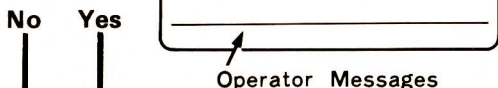# IBM

IBM 3191 Display Station

Problem Solving Guide 1
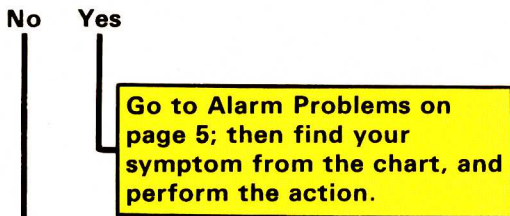
Problem Determination

1. Does an operator message appear on the screen?

No   Yes

Operator Messages

> **Go to Operator Messages on page 2; then find your symbol from the chart, and perform the action.**

2. Does the alarm sound continuously OR not at all?

No   Yes

> **Go to Alarm Problems on page 5; then find your symptom from the chart, and perform the action.**

> **Go to Other Problems on page 6; then find your symptom from the chart, and perform the action.**

Operator Messages

Note:

1. There are some differences between the operator messages for the IBM 3191 Display Station attached to the following **Group A** and those for the IBM 3191 Display Station attached to the following **Group B**.

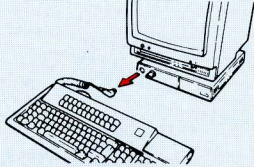**Group A:** IBM 3174, IBM 3274, IBM 3276, IBM 4321, IBM 4331, and IBM 4361
Group B: IBM 4701 and IBM 4702

When your IBM 3191 Display Station is attached to the **Group B**, see those operator guide books.
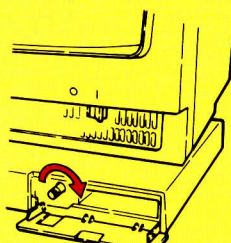
2. See the User's Guide GA18-2454, for the meanings of the following symbols.

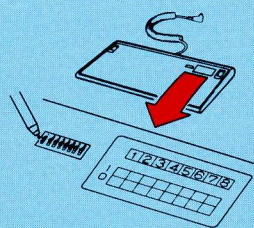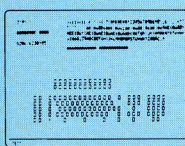| Symbol	Action
✗ ☼	You must wait for the function to complete.
✗ SYSTEM	Wait or press the Reset key.
✗ ⤻ nn ✗ ⤻ nnn (n: 0-9)	
✗ ⤻ nn ✗ ⤻ nnn (n: 0-9)	Press the Reset key and retry the operation. If the symptom still
✗ PROG nn ✗ PROG nnn (n: 0-9)	appears, contact your supervisor.
✗ ?+ ✗ ?+	Press the Reset key and retry the operation.
✗ -f ✗ -f	
✗ ←↓→	Press the Reset key and move the cursor or take another action.

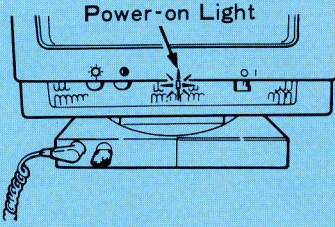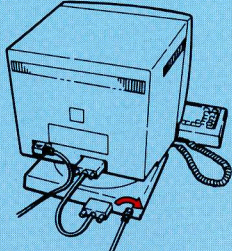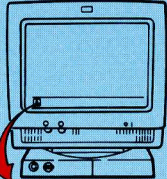| Symbol	Action
✖ 木>	Press the Reset key. Correct the entry.
✖ 木 NUM	Press the Reset key and enter a numeral.
✖ -S	Press the Reset key to restore the keyboard.
✖ ⊐⊢圆	Press the Reset key.
✖ ⊐2%%	Ensure that the keyboard setup switches are set correctly. If the symbol still appears, contact your supervisor.
✖ C-f	Press the Reset key.
✖ ⊶	1. Turn the security key counterclockwise. 2. Turn the security key clockwise. 3. Does "✖ ⊶ " still appear? YES, the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9. NO, continue the operation.
⤚z— nn ⤚z— nnn	Contact your supervisor.
TEST	Go to the symptom, "Test pattern appears at power on time." on page 6.
L	The logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.

