PAIRS ™

STRATA ™

OPERATIONAL MANUAL

SERVICE / SALES   (800) 262-0323
FAX   (708) 870-0120

WARRANTY, REPAIR and RETURN POLICY

... day warranty on all electronic components. All warranty periods begin on the date of purchase from Strata Group, Inc.

... $40.00 service charge for all non-warranty repairs or returns.

... servicing return to Strata Group, Inc..

- ANY non-factory repair or attempted repair voids warranty.

- A ... must not be removed from the PCB.

RETURN MERCHANDISE AUTHORIZATION

- All returned merchandise must have a Return Merchandise Authorization (RMA) number marked clearly on the outside of the package.

- You must obtain all RMA numbers from your authorized Strata Group, Inc. distributor. Please have your Strata Group, Inc. serial number available when calling for an RMA number.

- Merchandise returned without an RMA number will not be accepted.

- Advance ... distributors of the The distributor's ... shipped directly to the operator.

- Advance replacement boards will be billed to the distributor until Strata Group, Inc. ... board, at which time a credit will be issued

- ... repairs and/or repl...

TABLE OF CONTENTS

PAIRS™

GAME DESCRIPTION

- Insert coin(s) and press the START button.

- Use joystick to highlight a card.

- Press the SELECT button to turn the card over.

- Use joystick and SELECT button to find matching cards.
  - If cards DO NOT match, they are both turned over, and a heart is broken.
  - If cards DO match, they are both removed and a heart is signaled.

- When all cards are broken the game is over.

- Insert coin(s) to continue.

- Win cards will improve your chances at...!

GETTING STARTED

GAME PACKAGE CONTENTS

- (01) PCB Assembly
- (01) Connecting Wire Harness (JAMMA)
- (01) Joystick Assembly
- (2) Button Assemblies
- (01) Marquee Styrene
- (01) Marquee Plexiglas
- (01) Control Panel Overlay
- (01) Instruction Card
- (01) Set of Function Labels
- (01) Manual

RECOMMENDED TOOLS and SUPPLIES

Phillips and Slotted Screwdrivers

Wire Cutters and Strippers
Pliers or Channel Locks
Electric Drill with 3/32", 1/4", and 7/16" Bits
1-3/16" Chassis or Sheet Metal Punch
Small File
Razor Knife and Sharp Blades
Straight Edge

Staple Gun and Staples
Soldering Iron and 60/40 Rosin Core Solder
Vacuum Cleaner
Assorted Fastening Hardware
Heat Shrink Tubing (3/32" 1/8" and 3/16")
Masking Tape
3-1/2/2 or 4 Wire Ties
Mild Liquid Soap and Water Solution

IF YOU DO YOUR OWN PAINTING,
YOU'LL NEED THESE PAINT SUPPLIES:

- Air Brush or Paint Sprayer
- Paint Roller and Pan
- Paint Brush
- Paint (and Primer)
- Sandpaper
- Putty Knife and Wood Putty

INSTALLATION PREPARATION

BEFORE YOU START...

1. Check to see if all the needed parts have been included in your kit. (See GAME PACKAGE CONTENTS.)

2. Do you have the necessary tools? (See RECOMMENDED TOOLS and SUPPLIES.)

3. Do not work with any part of the system plugged in (lights, monitor or power supply).

The CABINET

Power Requirements:

Make sure the game you have chosen to convert is able to supply all the required voltages for PAIRS.

+5 VDC	5 amps
+12 VDC	2 amps

NOTE

This game requires far less power to operate than most games on the market. Some games regulate their voltages on the main PCB. The output level of many "regulated" switching power supplies actually vary with load. For this reason, the power supply from an old game may not be correctly adjusted for PAIRS. This makes the existing power supply inappropriate and hazardous to your new game. Therefore, it is very important to adjust the +5 VDC supply

WITHOUT connecting the PCB, then readjusting it later, after the PCB has been installed. Measure power on the PC board, across an I.C. Damage will occur if the power supply is outside the acceptable limits (between 4.8 and 5.5 VDC.)

Monitor Requirements:

PAIRS requires a monitor in a horizontal mount raster scan with positive or negative composite Sync. It can be difficult to change the monitor from vertical to a horizontal unit. Installation will be easier if you choose a horizontal mount cabinet.

Cabinet Selection:

1. You can choose either a new cabinet or a used cabinet for your PAIRS game. Reusing a cabinet is by far the most cost-effective way to maximize the return of your initial investment. In either case, all you provide is the cabinet with a power supply and monitor. We provide the rest. The end result is a new game at a very low cost.

2. Spend time on the cabinet's appearance (i.e., marquee, control panel, and cabinet graphics). You will raise your profits with the introduction of a new game package, especially if the cabinet looks clean and new.

3. The "new game look" should always apply to the inside of your game as well. A few wire ties and shrink tubing on your harness, some fastening hardware on your subassemblies, and a sweep with the vacuum cleaner will ensure that glitches do not occur.

Preparing a used cabinet for PAIRS:

1. Remove the following from the cabinet:
   - Main Logic Board(s)
   - Control Panel
   - Monitor Plexiglas
   - Marquee
   - Cabinet Graphics

2. Thoroughly clean out your cabinet. Remove all the old buttons, joysticks and wires from the control panel and set aside. Remove the original overlay. DO NOT remove monitor and speaker wires.

3. Remove the old graphics and adhesive from the side of the cabinet. Remove adhesive with solvent.

4. For a fresh look, painting is highly recommended. Spray painting gives a better finish, but if an air brush or paint sprayer is unavailable, a roller is second best. Cover all exposed surfaces not to be painted, such as the coin door and monitor.

5. Use a small brush to finish up the details. If you do not have the facilities for painting, try an auto body shop.

The CONTROL PANEL

PAIRS can be played by one player, or two players taking turns. Your Cabinet can use either set of controls that both players share, or your cabinet can have one set of controls for player one and a different set of controls for player two. See diagrams for sample control layouts. The game's software defaults to the double control layout. See the Operator Adjustables section on Page 6 for setting the software to recognize your cabinet's configuration.

Preparation:

1. Determine where your controls will be on your control panel. Refer to the layout diagrams below for correct control placement.

