PRUG00X (PR701/801/901)

User's Guide

DPS7000/XTA NOVASCALE 7000

Hardware: PR70XX/80XX/90XX

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Preface

This manual discusses how to configure and use PRUG00X (PR701/801/901) printers from a DPS 7000.

INTENDED READERSHIP

This manual is intended for DPS 7000 system administrators and operators.

STRUCTURE OF THIS MANUAL

Chapter 1	introduces the PRUG00X series of printers.
Chapter 2	describes the SYS.URCINIT values appropriate for using PRUG00X printers.
Chapter 3	describes the CONFIG values appropriate for using PRUG00X printers.
Chapter 4	discusses PRUG00X printer management.
Chapter 5	discusses Telecommunication Generation and GTWriter parameter values appropriate for using PRUG00X printers.
Appendix A	discusses Belt Codes and Translation Tables.
Appendix B	gives the SYS.URCINIT Index Table in its state before modification.
Appendix C	contains the job to update SYS.URCINIT.
Appendix D	gives the SYS.URCINIT Index Table in its state after modification (by the job in Appendix C).
Appendix E	contains the Character Sets.

NOTATION

The following PRUG00X printers are discussed in this manual:

- **PRUG004**
  The alternative name is PR701.
  The names PRUG004 and PR701 are used interchangeably in this manual.

- **PRUG007**
  The alternative name is PR901.
  The names PRUG007 and PR901 are used interchangeably in this manual.

- **PRUG008**
  The alternative name is PR801.
  The names PRUG008 and PR801 are used interchangeably in this manual.

ASSOCIATED DOCUMENTS

PRUG00X (PR701/801/901) Printer

PR701/801/901 Operator's Guide..22 X1 67VA (1)
PR701/801/901 Set Up Guide 22 A1 69VA
PR701/801/901 Programmer's Reference Manual 22 A1 68VA
PR701/801/901 Maintenance Manual...22 A1 71VA
PR701/801/901 IGP/PG2 Reference Manual...22 A1 70VA

(1) for English, French, German, Italian and Spanish.

GCOS 7 Manuals

The following GCOS 7 documents also contain information relevant to PRUG00X printers:

GCOS 7-V7 System Installation, Configuration, and Updating Guide............47 A2 18US
GCOS 7 System Operator's Guide...47 A2 47US
Generalized Terminal Writer User's Guide... 47 A2 55UU

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1. Introduction

This chapter introduces the PRUG00X (PR701/801/901) series of dot matrix line printers available with the DPS 7000. These printers are suitable for high volume business and industrial printing tasks.

1.1   LINE DOT MATRIX PRINTERS

Technology

These printers use line dot matrix technology. Characters (and graphics) are formed by assembling groups of dots in matrices (hence the term "dot matrix"). Characters (and graphics) are placed on the paper by printing an entire row (line) of dots at a time (hence the term "line dot matrix").

DPS 7000 Models

These printers can be used by the following DPS 7000 models:

- Bull DPS 7000/4xx, Cxx, MTx1,

- Bull DPS 7000/5xx and /7xx,

- Bull DPS 7000/8xx, Dxx, Mxx, MTxx.

Features

The PRUG00X printers have the following features in common:

- Up to 6 print copies (1 original plus 5 copies),

- International character sets,

- Graphics, logo, and bar codes.

1.2   PRUG00X MODELS SUPPORTED BY DPS 7000

The DPS 7000 supports the PRUG004 (PR701), PRUG007 (PR901), and PRUG008 (PR801) matrix line printers.

The characteristics of each of these printer models is summarized below.

1.2.1   PRUG004 (PR701) Printer Model

The PRUG004 (PR701) is a new offer complementary of PRUG007 (PR901) and PRUG008 (PR801) models.

Print Rates

It operates at 500/428 lpm (Lines Per Minute) in "Draft" print quality, that is, about 48 DPI (Dots Per Inch). At "Data Processing" quality (about 72 DPI), it operates at 375/300 lpm. At "Correspondence" quality (about 96 DPI), it operates at 200/154 lpm.

Horizontal Print Densities

The horizontal densities are as follows:

characters per inch (CPI)	10	12	13,3	15	17,1	20
characters per line (columns)	136	163	180	204	232	272

Lines Spacing

The Lines Spacing (vertical print densities) are: 6, 8, 10,3 LPI (and 9 LPI with EASYPRINT7).

Paper Specifications

The paper specifications are as follows:

Paper Type	Continuous fanfold edge-perforated listing paper
Width	7,62 cm to 43,18 cm (3" to 17")
Height	2,54 cm to 30,48 cm (1" to 12")
Thickness	up to 0,635 mm (0,025 inches)
Weight	15 - 43 lbs or 6.80 - 19.54 Kg (single part) (equivalent to 56.4 - 162,8 gr/m^{2})
Number of Copies	1 original plus up to 5 copies

NOTE: The above paper specifications are of a general nature. Before ordering large quantities of paper, you are **strongly recommended to test the paper** using your applications.

1.2.2 PRUG007 (PR901) Printer Model

The PRUG007 (PR901) is a new printer model. It is intended as a replacement for the existing PRUD003 (PR900) printer.

Print Rates

Some nominal print rates are as followings:

Quality	Upper Case Only	Upper & Lower Case
High Speed Draft A	1200 lpm	1026 lpm
Data Processing	900 lpm	720 lpm
Correspondence	480 lpm	370 lpm

Horizontal Print Densities

The horizontal densities are as follows:

characters per inch (CPI)	10	12	13,3	15	17.1	20
characters per line (columns)	136	163	180	204	232	272

Lines Spacing

The Lines Spacing (vertical print densities) are: 6, 8, 9, or 10,3 LPI.

Paper Specifications

The paper specifications are as follows:

Paper Type	Continuous fanfold edge-perforated listing paper
Width	7.62 cm to 43,18 cm (3" to 17") without stacker 7.62 cm to 40,64 cm (3" to 16") with stacker
Height	2,54 cm to 30.48 cm (1 to 12 inches)
Thickness	up to 0.635 mm (0.025 inches)
Weight	15 - 43 lbs or 6.80 - 19.54 Kg (single part) (equivalent to 56.4 - 162.8 gr/m$^{2)}$
Number of Copies	1 original plus up to 5 copies

NOTE: The above paper specifications are of a general nature. Before ordering large quantities of paper, you are **strongly recommended to test the paper** using your applications.

1.2.3   PRUG008 (PR801) Printer Model

The PRUG008 (PR801) is a new printer model. It is intended to replace the existing PRUD002 (PR800) printer.

Print Rates

Some nominal print rates are as followings:

Quality	Upper Case Only	Upper & Lower Case
High Speed Draft A	800 lpm	685 lpm
Data Processing	600 lpm	480 lpm
Correspondence	320 lpm	245 lpm

Horizontal Print Densities

The horizontal densities are as follows:

characters per inch (cpi)	10	12	13,3	15	17,1	20
characters per line (columns)	136	163	180	204	232	272

Lines Spacing

The Lines Spacing (vertical print densities) are: 6, 8, or 10,3 LPI.

Paper Specifications

The paper specifications are as follows:

Paper Type	Continuous fanfold edge-perforated listing paper
Width	7.62 cm to 43,18 cm (3" to 17") without stacker 7,62 cm to 40,64 cm (3" to 16") with stacker
Height	2,54 cm to 30.48 cm (1" to 12")
Thickness	up to 0.635 mm (0.025 inches)
Weight	15 - 43 lbs or 6.80 - 19.54 Kg (single part) (equivalent to 56.4 - 162.8 gr/m$^{2)}$
Number of Copies	1 original plus up to 5 copies

NOTE: The above paper specifications are of a general nature. Before ordering large quantities of paper, you are **strongly recommended to test the paper** using your applications.

1.3 PRUG00X CONNECTIONS

Direct Connection

A PRUG00X (PRX01 or PR/701/801/901) printer can be connected "directly" to a DPS 7000 via an RS232D interface or via a DataProducts Long Line (DPLL) interface. From a GCOS 7 point of view, the print outputs are handled by the GCOS 7 Output Writer (SYSOUT).

Network Connection

A PRUG00X (PRX01 or PR/701/801/901) printer can be connected "indirectly" to a DPS 7000 via a network. From a GCOS 7 point of view, the print outputs are handled by the GCOS 7 GTWriter (Generalized Terminal Writer).

In this case, the PRUG00X (PRX01 or PR/701/801/901) is accessed from the DPS 7000 via a Datanet, a CNP7, or an FCP7 (and MainWay).

The possible connections are outlined in Figure 1-1.
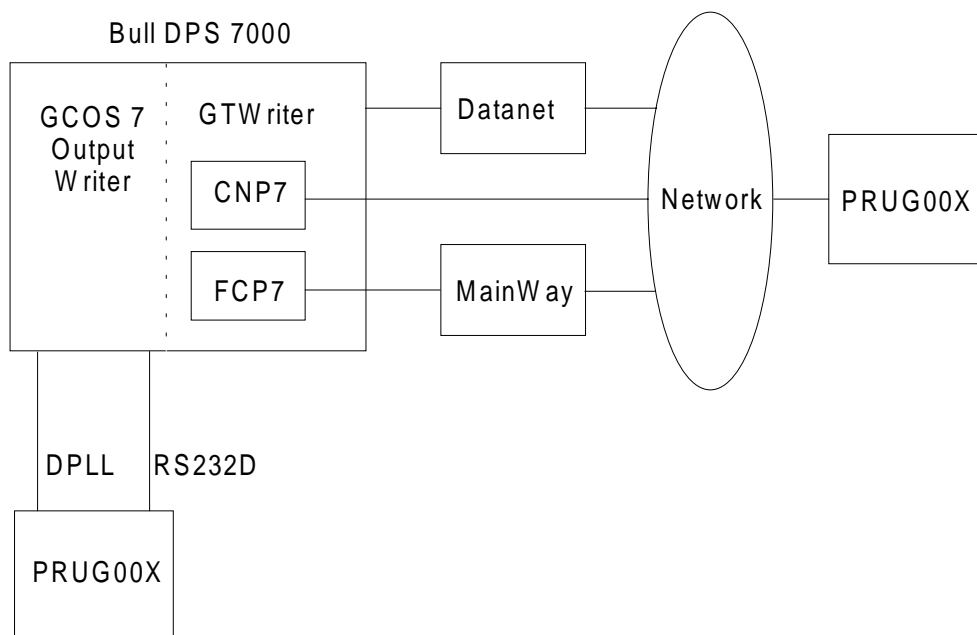
Figure 1-1. PRUG00X Connections

2. Specifying SYS.URCINIT Values

This chapter discusses the values to be specified in the SYS.URCINIT file for PRUG00X (PRX01) printers.

