SPECIFICATION FOR
SSI SWITCH ASSEMBLY - 452190

1. GENERAL

1.01 This specification describes a 452190 SSI Switch Assembly as an accessory for 4540 Clustered Station arrangements. The 452190 SSI Switch Assembly provides the operator of a Keyboard-Display (KD) access to two independent 45C340 Station Cluster Controllers (SCCs). Both SCCs must be located within 5280 cable feet of the KD or 2000 cable feet of a printer. See Fig. 1.

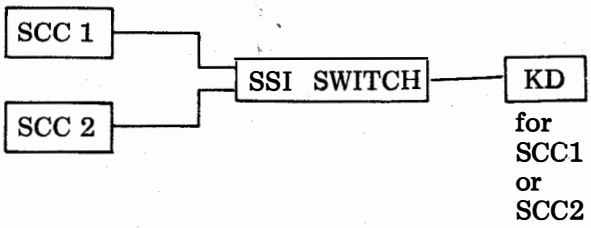

Fig. 1 -- Example of use

1.02 The SSI switch configuration shown in Fig. 1 is expected to be the one used most often. The SSI switch assembly can also be used in other configurations wherever an SSI cable is switched between two other SSI cables.

Examples are:

(a) An SSI interface printer connected through an SSI switch assembly to two SCCs.

(b) Any controller with SSI ports to any two other SSI devices. Specifically, a 40/2 KD connected through an SSI switch assembly to a forms access line printer and a 132-column line printer.

1.03 The 452190 SSI Switch Assembly is housed in a self-supporting enclosure which can be readily mounted to the 45CAB501/AAA or 45CAB502/AAA Keyboard-Display Table or easily adapted to other mounting arrangements suitable to the customer. See Figs. 2 and 4.

2. PARTS LISTING

2.01 Following is a parts list of the SSI Switch Assembly - 452190. For identification of parts on the 410492 SSI Switch Circuit Card, see Fig. 2.

452190 SSI Switch Assembly consists of:

Parts No.	Description	Qty
112620	Screw, Hex, 4-40	2
327954	Retainer, Split Ring	1
327955	Nut, Speed	1
341797	Screw w/Lockwasher, 6-32 x 5/16 Hex	2
407217	Screw, Hi-Lo 6-19	2
410492	Circuit Card	1
451379	Fastener, Oval Head	1
452822	Frame	1
452823	Cable Clamp	1
452824	Cover	1
51026S	Specification	1

3. PHYSICAL & ENVIRONMENTAL DATA

3.01 PHYSICAL DIMENSIONS - Approximately 7" long, 3.25" wide and 1.25" high. See Fig. 2.

3.02 WEIGHT - One pound

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3.03 ENVIRONMENTAL DATA

Table A

Condition		Min.	Max.
Temperature	Storage	-40C, -40F	65C, 150F
	Operating	4.5C, 40F	43C, 110F
Relative Humidity		5%	95%

