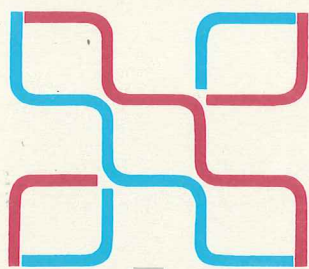


POLY SYSTEM

FIELD SERVICE GUIDE



polycorp



New Zealand Limited

POLY SYSTEM

FIELD SERVICE GUIDE

POLYCORP

New Zealand Limited

C O N T E N T S

SERVICE NOTES

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POLYCORP

S E R V I C E N O T E S

1. GENERAL

Try to ascertain the nature of the fault.

1.1 Is it in the computer or disk unit.

If the fault is in the disk unit the computer/s should function in the 'standalone mode', ie the purple log-on screen should appear and "Standalone Basic" should operate.

However, note that this condition can also arise with a faulty computer, eg if the network cable is faulty.

1.2 For faults in the computer, try to ascertain whether it is on the computer PCB, Keyboard, Power Supply or Video Monitor. Examples of types of faults caused by each unit are:

Faulty Computer PCB

Garbage display when switch on.
Programs will not run correctly, or stop partway through.
Diagnostic program indicates errors.

Faulty Keyboard

One key does not work at all.
Keyboard does not work when attempting to log-on.
(Note: if the keyboard appears to fail partway through a program it is probably a faulty computer PCB).

Faulty Power Supply

Computer does not work at all.

Faulty Video Monitor

Any fault normally exhibited by a colour TV, eg loss of picture, loss of sync, poor colour etc

Faulty Network Cable

The computer will not access the disk unit. In a network configuration, all computers past the faulty one will also not access the disk unit.

2. ACTIONS TO BE TAKEN BY SERVICE COMPANY

2.1 Faulty Disk Unit

Return to Polycorp for repair. A cardboard shipping disk must be inserted.

2.2 Faulty Computer PCB

Return to Polycorp for repair.

2.3 Faulty Keyboard

Servicing is limited to replacement of keyswitches and encoder IC's (KR2376-012) If this does not fix the fault the whole keyboard should be returned to Polycorp for repair.

2.4 Faulty Video Monitor

If possible this should be repaired by the service company.

2.5 Faulty Power Supply Experience indicates that failure is very unlikely. However if failure does occur the service company should if possible repair it.

2.6 Faulty Network Cable The network cable attached to the power supply does occasionally break at the connector. This will mean that the computer will not be able to access the disk. This fault should be verified and repaired by the service company.

3. ACCESS TO PCB's

3.1 To Open the Cabinet

- Switch off power.
- Prise off the 2 black plastic caps on the rear of the unit with a small screwdriver.
- Unscrew the 2 screws.
- Unscrew the 2 dome nuts under the keyboard.
- Remove the keyboard cover plate.
- Remove the top of the cabinet by lifting at the rear first, taking care not to damage the screen surround.

3.2 To Remove the Computer PCB

- Unplug the ribbon cable from the keyboard PCB and put the keyboard aside.
- Unplug the power cable (5way-blue,blue,green,red,red)
- Unplug the video cable (5way-black,red,green,blue,white)
- Unplug the network cable (8way-red,yellow,white,black,red,yellow,greenblue,red near edge of PCB)
- Slide out the user port cable (3way-blue,red,yellow. Blue near edge of PCB)
- Slide out the PCB until the reset switch cable can be unplugged. Do not allow the cable to recoil back under the shield.
- Slide the PCB out the rest of the way.
- Unplug the speaker connection (2 way-brown,brown)

NOTE: The first models are a friction fit. Later models may have a clip to secure the PCB.

3.3 To Service the Video Monitor

- Remove the short plastic extrusion securing the top of the PCB.
- Unplug the degaussing coil cable.
- Raise the PCB until the controls are accessible and support with a suitable spacer.

3.4 To Re-assemble Unit

- Reverse the above procedures.

4. SERVICING KEYBOARD

If only one key does not work, verify that the switch is faulty by momentarily shorting it. This should then enter the character. If this is the case the keyswitch should be replaced as follows:-

- Remove all solder with a solder-sucker.
- Free the switch from the PCB by a slight sideways rocking.
- Pull the keycap off the switch
- Remove the switch by depressing the two plastic clips which hold it in the metal plate.
- Replace with a new switch.