The SYS.URCINIT file is updated using the GCOS 7 URINIT utility (Unit Record INITialization).

For a complete description of SYS.URCINIT and URINIT, refer to the manual *GCOS 7 System Operator's Guide*.

2.1   THE SYS.URCINIT FILE

As each DPS 7000 installation has customized its SYS.URCINIT file by introducing parameter values to suit its own applications, there is no longer a unique SYS.URCINIT which can be considered as a reference version of the file. Consequently, the file is maintained by applying updates to the existing file not by creating a new one.

Each GCOS 7 Technical Status brings an "update file" to be applied to SYS.URCINIT. This "update file" is a source member named UREXT of the SL library SYS.HSLLIB. The customer applies UREXT to SYS.URCINIT using the URINIT utility.

Since GCOS 7-V6 TS 6152, UREXT contains the belt images (item BPRU) and the translation tables (item KPRU) for the PRUG00X printers (PRX01).

2.2   BELTS

2.2.1   Belt Types

In general, the existing PR54 printers have the following two types of belt:

- a 500 type belt (upper case, numerics, and special characters),

- a 600 type belt (upper case, lower case, numerics, and special characters).

Each of these belts has an associated belt code (BELTCODE), a value for the space character (SPVALUE), and a substitution character (INVCHAR). The substitution character is printed instead of each character which is not present on the belt.

The above two belts are accessible via the index table I1 (item IPRU). Concatenating item IPRU to the form (item FPRU) gives the media name. I10000 is the default media name for GCOS 7.

The belts E500 and E600 have BELTCODE values of 500 and 600 respectively.

2.2.2   Changing Belts

For a PR54 or PR88 printer, you change a belt by manually dismounting the "old" belt and remounting the "new" belt. The remounting leads to an AVR (Automatic Volume Recognition) which sends GCOS 7 the value of BELTCODE (for the "new" belt). The Output Writer searches the table of index tables (for example, I1) to find the image of a belt with a BELTCODE equal to the value (sent by AVR). Note that the search stops at the first matching BELTCODE. The Output Writer initializes the printer with the other parameters (SPVALUE, INVCHAR) and translation table (if necessary).

2.2.3   Belts for PRUG00X Printers

For PRUG00X printers (PRX01 family), the concept of a physical (hardware) belt does not exist. However, for reasons of compatibility (SPVALUE, INVCHAR, etc.), the concept of a software belt still exists for these printers. Belts to be used by these printers must have PR90_ as a prefix.

The value of BELTCODE for such belts must always be 0 (zero). This restriction means that you cannot define more than one such belt for the same index table. Except for the parameter values SPVALUE and INVCHAR, GCOS 7 does not use the contents of such belts.

Only ASCII characters should be sent to PRUG00X printers (PRX01). Characters sent from GCOS 7 are translated either by the translation table associated with the belt (if any) or by an internal table (in the Output Writer). Translation tables for these belts must be EBCDIC/ASCII conversion and must contain the keyword NCHECK.

The above may be summarized in the following rules:

1.   Any belt to be used by PRX01 printers **must have PR90_ as a prefix**.

2.   You can define only **one such belt in an index table**.

3.   All translation tables for such belts must give **EBCDIC/ASCII conversion** and must contain the **keyword NCHECK**.

If these rules are not observed, the printer output will not be intelligible.

2.2.4   Objects Delivered with GCOS 7

The member UREXT of SYS.HSLLIB contains 4 belt images and the associated 4 translation tables for PRUG00X printers. These objects are described in Appendix A.

2.3   PRINTING SYS.URCINIT CONTENTS

Before modifying this file, you should print its contents by running the following job:

```
$JOB PRINT_URC [HOLDOUT];
$URINIT COMFILE=*ITEM;
$INPUT ITEM;
PRINT *;
$ENDINPUT;
$ENDJOB;
```

Part of the output of this job is shown in Appendix B.

Note in particular the section indicated by "****** INDEX TABLE.   IPRU", and check the items in each index table and in particular the index table I1. Note that the index tables I1 and G1 both already contain 7 objects (the maximum allowed).

2.4 MODIFYING SYS.URCINIT CONTENTS

It is necessary to modify SYS.URCINIT to introduce the 4 PRX01 belts supplied in UREXT (see above and Appendix A).

Belts to be Introduced

The names of these belts are:

- PR90_500,

- PR90_600,

- PR90_611,

- PR90_PLW.

Choosing Index Tables

You may choose any 4 of the index tables (see Appendix B) to introduce these 4 belts. For the purpose of the discussion here, it has been decided to use the index tables I1, I2, I4, and I6 and this choice applies to the rest of this manual. However, you must remember that this is an arbitrary choice and in practice may be replaced by any other choice.

Since index table I1 already contains the maximum number of objects (7), you cannot add a new object. Instead, an existing object has to be replaced. The existing object EH112_63 has a BELTCODE = 0 (even though this fact is not visible in Appendix B) and a standard translating table (EBCDIC/EBCDIC, not suitable for PRX01).

Since EH112_63 cannot be used for our purposes (BELTCODE = 0), it is decided to replace it by the belt PR90_PLW.

The index tables I2, I4, and I6 each contains fewer than 7 objects (and therefore new objects may be added). However, they contain no belts with BELTCODE = 0. It is decided to introduce the belts PR90_500 (in I2), PR90_600 (in I4), and PR90_611 (in I6).

Updates to be Made

To summarize, the following are to be introduced:

- Belt PR90_PLW, table JT, in I1,

- Belt PR90_500, table JR, in I2,

- Belt PR90_600, table JS, in I4,

- Belt PR90_611, table JQ, in I6.

The job to make these changes is shown in Appendix C.

By re-running the job PRINT_URC, you can see the results of the job which made the changes. These results are shown in Appendix D.

You may decide to introduce new belts and/or translation tables at any time. However, you must check that the substitution character INVCHAR exists in each "new" translation table. The character "00"X (in EBCDIC) must always be translated to a space character (as for the PR54 printer). **The EBCDIC characters "01"X through "3F"X must have no translation except to INVCHAR** (as these are generally reserved special characters).

The standard character sets are described in the manual *GCOS 7 System Operator's Guid*e.

The 4 character sets for PRX01 are shown in Appendix E.

3. Specifying CONFIG Values

This chapter discusses the values to be specified at CONFIG time for PRUG00X (PRX01) printers.

3.1 INTRODUCTION

3.1.1 Phases of an Output

For the purpose of this discussion, a printer output is produced in two phases:

- Creation of the Output (by the GCOS 7 Output Writer),

- Actual Printing of the Output (by a printer).

The second phase may take place immediately after the first phase or it may take place much later. Further, the printer on which the second phase takes place may be physically distant from the place where creation takes place.

3.1.2 Columns in Printers

Printers do not necessarily all have the same number of columns.

It is necessary to specify the maximum number of columns in an output at the creation phase. GCOS 7 has a facility to do this using the OWDFLT parameter of CONFIG. OWDFLT specifies the default value for the number of columns in an output.

If your site has a single type of printer (and therefore all with the same number of columns), you can use OWDFLT instead of specifying the number of columns at the output creation phase.

If your site has printers with different number of columns, you can use OWDFLT to define a default value.

3.1.3   PR54, Mathilde, and PRX01 Printers

The PR54 is a 136 column printer.

Mathilde is a 160 column printer.

The PRUG00X (PRX01) for 136 column printer if the default factory specified DPS 7000 configuration of 13,6 inches at 10 CPI has not been modified.

3.1.4   Problem Due to Difference in Number of Columns

Sites which have printers with different number of columns should take this into account when specifying the OWDFLT value. An example a problem which can result if this is not done is given below.

A site with both Mathilde and PRX01 (PRUG00X) printers specified an OWDFLT value of 160. LIBMAINT created an output based on 160 columns. This output was subsequently printed on a PRX01 printer. If this PRX01 operate at a 136 columns value, it folded any lines longer than 136 columns (the "truncate" option was not selected). The folded lines caused certain output pages to exceed the page length (and "overflow" onto the following page).

To avoid such problems, please implement the recommendations given below.

3.2   RECOMMENDED OWDFLT VALUE

If your site has printers with different number of columns, **you are recommended to set OWDFLT to the smallest value** (of the printers concerned).

If you cannot do this, or it causes other problems, **you must define the correct values for each case via the parameter DVC=PR/Hxx of $SYSOUT and/or $WRITER**.

4. Printer Management

This chapter discusses how to manage PRUG00X (PRX01) printer operations.

It discusses both normal operations and how to handle problems.

4.1   NORMAL OPERATIONS

4.1.1   Loading Paper

1.   Open the platen (anvil).

2.   Open the tractor gates.

3.   Load the paper in the printer.

4.   Place the paper on the tractor sprockets.
      Move the tractors horizontally to fit the paper width.

5.   Adjust the distance between the tractors until the paper is slightly stretched (no slack).

6.   Lock the tractors.

4.1.2   Adjusting for Paper Thickness (Closing the Platen)

> **NOTE:**   You must note the position of the platen lever (forms thickness lever) before starting the Paper Positioning operation (described in next paragraph).

1.   Load the paper in the printer.

2.   Position the front paper fold opposite the guide mark on the left tractor.
Listing paper is delivered folded. If you pull up a few pages of such paper, you will notice that at one fold the front of the paper bulges towards you (front fold) and at the next fold, the front of the paper bulges away from you (back fold). The paper must be positioned at a front fold.

