start a new period for the cumulative job weights.

The program is set to recognize a new period at the beginning of each month. At startup, the program will remind you when a new period is beginning. You must manually select this option to begin the new period. This will give you the chance to complete entry and posting of production tasks and shipments so that weights will be shown in the correct period. Production tasks and shipments for next period can still be entered and posted but they will not show up on the Cumulative Report until you select the "Start New Period" menu option.

The program allows posting to two different periods, the current period and the next period. For example, if the current period has an ending date of July 31, all transactions dated July 31 or earlier will be posted to the current period, all transactions dated after July 31 will be posted to the next period. If a transaction date is more than one month prior to the current period ending date, the transaction will be posted to the current period even though it belongs in an earlier period.

Weights and values posted into the next period are not available for viewing or reporting until the current period is closed. When a period is closed, the period ending date is advanced one month and any values posted into what was the next period will be added to the new current period.

**Set Configuration**  
**Miscellaneous**

This option allows you to enter your company name and address. The company name is printed at the top of each printed report. The company name and address is printed on the shipping tickets.

**Data Files Location**  
**Inventory Interface**  
**Software Registration**  
**Print Registration Form**

## **Help**

**Enter Registration Number**  
**Contents**

On line help files.

**About**

Displays information showing program version, license status, program serial numbers, and contact information.

## Project Job Numbers

A unique job number identifies each production control project. This job number is limited to a combination of alpha (A through Z), numeric (0 through 9), or the hyphen characters and can be up to 6 characters in length.

Data for each production control project is stored in a single folder (or directory). The folder name will be the job number preceded by "FP\_" (such as FP\_999 or FP\_A-999). It is strongly recommended that a daily backup be made of the Romac Fabrication Package data files. See the Fabrication Package Operator's Manual for additional information regarding data backup and restore.

The data files in a job folder (FP\_nnnn) should be considered as a synchronized unit. Individual files should not be copied to this folder or deleted from this folder. If restoring production control job files from a backup or copying job files from another location, all files in the FP\_nnn folder should be deleted before restoring the backup. If you don't feel comfortable deleting the files, copy them to a temporary location before deleting. Failure to maintain all files in the FP\_nnn folder as a synchronized unit could result in file corruption and lost or inaccurate data.

## Edit Job Title

The master job information can be edited immediately after creating a new project or by selection the menu option 'Edit | Job Title'. The edit screens are:

### General

The General tab allows you to Job Name, Location, Customer, and Customer Order fields. This data item will show up on most printed reports.

The **Description Type** sets whether the job uses US Std. (imperial) or metric material descriptions and dimensions. Currently, all descriptions and dimensions for all entries within a job must be either US std. or metric. Once bill of material data has been entered for a job, this option cannot be changed.

The **Production Status** (Active or Inactive) determines whether a job is included on cumulative reports and whether the job is available in the task data entry module.

**Sequences Required** denotes whether shipping sequences are used for the job. If used, you may have up to 15 sequences per drawing and an unlimited number per job. Sequence descriptions can be up to 3 alphanumeric characters. Sequences can be turned on at any point during the life of a job. If turned on after bill of material has been entered for a job, all pre-existing data is assigned to sequence "1". Once turned on and bill of material data has been entered, sequences cannot be turned off.

The **Use Cut Tracking** option links bill of material items to a shop cutting list batch. With this option turned on, whenever a shop cutting batch is created, all bill of material items that are included with that batch are marked with the batch number and quantity. This allows easy tracking of which cutting batch (if any) that a bill of material item is included.

**Production Control Job**

Job Number: **1000**  
Job Name:

1) General | 2) Extra Fields | 3) Sold/Ship To | 4) Special Item Wts. | 5) Pay Item Codes

Job Name:   
Location:   
Customer:   
Customer Order:

Description Type  
 US Std  
 Metric

Production Status  
 Active  
 Inactive

Sequences Required  
 Use Cut Tracking

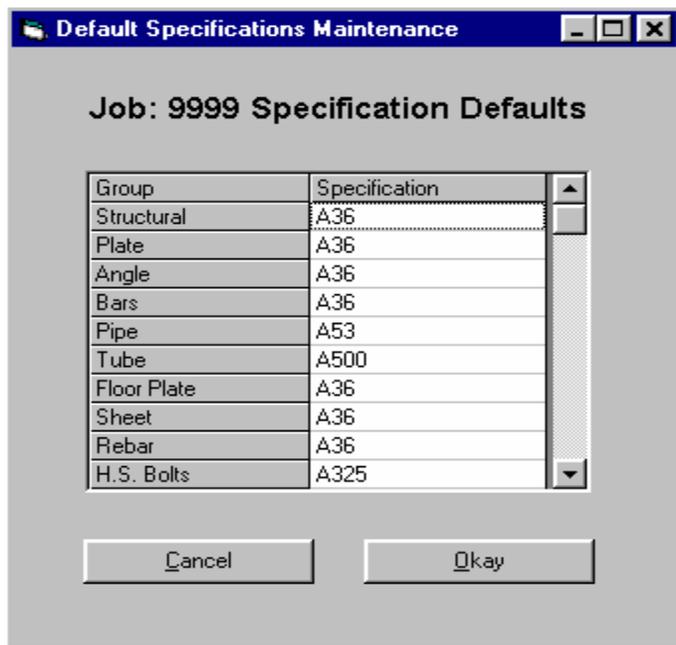
Edit Default Specifications

Okay Cancel Apply

### Edit Default Specifications

The Default Specifications table determines which material specification is assigned to a bill of material item at data entry. The default should be set for the most prevalent material specification used for the shape. You are never locked into the default; the material specification for the item can always be changed as required.

The Edit Default Specifications button allows you to edit the specification defaults table. This table is used by this job only. The master default specification table can be edited elsewhere.



For specification default purposes, the various shapes are grouped as follows:

- Structural – W, WT, HP, S, ST, M, MT, C
- Plate - PL
- Angle – L, BC
- Bars – BR, SQ, RD
- Pipe – PI, PS, PE, PD
- Tube – TS, TO
- Floor Plate – FP
- Sheet – GA
- Rebar – RB
- H.S. Bolts – BTH, BTN, WHF, WHB, WHL, TC
- Mach. Bolts – BTM
- Other Bolts – BTE, BTW, AB, SC
- Other Matls. – SA, SI, SL, FEM, REM, GR

## Extra Fields

The Extra Fields tabs allows you to denote which extra data fields will be required for the job's shop bill of material, the length of those fields, and the field titles. Currently, the software allows two remark type fields and an Advance Bill of Material reference field. Maximum total length of the two remark fields is 30 characters.