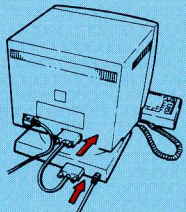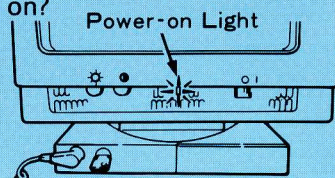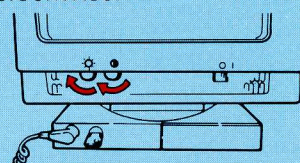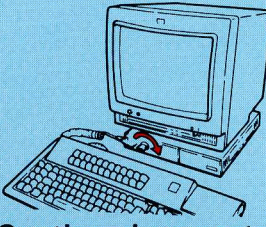| Symbol	Action
LK	1. Set the power switch to O (Off). 2. Pull out the keyboard cable from the logic element. 3. Set the power switch to I (On). 4. Does "LK" still appear? YES, the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9. NO, the keyboard is failing. Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.
K	1. Set the power switch to O (Off). 2. Make sure the keyboard cable is firmly connected. 3. Set the power switch to I (On). 4. Does "K" still appear? YES, the keyboard is failing. Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7. NO, continue the operation.

Alarm Problems

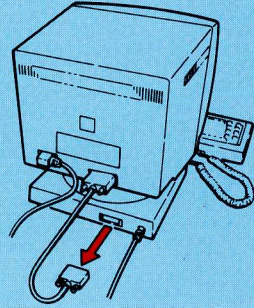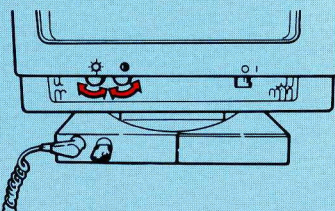| Symptom	Action
Alarm continues to sound.	**1**. Set the power switch to O (Off); then wait for a few seconds. **2**. Set the power switch to I (On). **3**. Does the alarm still continue to sound? **YES,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9. **NO,** continue the operation.
Alarm does not sound.	**1**. Turn the volume control knob fully clockwise. **2**. Continue the operation. Did the alarm sound after you continued the operation? **YES,** turn the volume control knob to a comfortable sound level; then continue the operation. **NO,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.

Other Problems

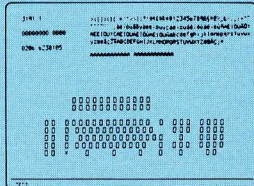| Symptom	Action
An unexpected character (a character different from what should appear) is displayed.	**1**. Set the power switch to O (Off). **2**. Make sure the keyboard setup switches are set as shown on the label. **3**. Does the keyboard setup switches match the label? **YES,** go to "Keyboard Test" on page 16. **NO,** set the keyboard setup switches correctly.
Test pattern appears at power-on time.	**1**. Set the power switch to O (Off); then wait for a few seconds. **2**. Set the power switch to I (On). **3**. Does the test pattern still appear? **YES,** the keyboard is failing. Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7. **NO,** continue the operation.
A single character is typed, but multiple characters are displayed.	The keyboard is failing. Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.

Symptom	Action
Keys are pressed, but do not change on the screen.	**1**. Is the power-on light on? Power-on Light **YES,** go to step 2. **NO,** go to "Power-on Light problem" on page 18. **2**. Make sure the communication cable is firmly connected. **3**. Does the system indicator appear? (④, ⑥, **I, i, S,** or **4700**) **YES,** go to step 4. **NO,** go to "Logic Test" on page 14. **4**. Does the problem still appear? **YES,** go to "Keyboard Test" on page 16. **NO,** continue the operation.

Symptom	Action
Characters on the screen are moving vertically or horizontally.	**1**. Set the power switch to O (Off). **2**. Wait five seconds. **3**. Set the power switch to I (On). **4**. Does the alarm continue to sound? **YES,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9. **NO,** the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2.
High-intensity character problem.	**1**. Turn the brightness and contrast knob to a comfortable viewing level. **2**. Does the problem still exist? **YES,** the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2. **NO,** continue the operation.

Symptom	Action
Screen is completely blank.	**1**. Set the power switch to O (Off). **2**. Make sure the video cable is firmly connected. **3**. Set the power switch to I (On). **4**. Is the power-on light on? Power-on Light **YES**, go to step 5. **NO**, go to "Power-on Light Problem" on page 18. **5**. Turn the brightness and contrast knob fully clockwise. **6**. Turn the security key fully clockwise. **(Continued on next page.)**

Symptom	Action
Screen is completely blank. **(Continued)**	**7**. Does the problem still exist? **YES**, go to step 8. **NO**, continue the operation. **8**. Set the power switch to O (Off). **9**. Disconnect the video cable from the logic element. **10**. Set the power switch to I (On). **11**. Is the whole screen bright? **YES**, the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9. **NO**, the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2.

