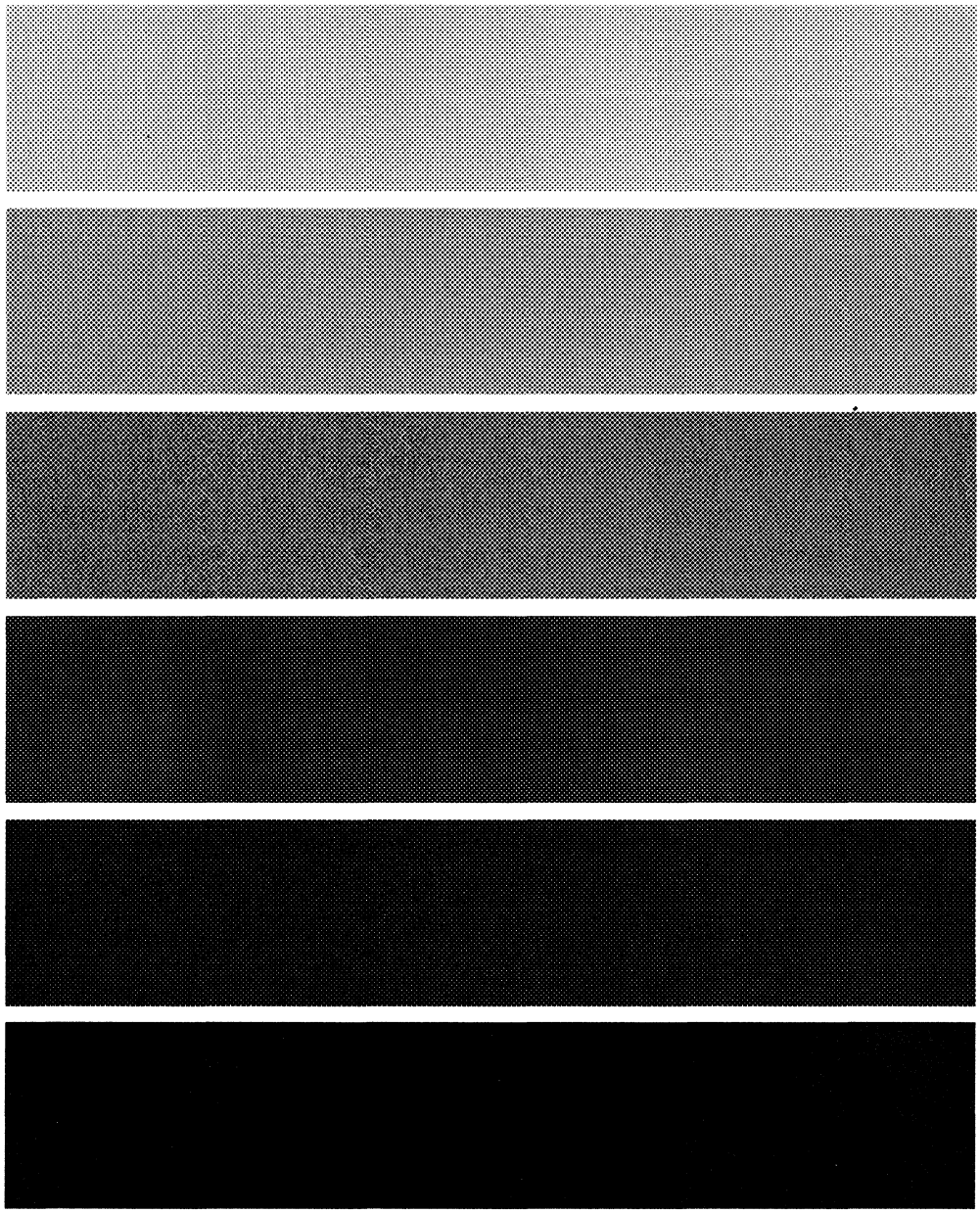
GA23-0330-02

3174 Establishment Controller

Storage Expansion Feature

Installation and Removal Instructions



3270 Information Display System

Third Edition (May 1989)

This edition obsoletes and replaces GA23-0330-1.

Changes are made periodically to the information herein; before using this publication in connection with the operation of IBM systems, consult the latest *IBM System/370, 30xx, and 4300 Processors Bibliography,* GC20-0001, for the editions that are applicable and current.

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The following warning statements (required by country regulatory agencies) are applicable in the countries indicated.

United States

Warning: This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions manual may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Additional IBM Statement

This warning is also applicable to all attaching units produced for use in the U.S.A. that have been manufactured after December 31, 1980. A notice of compliance has been affixed within the customer access area of all affected units.

Instructions to User:

Properly shielded and grounded cables and connectors must be used for connection to peripherals in order to meet FCC emission limits. Proper cables are available through IBM marketing channels, or from dealers of computer accessories. IBM is not responsible for any radio or television interference caused by using other than recommended cables or by unauthorized modifications to this equipment. It is the responsibility of the user to correct such interference.

United Kingdom

Warning: This IBM product is made to high Safety standards. It complies inherently with Telecommunications safety standard BS6301. It is not designed to provide protection from excessive voltages appearing externally at its interfaces. Therefore, when this product is connected to a public telecommunications network via any other equipment, and you connect to this product items not supplied by IBM United Kingdom Ltd., you must comply with mandatory telecommunications safety requirements.

You may do this either by choosing products which also are approved as complying to BS6301 or British Telecom Technical Guide No. 26, or by the use of approved safety barriers. Consult the local office of your public telecommunications operator, for advice and permission to make the connections.

Canadian Department of Communications compliance statement

This equipment does not exceed Class B limits per radio noise emissions for digital apparatus, set out in the Radio Interference Regulation of the Canadian Department of Communications. Operation in a residential area may cause unacceptable interference to radio and TV reception requiring the owner or operator to take whatever steps are necessary to correct the interference.

Avis de conformité aux normes du ministère des Communications du Canada

Cet équipement ne dépasse pas les limites de Classe B d'émission de bruits radioélectriques pour les appareils numériques, telles que prescrites par le Règlement sur le brouillage radioélectrique établi par le ministère des Communications du Canada. L'exploitation faite en milieu résidentiel peut entraîner le brouillage des réceptions radio et télé, ce qui obligerait le propriétaire ou l'opérateur à prendre les dispositions nécessaires pour en éliminer les causes.

Contents

Storage Expansion Feature Installation in a Model 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R 1

Storage Expansion Feature Removal from a Model 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R 11

Verification Test for Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R 15

Storage Expansion Feature Installation in a Model 51R or 53R 18

Storage Expansion Feature Removal from a Model 51R or 53R 22

Storage Expansion Feature Installation in a Model 61R, 62R, or 63R 25

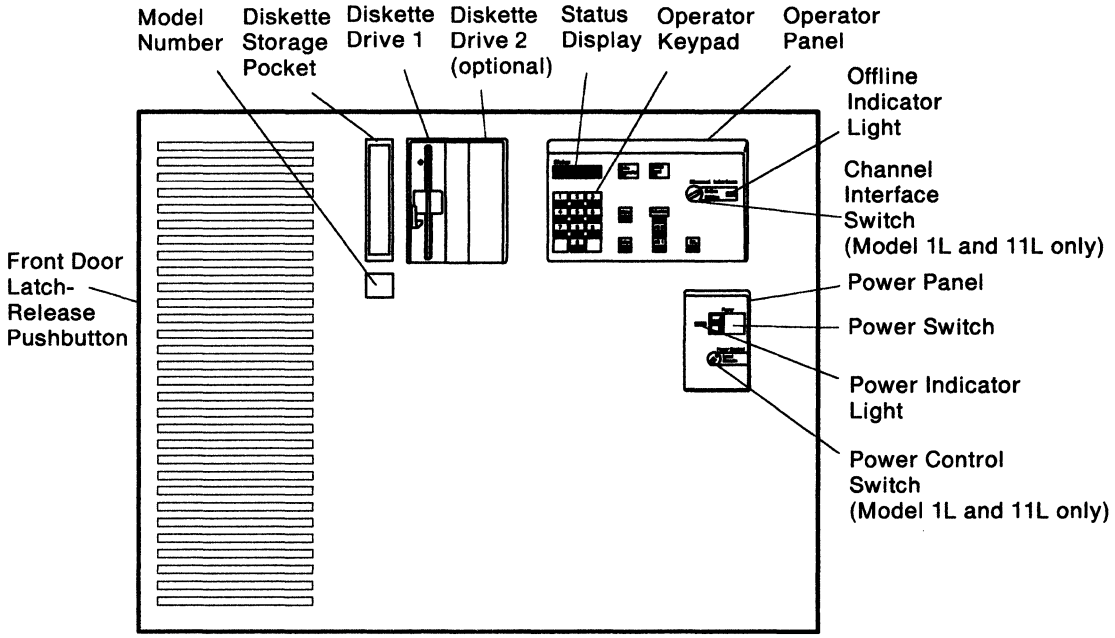
Storage Expansion Feature Removal from a Model 61R, 62R, or 63R 29

Verification Test for Models 51R, 53R, 61R, 62R, or 63R 32

Storage Expansion Feature Installation in a Model 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R

CAUTION:
Do not connect or disconnect cables during periods of lightning activity. (For translations of this safety notice, see Safety Notice 5 in *IBM 3174 Safety Notices*, GA27-3824.)

Before beginning, note the location of the controller's basic components in the following figure.



Note: The maximum usable storage capacity of models 1L, 1R, 2R, and 3R is 4 megabytes (MB).

- Storage Expansion adapter type **9051** has 0.5 MB of storage.
- Storage Expansion adapter type **9052** has 1.0 MB of storage.
- Storage Expansion adapter type **9053** has 2.0 MB of storage.

You should not install Storage Expansion adapters in these models that will cause the sum of the storage in locations 19, 20, and 17 to exceed 4.0 MB.

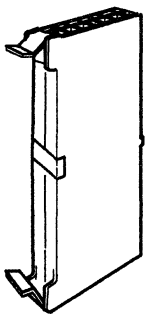
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.



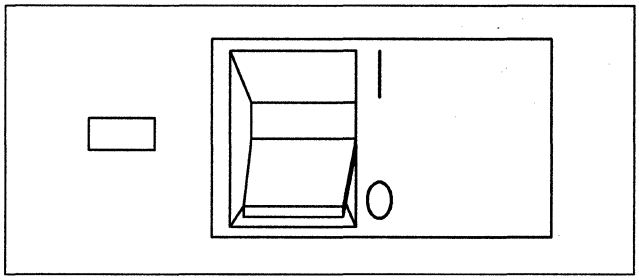
Storage Expansion Card (905X)

2

Is the controller power switch switched off?

YES Go to step **6** on this page.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.

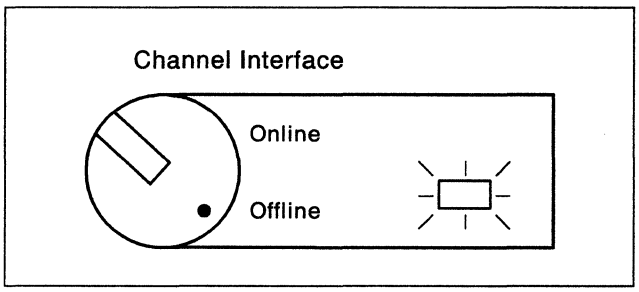


3

Does this controller have a Channel Interface switch on the operator panel?

YES Set the Channel Interface switch to **Offline**, wait for the Offline Indicator light to come on, and continue with the next step.

NO Go to step **5** on this page.

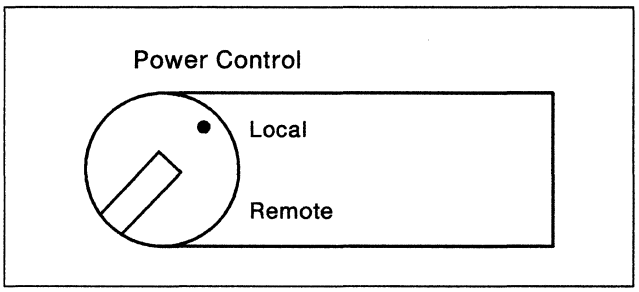


4

Is the Power Control switch set to **Local**?

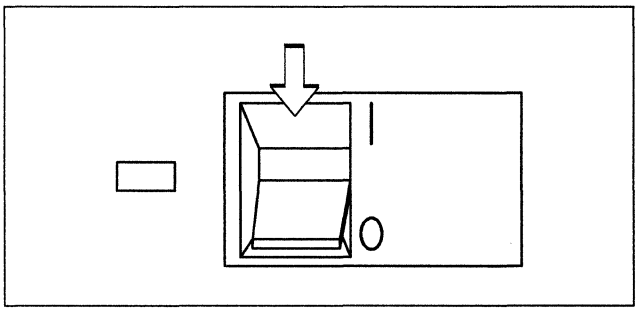
YES Continue with the next step.

NO Set the Power Control switch to **Local**.



5

Press the power switch to **O** (Off).



6

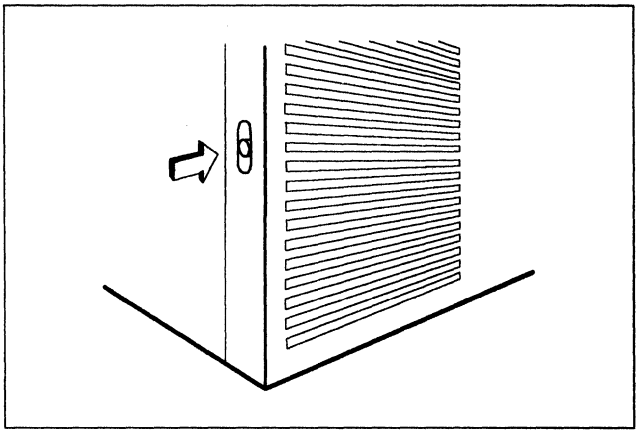
Does your controller have a metallic, waterproof-type power plug?

YES **CAUTION:**
If your machine has a metallic, waterproof-type power plug, do not attempt to disconnect it. Instead, have a qualified electrician disconnect the plug. (For translations of this safety notice, see Safety Notice 2 in *IBM 3174 Safety Notices*, GA27-3824.)

