



# **Global 3000 Debtors Ledger Enhancement Note Service Pack ZD60\_000115\_000**

## Direct Posting to Debtors Ledger

This enhancement note describes a method by which third party application programs can inter-actively post transaction batches to Debtors Ledger. This method – known as Direct Posting – can be used to create batches directly in the Debtors Ledger database. Batches created and maintained via this interface are designated as “direct posting” batches. From the interface, transactions, General Ledger analysis, Tax analysis and allocation records can be added to the batches, and they can then be posted, deleted or released for use by manual Transaction Entry. It is possible to create batches and add transactions by Direct Posting, subsequently releasing the batch so that the analysis and allocation information can be added from, manual Transaction entry. Batches created by Transaction Entry can also be added to using Direct Posting

Direct posting works by establishing an access channel to a new or existing Debtors Ledger batch through which the third-part application can add and delete transactions.

The access channel can be single-user, in which case the batch accessed via the channel is locked for exclusive use and marked with the user’s id when the channel is opened and released when the channel is closed. This is achieved by obtaining an **exclusive** regional lock using the batch number which is in force while the channel is open.

Direct Posting also supports a multi-user access mode in which several users can each open a channel to the same batch at the same time. In this case, each user obtains a **shared** regional lock on the batch number which persists until the channel is closed. When a transaction is to be written in multi-user mode, Direct Posting locks the batch header record and retains that lock until all the records pertaining to that transaction have been written and the transaction has been closed. Thus other users with channels open to the batch must wait until this process is complete before they can write a transaction of their own. It is therefore important that the third party application should obtain all the data required to complete the transaction before starting to write to the Direct Posting interface, thus minimising the time the batch is locked for that user.

When a user with multi-user access wishes to close or delete the batch or release it for manual processing, Direct Posting attempts to acquire an exclusive regional lock on the batch number to ensure that there are no other Direct Posting users with a channel open to the batch.

The Direct Posting interface is supplied as a series of DLM’s of which a brief list grouped by function is shown below. Each DLM is defined in detail in the Direct Posting Interface Appendix in this note.

Direct posting uses the standard Interface Definitions maintenance utility in Debtors Ledger System Parameters to create and maintain an interface control record for the channel. The interface record holds standard drill down and usage information. Channel control DLM’s supplied in the service pack are:-

[DL%OPEN](#) – Open Channel – Establish an access channel for the current user and create a new batch or open an existing batch in that channel. Obtain a regional lock on the batch number – exclusive for single-user access, shared for multi-user.

[DL%CLOSE](#) – Close Channel – Signal use of the current channel is complete and optionally instruct Debtors Ledger to close or delete the batch open in the channel. If the batch is neither closed nor deleted it can remain marked for Direct Posting use or marked as an open batch for normal access from Transaction Entry. For multi-user channels, acquire an exclusive regional lock on the batch number before attempting the close to ensure that there are no other Direct Posting users with a channel open to the same batch.

Channel control DLM’s use control [block tc](#) to establish and maintain batch header data in [block th](#). Both blocks tc and th are defined in detail in the [Interface Copybooks](#) section of this note.

While a channel is open, Transaction Process DLM’s can be used to create new transactions, add analysis and allocation records, delete existing transactions and exit from transactions in the batch open in that channel. The Transaction Process DLM’s included in the service pack are:-

<p><a href="#">DL%TRAN</a> – Write Transaction – For multi-user channels, lock the batch header to obtain exclusive access for the current user while the transaction remains open. Build a detail record for the new transaction in the batch in the open channel from data supplied by the calling program in transaction data <a href="#">block tt</a>. (Details of tt are included in the <a href="#">Interface Copybooks</a> section of this note). Note: On successful completion, DL%TRAN returns the item number assigned to the transaction in the batch to the calling program. The batch number and this item number can be used to remove the transaction and its associated analysis from the batch subsequently if the information from which it derives is changed before the batch is closed.</p>
<p><a href="#">DL%TXGL</a> – Add Analysis – Create tax and GL analysis records from the analysis data <a href="#">block tl</a> for the transaction just written. (Details of tl are included in the <a href="#">Interface Copybooks</a> section of this note).</p>
<p><a href="#">DL%ALOC</a> – Add Allocation – Create an allocation record for the transaction just written using the allocation data <a href="#">block tw</a> (defined in detail in the <a href="#">Interface Copybooks</a> section of this note).</p>
<p><a href="#">DL%TCLO</a> – Exit Transaction – Check analysis and allocation totals match transaction details. If either is non-zero and not equal to the transaction total, signal this fact. This is for information only, it is still possible to close the transaction if the analysis does not balance. There is an option to delete the transaction which may be used at any time during the creation of the transaction record set. For multi-user channels, unlock the batch header prior to exit.</p>
<p><a href="#">DL%TDEL</a> – Delete Transaction – Use the supplied batch and item number to remove a transaction and all associated analysis and allocation records from an open batch.</p>
<p>Data supplied during direct posting to Debtors Ledger is validated on a field by field basis by the receiving DLM and a comprehensive table of the errors that can be returned to the calling program is provided in the <a href="#">Table of Returned Errors</a> section at the end of this note.</p>
<p><a href="#">DL%ERRS</a> – Error message text – Supply a verbose error message for each error listed.</p>
<p><i>Please note:-</i> The release does not include an option to post General Ledger analysis by batch.</p>

## DOCUMENTATION CHANGES

### Debtors Batches window

*<The status description in the debtors batches window has been extended to include the “In-use” status which may now appear for directly posted batches as follows:->*

**Status** (Display only.) This indicates the batch status. It can be:

- **Empty.** The batch contains no items. This is the status when starting a new batch.
- **Deleted.** The batch has been deleted. You can only delete Open or \*Empty batches.
- **Open.** The batch has not been posted. You can amend existing transactions and add further transactions.
- **Posted.** The batch has been posted and cannot be changed or deleted.
- **In use.** The batch is currently in use for Direct Posting, or Direct Posting has been interrupted or temporarily completed. In the latter case manual transaction entry may be used to delete or attempt to recover the batch.
- **\*Post.** An attempted posting of the batch completed successfully in Debtors Ledger but failed in on-line posting to General Ledger or Cash Manager. You need to restart the posting process.
- **\*Bad.** An attempted posting of the batch failed to complete. You need to restart the posting process.