A field can be added after a job has commenced but once added, the extra field parameters cannot be changed.

The screenshot shows a software window titled "Production Control Job" with a blue title bar. Below the title bar, the "Job Number" is set to "1000" and the "Job Name" field is empty. A tabbed interface at the top shows five tabs: "1) General", "2) Extra Fields" (which is selected and highlighted with a dotted border), "3) Sold/Ship To", "4) Special Item W/ts.", and "5) Pay Item Codes". The "Extra Fields" tab contains five sections, each with a checkbox, a "Field Length" input, and a "Field Title" input:

- Remark 1:**  Use Remark Field 1, Field Length: 12, Field Title: REMARK
- Remark 2:**  Use Remark Field 2, Field Length: 8, Field Title: PO REF
- Shop Routing:**  Use Shop Routing Codes, Field Length: 10, Field Title: ROUTING
- Pay Items:**  Use Pay Item Codes, Field Length: 5, Field Title: P.I.
- ABOM Ref:**  Use ABOM Reference, Field Length: 6, Field Title: ABOM

At the bottom of the dialog box are three buttons: "Okay", "Cancel", and "Apply".

## Sold/Ship To

This tab is used to enter the Sold to and Ship to information that will be printed on the Shipping Tickets.

## Special Item Wts.

The program requires that all materials for the shop bill of material be included in the materials database with the exception of bolts and special items (SI, SA, and SL shapes). This tab lets you denote whether bolts and special items will require weights. In either case, weight units for these special items can be entered as they are being entered into the shop bill of material. During SBOM entry, if a bolt or special item is entered, the materials database is checked. If the item is found in the materials database, that weight is used. If the item is not found in the materials database, you will be prompted to enter a weight unit, that weight unit entry is either optional or required depending upon your selections on this tab.

This tab also allows you to select which production tasks (if any) you wish to track for this job. The **Use Task By** option denotes if you can make a 3-character "Task By" entry with each production milestone entry.

The screenshot shows a Windows-style dialog box titled "Production Control Job". At the top, it displays "Job Number: 1000" and "Job Name:". Below this is a tabbed interface with five tabs: "1) General", "2) Extra Fields", "3) Sold/Ship To", "4) Special Item Wts.", and "5) Pay Item Codes". The "4) Special Item Wts." tab is currently selected. The main area of the dialog is divided into two sections. On the left, there are four groups of radio buttons for weight requirements: "Bolt Weights" (with options Optional, Required, Omit), "SI Weights" (with options Optional, Required), "SL Weights" (with options Optional, Required), and "SA Weights" (with options Optional, Required). On the right, there is a "Job Tasks:" section containing a list of checkboxes for "FIT UP", "INSPECT", "COMPLETE", "TASK 5", "TASK 6", and "TASK 7". At the bottom of this section, the "Use Task By" checkbox is checked. At the very bottom of the dialog box, there are three buttons: "Okay", "Cancel", and "Apply".

# Shop Bill of Material Entry

The shop bill of material list is broken down by drawing numbers. To enter or edit bill of material data, you first enter or select the drawing number that includes the bill of material items.

The drawing number can be up to 5 characters in length. The drawing can include alpha, numeric and most punctuation characters. Disallowed characters include the dash and the comma.

The Bill of Material Editor window consists of two tabs; Title and SBOM. The Title tab is used to enter the drawing number, revision, and date along with sequence heading information if applicable. The SBOM tab is used to enter/edit the shop bill of material.

## Drawing Title

Drawing title entries include:

**Revision** – 2 characters.

**Drawing Date** – 8 characters.

**Released for Fab** – (Yes/No) Allows you to place an entire drawing 'on hold'. On hold drawings will not be included in shop cutting lists.

**Sequence Heading** – (if applicable) Up to 15 sequences are available for each drawing.

The screenshot shows a software window titled "Shop Bill of Material Editor". At the top, it displays "Job Number: 1000" and "Job Name: Sample Project 1000". Below this are two tabs: "1) Title" (selected) and "2) SBOM". The "Title" tab contains several input fields: "Drawing Number:" with the value "4", "Revision:" with "01", and "Drawing Date:" with "04/14/02". To the right is a "Released for Fab:" section with two radio buttons, "Yes" (selected) and "No". Below these is a "Drawing Sequence Heading:" section with a 3x5 grid of input boxes; the first two boxes contain "1" and "2". At the bottom are two buttons: "Okay" and "Close Drawing".

## **SBOM entry**

Each drawing includes a material list. The material list consists of one or more shipping assemblies which include a shipping piece item and optional detail piece items. The order of input an assembly is first the shipping piece line entry followed by the detail pieces that are attached to the shipping piece.

The first material list item on a drawing is always a shipping piece. After the first item is entered, each additional line item is considered to be a detail piece (attached to the most recent shipping piece) unless you tell the system otherwise. To end input for the shipping piece and start a new shipping piece, you can enter "NS" in the quantity field or click the "Start New Ship Piece" button.

You can also denote a line item as a secondary ship piece. A secondary ship piece is used when 2 or more shipping pieces have different shipping marks but have identical attached detail pieces. Detailers often combine multiple shipping pieces in one picture when they have right and left hand conditions or opposite hand conditions. To denote an item as a secondary ship piece, the previous entry must have been a main ship piece or a secondary ship piece, you can then enter 'S' in the quantity field or click the 'Secondary Ship Piece' button.

The Shop Bill of Material Editor has three modes; Append, Edit, and Browse.

The append mode is used to add items to the end of the drawing's material list. When you create a new drawing, you are placed in the append mode. You remain in the append mode until you close the drawing or switch to the browse mode. While in the append mode, you can add items to the end of the drawing's material list or edit the current item. To review the material list or edit a previously entered line item, you must switch to the browse/edit mode.

The browse mode allows you to scroll through the drawing's material list, edit individual items, delete items, add detail pieces or secondary ship pieces, etc. Whenever you recall an existing drawing, you are placed in the browse mode. To edit a line item, highlight the item then click the "Edit Item" button. When inserting detail pieces, the detail piece will be inserted into the spot following the highlighted item. Deleting a shipping piece will also delete all attached detail pieces. The button "Add Ship Piece to Drawing" will place you in the append mode where you can begin adding to the end of the drawing's material list.