NO Unplug the controller power plug.

7

Press the latch-release button on the left edge of the front door, and open the door.



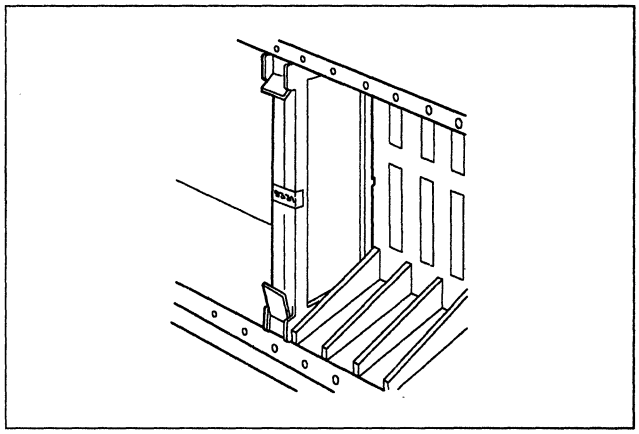
8

If you are:

Installing an additional Storage Expansion adapter	Go to step **11** on page 4.
Replacing an installed Storage Expansion adapter	Continue with the next step.

9

Locate the Storage Expansion adapter in location 19, 20, or 17 you have been instructed to replace.



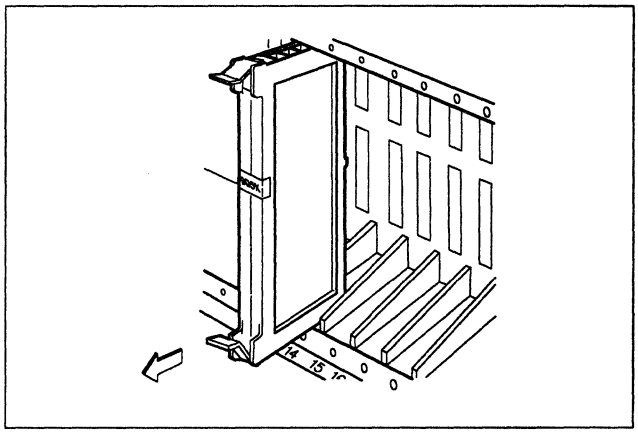
10

Lift the extractor levers at each end of the adapter and pull it out.

Store the adapter according to your company's procedures.

Then go to step **32** on page 9.

Note: If there are shipping springs holding the extractor levers closed, squeeze the springs together and discard them.

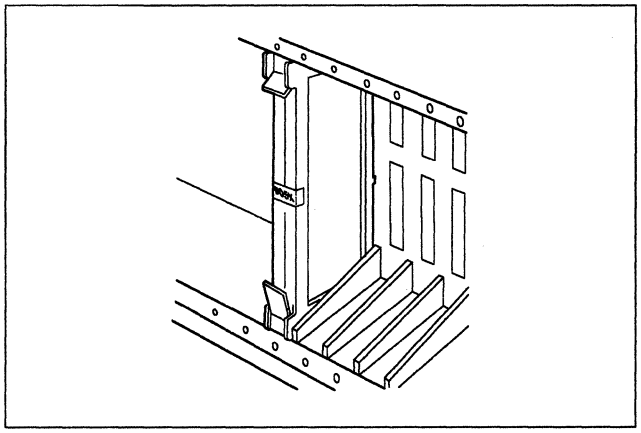


11

Is there a type 9051, type 9052, or type 9053 adapter in location 20?

YES Continue with the next step.

NO Go to step **31** on page 8 to install the new Storage Expansion adapter in location 20.



12

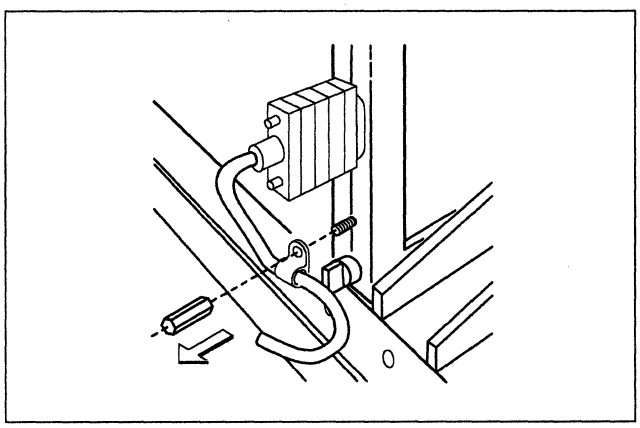
If location 17 contains:

No adapter	Go to step **31** on page 8 to install the new Storage Expansion adapter in location 17.
Type 935x adapter	Continue with the next step.
Type 917x adapter	Go to step **18** on page 5

13

If the cable of the adapter in location 17 is secured with a clamp:

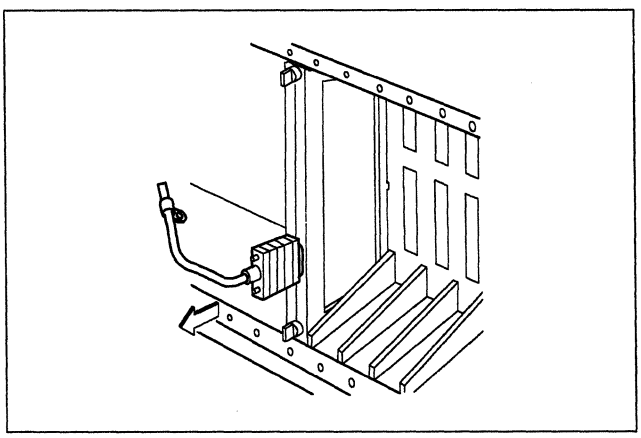
1. Remove the hexnut.
2. Remove the clamp from the adapter.



14

CAUTION:
Do not connect or disconnect cables during periods of lightning activity. (For translations of this safety notice, see Safety Notice 5 in *IBM 3174 Safety Notices*, GA27-3824.)

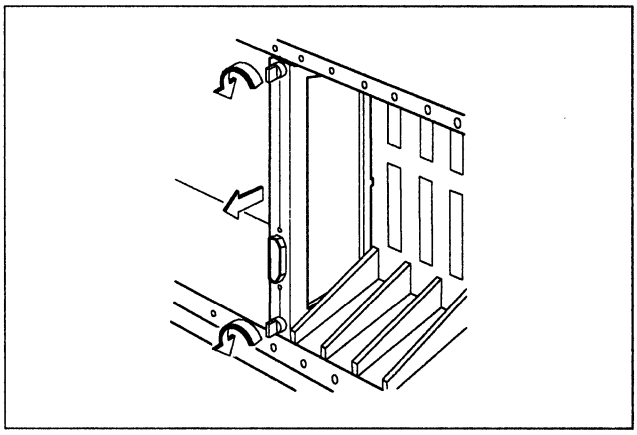
Unplug the cable from the adapter.



15

Loosen the adapter thumbscrews in an alternating manner and remove the adapter by pulling it straight out.

Set the adapter aside for now.



16

In the following sequence, **11 12 13 14 15 16** , circle the number of the first available (unused) location.

Then go to step **20** on page 6.

If there are no available locations, continue with the next step.

17

In the following sequence, **11 12 13 14 15 16** , circle the number of the first location that contains a type 917x adapter.

If none of these locations contains a type 917x adapter, close the door, and see your system planner. There is not a location available for the type 935x adapter you removed from location 17 without removing an adapter from location 11, 12, 13, 14, 15, or 16.

18

CAUTION:
Do not connect or disconnect cables during periods of lightning activity. (For translations of this safety notice, see Safety Notice 5 in *IBM 3174 Safety Notices*, GA27-3824.)

Are cables connected to the type 917x adapter?

YES Carefully make a chart of the cable connection locations, label each cable with tape, and unplug the cables from the adapter.

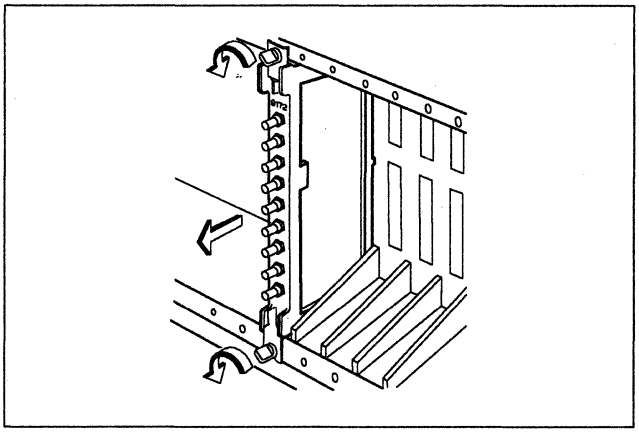
NO Continue with the next step.

19

Loosen the thumbscrews in an alternating manner and remove the adapter by pulling it straight out.

Set the type 917x adapter aside for now.

Then go to step **21** on this page.

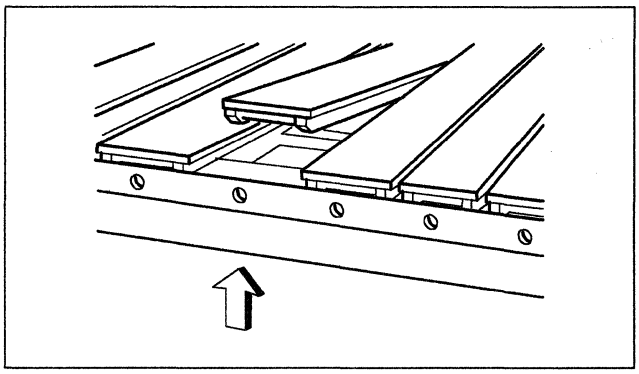


20

Is there an insert in the location you circled in step **16**?

YES Grip the front of the insert, pull it up, and remove it.

NO Continue with the next step.



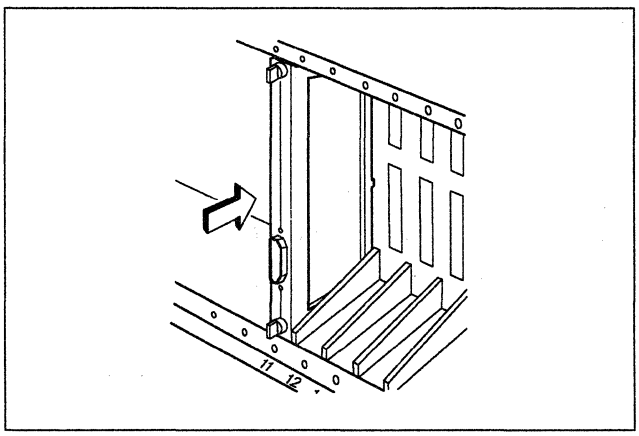
21

Did you remove a type 935x adapter from location 17?

YES Hold the type 935x adapter with the recessed panel at the right.

Insert it into the guides of the location you circled in step **16** or step **17**, until it is firmly seated.

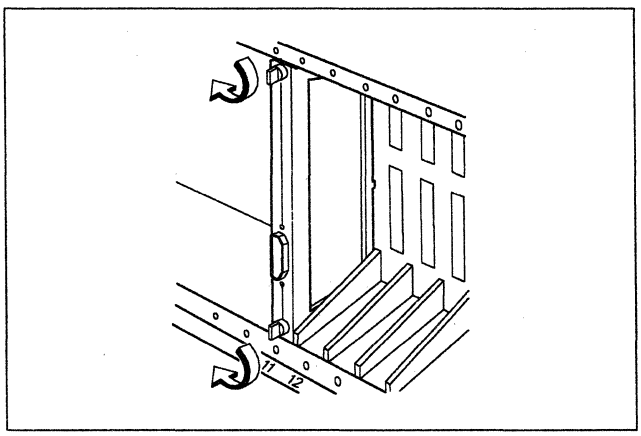
NO Go to step **25** on page 7.



22

Tighten the thumbscrews in an alternating manner. For example, tighten one screw two turns, then the other two turns, until both screws are tightened completely.

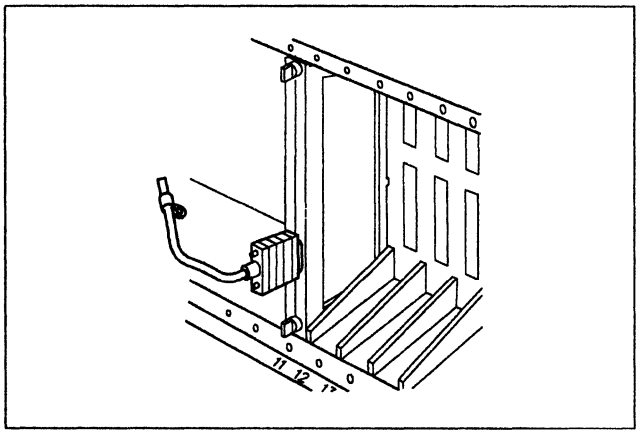
Then push the adapter in to see if further thumbscrew tightening is needed.



23

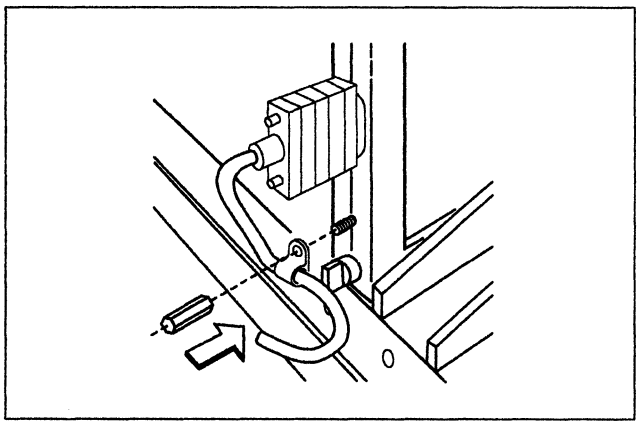
Plug the cable you removed from the type 935x adapter back in.

Turn the thumbscrews clockwise to lock the cable connector in place.