### Definition of Autotransfer Interfaces

*<The following note has been inserted after the paragraph titled “Warning”:->*

**Note** For interfaces with the Mode of Posting to Debtors Ledger set to “Direct” all prompts except that relating to Drill down are skipped.

*<The paragraph titled “On-line posting” has been replaced by the following:- >*

**Mode of posting to Debtors Ledger** (Only if Export Data to other systems is set to N). Select from the drop-down box:-

- Direct – the sending system generates transaction batches directly in Debtors Ledger
- On-line – the transactions are written to a file which is used to post as soon as the transaction is completed.
- Manual – the transactions are written to a file which is used to post when requested by the user.

**Note** You are prevented from changing an interface from manual posting to Direct or On-line if there are unposted transactions on an interface file. You are also prevented from changing an interface from On-line posting to Direct or Manual if on-line posting from Sales Order Processing is in progress or has failed.

## Appendix – Direct Posting Interface

This appendix provides technical information for software developers requiring a transaction-based interface to Global 3000 Debtors Ledger. The interface is referred to as “The Direct Posting Interface”.

The direct posting interface allows transactions to be generated in Debtors Ledger in parallel with originating transactions being completed in a source sub-system. The interface comprises several DLM’s which can be called by the source sub-system to create batches and transactions in Debtors Ledger.

An interface definition with posting mode set to “Direct” must be set up in Debtors Ledger system parameters to enable direct posting. Information relating to interface files used by other methods of auto-transfer is redundant, but the information about drill down and usage on the interface definition still holds force.

A direct posting interface can operate in single or multi-user mode.

In single-user mode, the sub-system is granted exclusive control over a direct posting batch in Debtors Ledger when it opens a channel to the batch and retains that control until it closes the channel. Each user acquires an exclusive regional lock on the batch number which exists the whole time the batch is in use by Direct Posting.

In multi-user mode each user acquires a shared regional lock on the batch number which exists while the channel is open, being replaced by an exclusive lock if the batch is to be posted, deleted or released for manual processing when the channel is closed. The batch header is locked while all records pertaining to a single transaction are written and unlocked on exit from the transaction or if the transaction is deleted. This allows different users to open channels to the same batch and post transactions to that batch sequentially.

The program calling the DLM’s must first open the PARAS and DL databases. If On-line posting from Debtors Ledger to General Ledger and/or Cash Manager is in use DBGL and/or DBCM must be opened, and DBUSER is required since it is used by the standard Post Batch routine to check for export scenarios. The direct interface routines reside in P.DLLOAD and this must be linked into routines which use them. Also, P.DLLOAD, P.COMMON, P.SEARCH and P.MIDDLE must be present on your program unit and included in \$\$DLM1.

*Please note:-* Granting exclusive access across update of all records pertaining to a particular transaction may impact on the way you plan your program’s use of the interface. Where possible it is best to minimise user interaction while the group of records making up a transaction is being posted to reduce the possibility of other users of the same interface being locked out for extended periods.

The following DLMs are provided to maintain channels:-

- [DL%OPEN](#) – Open Channel to Debtors Ledger,
- [DL%CLOSE](#) – Close Channel,

The following DLMs are provided to process transactions:-

- [DL%TRAN](#) – Write transaction details,
- [DL%TXGL](#) – Add analysis details,
- [DL%ALOC](#) – Add allocation details,
- [DL%TCLO](#) – Exit transaction,
- [DL%TDEL](#) – Delete transaction.

The following DLM is provide for error reporting:-

- [DL%ERRS](#) – return error message.

In a similar manner to the Global 3000 Debtors Ledger Auto-Transfer facility which creates transactions from files built by sub-systems such as Global 3000 Sales Order Processing containing records defined by copy-books TC, TH, TT, TL and TW, calling programs can use the direct posting procedures to create transactions by passing interface blocks containing similar information defined in copybooks:

- [tc – channel control](#).

- [th – batch headers.](#)
- [tt – transaction details.](#)
- [tl – analysis.](#)
- [tw – allocations.](#)

to post batch headers, transactions, analysis records and allocations.

Any condition preventing the routines from completing successfully signals an exception and sets the error number C-ERRS and error field C-EFLD as described in the [table of returned errors](#) listed at the end of this note. DL%ERRS returns a verbose error message when supplied with the error number and error field.

Note that if the option to post the batch on closure is taken, the standard batch posting routine is called, and any errors arising in that process are reported to the screen in the same way as during on-line posting from Debtors Ledger to General Ledger and Cash Manager. These errors are not reported in detail to the calling routine.