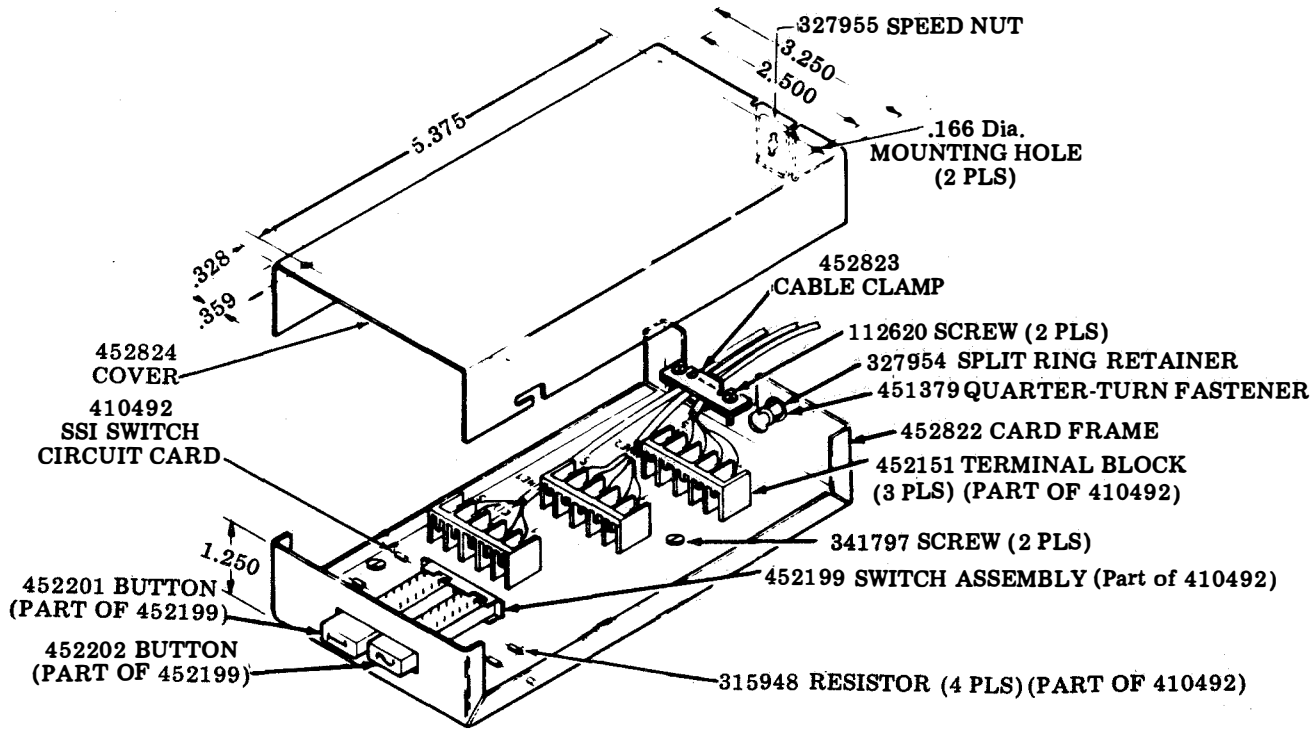


Fig. 2 - SSI SWITCH ASSEMBLY

4. DESCRIPTION

4.01 The SSI Switch Assembly consists of a two-piece enclosure, the 452822 Card Frame with the 452824 Cover, and the 410492 SSI Switch Circuit Card Assembly. The 452822 Card Frame provides mounting for the 410492 Circuit Card Assembly and strain relief for the three SSI cables. The 452824 Cover completes the circuit card enclosure, and acts as a mounting bracket for the card frame and circuit card assembly. Two holes are provided in the cover for securing the assembly with screws. The 410492 SSI Switch Circuit Card Assembly consists of a 409492 Etched Circuit Board, three 452151 five point terminal blocks, a 452199 Switch Assembly, and four 315948 100-ohm 1/4-watt resistors.

4.02 The SSI Switch Assembly is intended to interface a single KD or printer to one of two Station Cluster Controllers (SCCs). The assembly will accept two different SSI lines from independent controllers which can be located up to 5280 feet from the KD or 2000 feet from the printer. The controller lines and the KD or Printer Line are connected to the five point terminal blocks on the circuit card and are interfaced together via two interlocking four pole double throw switches. The switches are interlocked and have non-shorting transfer contacts to eliminate the chance of both lines being tied together simultaneously. The terminal blocks are identified as Line 1 and Line 2 and correspond to the hot stamped numerals 1 and 2 of the switch pushbuttons. A depressed pushbutton connects its associated SSI line to the KD or printer while the undepressed pushbutton connects its SSI line to the terminating resistors to minimize noise transients on the idle SSI line.

4.03 The KD attendant must not change SSI lines during transmission or reception of data. The printer attendant must not change SSI lines while the printer is printing or while the printer motor is running.

4.04 When the controller options and feature group card versions are identical, downloading the operating program from SCC is not required. Downloading is not required for other applications (see 1.02). The device number for the KD or printer need not be the same on each SCC.

If the options or feature group card is different, the KD attendant will have to download the operating program each time the SSI lines are switched. When downloading is required, an attendant must turn off the KD base power switch, then depress the SSI switch line control button from line 1 to 2 or 2 to 1. After switching lines, the attendant must then turn KD base power back on and wait for downloading to provide the new operating program from the SCC. The KD can be used in the other system as soon as the base red LED indicator is on steady. Downloading is now completed.

5. INTERNAL WIRING

5.01 The internal wiring of the assembly is shown in Fig. 3.

5.02 SW1 and SW2 are an interlocked pair of four pole double throw switches. Operation of No. 1 will automatically disengage No. 2, and vice versa. SW1 is shown operated and SW2 is shown unoperated.

5.03 Resistors R1, R2, R3 and R4 serve as terminating loads for the idle SSI line.

6. INSTALLATION

6.01 For an attached KD, the 452190 SSI Switch Assembly mounts in the kneewell against the left leg of the 45CAB501/AAA and 45CAB502/AAA KD Tables. It should be positioned conveniently below the left side of the keyboard and have its front edge in line with the rear edge of the black plastic edge trim of the left leg. Figure 4 illustrates this installation.