Bill of material item entry consists of the following:

### **Quantity**

If the line item is a shipping piece and sequences are used, the sequence heading will be displayed allowing you to enter the ship quantities for each sequence. The total shipping quantity will be totaled and the total displayed in the Qty field. For shipping pieces, the quantity cannot be edited to less than the quantity that has been completed through a production task or shipped.

For detail item quantities, the quantity must be a multiple of the ship quantity. For example, if the ship quantity is 3, all detail items attached to that piece must be a multiple of 3 (such as 3, 6, 9, 12, etc.).

All numeric entries must be positive. Non-numeric control codes recognized are; NS – Next Ship piece, S – Secondary ship piece, and ND – Next Drawing.

**Shop Bill of Material Editor**

Job Number: 1000  
 Job Name: Sample Project 1000  
 Drawing Number: 4      Drawing Rev: 01      Drawing 04/14/02

1) Title    2) SBOM

Qty	Mark	Description	Length	Spec	Wt Unit	REMARK
<b>Append Mode</b>						
Seq:	1	2				
Qty:						
Qty	Mark	Description	Length	Spec	Wt Unit	REMARK

Buttons:                

### Piece Mark

For shipping pieces the piece mark entry is required. The piece mark can be up to 12 characters (alpha/numeric) in length. Duplicate shipping piece marks are not permitted within a job. Alpha characters used in shipping marks are converted to upper case.

For detail pieces the piece mark entry is optional and can be up to 10 characters in length. Detail piece marks can be duplicated within drawings and within a job. The program does not do any checking to assure that descriptions, etc. are the same for duplicated detail piece marks. However, when grouping and combining materials for the shop cutting list, quantities will be combined for duplicate piece marks only if the descriptions are identical. Detail piece marks are case sensitive (a1 and A1 are not considered as the same).

### Description

The bill of material description is entered into this field. If the item has a width (such as plates), the width would be included in the description field. In most cases, the item length is not entered into the description field but entered into the separate length field. An exception is that bolt lengths are entered into the description field.

The description entry is made by entering the shape code followed by [ENTER] (or the space bar) then the description dimensions. For most entries, if the description contains fractions, the fraction entry is made using re-defined fractions keys. This allows you to make fraction entries using one keystroke. The re-defined fraction keys are:

W=1/16, E=1/8, R=3/16, T=1/4, Y= 5/16,  
U=3/8, I=7/16, O=1/2, S=9/16, D=5/8,  
F=11/16, G=3/4, H=13/16, J=7/8, K=15/16

The shape codes and corresponding description formats are:

Note, these examples are based on US standard description entry. Metric description entries are similar except fractions are not applicable. Depending upon whether you are updating a US standard or metric item, the appropriate Description Type at the upper right of the window must be checked.

Unless noted, the following shapes can be used for shipping pieces and detail pieces alike. Some shapes are applicable for shipping pieces only or detail pieces only and are noted if the limitation applies.

**W, WT, C, MC, S, ST, M, MT, & HP - (Structural shapes as per AISC designations).**

Description is entered by typing in the shape followed by [ENTER] (or space) then the depth, then X, then the weight per foot followed by [ENTER]. Spaces are automatically inserted before and after the 'X'. Use the decimal point where required. Optionally, the '+' key can be used rather than 'X'.

Example: W 10 x 22

**L - (Angles).** Input is in inches and inch fractions. Description is entered by typing in the shape followed by [ENTER] (or space) then leg 1, then X, then leg 2, then X, then the thickness followed by [ENTER]. Fractions must be entered using the redefined single key. Spaces are inserted by the computer where required for clarity.

Example: L 3 1/2 x 3 1/2 x 5/16

**PL - (Plate).** Input is in inches and inch fractions. Description is entered by typing in the shape followed by [ENTER] (or space) then the thickness, then X, then the width followed by [ENTER]. Maximum thickness is 9 15/16". Fractions must be entered using the redefined single key. Spaces are inserted by the computer where required for clarity.

Example: PL 1/2 x 15 3/4

**PLD - (Plate - decimal thickness).** Input is in decimal inches for the thickness and inches and inch fractions for the width. Description is entered by typing in the shape followed by [ENTER] (or space) then the thickness in decimal inches, then X, then the width in inches and inch fractions followed by [ENTER]. Thickness can be entered up to 3 decimal places. Fractions for the width must be entered using the redefined single key. Spaces are inserted by the computer where required for clarity. Decimal thickness plate must be added to the materials database. The program does not convert between fractional thicknesses and decimal thicknesses (PL 1/2 and PL .500 are not the same as far as the program is concerned).

Example: PL .500 x 15 3/4

**PLA - (Plate - area).** Input is in inches and inch fractions for the thickness and decimal square feet for the area. Description is entered by typing in the shape followed by [ENTER] (or space) then the thickness, then X, then the area in decimal feet followed by [ENTER]. Weight is calculated using the PL thickness entry in the materials database. Fractions must be entered using the redefined single key. Spaces are inserted by the computer where required for clarity.

Example: PL 1/2 x 34.45

**PLDA - (Plate – decimal thickness x area).** Similar to PLA except thickness is entered in decimal inches.

Example: PL .500 x 34.45

**BR - (Flat bar).** Input is in inches and inch fractions. Description is entered by typing in the shape followed by [ENTER] (or space) then the thickness, then X, then the width followed by [ENTER]. The maximum width/thickness is 99 15/16".

Example: BR 1/2 x 4

**SQ - (Square bar).** Entry is in inches and inch fractions. The description is entered by typing in the shape followed by [ENTER] (or space) then the bar dimension followed by [ENTER]. Maximum dimension is 9 15/16". Fractions must be entered using the redefined single key.

Example: SQ 1/2

**RD - (Round rod).** Entry is in inches and inch fractions. The description is entered by typing in the shape followed by [ENTER] (or space) then the diameter followed by [ENTER]. Maximum diameter is 9 15/16". Fractions must be entered using the redefined single key.

Example: RD 3/4

**RB - (Rebar).** The description is entered by typing in the shape followed by [ENTER] (or space) then the bar size followed by [ENTER]. Allowed bar sizes are 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 14, and 18.

Example: RB 4

**GA - (Gauge material).** The description is entered by typing in the shape followed by [ENTER] (or space) then the gauge thickness, then X, then the width followed by [ENTER].

Example: GA 11 x 24

**FP - (Floor Plate).** Entry is similar to plate (PL).

Example: FP 3/8

**TS - (Square and rectangular tube).** Entry is similar to Angle. The wall thickness must always be the last entry. If the wall thickness entry is 7 - 28, then a gauge wall thickness is assumed.