## Channel Maintenance DLM's

<b>Open Channel</b>	
<p>To open a direct posting channel to Debtors Ledger code:-</p> <p>CALL DL%OPEN USING C-TC H-TH</p> <p>The fields in control block C-TC are used as follows:</p>	
C-INTF	Set to the id of the interface controlling the posting prior to the call.
C-COID	Set to the company-id of the company receiving the postings prior to the call.
C-OPEN	<p>Set to 0 to create new batch,</p> <p>Set to 1 to seek open batch of specified type,</p> <p>Set to 2 to open batch identified by C-BTNO.</p>
C-BTNO	<p>Set to 0 if C-OPEN not = 2,</p> <p>Set to number of specific batch to open channel into if C-OPEN = 2.</p>
C-ITEM	Set to 0.
C-DEFA	Set to 0.
C-CSTA	Set to 0.
C-POST	Set to 0.
C-LOCK	<p>Set to 1 to open batch locked for this user (single-user channel access),</p> <p>Set to 0 to open batch unlocked. (multi-user channel access).</p>
C-ERRS	Set to 0
C-EFLD	Set to spaces
<p>For a new batch the TH block must contain the information required to write a batch header. See <a href="#">book th</a> for details. For an existing batch (C-OPEN = 2), fields in the TH block should be set to zero or spaces. Where a batch of a specified type is required (C-OPEN = 1) the batch type must be passed in H-BTYP and the currency in H-CURR.</p>	
<p>The DL%OPEN routine opens or creates the batch indicated by the control block settings. If C-OPEN = 1 an open batch of type H-BTYP is looked for in the current session. If one is found, the batch number is established in C-BTNO otherwise a batch not found error is returned.</p>	
<p>For all open operations, if single-user access is requested, the direct posting operator details are written to the batch header before exit from the routine unless they are already set in which case the batch is treated as locked and a batch in use error is returned. An exclusive regional lock is obtained on the batch number. If multi-user access to a batch is requested and the operator details on the batch header are set and are not those of the current user, the batch is treated as locked and a batch in use error returned.</p>	
<p>If the batch is successfully found or created in a multi-user channel, the batch header remains unlocked but a shared regional lock on the batch number is acquired.</p>	
<p>On return from DL%OPEN, an exception is signalled if there was a problem that made it impossible to complete the request. More specific information about the problem is returned in the error number field C-ERRS and, if appropriate the error field identifier, C-EFLD. A complete <a href="#">table of returned errors</a> is provided at the end of this note.</p>	
<p>On successful return from DL%OPEN no exception is signalled, C-BTNO contains the number of the batch accessed by the opened channel, the TH block contains its details and C-CSTA is set to 1 indicating the channel is ready.</p>	

Close Channel	
To close a direct posting channel to Debtors Ledger code:- CALL DL%CLOSE USING C-TC The fields in control block C-TC are used as follows:	
C-INTF	Leave unchanged.
C-COID	Leave unchanged.
C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-ITEM	Leave unchanged.
C-DEFA	Leave unchanged
C-CSTA	Leave unchanged.
C-POST	Set to 0 to close channel leaving batch open for further direct posting, Set to 1 to close channel after posting the batch, Set to 2 to close channel after deleting batch. Set to 3 to close channel and leave batch open for manual entry.
C-LOCK	Leave unchanged.
C-ERRS	Set to 0
C-EFLD	Set to spaces
The routine checks for the specified interface and batch that the channel has a suitable status for closing. If the batch requires posting before the channel is closed (C-POST = 1) the DLM executes the standard Debtors Ledger batch close procedure for the batch identified by C-BTNO. For single-user channels, the direct posting operator details are cleared from the batch header to unlock it before control is returned to the calling program. For multi-user channels, an exclusive regional lock is obtained on the batch number to ensure that the batch is no longer open for other users. If the channel is to be released for manual access the batch status is set to Open. On completion all regional locks on the batch number are released.	
<i>Please Note: If the channel is left marked for further use by Direct Posting it can still be accessed by manual transaction entry after a warning.</i>	



## Transaction Process DLM's

### Write Transaction

To write a new transaction to the batch, code:-

CALL DL%TRAN USING C-TC T-TT

The fields in control block C-TC are used as follows:

C-INTF	Leave unchanged.
C-COID	Leave unchanged.
C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-ITEM	Set to 0.
C-DEFA	Leave unchanged
C-CSTA	Leave unchanged.
C-POST	Leave unchanged.
C-LOCK	Leave unchanged.
C-ERRS	Set to 0.
C-EFLD	Set to spaces.

Data block T-TT contains details of the new transaction. Contents of the block are specified in detail in [book tt](#) in the [Interface Copybooks](#) section of this note.

For multi-user access channels (C-LOCK = 0) the routine establishes a lock by writing the direct posting operator details on the batch header for this user unless they are already set in which case the batch is treated as locked and a batch in use error is returned. Control of the batch is retained by this operator by means of a record lock on the batch header until the Exit Transaction DLM is called to signal that all records for the transaction have been written or the Delete Transaction DLM is called to remove the transaction.

The Write Transaction routine checks channel status to ensure that the batch is in an appropriate state for a new transaction to be added. If it is not, an incorrect channel status error is returned.

Data supplied in T-TT is checked for consistency according to the rules laid down for [book tt](#) in the [Interface Copybooks](#) section of this note. Any problems preventing the transaction from being processed cause an exception to be returned with the error and supporting field information in C-ERRS and C-EFLD.

If the transaction data is consistent, the next item number for the batch is determined and written with the transaction data from T-TT onto the next available transaction record in the batch. C-ITEM is updated to contain the item number of the new transaction, the channel status is updated to indicate that a transaction addition is in progress and control is returned to the calling program with no exception being signalled.

### Add Analysis

To write a GL analysis record for a transaction, code:-

CALL DL%TXGL USING C-TC L-TL

The fields in control block C-TC are used as follows:

C-INTF	Leave unchanged.
C-COID	Leave unchanged.

C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-DEFA	Leave unchanged
C-ITEM	Leave unchanged.
C-CSTA	Leave unchanged.
C-POST	Leave unchanged.
C-LOCK	Leave unchanged.
C-ERRS	Set to 0.
C-EFLD	Set to spaces.
Data block L-TL contains details of the new line of transaction analysis. Contents of the block are specified in detail in <a href="#">book tl</a> in the <a href="#">Interface Copybooks</a> section of this note.	
The Add Analysis routine ensures that the batch is locked and checks the channel status to ensure that the batch is in an appropriate state for analysis to be added to the specified transaction.	
Data supplied in L-TL is checked for consistency according to the rules laid down in <a href="#">book tl</a> in the <a href="#">Interface Copybooks</a> section of this note. Any problems preventing the analysis lines from being added to the transaction cause an exception to be returned with error number and supporting field information in C-ERRS and C-EFLD.	
If the analysis data is consistent, the analysis record is written using Speedbase auto-numbering to maintain record sequence within the transaction. For each tax type analysis, a VAT record (type RJ) is also added to the ledger.	
<i>Please Note: For Payment, Refund and Dishonoured Cheque batches analysis records can either be written explicitly using DL%TXGL or created automatically during Close Transaction using the General Ledger profit centres and accounts held on the Cash Book record. This is controlled by the value of C-DEFA on the call to DL%TCLO (see below).</i>	