If the installation is being done on non-Teletype furniture or for a printer, it will be up to the customer to determine the location most convenient to his operation and supply any mounting hardware required.

6.02 In preparing to install the 452190 Assembly, remove the card frame from 452824 cover by unlatching the 451379 Oval Head Quarter-turn Fastener, push the 452822 Card Frame toward the rear to disengage the guide pins. Place the card frame down. It will be wired later. Locate the 452824 Cover against the left leg of the KD Table as mentioned in 1.1, and using the cover as a template, locate the two (2) mounting holes and mark their location. Drill two (2) holes at the marked locations .104" + .003" in diameter and .750" + .062" deep (a number 36, 37 or 38 drill may be used). Attach the cover to the leg using the two (2) 407217 Hi-Lo 6-19 screws provided.

6.03 The SSI cable required for installation is not provided with the switch assembly because the cable lengths depend on the application. Construction of cable assemblies is illustrated in Figures 5 and 6. A 452219 Connector Kit which contains parts for five KD to SCC cable assemblies or 452220 Connector Kit which contains parts for two printers to SCC cable assemblies must be ordered separately.

6.04 At each SSI cable end remove approximately 1-1/2 inches of the outer plastic jacket and the braided shield. Exercise caution when removing the shield to prevent knicking the drain wire. The mylar wrap which covers the two twisted pairs should be cut back until it is about 1/4 longer than the braided shield in order to prevent frayed shield ends from piercing the conductor insulation. Strip approximately 3/8 inch of the conductor insulation from each lead if the cable is going to be terminated in a terminal block (as at the switch) or 5/32 inch if a pin is to be crimped to each lead (as at the KD, printer or SCC).

For convenience, the remainder of part 6 is written as if cabling begins at the SSI switch and is routed to the controller(s) and device(s). It is recommended, however, that cabling proceed from controller(s) to the switch, to the device(s).

6.05 Connect the cables to the terminal blocks as indicated by the etched identification on the circuit card. The terminal blocks are labeled KD, Line 1, and Line 2. Terminals No. 1 and No. 5 are also labeled. The wiring color code is No. 1 - Red (ITD-N), No. 2 - Yellow (ITD-I), No. 3 Green (ITC-N), No. 4 - Orange (ITC-I), and No. 5 - Drain. This color coding is for Teletype Corporation shielded cable. The drain wires of the shielded cable will be interconnected through Terminal No. 5 and the etched board artwork. This will result in the drain wire being tied together for noise immunity. Install the cable clamp, securing the SSI cables.

6.06 Align the guide pins on the card frame with the locking notches in the cover, slide it in and forward until it seats against the rear of the cover. Secure the card frame and cover together with the 451379 Oval Head Quarterturn Fastener. When the switch is used for an attached KD, route the SSI cable from the switch to the junction box of the 452015 Set Cable Assembly of the KD which is located on the underside of the table top. Use existing cable clamps that are provided for the keyboard cable assembly. Remove the cover from the junction box and connect the KD cable to the SSI connector in the box. Reinstall the junction box cover.

6.07 When the switch is used for an attached KD, the two SSI cables from the switch to the controllers will be routed beneath the table top, using existing cable clamps provided with the set cable assembly, to the upper return of the rear skirt and to the right rear cable channel. Both cables will drop down through the cable channel and exit at the right rear leg. If one of the controllers is local to the KD involved, the cables will be routed to the left in the lower return of the rear skirt. The local cable will enter the 45CAB401 Controller cabinet while the remote cable will exit with the other cabling coming out of the controller cabinet.

6.08 When the SSI cables from the switch to the controllers have been connected to their assigned device I/O ports, the systems shall be powered up and the correct options loaded for the associated KD or printer, as applies.