Symptom	Action
• Screen is out of focus.	**1**. Does the alarm continue to sound?
• Screen is tilted.	**YES,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.
• Screen is shrunk.	**NO,** go to step 2.
• Screen is expanded.	**2**. Turn the brightness and contrast knob to a comfortable viewing level.
• Screen is waving.	
• Brightness or contrast doesn't work.	
• A part of the screen is shrunk, while the other part is expanded.	Does the problem still exist? **YES,** the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2.
• The brightness and contrast controls do not work correctly.	**NO,** continue the operation.

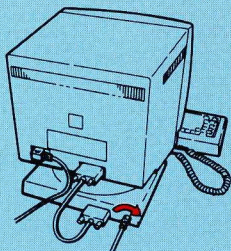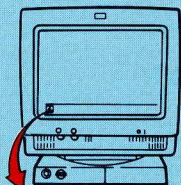| Symptom	Action
Characters have extra or missing dots.	The logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.
Screen is distorted.	**1**. Set the power switch to O (Off). **2**. Press and hold the space bar, then set the power switch to I (On). **3**. Hold the space bar down until the test pattern appears. **4**. Compare the test pattern on the screen with the pattern as shown in the figure above. **5**. Are both patterns the same? **YES,** the problem is not in your display station. One of the following is probably failing: • Host system • Control unit • Customization • Communication cable **Contact your supervisor.** **NO,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.

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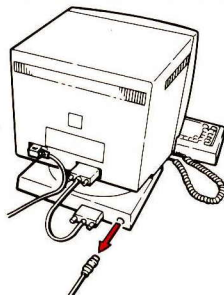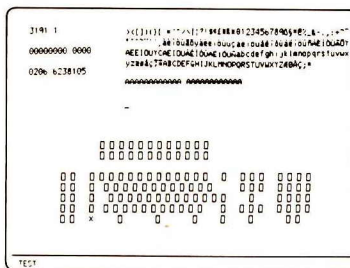| Symptom	Action
Only a horizontal line and a cursor are displayed.	**1**. Make sure the communication cable is firmly connected. **2**. Does the system indicator appear? (4, 6, **I**, **i**, **S**, or **4700**) **YES**, press the Reset key; then continue the operation. **NO**, go to "Logic Test" on page 14.
The keyboard clicker does not sound.	**1**. Press the Clicker On/Off key. 122/124-key Keyboard 104/106-key Keyboard IBM Enhanced Keyboard **2**. Does a short beep sound when a key is pressed? **YES**, continue the operation. **NO**, the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.
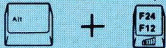
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Logic Test

1. Set the power switch to O (Off).
2. Disconnect the communication cable.
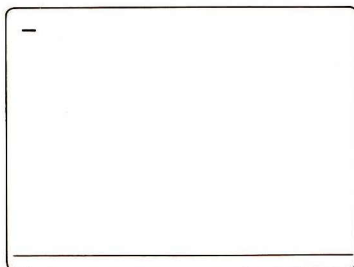

3. Press and hold the space bar, then set the power switch to I (On).
4. Hold the space bar down until the test pattern appears.

5. Are only a horizontal line and a cursor displayed?
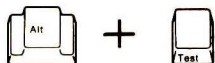

YES, the keyboard is failing.
Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.
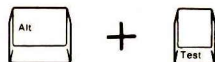**NO**, go to step **6**.

(Continued on next page.)

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6. Press and hold the Alt key; then press the Test key. ('**T**' appears in the operator information area on the screen.)

122/124-key Keyboard
**104/106-key Keyboard**

[Alt] + [Test]

IBM Enhanced Keyboard

[Alt] + [Test]

7. Press the PF1 key.

122/124-key Keyboard
104/106-key Keyboard

[PF1]

IBM Enhanced Keyboard

[F13 F1]

8. Does '**LL**' appear in the operator information area on the screen?
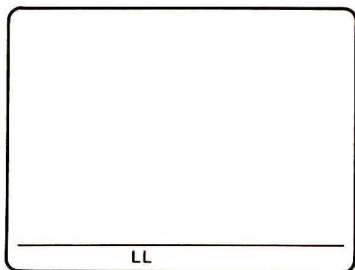
YES, the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.
NO, one of the following is probably failing:
- Host system
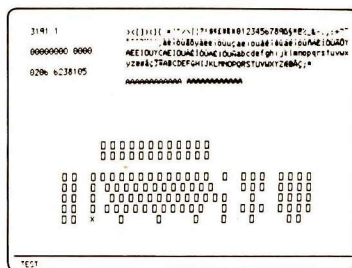- Communication cable
- Logic element
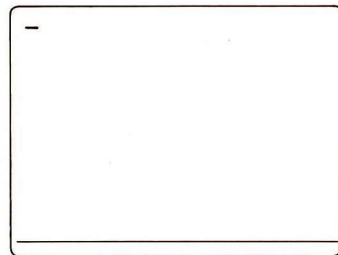- Customization

Contact your supervisor.