Paper folds are shown in Figure 4-1.
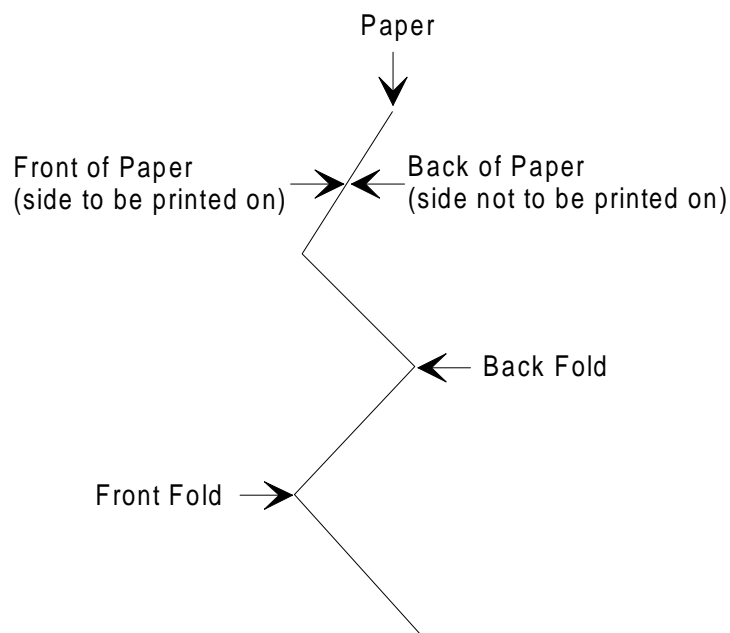
Figure 4-1. Paper Folds

3.   Close the platen (position "C").

4.   Press CLEAR.

5.   Press TOF.

6.   Open the platen.

7.   Press CLEAR.

8.   Place an A4 sheet of about 70 to 80 g/m2 (photocopier type paper) between the listing paper and the print block.

9.   Close the platen until the A4 sheet is firmly held.

10.   Pull strongly on the A4 sheet and at the same time open the platen very slowly until the A4 sheet comes free.

11.   Note the position of the platen lever at which the A4 sheet came free.
This position will be used in subsequent settings.

NOTES: 1.   **Never tighten the position of the platen lever beyond the position noted at step 8 above.** If you do, the print quality will deteriorate (smeared ink, wavy print, etc.) and the vertical paper positioning (see paragraph 4.1.3) will be disturbed.

2.   For wide paper, perform the above operation with the A4 sheet at both the left and the right of the print block. If there is a significant difference between the left and right readings (taken at step 8), call your printer maintenance support.

4.1.3   Positioning the Paper (Vertically)

1.   Turn the vertical positioning knob until a paper fold is opposite the guide mark on the left tractor.

2.   Close the platen.

3.   Press CLEAR.

4.   Press TOF.

5.   Paper Movement

6   The paper is moved backwards to be positioned on the first line of the sheet.

7.   Press ON LINE.

4.1.4   Arranging Paper in the Stacker

1.   Move the stacker platform to its maximum height using the manual button.

2.   Remove or re-make the existing paper stack in the stacker.

3.   Check and adjust (if necessary) the distance between the front and back stacker paper gates to fit the paper height.

4.   Install the paper in the printer.

5.   Position the paper.

6.   Bring the first two pages to the level of the stacker platform, either by:

6.1   Pressing one or more PAPER ADVANCE,

      or

6.2   Pressing ON LINE/OFF LINE alternately, to print some pages.

7   Fold the paper in the stacker following the natural paper folds.

8.   Lower the stacker platform using the manual button.

9.   Make the printer ON LINE.

4.1.5   Handling Multi-Part Paper

PRX01 printers have an platen lever (or forms thickness lever) used to adjust the printer for the actual paper thickness. This lever has three main settings: A (for thin paper), B (for medium paper), and C (for thick paper). You can also position the lever anywhere between the three main settings.

If the lever is set too loosely (that is towards C), the resulting printed output will be too light (perhaps even illegible). If the lever is set too tightly (that is towards A), paper jams, smeared ink, and/or wavy print may result. With experience, the operator should learn the appropriate setting for each type of paper used at your installation.

Refer to paragraph 4.1.2 to determine the appropriate position of the lever.

4.1.6 Managing Ribbon Life

The figures given below for ribbon life are approximate. They are given to help you plan and manage ribbon consumption. These values are not to be interpreted as being contractual.

Ribbon Life (PRX01)

The approximate life of PRX01 ribbons are shown below:

Bull Express Reference No.	Ribbon Length	Application	Approximate Ribbon Life
4360	60 yards	General	150,000 lines 136 characters per line at 10 CPI.
4396	100 yards	General	220,000 lines 136 characters per line at 10 CPI.
4361	60 yards	OCR & Bar Code	90,000 lines 136 characters per line at 10 CPI.
4404	100 yards	OCR & Bar Code	150,000 lines 136 characters per line at 10 CPI.

Reference supply for one ribbon. This reference followed by "-A" supplies a 6 ribbons box. The figures given above are for the approximate life of a single ribbon (not a box).

RibbonMinder^{TM}

PRX01 printers have a facility to manage the consumption of ribbon ink. This facility is called RibbonMinder^{TM}. When the RibbonMinder^{TM} is enabled, it warns the operator whenever the print quality goes below a pre-set level (that is, the amount of ink falls below a certain level).

RibbonMinder^{TM} displays the amount of ink remaining in the ribbon. This appears on the on the printer's operator panel.

New Ribbon

Just after the installation of a new ribbon, this display is as shown in Figure 4-2.

```
┌─────────────────────────┐
│ On-Line         100%    │
│ Line Printer +          │
└─────────────────────────┘
```
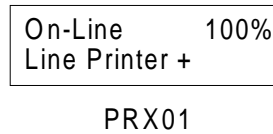PRX01

Figure 4-2. RibbonMinder^{TM} Display

The amount of ink is presented as a percentage as follows:

- 100% = full = new ribbon,
- -100% = empty = ribbon fully used.

Change Ribbon Message

One the value 0% is reached, the printer stops and the message "RIBBON INK OUT, CHANGE RIBBON" is displayed on the printer's operator panel. This is shown in Figure 4-3.

```
┌─────────────────────────┐
│ RIBBON INK OUT          │
│ CHANGE RIBBON           │
└─────────────────────────┘
```
PRX01

Figure 4-3. Ribbon Fault Display

The operator is requested to change the ribbon. However, the operator can allow printing to continue (without changing the ribbon) by pressing CLEAR then ON LINE. Printing cannot continue beyond except a new printing session of two minutes (the ribbon must then be changed).

Determining the Job Rate

RibbonMinder^{TM} works more efficiently if each print job is analyzed and its print workload obtained. The print workload is expressed as a Job Rate. The Job Rate is a number between -99% (the highest ink usage rate) and 99% (the lowest ink usage rate).

NOTE: if the printing rate is 1000 pages for a value of 0%, by setting this value at 10%, the printing rate will be 1100 pages (1000 + 10%) before the display goes to 0%.

So, if this value is set at -20%, the printing rate will be 800 pages (1000 - 20%) before the display goes to 0%.

The Job Rate is determined as follows:

- Analyze each print job and determine its Job Rate. This procedure is described in the *Printer's Setup Guide*.
- Always use a new ribbon when doing the analysis.

4.2   INCIDENTS NEEDING RECOVERY

In this context, recovery implies performing some actions on the printer and then re-starting the printing operation from an earlier point (perhaps from the beginning).

4.2.1   How Do You Know that Such an Incident has Occurred?

You can "see" that an incident has occurred on a PRUG00X (PRX01) printer both from the GCOS 7 console and from the printer's own operator panel.

PRUG00X incidents have the following visible effects:

- A message "RECOVER PRxx" is displayed on the GCOS 7 console. The "ON LINE" light on the printer goes out.

- The message "OFF LINE" appears on the first line of the printer's operator panel.

- A brief description of the incident appears on the second line of the printer's operator panel.

4.2.2   List of Incidents

The following PRUG00X (PRX01) printer incidents need recovery:

- Paper Jam Requiring Re-Printing (torn paper, crumpled paper, etc.).

- Ribbon Incident Requiring Re-Printing (print illegible). Other Incident Not Requiring Re-Printing But Preventing Correct Print Completion.

- These include shuttle jammed, ribbon motor problems, cooling system problems, memory problems, hammer coiling power supply problems, logical font management problems, program management problems, other incidents which block the printer.

4.2.3   Operator Action After Incident

You do the following:

1. Reply "CR PRxx" to the message "RECOVER PRxx" (on the GCOS 7 console) to force the display of the "RESTART FROM?" message (see also the paragraph "Replying to the RESTART FROM? Message" below).

2. Correct the physical fault on the printer.
   For example, in the case of a paper jam, remove the paper causing the jam, etc. as described in the *Printer's Operator Guide*.
   If you cannot correct the physical fault on the printer, put the Output Writer in the "HOLD" state and call your printer maintenance center.

3. Press the "CLEAR" button on the printer.

4. Press the "ON LINE" button on the printer.

5. Reply to the "RESTART FROM?" message (on the GCOS 7 console), thereby causing printing to re-start.

4.2.4   Replying to the RESTART FROM? Message

The following paragraphs discuss how you determine the "restart" page number.

Page Numbering

Because of double buffering between GCOS 7 and the printer's firmware, there is rarely exact synchronization between the current page for GCOS 7 (say page "n") and the last page physically printed by the printer ("n - x", where x > 0). Under normal operations, this lack of synchronization does not pose any problems. However, when an output has to be restarted from the last "good" page, it is not necessarily obvious what the number of the last "good" page was.

Adjusting the Page Number

As from TS 7254, GCOS 7 displays the current page number ("n") when asking the question "RESTART FROM" for an output to be recovered.

The operator must then reply "n-x" and not "n" to the "RESTART FROM" question (where "x" is the operator's estimate of the difference between the GCOS 7 page number and the printer's page number).

4.2.5   Automatic Recovery

GCOS 7 has sent all the output to the printer and so its "current page" counter is undefined. This may happen in the following cases:

- start banner printed

- end of output

- end banner printed

In this case, the "RESTART FROM?" message appears after the "RECOVER PRxx" message (on the GCOS 7 console) **automatically** (without the operator entering a "CR PRxx" command).

In this case, the operator must also follow the procedure described in paragraph: Operator Action After Incident.

4.3   INCIDENTS NOT NEEDING RECOVERY

In this case, you must perform some actions on the printer but you do not need to re-start the printing operation (from an earlier point).

4.3.1   How Do You Know that Such an Incident has Occurred?

You can "see" that an incident has occurred on a PRUG00X (PRX01) printer both from the GCOS 7 console and from the printer's own operator panel.