24

If the cable has a clamp, put the cable clamp over the adapter lug and screw the hexnut in securely to hold the clamp in place.



25

Did you remove a type 917x adapter?

YES Continue with the next step.

NO Go to step **32** on page 9.

26

In the following sequence, **11 13 15 22 23 12 14 16 24** , circle the number of the first available (unused) location.

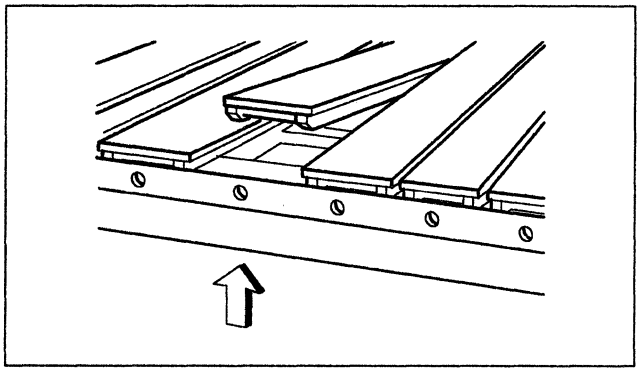
If none of these locations is available, close the door, and see your system planner. There is not a location available for the type 917x adapter you removed.

27

Is there an insert in the location you circled in step **26**?

YES Grip the front of the insert, pull it up, and remove it.

NO Continue with the next step.

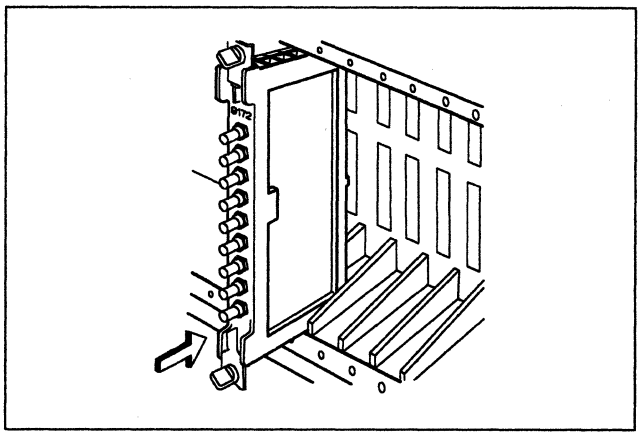


28

Hold the type 917x adapter you removed from location 17 with the recessed panel to the right.

Then insert it into the guides of the location you circled in step **26**.

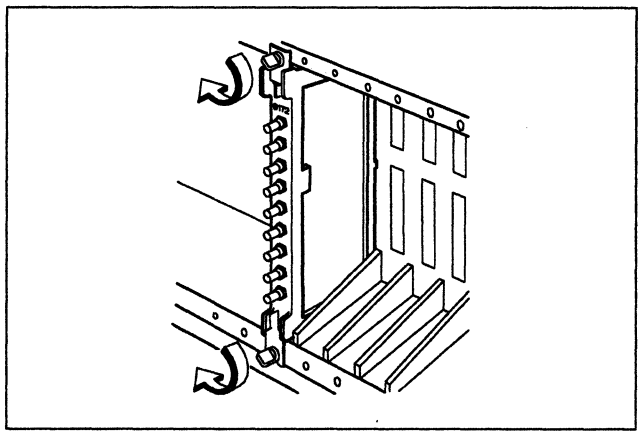
Push it in until it is firmly seated.



29

Tighten the thumbscrews in an alternating manner. For example, tighten one screw two turns, then the other two turns, until both screws are tightened completely.

Then push the adapter in to see if further thumbscrew tightening is needed.



30

Did you unplug cables from this adapter?

YES Plug them into the adapter according to the cable connection chart and labels you made.

Then go to step **32** on page 9.

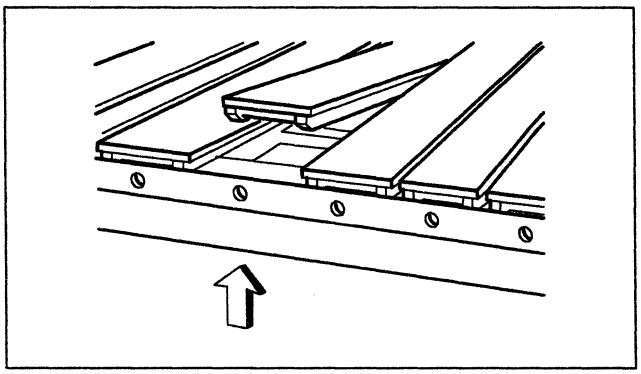
NO Go to step **32** on page 9.

31

Is there an insert in the location?

YES Grip the front of the insert, pull it up, and remove it.

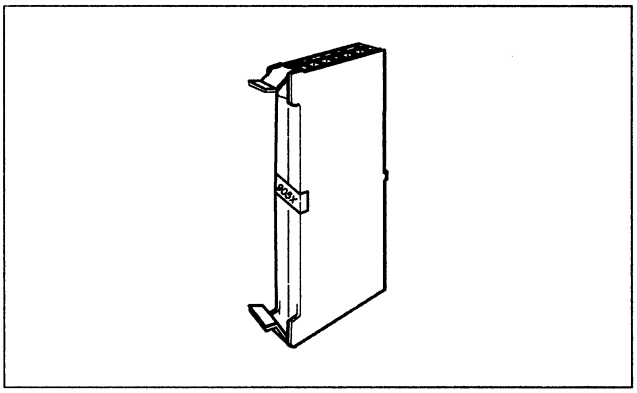
NO Continue with the next step.



32

Hold the adapter from the kit with the type number, 905x, toward the top and facing you.

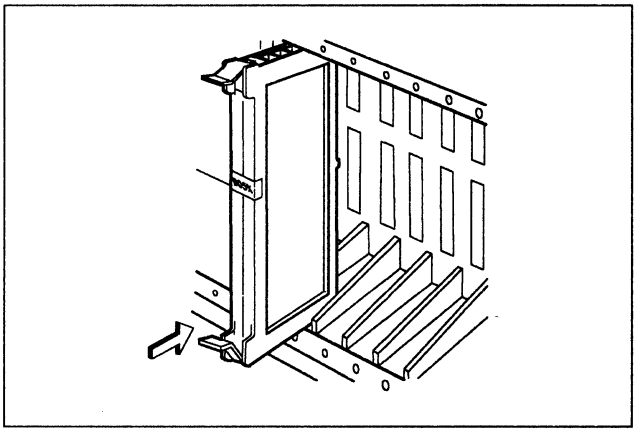
Make sure that both extractor levers are in the open position.



33

In the following sequence, **19 20 17** , insert the adapter into the guides of the first available (unused) location.

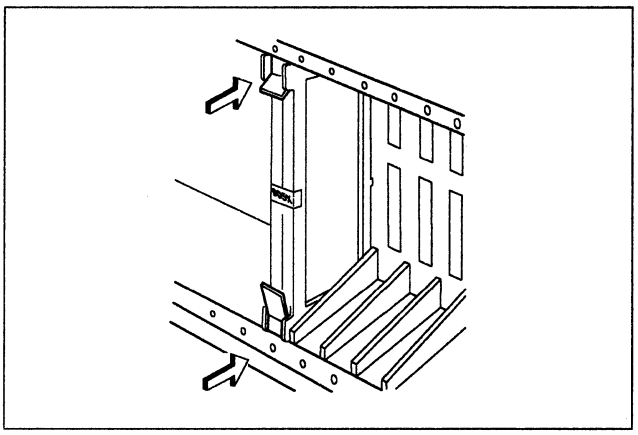
Insert the adapter into the guides until it is firmly seated.



34

Press the extractor levers in to lock the adapter in place.

Then push the adapter in to be certain it is fully seated.



35

Do you have another Storage Expansion adapter to install on this controller at this time?

YES Repeat step **8** through step **34**.

NO Continue with the next step.

36

For Models 11L, 11R, 12R, or 13R only, is there a type 9053 adapter in location 20 and a type 9052 adapter in location 17?

YES This placement will cause an error.

Swap the locations of these two adapters.

NO Continue with the next step.

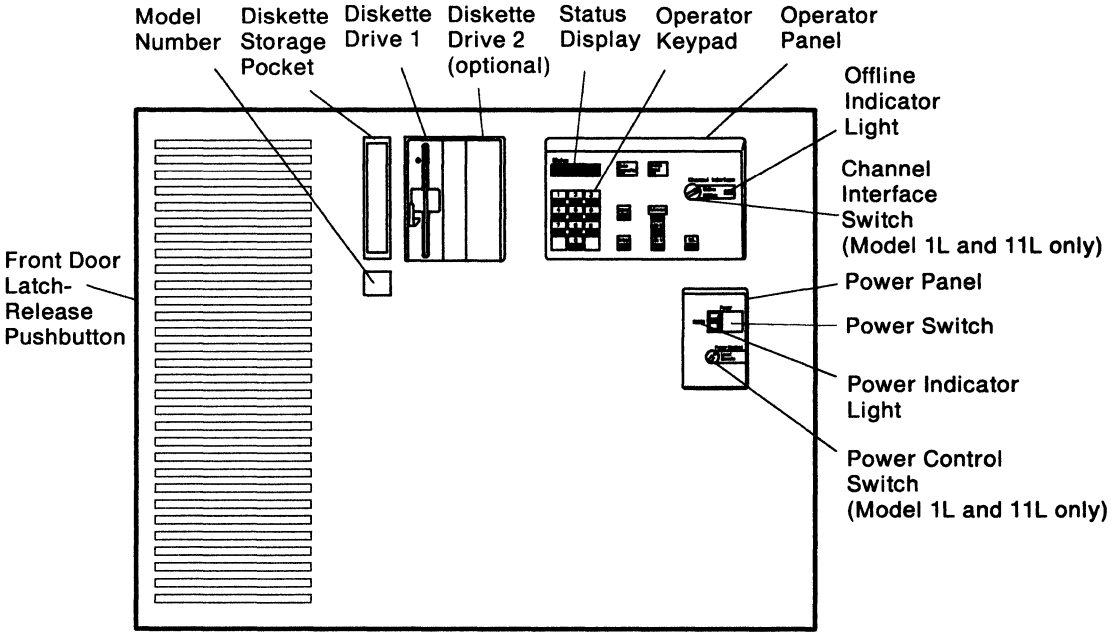
37

Close the door of the controller.

Then go to "Verification Test for Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R" on page 15 to verify that this controller is operating correctly.

Storage Expansion Feature Removal from a Model 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R

Before beginning, note the location of the controller's basic components in the following figure.



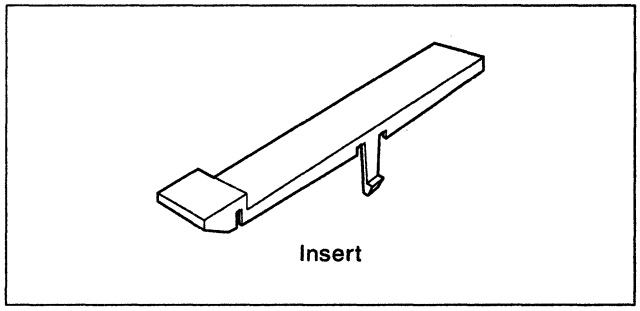
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.

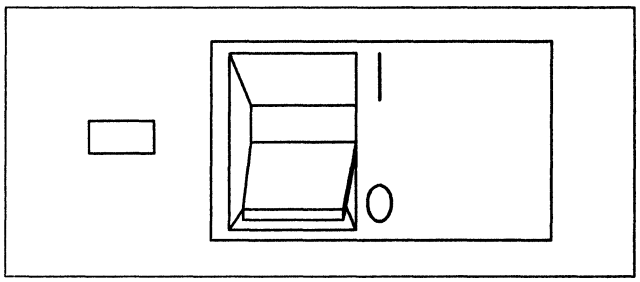


2

Is the controller power switch switched off?

YES Go to step **6** on page 12.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.

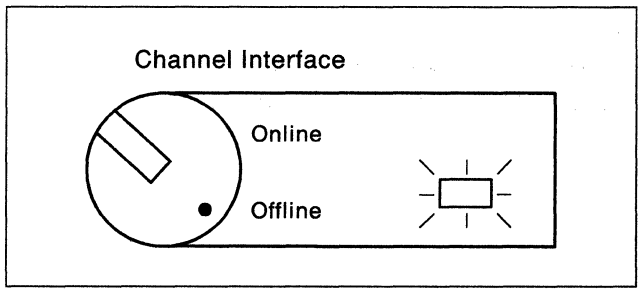


3

Does this controller have a Channel Interface switch on the operator panel?

YES Set the Channel Interface switch to **Offline**, wait for the Offline Indicator light to come on, and continue with the next step.

NO Go to step **5** on this page.

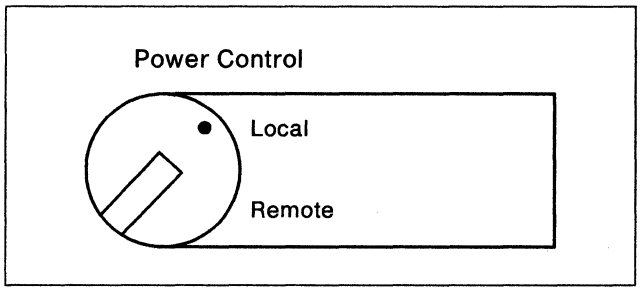


4

Is the Power Control switch set to **Local**?

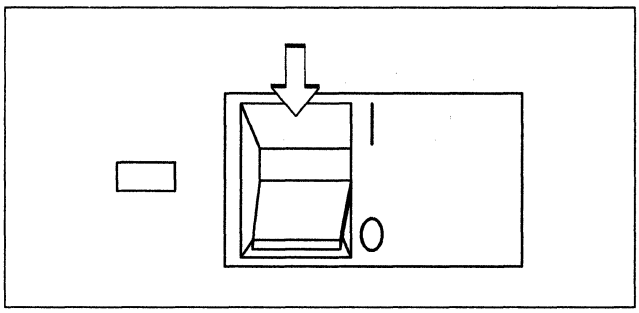
YES Continue with the next step.