If several or all keys do not work, or if characters are entered without depressing a key, it is likely that the encoder IC is at fault. This IC is sensitive to static and the earth lead on the keyswitch mounting plate is designed to prevent static from reaching the PCB. If replacement of the IC(KR2376-012) does not fix the fault, return the keyboard to Polycorp.

NOTE: Faulty computer boards can make the keyboard appear faulty. If possible, verify that the fault is in the keyboard by swapping the keyboards between two computers.

5. SERVICING POWER SUPPLY

The outputs of the power supply are as follows:

Pin 1	-	Blue,	-12 volts at 0.05A
Pin 2	-	Blue,	-05 volts at 0.05A
Pin 3	-	Grey,	0 volts
Pin 4	-	Red,	+05 volts at 3A
Pin 5	-	Red,	+12 volts at 0.5A

They can be checked, preferable under load, with a DVM. All should be within ±5%.

Components likely to fail are the 3 terminal regulators, bridge rectifiers and filter capacitors.

6. SERVICING VIDEO MONITOR

This should be treated as a television set. Inputs from the computer board are Red, Green and Blue signals - black level 0v and white level 0.7v, and composite sync 2 volts peak to peak.

The main PCB can be slid up for servicing and adjustment and held in position with a block of polystyrene etc. The degaussing coil should be disconnected before raising the PCB.

Adjustment Procedure

All following can be done with purple log-on screen

<u>PSU Board</u>	<u>V-SET Control</u>	Adjust for 148 volts at cathode of D210. Use DVM.
<u>SYNC Board</u>	<u>SYNC Level Control</u>	Adjust the centre of locking range
<u>PHASE Control</u>		Adjust to centre picture (normally fully clockwise).
<u>E-W Board</u>	<u>WIDTH Control</u>	Adjust for width slightly less than screen size (normally maximum).
<u>SHAPE Control</u>		Adjust for square sides.
<u>Main Board</u>	<u>L.FREQ Control</u>	Short 2 pin plug on sync board and adjust for almost horizontal lock. Remove short.
<u>F.FREQ Control</u>		Adjust to centre of locking range.
<u>AMP Control (Height)</u>		Adjust for height slightly less than screen size.
<u>LIN Control (Linearity)</u>		Adjust for linear vertical scan (A program will be provided at a later date to generate a suitable pattern).
<u>Picture Tube Base Board</u>		Adjust focus control for sharpest picture

Colour Balance, Cut-off, Brightness, Contrast Controls

Load program VDEOTEST (Type EXIT, then LOAD "VDEOTEST")
Type RUN. Ensure Caps Lock key is depressed.
Now you may type the following keys:

W	gives white screen
B	gives black screen
R	gives red screen
G	gives green screen
U	gives blue screen
C	gives colour bars plus black and white
H	gives a convergence test pattern
1 to 7	give $\frac{1}{2}$ intensity colour backgrounds
0	turns background off

Set brightness switch (small switch on rear of unit to LOW position (up))

Select red screen. Use degaussing tool to demagnetize the shadow mask and display an even red colour. Switch off demagnetizer when well away from screen. Do not leave switched on.

The following procedure assumes the use of a Philips Colour Analyser type PM5539.

1. Select a black screen. Select scale 1NIT on PM5539. Adjust brightness control until readings on instrument approximately 3. If flyback lines are visible reduce G2 control on picture tube base and increase brightness control. Adjust Red, Green and Blue cut-off controls for readings of 3 for each colour. Note these controls are labelled R.GAIN, G.GAIN, B.GAIN on the silk screening.
2. Select a white screen. Select scale 300NIT on PM5539. Adjust contrast control for a reading of 5 on red. Adjust colour balance controls for readings of 5 on green and blue. Note these controls are labelled G-Wp and B-Wp on the silk screening.
3. Repeat steps 1 and 2 until correct.
4. Select a white screen. Select scale of 300NIT on PM5539. Adjust brightness control for a reading of 3. Black should now be invisible.

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POLY CONSOLE UNIT

COMMISSIONING TESTS

POLY UNIT SERIAL NUMBER

Log-on to Poly unit using Programming Disk. Type in RUN "POLYTEST"

Test 1	-	Colour bands	()
Test 2	-	Full Screen Colour	()
Test 3	-	Backgrounds	()
Test 4	-	Convergence	()
Test 5	-	Screen mixing	()
Test 6	-	Colour additions	()
Test 7	-	Screens test	()
Test 8	-	Sound	()
Test 9	-	Keyboard	()
Test 10	-	ROM Checksum	()
Test 11	-	Memory Test	()

Leave Test 11 running for at least 1 hour. To exit from Test 11, use the reset button.