2. Drill or punch 1-1/8" holes at the marked position for your controls. Use a chassis or sheet metal punch for best results on button holes.

3. Use a file to smooth any rough edges on the holes.

4. Fill any old and unused holes with wood or a metal plate.

5. It is recommended that you cover your control panel with Plexiglas. Now would be a good time to cut it to fit while the dimensions and tools are at hand.
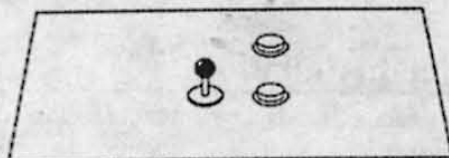
SINGLE CONTROL PANEL LAYOUT

DOUBLE CONTROL PANEL LAYOUT

## Control Panel Overlay Installation:

1. Make sure the control panel is clean and free from dust, grease, metal filings, and sawdust.

2. Remove the protective backing from the lexan overlay. Center the lexan overlay over the control panel and place

down gently, making sure to keep it square. Using your hand, press down firmly, starting from the center and smooth the lexan overlay outward. Make sure all bubbles have been pressed out for a clean, flat surface.

3. Using a sharp razor knife, trim any excess from the lexan overlay. Carefully pierce through the overlay above each control panel hole that you have drilled. Cut out the material covering the pre-drilled holes with the razor knife. Be sure to cut the lexan overlay above each hole and trim cleanly and evenly.

Function Labels Overlay Installation:

1. Cut out the supplied function labels. Line up each label with the corresponding control panel hole. Remove the backing and carefully press into place. Be sure they are straight., Refer to the diagram below for correct label placement.
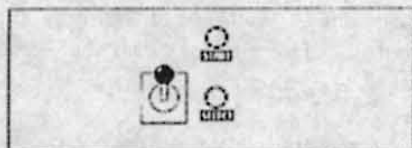
SINGLE CONTROL FUNCTION LABELS LAYOUT
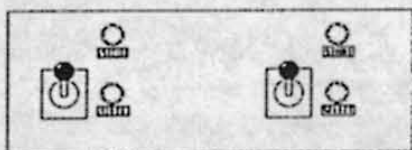
DOUBLE CONTROL FUNCTION LABELS LAYOUT

Marquee Installation:

1. If your cabinet needs a new marquee glass, determine the correct size and cut the supplied Plexiglas to fit. Using the old marquee glass as a template, center the Plexiglas on your new marquee graphics, making sure that all the printed images will be visible. Using a razor knife, score the new marquee deeply, following the edges of the old glass. Carefully break off the styrene. Be sure the light behind the marquee works and that the glass is clean on both sides. Now install the marquee graphics and glass securely.

WIRING and HARNESS ASSEMBLY

REMEMBER! DO NOT WORK WITH ANY PART OF THE SYSTEM PLUGGED IN (Lights, Monitor, or Power Supply).

Buttons and Joystick (Control Panel Assembly):

1. Install all buttons on the ground panel as per the control panel configuration.

2. If you are using Plexiglas for added protection, don't forget to place it on the panel before inserting the buttons. The colored button is the SELECT button. The WHITE button is used as the START button.

3. Wire the buttons and joystick to the JAMMA harness by using the wiring diagram on PAGE 15.

Printed Circuit Board (PCB):

1. Mount the PCB to the side of the cabinet with the connector toward the top of the drawer. This will keep the wire harness from slipping off due to vibration. Mark and drill pilot holes (3/32") onto the cabinet side, being careful not to drill through to the outside. Attach the PCB standoffs to the cabinet using wood screws and spacers — snug but not too tight or the board may warp or crack. Be sure the board is not being flexed in any way.

Wire Harness:

1. If you are installing PAIRS into a Dynamo cabinet with a pre-installed JAMMA harness, you will notice that it does not have a wire for the test switch. You will have to add a contact to the edge connector at the proper position (position 15). Some cabinets (Dynamo included) have only one coin switch input and the coin switches are wired together. Connect the designated wires to the coin switches separately.

2. Attach the wire harness connector to the PCB. This connector should be keyed and labeled "COMPONENT SIDE". Be sure it is mounted correctly. WARNING! - Plugging the JAMMA connector in backwards will cause damage to the PCB.

3. It is best to use connectors (not supplied) whenever joining a set of harness wires to a subassembly. If you choose to solder wires together, follow this procedure:

    a. Strip off about 1/2" of insulation from the wire.
    b. Slide a piece of heat-shrink tubing over the end.
    c. Do not leave a lot of excess wire spooled up in your cabinet. Cut the wires to the length you need plus a

few extra inches. Leave enough for proper cable dressing — do not make it stretch across the inside of the cabinet.

d. Solder the new wire to the original wire. Use a straight in-line splice.

e. Melt the heat-shrink over the splice.

NOTE

This game uses the JAMMA standard wiring harness. Therefore, if the cabinet you are using is not equipped with a JAMMA harness, you may want to change it.

Power Wires:

1. Connect the wires that are designated for your power supply. You will need a supply of +5 vdc, and +12 vdc. The +5 vdc must be regulated to within 5% (+ or - 0.25 vdc). The +12 vdc may be unregulated but should not stray too far or the sound may be affected. If the cabinet's supply does not provide these voltages, it will have to be replaced. A switching-type supply is recommended.

2. You will notice that you have more than one wire for each voltage. Use all wires supplied on the harness. This will ensure better power transmission and prevent overloading of the edge connector pads.

3. Tin all power supply wires before connecting them to the power supply. Loose strands may short out the supply. For best results, connect spade lugs to the ends of the power wires and attach to the screw terminals of the power supply.

Monitor Wires:

You will be connecting the RED, GREEN, and BLUE video drives along with the composite Sync and video GROUND wires.

Sync:

This is the recommended approach for a Wells-Gardener monitor and should work with some others as well.

1. This game generates a composite Sync signal which is accepted by most monitors. A DIP switch (Dip switch 4) on the logic board allows you to choose between positive and negative composite Sync. Most monitors require negative Sync. If your monitor requires positive Sync, flip the switch towards the OFF position.

2. If your monitor does not have a composite Sync input but has separate horizontal and vertical Sync inputs, try connecting the composite Sync signal from the PCB to the negative horizontal Sync signal on the monitor.