NO Set the Power Control switch to **Local**.



5

Press the power switch to **O** (Off).



6

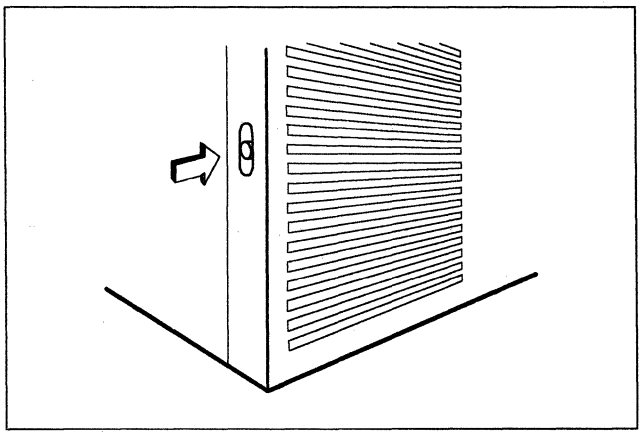
Does your controller have a metallic, waterproof-type power plug?

YES **CAUTION:**
If your machine has a metallic, waterproof-type power plug, do not attempt to disconnect it. Instead, have a qualified electrician disconnect the plug. (For translations of this safety notice, see Safety Notice 2 in *IBM 3174 Safety Notices*, GA27-3824.)

NO Unplug the controller power plug.

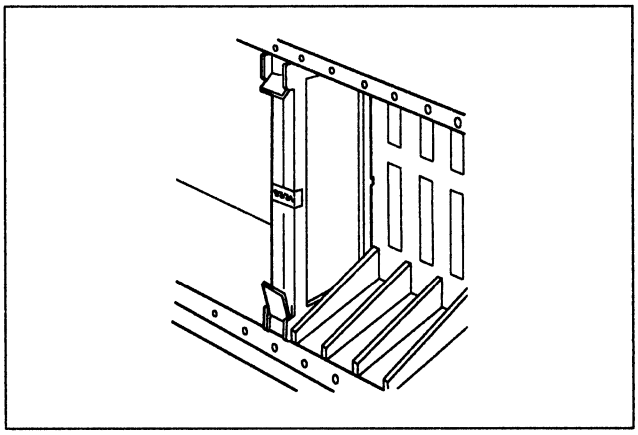
7

Press the latch-release button on the left edge of the front door, and open the door.



8

Locate the type 905x adapter you have been instructed to remove in location 17 or 20.

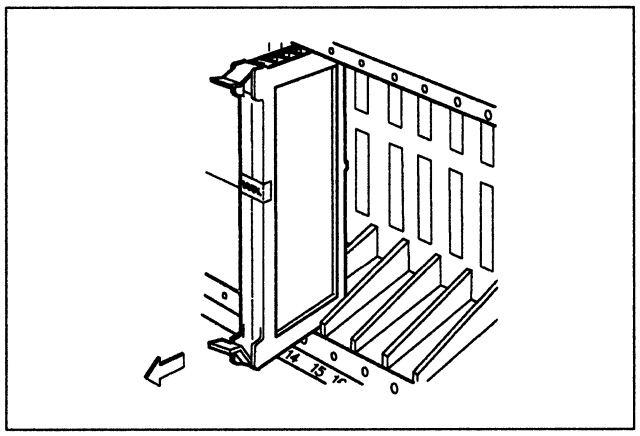


9

Lift the extractor levers at each end of the adapter and pull it out.

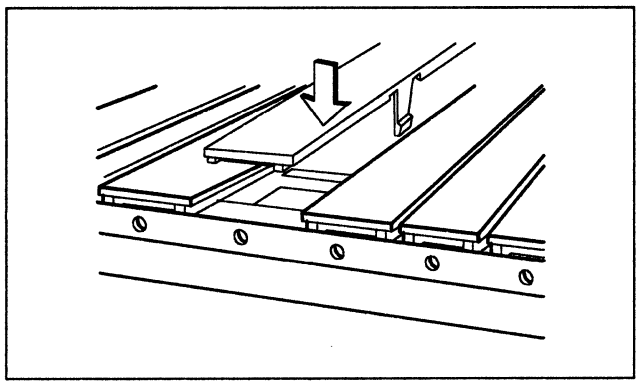
Store the adapter according to your company's procedures.

Note: If there are shipping springs holding the extractor levers closed, squeeze the springs together and discard them.



10

Install the insert you received in the kit in the location where you removed the type 905x adapter.



11

Do you have another Storage Expansion adapter to remove from this controller at this time?

YES Repeat steps **8** through **10**.

NO Continue with the next step.

Note: If there is not a type 905x adapter in location 20 and there is a type 905x adapter in location 17, this placement will cause an error.

Move the type 905x adapter from location 17 to location 20.

12

Close the door of the controller.

Then go to "Verification Test for Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R" on page 15 to verify that this controller is operating correctly.

Verification Test for Models 1L, 1R, 2R, 3R, 11L, 11R, 12R, or 13R

1

Does your controller have a metallic, waterproof-type power plug?

YES **CAUTION:**
If your machine has a metallic, waterproof-type power plug, do not attempt to connect it. Instead, have a qualified electrician connect the plug. (For translations of this safety notice, see Safety Notice 3 in *IBM 3174 Safety Notices*, GA27-3824.)

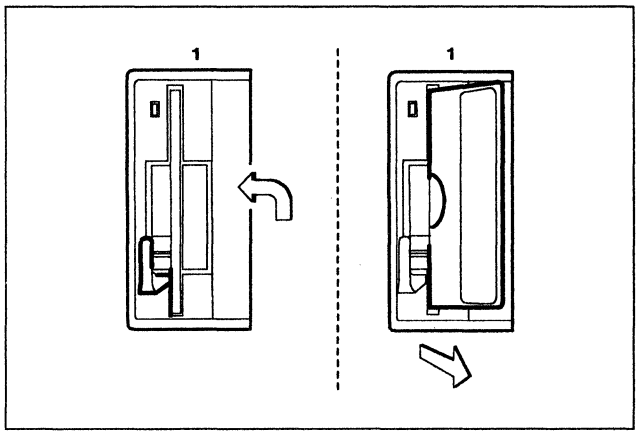
NO Plug the controller power plug into an electrical outlet.

2

Is there a diskette in drive 1?

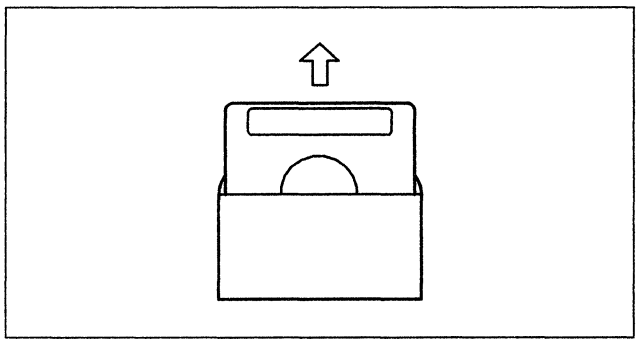
YES Open the lever of drive 1, and remove the diskette.

NO Continue with the next step.



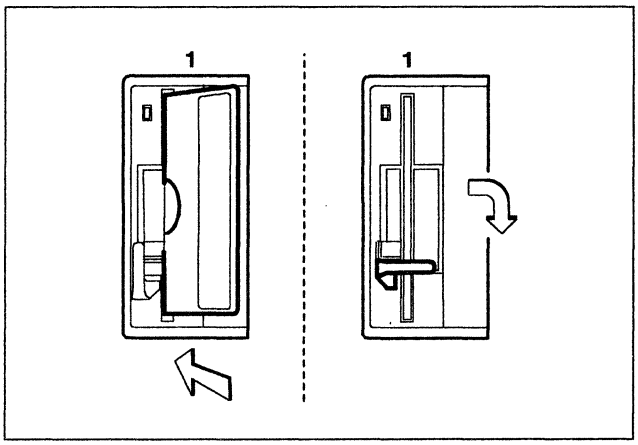
3

Remove the Utility diskette from the protective envelope.



4

With the label facing to the left, insert the Utility diskette into drive 1 and close the lever.

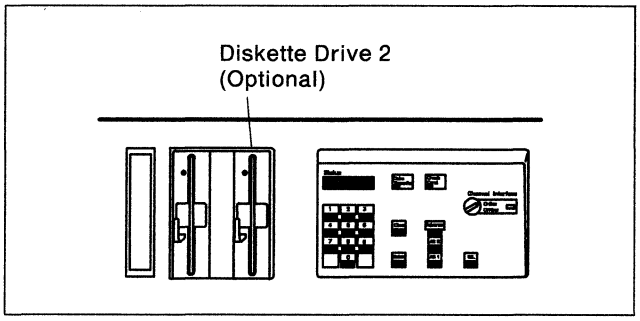


5

Does this controller have an optional Diskette Drive 2?

YES Continue with the next step.

NO Go to step **7** on this page.



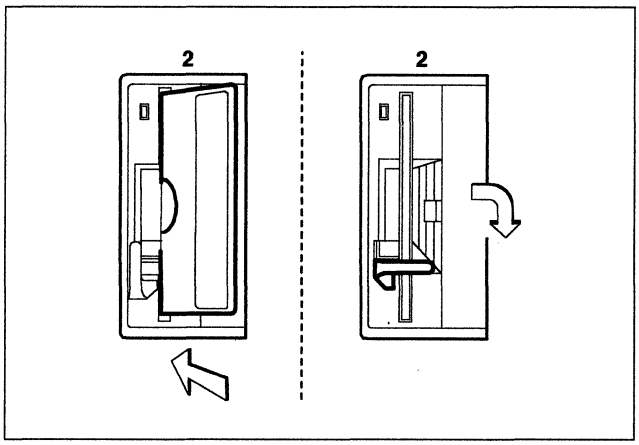
6

Is there a diskette in drive 2?

YES Continue with the next step.

NO Insert either a 3174 Control, DSL, or RPQ diskette into drive 2 and close the lever.

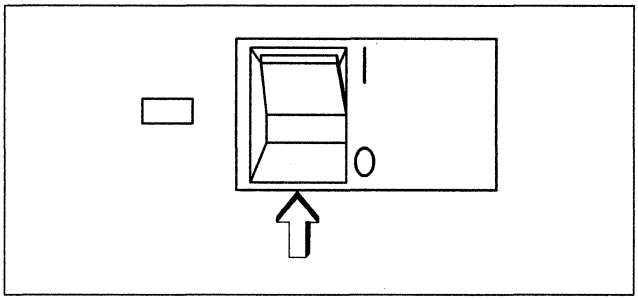
Do not use a diskette marked **2.4** unless drive 2 is labeled **2.4**.



7

Switch the machine on with the power switch.

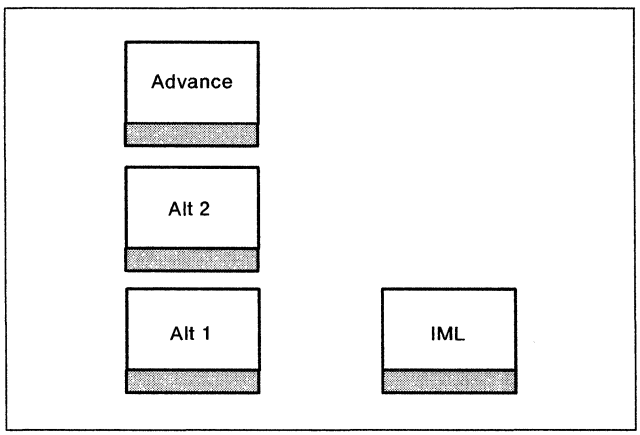
Note: For a Model **1L** or **11L**, lift the switch to the **Start** position and release.



8

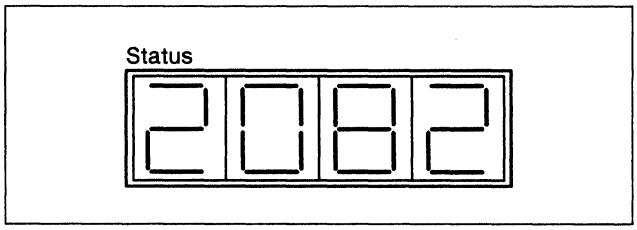
In the following sequence:

1. Press and hold **Alt 2**.
2. Press and release **IML**.
3. Release **Alt 2**.



9

Does 2082 appear on the Status display within 5 minutes?



YES Continue with the next step.

NO Repeat step **8** on page 16.

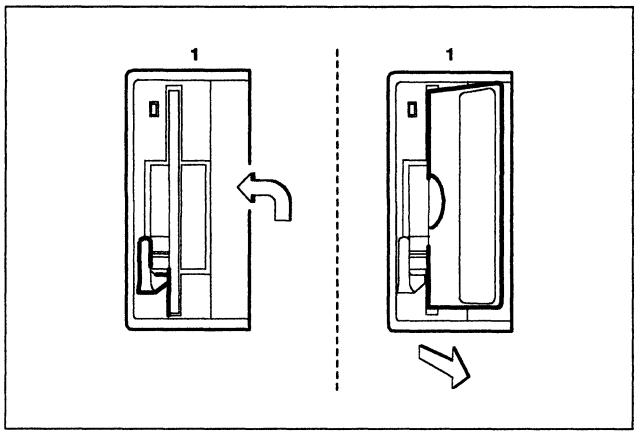
If 40 still does not appear, see the *3174 Status Codes* manual, GA27-3832, for a description of the status code displayed.

This status code description is also in the first and second editions of the *3174 Models 1L, 1R, 2R, and 3R User's Guide*, GA23-0337.

10

Open the lever of drive 1, and remove the diskette.

Insert the diskette into its protective envelope, and put it into the diskette storage pocket.