<b>Add Allocation</b>	
To write an allocation record, code:- CALL DL%ALOC USING C-TC W-TW  The fields in control block C-TC are used as follows:	
C-INTF	Leave unchanged.
C-COID	Leave unchanged.
C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-ITEM	Leave unchanged.
C-DEFA	Leave unchanged
C-CSTA	Leave unchanged.
C-POST	Leave unchanged.
C-LOCK	Leave unchanged.
C-ERRS	Set to 0.
C-EFLD	Set to spaces.
Data block W-TW contains details of a line of allocation information to be added for the new transaction. Contents of the	

block are specified in detail in <a href="#">book tw</a> in the <a href="#">Interface Copybooks</a> section of this note.
<i>Please note:</i> The TW block referred to here differs from the TW record in the RSAM file used by Debtors Ledger Auto-Transfer in that it holds a single allocation instead of an array of up to five allocations.
The Add Allocation routine ensures that the batch is locked and checks the channel status to ensure that the batch is in an appropriate state for allocation details to be added to the specified transaction. If the channel status indicates this is the first allocation, the routine checks that analysis is complete and, if not, returns an incomplete analysis error.
Data supplied in W-TW is checked for consistency according to the rules laid down in <a href="#">book tw</a> in the <a href="#">Interface Copybooks</a> section of this note. Any problems preventing the allocation line from being added to the transaction cause an exception to be returned with the error number and supporting field information in C-ERRS and C-EFLD.
If the allocation data is consistent, an allocation record containing the data is added to the transaction.
<i>Please note:-</i> Once an allocation record is added, no further analysis can be added for the transaction. The channel status is set to 3 and the only valid actions are to add further allocation records, exit from the transaction or delete the transaction.

<b>Close Transaction</b>	
To exit from a transaction, code:-  CALL DL%TCLO USING C-TC  The fields in control block C-TC are used as follows:	
C-INTF	Leave unchanged.
C-COID	Leave unchanged.
C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-ITEM	Leave unchanged.
C-DEFA	On Payment, Refund and Dishonoured Cheque batches  Set to 0 to use posted analysis  Set to 1 to delete any posted analysis and create GL postings using the GL profit centres and analysis codes defined for the selected cash book.
C-CSTA	Leave unchanged.
C-POST	Set to 0 to complete processing the transaction and unlock the batch header record.  Set to 1 to delete the transaction and unlock the batch header record
C-LOCK	Leave unchanged.
C-ERRS	Set to 0.
C-EFLD	Set to spaces.
For Payment, Refund and Dishonoured Cheque batches with C-DEFA set to 1 the routine deletes any posted analysis and writes new analysis for the net amount, settlement discount taken and exchange gain/loss (if any) using the General Ledger profit centres and accounts defined for the cash book supplied.	
The routine then checks whether or not the transaction is OK to close, releases the batch header lock in multi-user access channels and resets the channel status to prepare for writing another transaction, deleting a transaction or closing or deleting the batch.	
If the transaction is not OK to close, the error number and supporting field information C-ERRS and C-EFLD are set to indicate the nature of the problem. In such situations, if analysis is not to be added by manual posting, normal protocol is to delete the transaction then write it again.	

Delete Transaction	
<p>To delete a transaction, code:-</p> <p>CALL DL%TDEL USING C-TC</p> <p>The required fields within C-TC are set as follows:</p>	
C-INTF	Leave unchanged.
C-COID	Leave unchanged.
C-OPEN	Leave unchanged.
C-BTNO	Leave unchanged.
C-ITEM	Set to a specific item number to delete a specific transaction in batch C-BTNO.
C-DEFA	Set to 0.
C-CSTA	Leave unchanged.
C-POST	Leave unchanged.
C-LOCK	Leave unchanged.
C-ERRS	Set to 0.
C-EFLD	Set to spaces.
<p>The routine checks that the batch C-BTNO is locked for the current operator and if not, attempts to establish the lock. If this is not possible a batch in use error is returned and the transaction remains undeleted. If a lock is obtained, all records associated with the transaction identified by C-BTNO and C-ITEM are deleted. The channel status (C-CSTA) is reset to 1 (ready for another transaction, batch close or batch delete). The batch is left locked or released according to C-LOCK. No attempt is made to re-use the item number of the deleted transaction.</p>	

Report errors	
<p>To obtain a verbose error message code:-</p> <p>CALL DL%ERRS USING C-ERRS C-EFLD C-TEXT</p> <p>The required fields are set as follows:</p>	
C-ERRS	Error number returned by previous call.
C-EFLD	Error field returned by previous call (spaces if none)
C-TEXT	Returned 60-character error message.

# Interface Copybooks

## Book tc – The Direct Posting Control Block

01	C-TC			
	02	C-INTF	PIC X(2)	* Interface ID - passed by source system
	02	C-COID	PIC X(2)	* Company - passed by source system
	02	C-OPEN	PIC 9 COMP	* 0 = New batch, * 1 = Open batch of type C-BTYP, * 2 = C-BTNO.
	02	C-BTNO	PIC 9(6) COMP	* Batch number - passed by source system * if a specified batch is to be opened, * returned if a new or unspecified batch * is opened
	02	C-ITEM	PIC 9(4) COMP	* Item number - returned for new * transaction, supplied for update
	02	C-DEFA	PIC 9 COMP	* Default analysis for payment type batch * 1 = create default analysis from BK * 0 = use analysis supplied
	02	C-CSTA	PIC 9 COMP	* Channel status - returned. * 0 = OK to create batch, * 1 = OK to create transaction, exit * transaction, delete transaction or * close channel. * 2 = OK to create analysis, create * allocation, exit transaction or * delete transaction. * 3 = OK to create allocation, exit * transaction or delete transaction.
	02	C-POST	PIC 9 COMP	* Posting batch on close of channel * 0 = Close channel leaving batch open for * further direct posting * 1 = Close channel closing batch * 3 = Close channel leaving batch open for * manual entry * Closing transaction * 0 = close * 1 = delete
	02	C-LOCK	PIC 9 COMP	* Channel access: * 1 = single-user, * open channel locks batch * close channel unlocks batch * 0 = multi-user, * write transaction locks batch * exit transaction unlocks batch
	02	C-ERRS	PIC 9(4) COMP	* Returned error number
	02	C-EFLD	PIC X(6)	* Field id associated with error, spaces * if none. See Error Table for list

