

August, 1971

Installation and Operating Instructions

TENNECOMP TP-1346-8/e

AUTOMATIC LOADER

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TENNECOMP TP-1346-8/e AUTOMATIC LOADER

INTRODUCTION

The TP-1346-8/e "TENNELOADER" is intended for use with the PDP-8/e computer. In order to prepare this computer to read binary programs, it is necessary first to read in a binary loader program. Because this program is too long to key in conveniently by hand, a shorter program, known as the RIM (for "read in mode") loader, is usually keyed in. The binary loader is then loaded from the Teletype or from a high-speed paper-tape reader.

The TENNELOADER removes the necessity for keying in a program manually. By placing the console switches in the 0 position and pushing the "go" button on the TENNELOADER, the TENNELOADER will simulate the manual keying in of a program. Any program which requires up to 128 manual steps may be loaded. Disk or tape bootstrap loaders or an abbreviated version of the binary loader may be loaded rather than the RIM loader.

Besides removing the necessity for keying in the RIM loader manually, the TENNELOADER may be used for completely automatic loading and starting of a program. This is useful if the system is to be operated by production workers, or if the rapid recovery from an error or system failure is desirable.

The simplest method of automatically reloading a system program is to arrange the program into a continuous loop and keep it in the Teletype reader. The TENNELOADER can then load in a short program which will search for the beginning of the system program, read it in, and then start it up.

If the computer configuration contains a DEC Tape, a disc, or a drum, the TENNELOADER may be used to load one of the standard bootstrap routines, which brings the system program off the high speed device and starts it up. The high speed paper tape reader or the Tennecomp TP-1351 Magnetic Tape Unit may also be used.

OPERATION

The TP-1346-8/e is a solid-state device which automatically loads a program into the PDP-8/e and optionally starts it. The loading may be actuated by lifting the "SW Key" on the front panel of the PDP-8/e, or it may be actuated remotely by the addition of a SPDT switch.

The TENNELOADER simulates the way in which an operator would load a short program from the console. The circuits are similar to those on the front panel controls, except that a 128-word, 16-bit read-only memory controls the operation of the switches.

When the TENNELOADER is actuated, the read-only memory steps up to 128 positions. Sixteen output bits at each location have the following function:

BITS 0-11	DATA 0-11	(Corresponding to the 12 PDP-8/e front panel Key switches.)
BIT 12	LOAD ADDRESS	(Corresponding to the Load Address Key)
BIT 13	DEPOSIT	(Corresponding to the Deposit Key.)
BIT 14	CLR & START	(Corresponding to the Clear & Start Key - also resets Tenneloader for the next operation.)
BIT 15	INHIBIT	Use for conditional loading under the control of a switch or jumper.

The loading process starts with momentarily hitting the "SW Key" on the front panel of the PDP-8/e or actuating a remote SPDT switch. The position of the front panel switches is immaterial as they are duplicated by the autoloader. When the loading switch is actuated, the autoloader generates a HALT command to stop the computer action (if it is running) and then loads the program stored in its ROM. (The loading process takes less than 0.2 sec.) When the loading is completed, the program just loaded is executed (if the last autoloader step is a START). The "START" step may be suppressed if desired by setting the HALT Panel switch down or the SINGLE STEP Panel switch down.

INSTALLATION

The TP-1346-8/e is constructed on a standard PDP-8/e card which plugs into the OMNIBUS[®]. When your TENNELOADER arrives, inspect the board carefully to see if there are any damaged components or any loose material clinging to the board.

Plug the board into any spare slot of the PDP-8/e, making sure not to plug the board in backwards. (e.g., Make sure that the components are on the same side as all the other PDP-8/e boards.)

There are several jumpers on the TENNELOADER board which may be positioned at the time of installation. The options are:

External Start Switch:

External SPDT switch is connected to points SW1 SET and SW1 RES (as shown in Figure 1).

In this event, the SW Key when in the up position is used to inhibit all steps which have a "one" in BIT 15.

No External Start Switch:

The SW Key is used in lieu of an external SPDT switch.

In this event, a jumper on the board determines whether steps which have a "one" in BIT 15 will be ignored or not.

Figure 2 shows the jumper connected so that steps corresponding to BIT 15 will be ignored. Figure 3 shows the jumpers connected so that steps corresponding to BIT 15 will not be ignored.

Normally, as shipped from the plant, the jumpers will be set as shown in Figure 2. Frequently, an autostart feature is put under the control of BIT 15. Thus as normally shipped, the program will not "autostart". By changing the jumpers to the configuration in Figure 3, the program will "autostart" at the location which is programmed.