PRUG00X incidents have the following visible effects:

- A message "RECOVER PRxx" is displayed on the GCOS 7 console.
- The "ON LINE" light on the printer goes out.
- The message "OFF LINE" appears on the first line of the printer's operator panel.
- A brief description of the incident appears on the second line of the printer's operator panel.

4.3.2   List of Incidents

The following PRUG00X (PRX01) printer incidents do not need recovery:

- End of Paper (that is, "Paper Out").
- False Paper Jam (that is, paper jam falsely indicated).
- Paper Jam at Tractor Level Not Requiring Re-Printing.
- Paper Jam at Stacker Level (not PR701).
- Stacker Full (not PR701).
- Ribbon Incident Not Requiring Re-Printing.

4.3.3   Action After Incident

You do the following:

1.   Correct the physical fault on the printer.
      For example, in the case of a paper jam, remove the paper causing the jam, etc. as described in the Printer's *Operator Guide*.
      In the case of "Paper Out", load the new paper, position the paper, etc. as described in paragraphs 4.1.1, 4.1.2, and 4.1.3 above.

2.   Press the "CLEAR" button on the printer.

3.   Press the "ON LINE" button on the printer.

4.   Printing restarts automatically (no operator action required on the GCOS 7 console).

4.4   SETTING PARAMETER VALUES

You must not change printer parameters while printing is in progress.

4.4.1   Configuring PRUG00X Printers

Refer to the *PR701, 801, 901 Operator's Guide* to see the operator panel actions necessary to configure the printer, plus chapters 3 and 4, in: *PR701, 801, 901 Setup Guide Manual .*

4.4.2   PRUG00X Print Formats

You can change the fonts and character formats supplied implicitly in the basic printer configuration. You do this using the printer's operator panel. You cannot do this from GCOS 7.

GCOS 7 manages the following:

- the number of columns to be printed (independent of the width of the paper),
- the page height (for example, 11 inches),
- the vertical density (6 or 8 lines per inch),
- the programmed channel jumps.

To change the character formats and the fonts, refer to the *PR701/801/901 Operator's Guide*, and chapters 3 and 4 of the *PR701, 801, 901 Set Up Guide.*

4.4.3   PRUG00X (PRX01) Re-Initialization

6 (six) printer configurations are available and can be used to select 6 font and character formats. Configurations 0 (zero):factory configuration, 7 (seven) DPS 7000 configuration , and 8 (eight), UNIX configuration are not available.

Printer Re-Initialization After Change of Media

If you print using a paper form (media) different from that of the preceding print, the printer is re-initialized and the current configuration is replaced by the Power On configuration. Therefore, you must select the configuration you desire by the "Power Up Configuration" before starting the printing operation. After printer initialization, this configuration becomes the implicit configuration.

Printer Re-Initialization After Recovery from an Incident

Unless more than 6 printer configurations are being used, there is no need to re-enter the parameter values.

Example:

You are using the font "DP" (Data Processing) and the density 10 CPI (Characters Per Inch) which have been registered in configuration no: 1. Configuration 1 is your implicit and active configuration.

This is shown in Figure 4-4.

Configuration 1 active	$\longrightarrow$	DP AT 10 CPI 1
Configuration 2	$\longrightarrow$	HS AT 10 CPI 2
Configuration 3	$\longrightarrow$	NLQ AT 10 CPI 3
Configuration 4	$\longrightarrow$	DP AT 12 CPI 4

Figure 4-4. Configuration 1 Active and Implicit

You now want to use the font "NLQ" (Near Letter Quality) and the density 10 CPI (Characters Per Inch) which have been registered in configuration no: 3.

However, since Configuration 1 is your current and active configuration, you must change configuration. You do this as follows:

1.   Press the ON LINE button to set OFF LINE state.

2.   CONFIG. CONTROL display

3.   Press ↑ and ↓ keys to unlock the access menu

4.   Press the ↓ key to display LOAD CONFIG.

5.   Press the ← key or → key to select "POWER UP" config.

6   Press ↓ key and ← → to select the number 3

7.   Press the "ENTER" key to load this configuration

8.   Idem 3, but for lock the access

9.   Press ON LINE

Configuration 3 will be the configuration at every initialization of the printer.

This is shown in Figure 4-5.

Configuration 1 $\longrightarrow$ DP AT 10 CPI

Configuration 2 $\longrightarrow$ HS AT 10 CPI

Configuration 3 active $\longrightarrow$ NLQ AT 10 CPI

Configuration 4 $\longrightarrow$ DP AT 12 CPI

Figure 4-5. Configuration 3 Active and Implicit

5. Using PRUG00X via GTWRITER

This chapter discusses the use of PRUG00X printers connected to a DPS 7000 via a network. From a GCOS 7 point of view, the outputs sent to such printers are handled by GTWriter.

This chapter gives the recommended parameter values to be specified for GTWriter and for the telecommunication components (Datanet, CNP7, MainWay 2000) concerned.

5.1 TELECOMMUNICATION COMPONENTS

5.1.1 PRUG00X in a Datanet (DNS V4) Generation

Below is an example of the part of a generation file (DNS V4 for a Datanet) concerning a PRUD001 (PR90) printer.(old device)

Part of DNS V4 Generation File:

Items of particular interest to this example are shown in **bold** and are explained below.

```
.....
&
&==  Declaring an asynchronous PL for a PR90 printer
&
LL 6A01 ASY -PL 6A01 –ASC2 –T2 32700
PL 6A01 ASY –PHTP 296A –SPD 19200 –PHAD X'1500' -CT CT10 –NBUFF &
              -SB SBPL –SWITCH 600
DEVICE XERO ASY -MD RX3700 –NOBANN –DLALL –LCON –SPEED 19200 &
              –LOWCAS –ECHOFF –BUFTAP 30 -LL 6A01
&
.....
.....
&
&==  Declaring an asynchronous MD for a PR90 printer
&
MD A2 ASY
&
MD RX3700 ASY -SPEED 30 -STOP 1 2 -LINE 0 -PAGE 0 -FILLFF 0 -LIKE A2

....
```

Explanation of DNS V4 Generation File:

The LL command declares a logical line named 6A01. It is mapped to the physical line named 6A01.

The PL command declares a physical line named 6A01. It is connected to the controller named CT10.

The DEVICE macro is mapped to a non-standard model (MD) named RX3700 with the attributes shown. It is also mapped to the logical line (LL) named 6A01.

The MD command declares the model named RX3700. It is declared to be "like" A2 and with the attributes: asynchronous (ASY), 30 characters per second (SPEED), and uses start/stop sequences.   LINE specifies the number of characters (columns) per line. PAGE specifies the number of lines per page. FILLFF specifies the Form Feed Filling Algorithm. Such an algorithm calculates the time that the host must wait before it sends more data. This wait is to give the printer time to advance the paper (as a result of a form feed request).

For a PRUG004 (PR701) printer, you are recommended to specify the following values:

- **LINE = 0** (0 means "undefined"),

- **PAGE = 0** (0 means "undefined"),

- **FILLFF = 0** (0 means "undefined", that is, no algorithm).

You are recommended to set LINE and PAGE to "undefined", so that, GTWriter will calculate the appropriate values for each.

The above discussion and recommendations also apply to PRUG00X (PRX01).

5.1.2   PRUG00X in a CNP7 (CNS A2) Generation

In this case, the PRUG00X is accessed from the DPS 7000 via a CNP7.

The values to be specified for a PRUG00X in a CNS A2 generation are exactly as described above for a Datanet (DNS V4).

5.1.3   PRUG00X in a MainWay (DNS-E) Generation

In this case, the PRUG00X is accessed from the DPS 7000 via a MainWay 2000 (and an FCP7 communications controller).

The values to be specified for a PRUG00X in a MainWay 2000 generation (DNS-E V1) are exactly as described above for a Datanet (DNS V4).

For more details, see the MainWay 2000 documentation.

5.2   SPECIFYING GTWRITER PARAMETERS

In the discussion below, items of particular interest to PRUG00X (PRX01) printers are shown in **bold**.

5.2.1   TERM Statement

In the TERM statement of the GTWriter configuration, you should specify both the **BLOCKINGLG** and the **REALSKIP** parameters.

Example:

```
....
TERM MADN ID=XERO NODE=BYA8 DRIVER=VDAT CLASSLIST=A-Z  AUTO=MAIN
        BLOCKINGLG=4096  REALSKIP ;
....
```

The TERM statement assigns the logical name MADN (name as known to GTWriter) to the identification XERO (name as known to the network generation).

The printer belongs to the node named BYA8 (NODE parameter) and VDAT is the mailbox name of the associated GTWriter driver.

The printer is started by default for classes A through Z (CLASSLIST parameter) and the string MAIN is the prefix to be used by the auto-mechanism (AUTO parameter).

The blocking factor is 4096 characters (**BLOCKINGLG** parameter).

A Form Feed is issued at the end of each logical page (**REALSKIP** parameter).

5.2.2   Terminal Characteristics

GTWriter Generation Output

The following are the terminal characteristics as listed by the GTWriter generation (TWGEN):

```
***************************************************************************
MADN * ID    : XERO    RETRYCT   : 20    INVCHAR : ?   NMOUNT    : N   CLASS : A-Z
     * NODE  : BYA8    MAXCNCT   : 255   NBANNER : N   AUTOMOUNT: N   KEEP  : N
     * DRIVER: VDAT    TYPE      :       FBANNER : 1   FORMLOCK : N   CLOSE : N
     * FORM  : NORM    CSET      : PLW   EBANNER : 1   ACCOUNT  : N   MANUAL: N
     * OWNER :         BLOCKINGLG: 4096  MINIBAN : N   REALSKIP : Y   NOSKIP: N
     * AUTO  : MAIN    BLOCKING  : *     PADDING : 0   REPEATMSG: N   DISCO : N
***************************************************************************
```

Explanation of GTWriter Generation Output

Below, the order of explanation of the items of the above display is from top to bottom and from left to right.

The logical name is MADN (name by which the printer is known to GTWriter).

The terminal identification (ID) is XERO (name by which the printer is known in the network generation). The printer belongs to the node (NODE) named BYA8. The name of the mailbox of the associated GTWriter driver (DRIVER) is VDAT. The form NORM is to be mounted at GTWriter initialization (FORM). The owner is undefined (incidents are referred to the report submitter). The prefix (AUTO) to be used by the auto-mechanism is MAIN.

