A GUIDE TO BASIC PRODUCTION PLANNER PROCEDURES USING SAP

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Introduction

Welcome to the team of Lam Research! You are now a member of the division of Lam Research called Production Control, otherwise known as PC. While the assemblers on the Manufacturing floor are working to build Lam Research's products, you will be monitoring our supplies of parts to make sure that the assemblers always have what they need to accomplish their tasks.

Your job is made much easier through the use of the enterprise resource planning (ERP) software programmed by SAP SE. This allows you to oversee the updated inventories for all the parts used by the assemblers.

The purpose of this guide is to give you an introduction to the basic procedures you will carry out as member of PC. All of the procedures described here will be very important to keeping Lam Research's Manufacturing floor running smoothly and on schedule.

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1 Signing In

The first thing that must be done when you begin your work day is to sign into the SAP GUI (Graphical User Interface).

NOTE: If you are working onsite at Lam Research, you can ignore the steps marked with (*). These are steps to sign into the Lam VPN. This is required if you are working outside the Lam facility.

1) (*) Double-click on the PulseSecure icon on your desktop.
2) (*) Select the Lam-Global-VPN icon and select CONNECT.

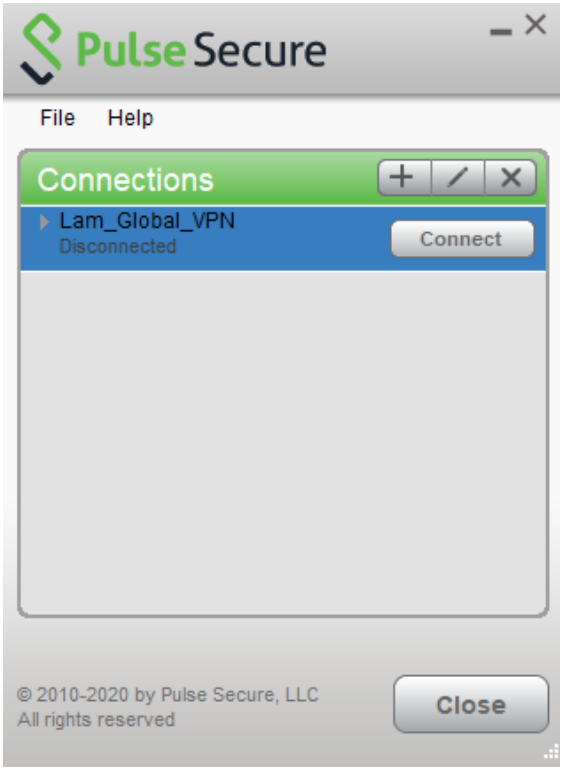


Figure 1-1 The first login screen for PulseSecure VPN.

3) (*) Sign in with the same login that you use for your computer. Wait for connecting to complete.

Figure 1-2 The second login screen.

4) Double-click on the SAP GUI icon on your desktop.

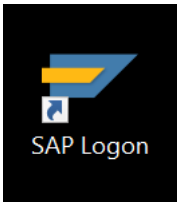


Figure 1-3 The desktop icon for SAP Logon.

5) When the SAP window opens, click on the list item SAP PRODUCTION (PRD) and then click LOG ON.

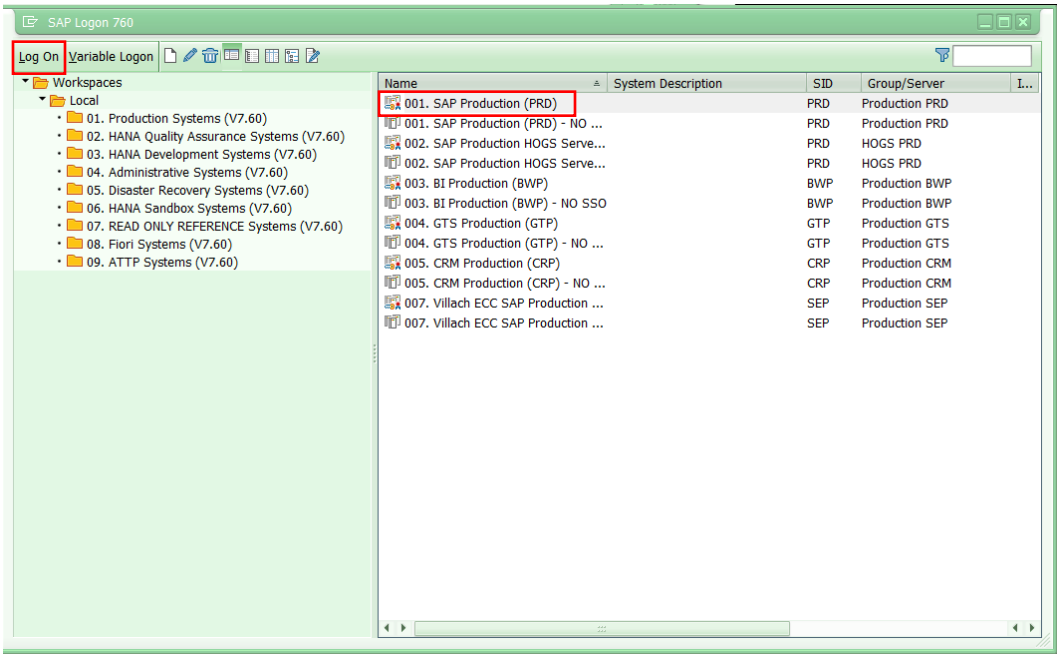


Figure 1-4 Main Logon screen for SAP.

You are now on the home page of the SAP GUI. From here you can type Transaction codes, or T-codes, into the search bar at the top left corner of the window (marked by the red square below). A list of your most used T-codes can be found at the Appendix of this document. You can also create new windows of the GUI by pressing the New Window button (marked by the blue square).

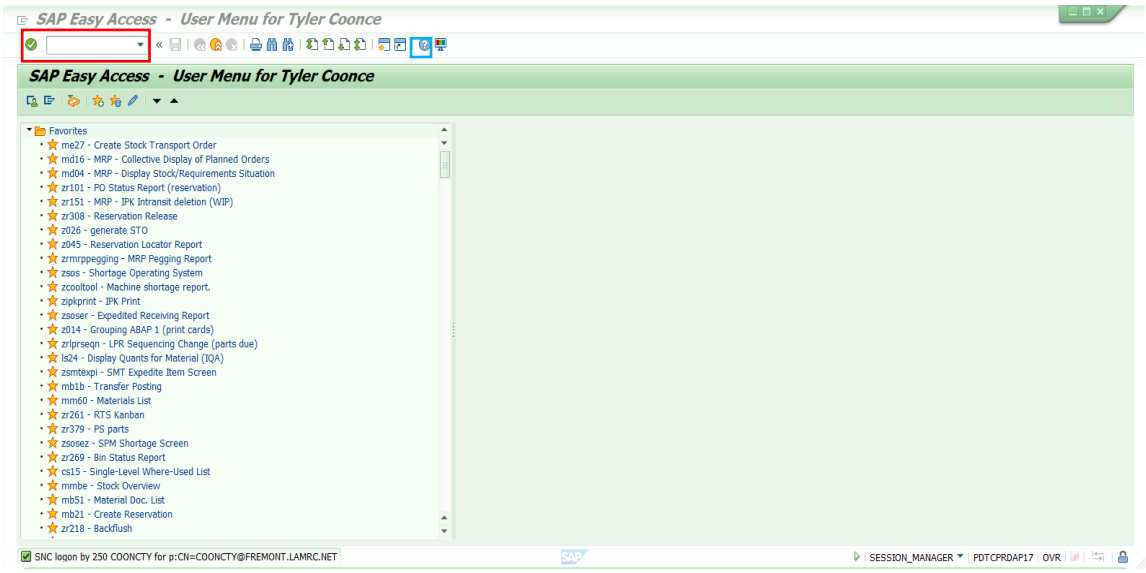


Figure 1-5 SAP GUI Main Menu.

2 Important Terms and Groups

This is a list to help familiarize you with the terms you should familiarize yourself with and groups you will be regularly interacting with over the course of a work day.

- Lam Research Manufacturing 1000 – the Lam manufacturing facility in Livermore. Consists of buildings 3150 and 3250
- Lam Research Warehouse 2000 – the main Lam warehouse storing our parts.
- Lam Research Spares Warehouse 2001 – a Lam warehouse storing emergency stocks for parts that are usually sent worldwide.
- Assemblers – the employees working on the Manufacturing floor of 1000. They will be your most frequent customers.
- DHL – the courier company that manages 2000 and transports our parts. Its subgroups are listed below

- DHL Receiving – the division responsible for receiving new deliveries of parts to 2000 and making sure they are properly decontaminated and ready for use. You will contact them about the status of incoming deliveries or moving parts to a pickable location.

  Email: DL-DHL.LIV-LAM-RECEIVING@dhl.com
- DHL Inventory Control – the division that monitors 2000 inventory. You will contact them about moving Freestock parts from 2000 to 1000.

  Email: DL-DHL.LIV-LAM-InventoryControl@dhl.com
- DHL Picking – the division responsible for loading parts onto delivery trucks and sending them to 1000. Contact them about expediting part through the loading process to arrive as soon as possible.

  Email: DL-DHL.LIV-LAM-PICKING@dhl.com
- DHL Resupply – the division that receives shipments of parts into 1000 and moves them to the Manufacturing floor. Contact them about the status of recently arrived parts.

  Email: DL-DHL.LIV-LAM-CA31.32RESUPPLY@dhl.com

- Hot Orders – the side of Lam that focuses on delivering parts to different facilities around the world. Contact them if you are trying to pull parts into 2000 from outside facilities.

  Email: Hot.Orders@lamreasearch.com

3 Expediting Parts

The most common action that PC is responsible for is expediting deliveries of parts from 2000 to 1000. When a production line on the Manufacturing floor begins to run out of a specific part, the assemblers will scan the barcode on one of the bins that hold that part. The first scan gets logged on the SAP system and the system will eventually generate a Stock Transfer Order (STO) to replenish the part. When an assembler scans this part for a second time, that will tell the system that the part is entirely depleted and an STO will generate with a faster delivery window.

Sometimes there are special circumstances that require PC to take a more active role in part procurement. Whether from misplaced stock, too many requests on the system, or simple human error, production lines on the Manufacturing floor can find themselves entirely empty of a necessary part and will enter a Line Down situation, where work on the current product builds cannot continue and progress is essentially frozen. To resolve this issue, members of PC will expedite existing STOs or create new ones.

Assemblers will send emails to PC asking for specific parts to be expedited into 1000. Emails can be found in Microsoft Outlook. When your email account is set up, you will be automatically added to the ‘PC Mfg’ Outlook group.

The first step of expediting parts to 1000 is to find out which part type you are currently working with. The part type determines which procedure you will use to expedite it. This information and more can be found easily on SAP.

1. The T-code you will be using the most throughout these procedures is **MD04**, which shows the scheduled uses and deliveries for a specific part. Type **MD04** into the search bar of the Main Menu and press the ENTER key or click the Green Checkmark to go to the **MD04** page.

NOTE: Pressing the ENTER key and clicking the Green Checkmark are interchangeable for this interface. Both will accomplish the same thing.

2. When you reach the first screen of **MD04**, type out the full number of the part you are searching for on the line marked MATERIAL. Assemblers on the Manufacturing floor will send you the number in an email, along with how many they will need and which location it should be sent to.

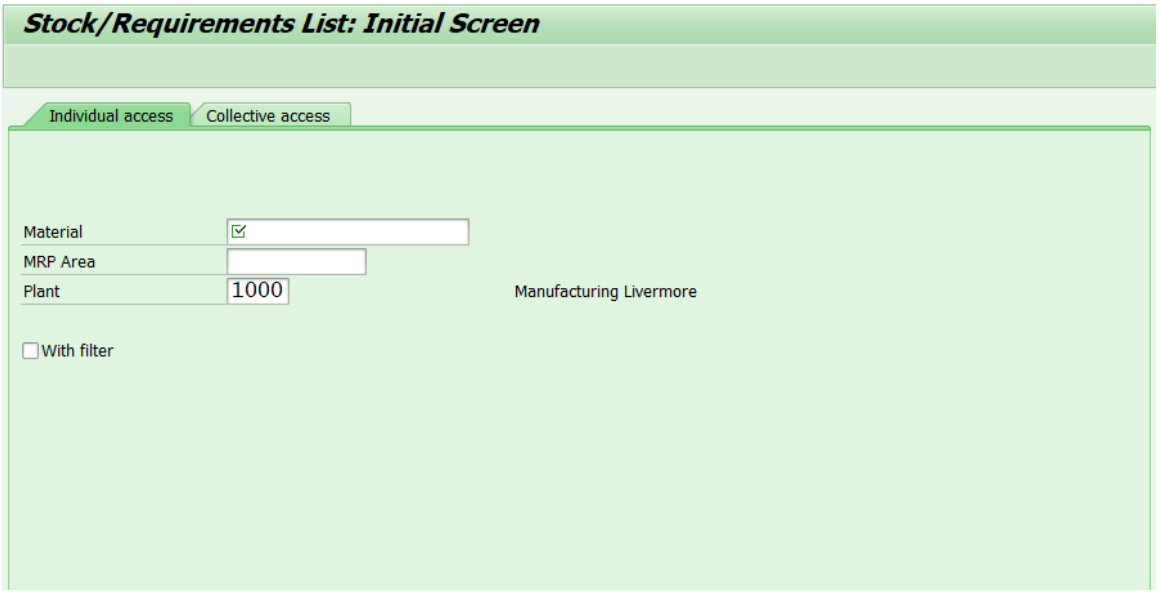


Figure 3-1 The main page of MD04.

3. When you add the part number and press ENTER, that will take you to the STOCK / REQUIREMENTS LIST page.

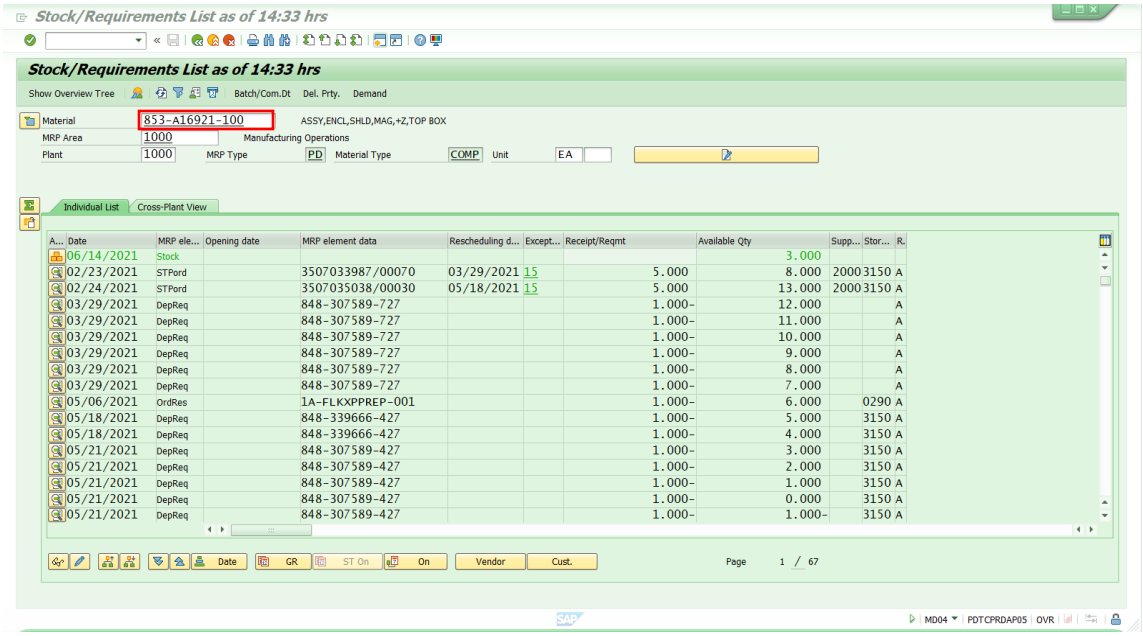


Figure 3-2 Showing Part Inventory and Schedule.

4. To find the part type you are working with, double-click on the part number marked by the square above. This will take you to the DISPLAY MATERIAL page.

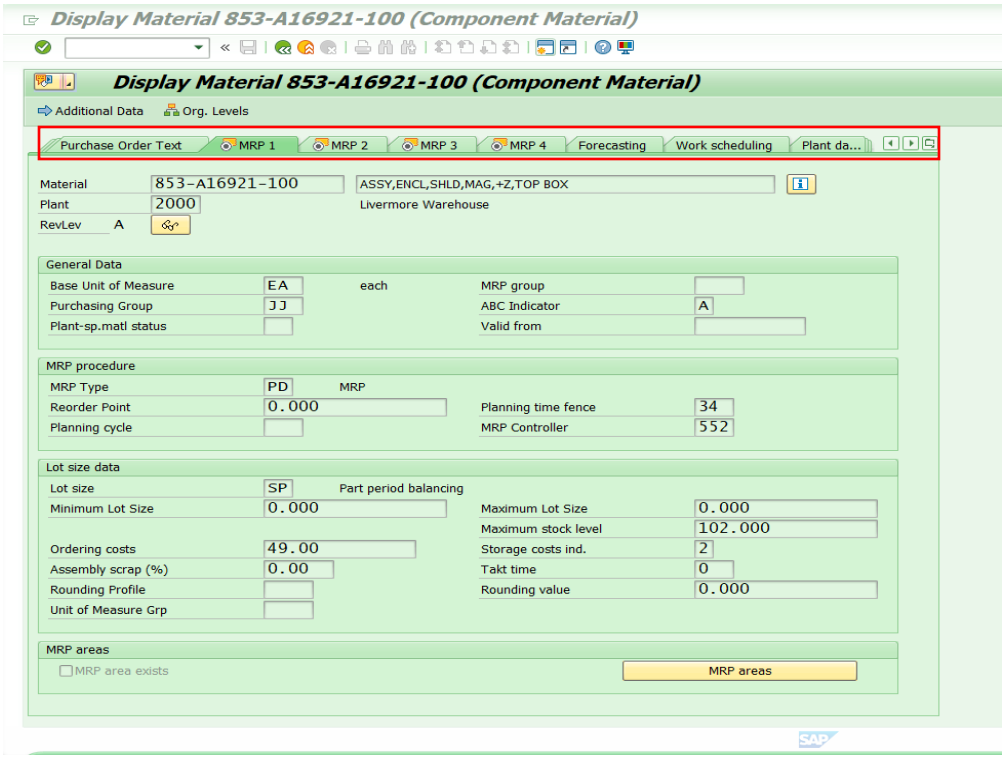


Figure 3-3 Display Material; specific information is found on the tabs marked at the top.

5. Move through the tabs until you reach one titled BASIC DATA 1. Click on it.

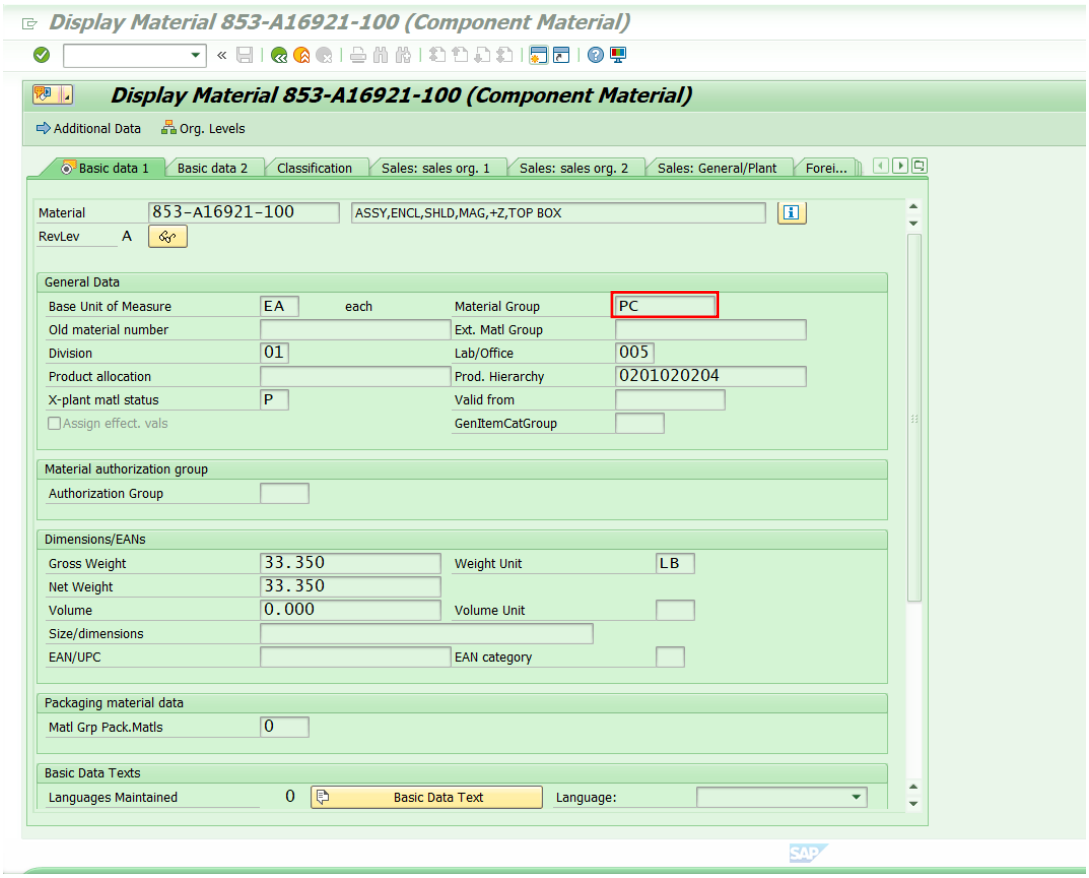


Figure 3-4 In Basic Data 1, the type of part (Material Group) is marked with the red square.