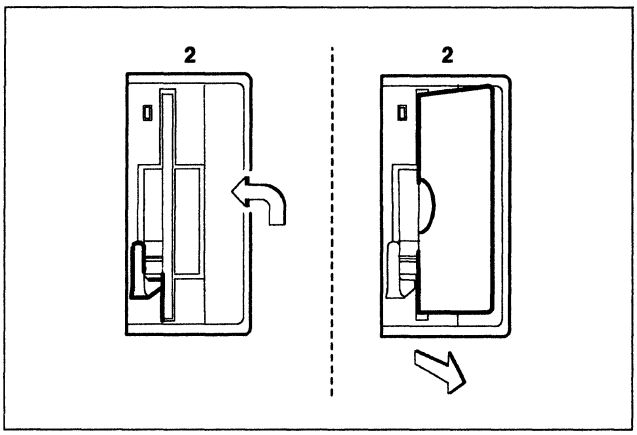
11

Is there an optional Diskette Drive 2?

YES Open the lever of drive 2, and remove the diskette.

Insert the diskette into its protective envelope, and put it into the diskette storage pocket.

NO Continue with the next step.



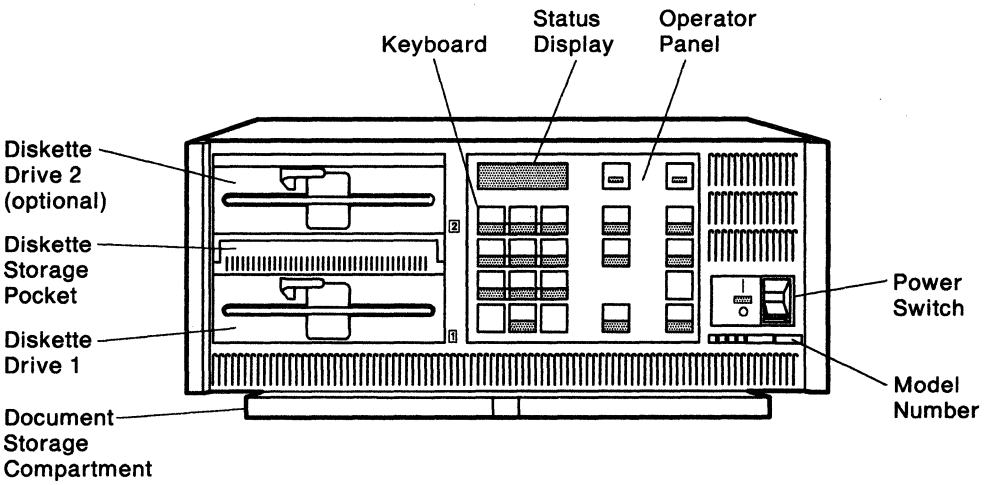
12

Storage Expansion Feature modification is complete.

To make the controller operational, see the *3174 Model 1L, 1R, 2R, 3R, 11L, 11R, 12R, and 13R User's Guide*, GA23-0337.

Storage Expansion Feature Installation in a Model 51R or 53R

Before beginning, note the location of the controller's basic components in the following figure.



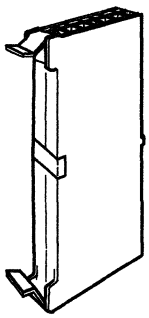
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.

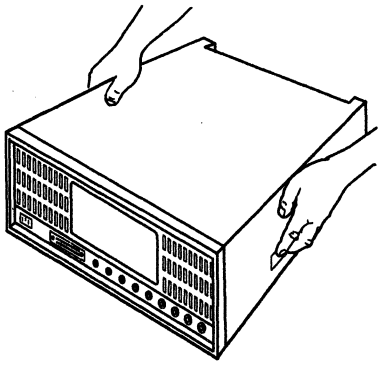


Storage Expansion Card (905X)

2

Lift the latches on the sides of the top cover.

Pull the sides slightly outward, and lift the cover off.

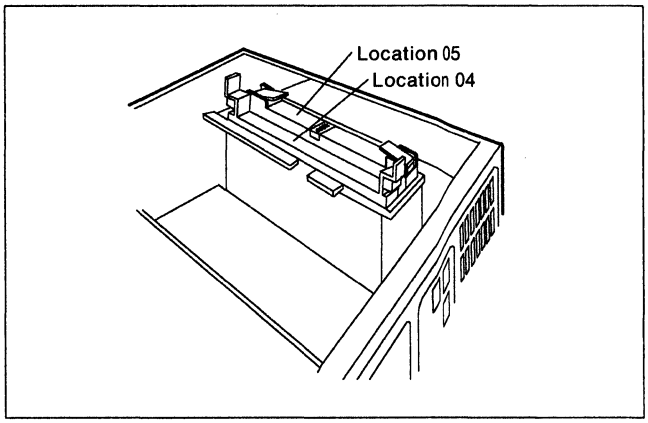


3

Is there already a type 9051, type 9052, or type 9053 adapter in location 05?

YES Continue with the next step.

NO Go to step **5** on this page.



4

Are you replacing the type 905x adapter in location 05 with a different type 905x adapter?

YES Continue with the next step.

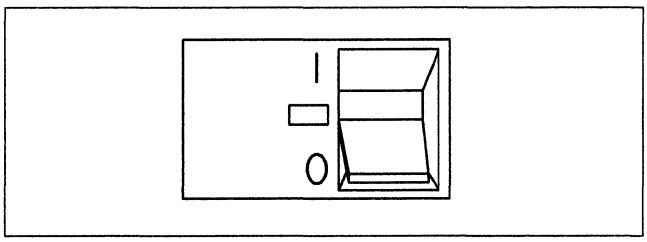
NO Replace the cover, discontinue this procedure, and see your system planner. There is only one type 905x adapter location in this machine.

5

Is the controller power switch switched off?

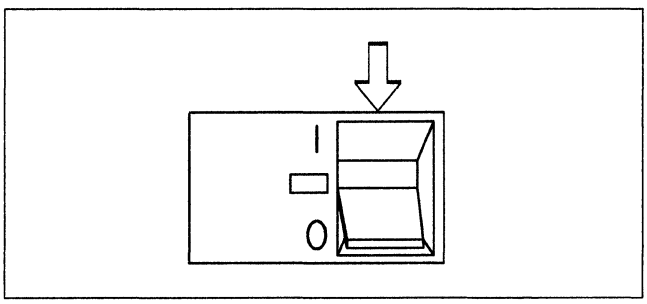
YES Go to step **7** on this page.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.



6

Press the power switch to **O** (Off).



7

Unplug the controller power plug.

8

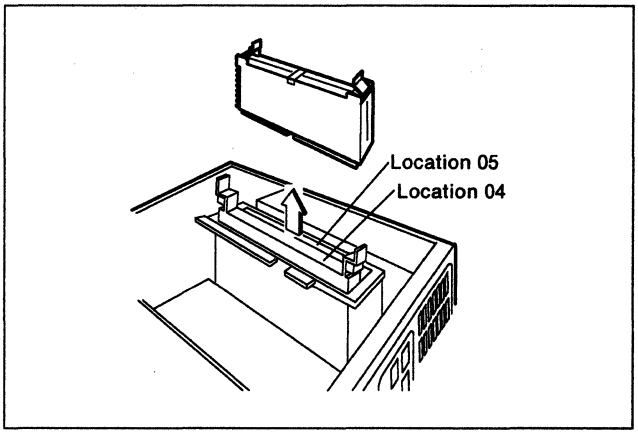
Is there a type 905x adapter in location 05?

YES Lift the extractor levers at each end of the adapter, pull it out, and store it according to your company's procedures.

Then go to step **10** on this page.

Note: If there are shipping springs holding the extractor levers closed, squeeze the springs together and discard them.

NO Continue with the next step.

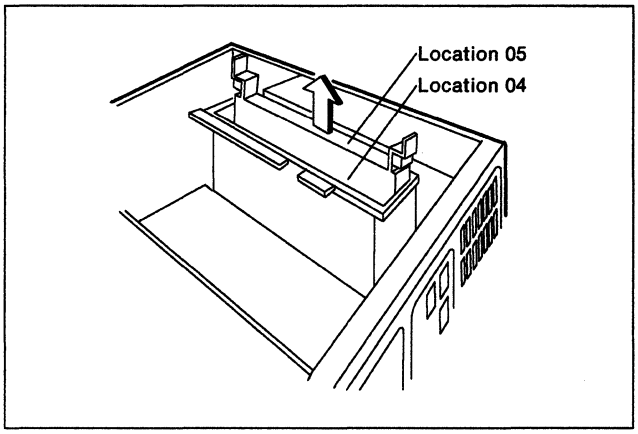


9

Is there an empty cassette (no adapter type) in location 05?

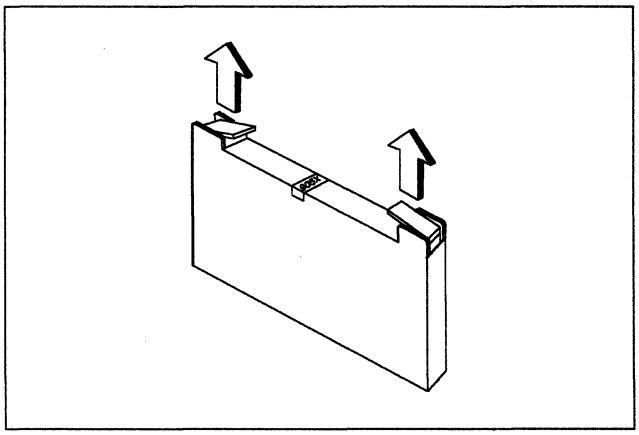
YES Grip the tabs on each end of the cassette, pull it up, and remove it.

NO Continue with the next step.



10

Make sure that both extractor levers of the adapter from the kit are in the open position.

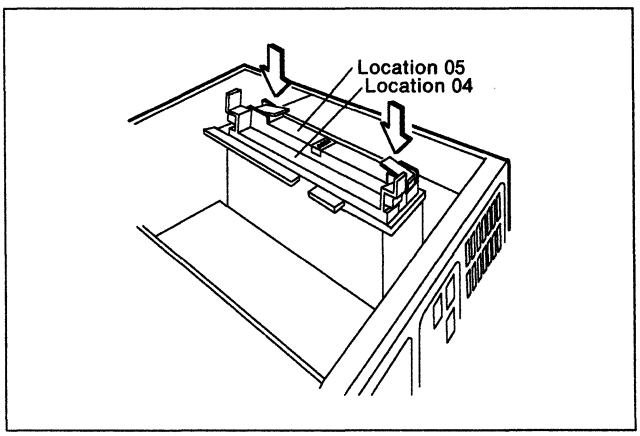


11

From the front of the controller and with the adapter type 905x facing you, insert the adapter into location 05 until it is firmly seated.

Press the extractor levers in to lock the adapter in place.

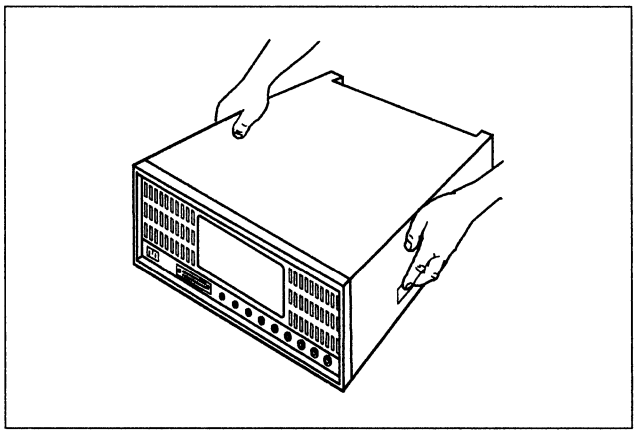
Then push the adapter in to be sure it is fully seated.



12

Lift the latches on the sides of the top cover.

Put the top cover back in place, and push the sides slightly inward while pushing the latches down into the locked position.

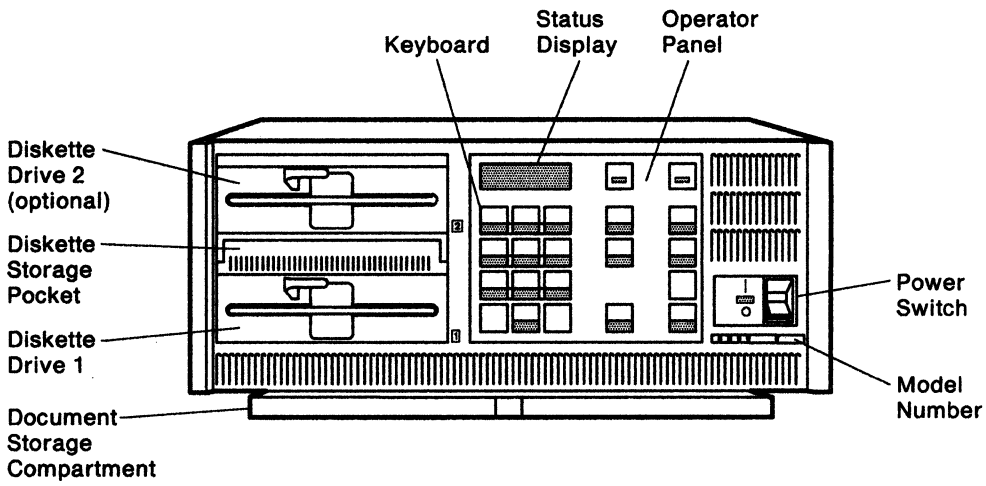


13

Go to "Verification Test for Models 51R, 53R, 61R, 62R, or 63R" on page 32 to verify that this controller is operating correctly.

Storage Expansion Feature Removal from a Model 51R or 53R

Before beginning, note the location of the controller's basic components in the following figure.



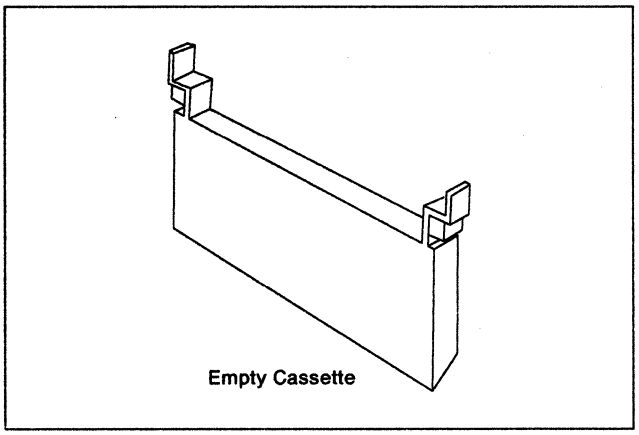
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.