TESTED BY.....

DATE.....

COMMENTS:



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COMMISSIONING TESTS

DISK UNIT SERIAL NUMBER

EXTENSION SERIAL NUMBER

Use "HARDWARE TEST PROGS" disk

Checked OK

Log - on to one POLY

Type in a small prog

SAVE "MASTTEST" check no error messages ()

Reset Disk Unit

NEW

LOAD "MASTTEST" check no error messages ()

LIST check same as typed ()

KILL "MASTTEST.BAS" check no error messages ()

If single disk drive test complete

If 2 disks connected - insert a disk in drive 1

SAVE "MASTTEST.1". Check no error messages ()

Reset Disk Unit

NEW

LOAD "MASTTEST.1" Check no error messages ()

LIST. Check same as typed ()

KILL "MASTTEST.1". Check no error messages ()

Test complete

Tested by.....

Date.....



POLY COMPUTER SYSTEM

SERVICE REPORT

LOCATION: _____

REF CODE: _____

REPAIR TO: (tick appropriate box)

POLY CONSOLE UNITS ☐

SERIAL NO(S) _____

DISK UNIT ☐

SERIAL NO _____

PRINTER ☐

SERIAL NO _____

COMMENTS: _____

BRIEF DESCRIPTION OF FAULT: _____

PROBABLE CAUSE: _____

NATURE OF REPAIR: (parts replaced etc) _____

REPAIR TIME: _____

DATE: _____

SERVICEMAN'S SIGNATURE: _____

POLYGRAPH

FAULT REPORT FORM

SYSTEM LOCATION		NAME OF USER		TIME	DATE								
MODULE NAME AND VERSION		DISK UNIT 0 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 3 <input type="checkbox"/>											
TYPE OF FAULT Hardware <input type="checkbox"/> (tick appropriate Network <input type="checkbox"/> box) Program <input type="checkbox"/>		NUMBER OF UNITS <input type="checkbox"/> AFFECTED (if entire system enter "All")		IDENTIFIER OF UNIT AFFECTED (if only one unit <input type="checkbox"/>									
DESCRIPTION OF FAULT		PROGRAM CODE <input type="checkbox"/>											
PROGRAM FAULT		ERROR ON LINE NO <input type="checkbox"/>											
PROGRAM DESCRIPTION		SCREEN NUMBER <input type="checkbox"/>											
		ERROR NUMBER <input type="checkbox"/>											
HARDWARE FAULT													
POLY: Screen does not light up Keyboard does not appear to start Some colours not right Screen unstable Won't run any programs Some programs won't start or fail part way through POLY will execute only standalone BASIC POLY's downstream of a particular POLY will execute only standalone BASIC DISK: Clicking noise, does not start Clicking noise, goes on until unit switched off Frequent disk errors reported PRINTER: Describe fault													
<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>													
<table border="1"> <tr><td></td></tr> <tr><td></td></tr> <tr><td></td></tr> </table>													
NETWORK FAULT System seizes when running a specific program One or more units are seized													
GENERAL:													
Can fault be repeated at will?		Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
If Yes, how?													
OTHER COMMENTS:													
(attach separate sheet if necessary)													

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FAULT REPORT FORM

SYSTEM LOCATION		NAME OF USER		TIME		DATE			
MODULE NAME AND VERSION				DISK UNIT		0	<input type="checkbox"/>	2	<input type="checkbox"/>
						1	<input type="checkbox"/>	3	<input type="checkbox"/>
TYPE OF FAULT (tick appropriate box)		Hardware		<input type="checkbox"/>	NUMBER OF UNITS AFFECTED (if entire system enter "All")		IDENTIFIER OF UNIT AFFECTED (if only one unit <input type="checkbox"/>		
		Network		<input type="checkbox"/>					
		Program		<input type="checkbox"/>					
DESCRIPTION OF FAULT				PROGRAM CODE		<input type="checkbox"/>	ERROR ON LINE NO <input type="checkbox"/>		
PROGRAM FAULT				SCREEN NUMBER		<input type="checkbox"/>	ERROR NUMBER <input type="checkbox"/>		
PROGRAM DESCRIPTION									

HARDWARE FAULT

POLY:

Screen does not light up
Keyboard does not appear to start
Some colours not right
Screen unstable
Won't run any programs
Some programs won't start or fail part way through
POLY will execute only standalone BASIC
POLY's downstream of a particular POLY will
execute only standalone BASIC

DISK:

Clicking noise, does not start
Clicking noise, goes on until unit switched off
Frequent disk errors reported

PRINTER:

Describe fault

NETWORK FAULT

System seizes when running a specific program
One or more units are seized

GENERAL:

Can fault be repeated at will?