Keyboard Test

1. Set the power switch to O (Off).
2. Set the setup switches as shown on the label.
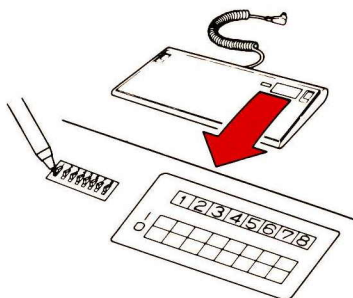
3. Press and hold the space bar down; set the power switch to I (On).
4. Hold the space bar down until the test pattern appears.

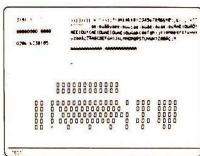

5. Are only a horizontal line and a cursor displayed?

YES, the keyboard is failing. Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.
NO, go to step **6**.

(Continued on next page.)

6. Press the key that fails, except the Reset key (displayed as X on the screen.)

Does the equivalent key shown on the screen change from ☐ to ▮, or vice versa?

Note: When a 104/106-key Keyboard is used, the key pad as shown in the figure appears on the screen.

YES, go to step 7.
NO, the keyboard is failing.
Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.

7. The setup switch field of the screen represents the on or off (1 or 0) condition of the switches located under the keyboard.
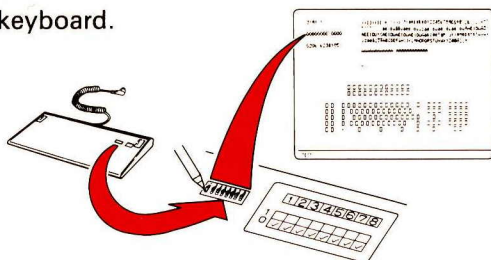
Do the setup switches match the display on the screen?

YES, go to step 8.
NO, the keyboard is failing.
Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.

8. Press the Reset key.
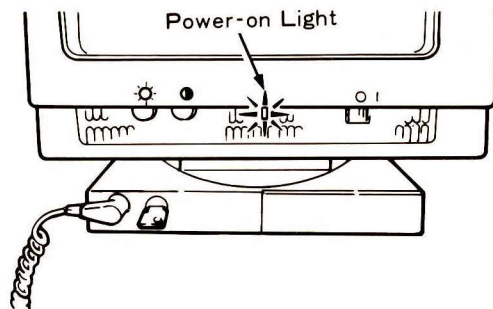
Is the screen changed?

YES, go to "Logic Test" on page 14.
NO, the keyboard is failing.
Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.

Power-on Light Problems

1. Make sure the power cord is firmly connected at both ends (wall outlet and video element).
2. Make sure the power switch is set to I (On).
3. Is the power-on light on?

Power-on Light

YES, continue the operation.
NO, go to step 4.

4. Set the power switch to O (Off).
5. Disconnect the keyboard cable from the logic element.
6. Set the power switch to I (On).
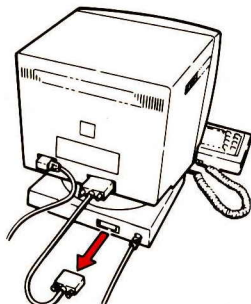**7**. Is the power-on light on?

YES, the keyboard is failing.
Go to another manual (Problem Solving Guide 2) "Keyboard" on page 7.
NO, go to step 8.

(Continued on next page.)

8. Set the power switch to O (Off).
9. Disconnect the video cable from the logic element.

10. Set the power switch to I (On).
11. Is the power-on light on?

> **YES,** the logic element is failing. Go to another manual (Problem Solving Guide 2) "Logic Element" on page 9.
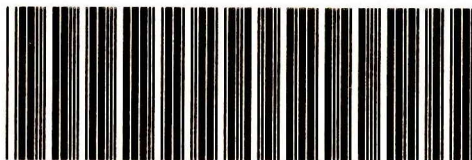> **NO,** go to step 12.

12. Set the power switch to O (Off).
13. Do you have another IBM 3191 Display Station?

> **YES,** replace the power cord with one from the other IBM 3191 Display Station.
> Go to step 14.
> **NO,** the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2.

14. Set the power switch to I (On).
15. Does the power-on light come on?

> **YES,** the original power cord is failing. Go to another manual (Problem Solving Guide 2) "Power Cord" on page 18.
> **NO,** the video element is failing. Go to another manual (Problem Solving Guide 2) "Video Element" on page 2.