This should produce a satisfactory result, although some adjustment of the monitor's Sync controls may be necessary.

Coin Doors, Test Switch and Service Button Wiring:

1. Wire the coin doors and the test / service switch(es) as per the JAMMA HARNESS CONNECTIONS information on page 15.

2. Connect the door lamps to the +12 vdc supply. Some games have separate power supply outputs for the lamps.

3. Install a test switch (not included) somewhere convenient inside the coin door area. This switch allows you to enter adjustables, run diagnostics, and see or clear audits. Make it readily accessible through the coin door. Wire it to the Test wire on the JAMMA Harness.

4. Install a service switch (not included) somewhere convenient inside the coin door area. This switch allows you to give credits to players without affecting the game's credit audits or coin meters. Example: A player puts in a coin and gets no credit, the operator can then push the service button and a credit is given to the player without affecting the game's AUDITS and coin meter.

5. Clean and lubricate your coin mechs.

Final Check:

1. Check the game inside and out for any imperfections. Secure any loose wiring or fastening hardware.

2. Make sure the coin door is tight and the coin mechs are well adjusted.

3. Make sure all assemblies are firmly attached. Anything that is not mounted securely will rattle when the game is played. This game makes use of low-frequency sounds which can cause any loose joints to rattle.

INITIAL POWER-UP

1. Attach JAMMA Harness. Plug in the game and turn it on.

2. Look and smell for smoke (TURN IT OFF IMMEDIATELY IF ANY IS NOTICED).

NOTE

Readjust the +5 Volt supply. Adjust the +5 Volt supply so that you read 5.2 Volts across an I.C. on the circuit board. If measured at the power supply, the reading will be about 5.5 volts at the power supply outputs.

3. Make sure the yellow LED on the Sound PCB is flashing. If not, something is wrong, turn off the game.

4. Listen for sound. A few notes or some speech should play on power up.

5. If you do not hear any sounds and the yellow LED is flashing, try turning up the volume and check the speaker connections. Dropping a coin through a coin switch should cause a sound.

6. Look at the image on the monitor. If it is not in Sync and you cannot stop it from rolling by adjusting the monitor's Sync controls, try flipping Dip switch 4 on the logic board.

7. How is the picture? Is it centered or is it too bright or too dim? Is it in focus? Adjust your monitor to get the best picture possible.

NOTE

Check your monitor manual to make adjustments. Some test patterns are available through the game's system tests by pressing the Test switch. Use them when making any adjustments. (See "SYSTEM TESTS" information on PAGE 9. Proper monitor adjustment is very important.)

8. Try all coin switches. Drop quarters or tokens through to check the coin mechs. Make sure the game is adding credits. You can use the Player Control Tests by pressing the test switch and entering the System Tests Menu. Do all of the joysticks and push buttons work? Try playing the game with the volume up and listen for rattling as you play. Tighten anything that is making noise.

9. Upon initial power-up, the game will initialize to factory default settings. These settings affect game elements such as number of credits per coin, difficulty settings, etc. The "OPERATOR MODE" section will describe how to alter these settings and view the system audits or run system tests.

DIP SWITCH SETTINGS

SETTING THE DIP SWITCH

Dip switch 4 (ON):	Negative Video Sync
Dip switch 4 (OFF):	Positive Video Sync
Dip switch 3 (ON):	Screen Upright
Dip switch 3 (OFF):	Screen Flip
Dip switch 2 (ON):	MODESTY OFF
Dip switch 2 (OFF):	MODESTY ON
Dip switch 1 (ON):	Test Mode Normal
Dip switch 1 (OFF):	Strata Test Mode

NOTE

PAIRS allows for a Modesty Setting, which controls the amount of nudity revealed in the hidden pictures. Dip switch 2 ON will allow for the full picture to be viewed. Dip switch 2 OFF will cover up certain parts of the hidden picture. See Modesty Settings on PAGE 7 for more details.

STRATA TEST MODE

To enter Strata Test Mode, press the Test Button, located just inside the coin door. When the Test Button is pressed or DIP Switch 1 is flipped to the OFF position, the screen displays the Main Service Menu.

NOTE

If you used the DIP switch to enter the TEST MODE, you will need to flip the DIP switch back to the ON position in order to return to the game.

MAIN SERVICE MENU

The Main Service Menu allows you to enter into three different areas:

OPERATOR ADJUSTABLES is used for customizing your game for your location. Some of the features in Operator Adjustables are number of coins per game, sounds on or off when no one is playing, difficulty settings, etc.

GAME AUDITS allows you to check your game's overall earnings, game times, game scores, etc. The Audits can be reset through this menu as well.

SYSTEM TESTS verifies the operation of the hardware, controls, and monitor through easy and automatic procedures accessed through these menus.

To exit any of these tests and return the game to its normal state, use any player joystick to highlight the line that says EXIT and press any player start button.

COLOR KEY NOTE:

For easy identification, all test screens have been color coded. Items displayed in GREEN are the Menu titles. This is the name of the menu that is currently displayed. Items appearing in YELLOW are the menu's instructions. The BLUE items are choices available in this menu. The WHITE item is the selection that is currently highlighted. If RED is ever displayed, there is a problem with that item and it should be corrected.

OPERATOR ADJUSTABLES

The Operator Adjustables section is accessed through the Main Service Menu. From the Main Service Menu, move any player joystick down until the word OPERATOR ADJUSTABLES MENU appears in white letters. Now press any player start button, and the Operator Adjustables Menu will appear on the screen.


OPERATOR ADJUSTABLES MENU

As you can see, there are many possible customizing procedures that you can control. Below is a brief description of each adjustable function and what the screen looks like when displayed. Remember, to select an item from any menu, use any player joystick to highlight the item in white, and then press any player start button.

Game Mode Selection:

This menu allows you to place the game in standard Coin Mode, or choose Free Play.
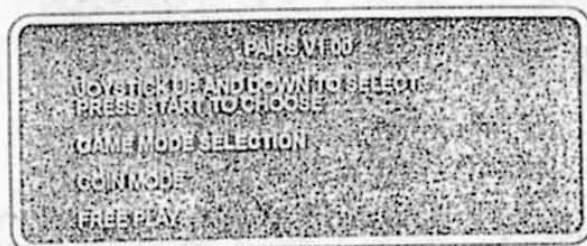
GAME MODE SELECTION SCREEN

In COIN MODE, the game will only work if coins are deposited into the game.