Example: TS 4 x 4 x 1/4

**TO - (Round tube).** Entry format is shape followed by [ENTER] (or space) then the outside diameter in inches and inch fractions), X, then the wall thickness. The wall thickness must always be the last entry. If the wall thickness entry is 7 - 28, then a gauge wall thickness is assumed.

Example TO 4 x 1/2

**PI - (Pipe).** Schedule pipe can be entered using this Shape code. The entry format is Shape, [ENTER] (or space), diameter, <X>, then the schedule followed by [ENTER].

Example: PI 4 x 40

**PS, PE, and PD - (Pipe).** Standard (PS), Extra strong (PE), and Double extra strong (PD) pipe can be entered using these Shape codes. The entry format is Shape, [ENTER], then the diameter followed by [ENTER].

Example: PS 4

PE 4

PD 4

**CB - (Bar Channel).** Entry is similar to Angle.

Example: CB 1 1/2 x 1/2 x 1/8

**TB - (Bar Tee).** Entry is similar to Angle.

Example: TB 1 1/2 x 1 1/2 x 3/16

**BTH - (High strength Bolt).** Enter the shape then [ENTER] (or space), diameter, then X, then the length followed by [ENTER]. All entries are in inches and inch fractions.

Example: BTH 3/4 x 2 1/2

**BTM - (Machine Bolt).** Enter the shape then [ENTER] (or space), diameter, then X, then the length followed by [ENTER]. All entries are in inches and inch fractions.

Example: BTM 3/4 x 2 1/2

**BTN - (Nut).** Enter the shape then [ENTER] (or space), diameter in inches and inch fractions followed by [ENTER].

Example: BTN 3/4

**WHF - (Flat Washer).** Enter the shape then [ENTER] (or space), diameter in inches and inch fractions followed by [ENTER].

Example: WHF 3/4

**WHB - (Bevel Washer).** Enter the shape then [ENTER] (or space), diameter in inches and inch fractions followed by [ENTER].

Example: WHB 3/4

**WHL - (Load indicator Washer).** Enter the shape then [ENTER] (or space), diameter in inches and inch fractions followed by [ENTER].

Example: WHL 3/4

**BTE - (Expansion Bolt).** Enter the shape then [ENTER] (or space), diameter, then X, then the length followed by [ENTER]. All entries are in inches and inch fractions.

Example: BTE 3/4 x 4

**BTW - (Wedge insert).** Enter the shape then [ENTER] (or space), diameter in inches and inch fractions followed by [ENTER].

Example: BTW 3/4

**AB - (Anchor Bolt).** Enter the shape then [ENTER] (or space), diameter, then X, then the length followed by [ENTER]. All entries are in inches and inch fractions.

Example: AB 3/4 x 12

**SC -(Shear Connector).** Enter the shape then [ENTER] (or space), diameter, then X, then the length followed by [ENTER]. All entries are in inches and inch fractions.

Example: SC 1/2 x 4

**GR - (Bar Grating).** Enter the shape then [ENTER] (or space) then the bearing bar depth, then X, then the bearing bar thickness, then X, then the thickness followed by [ENTER]. All entries are in inches and inch fractions.

Example: GR 1 1/4 x 3/16 x 24

**REM - (Regular Expanded Metal).** Enter the shape then [ENTER] (or space) then the diamond SWD, then X, then the gauge thickness, then X, then the thickness followed by [ENTER].

Example: REM 3/4 x 16 x 24

**FEM - (Flattened Expanded Metal).** Enter the shape then [ENTER] (or space) then the diamond SWD, then X, then the gauge thickness, then X, then the thickness followed by [ENTER].

Example: FEM 3/4 x 16 x 24

**SI - (Special item with weight calculated per each or item).** Used for entries such as castings where the weight is calculated by the item. SI can also be used for items that do not have a

weight. At Shape type SI [ENTER], then a 24 character description followed by [ENTER]. Redefined fraction keys are not available for the description part of this entry.

Example: SI #101 CASTING

**SA - (Special item with weight calculated by Area).** Used for items such as grating where weight is calculated by area. At Shape type SA [ENTER], then a 15 character description followed by [ENTER] then the width. Redefined fraction keys are not available for the description part of this entry but must be used in the width entry section if applicable.

Example: SA 1/8" PERF. PL x 24

**SL - (Special item with weight calculated by Length).** Used for items such as extrusions or aluminum sections. At Shape type SL [ENTER], then a 24 character description followed by [ENTER]. Redefined fraction keys are not available for the description part of this entry.

Example: SL #101 EXTRUSION

**D - (Ditto the previous description).** Dittos the previous line item description only. You must enter the length, remarks, etc. Applicable to detail pieces only.

**SD - (Shipping Description).** Used for a shipping description (such as FRAME, BEAM, COLUMN, etc.) that is used to describe the item but is not actual material. Shipping Descriptions are listed on the shipping ticket but are not included on shop cutting lists. The "SD" shape is applicable to shipping pieces only.

**E - (Exists on current drawing).** If the current detail piece (including identical piece mark) has been previously entered on the drawing, it is not necessary to re-enter the description, length, etc. The "E" shape will be retained for screen displays but the description, etc will be listed on printed reports. The "E" shape is applicable to detail pieces only.

**JS - (Job Standard).** Pulls the description from a matching piece mark in the Job Standards table. Each job standard table is specific to that job only. This shape is applicable to detail pieces only.

**SS - (Shop Standard).** Pulls the description from a matching piece mark in the Shop Standards table. Shop standards are available for all jobs. This shape is applicable to detail pieces only.

## Length

Length is entered in feet, inches, and inch fractions for US standard jobs and millimeters for metric jobs. Maximum length is 999'11 15/16 for US standard or 99999 mm for metric.

For US standard units the hyphen [-], period [.] , or single quote ['] can be used to separate feet and inches. Fractions must be entered using the redefined single key. For metric units, decimal entries are not permitted.

## Spec

The spec field will be automatically filled in with the default specification based on the shape. If this is correct, you can tab or enter to the next field. A different spec can be selected from the specifications table or you can enter the material code (1-99) relating to the actual specification. Regardless of which method is used to enter the specification, it must exist in the specifications table.

**Wt. Unit**

For most items, the wt. unit comes from the materials database through an internal lookup operation. If the item is a bolt or special item and not found in the materials database, you will be prompted to enter a weight unit. Depending on your selections on the Job Titles screen, the weight unit may or may not be required.

**Other entry fields**

You may be prompted for other entries such as Remark, etc. depending on job setup. In most cases, these entries are optional and may be skipped if not applicable.