If the MATERIAL GROUP is listed as PL or PC, you will proceed to Section 3.1.

If it is PN, you will proceed to Section 3.2.

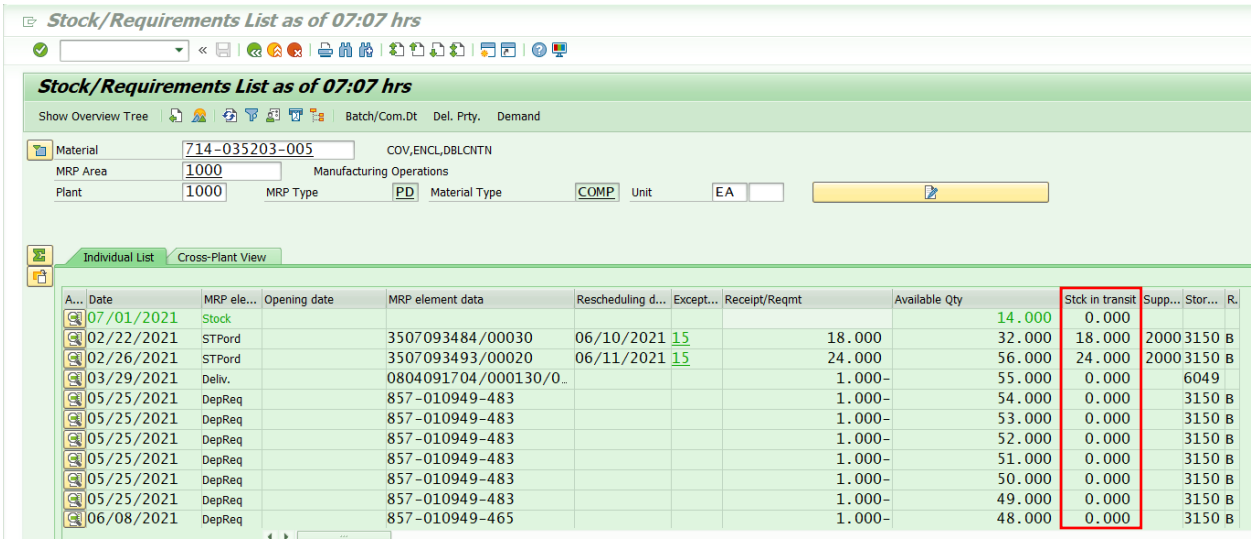
Finally, if it is F, you will proceed to Section 3.3.

3.1 PL / PC Parts

PL and PC parts are the easiest to replace. These are smaller and cheaper parts of which the Manufacturing floor receives regular shipments. New shipments are requested by scanning the production line bins these parts are kept in. If no shipments have been generated, however, you can create a new one as needed.

3.1.1 Check for Transit

When you get a new request for parts, the first thing to check is to see if there is any stock already in transit to the Manufacturing floor. If there are parts in transit, you will see a new column on the STOCK / REQUIREMENTS LIST page marked TRANSIT. Most of the cells in this column will be marked with **0.000**, but there will be at least one cell that has a number in it.



A...	Date	MRP ele...	Opening date	MRP element data	Rescheduling d...	Except...	Receipt/Reqmt	Available Qty	Stck in transit	Supp...	Stor...	R.
	07/01/2021	Stock						14.000	0.000			
	02/22/2021	STPord		3507093484/00030	06/10/2021	15	18.000	32.000	18.000	2000	3150	B
	02/26/2021	STPord		3507093493/00020	06/11/2021	15	24.000	56.000	24.000	2000	3150	B
	03/29/2021	Deliv.		0804091704/000130/0...			1.000-	55.000	0.000		6049	
	05/25/2021	DepReq		857-010949-483			1.000-	54.000	0.000		3150	B
	05/25/2021	DepReq		857-010949-483			1.000-	53.000	0.000		3150	B
	05/25/2021	DepReq		857-010949-483			1.000-	52.000	0.000		3150	B
	05/25/2021	DepReq		857-010949-483			1.000-	51.000	0.000		3150	B
	05/25/2021	DepReq		857-010949-483			1.000-	50.000	0.000		3150	B
	05/25/2021	DepReq		857-010949-483			1.000-	49.000	0.000		3150	B
	06/08/2021	DepReq		857-010949-465			1.000-	48.000	0.000		3150	B

Figure 3-5 The column marking In Transit parts is marked by the square.

If the Storage Location (SLoc) column is labeled with either **3150** or **3250**, then those parts are meant for us. You can then reply to the assembler to let them know that their parts are already on the way.

3.1.2 Expediting A Pre-existing Order

1) Change the number on the MRP AREA line from **1000** to **2000**. This will take you to the Lam inventory in the Fremont warehouse. All of our part deliveries come through this facility.

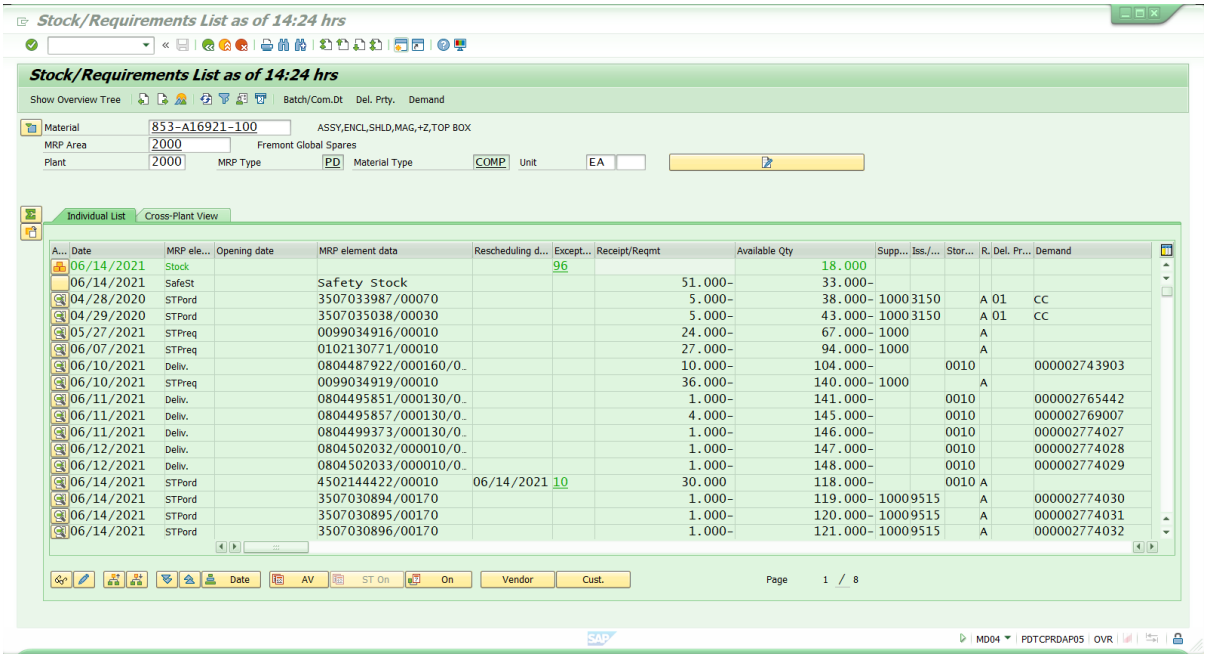


Figure 3-6 The 2000 side of MD04 shows our warehouse inventory.

2) When looking through the various Stock Transfer Orders (STO) on the schedule, make note of any that are marked with one of the number designations listed below.
    a. **35**- — This indicates a delivery scheduled to leave the warehouse to our facility.
    b. **080**- — Indicates a delivery that is in the stage of being moved to a loading area of the warehouse. At this point, the delivery should be in transit shortly.
    c. **45**- — Indicates an upcoming shipment of parts to the warehouse from our suppliers.
3) Pressing the Delivery and Demand buttons on the top of the screen will reveal more columns on the STO in question. STOs that are going to the

Manufacturing floor will all have the **35**- designation and will also have **CC** in the demand column.

4) If there is an STO that fulfills the above criteria, that is a delivery already scheduled to arrive on the line.

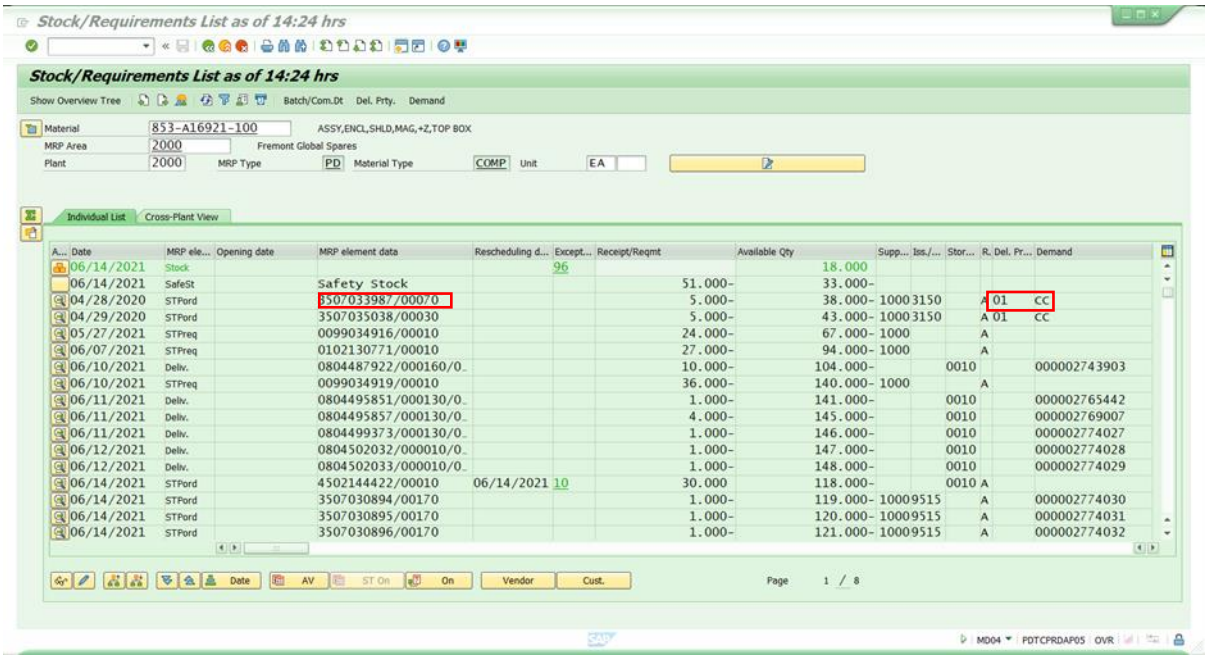


Figure 3-7 The marked STO has its demand marked CC. This is an STO going to 3150.

5) The next step is to expedite the STO. Double-click on this row to pull up a detail window. Click on the EDIT button to move to a new screen.

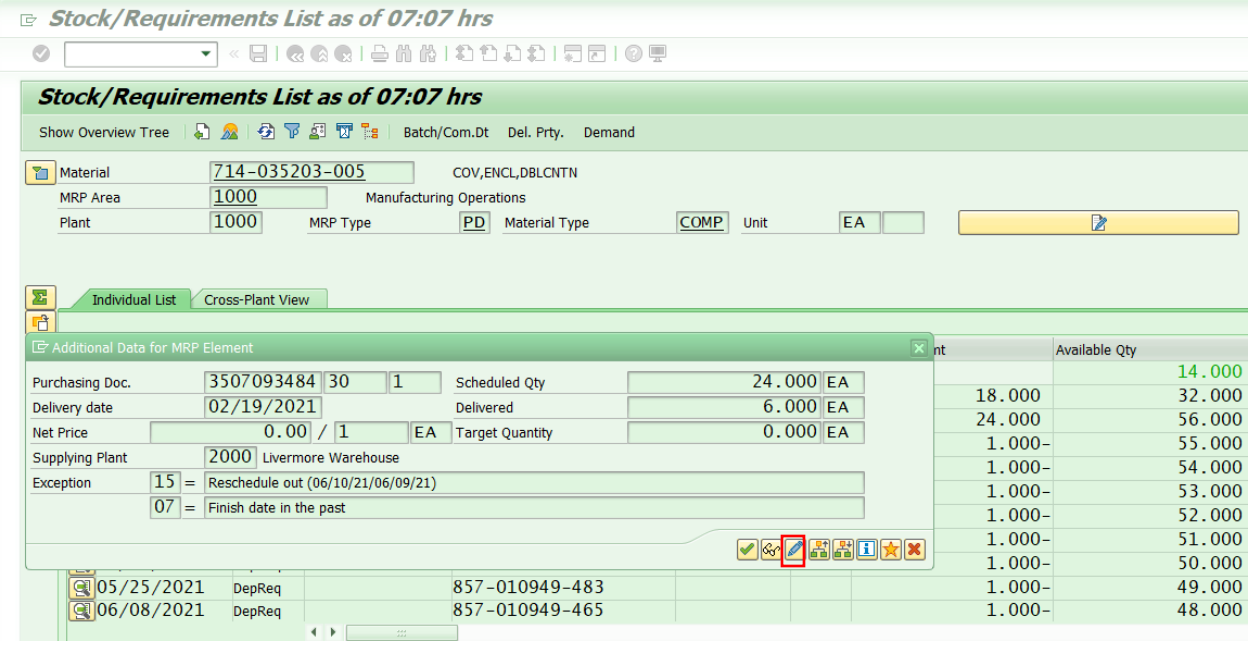


Figure 3-8 The STO pop up menu. EDIT STO button is marked with red.

6) Now that you are on the STOCK TRANSFER ORDER screen, you can expedite the STO. In the box at the bottom of the screen, move to the SHIPPING tab and find the line marked DEL PRIOR. Change the value in this box to **1**.

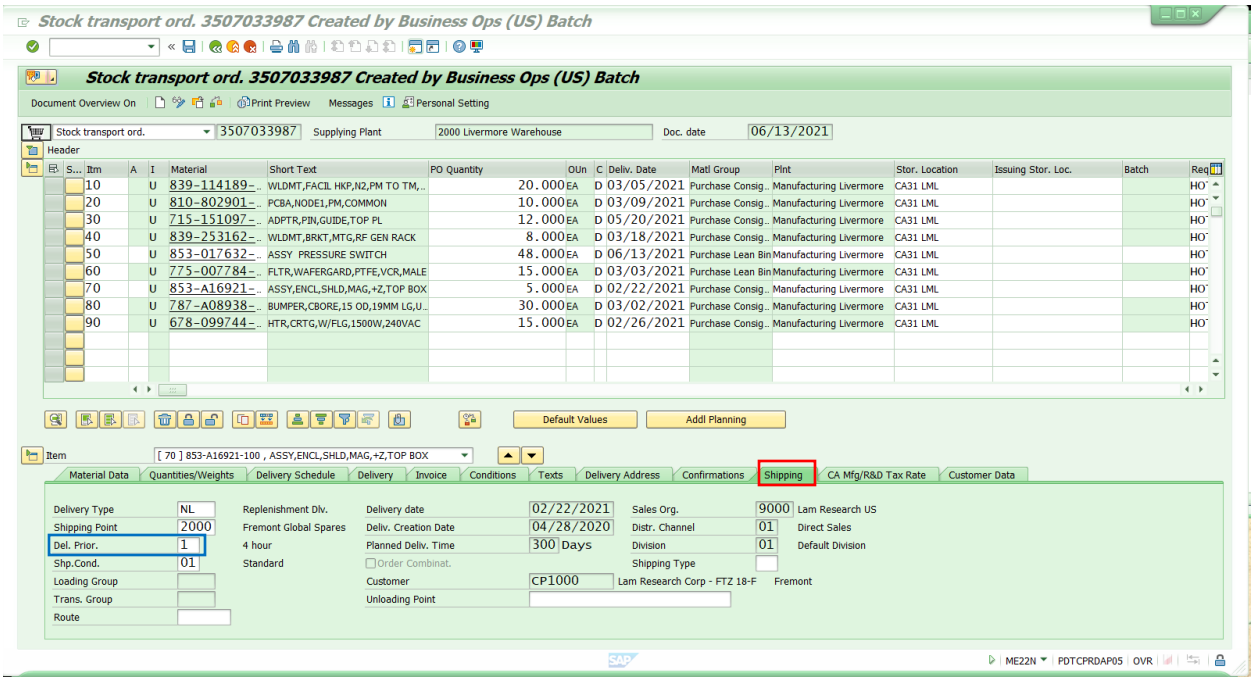


Figure 3-9 STO Details. The Shipping tab is marked with red and the Delivery Priority field is marked with blue.

The STO is now expedited and should arrive at our facility sometime within the next four hours. Your task is now complete.

3.1.3 New STO

When an STO does not currently exist for this card, the next step is to create a brand new one.

1) Keeping the **MD04** page open, create a new window and type in the T-code **ZR269**. Put the part number on the appropriate line and press the **F8** button or click the EXECUTE ICON at the top of the screen.

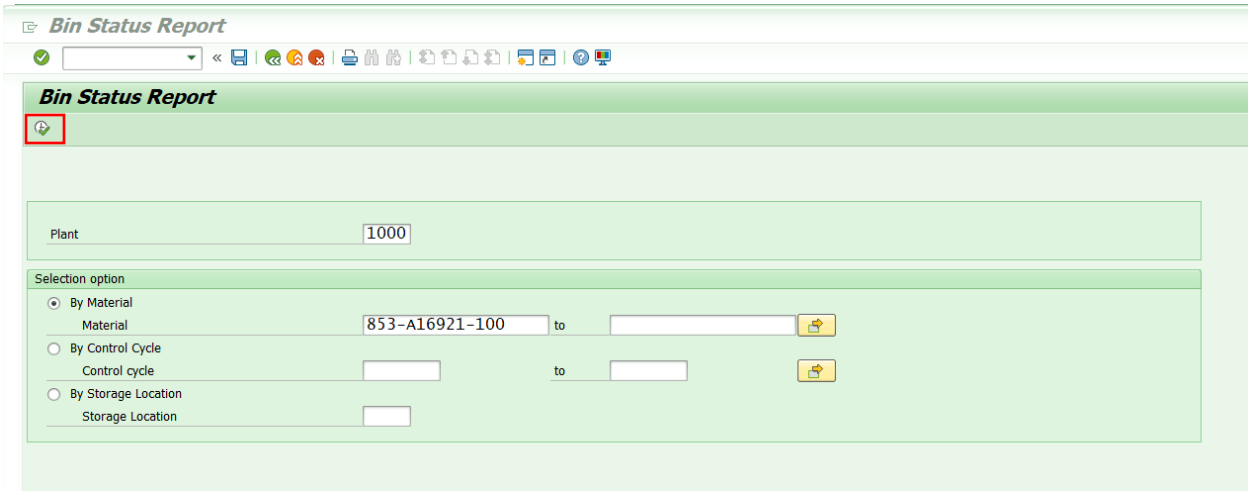


Figure 3-10 Bin Status Report. The Execute button is marked in red.

NOTE: The **F8** button and the EXECUTE button are interchangeable and both accomplish the same action.