In FREE PLAY, coins are not needed for play, and the Start buttons are always active.

Game Resets:

The Game Resets Menu will cancel or zero out any custom features or bookkeeping figures that are no longer wanted.

GAME RESETS SCREEN

RESET ALL TO FACTORY SETTINGS will change the game back to the way the game was pre-set when new. Any custom features such as Free Play and Skill Levels will be changed back to the original settings set at the factory.

RESET AUDITS ONLY is used when all of your bookkeeping and statistics have been gathered from the Audits section, and are no longer needed. If you like to gather all of your accounting information each week, or after each collection, it is a good practice to reset all of the audits so your coin count will match the audit information.

Attract Mode Sounds:

This menu is used to adjust the sounds that are heard while no one is playing the game.

```
          PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE

ATTRACT MODE SOUNDS
ALL ATTRACT MODE SOUNDS OFF
OCCASIONAL ATTRACT MODE SOUNDS
ALL ATTRACT MODE SOUNDS ON
```
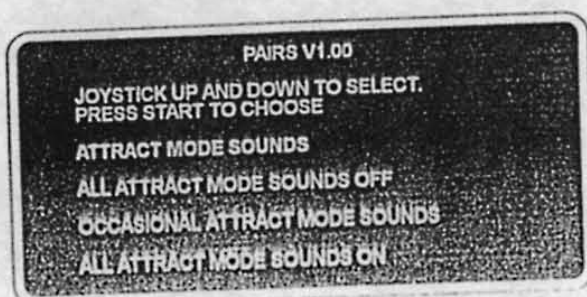
ATTRACT MODE SOUNDS MENU

ALL ATTRACT MODE SOUNDS OFF will not allow any sounds to be played during the attract mode.

OCCASIONAL ATTRACT MODE SOUNDS plays sounds about every ten to twelve times the attract mode is repeated.

ALL ATTRACT MODE SOUNDS ON will play sounds during every attract cycle.

Credits Settings:

This menu allows you to change the number of coins needed to play PAIRS.

```
          PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE

CREDITS SETTINGS

EXIT CREDITS

DOOR 1 CREDITS PER COIN          X
DOOR 2 CREDITS PER COIN          X
DOOR 3 CREDITS PER COIN          X
DOOR 4 CREDITS PER COIN          X
CREDITS NEEDED TO START          X
CREDITS NEEDED TO CONTINUE       X

TO CHANGE VALUES
MOVE JOYSTICK LEFT TO DECREASE
MOVE JOYSTICK RIGHT TO INCREASE
```
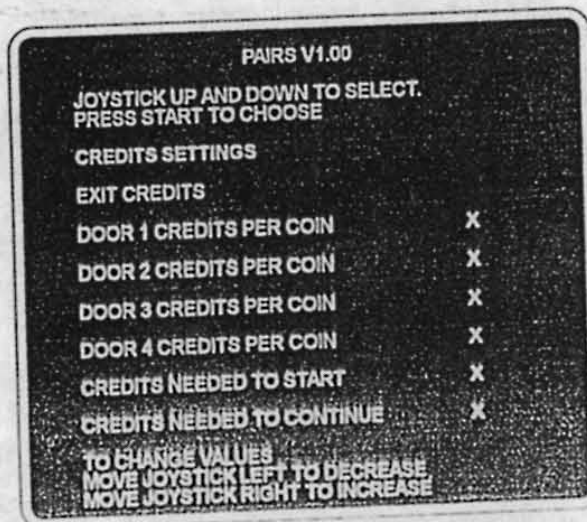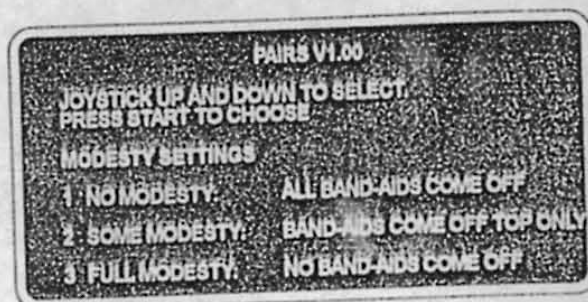
CREDIT SETTING SCREEN

You can set each coin door at different credit values by highlighting: DOOR 1 CREDITS PER COIN for coin door 1, DOOR 2 CREDITS PER COIN for coin door 2, etc.. Moving the Player 1 joystick left or right will change the number of credits that each coin represents.

CREDITS NEEDED TO START will adjust the number of credits it takes for a player to begin a game. If you want

the number of credits needed to continue a game already in progress to be different than the number of credits needed for the initial game start, you can set the new value using CREDITS NEEDED TO CONTINUE.

"Modesty" Settings:

PAIRS Adult version has 3 different settings to control the amount of nudity shown in the hidden pictures.

```
          PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE

MODESTY SETTINGS

1. NO MODESTY.      ALL BAND-AIDS COME OFF
2. SOME MODESTY.    BAND-AIDS COME OFF TOP ONLY
3. FULL MODESTY.    NO BAND-AIDS COME OFF
```

"MODESTY" SETTING SCREEN

NO MODESTY - displays the entire picture, with no areas covered, at the end of a round
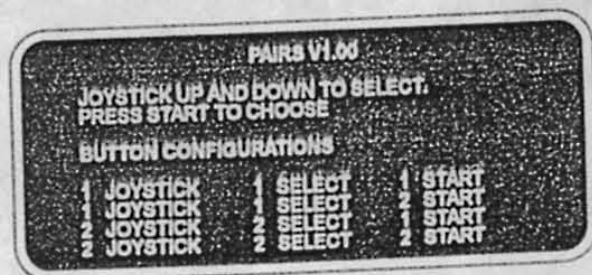SOME MODESTY - will keep any areas below the waist covered up, at the end of a round.

FULL MODESTY - will keep areas above and below the waist covered, at the end of a round.