The retry count is 20 (RETRYCT) . The maximum number of connections to print an output is 255 (MAXCNCT). The type is undefined. The character set (CSET) is PLW. The blocking factor (**BLOCKINGLG**) is 4096 characters.

The substitution character (INVCHAR) for invalid characters is "?". One front banner (FBANNER) and one end banner (EBANNER) are printed. No padding characters are inserted (PADDING).

GTWriter does not issue mount requests for this printer (NMOUNT = N) nor does it automatically change the form if required for the report (AUTOMOUNT = N). System accounting is not activated (ACCOUNT = N). A Form Feed is issued at the end of each logical page (**REALSKIP = Y**). A "printer-name NOT READY" message is not sent at each unsuccessful connection retry (REPEATMSG = N).

The printer is started by default for classes A through Z (CLASS). The printer may be logged off by GTWriter if no reports are waiting (KEEP = N). The printer is to be started at GTWriter initialization (CLOSE = N). The printer does not need to be logged on to the application (MANUAL = N). A Form Feed will be issued at initial connection (NOSKIP = N). The printer is not logged off by GTWriter at the end of each report (DISCO = N).

A. Belt Codes and Translation Tables

This Appendix contains the 4 belt images and 4 translation tables contained in the member UREXT of the library SYS.HSLLIB.

A.1   BELT 500

```
* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE BELT 500 (item BPRU).                             *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE PR90_500 REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =   '-
7EF5F6F7F8C7C8C9D1D2D3E0F04B605C-
61D4D5D6D7D8D97A504DF95D6BE2E3E4-
E5E6E74FF0F1F2F3F4E8E95B7C7B4E5A-
6FF5F6F7F8C1C2C3C4C5C65FF04B605C-
61C7C8C9D1D2D34C6E4DF95D6BD4D5D6-
D7D8D94AF0F1F2F3F4E2E3E4E5E6E75E-
7DF5F6F7F8E8E95B7C7B6C6DF04B605C-
61C1C2C3C4C5C67F7E4DF95D6BC7C8C9-
D1D2D3E0F0F1F2F3F4D4D5D6D7D8D97A-
50F5F6F7F8E2E3E4E5E6E74FF04B605C-
61E8E95B7C7B4E5A6F4DF95D6BC1C2C3-
C4C5C65FF0F1F2F3F4C7C8C9D1D2D34C-
6EF5F6F7F8D4D5D6D7D8D94AF04B605C-
61E2E3E4E5E6E75E7D4DF95D6BE8E95B-
7C7B6C6DF0F1F2F3F4C1C2C3C4C5C67F-
' ) ;


* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE ASSOCIATED TRANSLATION TABLE  (item KPRU).        *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE JR REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
2000000000000000000005B2E3C282B21-
2600000000000000000005D242A293B5E-
2D2F0000000000000000002C255F3E3F-
00000000000000000003A2340273D22-
004142434445464748490000000000000-
004A4B4C4D4E4F505152000000000000-
0000535455565758595A000000000000-
0000000000000000000000000000000-
004142434445464748490000000000000-
004A4B4C4D4E4F505152000000000000-
5C00535455565758595A000000000000-
3031323334353637383900000000000000-
',NCHECK);
```

A.2   BELT 600

```
* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE BELT 600 (item BPRU).                             *
*                                                                  *
* ---------------------------------------------------------------- *


    MOVE PR90_600 REPLACE , BPRU = ( BELTCODE =   0
                                   , SPVALUE =   40
                                   , INVCHAR =   7C
                                   , LENGTH  = 240
                                   , HEXBELT =   '-
C2C4C6C7C8D187E2F0C1C3C5C9D5D6D9-
D3E3818283848586D2888991929394D4-
F0D7D8E4E5E6E7E8E97A5E6F4F6CF7A7-
A895969799A2A3A6F0A9F1F2F3F4F5F6-
7BF8F94B6B4D5D7C5B7E50617DE05F6D-
F07F4C6E4A5A87E2A1C1C3C5C9D5D6D9-
C0E3818283848586F0888991929394D0-
6A79605C4E98A4A5C2C4C6C7C8D1F7A7-
F095969799A2A3A6D3A9F1F2F3F4F5F6-
D2F8F94B6B4D5DD4F0D7D8E4E5E6E7E8-
E97A5E6F4F6C87E2A8C1C3C5C9D5D6D9-
F0E38182838485867B8889919293947C-
5B7E50617DE05F6DF07F4C6E4A5AF7A7-
A195969799A2A3A6C0A9F1F2F3F4F5F6-
F0F8F94B6B4D5DD06A79605C4E98A4A5-
' ) ;


* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE ASSOCIATED TRANSLATION TABLE  (item KPRU).        *
*                                                                  *
* ---------------------------------------------------------------- *


    MOVE JS REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
200000000000000000005B2E3C282B21-
260000000000000000005D242A293B5E-
2D2F00000000000000007C2C255F3E3F-
00000000000000000000603A2340273D22-
006162636465666768690000000000000-
006A6B6C6D6E6F707172000000000000-
007E737475767778797A00000000000-
0000000000000000000000000000000-
7B4142434445464748490000000000000-
7D4A4B4C4D4E4F505152000000000000-
5C00535455565758595A000000000000-
303132333435363738390000000000000-
',NCHECK);
```

A.3 BELT 611

```
* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE BELT 611 (item BPRU).                             *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE PR90_611 REPLACE , BPRU = ( BELTCODE =   0
                               , SPVALUE  =  40
                               , INVCHAR  =  6F
                               , LENGTH   = 240
                               , HEXBELT  =  '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
40004243444546474800 4A4B4C4D4E4F-
50515253545556575800 5A5B5C5D5E5F-
606162636465666768696A6B6C6D6E6F-
0071727374757677780 07A7B007D7E7F-
008182838485868788899 00000000000-
009192939495969798999 00000000000-
0000A2A3A4A5A6A7A8A9 000000000000-
000000000000000000000000000000000-
C0C1C2C3C4C5C6C7C8C900 CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900 DBDCDDDE00-
E000E2E3E4E5E6E7E8E900 EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900 FBFCFDFE00-
');


* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE ASSOCIATED TRANSLATION TABLE (item KPRU).         *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE JQ REPLACE , KPRU = ( HEXTBL = '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
2000E2E4E0E1E3E5E700 5B2E3C282B21-
26E9EAEBE8EDEEEFEC00 5D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
00C9CACBC8CDCECFCC00 3A2340273D22-
006162636465666768690 00000000000-
006A6B6C6D6E6F707172 0000000000-
0000737475767778797A 000000000000-
000000000000000000000000000000000-
7B41424344454647484900 F4F6F2F3F5-
7D4A4B4C4D4E4F50515200 FBFCF9FA00-
5C00535455565758595A00 D4D6D2D3D5-
303132333435363738390 0DBDCD9DA00-
',NCHECK);
```

A.4   BELT PLW

```
* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE BELT PLW (item BPRU). PLW = Pluri Lingual West.   *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE PR90_PLW REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE =   40
                                , INVCHAR =   7C
                                , LENGTH  = 240
                                , HEXBELT =   '-
00000000000000000000000000000000-
00000000000000000000000000000000-
00000000000000000000000000000000-
00004243444546474849494A4B4C4D4E4F-
5051525354555657585960605A5B5C5D5E5F-
6061626364656667686960A6B6C6D6E6F-
707172737475767778797A7B7C7D7E7F-
8081828384858687888900000000008F-
9091929394959697989990A9B9C009E9F-
A0A1A2A3A4A5A6A7A8A9AAAB00000000-
00B10000000B5B600000000000BDBE00-
C0C1C2C3C4C5C6C7C8C900CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900DBDCDDDE00
E000E2E3E4E5E6E7E8E900EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900FBFCFDFE00-
');


* ---------------------------------------------------------------- *
*                                                                  *
*   IMAGE OF THE ASSOCIATED TRANSLATION TABLE (item KPRU).         *
*                                                                  *
* ---------------------------------------------------------------- *


MOVE JT REPLACE , KPRU = ( HEXTBL = '-
00000000000000000000000000000000-
00000000000000000000000000000000-
00000000000000000000000000000000-
00000000000000000000000000000000-
2000E2E4E0E1E3E5E7F15B2E3C282B21-
26E9EAEBE8EDEEEFECDF5D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
F8C9CACBC8CDCECFCC603A2340273D22-
D86162636465666768690000000000B1-
B06A6B6C6D6E6F707172AABAE600C6A4-
757E737475767778797AA1BF00000000-
00A3000000A771000000000000A8B400-
7B41424344454647484900F4F6F2F3F5-
7D4A4B4C4D4E4F50515200FBFCF9FA00-
5C00535455565758595A00D4D6D2D3D5-
30313233343536373839000DBDCD9DA00-
',NCHECK);
```

B. Index Table Before Modification

This Appendix shows the contents of the Index Table before making the modifications for the PRUG00X printers (that is, before running the update job shown in Appendix C).

```
*******  INDEX TABLE.       IPRU
INIT_NAME: G1
          BPRU       = G500         KPRU         = JG
          BPRU       = G601         KPRU         = BG
          BPRU       = G200         KPRU         = JG
          BPRU       = G700
          BPRU       = G600         KPRU         = JG
          BPRU       = GH112_63     KPRU         = JG
          BPRU       = G559         KPRU         = JG
INIT_NAME: G2
          BPRU       = G501         KPRU         = JG
          BPRU       = G502         KPRU         = JG
INIT_NAME: G3
          BPRU       = GH112_96     KPRU         = JG
          BPRU       = G601         KPRU         = BG
INIT_NAME: G7
          BPRU       = GI51_64      KPRU         = JG
INIT_NAME: I1
          BPRU       = E500         KPRU         = J1
          BPRU       = EH112_63     KPRU         = J1
          BPRU       = E200         KPRU         = J1
          BPRU       = E703
          BPRU       = E600
          BPRU       = E501         KPRU         = J1
          BPRU       = E800         KPRU         = J1
INIT_NAME: I2
          BPRU       = E600
          BPRU       = E600         KPRU         = B2
INIT_NAME: I3
          BPRU       = EH112_96
INIT_NAME: I4
          BPRU       = E700
INIT_NAME: I5
          BPRU       = E501
          BPRU       = E502
          BPRU       = E503
          BPRU       = E504
          BPRU       = E505
INIT_NAME: I6
          BPRU       = E511
          BPRU       = E512
          BPRU       = E513
INIT_NAME: I7
          BPRU       = EI51_64
```

C. Updating SYS.URCINIT

This Appendix contains the job to update SYS.URCINIT. It also contains the result of the update job.