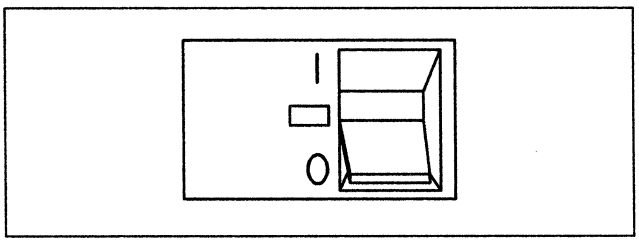


2

Is the controller power switch switched off?

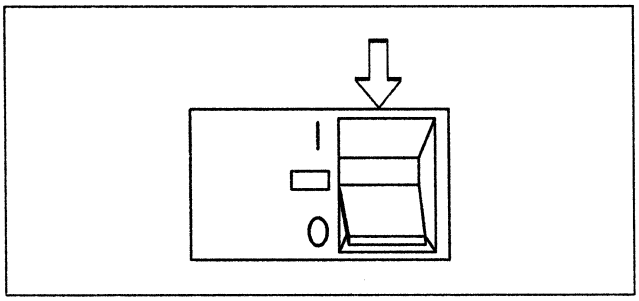
YES Go to step **4** on page 23.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.



3

Press the power switch to **O** (Off).



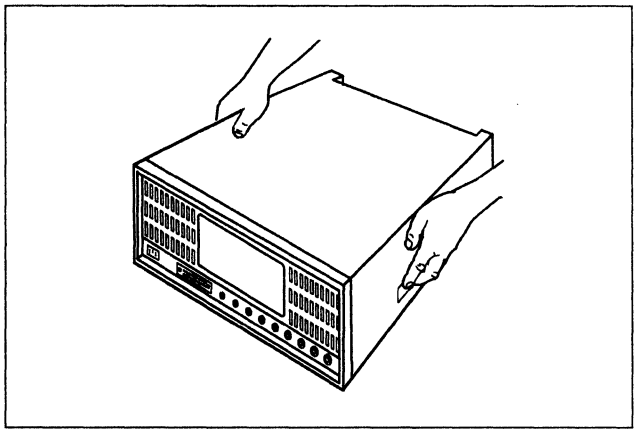
4

Unplug the controller power plug.

5

Lift the latches on the sides of the top cover.

Pull the sides slightly outward, and lift the cover off.



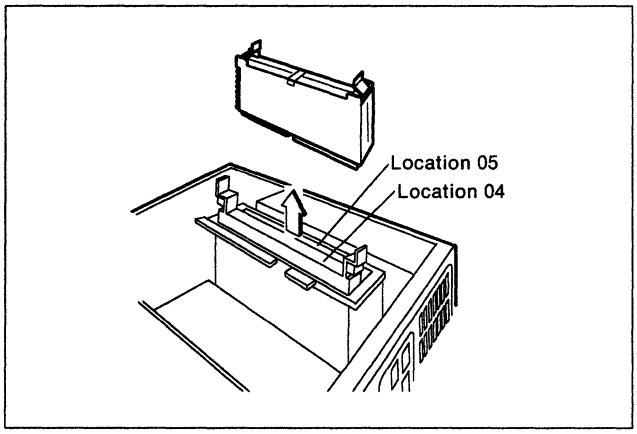
6

To remove the type 905x adapter in location 05:

1. Lift the extractor levers at each end of the adapter.
2. Pull the adapter out.

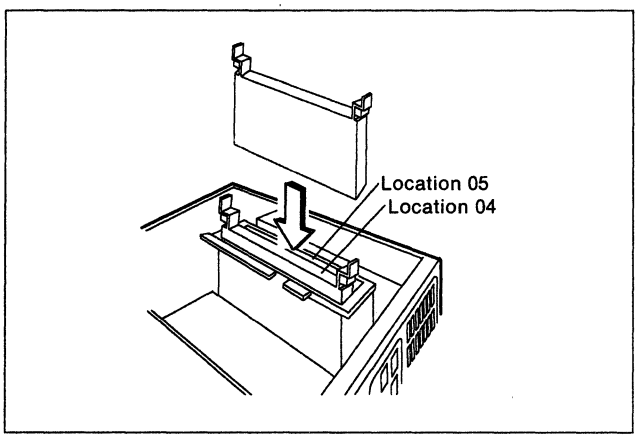
Store the adapter according to your company's procedures.

Note: If there are shipping springs holding the extractor levers closed, squeeze the springs together and discard them.



7

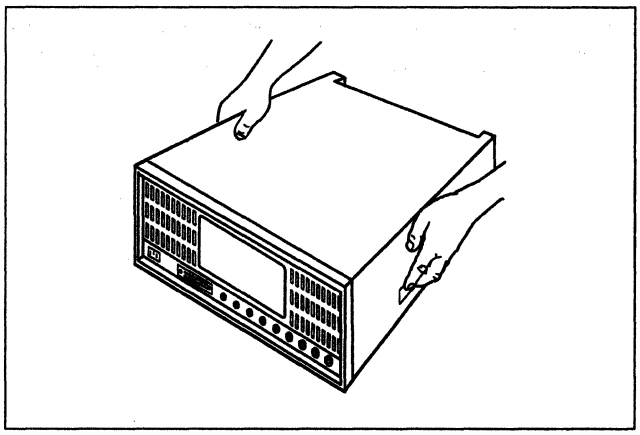
Insert the empty cassette you received in the kit into location 05 until it is firmly seated.



8

Lift the latches on the sides of the top cover.

Put the top cover back in place, and push the sides slightly inward while pushing the latches down into the locked position.

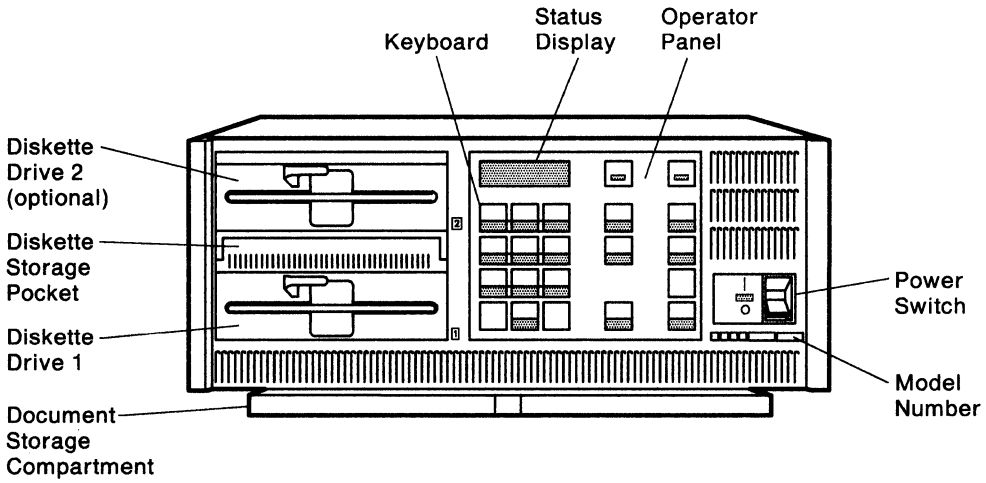


9

Go to "Verification Test for Models 51R, 53R, 61R, 62R, or 63R" on page 32 to verify that this controller is operating correctly.

Storage Expansion Feature Installation in a Model 61R, 62R, or 63R

Before beginning, note the location of the controller's basic components in the following figure.



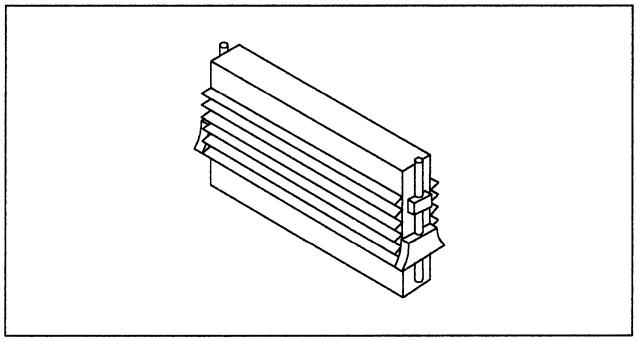
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

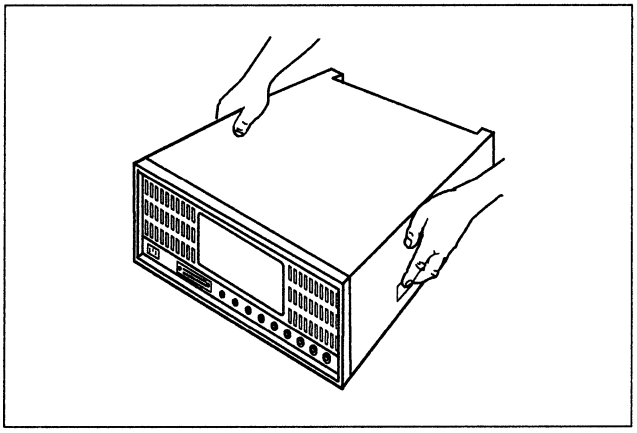
Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.



2

Lift the latches on the sides of the top cover.

Pull the sides slightly outward, and lift the cover off.

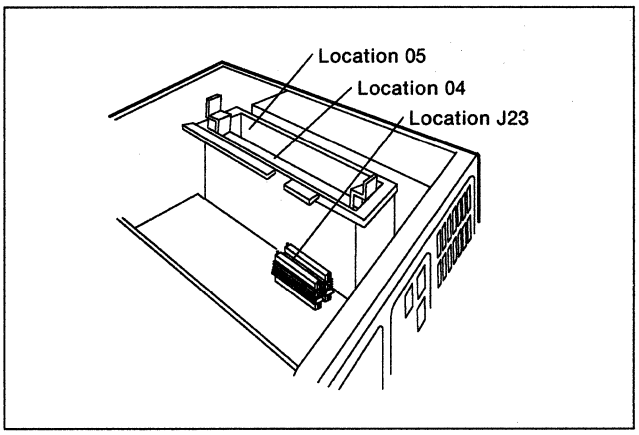


3

Is there already a Storage Expansion module in location J23?

YES Continue with the next step.

NO Go to step **5** on this page.



4

Are you replacing the Storage Expansion module in location J23 with a different Storage Expansion module?

YES Continue with the next step.

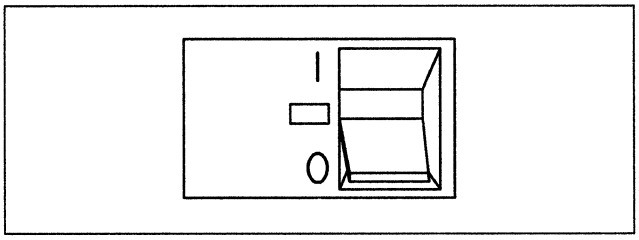
NO Replace the cover, discontinue this procedure, and see your system planner. There is only one Storage Expansion module location in this machine.

5

Is the controller power switch switched off?

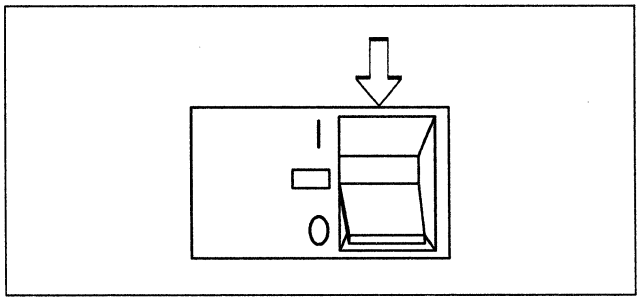
YES Go to step **7** on this page.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.



6

Press the power switch to **O** (Off).



7

Unplug the controller power plug.

8

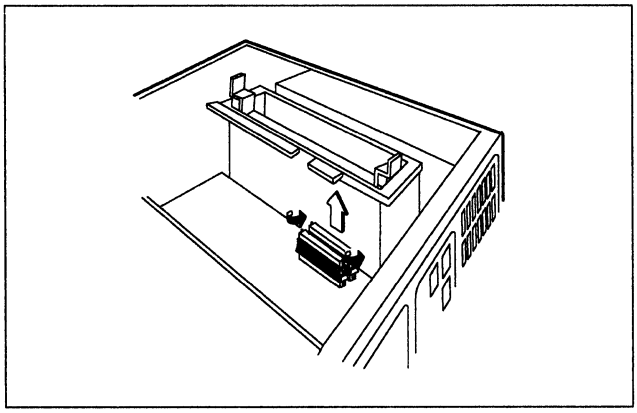
Is there a Storage Expansion module in location J23?

YES Unscrew the thumbscrews of the module in location J23 and pull it out.

Store it according to your company's procedures.

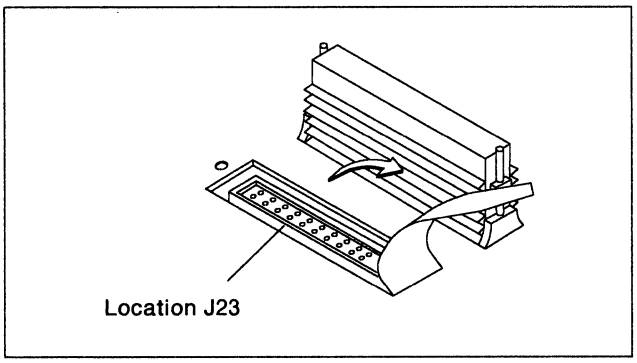
Then go to step **10** on this page.

NO Continue with the next step.