2) You are now on the BIN STATUS REPORT page, which shows the information on the bins for this part. The number you need off this page is the number marked CNTCYCLE. Copy the number that is connected to the bin you are sending these parts to.

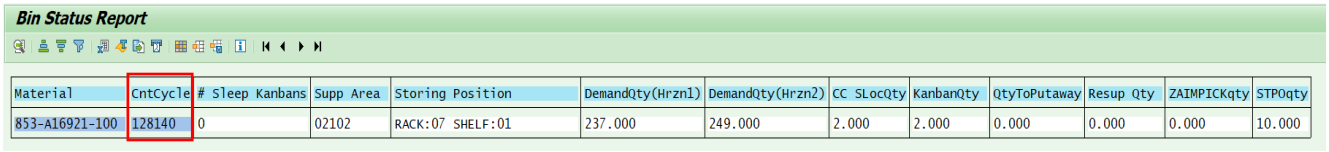


Figure 3-11 The Control Cycle indicates a bin's location. Marked with red.

3) Create a new window and use the T-code **ME27**. Paste in the provided information in the way shown below. Press ENTER when you are done.

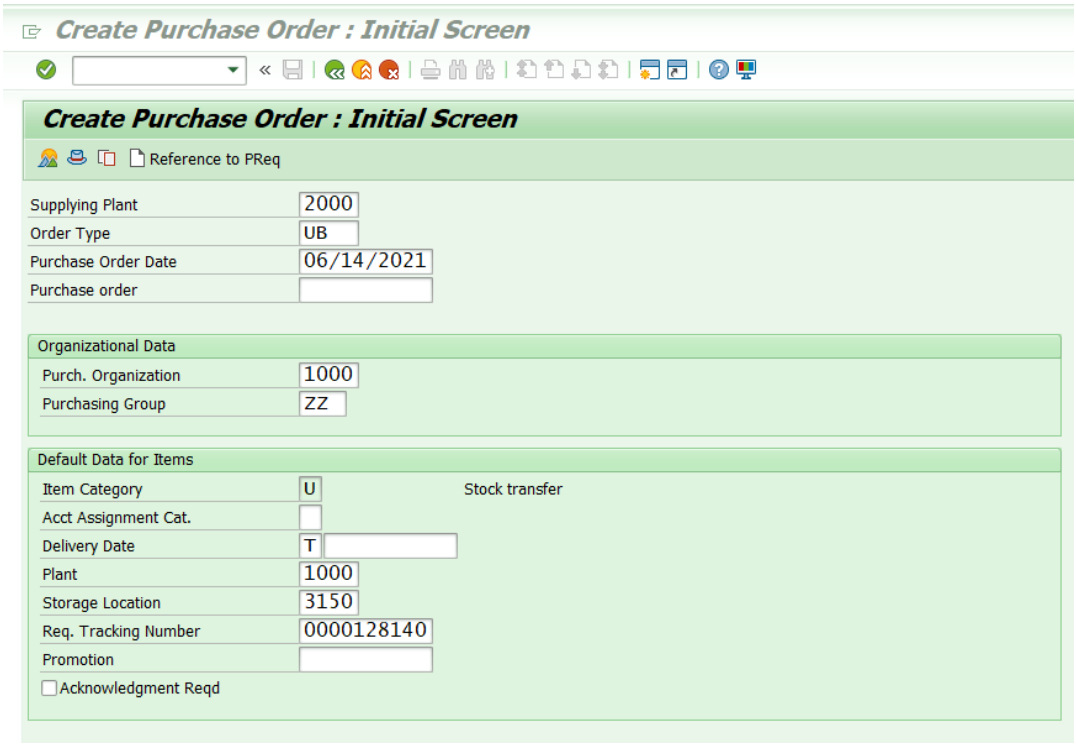


Figure 3-12 This is the setup of values you absolutely want to follow on ME27.

4) You'll be taken to the CREATE PURCHASE ORDER screen. In the first row of the table, input the part number and the quantity you want to order. Input today's date in the DELIV DATE cell. Double-click on the part number. Three prompts will appear, but press ENTER for all of them.

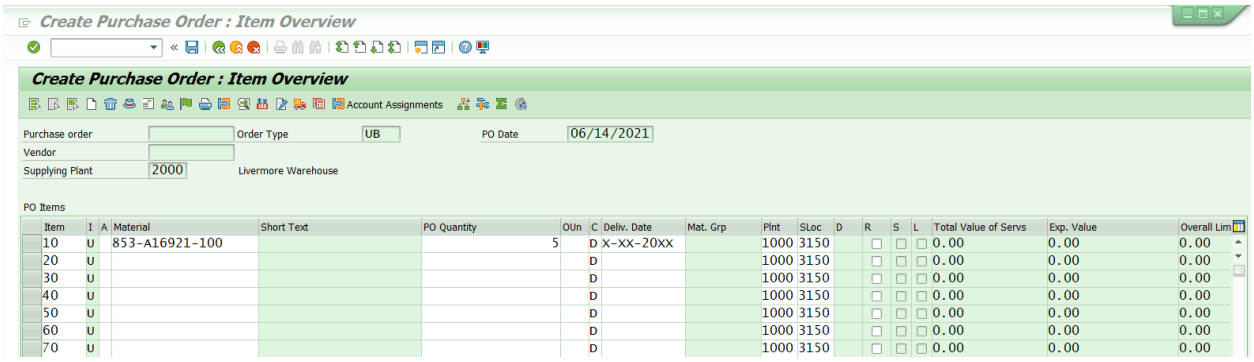


Figure 3-13 The inserted values for creating a new STO.

5) When the smaller window pops up, press the GENERATE NEW STO button to move to the next screen.
6) When you come to the NEXT page, copy the TRACKING number along with one of the leading 0's and paste it onto the line marked MRP ELEMENT NUMBER. Next, type **CC** on the MRP ELEMENT line. When you are finished, click the SAVE icon at the top of the window.

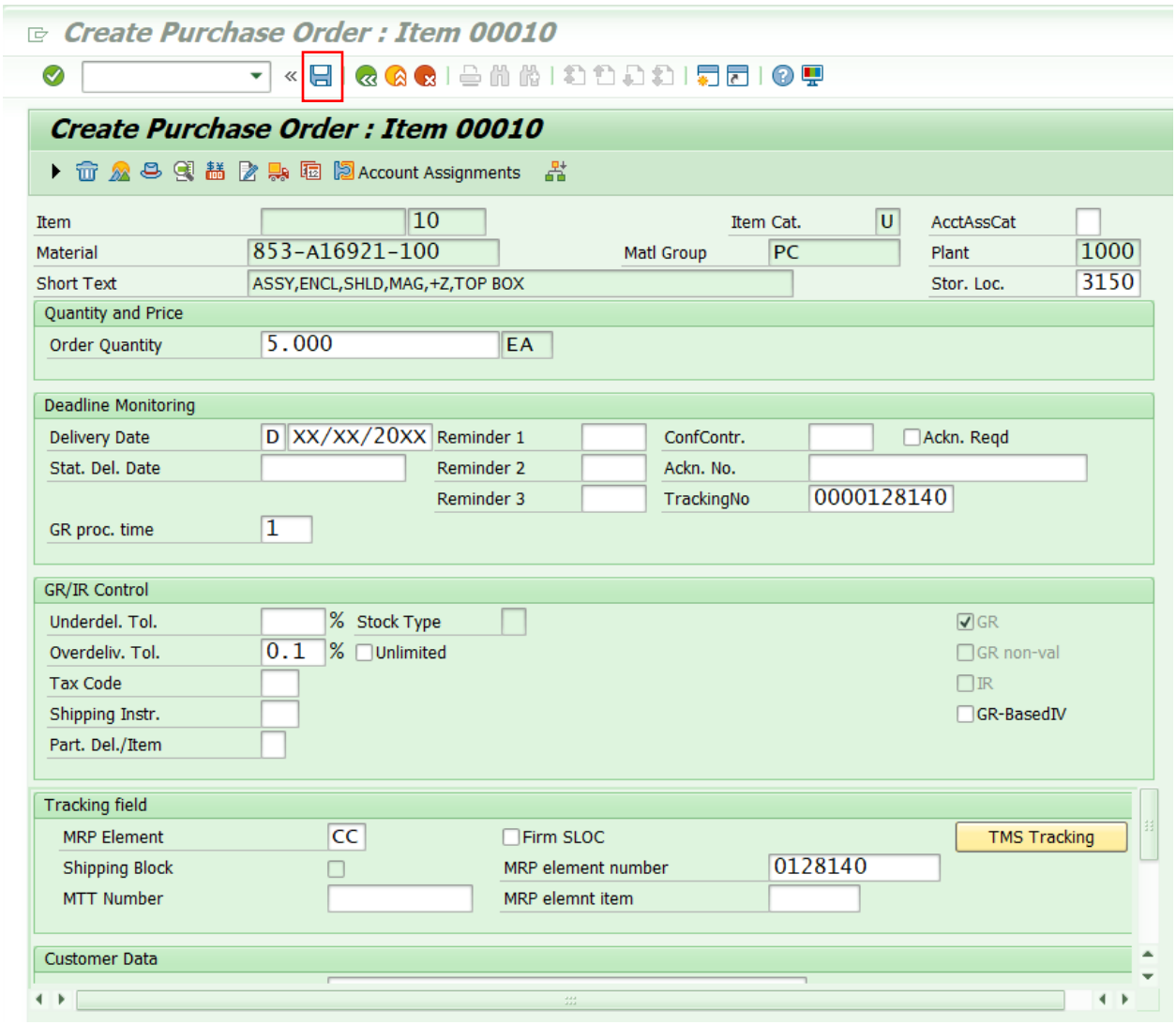


Figure 3-14 Make sure the MRP Element and MRP element number fields are filled as the text specifies. The Save button is marked red.

7) A new STO has been generated and you can go back to **MD04** to expedite it by the steps listed in Section 3.1.2.

3.1.4 Replacing

The step for replacing missing or damaged parts is slightly different than creating a normal STO. If parts must be replaced, the assembler contacting you will add provide an NCI number for their request.

1. Similar to the start of Section 3.1.3, go to the **ZR269** page and copy the COUNTER number for the part.
2. Make a new window and use the T-code **ZR261**. Paste the copied COUNTER number on the line and press the button marked NCR.

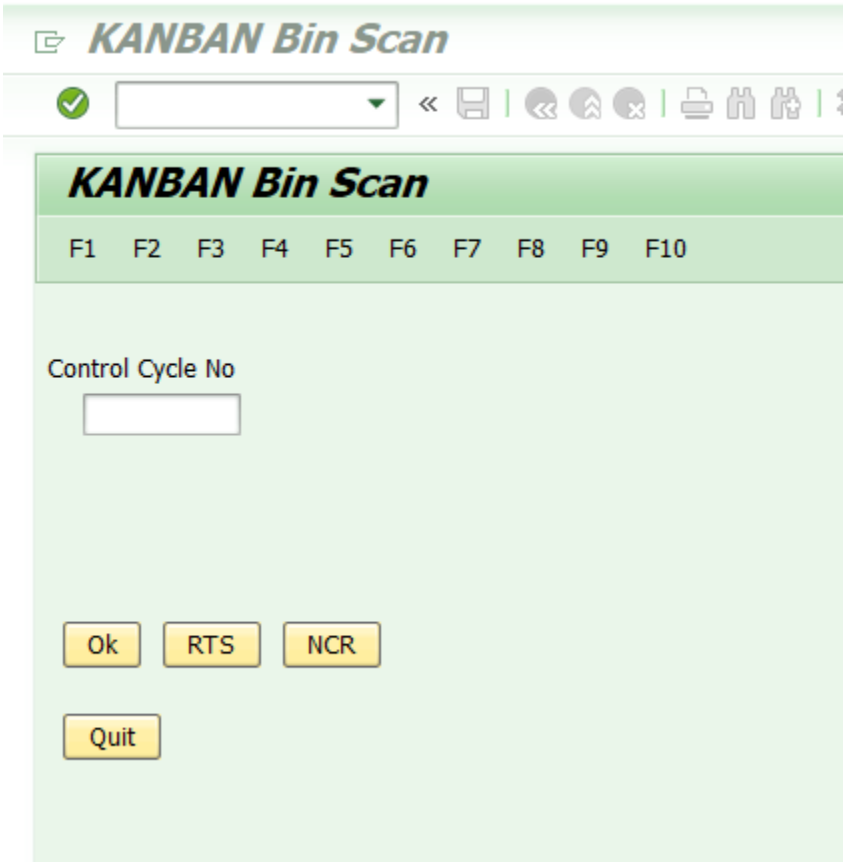


Figure 3-15 Main page of ZR261.

3. Type in the quantity that are missing and the NCI number on the corresponding lines. When you are done, press ENTER.

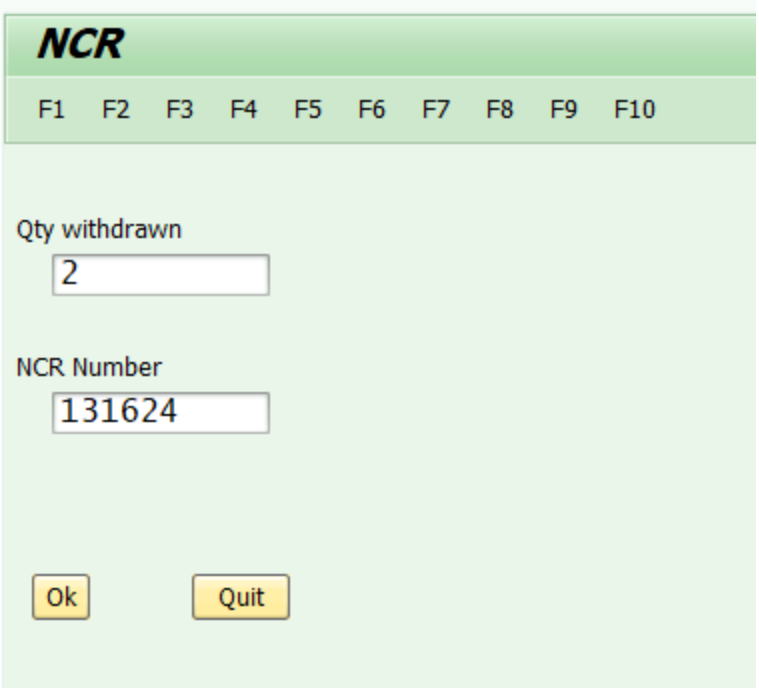


Figure 3-16 Entering values to log damaged parts.

4. When the pop-up window appears, specify whether the bin is empty or not. The assembler will let you know if it is empty. After choosing YES or NO, the request will be complete. The system will generate a new STO to replace the missing parts.

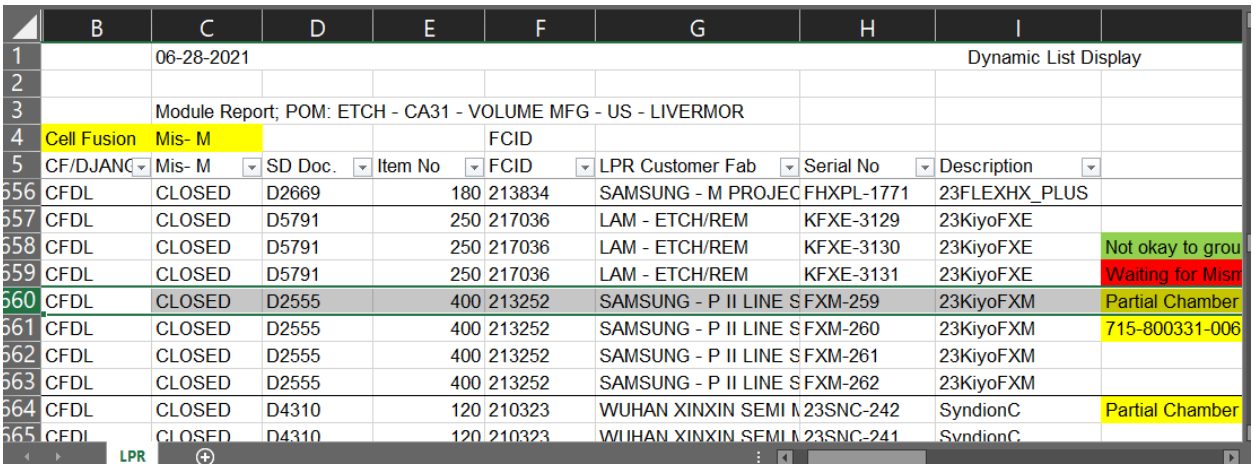
3.2 PN Parts

In contrast to PL and PC parts, PN parts are more expensive and are harder to order. The system typically only orders these parts on an as-needed basis. This is done by linking that part to a unique reservation number, which connects all PN parts to a specific product. When an assembler requests an expedite of PN parts, they will need to provide a Functional Configuration Identification (FCID) that specifies the type of product being built. This FCID is used in the **PC Release Schedule spreadsheets**,

which you should have access to through the PC group SharePoint, and can be used to find the reservations you will be working with for this expedite.

3.2.1 Find the Reservation

1. Open the PC Release Schedule in Excel and press **CTRL+F**. Paste the FCID into the search bar and press ENTER. If the FCID is present in the spreadsheet, your cursor will snap to it.



	B	C	D	E	F	G	H	I	
1		06-28-2021						Dynamic List Display	
2									
3		Module Report; POM: ETCH - CA31 - VOLUME MFG - US - LIVERMOR							
4	Cell Fusion	Mis- M			FCID				
5	CF/DJANG	Mis- M	SD Doc.	Item No	FCID	LPR Customer Fab	Serial No	Description	
556	CFDL	CLOSED	D2669	180	213834	SAMSUNG - M PROJEC	FHXPL-1771	23FLEXHX_PLUS	
557	CFDL	CLOSED	D5791	250	217036	LAM - ETCH/REM	KFXE-3129	23KiyoFXE	
558	CFDL	CLOSED	D5791	250	217036	LAM - ETCH/REM	KFXE-3130	23KiyoFXE	Not okay to grou
559	CFDL	CLOSED	D5791	250	217036	LAM - ETCH/REM	KFXE-3131	23KiyoFXE	Waiting for Mism
560	CFDL	CLOSED	D2555	400	213252	SAMSUNG - P II LINE S	FXM-259	23KiyoFXM	Partial Chamber
561	CFDL	CLOSED	D2555	400	213252	SAMSUNG - P II LINE S	FXM-260	23KiyoFXM	715-800331-006
562	CFDL	CLOSED	D2555	400	213252	SAMSUNG - P II LINE S	FXM-261	23KiyoFXM	
563	CFDL	CLOSED	D2555	400	213252	SAMSUNG - P II LINE S	FXM-262	23KiyoFXM	
564	CFDL	CLOSED	D4310	120	210323	WUHAN XINXIN SEMI M	23SNC-242	SyndionC	Partial Chamber
565	CFDL	CLOSED	D4310	120	210323	WUHAN XINXIN SEMI M	23SNC-241	SyndionC	

LPR

Figure 3-17 Use Ctrl+F to find the FCID given in the email. Highlight the full row.

2. Follow along that same row to find the reservation numbers connected to the FCID. If you are sending a part to 3150, you will concentrate on the PM LINE reservation. If instead you are sending to 3250, the BIAS LINE number is the one you want.

	O	P	Q	R	S	T	U	V	W
1				*					
2				>					
3				<					
4				Pump Line	Prep Line	PM Line	Bias Line	Bias Test	Comments
5	Pln Group	Pln Launch	Act Launch	Pump Line	Prep Line	PM Line	Bias Line	Bias Test	Comments
656	6/22/2021	6/29/2021				17446899*	17446900*		
657	6/22/2021	6/29/2021			17455626	17455627	17455628		
658	6/22/2021	6/29/2021			17455626	17455627	17455628		
659	6/22/2021	6/29/2021			17455626	17455627	17455628		
660	6/22/2021	6/29/2021			17446901*	17446902*	17446903*		
661	6/22/2021	6/29/2021			17446901*	17446902*	17446903*		
662	6/22/2021	6/29/2021			17446901*	17446902*	17446903*		
663	6/22/2021	6/29/2021			17446901*	17446902*	17446903*		
664	6/22/2021	6/29/2021		17446906*	17446907*	17446908*	17446909*	17446910*	17446911*
665	6/22/2021	6/29/2021		17446906*	17446907*	17446908*	17446909*	17446910*	17446911*

Figure 3-18 Follow the row to find the reservation number you need.

Make note of this reservation number.

3.2.2 Expediting

1. Similar to Section 3.1.2, you want to search if there are any already active STOs when you first receive an expedite request. Go to the **2000** side of **MD04**.
2. Click on the DEL PRTY and DEMAND buttons near the top of the screen to see what reservations the active STOs are connected to.