NOTE

You can also set the Modesty level from Dip Switch 2 on the PCB. Dip Switch 2 ON (Default) will allow for any setting to be active. Use the settings menu above to adjust the Modesty level of your choice. Dip Switch 2 OFF will NOT allow the full picture to be displayed and the screen menu will be inactive

Control Configurations:

PAIRS allows for changing the button configuration needed to play the game for your particular control panel.

```
          PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE

BUTTON CONFIGURATIONS

1 JOYSTICK    1 SELECT    1 START
1 JOYSTICK    1 SELECT    2 START
2 JOYSTICK    2 SELECT    1 START
2 JOYSTICK    2 SELECT    2 START
```
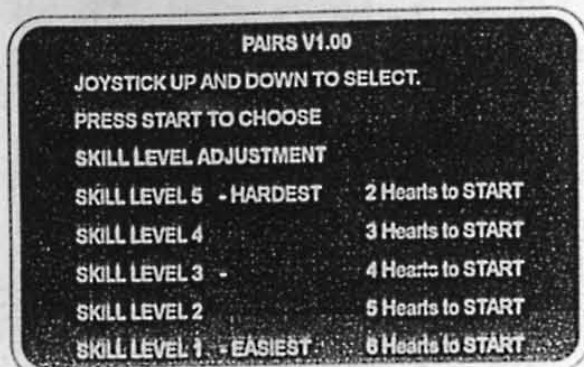
CONTROL CONFIGURATIONS SCREEN

Determine the number of controls you are using on your cabinet and select the appropiate choice. This is very important for your controls to work properly.

Skill Level Adjustment:

PAIRS allows for changing the level of skill needed to play the game. This feature is good for locations with younger or novice players who are less skilled at the game, or expert or accomplished players who demand a greater challenge.

```
                    PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE
SKILL LEVEL ADJUSTMENT
SKILL LEVEL 5 - HARDEST     2 Hearts to START
SKILL LEVEL 4               3 Hearts to START
SKILL LEVEL 3 -             4 Hearts to START
SKILL LEVEL 2               5 Hearts to START
SKILL LEVEL 1 - EASIEST     6 Hearts to START
```
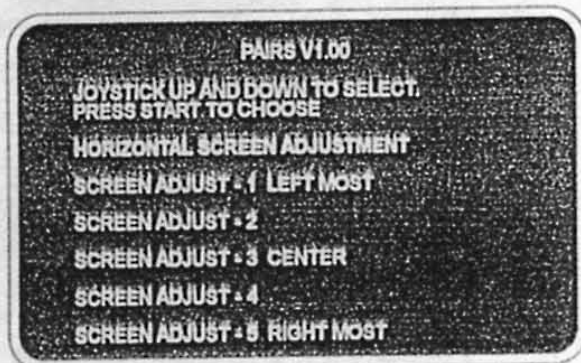
SKILL LEVEL ADJUSTMENT SCREEN

To set the game to an easy skill level, highlight SKILL LEVEL 1 - EASIEST. The most obvious skill factor is that a player will start with 6 Hearts at game start, giving him 6 chances to match a card.

To set the game to a difficult skill level, highlight SKILL LEVEL 5 - HARDEST. A player starts the game with only 2 Hearts.

SKILL LEVEL 2, SKILL LEVEL 3, and SKILL LEVEL 4 are settings between the easiest and hardest levels. Some times it is best if the skill level is adjusted gradually over a period of time.

Horizontal Screen Adjustment:

If for some reason the picture is not centered properly on the screen, use this menu to correct the problem.

```
                    PAIRS V1.00

JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE
HORIZONTAL SCREEN ADJUSTMENT
SCREEN ADJUST - 1 LEFT MOST
SCREEN ADJUST - 2
SCREEN ADJUST - 3 CENTER
SCREEN ADJUST - 4
SCREEN ADJUST - 5 RIGHT MOST
```

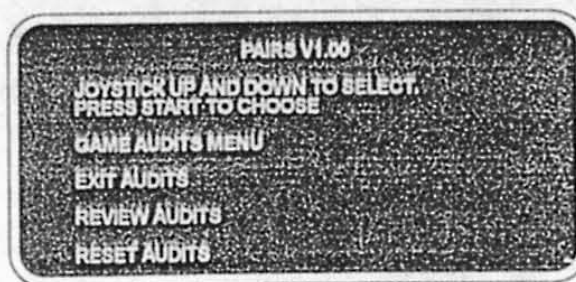HORIZONTAL SCREEN ADJUSTMENT SCREEN

SCREEN ADJUST - 1   LEFT MOST
will move the picture far to the left.

SCREEN ADJUST - 3   CENTER
will attempt to center the picture on the monitor.

SCREEN ADJUST - 5   RIGHT MOST
will move the picture far to the right.

GAME AUDITS

The Game Audits section will supply you with a detailed accounting of helpful and informative bookkeeping and statistics. To enter the Audits section, first go to the Main Service Menu by pressing the test switch located just inside the coin door of the cabinet or flip DIP switch 1 to the OFF position on the PCB. From the Main Service Menu, move the Player 1 Joystick down until the word GAME AUDITS MENU appears in white letters. Now press any player start button, and the Game Audits Menu will appear on the screen.

```
                    PAIRS V1.00
JOYSTICK UP AND DOWN TO SELECT.
PRESS START TO CHOOSE
GAME AUDITS MENU
EXIT AUDITS
REVIEW AUDITS
RESET AUDITS
```
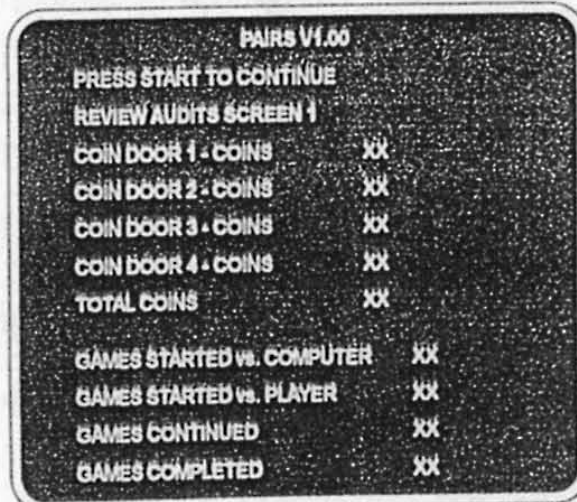
GAME AUDITS SCREEN

To look at the current statistics, highlight REVIEW AUDITS and press any player start button.