Yes

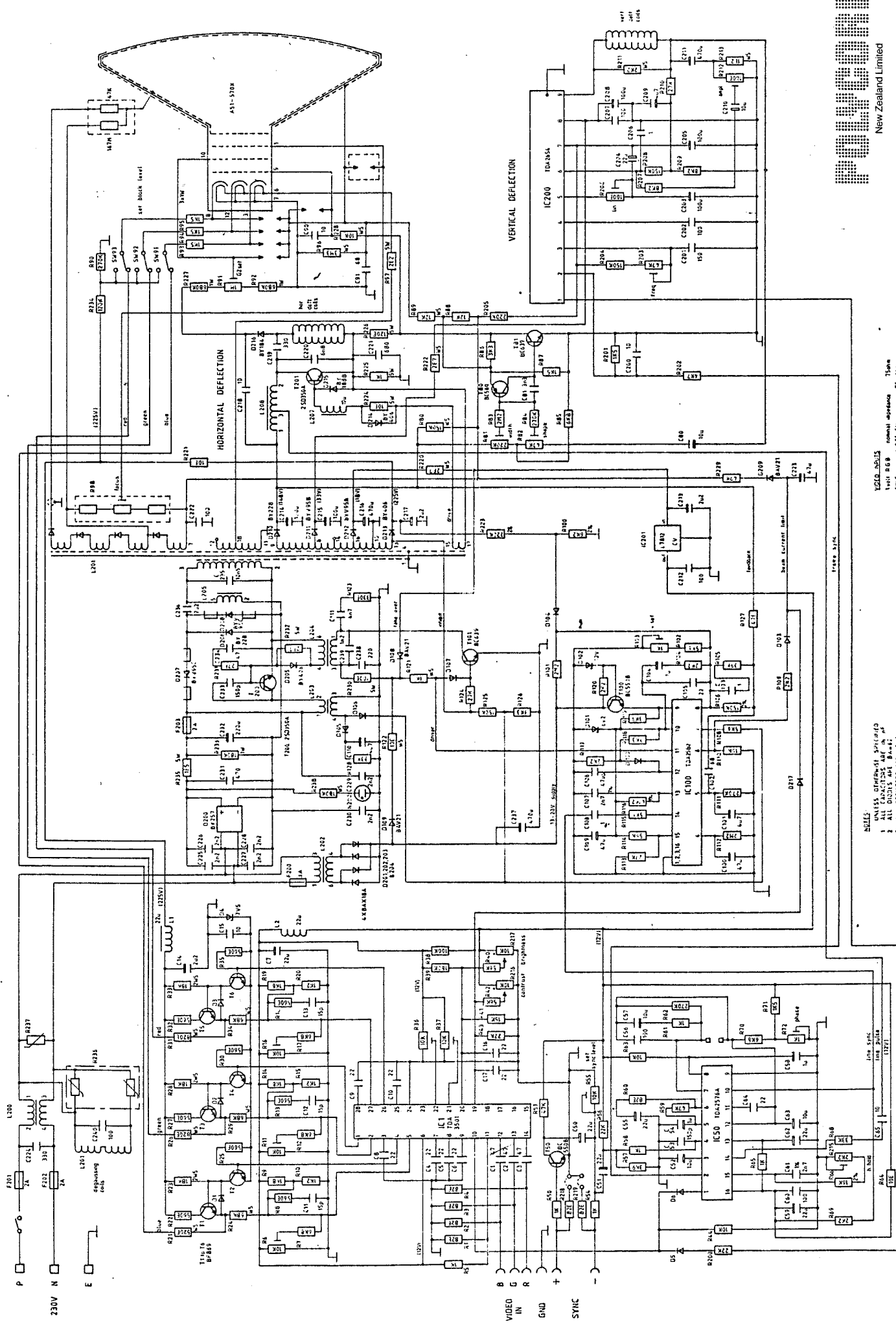
<input type="checkbox"/>
<input type="checkbox"/>

No

If Yes, how?

OTHER COMMENTS:

(attach separate sheet if necessary)



IC100-IC108
Level 0.8
Sync - approx 0.5-1V
Normal operating 75V
Sync - approx 0.5-1V

NOTES:
1. ALL CAPACITORS ARE IN μF
2. ALL RESISTORS ARE IN Ω
3. ALL RESISTORS ARE IN $k\Omega$



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