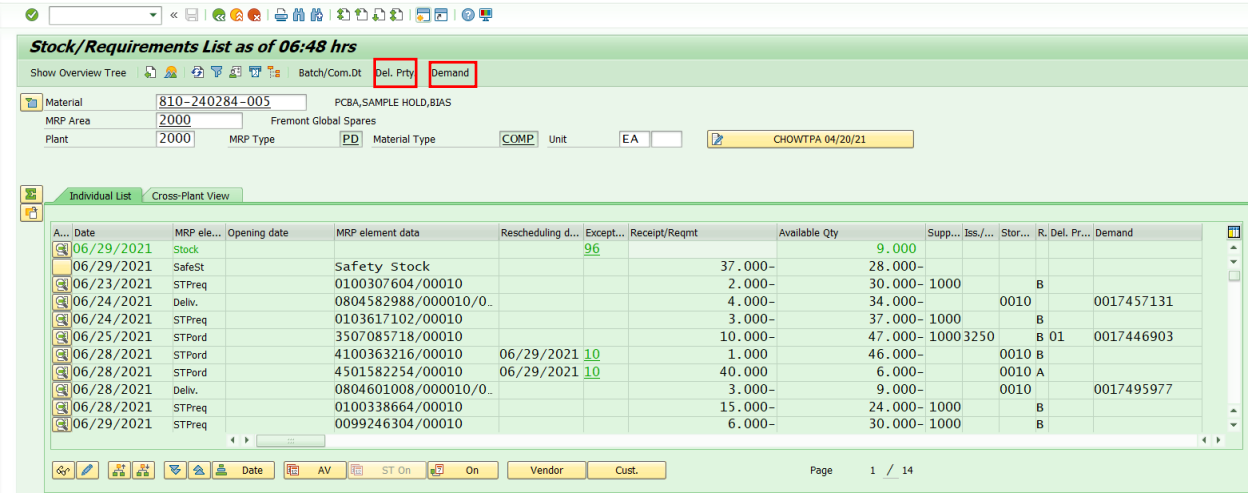


Figure 3-19 The Delivery Priority and Demand buttons are marked with red.

3. If you do not see this part's reservation number in **MD04**, you can ignore the rest of this section and move on to Section 3.2.3. Otherwise, we first need to make sure that this reservation has been properly released for transit. Create a new window using T-code **ZR101**. Fill in the bubble marked NR/ENG REPORT and paste your reservation number onto the line. Click EXECUTE.

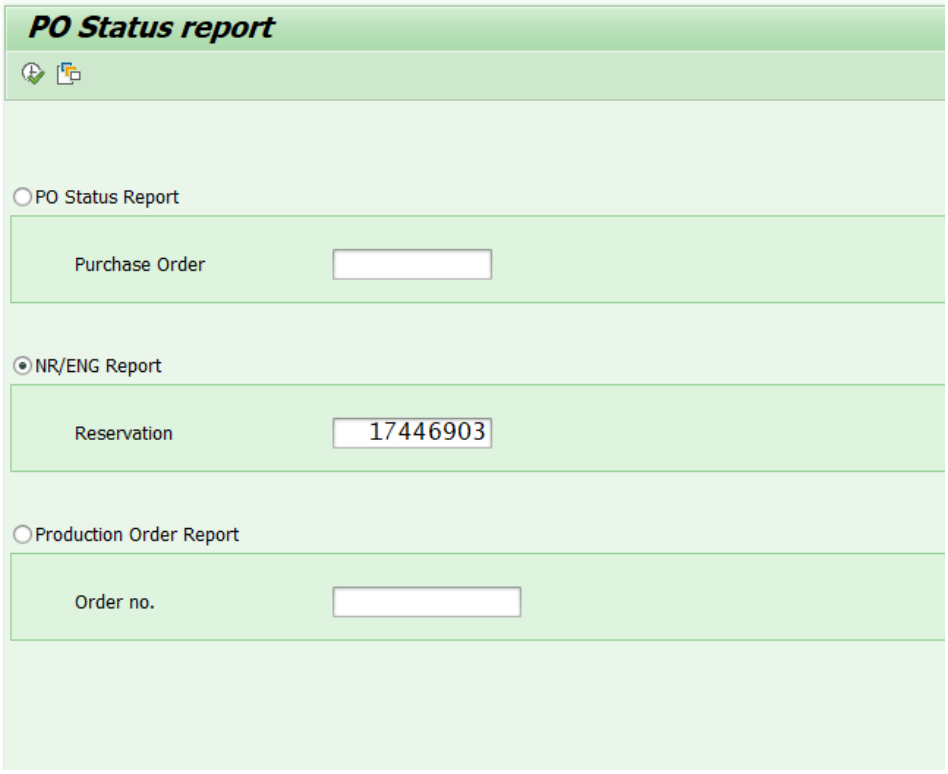


Figure 3-20 Main page for ZR101.

4. When you see this reservation's RESERVATION ITEM STATUA, check the top line. If the line has any sort of text on it, this reservation has been released. If the line is blank, then this is not the case. Consult with your supervisor at this point.

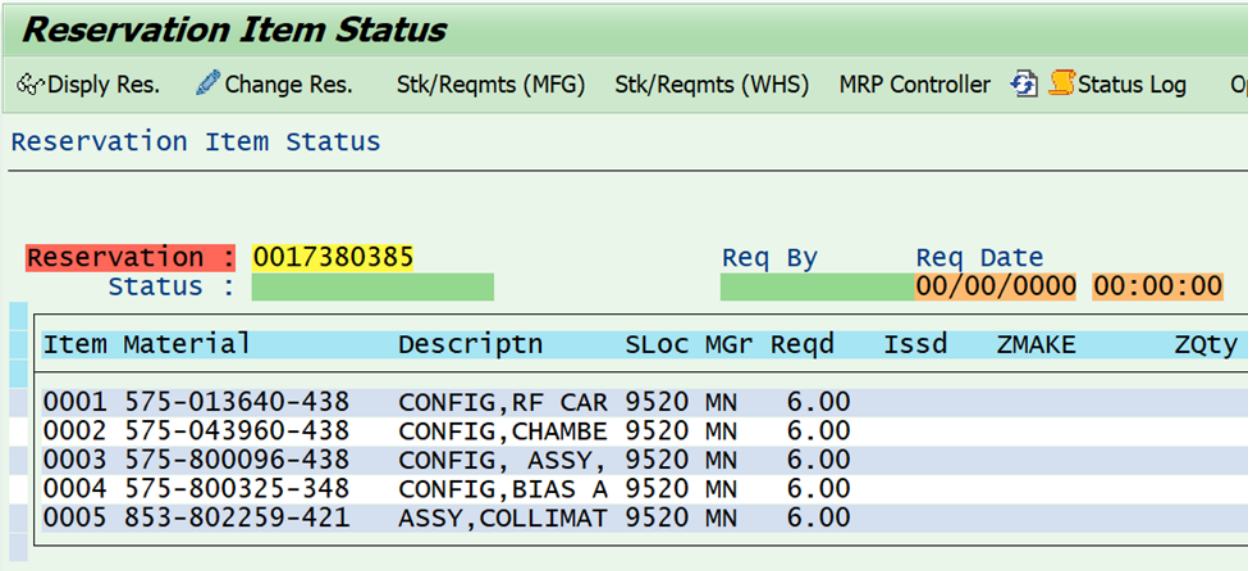


Figure 3-21 This page shows the items of the reservation.

5. If your supervisor approves releasing this reservation, create a new window and use the T-code **ZR308**.

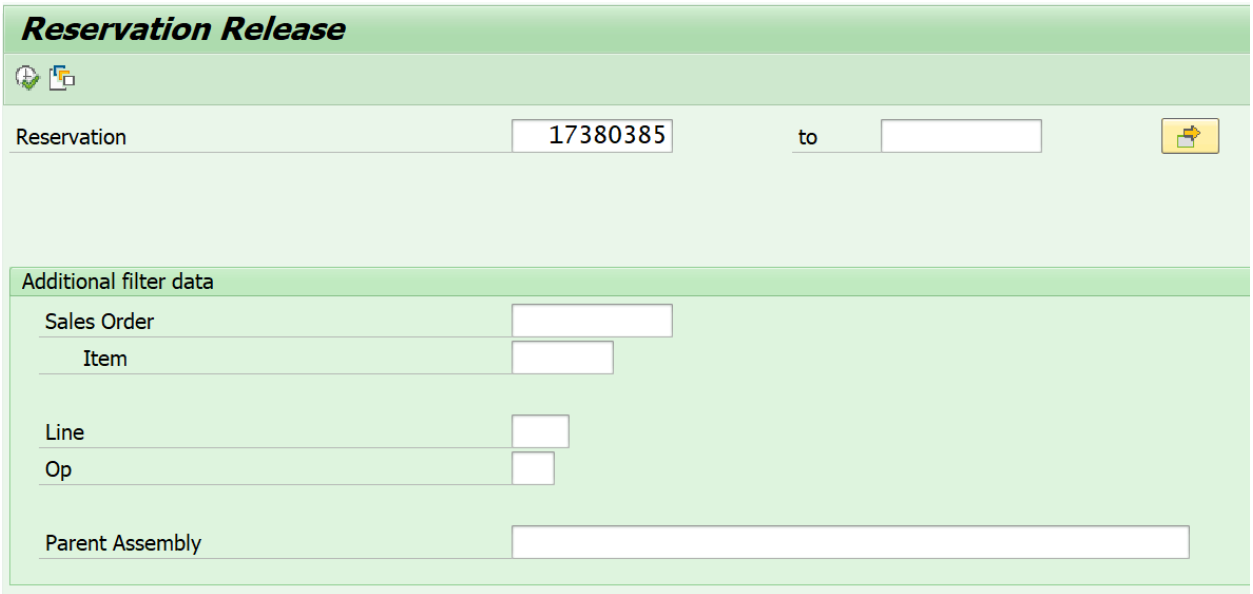


Figure 3-22 Main page of ZR308.

6. Paste the reservation number on the line a click EXECUTE.

7. When the next window comes up, click the bubble next to the reservation you want and press the RELEASE RESERVATION button.
8. Now the reservation has been released for transit. Return to **MD04** and expedite the STO as you have done in Section 3.1.2.

3.2.3 New STO

1. If there is no current STO, you will have to create a new one. Use the reservation number and make a new window for **ZR101**.
2. If the reservation is released, press the CHANGE RES button at the top. It has a pen icon.

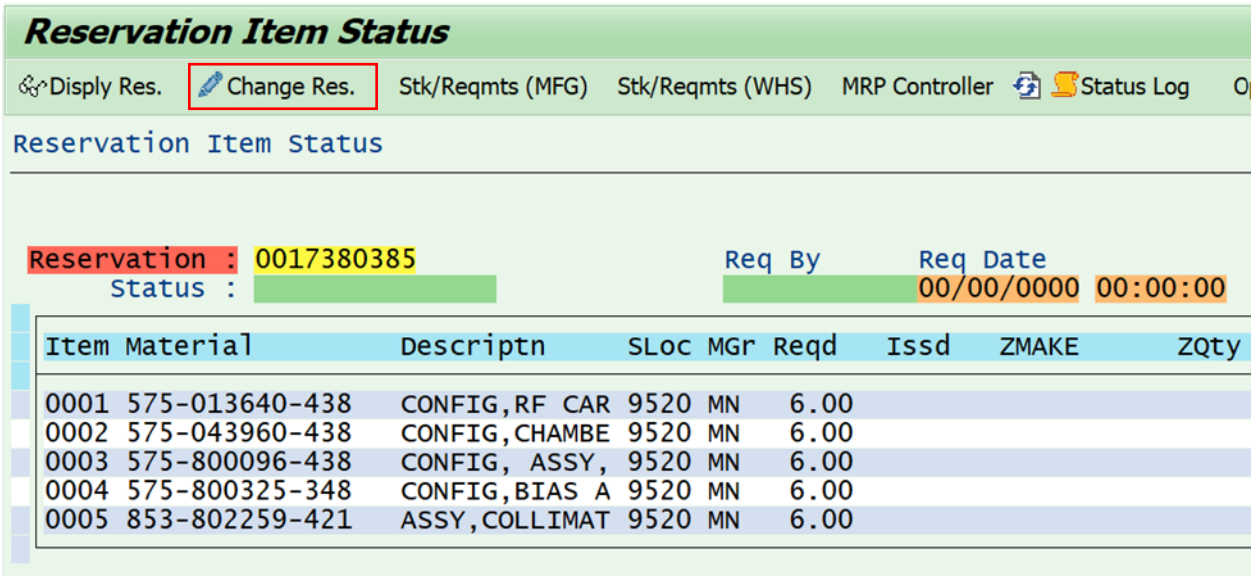


Figure 3-23 The Change Reservation button is marked with red.

3. Press the button at the top that has the icon of a blank page. This will let you create a new item for the reservation.

Figure 3-24 The New Item button is marked with red.

4. A small window will pop up asking for the REQUIREMENT DATE for this new delivery. Copy the BASE DATE onto that line and write **1000** for the PLANT.

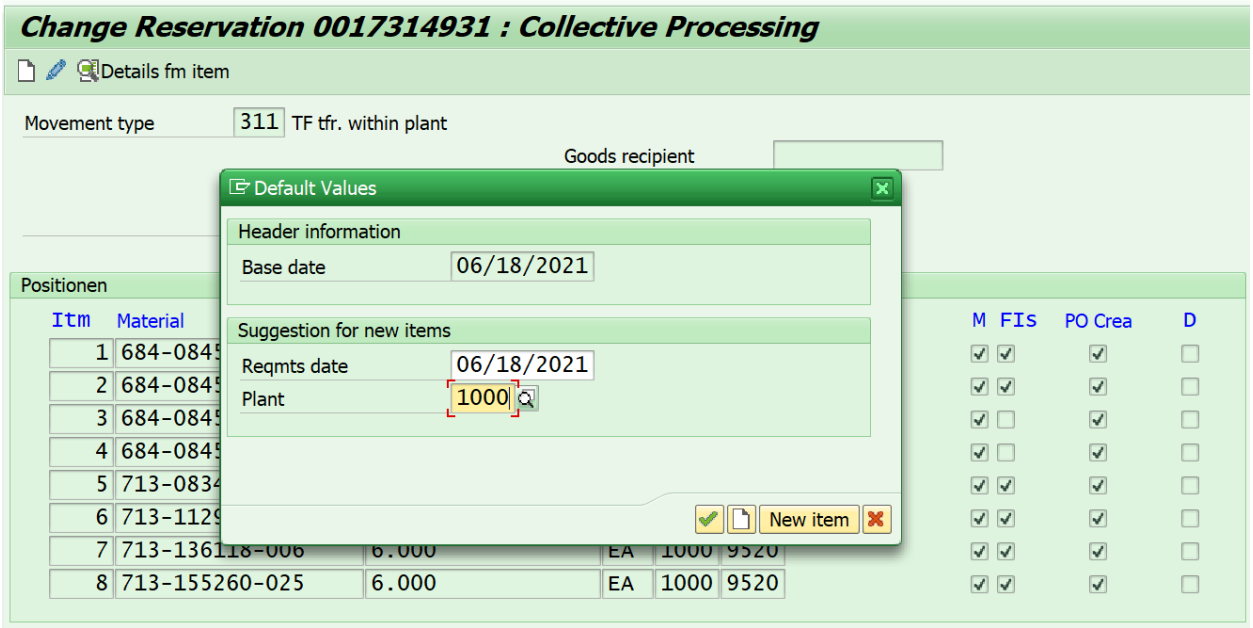


Figure 3-25 Pop up menu for making a new part entry. Make sure the Reqmts date matches the Base date.

5. You can now create a new reservation item. Fill in the first row of the new page, adding the part number, quantity, and whether this part is going to 3150 or 3250. All of this information should be present in the email. Double click on the part number after you have added the information.

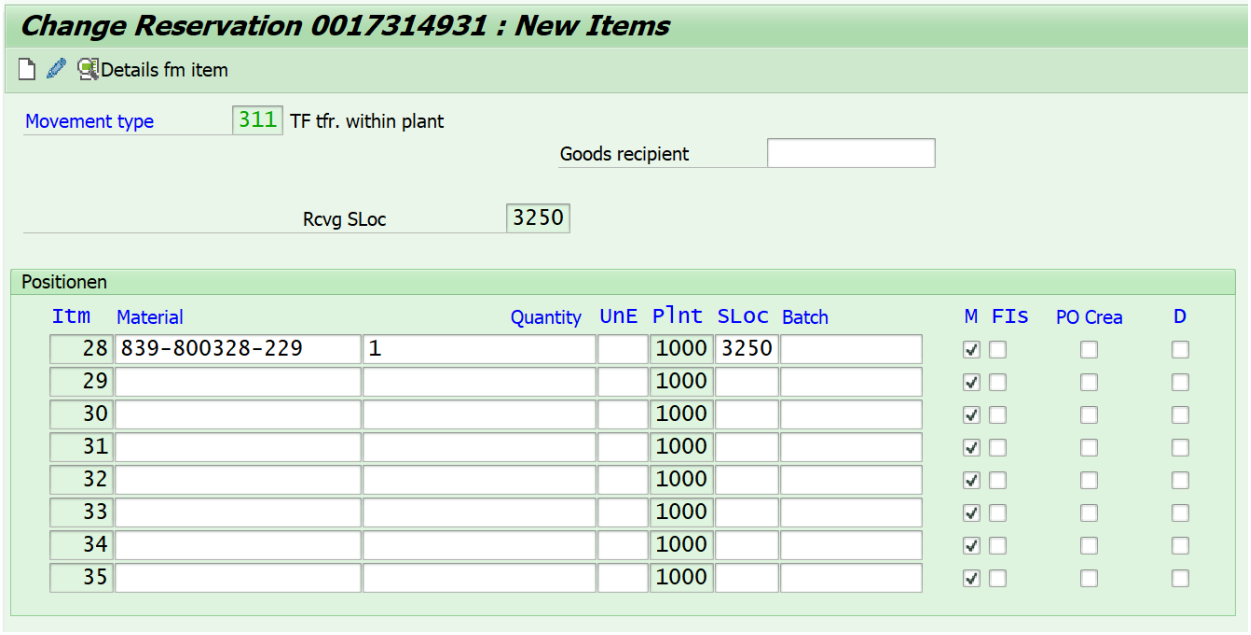


Figure 3-26 Fill out a line for a new entry as shown.

6. The item you have created will be at the very end of the reservation. Hold SHIFT+F7 to move through the reservation items until you reach the very end. Copy the RECIPIENT and TEXT lines from previous entries and paste them on the appropriate lines. Add the UNLOAD PT that this part must be delivered to, with the first three digits being the production line and the last two digits being the workstation as shown below. Press the SAVE button at the top of the screen.

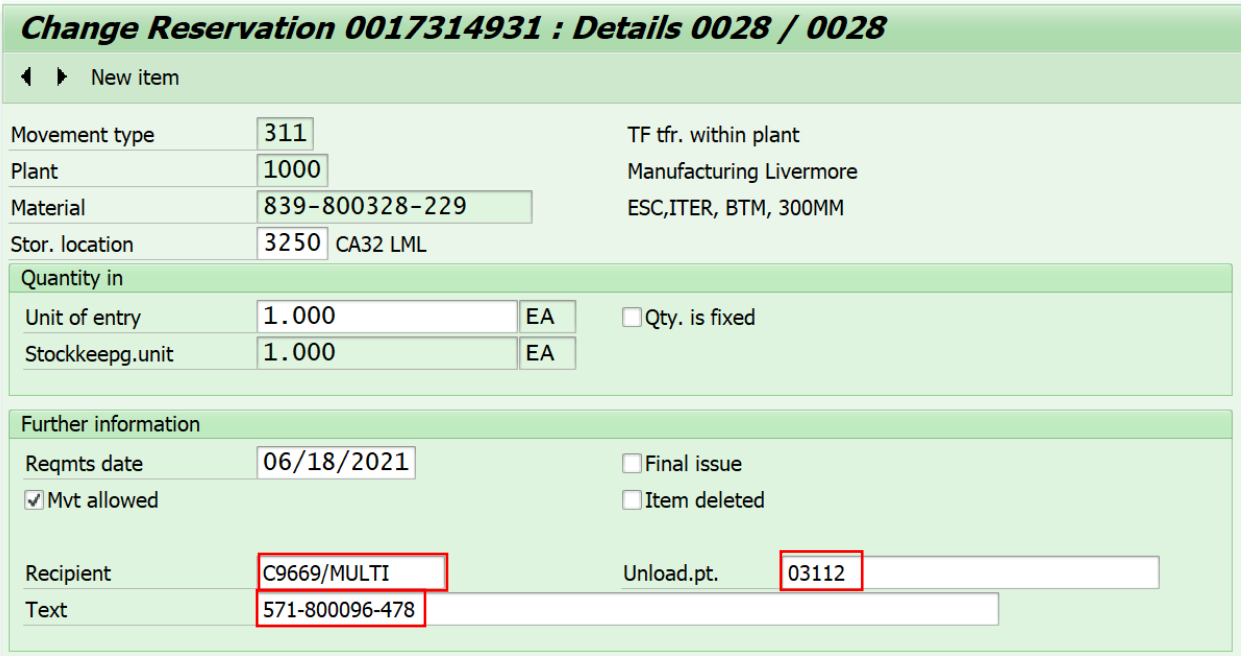


Figure 3-27 Make sure to fill in these lines as the text specifies.