C.1   UPDATE JOB

Below is the job to update SYS.URCINIT.

```
$JOB UPDT_URC HOLDOUT;
$URINIT COMFILE=*ITEM;
$INPUT ITEM;
MOVE PR90_500 REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =  '-
7EF5F6F7F8C7C8C9D1D2D3E0F04B605C-
61D4D5D6D7D8D97A504DF95D6BE2E3E4-
E5E6E74FF0F1F2F3F4E8E95B7C7B4E5A-
6FF5F6F7F8C1C2C3C4C5C65FF04B605C-
61C7C8C9D1D2D34C6E4DF95D6BD4D5D6-
D7D8D94AF0F1F2F3F4E2E3E4E5E6E75E-
7DF5F6F7F8E8E95B7C7B6C6DF04B605C-
61C1C2C3C4C5C67F7E4DF95D6BC7C8C9-
D1D2D3E0F0F1F2F3F4D4D5D6D7D8D97A-
50F5F6F7F8E2E3E4E5E6E74FF04B605C-
61E8E95B7C7B4E5A6F4DF95D6BC1C2C3-
C4C5C65FF0F1F2F3F4C7C8C9D1D2D34C-
6EF5F6F7F8D4D5D6D7D8D94AF04B605C-
61E2E3E4E5E6E75E7D4DF95D6BE8E95B-
7C7B6C6DF0F1F2F3F4C1C2C3C4C5C67F-
' ) ;
MOVE JR REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
2000000000000000000005B2E3C282B21-
2600000000000000000005D242A293B5E-
2D2F000000000000000002C255F3E3F-
000000000000000000003A2340273D22-
0041424344454647484900000000000-
004A4B4C4D4E4F505152000000000000-
0000535455565758595A000000000000-
0000000000000000000000000000000-
0041424344454647484900000000000-
004A4B4C4D4E4F505152000000000000-
5C00535455565758595A000000000000-
3031323334353637383900000000000-
',NCHECK);
```

```
MOVE PR90_600 REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE  =  40
                                , INVCHAR  =  7C
                                , LENGTH   = 240
                                , HEXBELT  =   '-
C2C4C6C7C8D187E2F0C1C3C5C9D5D6D9-
D3E3818283848586D2888991929394D4-
F0D7D8E4E5E6E7E8E97A5E6F4F6CF7A7-
A895969799A2A3A6F0A9F1F2F3F4F5F6-
7BF8F94B6B4D5D7C5B7E50617DE05F6D-
F07F4C6E4A5A87E2A1C1C3C5C9D5D6D9-
C0E3818283848586F0888991929394D0-
6A79605C4E98A4A5C2C4C6C7C8D1F7A7-
F095969799A2A3A6D3A9F1F2F3F4F5F6-
D2F8F94B6B4D5DD4F0D7D8E4E5E6E7E8-
E97A5E6F4F6C87E2A8C1C3C5C9D5D6D9-
F0E38182838485867B8889919293947C-
5B7E50617DE05F6DF07F4C6E4A5AF7A7-
A195969799A2A3A6C0A9F1F2F3F4F5F6-
F0F8F94B6B4D5DD06A79605C4E98A4A5-
' ) ;
MOVE JS REPLACE , KPRU = ( HEXTBL = '-
000000000000000000000000000000000-
000000000000000000000000000000000-
000000000000000000000000000000000-
000000000000000000000000000000000-
20000000000000000005B2E3C282B21-
260000000000000000005D242A293B5E-
2D2F0000000000000007C2C255F3E3F-
00000000000000000603A2340273D22-
00616263646566676869000000000000-
006A6B6C6D6E6F707172000000000000-
007E737475767778797A000000000000-
000000000000000000000000000000000-
7B4142434445464748490000000000-
7D4A4B4C4D4E4F505152000000000000-
5C00535455565758595A000000000000-
30313233343536373839000000000000-
',NCHECK);
MOVE PR90_611 REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE  =  40
                                , INVCHAR  =  6F
                                , LENGTH   = 240
                                , HEXBELT  =   '-
000000000000000000000000000000000-
000000000000000000000000000000000-
000000000000000000000000000000000-
4000424344454647480004A4B4C4D4E4F-
5051525354555657580005A5B5C5D5E5F-
60616263646566676869006A6B6C6D6E6F-
007172737475767778007A7B007D7E7F-
00818283848586878889000000000000-
00919293949596979899000000000000-
0000A2A3A4A5A6A7A8A9000000000000-
000000000000000000000000000000000-
C0C1C2C3C4C5C6C7C8C900CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900DBDCDDDE00-
E000E2E3E4E5E6E7E8E900EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900FBFCFDFE00-
');
```

```
MOVE JQ REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
2000E2E4E0E1E3E5E7005B2E3C282B21-
26E9EAEBE8EDEEEFEC005D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
00C9CACBC8CDCECFCC003A2340273D22-
0061626364656667686900000000000-
006A6B6C6D6E6F707172000000000000-
0000737475767778797A000000000000-
0000000000000000000000000000000000-
7B41424344454647484900F4F6F2F3F5-
7D4A4B4C4D4E4F50515200FBFCF9FA00-
5C00535455565758595A00D4D6D2D3D5-
30313233343536373839 00DBDCD9DA00-
',NCHECK);
MOVE PR90_PLW REPLACE , BPRU = ( BELTCODE =  0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =  '-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
000042434445464748494A4B4C4D4E4F-
505152535455565758595A5B5C5D5E5F-
606162636465666768696A6B6C6D6E6F-
70717273747576777879 7A7B7C7D7E7F-
808182838485868788890000000000008F-
909192939495969798999A9B9C009E9F-
A0A1A2A3A4A5A6A7A8A9AAAB00000000-
00B10000000B5B600000000000BDBE00-
C0C1C2C3C4C5C6C7C8C900CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900DBDCDDDE00
E000E2E3E4E5E6E7E8E900EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900FBFCFDFE00-
');
MOVE JT REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
0000000000000000000000000000000000-
2000E2E4E0E1E3E5E7F15B2E3C282B21-
26E9EAEBE8EDEEEFECDF5D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
F8C9CACBC8CDCECFCC603A2340273D22-
D8616263646566676869 0000000000B1-
B06A6B6C6D6E6F707172AABAE600C6A4-
757E737475767778797AA1BF00000000-
00A3000000A771000000000000A8B400-
7B41424344454647484900F4F6F2F3F5-
7D4A4B4C4D4E4F50515200FBFCF9FA00-
5C00535455565758595A00D4D6D2D3D5-
30313233343536373839 00DBDCD9DA00-
',NCHECK);
```

```
MOVE I1 REPLACE IPRU=((BPRU=E500    ,KPRU=J1)
                     ,(BPRU=PR90_PLW,KPRU=JT)
                     ,(BPRU=E200    ,KPRU=J1)
                     ,(BPRU=E703            )
                     ,(BPRU=E600            )
                     ,(BPRU=E501    ,KPRU=J1)
                     ,(BPRU=E800    ,KPRU=J1));
MOVE I2 REPLACE IPRU=((BPRU=PR90_500,KPRU=JR)
                     ,(BPRU=E600            )
                     ,(BPRU=B600    ,KPRU=B2));
MOVE I4 REPLACE IPRU=((BPRU=E700            )
                     ,(BPRU=PR90_600,KPRU=JS));
MOVE I6 REPLACE IPRU=((BPRU=E511            )
                     ,(BPRU=E512            )
                     ,(BPRU=E513            )
                     ,(BPRU=PR90_611,KPRU=JQ));
$ENDINPUT;
$ENDJOB;
```

C.2   RESULT OF UPDATE JOB

Below is the JOR of the job to update SYS.URCINIT.