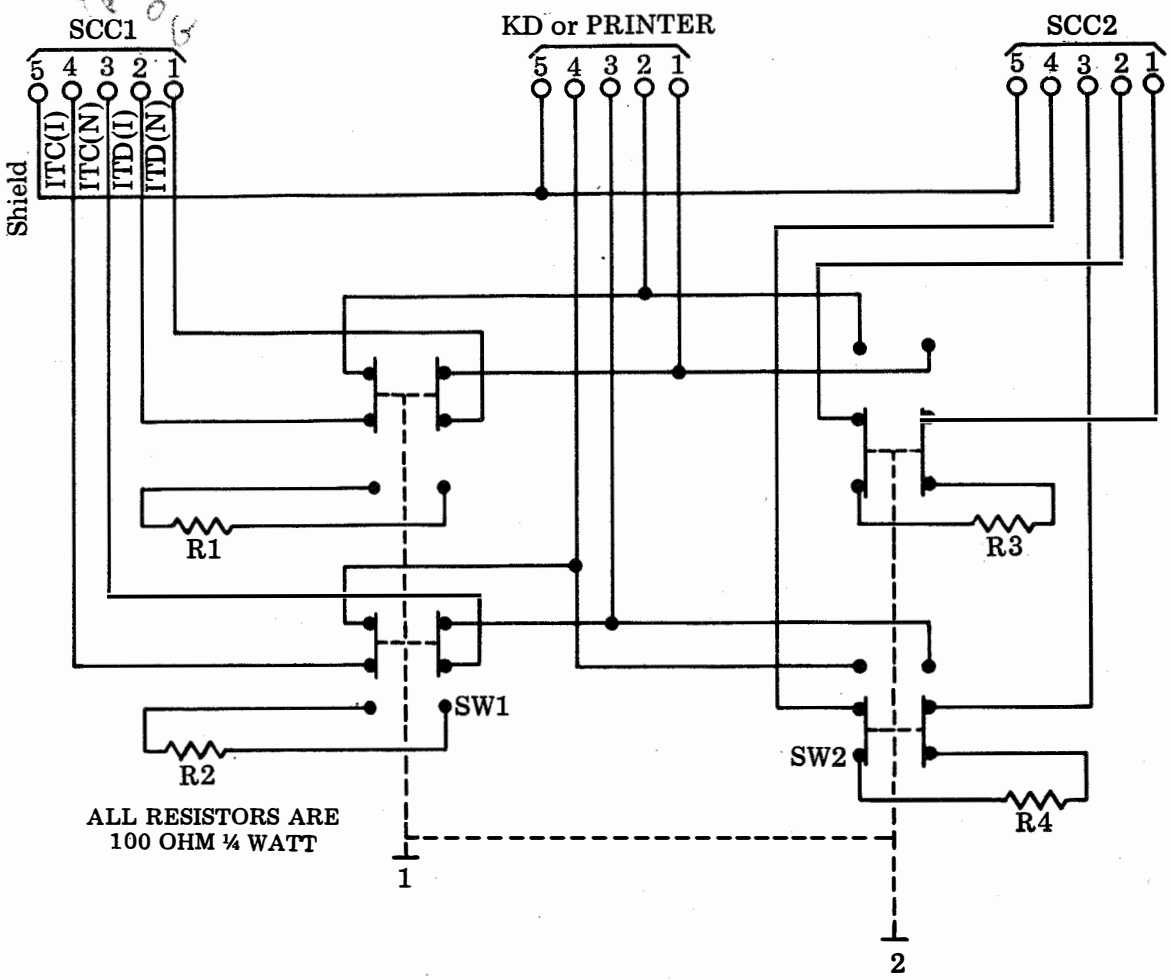


Fig. 3 — Internal Wiring

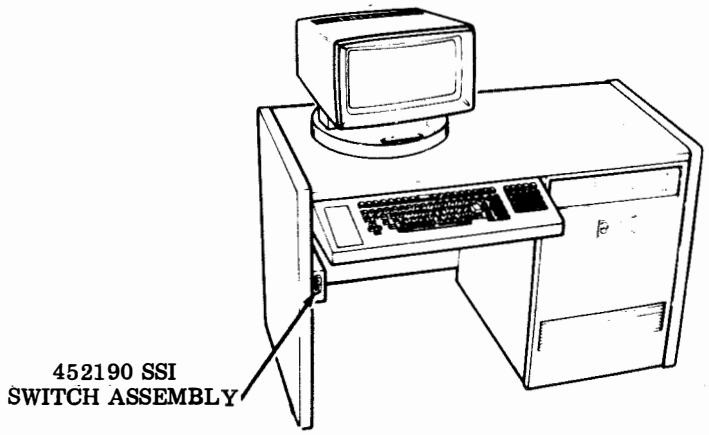


Fig. 4 — SSI SWITCH MOUNTING FOR ATTACHED KD

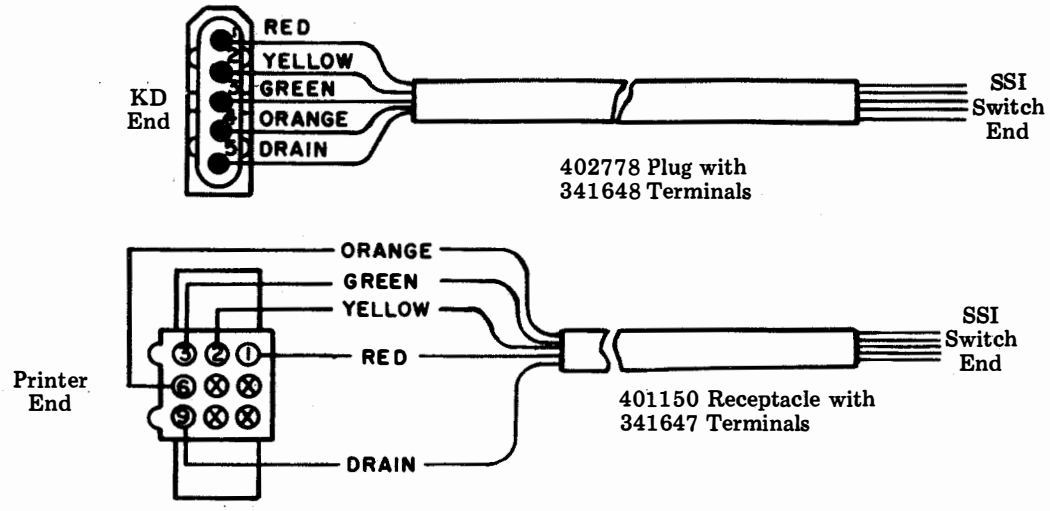


Fig. 5 — CABLE ASSEMBLY — (SSI SWITCH TO KD OR PRINTER CABLE ASSEMBLY)

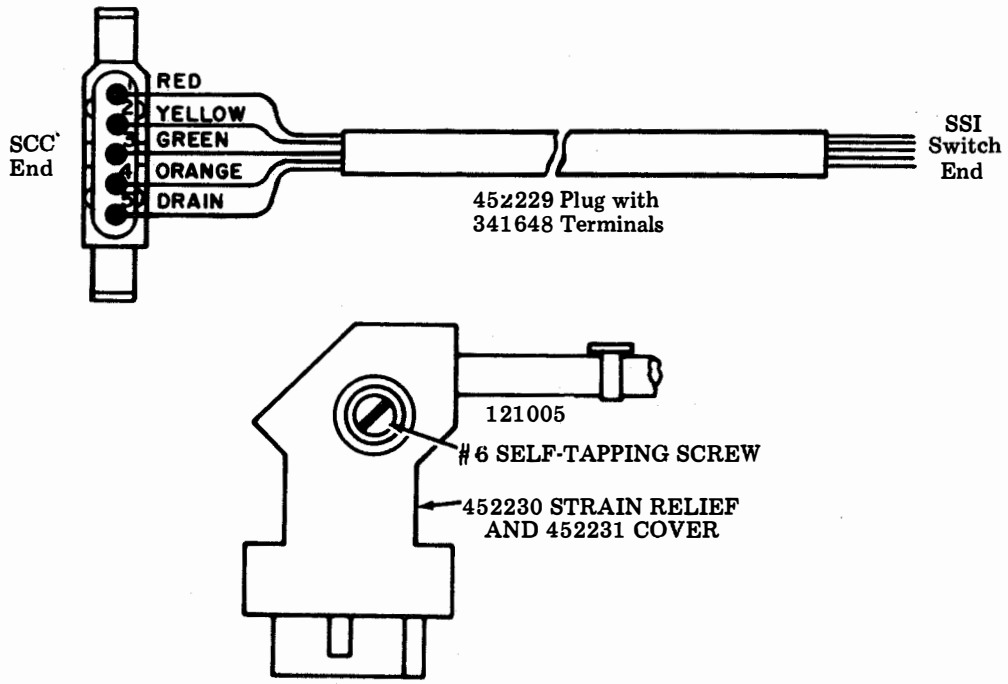


Fig. 6 — CABLE ASSEMBLY (SSI SWITCH TO SCC)

7. TESTING AND TROUBLESHOOTING

7.01 With all the SSI cables installed per Part 6 and "1" depressed on the SSI switch, turn on KD power. Red LED indicator on KD display base should be on steady and LOCAL indicator on the keyboard should be on. The system is now operational. If both indicators are not on, check the cable connections to be sure they are tight and correctly wired. Also see 7.03.