## Book th – The Direct Posting Header interface block

01	H-TH			
	02	H-YEAR	PIC 9(4) COMP	* Year
	02	H-PERD	PIC 9(2) COMP	* Period

**Note:** Year and period must not be later than the "Next" period on the ledger. Batches with year/period earlier than the "Current" period on the ledger are posted to the current period. If year and period are not supplied the current period is assumed.

	02	H-TITL	PIC X(30)	* Batch Title
	02	H-BTYP	PIC X	* Batch Type. Must be one of:- * I - Invoice,

			* C - Credit note,
			* P - Payment,
			* F - Customer Refund,
			* D - Dishonoured cheque,
			* J - Journal,
			* R - Reversal.
02	H-CURR	PIC X(3)	* Batch currency.
			* Spaces for multi-currency. (NB if this
			* is spaces the field T-CURR must be set
			* for each transaction.
02	H-TOTR	PIC S9(12,2) COMP	* Control total - single currency only
			* Zero or total of transactions in entry
			* currency
02	H-CBID	PIC X(2)	* Cash book ID. Required for batch types
			* P - Payment,
			* F - Customer Refund,
			* D - Dishonoured Cheque
			* Unless there is only one cash book which
			* will be used automatically.

Note: For other types of batch, a cash book is required if an allocation is posted in a foreign currency that could give rise to an exchange gain/loss.

### Book tt – The Direct Posting Transaction interface block

01	T-TT		
02	T-CUSU	PIC X(7)	* Customer code
02	T-DREF	PIC X(8)	* Transaction reference. Must be unique
			* within company/customer/transaction type
02	T-DATE	PIC 9(6) COMP	* Transaction date. Must not be later than
			* end date of period specified in header.
02	T-NARR	PIC X(25)	* Transaction narrative
02	T-COM1	PIC X(30)	* Comment 1
02	T-COM2	PIC X(30)	* Comment 2
02	T-PROJ	PIC X(10)	* Project code
02	T-NETA	PIC S9(12,2) COMP	* Net amount in transaction currency
02	T-PLSA	PIC S9(12,2) COMP	* Settlement discount if TTYP = "P", "F"
			* or "D". Used to calculate settlement
			* discount in base.
02	T-TAXA	PIC S9(12,2) COMP	* Tax amount for other values of TTYP.
02	T-HLDN	PIC 9 COMP	* Held - not used
02	T-DUED	PIC 9(6) COMP	* Due date
02	T-CURR	PIC X(3)	* Transaction Currency. May be left blank
			* if batch currency H-CURR is set.
02	T-TMCD	PIC X(2)	* Terms code. If set, this is used to
			* calculate discount and settlement dates
			* if these are not set.
02	T-SDIN	PIC S9(12,2) COMP	* Settlement discount.
02	T-TREG	PIC X(15)	* VAT registration
02	T-CTRY	PIC X(2)	* Country code
02	T-DISD	PIC 9(6) COMP	* Discount date
02	T-SENS	PIC X	* Currency sense
02	T-ORNO	PIC X(8)	* Order number
02	T-EXBA	PIC 9(6,6) COMP	* Base exchange rate. If not set, house
			* exchange rate at transaction date is
			* used to calculate net in base.
02	T-EXCB	PIC 9(6.6) COMP	* Cash book exchange rate. If not set,
			* house exchange rate at transaction date
			* is used to calculate net in cash book
02	T-NETB	PIC S9(12,2) COMP	* Base net amount. If this is set and the
			* exchange rate is not fixed, this is used
			* in preference to the calculated value
			* and the exchange rate is calculated from
			* it. If the exchange rate is fixed, this

			* must agree with the calculated value if
			* it is set.
02	T-TYOD	PIC X(3)	* Type of origin
02	T-RFOD	PIC X(25)	* Reference of origin

### Book tl – The Direct Posting Analysis interface block

01	L-TL			
02	L-STAT	PIC X		* Type of analysis record
				* "T" = Tax
				* "G" = General Ledger
02	L-PCID	PIC X(4)		* Profit centre
02	L-ACID	PIC X(10)		* Account
02	L-TXCD	PIC X(2)		* Tax code
02	L-LJNA	PIC X(30)		* Journal Narrative
02	L-LCO1	PIC X(30)		* Comment 1
02	L-LCO2	PIC X(30)		* Comment 2
02	L-NETA	PIC S9(12,2) COMP		* Net amount in trading currency
02	L-NETB	PIC S9(12,2) COMP		* Base amount in trading currency
02	L-LUNI	PIC S9(12,2) COMP		* Units
02	L-TAXA	PIC S9(12,2) COMP		* Tax in trading currency (type "T" only)
02	L-TAXB	PIC S9(12,2) COMP		* Base tax converted at tax exchange rate
				* (type "T" only). This must be set up
				* unless the base tax amount is zero.
02	L-ANID	PIC X(8)		* GL analysis ID 1
02	L-ANI2	PIC X(8)		* GL analysis ID 2
02	L-LORN	PIC X(8)		* Order number
02	L-LTYO	PIC X(3)		* Type of origin for drill-down
02	L-LRFO	PIC X(25)		* Ref of origin
02	L-LTRL	PIC 9(9) COMP		* Number associated with TREF
02	L-LORL	PIC 9(9) COMP		* Number associated with ORNO