7. Create a new window and use the T-code **Z026**. Make sure PLANT is **1000** and that the RESERVATION NUMBER option is bubbled. Paste the number onto the line and click EXECUTE. This will generate a new STO for the reservation item you just created.

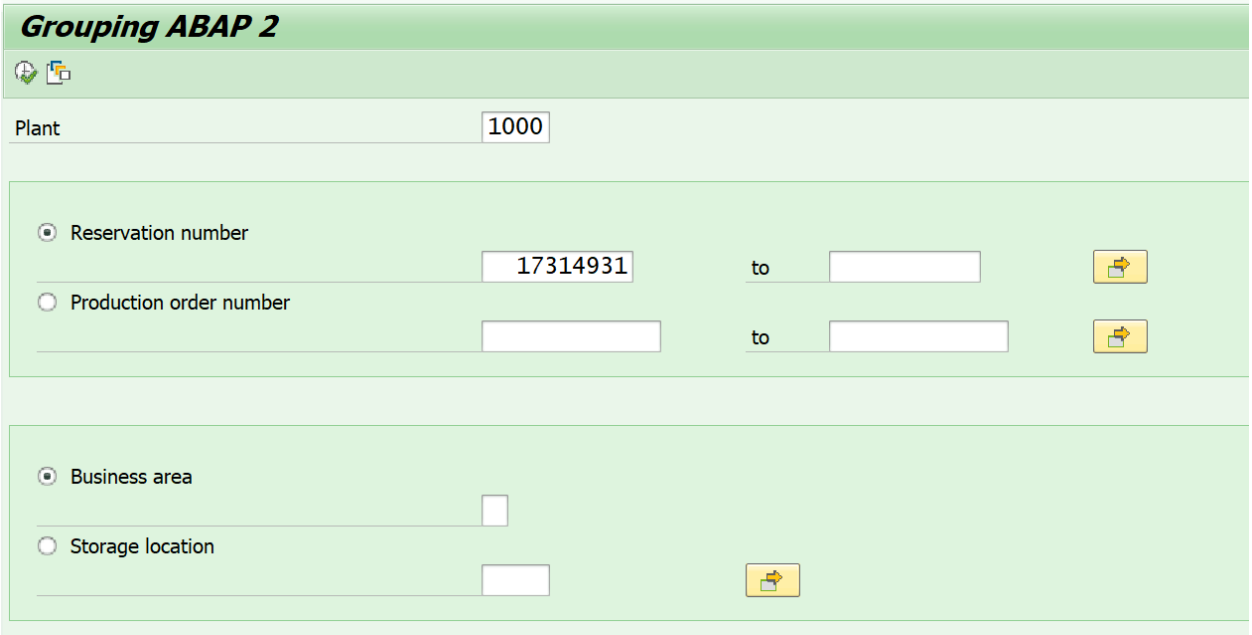


Figure 3-28 Main page for Z026.

8. Close all previous windows and go back to **MD04**. Find the new STO you have just generated and expedite it as you did in Section 3.1.2. Email the assembler and let them know that you have expedited the part.

3.2.4 Replacing

Like making a replacement STO for PL or PC parts, replacing a PN part will require use of an NCI number. Fortunately, the procedure for making such an STO is almost exactly the same as the procedure in Section 3.2.3. Go through the instructions of the previous section like normal, but just make an addition to the TEXT line with “NCI #” and the NCI number the assembler gave you. Then just finish the steps listed above in Section 3.2.3.

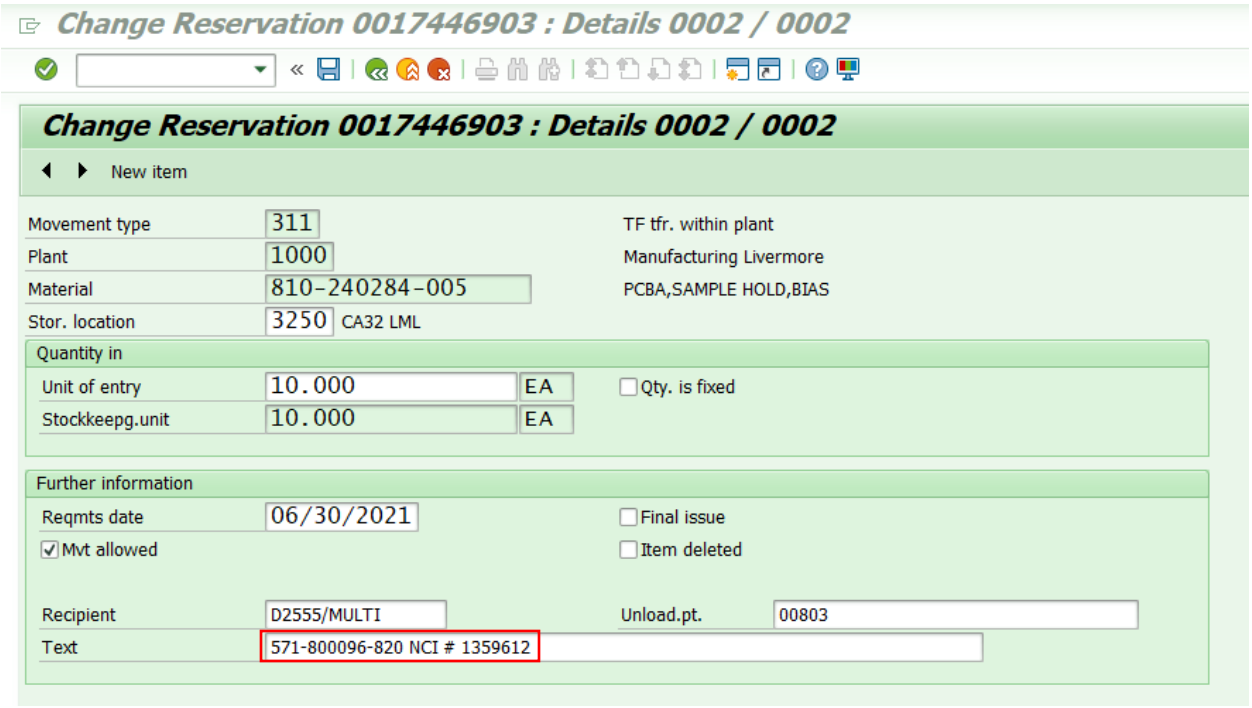


Figure 3-29 The given NCI information has been added to the text line.

3.3 Freestock Parts

Freestock parts are the final type of parts you will regularly work with. They are frequently those that are small and numerous, such as screws and caps for rivets. The challenge of these parts is they do not officially exist within the system and an STO cannot be made for them. There are three methods of pulling Freestock parts and it is recommended to try them in this sequence.

3.3.1 Inventory Control

1. On some occasions, the warehouse will be carrying the Freestock parts you are looking for. This can be confirmed by going to the warehouse **2000** side of **MD04**. Check with the procedure mentioned previously in Section 3.1.2.

2. If there turns out to be stock for this part in the warehouse, write an email to DHL Inventory Control and ask them to transfer the necessary quantity of the part to the location specified by the original email.

3.3.2 Wave Orders

1. If no stock can be found in **2000**, you will need to try a new approach. Create a new window and use the T-code **ZRWAVE01**. Fill in PLANT as **1000** and paste the part number on the MATERIAL NUMBER line.

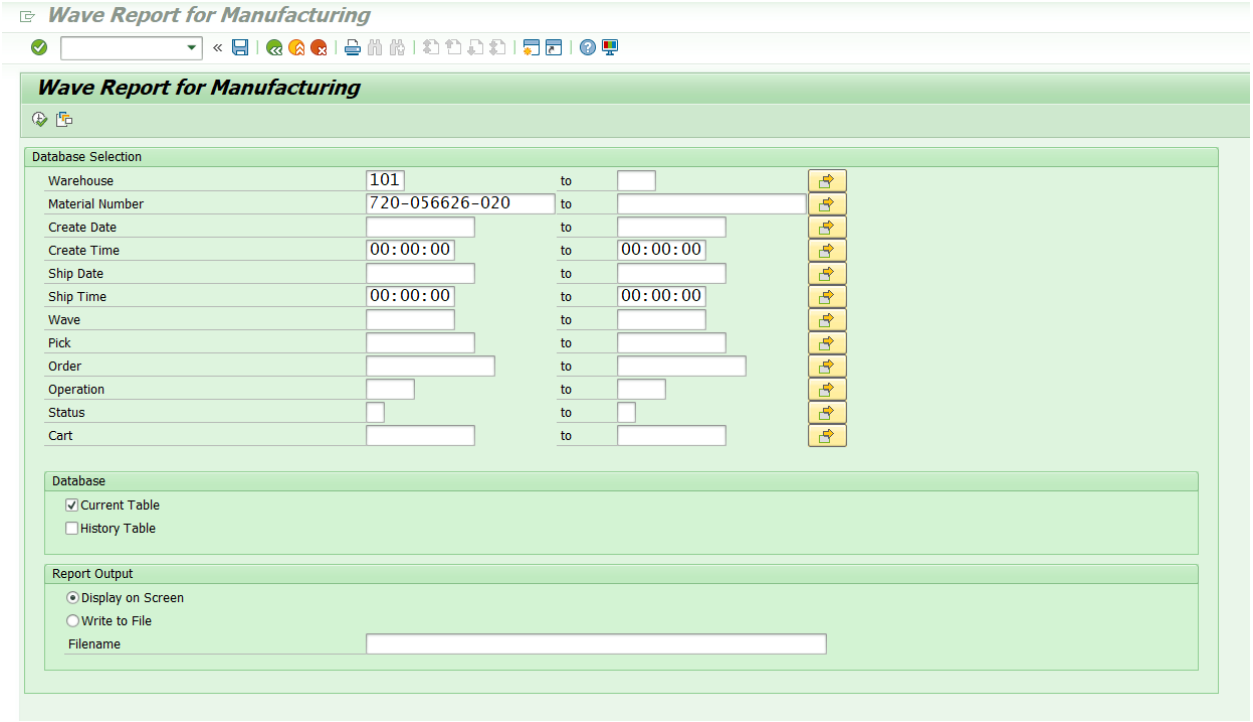
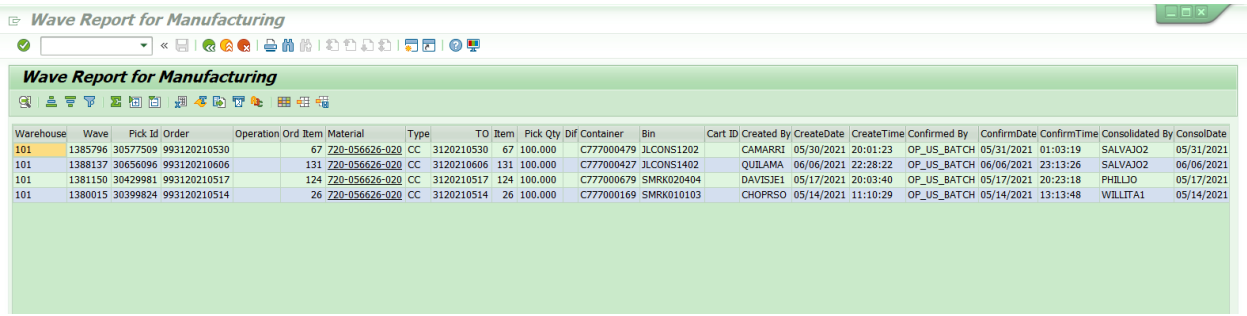


Figure 3-30 Main page for ZRWAVE01.

2. The WAVE REPORT page shows all the incoming deliveries bound for **3150** and **3250**. Scroll down the ORDER until you find row items that have an order number starting with **993-.** Find one or more of these orders that provide the required quantity of Freestock parts and copy the order numbers.



Warehouse	Wave	Pick Id	Order	Operation	Ord Item	Material	Type	TO	Item	Pick Qty	Dif	Container	Bin	Cart ID	Created By	CreateDate	CreateTime	Confirmed By	ConfirmDate	ConfirmTime	Consolidated By	ConsolDate
101	1385796	30577509	993120210530		67	720-056626-020	CC	3120210530	67	100.000		C777000479	JLCONS1202		CAMARRI	05/30/2021	20:01:23	OP_US_BATCH	05/31/2021	01:03:19	SALVAJO2	05/31/2021
101	1388137	30656096	993120210606		131	720-056626-020	CC	3120210606	131	100.000		C777000427	JLCONS1402		QUILAMA	06/06/2021	22:28:22	OP_US_BATCH	06/06/2021	23:13:26	SALVAJO2	06/06/2021
101	1381150	30429981	993120210517		124	720-056626-020	CC	3120210517	124	100.000		C777000679	SMRK020404		DAVISJE1	05/17/2021	20:03:40	OP_US_BATCH	05/17/2021	20:23:18	PHILLJO	05/17/2021
101	1380015	30399824	993120210514		26	720-056626-020	CC	3120210514	26	100.000		C777000169	SMRK010103		CHOPRSO	05/14/2021	11:10:29	OP_US_BATCH	05/14/2021	13:13:48	WILLITA1	05/14/2021

Figure 3-31 The current orders in progress for this part.

3. Send an email to DHL Picking asking for them to pull in the specified wave orders as soon as they can.

3.3.3 Spares

If neither of the above methods are successful, it is time to see if there is stock for this part in Spares.

1. Go back to the **MD04** page and change the MRP AREA value to **2001**. This will show stock in the Fremont Spares Warehouse.
2. If there is stock for this Freestock part in 2001, write an email to Hot Orders asking that they transfer the required stock from 2001 to 2000. Parts will be sent and you can then communicate with the warehouse using the procedure found in Section 3.3.1.

If all three methods have been attempted and there is no available stock for this part, consult your supervisor on possible next steps.

4 Pulling in Stock

Expediting parts is normally a simple process, but sometimes you will find that there are none of this part available in 2000 and our Manufacturing lines are desperately asking for them. In situations like this, you will need to try other ways of finding the parts you need. This can be done by either reaching out to buyers or by contacting other Lam facilities.

4.1 Contacting Buyers

After checking the 2000 inventory for a specific part and finding it empty, the first thing you want to do is try to communicate with the buyer. The buyer is the link between Lam and our part suppliers and order shipments of parts as we need them. If you inform them of the current predicament, they may be able to pull a shipment of parts into 2000 sooner than they would have arrived on their own.

1. First you want to look through the STOCK REQUIREMENTS LIST and find the next shipment of parts. As mentioned in Section 3.1.2, they will always be denoted by a number code beginning with **45-.** Copy this number for later use.

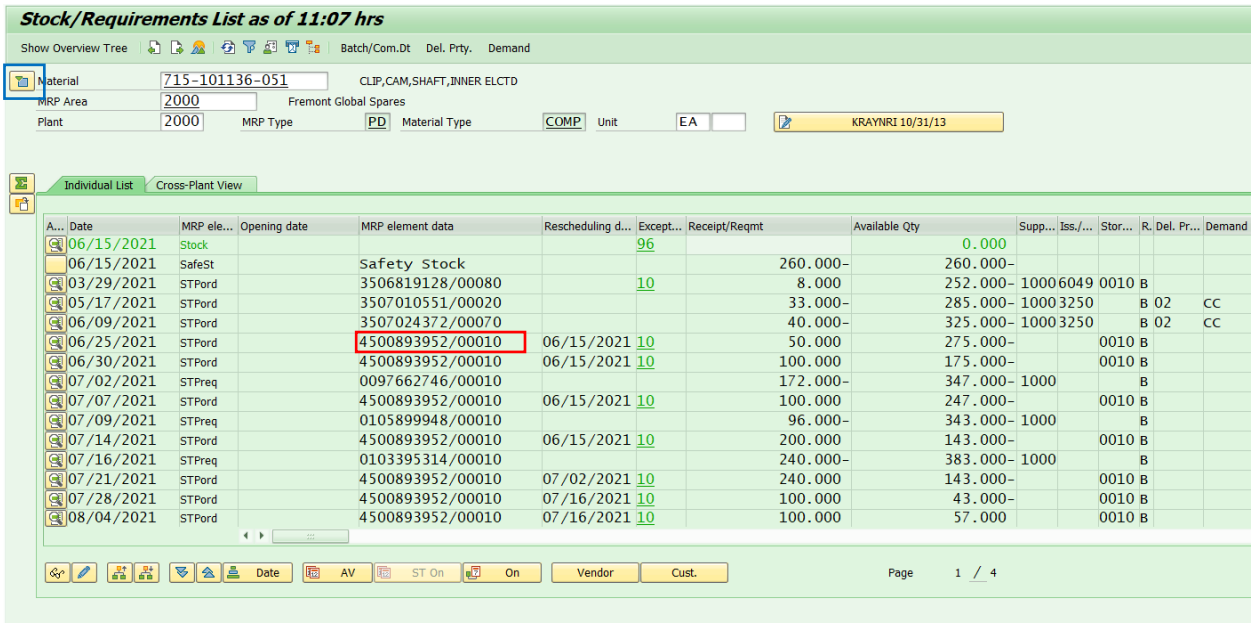


Figure 4-1 An incoming shipment of parts is marked with red.

2. Next to the PART line at the top of the screen there is a file icon. It is marked in the image above with a blue square. Click on it to extend a pull-down menu showing additional information on this part. Click on the tab marked OVERVIEW OF PART DATA. The person listed as PURCHASING GROUP is the buyer for this part.

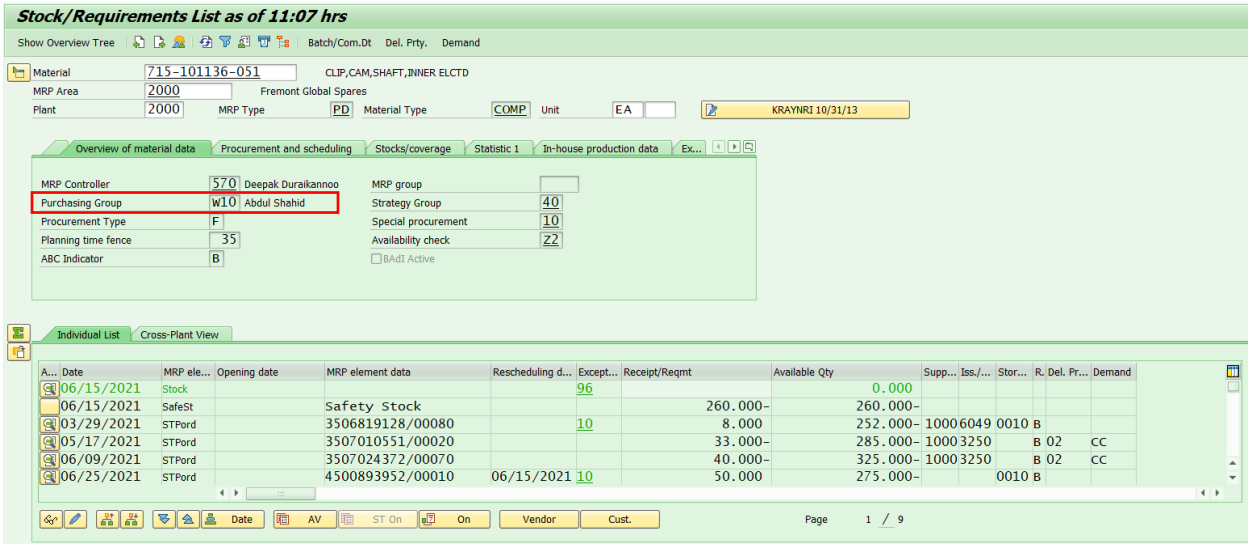


Figure 4-2 This part's buyer is marked with red.