7.02 Depress and hold CONTROL key while depressing S key on keyboard. When a keyboard is a 40K105 type, depress and hold ALPHA key while depressing L/TST key on keyboard.

7.03 Depress "2" on SSI switch. (If any option is different or the feature group card is different, the K-D must be downloaded before depressing "2" on the SSI switch. See paragraph 4.04.). Red LED indicator on KD display base should be on steady and LOCAL indicator on the keyboard should be on. The second system should now be operational. If both LEDs are not on, check the cables to be sure they are tight and correctly wired. If the indicators were not on in either "1" or "2' systems, replace the SSI switch.

7.04 Depress CONTROL S or ALPHA L/TST on keyboard. The local test mode message should appear on the tube. Check for the correct device and station address. If this device has an associated printer, depress PRINT LOCAL key. The local test mode message should be sent to the printer correctly.

8. CLEANING

8.01 To clean cover, wash with a mild soap solution and wipe with a dry cloth.

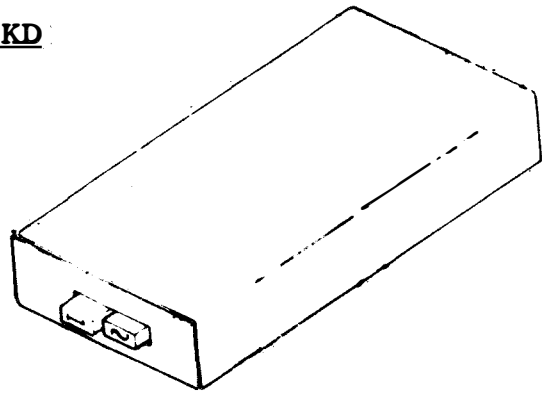
8.02 As required, the inside of the assembly should be vacuumed or air dusted. To remove the cover, given the oval head screw in the rear of the assembly ¼ turn counterclockwise. Push the 452822 card frame toward the rear to disengage the guide pins and lift off. Use a small soft bristled brush to dust away any particles or loose foreign material from the circuit card and cable terminal blocks.

8.03 The 452199 Switch Assembly should not be subjected to a freon degreasing procedure or any other type of cleaning. Lubricants internal to the switch will be washed out. Lack of this lubrication will result in premature failure of the gold plated contacts and the possibility of the slider bar binding. Lubrication external to the assembly involving the interlocking and lockout mechanisms will also be washed out resulting in the possibility of these mechanisms not functioning properly.

9. OPERATOR INFORMATION

CUT ON DASHED LINES AND PLACE IN ATTENDANT'S HOW TO OPERATE MANUAL FOR KD

SSI SWITCH ASSEMBLY FOR KD



A single KD can be accessed to two independent 4540 controllers by the SSI switch assembly. This switch has no other effect on the KD except:

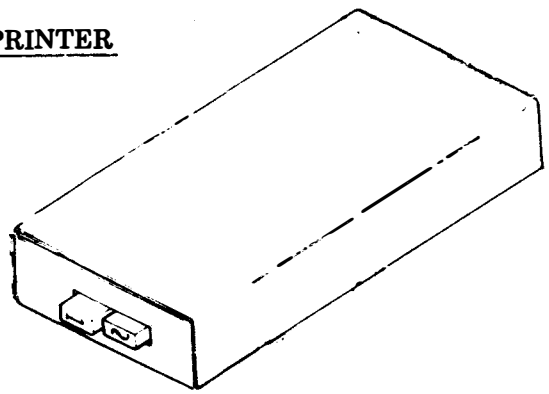
- When "1" is depressed, the KD is connected to the first controller.
- When "2" is depressed, the KD or printer is connected to the second controller.

Caution: Depression of "1" or "2" when the KD LOCAL indicator is not lighted may cause a message to be lost. Insure LOCAL is lighted before depressing "1" or "2".

Note: Power on the KD must be off when switching controllers if either the controller options or the feature group card is different in the controllers.

CUT ON DASHED LINES AND PLACE IN ATTENDANT'S HOW TO OPERATE MANUAL FOR PRINTER

SSI SWITCH ASSEMBLY FOR PRINTER



A printer can be accessed to two independent 4540 controllers by the SSI switch assembly. This switch has no effect on the printer except:

- When "1" is depressed, the printer is connected to the first controller.
- When "2" is depressed, the printer is connected to the second controller.

Caution: Depression of "1" or "2" button when the printer motor is running may cause a message to be lost. Insure the motor is off before depressing "1" or "2".