### Book tw – The Direct Posting Allocation Interface block

NOTE: The transaction being allocated is referred to as the "transaction", that being allocated against is referred to as the "item"

01	W-TW			
02	W-TTYP	PIC X		* Allocated to transaction type
02	W-DREF	PIC X(8)		* Allocated to transaction reference
02	W-ALAM	PIC S9(12,2) COMP		* Allocated amount
02	W-ALBA	PIC S9(12,2) COMP		* Allocated amount in base using the
				* item exchange rate .
02	W-EXGL	PIC S9(12,2) COMP		* Exchange gain or loss. Transaction base
				* value - item base value
02	W-ALTO	PIC S9(12,2) COMP		* Amount allocated to W-DREF in that
				* transaction's currency

## Table of Returned Errors

This table lists the errors that can be returned by the direct posting DLM routines. Each error is identified by the combination of the error number returned in C-ERRS and the identity of the field in the direct posting interface associated with the problem returned in C-EFLD. Note that the identity NOT the value of the field is returned in C-EFLD.

Each entry in the description column of this table consists of a single line summary of the error followed by one or more lines explaining in more technical detail the nature of the problem preventing the direct posting routines from processing the data supplied to them.

Number	Field	Returned by	Description
1	C-INTF	DL%OPEN DL%CLOSE DL%TRAN	Interface record missing. Unable to locate record DL:RQ with RQSRCE = C-INTF.
2	C-INTF	DL%OPEN DL%CLOSE DL%TRAN	Interface not set up for direct posting. Record DL:RQ with RQSRCE = C-INTF doesn't have RQOLDL set to "D".
3	SC	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Control Record not found – System Parameters Unable to locate System Parameter record PARAS:SC
3	C-COID	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Control record not found - Company Unable to locate Company record PARAS:CO with COCOID = C-COID.
4	R1	DL%TRAN	Control record not found – Debtors Ledger Unable to locate Ledger Control record DL:R1
4	C-COID	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC	Control record not found – Company Ledger Unable to locate Debtors Company record DL:CL with CLCOID = C-COID



		DL%TCLO DL%TDEL	
5	R1	DL%OPEN DL%CLOSE	Control record is locked – Debtors Ledger Unable to lock Ledger Control record DL:R1.
5	RI	DL%OPEN DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Control record is locked – Company/Period Unable to lock Company/Period totals record DL:RI
6	C-BTNO	DL%OPEN DL%CLOSE DL%TRAN	Incorrect Channel Status - batch level DL%OPEN called to open batch C-BTNO and RHCSTA not = 0 DL%CLOSE called to close batch or DL%TRAN called to write transaction and RHCSTA not = 1.
6	C-ITEM	DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Incorrect Channel Status - transaction level DL%TXGL called to write analysis when RHCSTA not = 2 DL%ALOC called to write analysis when RHCSTA not = 2 or 3 DL%TCLOSE called to close transaction and RHCSTA not = 2 or 3 DL%TDEL called to delete transaction and RHCSTA = 0
7	C-BTNO	DL%TXGL DL%TCLO	Channel is not locked DL%TXGL, DL%ALOC or DL%TCLO called when the channel is not locked
8	RHDPOP	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Channel is locked The user-id of the channel is set to RHDPOP which is not the same as that of the current user.
9	C-BTNO	DL%OPEN DL%CLOSE DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Batch not found for given number Unable to locate DL:RH with RHBTNO = C-BTNO.
9	H-BTYP	DL%OPEN	Batch not found for given type and currency

		DL%TRAN	No open batch of type H-BTYP and currency H-CURR can be found
10	C-COID	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	No financial calendar entry for current period.  Unable to locate financial period record PARAS:SI for current year & period on company ledger record.
11	H-YEAR	DL%OPEN DL%CLOSE DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Batch period not yet open. (note that transactions for period prior to the current period are posted to the current period)  The period supplied in H-YEAR/H-PERD is not yet open
12	H-YEAR	DL%OPEN DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	Period is protected  The Company/Period record (RI) indicates that the period defined in H-YEAR/H-PERD is protected
13	R1	DL%OPEN	Transfer to General Ledger in progress  Debtors control record indicates that transfer to GL is in progress
14	C-BTNO	DL%OPEN	Batch not in current session  The batch header indicates that the batch is not in the current session
15	C-BTNO	DL%OPEN	Batch not open for direct posting.  The batch in C-BTNO is not marked as In Use.
16	H-BTYP	DL%OPEN	Invalid batch type  The batch type supplied in H-BTYP is not one of I, C, J, F, P, R or D
21	H-CURR	DL%OPEN	Reference record not found – Currency  Unable to locate Currency record PARAS:CU with CUCURR = H-CURR
21	H-CBID	DL%OPEN DL%TRAN DL%TXGL DL%ALOC	Reference record not found - Payment Account  Unable to locate Payment account record PARAS:BK with BKCBID = H-CBID