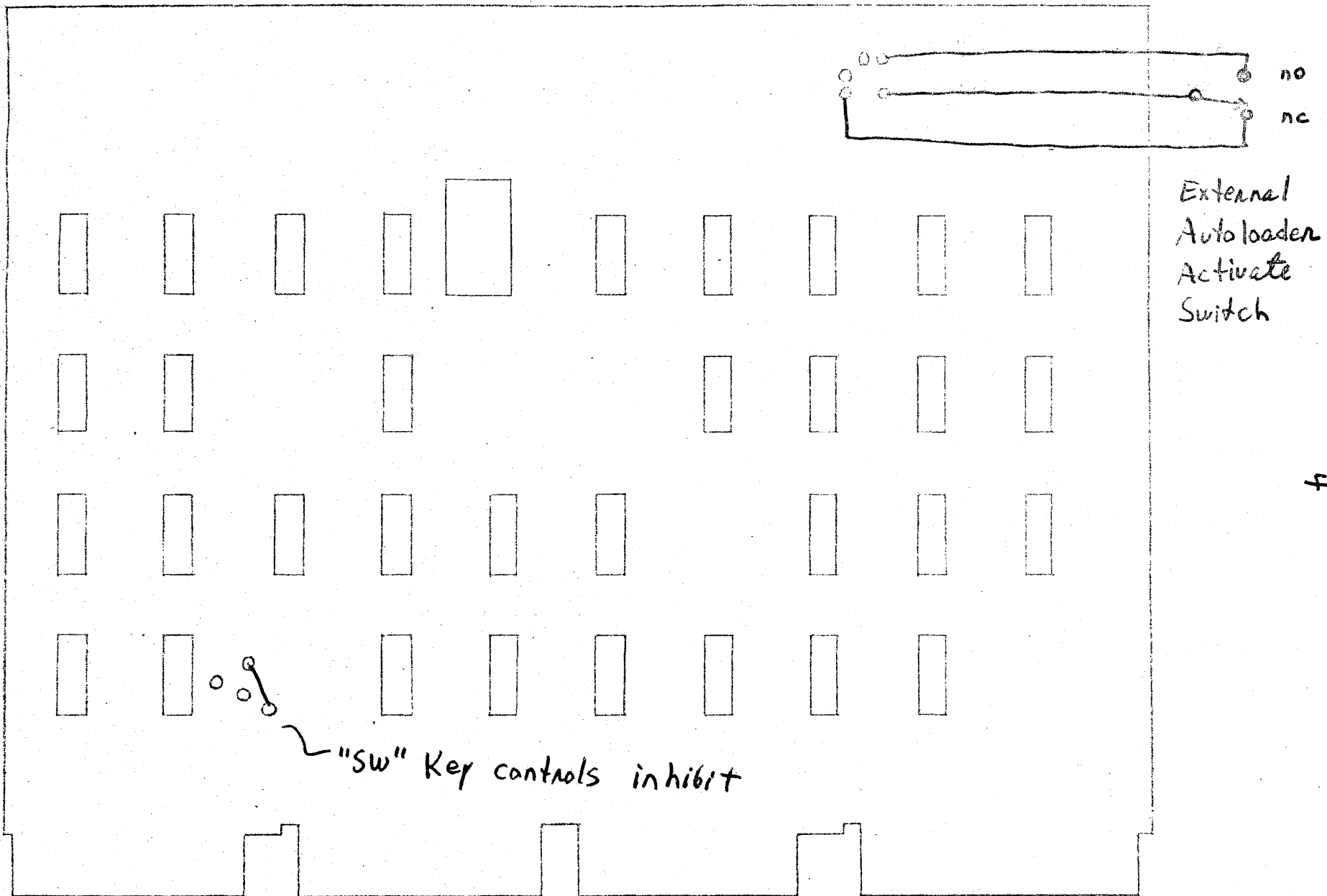


Figure 1. External Start Switch. Inhibit Controlled by BIT 15 .and.
Panel Switch "SW".