## Invalid entries

At the end of each line of data entry, you will be prompted if there were any errors. The error message will be descriptive of the error condition. If you choose to not correct the error; the item will be flagged as invalid and an asterisk will be placed in the line number column. Invalid items are not included in weights, summaries, nested lists, etc. A count of invalid items is shown at the top of the Bill of Material Editor window.

The OK button will update the material list with the data just entered or changed. The Cancel button will undo the last line of data entry or change. If you are in Append Mode, the Browse List button will switch control into display/edit mode. The last line of data entry is not saved if the Browse List button is selected. The Exit button will save all data and close the project.

**Shop Bill of Material Editor**

Job Number: **1000**  
 Job Name: **Sample Project 1000**  
 Drawing Number: **4** Drawing Rev: **01** Drawing **04/14/02**

1) Title 2) SBOM

Qty	Mark	Description	Length	Spec	Wt Unit	REMARK
3	1B1	W 24 x 55	29- 7 1/2	A992	55	
6	a1	L 3 1/2 x 3 1/2 x 5/16	1- 9 1/2	A36	7.2	
2	1B2	W 24 x 55	32-10 1/2	A992	55	
6	a1	E			0	

# Shop Cutting List

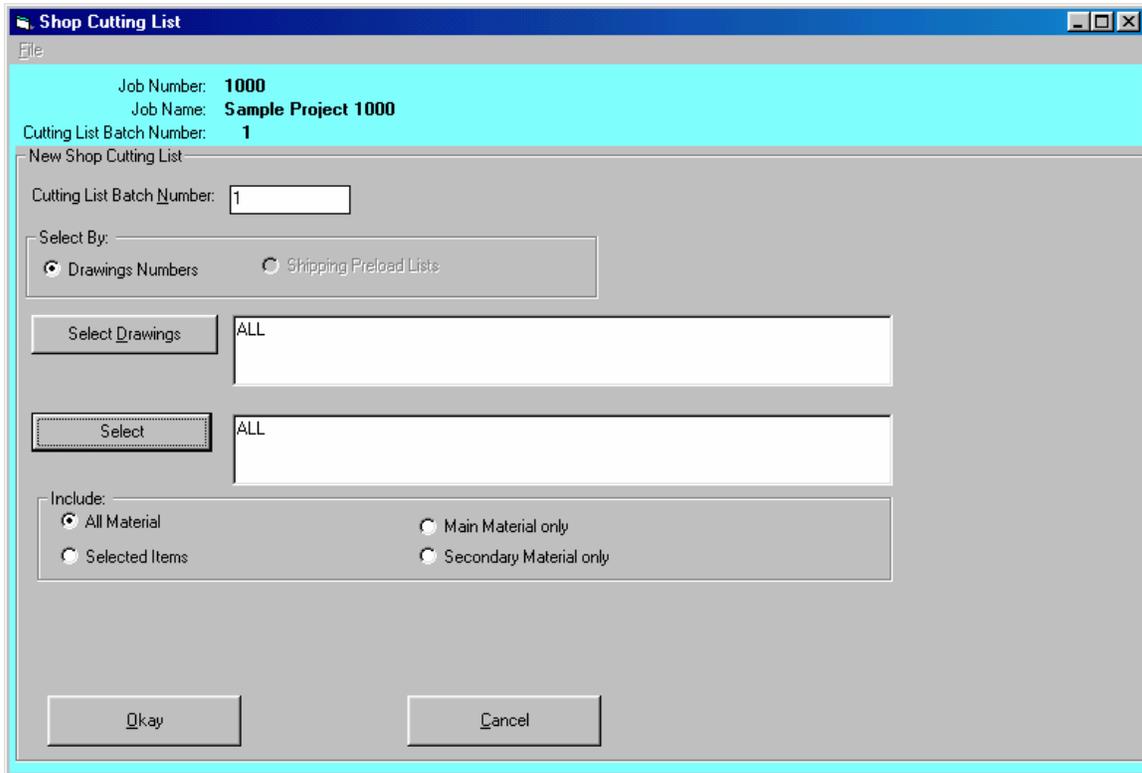
The shop cutting list options are available through the menu selection “Tools | Shop Cutting List”.

A unique batch number supplied by the operator identifies each cutting list. The batch number can be numeric only in the range of 1 through 9999.

Several criterions are available for selection of materials to include on a cutting list. The first selection criterion allows you to select based on drawing numbers or shipping preload lists. If selecting by shipping preloads, only the shipping pieces and shipping piece quantities (along with attached detail pieces) listed on the preload list(s) will be included in the cutting list.

The drawing numbers list (or preload lists) can be manually entered or selected from the browse list. If you want to include all drawings in the cutting list, you can enter “ALL” in the drawing list field.

If selecting by drawing numbers and the job is broken down into shipping sequences, you must also select which sequences to include. Selection of sequences is not applicable at this point if you are selecting by preload lists.



Additional selection criterion allows you to select the type of material to include. The options are:

**Main Material only** – Main material is defined by the shape. Main material shapes are the structural section (W, WT, M, MT, S, ST, C, and MC), rectangular and round tube, and all pipe.

**Secondary Material only** – Secondary material includes all materials not defined as main material.

**Selected Items** – Material can be selected for inclusion based on shape, description and/or specification. Use the “\*” (asterisk character) in the shape or specification field to select all shapes or specifications. Selected items entry can be a single material description (such as TS 4 x 4 x ¼, A500), or all items with a certain material specification, or limited to a single shape, etc.

If cut tracking is turned on for the job (see the Job Title section), only material items meeting the selection criterion and not included on a previous cutting list will be included in this cutting list. If cut tracking is not turned on, all material items meeting the selection criterion will be included, if this is the case it is up to the operator to keep track of what has and hasn't been included on previous cut lists.

# Nesting

Description	Spec	Item Count	Amount	Weight (lbs)	Nested
W 24 x 55	A992	4	154.6 Lft	8,504.4	N/A
W 10 x 22	A992	3	92.7 Lft	2,038.7	N/A
L 3 1/2 x 3 1/2 x 5/16	A36	2	27.8 Lft	199.8	N/A

In the following instructions, 'section' will refer to all quantities and lengths for a given steel section such as W 10x22, L 3x3x1/4, 1/2" thick plate, etc.

## Length Nesting

If the Romac Series 7 Inventory Control program is installed onto the system and the Production Control installation on the computer you are working from has the 'Interface with Inventory Control' option checked, the length nesting routine will interface with your inventory data. To set the 'Interface with Inventory Control' option, see the menu chain Maintain | Set Configuration | Inventory Interface.