		DL%TCLO DL%TDEL	
21	T-TMCD	DL%TRAN	Reference record not found - Terms Unable to locate Terms record PARAS:TM with TMTMCD = T-TMCD
21	T-CTRY	DL%TRAN	Reference record not found – Country Unable to locate Country record PARAS:CN with CNCTRY = T-CTRY
21	L-TXCD	DL%TXGL	Reference record not found - Tax code Unable to locate Tax Code record PARAS:TX with TXTXCD = L-TXCD
22	H-CBID	DL%OPEN	Cash book not supplied for batch type P, F or D No cash book specified in H-CBID and multiple cash books in use
23	T-DATE	DL%TRAN	No date on transaction. T-DATE is zero
24	T-DATE	DL%TRAN	Invalid date T-DATE does not contain a valid format date
25	T-DATE	DL%TRAN	Transaction date later than end of batch period. The transaction date is later than the period end date for the batch
26	T-CUSU	DL%TRAN	Customer information not found – Customer Unable to locate Customer record DL:RC with RCCUCD = T-CUSU
26	T-COID	DL%TRAN	Customer information not found – Customer/Company Unable to locate Customer/Company record DL:RY with RYCOID = C-COID and RYCUCD = T-CUSU
26	T-CURR	DL%TRAN	Customer information not found – Customer/Currency Unable to locate Customer/Currency record DL:RG for T-CUSU/T-CURR
27	T-CUSU	DL%TRAN	Customer account inactive The customer account is marked as inactive on the associated FR record
28	T-CUSU	DL%TRAN	Customer account deleted. Record DL:RC is marked for deletion subject to audit controls
29	RC	DL%TRAN	Cannot lock record - Customer Unable to lock Customer record DL:RC with RCCUCD = T-CUSU
29	RY	DL%TDEL	Cannot lock record– Customer/Company Unable to lock Customer/Company record DL:RY with RYCOID = C-COID and RYCUCD = T-CUSU
29	RG	DL%TRAN DL%TDEL	Cannot lock record– Customer/Currency Unable to lock Customer/Currency record DL:RG with RGCUSU = T-CUSU and RGCURR = T-CURR
29	RH	DL%OPEN	Cannot lock record – Batch Header

		DL%CLOSE DL%TRAN DL%TDEL	Unable to lock Batch Header record DL:RH with RHBTNO = T-BTNO
29	RQ	DL%OPEN	Cannot lock record– Interface Unable to lock Interface record DL:RQ with RQSRCE = C-INTF
29	FR	DL%TRAN	Cannot lock record - Cash Manager consolidation Unable to lock cash manager consolidation header PARAS:FR
29	W-TREF	DL%ALOC	Cannot lock record – transaction to allocate to Cannot lock Transaction record to be allocated to RL:RT with RTTREF = W-TREF
29	C-ITEM	DL%TXGL DL%ALOC	Cannot lock record – transaction Cannot lock Transaction being allocated RL:RT with RTITEM = C-ITEM
30	RI	DL%OPEN DL%TRAN DL%TXGL DL%ALOC DL%TCLO DL%TDEL	File full – DL:Company/Period Insufficient space to create DL:RI
30	RT	DL%TRAN	File full – DL:Transaction Insufficient space to create DL:RT
30	FR	DL%TRAN	File full – PARAS:Consolidated Payment Insufficient space to create PARAS:FR
30	FRSEC	DL%OPEN	File full – PARAS:Integrity control Insufficient space to create PARAS:FR
30	FRCON	DL%TRAN	File full – PARAS:Cash Manager Consolidation Insufficient space to create PARAS:FR
30	RB	DL%TRAN	File full – DL:Transaction Bank Details Insufficient space to create DL:RB
30	RH	DL%OPEN	File full – DL:Batch header Insufficient space to create DL:RH
30	RJ	DL%TXGL	File full – DL:Tax analysis Insufficient space to create DL:RJ
30	RL	DL%TXGL	File full – DL:General Ledger analysis Insufficient space to create DL:RL
30	RW	DL%ALOC	File full – DL:Allocation

			Insufficient space to create DL:RW
31	H-TITL	DL%OPEN	Illegal characters in batch title One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	T-CUSU	DL%TRAN	Illegal characters in transaction account code. One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	T-DREF	DL%TRAN	Illegal characters in transaction reference. One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	T-NARR	DL%TRAN	Illegal characters in transaction narrative. One or more characters supplied are outside the ranges #20-#7E and #80-#EF?
31	T-COM1	DL%TRAN	Illegal characters in first transaction comment One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	T-COM2	DL%TRAN	Illegal characters in second transaction comment One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	T-TREG	DL%TRAN	Illegal characters in transaction tax registration code. One or more characters supplied are outside the ranges #20-#7E and #80-#EF
31	L-LJNA	DL%TXGL	Illegal characters in transaction analysis journal narrative One or more characters supplied are outside the ranges #20-#7E and #80-#EF
32	T-CURR	DL%TRAN	No currency code on transaction in multi-currency batch. T-CURR is spaces for a multi-currency batch
33	C-ITEM	DL%TCLO DL%TDEL	Transaction not found. Unable to locate record DL:RT with RTBTNO/RTITEM = C-BTNO/C-ITEM
34	T-DATE	DL%TRAN	Cannot calculate discount date. The calendar is not set up for the period covering the calculated date
35	T-DATE	DL%TRAN	Cannot calculate due date. The calendar is not set up for the period covering the calculated date
36	T-NETA	DL%TRAN	Error converting amount to base currency – net amount Cannot calculate the base value of T-NETA because exchange rate not found or invalid
36	T-PLSA	DL%TRAN	Error converting amount to base currency – discount amount Cannot calculate the base value of T-PLSA because exchange rate not found or invalid