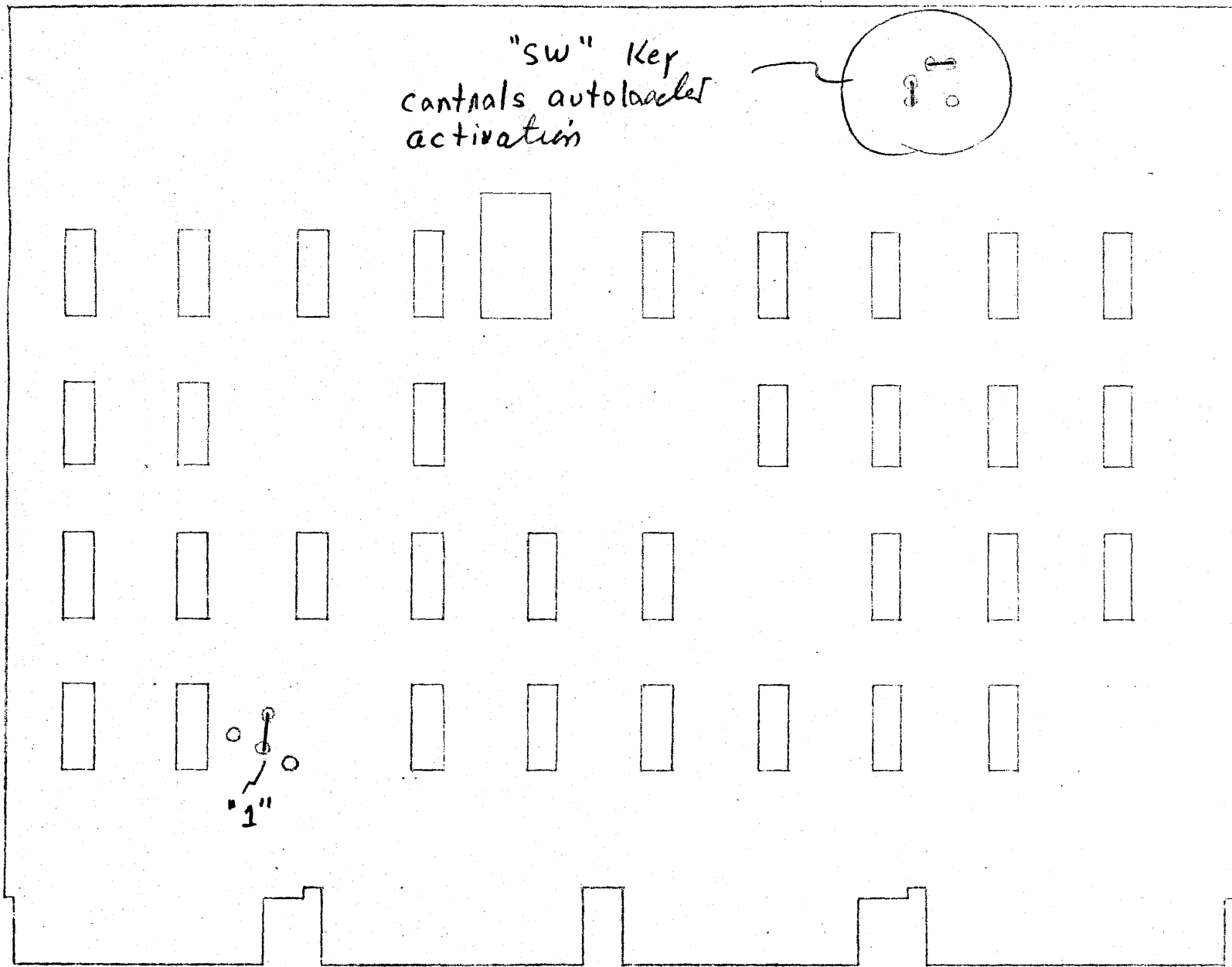


Figure 2. Panel Switch "SW" Starts Autoloader. Inhibit Controlled by BIT 15.