When the 'Nest' option is chosen for a length item, the Length Nesting screen will show 4 tabs. The tabs are:

- 1) To Cut – A listing of the 'To Cut' items for the section.
- 2) Cut From (Inventory) – A listing of available inventory to cut from.
- 3) Cut From (Required) – Allows you to enter available lengths to cut from.
- 4) Results – Display of the completed nesting(s).

The To Cut tab lists the 'To Cut' items from the cutting list. The listing has two quantity columns, the first column lists the required quantity, the second column (Qty Cut) lists the quantity that has been nested. The "Qty Cut" column is updated through the nesting routine. Otherwise, this listing cannot be edited

Qty Reqd	Qty Cut	Length	Mark
36		5- 2 3/4	a16
11		5- 2 3/4	a13
22		4- 9	a9
9		4- 9	a6
27		4- 9	a5
18		4- 9	a4
24		2- 4 1/2	a14
11		2- 4 1/2	a11
33		2- 4 1/2	a10

Kerf Allowance is the amount of material taken out for each cut.

Squaring Allowance is an amount taken from each end of the 'cut from' piece for squaring or other purposes. If both a kerf and squaring allowance is specified, the nesting routine adds the kerf amount to the squaring allowance for the required cuts at each end of the piece.

Some cutting equipment requires a grip or clamp allowance at one end of the piece. If you machine requires a grip allowance at one end, you will need to enter  $\frac{1}{2}$  of the grip allowance as

the squaring allowance. For instance, if your machine requires a 6” grip allowance you would enter a squaring allowance of 3”. In these cases, remnant (or drop) lengths will be understated by the amount of the squaring allowance.

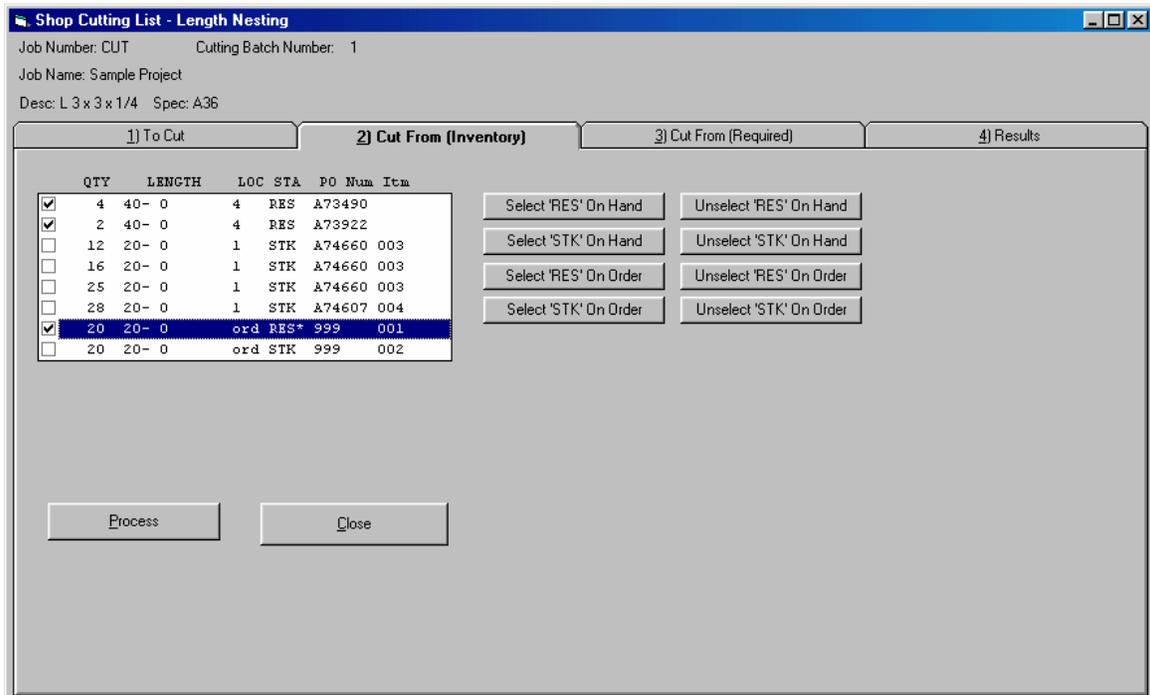
The Kerf Allowance and Squaring Allowance fields can be edited if nested results have not been saved for the section. If the Inventory program is installed and the section is in the inventory master listing, kerf and squaring allowances will be saved and automatically retrieved the next time that the section is selected for nesting.

The section can be nested from on hand or on order inventory (if available), manually entered sizes, or a combination of sources.

If inventory is available, it will be listed on the Cut From (Inventory) tab. Listed material will include on hand material reserved for the job, on hand stock material, on order material ordered for the job, and on order stock material. Allocated items or items reserved for other jobs will not be included in the available listing.

This screen allows you to select which cut from items you want to include in the nesting process. Individual items can be selected or cut from items can be selected or unselected by category using the buttons.

The Process button will consider only the checked inventory items for nesting. Note, the Process button on the Cut From (Inventory) tab does not use any items from the Cut From (Required) list for nesting.



At completion of the nesting process, the current nesting results will be displayed with the option to accept or reject individual nesting patterns.

**Shop Cutting List - Length Nesting**

Job Number: CUT      Cutting Batch Number: 1  
 Job Name: Sample Project  
 Desc: L 3 x 3 x 1/4    Spec: A36

**All Available 'CUT FROM' Lengths Used**

Gross Len: 640- 0 Ft.      Net Len: 613- 3 1/4 Ft.  
 Drop Len: 7-10 1/4 Ft.    Not Cut: 346- 4 Ft.

**Pattern 1 of 6**

Cut From		Cuts		Cut Yield			Drop
Qty	Length	Qty	Length	Qty	Length	Mark	Length
4	40- 0	2	5- 2 3/4	8	5- 2 3/4	a16	0- 0
		12	2- 4 1/2	24	2- 4 1/2	a14	
				11	2- 4 1/2	a11	
				13	2- 4 1/2	a10	

        Use This Pattern

Cut From Summary			Not Cut Summary		
Avail Qty	Used Qty	Length	Not Cut Qty	Length	Mark
4	4	40- 0	14	4- 9	a9
2	2	40- 0	9	4- 9	a6
20	20	20- 0	27	4- 9	a5
			18	4- 9	a4
			2	1- 2	a12

This display shows only the patterns from the current nesting. Previously saved patterns for this section are not shown on this screen. You can scan through the nesting patterns to mark and unmark the patterns you want to accept or reject. The 'Save Marked nest in this group' button will move all marked nests to the results tab and allocate the inventory items. The 'Delete all nests in this group' button abandons the current nest but does not affect saved nests.