To improve legibility and to enable the information to fit on the manual pages, certain non-significant information (for examples asterisks and spaces) has been suppressed.

```
URINIT 15 X6606.1   UPDT_URC  BULL.SA    CSI
09:19:30  MAR 29, 1995   PAGE  1
*************************************************************
*************************************************************
****   GCOS 7                                          ****
                        U R I N I T                    ****
*** VERSION: 15    DATED MAY 15, 1979                  ****
*****URINIT.OUTPUT*****************************************
*************************************************************
MOVE PR90_500 REPLACE , BPRU = ( BELTCODE =  0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =  '-
7EF5F6F7F8C7C8C9D1D2D3E0F04B605C-
61D4D5D6D7D8D97A504DF95D6BE2E3E4-
E5E6E74FF0F1F2F3F4E8E95B7C7B4E5A-
6FF5F6F7F8C1C2C3C4C5C65FF04B605C-
61C7C8C9D1D2D34C6E4DF95D6BD4D5D6-
D7D8D94AF0F1F2F3F4E2E3E4E5E6E75E-
7DF5F6F7F8E8E95B7C7B6C6DF04B605C-
61C1C2C3C4C5C67F7E4DF95D6BC7C8C9-
D1D2D3E0F0F1F2F3F4D4D5D6D7D8D97A-
50F5F6F7F8E2E3E4E5E6E74FF04B605C-
61E8E95B7C7B4E5A6F4DF95D6BC1C2C3-
C4C5C65FF0F1F2F3F4C7C8C9D1D2D34C-
6EF5F6F7F8D4D5D6D7D8D94AF04B605C-
61E2E3E4E5E6E75E7D4DF95D6BE8E95B-
7C7B6C6DF0F1F2F3F4C1C2C3C4C5C67F-
' ) ;
MOVE JR REPLACE , KPRU = ( HEXTBL = '-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
0000000000000000000000000000000-
200000000000000000005B2E3C282B21-
2600000000000000000005D242A293B5E-
2D2F0000000000000000002C255F3E3F-
00000000000000000000003A2340273D22-
0041424344454647484900000000000-
004A4B4C4D4E4F50515200000000000-
00005354555657585950000000000-
0000000000000000000000000000000-
0041424344454647484900000000000-
004A4B4C4D4E4F50515200000000000-
5C00535455565758595A000000000-
3031323334353637383900000000000-
',NCHECK);
```

```
URINIT  15  X6606.1   UPDT_URC  BULL.SA    CSI
09:19:30  MAR 29, 1995   PAGE  2

MOVE PR90_600 REPLACE , BPRU = ( BELTCODE =   0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =   '-
C2C4C6C7C8D187E2F0C1C3C5C9D5D6D9-
D3E3818283848586D2888991929394D4-
F0D7D8E4E5E6E7E8E97A5E6F4F6CF7A7-
A895969799A2A3A6F0A9F1F2F3F4F5F6-
7BF8F94B6B4D5D7C5B7E50617DE05F6D-
F07F4C6E4A5A87E2A1C1C3C5C9D5D6D9-
C0E3818283848586F0888991929394D0-
6A79605C4E98A4A5C2C4C6C7C8D1F7A7-
F095969799A2A3A6D3A9F1F2F3F4F5F6-
D2F8F94B6B4D5DD4F0D7D8E4E5E6E7E8-
E97A5E6F4F6C87E2A8C1C3C5C9D5D6D9-
F0E38182838485867B8889919293947C-
5B7E50617DE05F6DF07F4C6E4A5AF7A7-
A195969799A2A3A6C0A9F1F2F3F4F5F6-
F0F8F94B6B4D5DD06A79605C4E98A4A5-
' ) ;
MOVE JS REPLACE , KPRU = ( HEXTBL = '-
00000000000000000000000000000000-
00000000000000000000000000000000-
00000000000000000000000000000000-
00000000000000000000000000000000-
200000000000000000005B2E3C282B21-
260000000000000000005D242A293B5E-
2D2F0000000000000007C2C255F3E3F-
0000000000000000000603A2340273D22-
00616263646566676869000000000000-
006A6B6C6D6E6F707172000000000000-
007E737475767778797A000000000000-
00000000000000000000000000000000-
7B414243444546474849000000000000-
7D4A4B4C4D4E4F505152000000000000-
5C00535455565758595A000000000000-
30313233343536373839000000000000-
',NCHECK);
```

```
URINIT  15  X6606.1   UPDT_URC  BULL.SA     CSI
09:19:30  MAR 29, 1995   PAGE  3

MOVE PR90_611 REPLACE , BPRU = ( BELTCODE =  0
                                 , SPVALUE =  40
                                 , INVCHAR =  6F
                                 , LENGTH  = 240
                                 , HEXBELT =  '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
40004243444546474800044A4B4C4D4E4F-
5051525354555657580005A5B5C5D5E5F-
60616263646566676869606B6C6D6E6F-
007172737475767778007A7B007D7E7F-
0081828384858687888900000000000000-
00919293949596979899000000000000000-
0000A2A3A4A5A6A7A8A9000000000000-
000000000000000000000000000000000000-
C0C1C2C3C4C5C6C7C8C900CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900DBDCDDDE00-
E000E2E3E4E5E6E7E8E900EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900FBFCFDFE00-
');
MOVE JQ REPLACE , KPRU = ( HEXTBL = '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
2000E2E4E0E1E3E5E7005B2E3C282B21-
26E9EAEBE8EDEEEFEC005D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
00C9CACBC8CDCECFCC003A2340273D22-
00616263646566676869000000000000-
006A6B6C6D6E6F707172000000000000-
0000737475767778797A000000000000-
000000000000000000000000000000000000-
7B4142434445464748490000F4F6F2F3F5-
7D4A4B4C4D4E4F50515200FBFCF9FA00-
5C00535455565758595A00D4D6D2D3D5-
303132333435363738390DBDCD9DA00-
',NCHECK);
```

```
URINIT  15  X6606.1   UPDT_URC  BULL.SA    CSI
09:19:30  MAR 29, 1995   PAGE  4

MOVE PR90_PLW REPLACE , BPRU = ( BELTCODE =  0
                                , SPVALUE =  40
                                , INVCHAR =  7C
                                , LENGTH  = 240
                                , HEXBELT =  '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
00004243444546474849494A4B4C4D4E4F-
5051525354555657585A5B5C5D5E5F-
606162636465666768696A6B6C6D6E6F-
7071727374757677787A7B7C7D7E7F-
808182838485868788890000000008F-
9091929394959697989999A9B9C009E9F-
A0A1A2A3A4A5A6A7A8A9AAAB00000000-
00B10000000B5B600000000000BDBE00-
C0C1C2C3C4C5C6C7C8C900CBCCCDCECF-
D0D1D2D3D4D5D6D7D8D900DBDCDDDE00
E000E2E3E4E5E6E7E8E900EBECEDEEEF-
F0F1F2F3F4F5F6F7F8F900FBFCFDFE00-
');
MOVE JT REPLACE , KPRU = ( HEXTBL = '-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
000000000000000000000000000000000000-
2000E2E4E0E1E3E5E7F15B2E3C282B21-
26E9EAEBE8EDEEEFECDF5D242A293B5E-
2D2FC2C4C0C1C3C5C7D17C2C255F3E3F-
F8C9CACBC8CDCECFCC603A2340273D22-
D8616263646566676869000000000B1-
B06A6B6C6D6E6F707172AABAE600C6A4-
757E737475767778797AA1BF00000000-
00A3000000A771000000000000A8B400-
7B4142434445464748490000F4F6F2F3F5-
7D4A4B4C4D4E4F50515200FBFCF9FA00-
5C00535455565758595A00D4D6D2D3D5-
30313233343536373839000DBDCD9DA00-
',NCHECK);
MOVE I1 REPLACE IPRU=((BPRU=E500    ,KPRU=J1)
                  ,(BPRU=PR90_PLW,KPRU=JT)
                  ,(BPRU=E200    ,KPRU=J1)
                  ,(BPRU=E703        )
                  ,(BPRU=E600        )
                  ,(BPRU=E501    ,KPRU=J1)
                  ,(BPRU=E800    ,KPRU=J1));
MOVE I2 REPLACE IPRU=((BPRU=PR90_500,KPRU=JR)
                  ,(BPRU=E600        )
                  ,(BPRU=B600    ,KPRU=B2));
MOVE I4 REPLACE IPRU=((BPRU=E700        )
                  ,(BPRU=PR90_600,KPRU=JS));
MOVE I6 REPLACE IPRU=((BPRU=E511        )
                  ,(BPRU=E512        )
                  ,(BPRU=E513        )
                  ,(BPRU=PR90_611,KPRU=JQ));
*****   137 PERCENTAGE OF SPACE USED:  004.
```

D. Index Table After Modification

This Appendix shows the Index Table after running the update job (of Appendix C).

The items changed are shown in bold.

```
*******  INDEX TABLE.      IPRU
INIT_NAME: G1
           BPRU       = G500       KPRU       = JG
           BPRU       = G601       KPRU       = BG
           BPRU       = G200       KPRU       = JG
           BPRU       = G700
           BPRU       = G600       KPRU       = JG
           BPRU       = GH112_63   KPRU       = JG
           BPRU       = G559       KPRU       = JG
INIT_NAME: G2
           BPRU       = G501       KPRU       = JG
           BPRU       = G502       KPRU       = JG
INIT_NAME: G3
           BPRU       = GH112_96   KPRU       = JG
           BPRU       = G601       KPRU       = BG
INIT_NAME: G7
           BPRU       = GI51_64    KPRU       = JG
INIT_NAME: I1
           BPRU       = E500       KPRU       = J1
           BPRU       = PR90_PLW   KPRU       = JT
           BPRU       = E200       KPRU       = J1
           BPRU       = E703
           BPRU       = E600
           BPRU       = E501       KPRU       = J1
           BPRU       = E800       KPRU       = J1
INIT_NAME: I2
           BPRU       = PR90_500   KPRU       = JR
           BPRU       = E600
           BPRU       = E600       KPRU       = B2
INIT_NAME: I3
           BPRU       = EH112_96
INIT_NAME: I4
           BPRU       = E700
           BPRU       = PR90_600   KPRU       = JS
INIT_NAME: I5
           BPRU       = E501
           BPRU       = E502
           BPRU       = E503
           BPRU       = E504
           BPRU       = E505
```

```
INIT_NAME: I6
          BPRU          = E511
          BPRU          = E512
          BPRU          = E513
          BPRU          = PR90_611        KPRU           = JQ
INIT_NAME: I7
          BPRU          = EI51_64
```

E. Character Sets

This Appendix contains the 4 character sets for the 4 belt images contained in the member UREXT of the library SYS.HSLLIB.

These belt images are described in Appendix A.

E.1 BELT 500 CHARACTER SET

Character Set 500 (BPRU=PR90_500, KPRU=JR)

\	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		@	@	@		&	–	@	@	@	@	@	@	@	\	0
1	@	@	@	@	@	@	/	@	A	J	@	@	A	J	@	1
2	@	@	@	@	@	@	@	@	B	K	S	@	B	K	S	2
3	@	@	@	@	@	@	@	@	C	L	T	@	C	L	T	3
4	@	@	@	@	@	@	@	@	D	M	U	@	D	M	U	4
5	@	@	@	@	@	@	@	@	E	N	V	@	E	N	V	5
6	@	@	@	@	@	@	@	@	F	O	W	@	F	O	W	6
7	@	@	@	@	@	@	@	@	G	P	X	@	G	P	X	7
8	@	@	@	@	@	@	@	@	H	Q	Y	@	H	Q	Y	8
9	@	@	@	@	@	@	@	@	I	R	Z	@	I	R	Z	9
A	@	@	@	@	[	]	@	:	@	@	@	@	@	@	@	@
B	@	@	@	@	.	$	,	#	@	@	@	@	@	@	@	@
C	@	@	@	@	<	*	%	**@**	@	@	@	@	@	@	@	@
D	@	@	@	@	(	)	_	'	@	@	@	@	@	@	@	@
E	@	@	@	@	+	;	>	=	@	@	@	@	@	@	@	@
F	@	@	@	@	!	^	?	"	@	@	@	@	@	@	@	@

In the above table, the top row gives the first hexadecimal character and leftmost column gives the second hexadecimal character. For example, hexadecimal 81 or C1 represents the character "A", hexadecimal F6 represents the character "6", and hexadecimal 6D represents the character "_" (underscore).