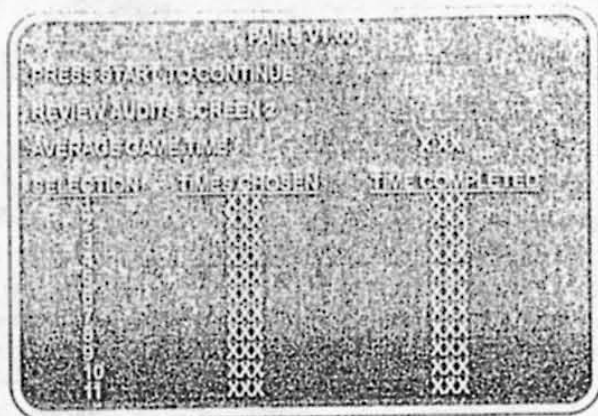To set all of the statistics back to zero, highlight RESET AUDITS and press any player start button.

Review Audits:

When you choose to review the audits, the Audits Review Screen will appear.

```
                    PAIRS V1.00
PRESS START TO CONTINUE
REVIEW AUDITS SCREEN 1
COIN DOOR 1 - COINS          XX
COIN DOOR 2 - COINS          XX
COIN DOOR 3 - COINS          XX
COIN DOOR 4 - COINS          XX
TOTAL COINS                  XX

GAMES STARTED vs. COMPUTER   XX
GAMES STARTED vs. PLAYER     XX
GAMES CONTINUED              XX
GAMES COMPLETED              XX
```
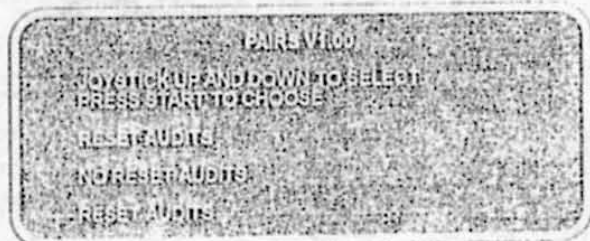
AUDITS REVIEW SCREEN 1

Continued...

AUDITS REVIEW SCREEN 2

Reset Audits:

When you choose to reset the audits, the Game Resets Screen will appear.

GAME RESETS SCREEN

If you wish to set all of the game audits (described above) back to zero, highlight RESET AUDITS from this menu and press any player start button. The screen will briefly display AUDITS RESET.

If you change your mind and decide not to reset the audits to zero, highlight NO RESET AUDITS and you will exit this screen without making any changes to the audits.

SYSTEM TESTS

PAIRS has been inspected and tested at the factory, and most likely the game will be in perfect working order when you first turn it on. If you are experiencing any problems with the game, the System Tests are a good place to start when tracking down the problem. To enter the System Tests section, first go to the Main Service Menu by pressing the test switch located just inside the coin door of the cabinet, or set DIP Switch 1 on the PCB to the OFF position. From the Main Service Menu, move any player joystick down until the word SYSTEM TESTS MENU appears in white letters. Now press any player start button, and the System Tests Menu will appear on the screen.
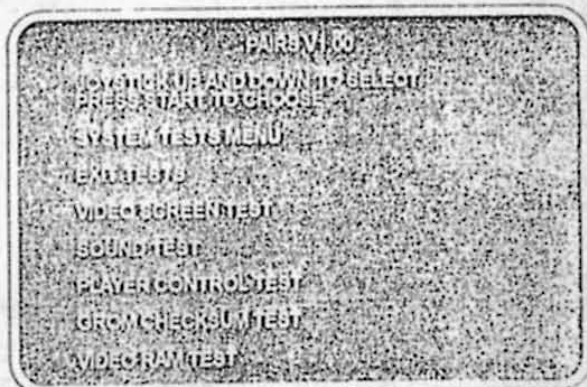
SYSTEM TESTS MENU

Video Screen Tests:

You can test your monitor and adjust colors by choosing VIDEO SCREEN TESTS and pressing any player start button.


VIDEO SCREEN TEST MENU

When any player joystick is moved up or down, the screen changes to display a grid of colored rectangles. Use these colors as a guide and adjust your monitor so they look as good as possible. This test can be exited at any time by pressing any player start button.

Sound Tests:

Choose SOUND TEST from the System Test Menu to the sounds and speakers in the game. The sound section also controls the coin meter, and you can test it from this section as well.
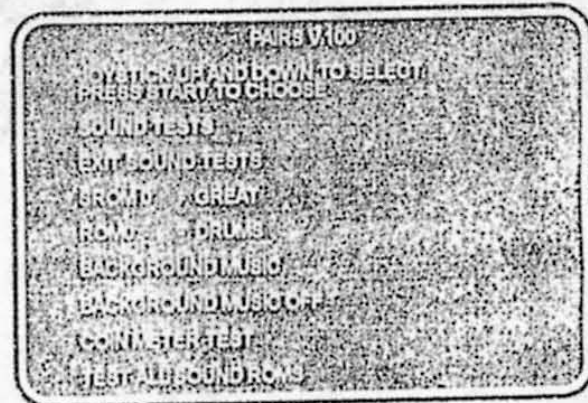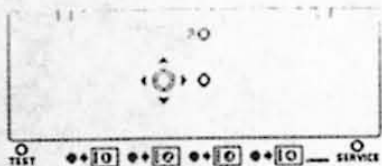

SOUND TESTS SCREEN

To test the coin meter, choose **COIN METER TEST** from this menu. If everything is working properly, the meter should increment each time any player start button is pressed while this line is highlighted.

Player Control Test:

Choose **PLAYER CONTROL TEST** from the System Test Menu to test the switches and controls of your game cabinet.

(1) PLAYER CONTROL TEST SCREEN
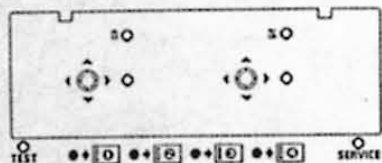
(2) PLAYER CONTROL TEST SCREEN

1. The screen displays a graphic representation of the players' control layout. If you have a cabinet using 1 set of controls, this display will show a single control panel layout. If you have chosen a 2 set configuration, this screen will automatically display a double controls control panel.