The 'Cut From (Required)' tab allows you to enter quantities and lengths to nest from. This option is usually used to nest for purchasing. The Process button on this tab will nest from the manually entered cut from list only and will not consider any available inventory.

If the inventory system is used and the section is an inventory master item, the 'Save as Std. Lengths' button will save the current cut from list then automatically recall it whenever the section is nested in the future. Only the lengths are saved, not the quantities or remarks. When recalled, the quantity is set at 999 pieces for each length.

The Results tab displays a summary of all saved nests for the section. The 'Delete Nest' button will wipe out all saved nests for the section. If inventory items have been allocated for the section (through the nesting routine), the allocated items will be returned to RES or STK status.

The Close button will exit the nesting routine for the selected section.

**Shop Cutting List - Length Nesting**

Job Number: CUT      Cutting Batch Number: 1  
 Job Name: Sample Project  
 Desc: L 3 x 3 x 1/4    Spec: A36

1) To Cut      2) Cut From (Inventory)      3) Cut From (Required)      **4) Results**

Gross Len: 640-0 Ft.      Drop Len: 7-10 1/4 Ft.  
 Net Len: 613-3 1/4 Ft.      Not Cut: 346-4 Ft.

Cut From		Cuts		Cut Yield			Drop
Qty	Length	Qty	Length	Qty	Length	Mark	Length
4	40-0	2	5-2 3/4	8	5-2 3/4	a16	0-0
		12	2-4 1/2	24	2-4 1/2	a14	
				11	2-4 1/2	a11	
				13	2-4 1/2	a10	
1	40-0	2	5-2 3/4	2	5-2 3/4	a16	0-0

Cut From Summary			Not Cut Summary		
Avail Qty	Used Qty	Length	Not Cut Qty	Length	Mark
4	4	40-0	14	4-9	a9
2	2	40-0	9	4-9	a6
20	20	20-0	27	4-9	a5
			18	4-9	a4

Close      Delete Nest

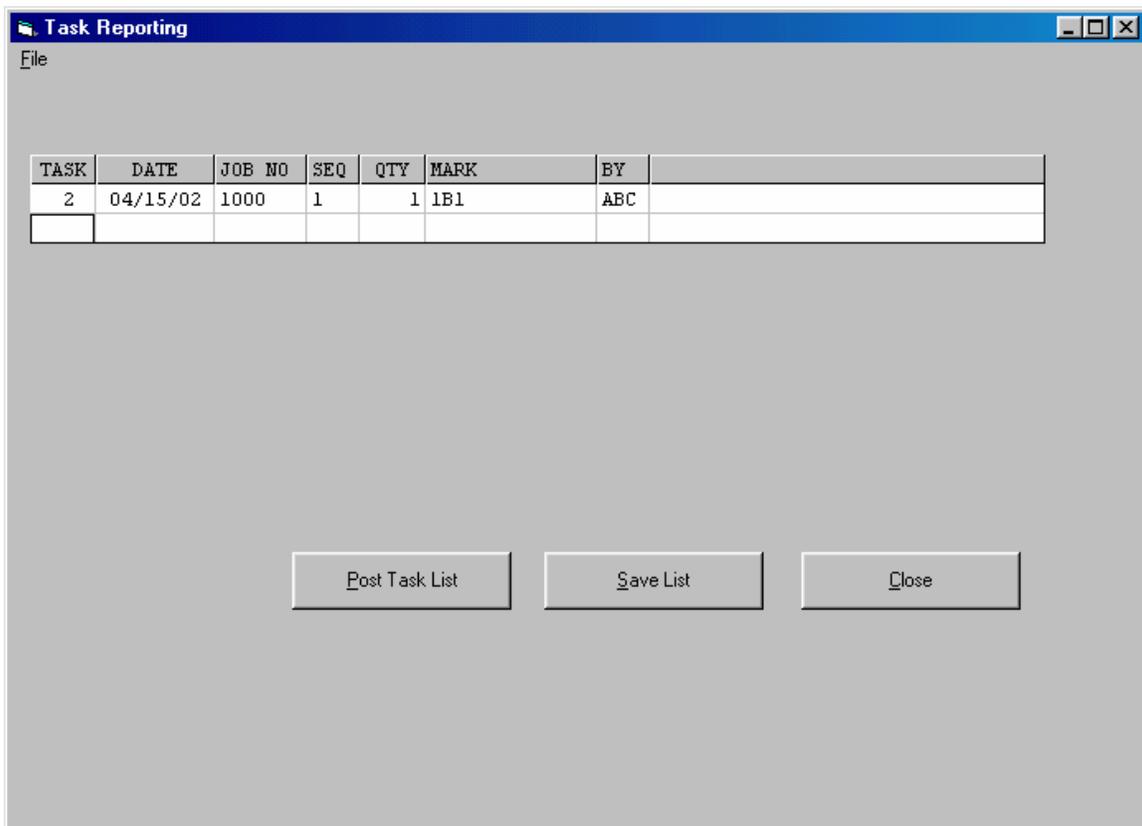
# Task Reporting

Production milestone task tracking is optional in the Romac Series 7 Production Control program. If you choose, up to 6 production milestones can be tracked. Typical tasks might be Fit-up, Weld, Inspect, Clean, Paint, Complete. If you choose to track production tasks, you would need to record and enter for each shipping piece; task ID, job number, date, quantity and optionally the initials of the person completing the task.

To enter the task descriptions, use the menu selection “Maintain | Set Configuration | Miscellaneous”. These descriptions apply to all jobs on the system.

To select the individual tasks to track for an individual job, see the Job Title section. The exact tasks tracked can vary from job to job.

For data input of production task data, nine different lists are available. The purpose of the different lists is to allow more than one person to enter task data. When a user opens one of the lists, it is locked from access to other users.



Task data entries are generally self-explanatory and consist of:

**Task** – Valid task ID are 2-7. All tasks may not be valid depending on the job setup.

**Date** –

**Job No.** -

**Seq** – If the sequence entry is omitted for a job that uses sequences, the first available sequence number will be assigned during posting.

**Qty** –

**Mark** –

**By** –

To ditto the entry from the previous line, press [Enter]. To leave an entry blank, press [Space] then [Enter].