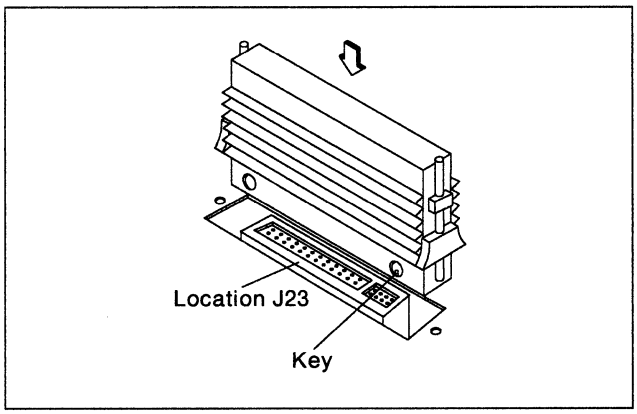
9

Grip the tab end of the tape covering location J23, pull it off, and discard it.



10

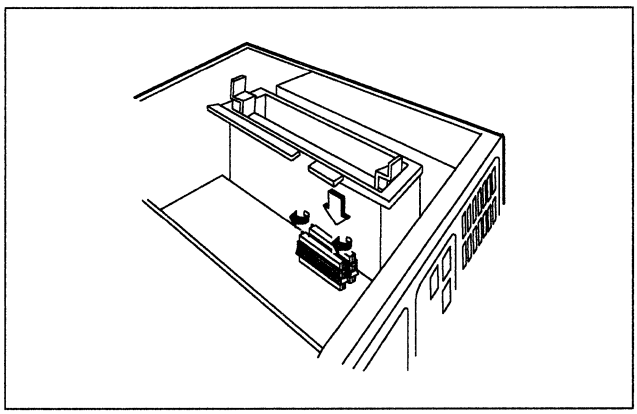
From the front of the controller, hold the module with the key toward the front.



11

Insert the module from the kit into location J23 until it is firmly seated.

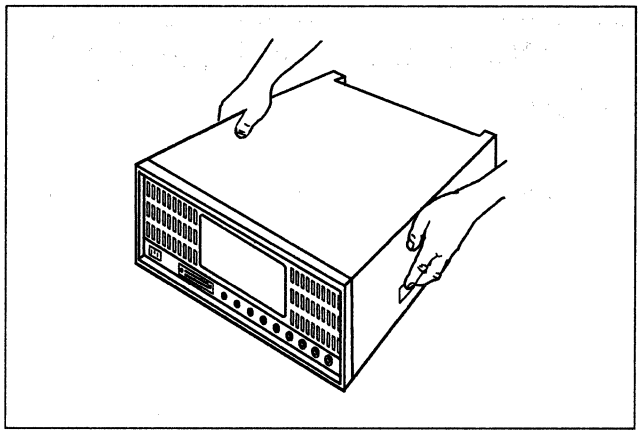
Tighten the thumbscrews to lock the module in place.



12

Lift the latches on the sides of the top cover.

Put the top cover back in place, and push the sides slightly inward while pushing the latches down into the locked position.

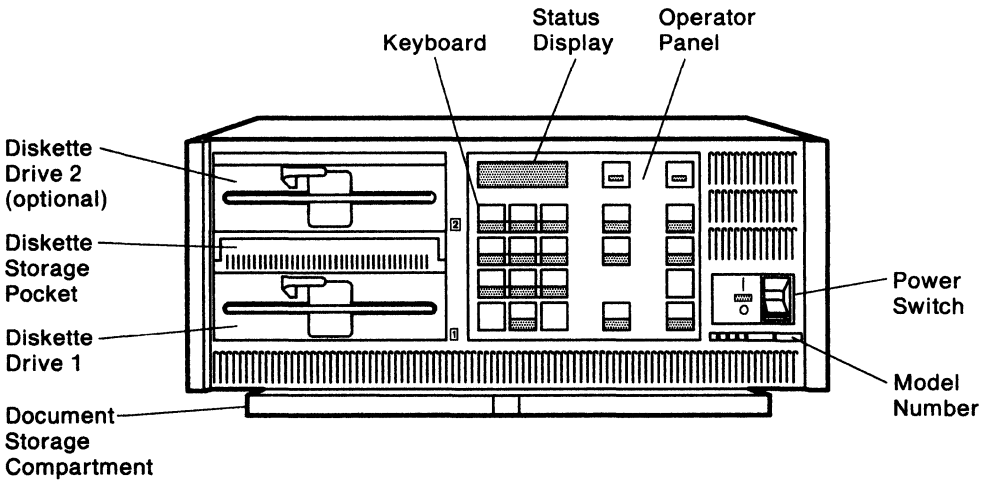


13

Go to "Verification Test for Models 51R, 53R, 61R, 62R, or 63R" on page 32 to verify that this controller is operating correctly.

Storage Expansion Feature Removal from a Model 61R, 62R, or 63R

Before beginning, note the location of the controller's basic components in the following figure.



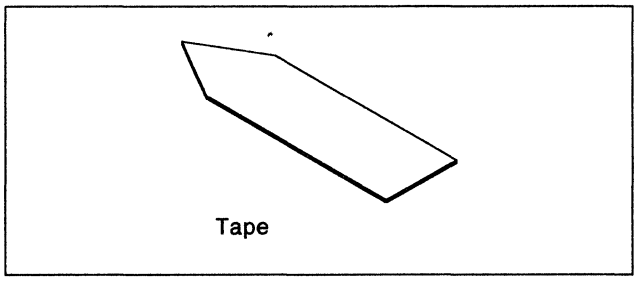
1

Do you have the required item shown, in the kit?

YES Continue with the next step.

NO Discontinue this procedure until you have the required item.

Note: For testing, you will also need a Utility diskette that supports all of the features installed on this controller.

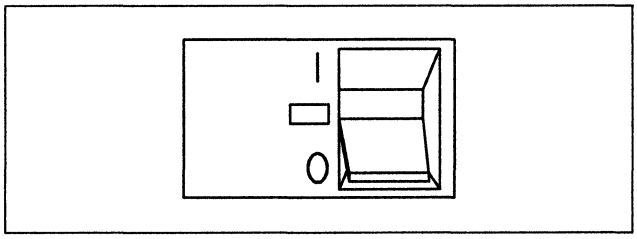


2

Is the controller power switch switched off?

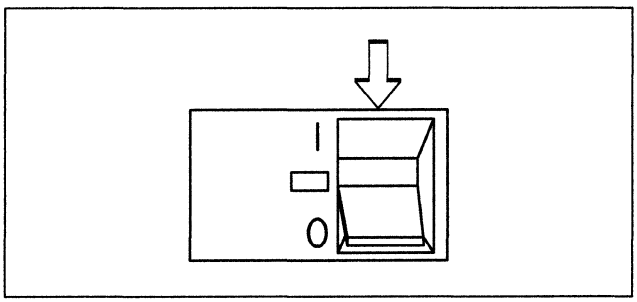
YES Go to step **4** on page 30.

NO Follow your company's procedures to notify users and to have this controller taken offline before continuing with the next step.



3

Press the power switch to **O** (Off).



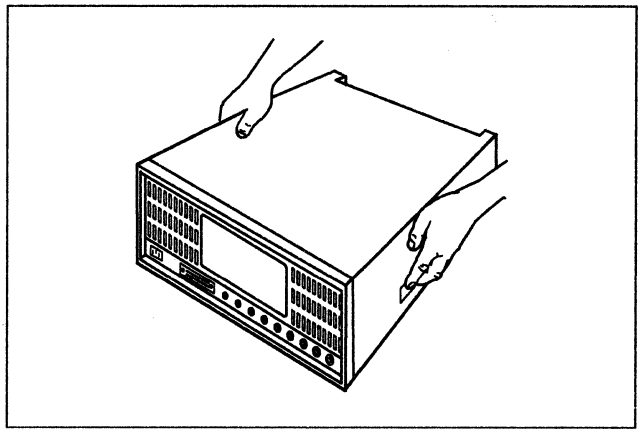
4

Unplug the controller power plug.

5

Lift the latches on the sides of the top cover.

Pull the sides slightly outward, and lift the cover off.

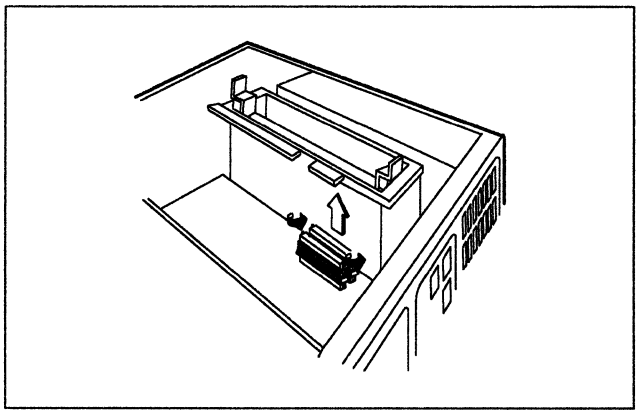


6

To remove the Storage Expansion module in location J23:

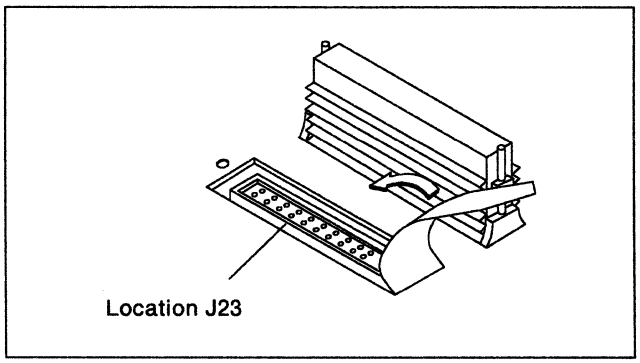
1. Unscrew the thumbscrews.
2. Pull the module out.

Store the module according to your company's procedures.



7

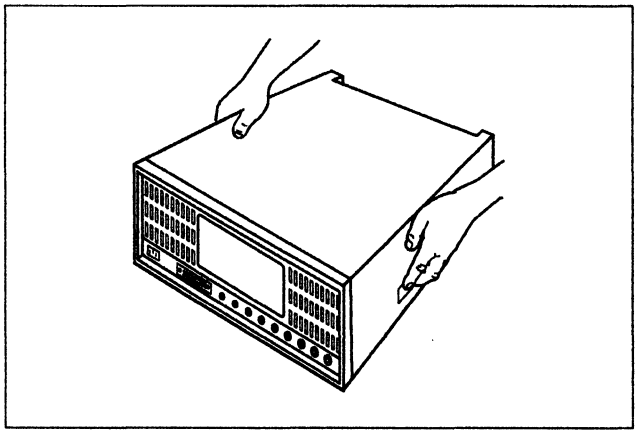
Peel the back off of the tape you received in the kit and stick it over the J23 opening with the tab to the rear.



8

Lift the latches on the sides of the top cover.

Put the top cover back in place, and push the sides slightly inward while pushing the latches down into the locked position.



9

Go to "Verification Test for Models 51R, 53R, 61R, 62R, or 63R" on page 32 to verify that this controller is operating correctly.

Verification Test for Models 51R, 53R, 61R, 62R, or 63R

1

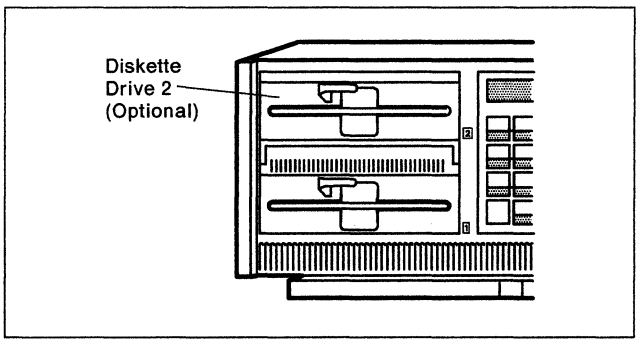
Plug the controller power plug into an electrical outlet.

2

Does this controller have an optional Diskette Drive 2?

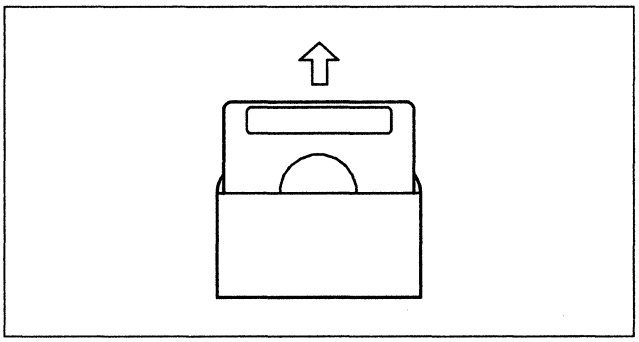
YES Continue with the next step.

NO Go to step **10** on page 34.



3

Remove the Utility diskette from the protective envelope.

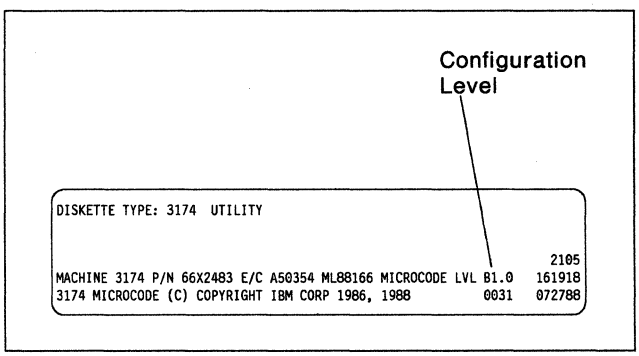


4

Is the Utility diskette label marked Configuration **B**?

YES Continue with the next step.

NO Go to step **6** on page 33.

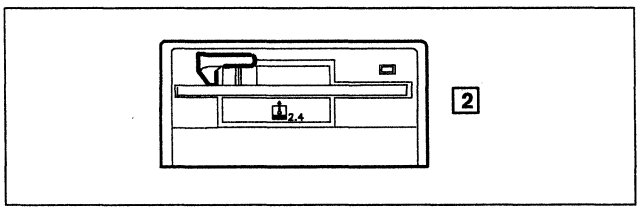


5

Is drive 2 labeled **2.4**?

YES Continue with the next step.

NO Go to step **9** on page 33.