2. Images on the screen will change color when the control is activated. Coin slots can also be tested from this screen.

3. Pressing the test or service button highlights the test or service text located in the lower part of the screen.

4. To exit the test, the Player 1 START button and the Player 1 SELECT button must be pressed at the same time.
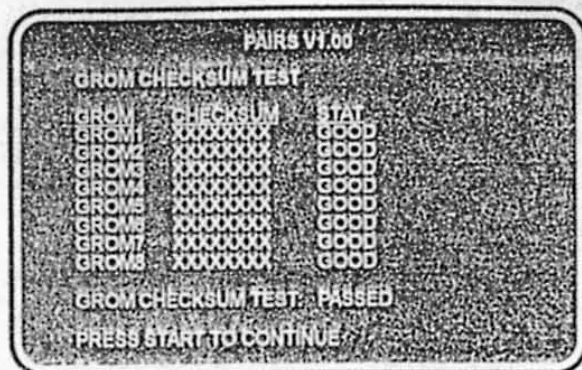
GROM Checksum Test:

Choose **GROM CHECKSUM TEST** from the System Test Menu to test the Graphics chips on the PCB. This test performs a complete test of the Graphics ROM's. While the test is in progress the following message is displayed:

> RUNNING GROM CHECKSUM TEST. 1 MINUTE TO FINISH

GROM TEST SCREEN (Test In Progress)

When the test is completed the GROM Test Screen is displayed.

GROM TEST SCREEN (Test Completed)

1. If all checksums are shown in white, the test passed and your game is in good working order.

2. If any checksums are bad, they will be displayed in red text on this screen. This means that the GROM is defective and needs to be replaced. Call your distributor or the Strata Service Department for further help.

3. To exit this test, press any player start button.

Video Ram Test:

This test performs a complete test of the Graphics video RAM. The video RAM is tested in two pages. The following message will be displayed as each page is tested.

> RUNNING VIDEO RAM TEST. FIRST PAGE

When the test is completed the results will be displayed as follows.

VIDEO RAM TEST SCREEN

1. If the game passes this test, zeros will be displayed in white along with a VIDEO RAM TEST PASSED message.

2. If the test fails, a non-zero status and VIDEO RAM TEST FAILED message will be displayed in red. Call your distributor or the Strata Service Department for further help.

3. To exit this test, press any player start button.

VIDEO PROBLEMS

Symptom	Probable Cause	Solution
No picture	Video inputs are not hooked up. (Refer to harness outputs and monitor specifications.)	Make sure Dip switch 4 is in the correc position: ON - for negative syn monitors and OFF - for positive syn monitors. Most monitors are negativ sync.
	Bad connections	Make sure there are good connectior from the board's video outputs to th monitor's video inputs.
	Monitor	Make sure the monitor is operatir correctly. (Check it with anoth compatible logic board.)
Scrambled Picture	Sync switch set incorrectly	Dip switch 4, OFF - for positive syn ON - for negative sync.
Missing colors or a washed out color	Bad video connections	Check the video red, green, and bl connections.
Bright, blurry, or rolling picture	Misadjusted monitor	Adjust the monitor, not the boar (Refer to your monitor manual.)
Picture too large, too small, or off center	Misadjusted monitor	Adjust the monitor, not the boar (Refer to your monitor manual.)
Video image is flipped	Misadjusted Monitor	Change Dip Switch 3 or reverse t monitor's convergence wires. (Refer your monitor manual.)
Bad images in picture	Bad GROM	Do GROM test. Check IC pins to ma sure none are bent over.
Diagonal white lines	GND problem	Earth and Logic GND's should connected at power supply.

SOUND PROBLEMS

Symptom	Probable Cause	Solution
No Sound	+12v power supply is bad	Try another +12v power supply.
	Bad connection to the board	Check for +12v power on the board.
		Check for +5v power on the board.
	—	Check the volume setting.
		Check the speaker connections.
	Miscellaneous	Make sure the sound status light is flashing on the board.

CONTROL PROBLEMS

Symptom	Probable Cause	Solution
Buttons do not work or are partly inoperable	Switches not properly connected	Make sure that the common post of the switch is connected to ground.
		Make sure each individual switch is working.
		Make sure that the signal wire for that particular switch is connected to the normally open post of the switch.
Coin counter not working	Miscellaneous	Make sure that the signal wire has a connection from the switch to the board.
		Make sure +12v is hooked up to the counter.
		The signal wire is not connected to coin counter. (Check continuity.)
		Verify that the counter is good.

Symptom	Probable Cause	Solution
No reaction when game is turned on	Blown fuse	Power supply is too high. Power sh< be between +5v & 5.2v. (Measure< the circuit board.)
		Cabinet is not connected to < ground. (All metal should be conne to the earth ground.)
		Short between power and gro Check for foreign material.
		Disconnect the harness and mea..r< resistance between power and gro It should read around 300 ohms. ohms is a dead short.)
		Make sure the harness is not shortir anything, such as bare or frayed \ shorting out each other or hitting metal.
	No power from the power supply	Replace power supply.
	Power supply	Power supply too low. (should id be between +5v & +5.2v.) (Meas on the circuit board.)
	Short on the board	Check for loose or foreign materi< the board.
Power-up sounds repeats itself	Open on socketed IC's	Check for bent pins on socketed pai
		Make sure that all IC's are seat< their sockets properly.
	+5v setting too low	Check voltage. (Measured on the c board.)

MISCELLANEOUS PROBLEMS

| Symptom	Probable Cause	Solution
Green L.E.D. not blinking	Program not running	Make sure all socketed I.C.'s are seated correctly. Look for bent pins.
	No power	Blown fuse. Check for +5v before and after the fuse. Adjust power supply for +5v after the fuse. Use fast blow fuses only.
	Bad connections	Make sure you have continuity from PCB to power supply.
	Loose pin on ASIC (U1)	Call Strata.
Buttons do not work	No continuity	Do Player Control test in System Tests.
		Check continuity from switch to PCB.
Diagonal line in picture	Grounding	Connect field ground to logic ground on power supply.
Operator adjustables keep changing	Low battery voltage	Battery should be 2 to 3 volts.
	Bad static RAM	Replace.
Sounds bad	Miscellaneous	Check the speaker connections.
me comes up in Test Mode	Dip Switch 1 is OFF	Make sure Dip Switch 1 is in the ON position.
Modesty Settings menu does not work / Bandaids do not come off	Dip Switch 2 is OFF	Make sure Dip Switch 2 is in the ON position.