3. Write an email to this buyer and ask if it is possible to expedite the upcoming shipment of parts. They will reply when they are able about the status of the shipment.

4.2 Reaching out Worldwide

If parts cannot be found in the way marked above, then you will need to borrow some from other Lam facilities.

1. After copying the part number, create a new window and use the T-code **MMBE**. When the page appears, copy the number onto the PART line and click EXECUTE. **Make sure all other lines in the DATABASE SELECTIONS area are empty**.

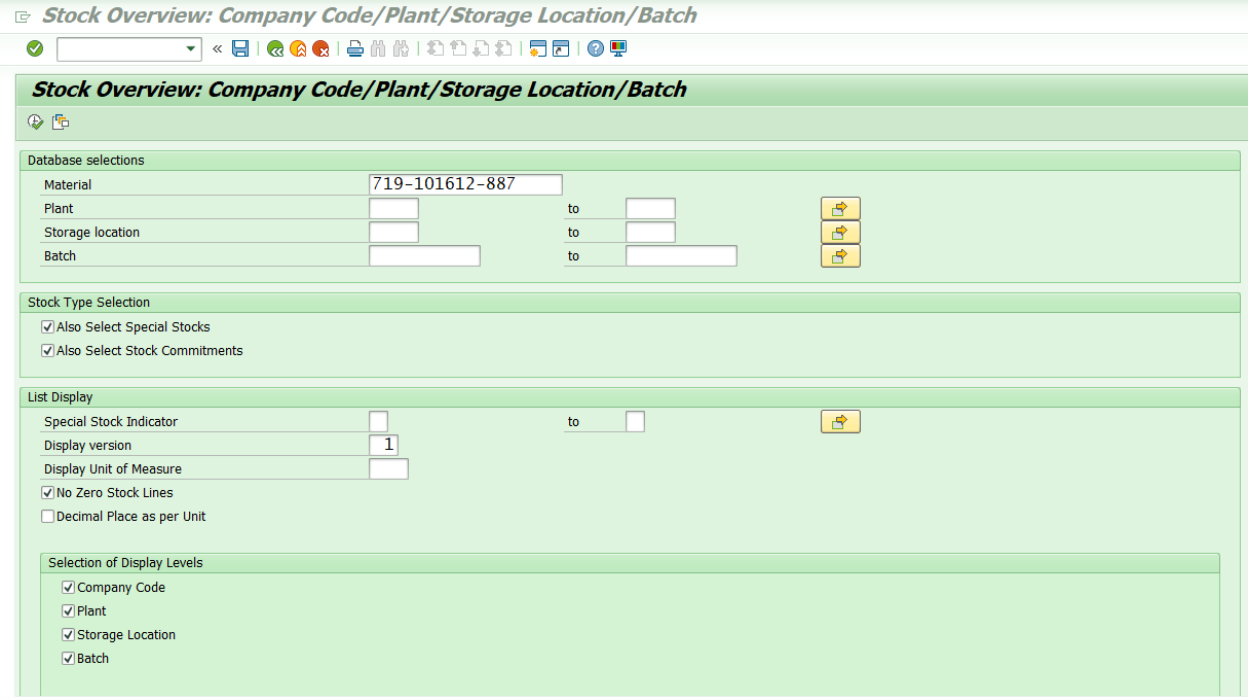


Figure 4-3 Main page of MMBE

2. You will now find yourself on the STOCK OVERVIEW page, which shows how much of this part every other Lam facility currently has and is expected to receive. Scroll through the list until you find one or more locations that carry the quantity of part that you need.

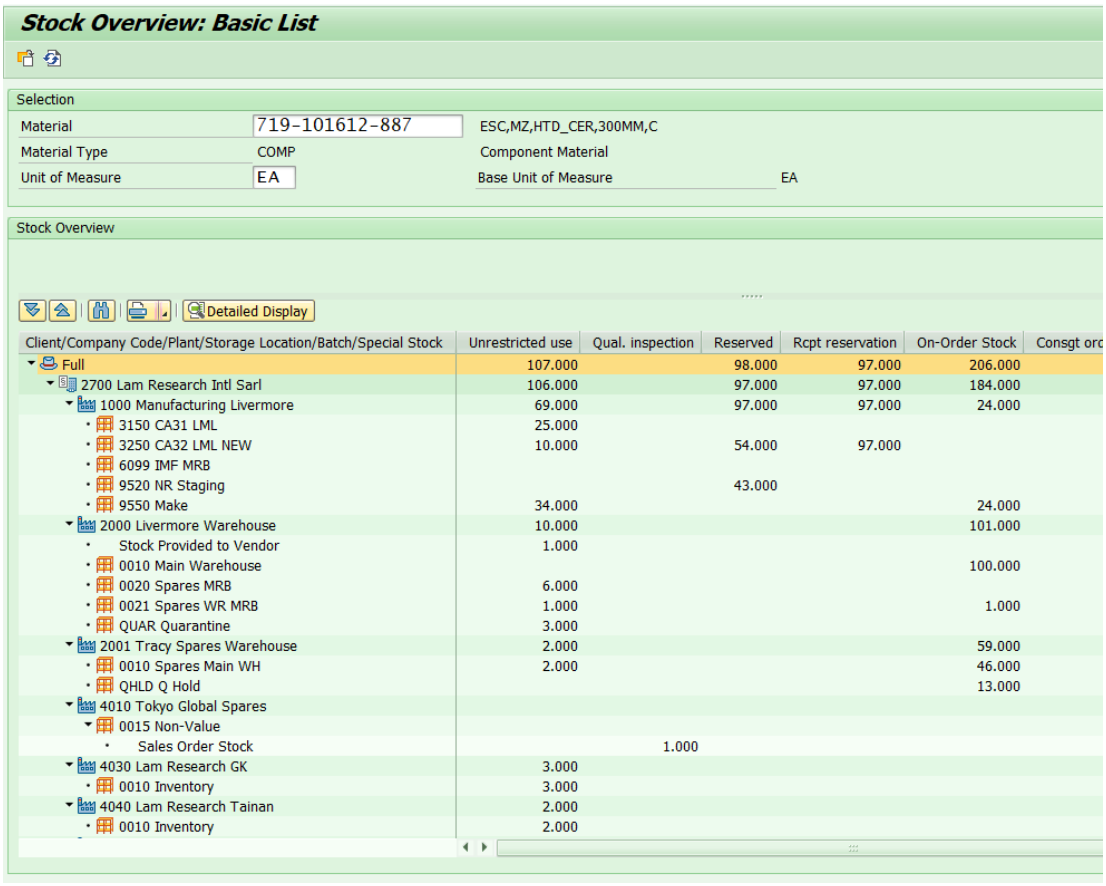


Figure 4-4 This shows our stock for a specific part company-wide. The Unrestricted use column shows parts that are open for use while On-Order Stock shows parts to be delivered.

3. Write an email to Hot Orders and ask them to transfer the quantity of part from the specified locations to the 2000 warehouse.

5 Return to Stock

While the previous chapter informed you on how to pull parts from other Lam facilities, this next chapter will inform you on what to do when other Lam facilities need to pull parts from the Manufacturing floor and transfer them to the warehouse so they can be sent out worldwide. These procedures are called Return to Stock, or RTS.

For a number of reasons, people from other Lam facilities will send emails to PC to ask to use some of the parts we have on hand. It can be to support Manufacturing in

another country or to repair a customer's damaged machine. Therefore, we need to do what we can to make sure they get the parts they need as quickly as possible. When you receive an email asking you to RTS a certain quantity of part, these emails will usually be sent by Hot Orders. They can handle the transfer of parts from the warehouse to their location, but they can't do anything about parts on the Manufacturing floor. These are steps to follow to accomplish that.

5.1 PL / PC Parts

1. When you receive the RTS email, you will need to find the supervisor of the production line the parts are found at. Make a new window and use the T-code **ZR269**. This will tell you what production line this part is located at. Your supervisor can provide you with the names of the supervisors in charge of that production line.
2. Add them to the original email and request that they check our on-hand stock for this part and advise if we can fill the RTS request. They will check our stock and respond back. Any parts we RTS are physically moved to the Material Review Board (MRB) room.
3. Go through the procedures listed in Section 3.1.4, but click on the RTS button instead of NCR.
4. Respond to the original email letting the requester know we can support their RTS. Add DHL Resupply to ask them to place these parts on a Hot Truck to the warehouse.

5.2 PN Parts

PN parts are frequently requested for RTS, but it is rare that we are able to accommodate these requests. We typically transfer PN parts to the Manufacturing floor on an as-needed basis. However, in the event we are able to support this RTS, whether because more PN parts were ordered than necessary or a production order was cancelled by a customer, follow these steps to RTS the parts.

1. Start by going to **MD04** and search for the PN part requested for RTS.
2. To find the location of this part, double-click on the total stock count on the **1000** side of **MD04** and then press the STOCK OVERVIEW button on the pop-up window. This shows the current and on-order stock for this part.

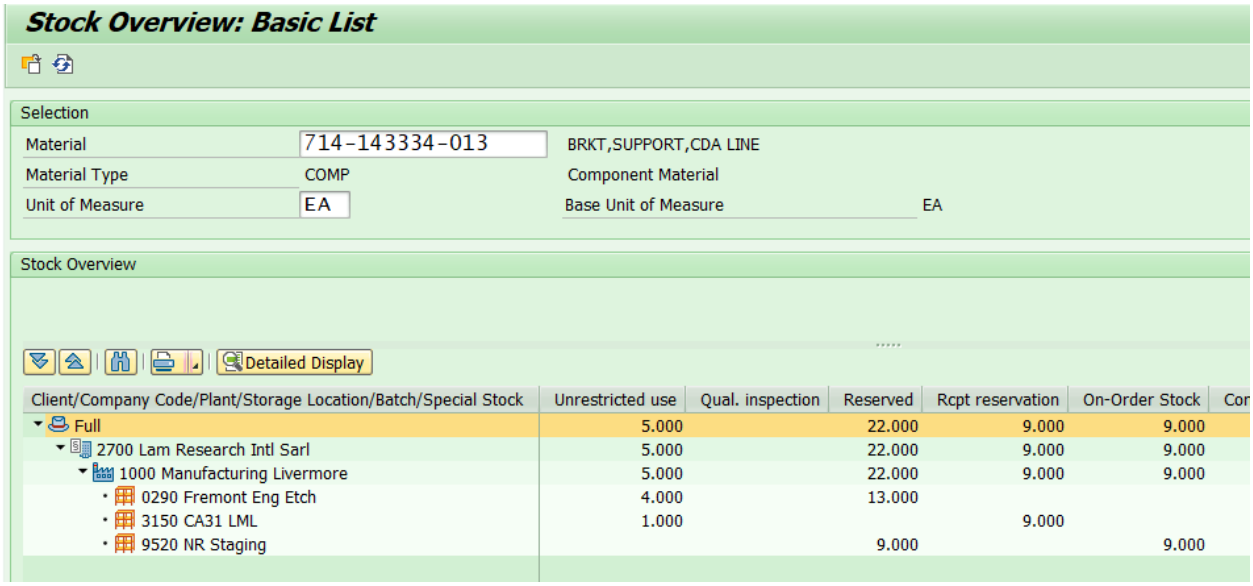


Figure 5-1 This Stock Overview shows all stock of this part within the 1000 facility.

3. Right-click on the stock number in 3150 / 3250 and select the RESERVATIONS option.

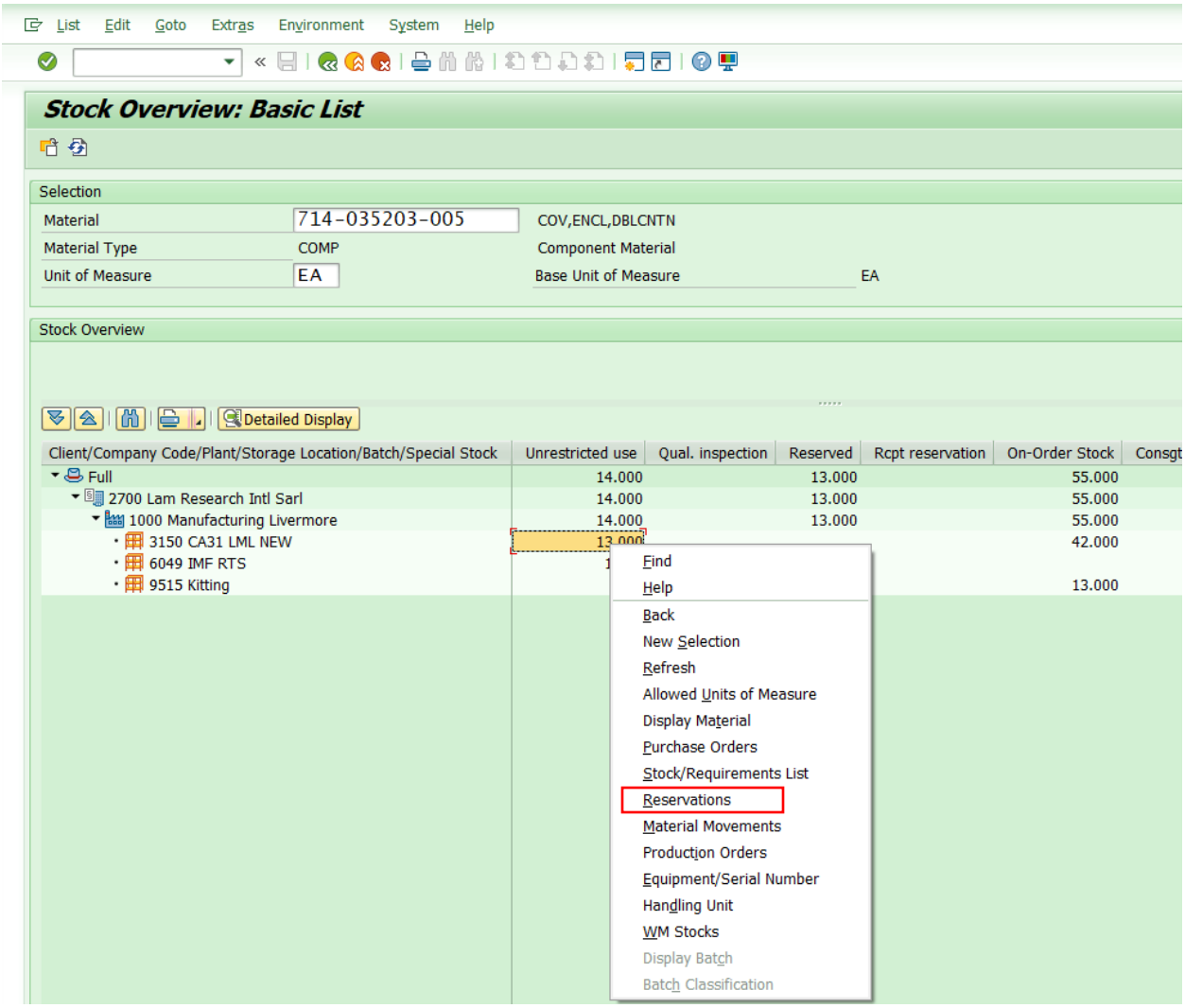
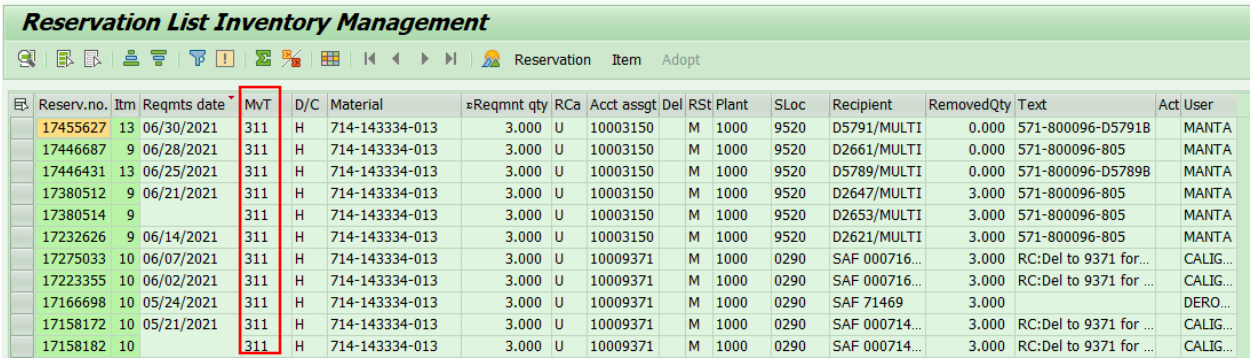


Figure 5-2 The option you need, Reservations, is marked with red.

4. This new page has all of the previous reservations that arrived for this part. Find a reservation that has the movement type (MvT) of 311 and copy the reservation number.



Reserv.no.	Itm	Reqmts date	MvT	D/C	Material	Reqmnt qty	RCa	Acct assgt	Del	RSt	Plant	SLoc	Recipient	RemovedQty	Text	Act	User
17455627	13	06/30/2021	311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D5791/MULTI	0.000	571-800096-D5791B		MANTA
17446687	9	06/28/2021	311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D2661/MULTI	0.000	571-800096-805		MANTA
17446431	13	06/25/2021	311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D5789/MULTI	0.000	571-800096-D5789B		MANTA
17380512	9	06/21/2021	311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D2647/MULTI	3.000	571-800096-805		MANTA
17380514	9		311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D2653/MULTI	3.000	571-800096-805		MANTA
17232626	9	06/14/2021	311	H	714-143334-013	3.000	U	10003150		M	1000	9520	D2621/MULTI	3.000	571-800096-805		MANTA
17275033	10	06/07/2021	311	H	714-143334-013	3.000	U	10009371		M	1000	0290	SAF 000716...	3.000	RC:Del to 9371 for...		CALIG...
17223355	10	06/02/2021	311	H	714-143334-013	3.000	U	10009371		M	1000	0290	SAF 000716...	3.000	RC:Del to 9371 for ...		CALIG...
17166698	10	05/24/2021	311	H	714-143334-013	3.000	U	10009371		M	1000	0290	SAF 71469	3.000			DERO...
17158172	10	05/21/2021	311	H	714-143334-013	3.000	U	10009371		M	1000	0290	SAF 000714...	3.000	RC:Del to 9371 for ...		CALIG...
17158182	10		311	H	714-143334-013	3.000	U	10009371		M	1000	0290	SAF 000714...	3.000	RC:Del to 9371 for ...		CALIG...

Figure 5-3 Reservations with a movement type of 311 are ones that arrive in 3150/3250.

5. Create a new window for **ZR101** and put in the number like in Section 3.2.2.
6. This will take you to the RESERVATION ITEM STATUS page and you can now find the entry for the PN part you are searching for. Click the button marked DISPLAY RES.

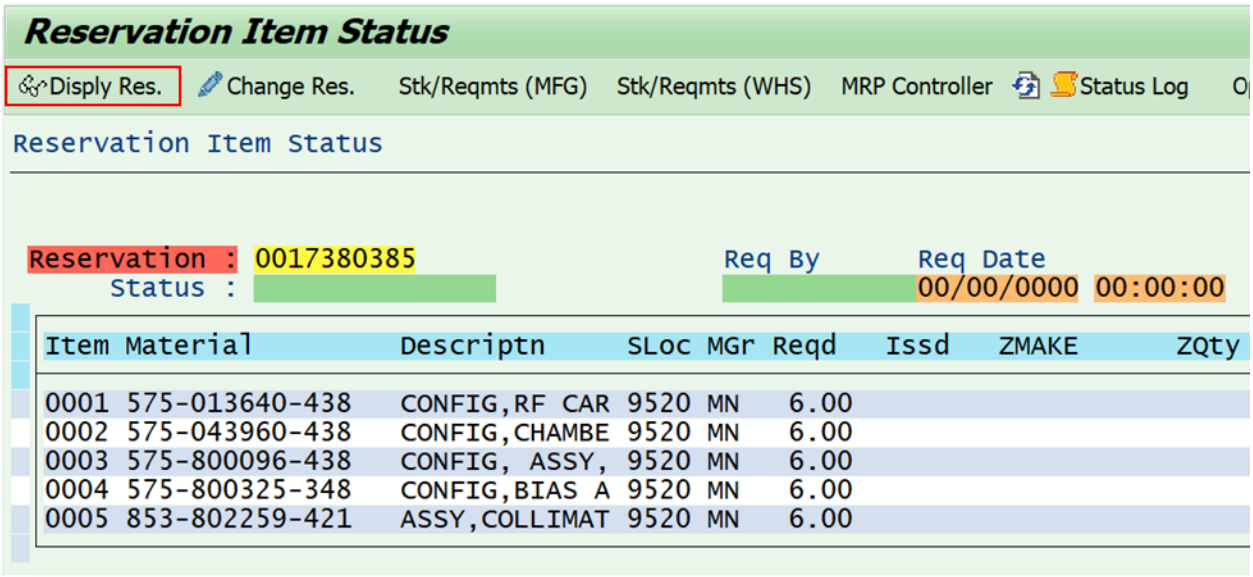


Figure 5-4 The Display Reservation button is marked with red.