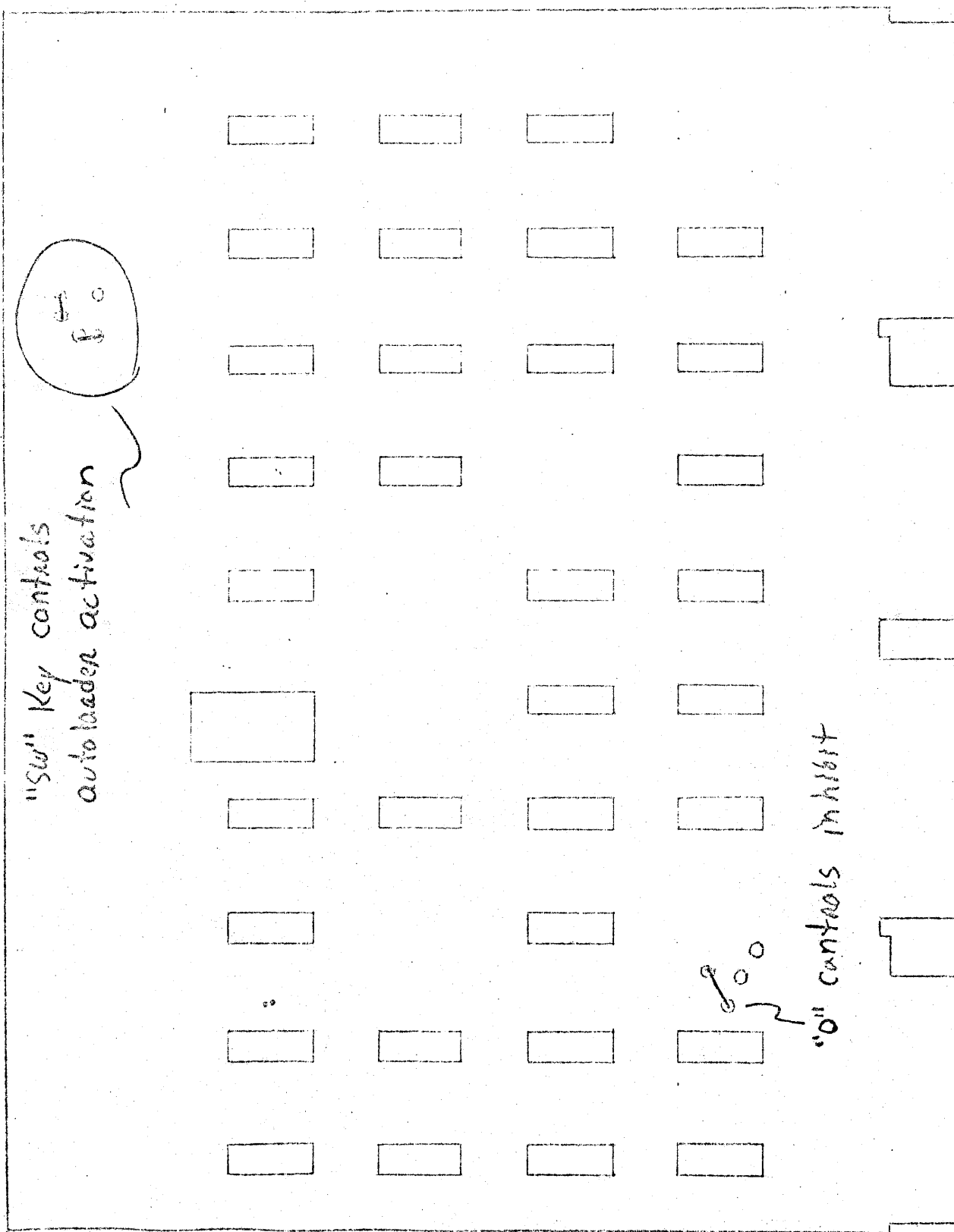


Figure 3 Panel Switch "SW" Starts Autoloader. All Steps Executed (BIT 15 Ignored).

ATTACHMENTS

Schematic Diagram

TP-1346/8E-A-EO

CONTENTS OF AUTOLOADER

SERIAL NUMBER X

FN7769
LN7637 UN7727

FN7769
LN7637
LN7727

- 7600\1326
- 7601\6326
- 7602\6322
- 7603\7450
- 7604\5229
- 7605\7421
- 7606\6322
- 7607\6321
- 7610\7343
- 7611\6327
- 7612\7731
- 7613\7104
- 7614\7434
- 7615\5225
- 7616\7904
- 7617\7433
- 7620\5233
- 7621\7904
- 7622\7630
- 7623\5234
- 7624\5231
- 7625\1327
- 7626\6326
- 7627\5237
- 7630\7333
- 7631\6326
- 7632\7375
- 7633\5237
- 7634\7322
- 7635\6326
- 7636\7317
- 7637\7106
- 7640\7901
- 7641\7421
- 7642\7373
- 7643\6326
- 7644\5355
- 7645\6354
- 7646\6373
- 7647\7909
- 7650\9326
- 7651\7640
- 7652\5251
- 7653\7525
- 7654\6375
- 7655\6373
- 7656\5255

"IN-HOUSE" A/C SE

7626\5326
7627\5237
7630\7273
7631\6326
7630\7275
7632\5937
7634\7342
7635\6326
7636\7277
7637\7176
7640\7271
7641\7271
7642\7272
7643\6326
7644\6365
7645\6367
7646\6372
7647\7273
7657\6326
7658\7547
7659\5241
7663\7325
7664\6373
7655\5255

Pick up here

7657\7272
7660\6365
7661\7721
7662\6375
7663\4316
7664\3332
7665\4316
7666\3331
7667\4316
7670\3739
7671\7521
7672\1739
7673\7521
7674\2330
7675\2331
7676\5267
7677\4316
7700\3332
7701\7325
7702\6375
7703\7323
7704\6327
7705\7721
7706\7641
7707\1339
7710\7653
7711\5727
7712\1326
7713\6311
7714\7325
7715\5209
7716\7009
7717\6373
7719\5317
7721\6249
7722\7659
7723\5312
7724\6376
7725\5716
7726\7277

7729\6244