JAMMA HARNESS CONNECTIONS
For PAIRS

WIRE COLOR	COMPONENT SIDE				SOLDER SIDE	WIRE COLOR
Black	GND	A		1	GND	Black
Black	GND	B		2	GND	Black
Red	+5 vdc	C		3	+5 vdc	Red
Red	+5 vdc	D		4	+5 vdc	Red
		E		5		
Orange	+12 vdc	F		6	+12 vdc	Orange
	KEY	H		7	KEY	
Blue-Green	Ticket Count	J		8	Coin Counter	Red-Green
		K		9		
Yellow-Green	Left Speaker (-)	L		10	Left Speaker (+)	Yellow-Red
White-Green	Right Speaker (-)	M		11	Right Speaker (+)	White-Red
Green-Black	Video Green	N		12	Video Red	Red-Black
White	Video Sync	P		13	Video Blue	Blue-Black
Orange-Black	Service	R		14	Video GND	White-Black
		S		15	Test	Blue
Green-Blue	Coin 2	T		16	Coin 1	Red-Blue
Red-Yellow	Start 2	U		17	Start 1	Red-White
Green-Yellow	Player 2 - UP	V		18	Player 1 - UP	Green-White
Blue-Yellow	Player 2 - DOWN	W		19	Player 1 - DOWN	Blue-White
Black-Yellow	Player 2 - LEFT	X		20	Player 1 - LEFT	Black-White
Violet-Yellow	Player 2 - RIGHT	Y		21	Player 1 - RIGHT	Violet-White
Brown-Yellow	Player 2 - SELECT	Z		22	Player 1 - SELECT	Brown-White
Black	GND	e		27	GND	Black
Black	GND	f		28	GND	Black

DIP SWITCH SETTINGS for PAIRS

	ON			OFF	
1	Test Mode Normal		Strata Test Mode		A
2	"Modesty" OFF		"Modesty" ON		B
3	Screen Upright		Screen Flip		C
4	Negative Video Sync (-)		Positive Video Sync (+)		D

STRATA™
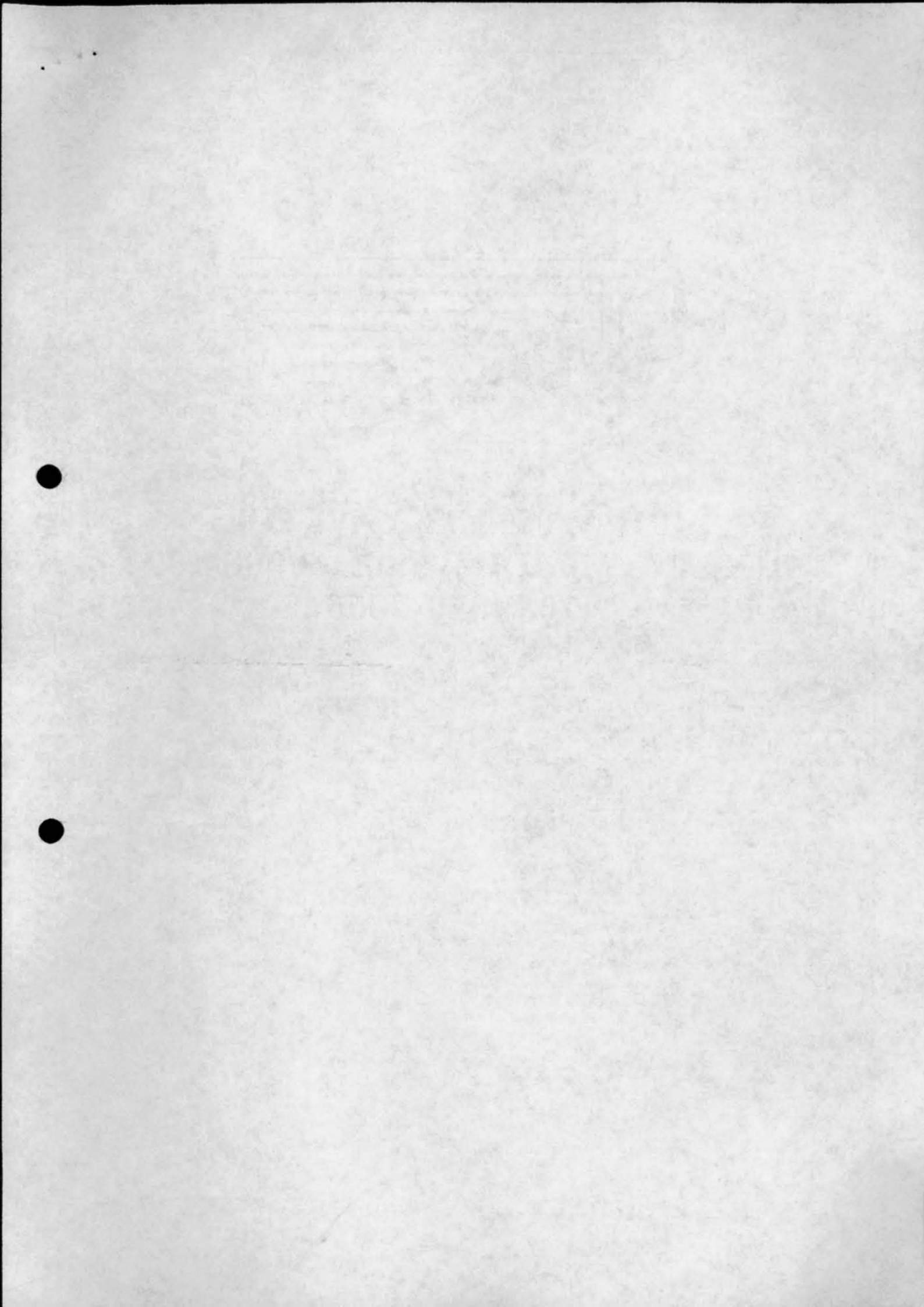
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