7. Scroll through the list of part entries until you find the part you are searching for. Double-click the entry.

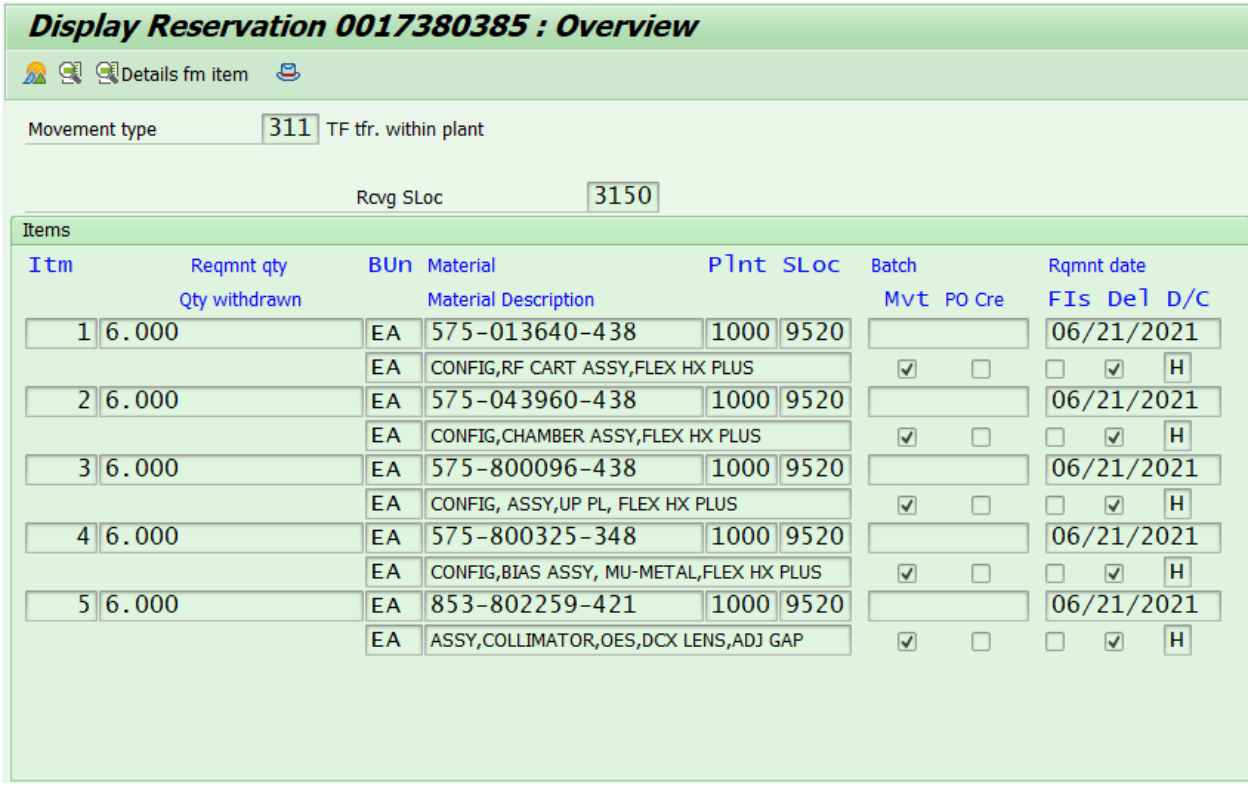


Figure 5-5 The individual parts that make up a reservation.

8. Attached to the entry will be the location this part was delivered to.

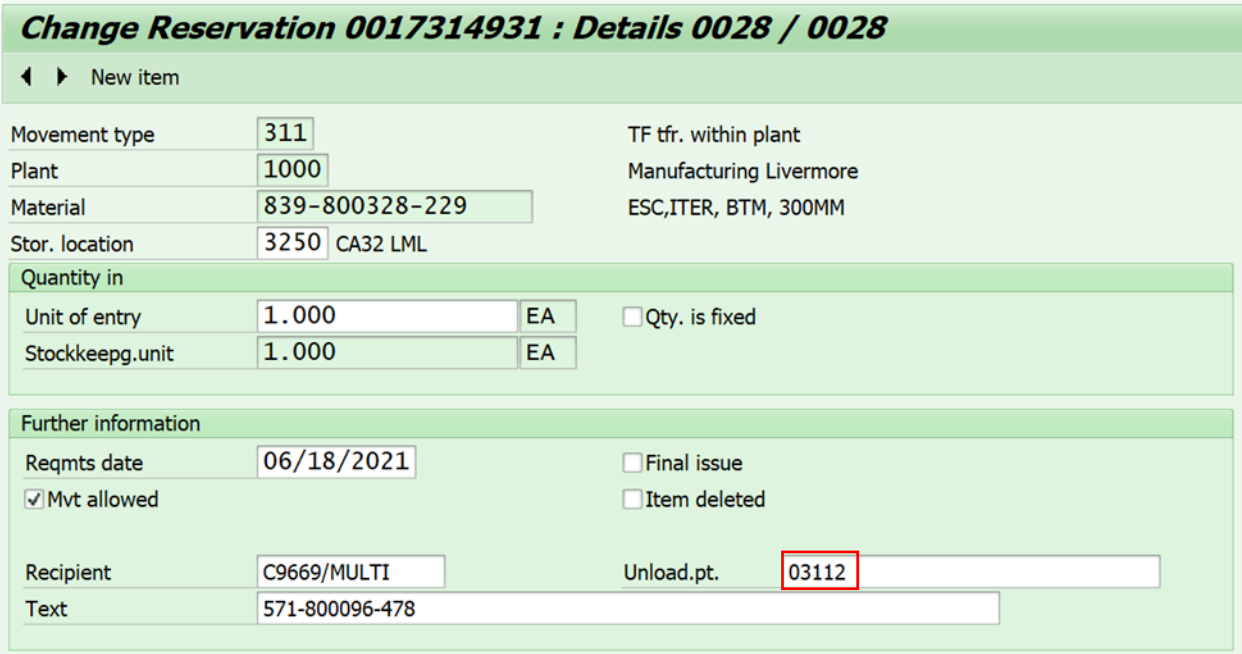


Figure 5-6 The location a part is delivered to is marked with red.

9. Now that you have the location, you can contact the production line supervisor. Like in Section 5.1, ask them to check our on-hand stock for this part to see if we can support this RTS.
10. If parts are found and moved to the MRB room, create a new window and use the T-code **MB1B**.

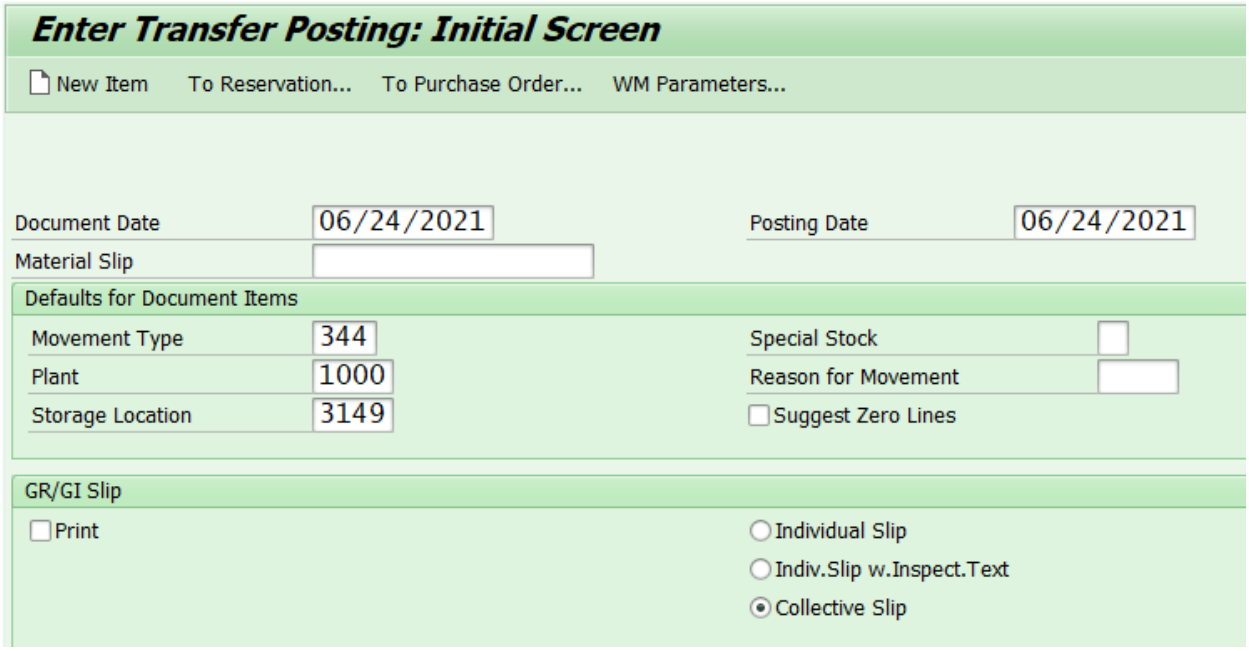


Figure 5-7 Main page of MB1B

11. **MB1B** is used when moving parts between different locations via differing movement types. In this instance, mark MOVEMENT TYPE as **344**. Write **3149** on the STORAGE LOCATION line if the specified part is found in 3150. Otherwise, write **3249** if 3250. Press ENTER.

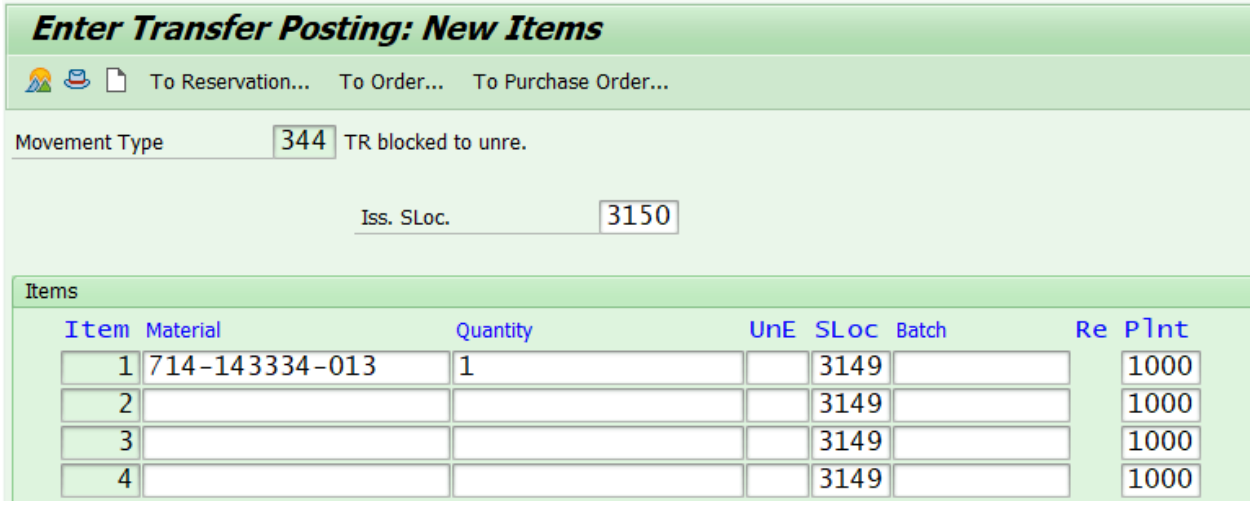


Figure 5-8 Fill the values of the line as shown above. Make certain that SLoc is 3149 and Iss. SLoc is 3150.

12. Fill out the PART NUMBER and QUANTITY. Write **3150** / **3250** for the ISS. SLOC at the top. Double-click on the PART NUMBER.

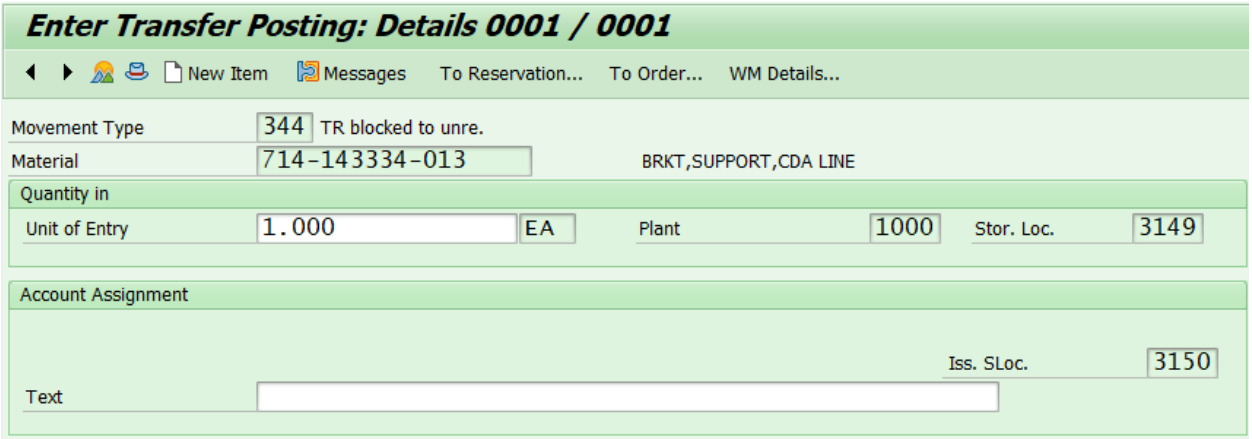


Figure 5-9 This is where you fill in specifics of why this part is needed for RTS.

13. On the TEXT line, copy and paste the subject line for the RTS request email. Press the SAVE button at the top of the page.
14. Now the part is ready for RTS. Email Resupply and ask them to put this part on a “hot truck”, which means a truck is meant to deliver the part as quickly as possible.

6 Production Cards

Printing out Production Cards is a simple procedure for PC. There are two production lines on the Manufacturing floor, lines 15 and 18, that are responsible for creating sub-assemblies that go onto the main product as a single part. When these sub-assemblies get used on the other production lines, the assemblers scan the bins as they would for other parts. Instead of creating an STO for this one sub-assembly, however, the SAP system will create STOs for the smaller parts going into the creation

of the sub-assembly and also generate a Production Card. One of the duties of PC is to print out these cards and take them down to the floor in a timely manner.

1. To print the newly generated Production Cards, use the T-code **ZIPKPRINT**. Near the top of the window, make sure cards are being printed for both **3150** and **3250**. Also write **Z500** on the line marked PRINTER. This is the printer in the PC work area. After that, click the EXECUTE button to begin printing the Production Cards.

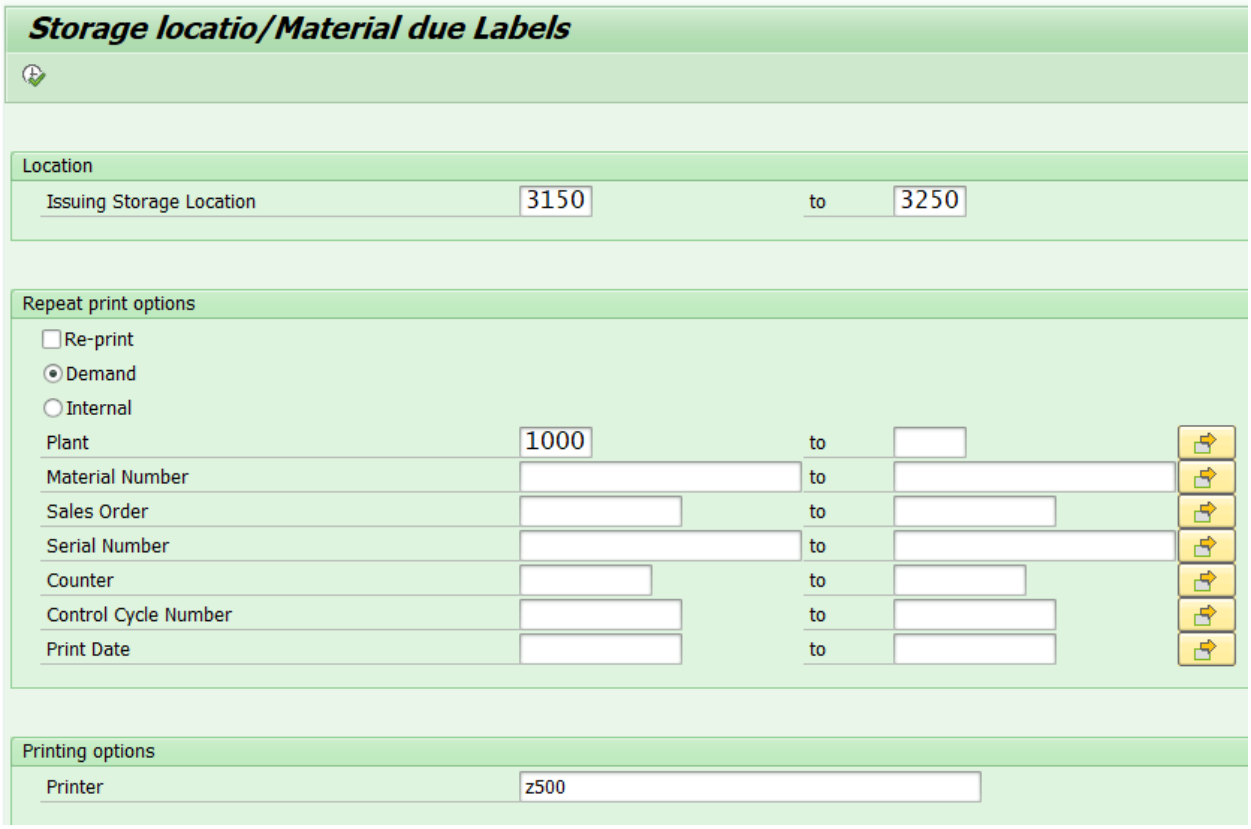


Figure 6-1 Main page for ZIPKPRINT.

2. When the printing is complete, the Production Card stickers must be placed onto laminated cards by hand. Make note that there are likely

different types of Production Cards in a single batch. Not only will they need to be sent to different production lines, but they could be for different types of parts as well.

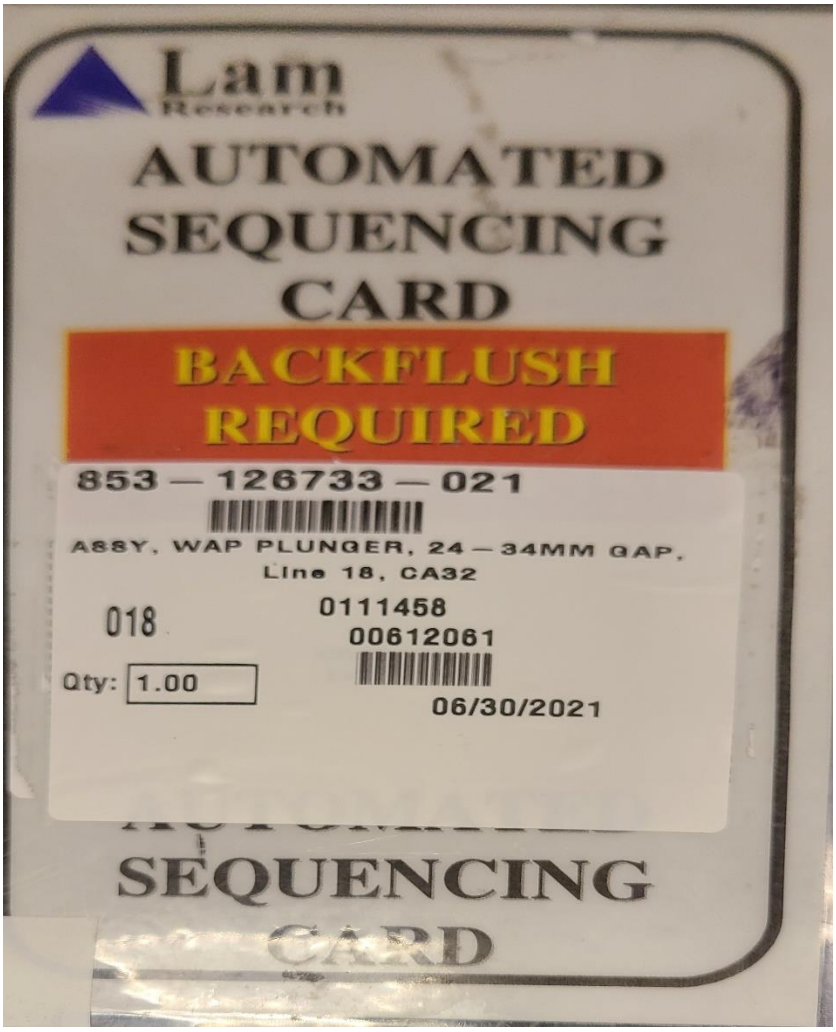


Figure 6-2 This is a White Card with a corresponding Production Card stuck on.