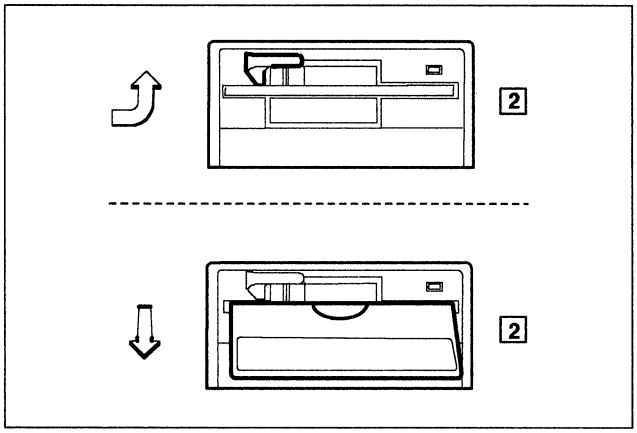


6

Is there a diskette in drive 2?

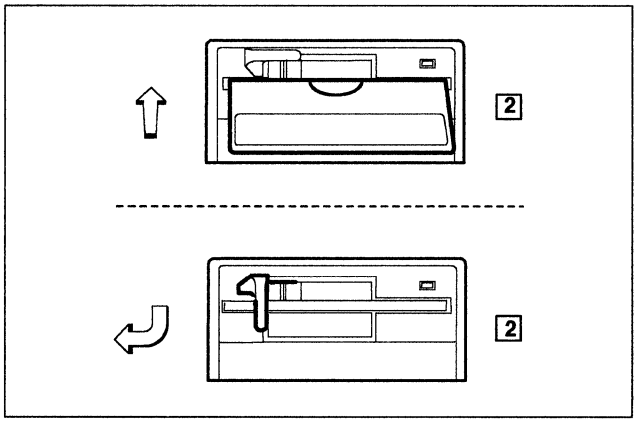
YES Open the lever of drive 2, and remove the diskette.

NO Continue with the next step.



7

With the label facing up, insert the Utility diskette into drive 2 and close the lever.



8

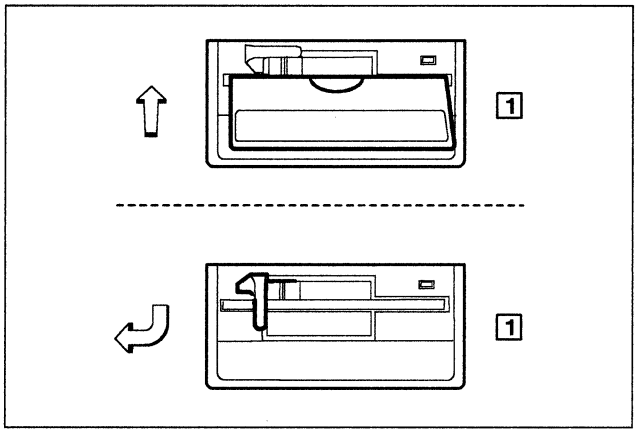
Is there a diskette in drive 1?

YES Go to step **13** on page 34.

NO Insert either a 3174 Control, DSL, or RPQ diskette into drive 1 and close the lever.

Do not use a diskette marked **2.4** unless drive 1 is labeled **2.4**.

Then go to step **13** on page 34.



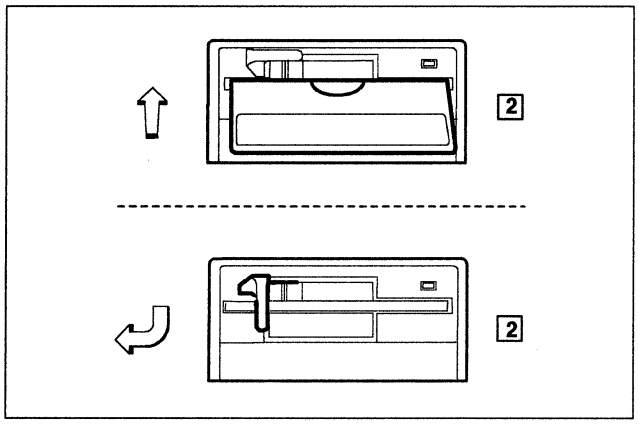
9

Is there a diskette in drive 2?

YES Continue with the next step.

NO Insert either a 3174 Control, DSL, or RPQ diskette into drive 2 and close the lever.

Note: Do not insert a diskette marked **2.4**.

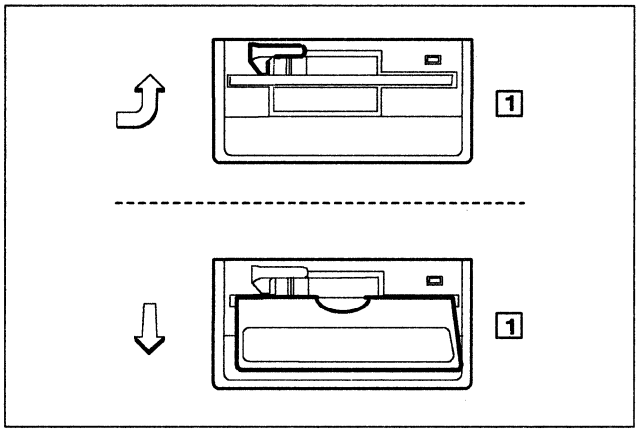


10

Is there a diskette in drive 1?

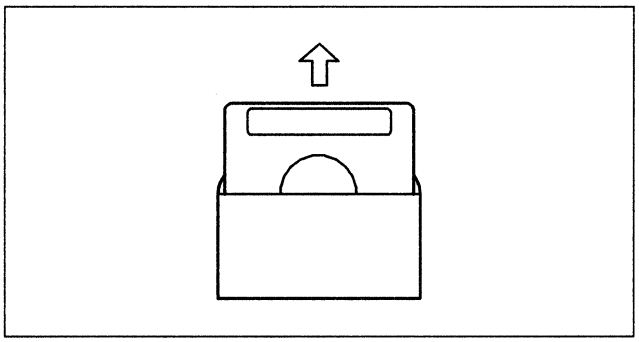
YES Open the lever of drive 1, and remove the diskette.

NO Continue with the next step.



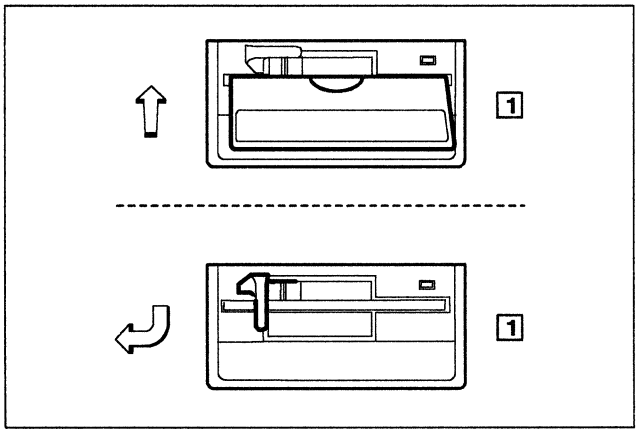
11

If necessary, remove the Utility diskette from the protective envelope.



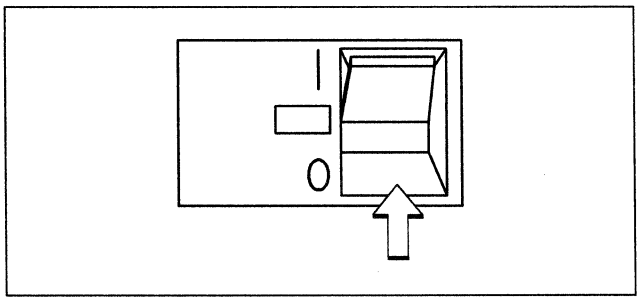
12

Put the Utility diskette into drive 1 and close the lever.



13

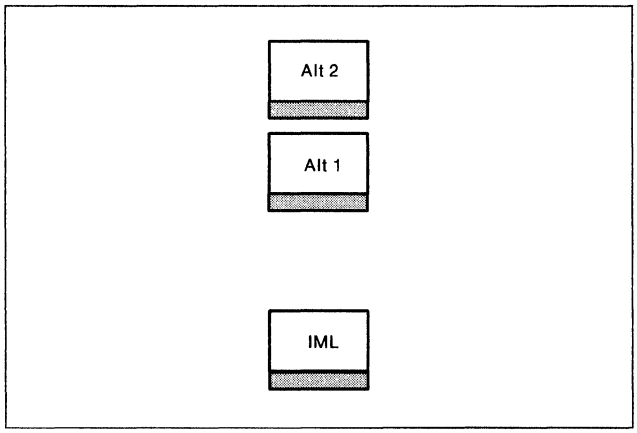
Switch the machine on with the power switch.



14

In the following sequence:

1. Press and hold **Alt 1**.
2. Press and release **IML**.
3. Release **Alt 1**.



15

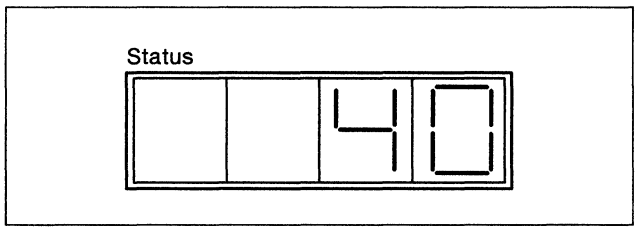
Does 40 appear on the Status display within 20 seconds?

YES Continue with the next step.

NO Repeat step **14** on this page.

If 40 still does not appear, see the *3174 Status Codes* manual, GA27-3832, for a description of the status code displayed.

This status code description is also in the first and second editions of the *3174 Models 51R, 52R, and 53R User's Guide*, GA23-0333.



16

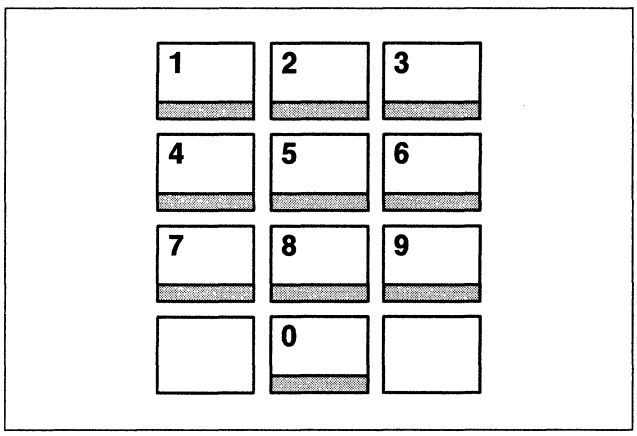
Use the keypad on the operator panel to key in:

82 If the Utility diskette is in drive 1.

If you key in a wrong number, press **Clear** and try again.

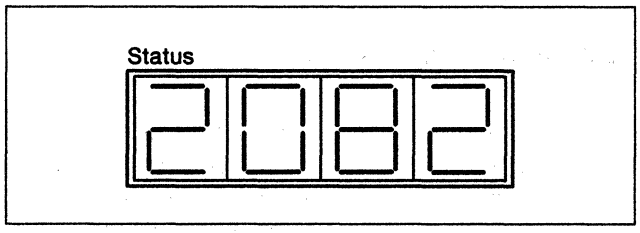
0282 If the Utility diskette is in drive 2.

If you key in a wrong number, press **Clear** and try again.



17

Press **Enter**.



Does 2082 appear on the Status display within 5 minutes?

YES Continue with the next step.

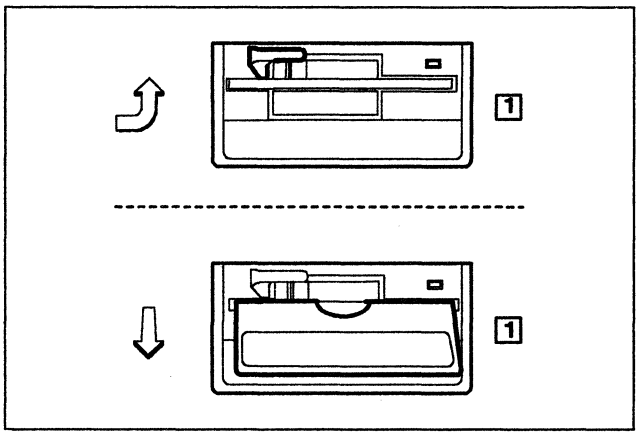
NO See the *3174 Status Codes* manual, GA27-3832, for a description of the status code displayed.

This status code description is also in the first and second editions of the *3174 Models 51L, 52R, and 53R User's Guide*, GA23-0333.

18

Open the lever of drive 1, and remove the diskette.

Insert the diskette into its protective envelope, and put it into the diskette storage pocket.



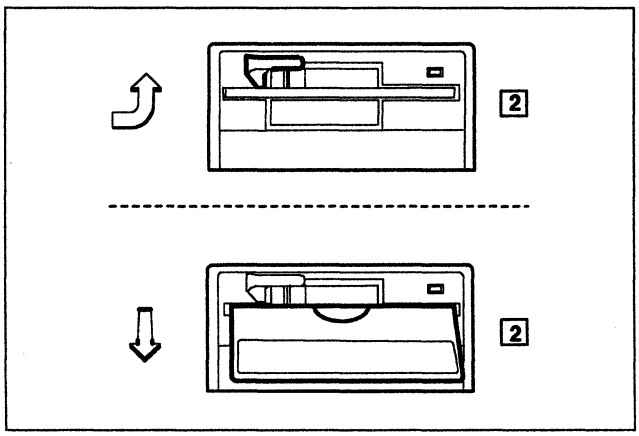
19

Is there an optional Diskette Drive 2?

YES Open the lever of drive 2, and remove the diskette.

Insert the diskette into its protective envelope, and put it into the diskette storage pocket.

NO Continue with the next step.



20

Storage Expansion Feature modification is complete.

To make the controller operational, see the *3174 Model 51R, 52R, 53R, 61R, 62R, and 63R User's Guide*, GA23-0333.

IBM 3174 Establishment Controller
Storage Expansion Feature
Installation and Removal Instructions

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