The real INVCHAR is shown in **bold** (that is, "@" at hexadecimal 7C). The "@" characters not shown in bold represent non-printable characters.

E.2   BELT 600 CHARACTER SET

Character Set 600 (BPRU=PR90_600, KPRU=JS)

\	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		@	@	@		&	–	@	@	@	@	@	{	}	\	0
1	@	@	@	@	@	@	/	@	a	j	~	@	A	J	@	1
2	@	@	@	@	@	@	@	@	b	k	s	@	B	K	S	2
3	@	@	@	@	@	@	@	@	c	l	t	@	C	L	T	3
4	@	@	@	@	@	@	@	@	d	m	u	@	D	M	U	4
5	@	@	@	@	@	@	@	@	e	n	v	@	E	N	V	5
6	@	@	@	@	@	@	@	@	f	o	w	@	F	O	W	6
7	@	@	@	@	@	@	@	@	g	p	x	@	G	P	X	7
8	@	@	@	@	@	@	@	@	h	q	y	@	H	Q	Y	8
9	@	@	@	@	@	@	@	`	i	r	z	@	I	R	Z	9
A	@	@	@	@	[	]	|	:	@	@	@	@	@	@	@	@
B	@	@	@	@	.	$	,	#	@	@	@	@	@	@	@	@
C	@	@	@	@	<	*	%	**@**	@	@	@	@	@	@	@	@
D	@	@	@	@	(	)	_	'	@	@	@	@	@	@	@	@
E	@	@	@	@	+	;	>	=	@	@	@	@	@	@	@	@
F	@	@	@	@	!	^	?	"	@	@	@	@	@	@	@	@

In the above table, the top row gives the first hexadecimal character and leftmost column gives the second hexadecimal character. For example, hexadecimal 81 represents the character "a", hexadecimal C1 represents the character "A", hexadecimal F6 represents the character "6", and hexadecimal 6D represents the character "_" (underscore).

The real INVCHAR is shown in **bold** (that is, "**@**" at hexadecimal 7C). The "@" characters not shown in bold represent non-printable characters.

E.3 BELT 611 CHARACTER SET

Character Set 611 (BPRU=PR90_611, KPRU=JG)

\	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		?	?	?		&	–	?	?	?	?	?	{	}	\	0
1	?	?	?	?	?	é	/	É	a	j	?	?	A	J	?	1
2	?	?	?	?	â	ê	Â	Ê	b	k	s	?	B	K	S	2
3	?	?	?	?	ä	ë	Ä	Ë	c	l	t	?	C	L	T	3
4	?	?	?	?	à	è	À	È	d	m	u	?	D	M	U	4
5	?	?	?	?	á	í	Á	Í	e	n	v	?	E	N	V	5
6	?	?	?	?	ã	î	Ã	Î	f	o	w	?	F	O	W	6
7	?	?	?	?	å	ï	Å	Ï	g	p	x	?	G	P	X	7
8	?	?	?	?	ç	ì	Ç	Ì	h	q	y	?	H	Q	Y	8
9	?	?	?	?	?	?	Ñ	?	i	r	z	?	I	R	Z	9
A	?	?	?	?	[	]	|	:	?	?	?	?	?	?	?	?
B	?	?	?	?	.	$	,	#	?	?	?	?	ô	û	Ô	Û
C	?	?	?	?	<	*	%	@	?	?	?	?	ö	ü	Ö	Ü
D	?	?	?	?	(	)	_	'	?	?	?	?	ò	ù	Ò	Ù
E	?	?	?	?	+	;	>	=	?	?	?	?	ó	ú	Ó	Ú
F	?	?	?	?	!	^	**?**	"	?	?	?	?	õ	?	Õ	?

In the above table, the top row gives the first hexadecimal character and leftmost column gives the second hexadecimal character. For example, hexadecimal 81 represents the character "a", hexadecimal C1 represents the character "A", hexadecimal F6 represents the character "6", and hexadecimal 6D represents the character "_" (underscore).

The real INVCHAR is shown in **bold** (that is, "**?**" at hexadecimal 6F). The "@" characters not shown in bold represent non-printable characters.

E.4   BELT PLW CHARACTER SET

Character Set PLW (BPRU=PR90_PLW, KPRU=JT)

\	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0		@	@	@		&	–	ø	Ø	º	u	@	{	}	\	0
1	@	@	@	@	@	é	/	É	a	j	~	£	A	J	@	1
2	@	@	@	@	â	ê	Â	Ê	b	k	s	@	B	K	S	2
3	@	@	@	@	ä	ë	Ä	Ë	c	l	t	@	C	L	T	3
4	@	@	@	@	à	è	À	È	d	m	u	@	D	M	U	4
5	@	@	@	@	á	í	Á	Í	e	n	v	§	E	N	V	5
6	@	@	@	@	ã	î	Ã	Î	f	o	w	q	F	O	W	6
7	@	@	@	@	å	ï	Å	Ï	g	p	x	@	G	P	X	7
8	@	@	@	@	ç	ì	Ç	Ì	h	q	y	@	H	Q	Y	8
9	@	@	@	@	ñ	ß	Ñ	`	i	r	z	@	I	R	Z	9
A	@	@	@	@	[	]	|	:	@	ª	¡	@	@	@	@	@
B	@	@	@	@	.	$	,	#	@	º	¿	@	ô	û	Ô	Û
C	@	@	@	@	<	*	%	**@**	@	æ	@	@	ö	ü	Ö	Ü
D	@	@	@	@	(	)	_	'	@	@	@	¨	ò	ù	Ò	Ù
E	@	@	@	@	+	;	>	=	@	Æ	@	´	ó	ú	Ó	Ú
F	@	@	@	@	!	^	?	"	±	¤	@	@	õ	@	Õ	@

In the above table, the top row gives the first hexadecimal character and leftmost column gives the second hexadecimal character. For example, hexadecimal 81 represents the character "a", hexadecimal C1 represents the character "A", hexadecimal F6 represents the character "6", and hexadecimal 6D represents the character "_" (underscore).

The real INVCHAR is shown in **bold** (that is, "**@**" at hexadecimal 7C). The "@" characters not shown in bold represent non-printable characters.

Glossary

This Glossary defines some of the terms used in this manual.

anvil	This is the part of the printer on which the paper lays at the moment of printing (it supports the paper at the moment of printing). On PRX01 printers, this is usually called the platen.
anvil lever	A lever on PRUG00X (PRX01) printers used to adjust the printer for the thickness of the paper being used. On PRX01 printers, this is usually called the "forms thickness lever".
belt	This was originally a physical (hardware) belt containing the charater set that can be printed by a printer. Even though the PRUG00X (PRX01) printers no longer have hardware belts, the concept of a belt still exists from a software point of view.
character set	the set of characters that can be printed by a printer. The character set depends on the belt being used. See also belt.
CNP7	Bull data communications controller. It is integrated in the DPS 7000 cabinet.
CNS	Software running on a CNP7.
CONFIG	A GCOS 7 configuration utility.
CPI	Characters Per Inch, unit of measurement of the horizontal density (number of characters that can be printed horizontally on a line).
Datanet	Bull data communications controller. It is stand-alone (that is, not integrated in the DPS 7000 cabinet).
DNS	Software running on a Datanet.
DNS-E	Software running on a MainWay.
FCP7	Bull FDDI communications processor. It is integrated in the DPS 7000 cabinet.

forms thickness lever A lever on PRUG00X (PRX01) printers used to adjust the printer for the thickness of the paper being used. This is also called the "platen lever" or the "anvil lever".

GTWriter A GCOS 7 system function which manages output to be printed when the printer is connected to a DPS 7000 via a network. See also Output Writer.

horizontal print density Measure of the number of characters that can be printed horizontally on a line (expressed in characters per inch). Also called pitch.

IGP Intelligent Graphics Processor. An interface on PRUG00X (PRX01) printers to converts graphics to line dot matrix form (suitable for printing).

INVCHAR The substitution character to be used instead of a character which is not on the belt and which therefore cannot be printed (INValid CHARacter).

Job Rate This is a number which measures the rate at which a print job uses the ribbon (that is, the ink). It is between -99% (the highest ink usage rate) and 99% (the lowest ink usage rate) .

line dot matrix Printer technology where objects to be printed are formed by assembling groups of dots in matrices and placed on the paper by printing an entire line (row) of dots at a time.

LPI Lines Per Inch, unit of measurement of the vertical density (number of lines that can be printed vertically).

MainWay A new generation of Bull data communications controllers (replacing the Datanet). It is stand-alone (that is, not integrated in the DPS 7000 cabinet).

Output Writer A GCOS 7 system function which manages output to be printed when the printer is connected directly to a DPS 7000 (that is, not via a network). See also GTWriter.

OWDFLT A parameter of the GCOS 7 CONFIG utility (Output Writer DeFauLT). It specifies the default value for the number of columns in an output.

pitch Measure of the number of characters that can be printed horizontally on a line (expressed in characters per inch).

platen This is the part of the printer on which the paper lays at the moment of printing (it supports the paper at the moment of printing). Also called anvil.

platen lever A lever on PRUG00X (PRX01) printers used to adjust the printer for the thickness of the paper being used. On PRX01 printers, this is usually called the "forms thickness lever".

RibbonMinder™   This is a facility which measures and manages the consumption of ribbon ink on PRUG00X (PRX01) printers. It is optional. The operator may enable/disable it.

SPVALUE   The internal code for the space (SPace VALUE).

SYS.URCINIT   A GCOS 7 system file (Unit Record Controller INITialization) containing information about unit record devices and in particular printers. For a description of this file, see the manual *GCOS 7 System Operator's Guide*.

TOF   Top of Form (button on printer which positions the paper on the first line (on which printing will take place) of the page.

URCINIT   A GCOS 7 utility (Unit Record Controller INITialization) to update the SYS.URCINIT file. For a description, see the manual *GCOS 7 System Operator's Guide*.

UREXT   A member of the GCOS 7 library SYS.HSLLIB which contains data to update the SYS.URCINIT file. The update is actually made using the URCINIT utility.

vertical print density   Measure of the number of lines that can be printed vertically (usually expressed in lines per inch).

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