3. Make note of the difference between the cards below.

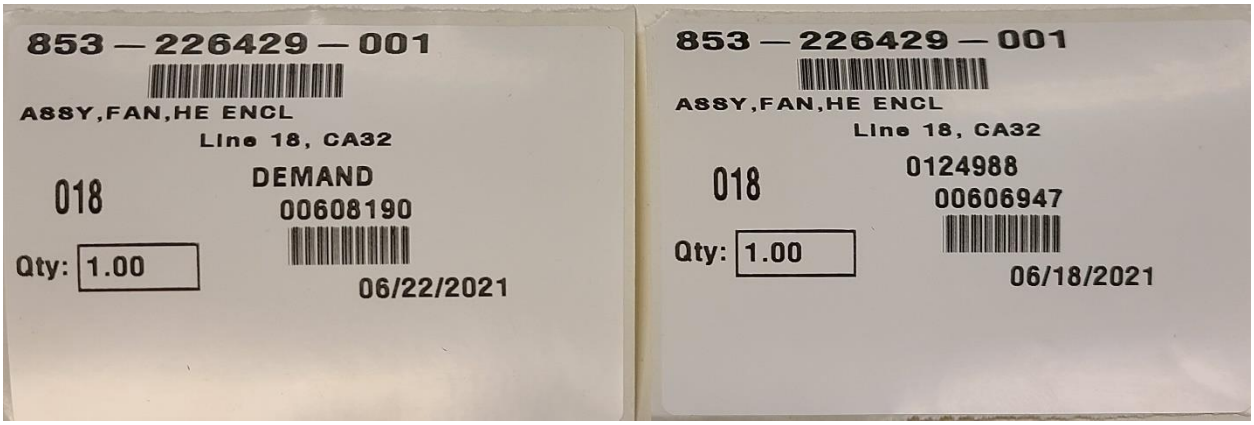


Figure 6-3 The card on the left is a Yellow Card and is marked DEMAND. The card on the right is a White Card and just has an ID number.

a. A Yellow Card means the subassembly that is built will be going somewhere different than the Manufacturing floor.

b. White Cards are sub-assemblies that are used on the Manufacturing floor.

4. When all the stickers are placed on cards, contact the supervisors who are in charge of the specified lines. Make arrangements with them to meet at one of the Decontamination rooms downstairs and hand these cards over to them.

7 Backflushing

When a product is complete, it is moved off the Manufacturing floor into a Decontamination room, where it is prepared for shipping. There is one final step before it can be shipped, though. A member of the Lam team on the loading dock makes note of the product's unique serial number and emails it to the PC team to be backflushed.

Backflushing is the process where all of the parts that have gone into the assembly of this product are accounted for and deleted from the 1000 inventory. These backflushes must be done in a specific order, as shown by the table below.

Table 7-1 Work Center values and their corresponding Backflush Types

Work Center ((WC))	**Backflush Type ((BT))**
08	TOPPLATE
14	PUMPCRT
31	BIASELTRD
32	CHAMBER
01	MODULE

For the below steps, follow down the left column, adding the specified work center where you see **((WC))** and the corresponding backflush type where you see **((BT))**.

To give a step-by-step example, we will use the serial number **FLGL-116** as an example.

1. To start, you will need to use the T-code **ZR151**. When you get to this new page, type **1000** on the PLANT line and then copy the above serial number on the line marked SERIAL NUMBER. Press ENTER.

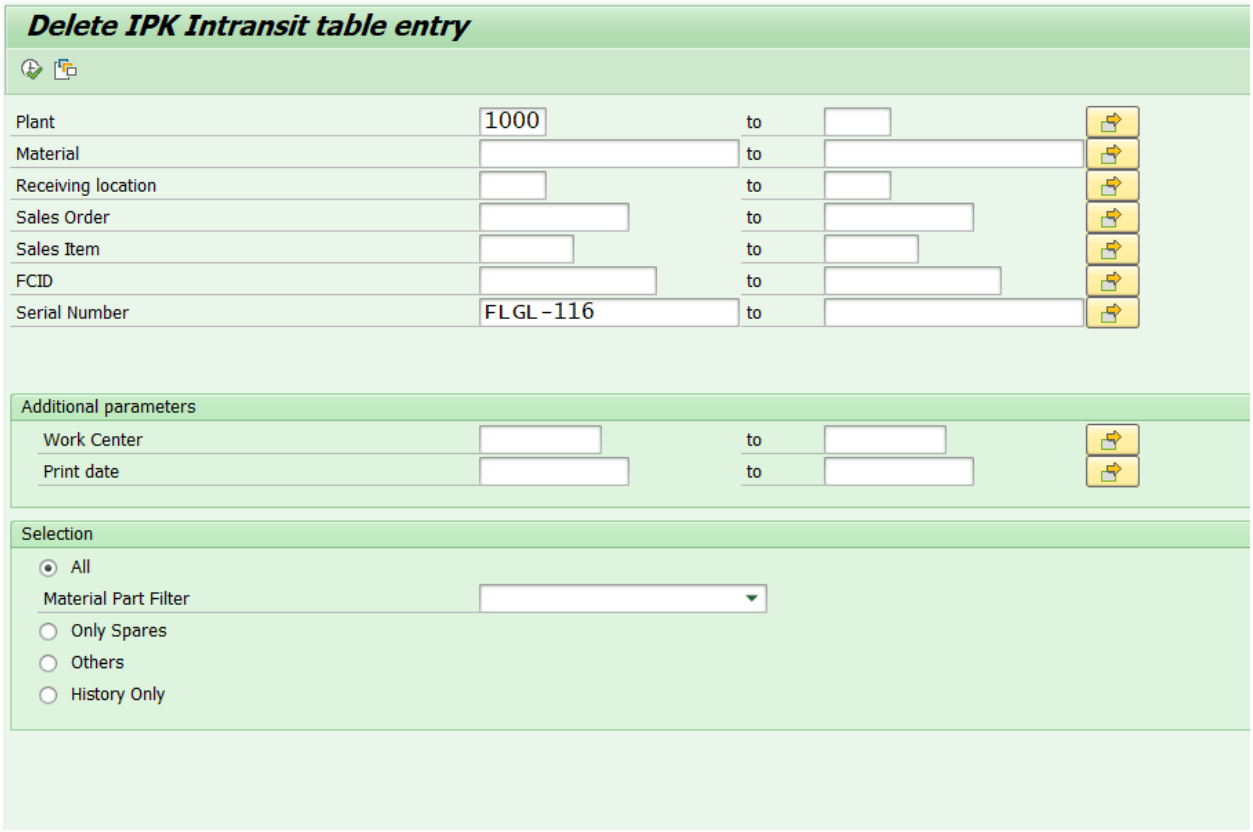


Figure 7-1 Main page for ZR151.

2. You are now showing the major assemblies that add up into a completed product.

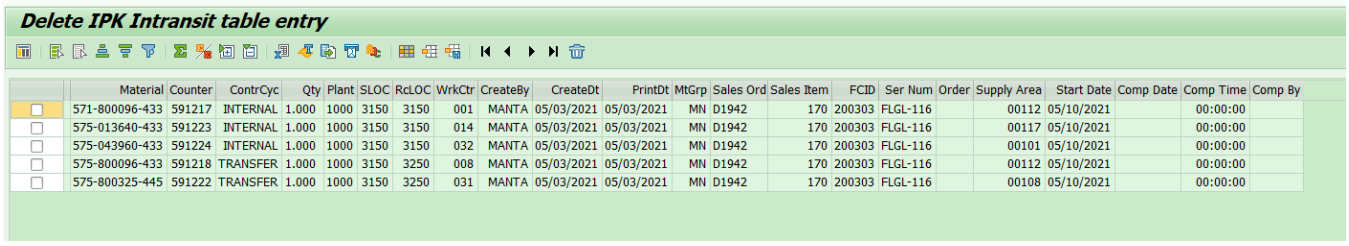


Figure 7-2 The active cards corresponding with the Serial Number above.

3. Create a new window and use the T-code **ZR218**. Type **3150** on the line labeled SLOC, but don't add anything else for the moment. You will need both this page and the previous **ZR151** to complete this task. Find the row on **ZR151** that has the number matching **((WT))** in the WRKCTR column.

One by one, copy the SALES ORD, SALES ITEM, and COUNTER from **ZR151** and paste them on the corresponding lines on **ZR218** (the COUNTER goes on the line marked CONTROL NUMBER). On the final line marked BACKFLUSH TYPE, type in **((BT))**. Click EXECUTE.

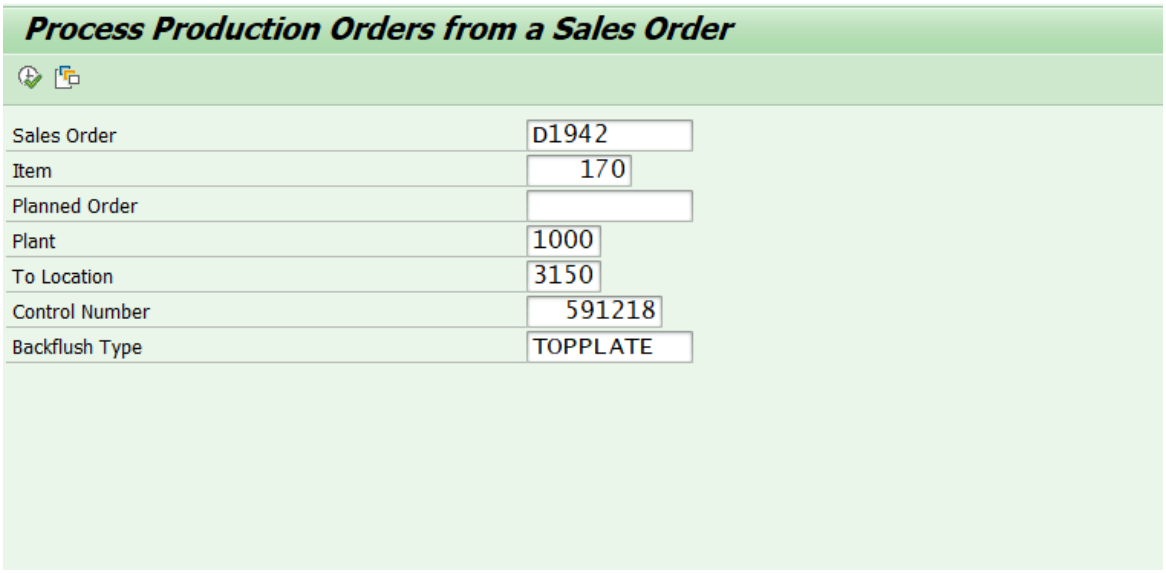


Figure 7-3 Main page of ZR218.

4. Scroll through the list of assembly numbers until you find the number that matches the row you were working with on **ZR151**.

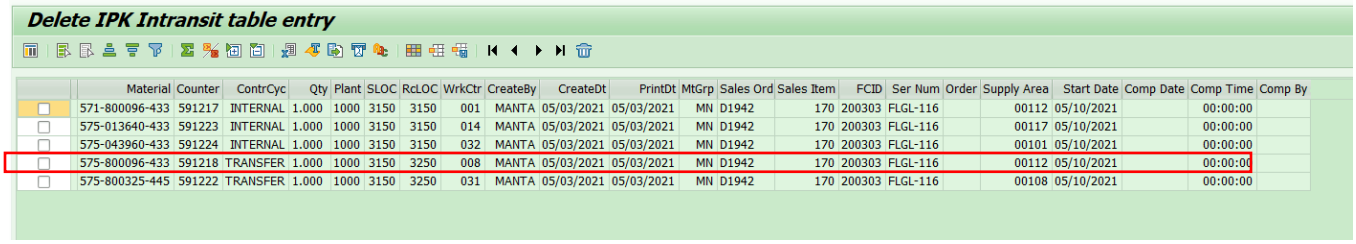


*Figure 7-4 Pay attention to the row with a WrkCtr value that matches **(WC)**.*

MAKE ABSOLUTELY CERTAIN THEY MATCH.

Press ENTER.

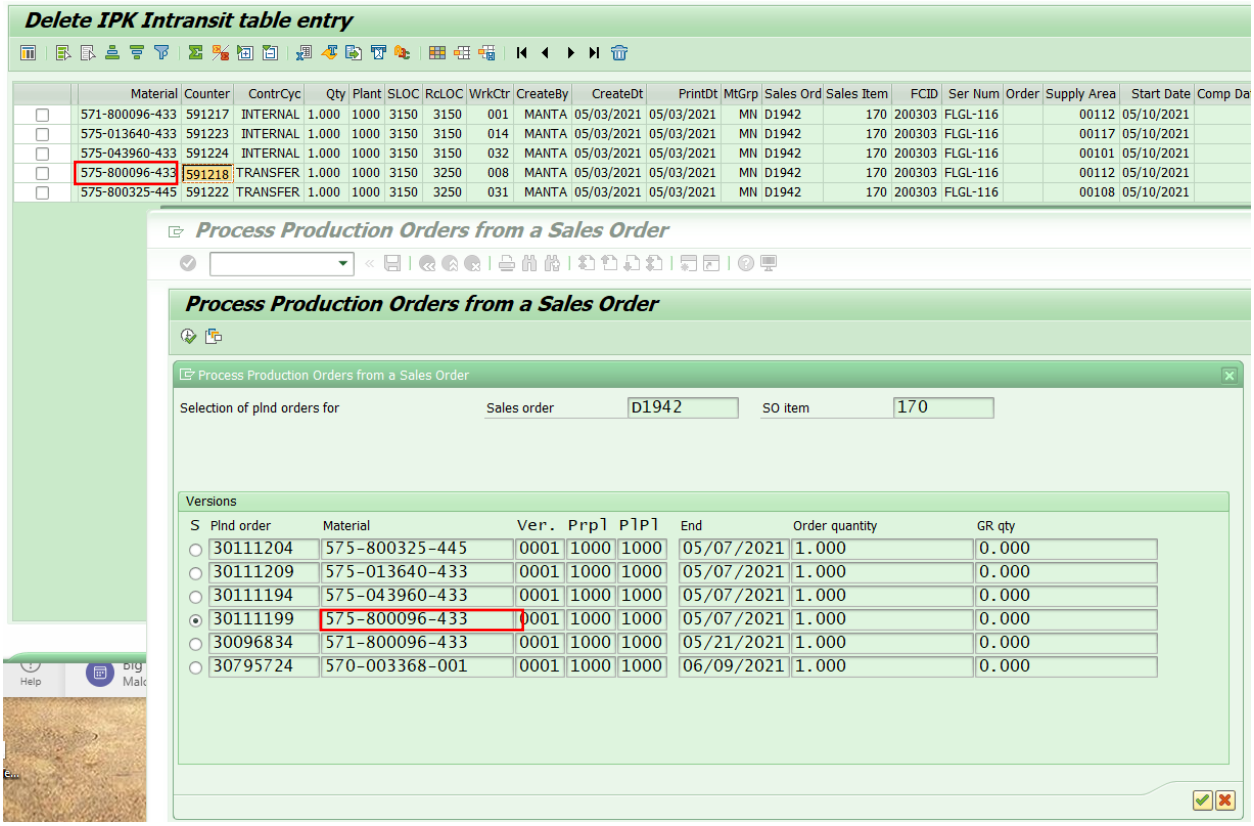


Figure 7-5 Make sure both numbers marked in red are matching when you select them.

5. When the screen changes, press the button marked PROD ORD and press YES on the window that pops up. Wait a few moments for the system to complete the action and take you to back to the original **ZR218** screen.

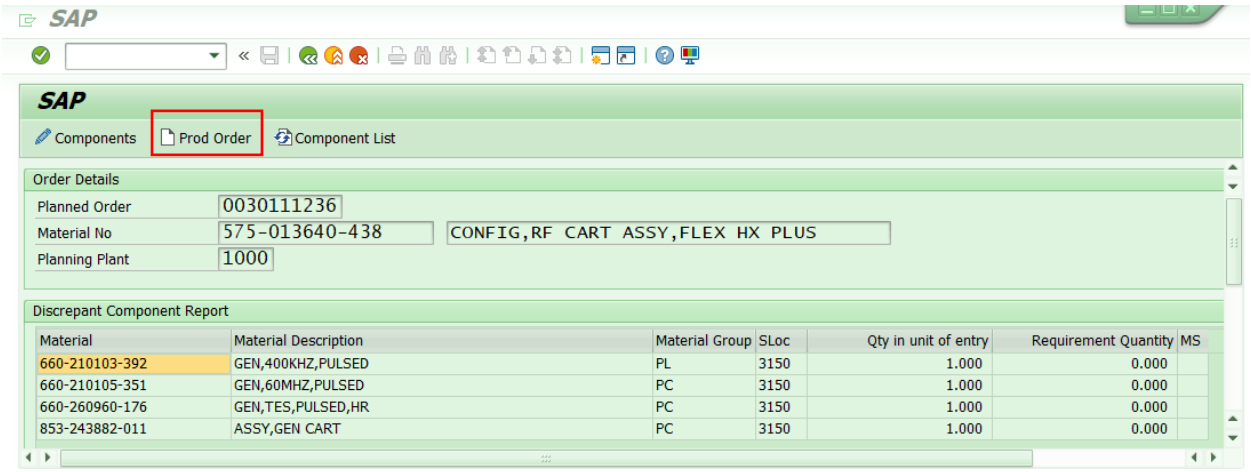


Figure 7-6 The Prod Order is marked with red.

6. Delete the information on the lines marked PLANNED ORDER, CONTROL NUMBER, and BACKFLUSH TYPE.
7. Repeat steps 4 through 7 for all items, but make certain you are performing the actions in the order shown in Table 7-1. If there are any items that do not match with this table, consult with your supervisor.

When the last item is processed, your backflush has now been completed.

Appendix

Important T-codes:

- MD04 – Stock/Requirements List
    - Used to verify part inventory and expedite upcoming STOs.
- ZR269 – Bin Status Report
    - Used to check bins and find Counter numbers.
- ME27 – Create Purchase Order
    - Used to create new STOs.
- ZR101 – PO Status Report
    - Used to check on the status of reservations and create part entries.
- Z026 – Grouping ABAP 2
    - Used to generate new STOs for parts added to reservations.
- ZRWAVE01 – Wave Report of Manufacturing
    - Used to find the status of shipments to 1000 and to expedite freestock parts.
- MMBE – Stock Overview
    - Used to check part inventory across all Lam facilities.
- ZR261 – KANBAN Bin Scan
    - Used to RTS and log replacements for PL and PC parts.
- MB1B – Enter Transfer Posting
    - Used to mark parts for transfer between facilities.

- ZIPKPRINT – Storage location/Material due Labels
    - Used to print new production cards.
- ZR151 – Delete IPK Intransit table entry
    - Used for performing backflushes.
- ZR218 – Process Production Orders from a Sales Order
    - Used for performing backflushes.

Glossary

C

Control Cycle – A number referring to the bin a specific part is stored in. Used to create new shipments.

D

DHL – The logistics and courier company that is in charge of moving our parts between facilities.

F

F Parts – Freestock parts; things like screws and caps that are cheap to replace and are delivered in large quantities.

FCID – an identifying number that refers to a specific product currently being built.

H

Hot Orders – A division of Lam Research that is responsible for transferring parts between facilities to cover demands or to repair customer machines.

I

Inventory Control – A division of DHL that keeps inventory of warehouse 2000.

M

Manufacturing floor – The main production area of Lam facility 1000.

N

NCI – An identifying number that is used when a part has been damaged and is in need of a replacement.

P

Picking

PL / PC Parts

PN Parts

Purchase Order

Production Control

Production Line

PulseSecure

R

Receiving

Reservation

Resupply

RTS

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