To remove a line item, change the quantity to 0. It will be removed at posting.

Two posting options are available, “Trial” checks the validity of the items without posting, “Final” post the items (if valid) and removes the posted items from the task list.

When making a final post, you have the option to add the posted items to the “Task Summary” file. This is an ASCII record of all posted task completions available for printing or use by other software applications.

# Shipping

The shipping module will record items shipped and produce a printed shipping ticket with piece descriptions and weights.

Two types of shipping documents can be generated, a preload list and the actual shipping ticket. The preload list can be used to pre-stage your shipments and can also be used to generate shop cutting lists.

Both preload list and shipping ticket are similar in creation and data entry. If used to generate shop cutting lists, the preload list must be posted. A preload list can be easily converted to a shipping ticket.

The screenshot shows a software window titled "Shipping" with a menu bar containing "File". The main area has a cyan header with the following information:

- Job Number: **1000**
- Job Name: **Sample Project 1000**
- Ship Ticket Number: **1**
- Load Weight: **0**

Below the header, there are two tabs: "1) Title" and "2) Load List". The "Load List" tab is active. It contains three input fields:

- Ship Date:
- Ship Via:
- Remark:

Below the input fields is a summary table:

	ENTRIES	WEIGHT
POSTED:	0	0
UNPOSTED:	0	0
TOTAL:	0	0

At the bottom of the window, there are seven buttons:

- Delete Ticket
- Print
- Okay
- Trial Post List
- Post List
- Close

Data entry items for the shipping list consist of quantity, mark and sequence (if required). Descriptions and weights are pulled from the shop bill of material.

Shipping

File

Job Number: **1000**  
 Job Name: **Sample Project 1000**  
 Ship Ticket Number: **1**      Load Weight: **1655**

1) Title   2) Load List

QTY	MARK	SEQ	WEIGHT
1	1B1	1	1655

Insert Item    Delete Item    Post Item    Unpost Item

Okay    Print Post List    Post List    Close

Four different printouts of the shipping ticket are available. They are:

**Sorted Shipping Ticket** – This is the report that can be sent with the shipment. It includes addresses, weights, etc.

**Load List (input order)** – This document can be used to load the truck. The item list is printed in the same order that it was input. This might be helpful if the shipment must be loaded so it can be erected directly off the truck.

**Load List (reverse order)** – Same as the previous but the list is printed in reverse input order.

**Check Printout** – Used for data input checking purposed only. Does not include weights or descriptions.

For the sorted shipping ticket: company name and address information is entered at "Maintain | Set Configuration | Miscellaneous"; sold to and ship to information in entered at Job Title.

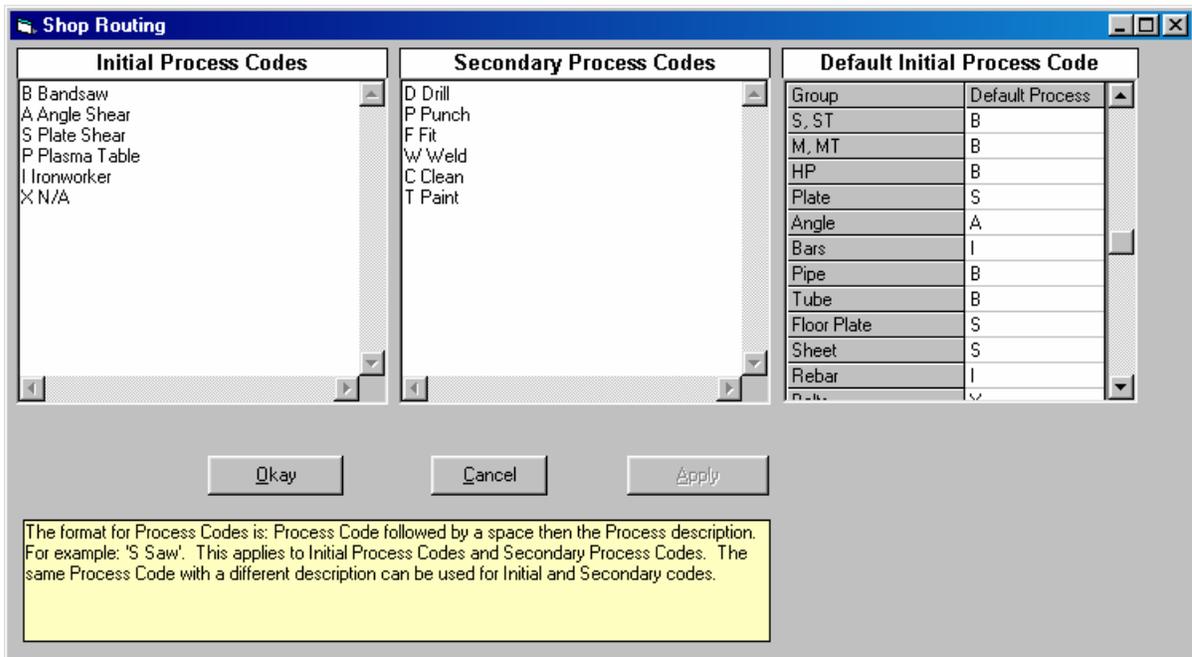
## Data Import

# Shop Routing

Shop Routing is used to route material through the shop. Routing codes consist of an initial process code and optional secondary process codes. Currently, a process code can consist of a single character (A-Z and 0-9). The initial process code is usually the first operation performed on a piece (normally the cutting operation but defined as which process is used for cutting such as saw, shear, burning table, etc.). The secondary process would be additional processes such as drill, punch, cope, fit, weld, etc.

Shop Routing is turned on by selecting the checking the 'Use Shop Routing' at the Job Title edit screen. Warning, once shop routing is turned on for a job, it cannot be turned off. Shop Routing can be turned on at any time during the life of a job but if it is turned on for a job with existing shop bill of material, you must edit every bill of material line item to add an initial process code before the bill of material will be useful.

To enter or edit the process codes, select the menu option Maintenance | Routing. Process codes are entered as line items in the text boxes. Each process code entry consists of a single character followed by a space then the process description. The same process code can be used as an initial process code and a secondary process code. The default initial process code is the code that an input item (based on it's shape group) will default to if an initial process code is not entered.



Process codes can be used for job standard items but cannot be used for shop standard items.

The initial process codes can be used when selecting materials to include on a shop cutting list. If process codes are used for the job and 'Use Cut Tracking' is turned on for the job, you will have the additional option to specify which initial process codes to include on a shop cutting list.