37	T-NETB	DL%TRAN	Cannot calculate exchange rate to base currency Cannot calculate exchange rate from T-NETA and T-NETB
38	T-NETB	DL%TRAN	Base net amount inconsistent T-NETB supplied for a fixed exchange rate transaction does not agree with the converted value of T-NETA
39	T-NETA	DL%TRAN	Error converting net amount to cash book currency Cannot calculate the cash book value of T-NETA because exchange rate not found or invalid
40	RTGRSA	DL%TRAN	Foreign gross amount too large Sum of Net and VAT or Net plus discount exceeds field size.
41	C-ITEM	DL%TCLO	Tax analysis incomplete. The total of net or tax amounts on the RJ records does not equal the value on RT
42	C-ITEM	DL%TCLO	GL analysis incomplete. The total of the amounts on the RL records does not equal the value on RT
43	T-CURR	DL%TRAN	Error converting account balances. Cannot calculate the value of the account balance in base currency
44	RH	DL%TRAN	Overflow – financial totals Overflow in financial total on DL:RH, RG, RY or RI
44	W-ALAM	DL%ALOC	Overflow – unallocated credit amount Overflow in unallocated credit amount on RY
44	W-EXGL	DL%ALOC	Overflow – exchange gain/loss Overflow in exchange gain/loss
45	T-TREF	DL%TRAN	Duplicate transaction. The value supplied in T-TREF is the same as that for an existing transaction of the same type for the customer/company combination.
46	L-STAT	DL%TXGL	Tax analysis is not in use L-STAT = “T” but system parameters indicate that tax analysis is not in use in DL
47	L-STAT	DL%TXGL	General Ledger analysis is not in use L-STAT = “G” but system parameters indicate that General Ledger analysis is not in use in DL
48	L-NETA	DL%TXGL	Analysis amount in trading currency not set up – net amount Net amount L-NETA is zero for a non-base-currency transaction
48	L-TAXA	DL%TXGL	Analysis amount in trading currency not set up – tax amount. Tax amount L-TAXA is zero for a non-base-currency transaction
49	L-NETB	DL%TXGL	Analysis amount in base currency not set up – net amount Net amount L-NETB is zero for a non-base-currency transaction

49	L-TAXB	DL%TXGL	Analysis amount in base currency not set up – tax amount Tax amount L-TAXB is zero for a non-base-currency transaction
50	L-TAXB	DL%TXGL	Base tax amount cannot be calculated. Error in calculating base tax amount
51	L-TXCD	DL%TXGL	Duplicate tax analysis record for transaction RJ record for C-BTNO/C-ITEM/L-TXCD already exists
52	RW	DL%ALOC	Insufficient free allocation records There are less than two free RW records when DL%ALOC is called
53	W-TREF	DL%ALOC	The item to allocate against cannot be found Cannot locate DL:RT with RTTREF = W-TREF
54	W-TREF	DL%ALOC	The item to allocate against is not posted. The item to allocate against is flagged as Unposted
55	W-TREF	DL%ALOC	The item to allocate against has been archived. The item to allocate against is flagged as Archived
56	W-ALAM	DL%ALOC	Allocation amount not specified – net amount to allocate The amount in W-ALAM is zero
56	W-ALBA	DL%ALOC	Allocation amount not specified – base amount to allocate The amount in W-ALBA is zero
56	W-ALTO	DL%ALOC	Allocation amount not specified – net amount allocated The amount in W-ALTO is zero
57	W-ALAM	DL%ALOC	Over-allocation - net The total allocated amount for the item in entry currency exceeds the outstanding amount
57	W-ALBA	DL%ALOC	Over-allocation - base The total allocated amount for the item in base currency exceeds the outstanding amount
58	C-ITEM	DL%ALOC	Allocation for next period - not allowed The item is in a Next Period batch and the system parameter allowing next period allocations is set to N
59	H-CBID	DL%ALOC	Allocation for foreign currency transaction but no cash book. DL%ALOC has been called for a foreign currency transaction, but no cash book was defined for the batch when it was opened and multiple cash books are in use.
60	C-BTNO	DL%CLOSE	The batch cannot be posted because it is empty There are no transactions in the batch
61	C-BTNO	DL%CLOSE	Cannot delete - daybook being printed The Debtors control record (R1) indicates that daybook print is in progress.

62	GLMNTN	DL%OPEN	General Ledger Month End in progress.  Unable to obtain shared lock on the FR record controlling General Ledger month end
63	DLMNTN	DL%OPEN	Debtors Ledger Month End in progress.  Unable to obtain shared lock on the FR record controlling Debtors Ledger month end
64	DLCP	DL%OPEN	Debtors Ledger Close Period in progress  Unable to obtain shared lock on the integrity file controlling Debtors Ledger close period.
65	RHBTNO	DL%CLOSE	Incorrect consolidation total detected  There is a discrepancy between the total to post to Cash Manager and the total of consolidations in the batch
66	RTITEM	DL%CLOSE	Net entry value with no base value on transaction  The transaction carries a non-zero net value in entry currency (RTNETA) but no corresponding value in base currency (RTNETB)
67	RTITEM	DL%CLOSE	Gross entry value with no base value on transaction  The transaction carries a non-zero gross value in entry currency (RTGRSA) but no corresponding value in base currency (RTGRSB)
68	RTITEM	DL%CLOSE	Net base value with no entry value on transaction  The transaction carries a non-zero net value in base currency (RTNETB) but no corresponding value in entry currency (RTNETA)
69	RTITEM	DL%CLOSE	Gross base value with no entry value on transaction  The transaction carries a non-zero gross value in base currency (RTGRSB) but no corresponding value in entry currency (RTGRSA)
70	RTITEM	DL%CLOSE	Net entry value with no cash book net value on transaction  The transaction carries a non-zero net value in entry currency (RTNETA) but no corresponding value in cash book currency (RTNETC)
71	RTITEM	DL%CLOSE	Cash book net value with no net entry value on transaction  The transaction carries a non-zero net value in cash book currency (RTNETC) but no corresponding value in entry currency (RTNETA)
72	RTITEM	DL%CLOSE	Transaction entry currency not set up  There is no entry currency code on the transaction
73	RTITEM	DL%CLOSE	Transaction cash book currency not set up  There is no cash book currency code on the transaction
74	RTITEM	DL%CLOSE	Transaction exchange rate sense invalid  The transaction exchange rate sense is not "D" or "M"
75	C-POST	DL%CLOSE	Cannot close channel for manual access, post or delete batch  Request to close channel and leave batch open for manual posting, post batch or delete batch when channel is open in multi-user mode.
76	EXCL	DL%OPEN	Cannot gain required batch lock - exclusive



			Cannot gain an exclusive regional lock on the batch number
76	SHRD	DL%OPEN	Cannot gain required batch lock - shared Cannot gain a shared regional lock on the batch number
77	DLINT/ CMINT	DL%OPEN	Cannot open security file – DLINT (CLINT) Cannot open the security file to acquire regional lock.