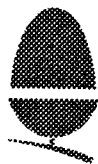


ICS



ideA

**Hard Disc System
for Acorn computers**

ideA

Hard Disc System for Acorn Computers

Second Edition published by Ian Copestake Limited April 1993

First published in Great Britain by Ian Copestake Software October 1990

MIDEA 93AP29

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Introduction

Congratulations on buying an ICS *ideA* product.

Your package should contain a User Registration Form. Please complete and return it straight away. This will entitle you to service and technical support, and to any system updates which may become necessary.

This booklet tells you how to use *ideA* products. There's very little to it, but please do read through the booklet before starting.

Installation instructions are provided for users who will be doing this themselves.

We hope everything goes smoothly as you start to use our product. Should any problems arise with installation please refer first to the troubleshooting section in this manual and then your supplier if you did not buy direct from us.

A returns procedure is explained later in this booklet. It is important that you follow this to ensure that we can give you the best possible service and that delicate goods are not damaged in transit.

About the ideA range

'IDE' stands for Integrated Drive Electronics. As the name suggests, IDE hard discs have much of the required electronics built into them. The computer interface can be simpler and therefore cheaper and more reliable. Transfer and access speeds can also be enhanced.

ICS was the first company to offer IDE products to Acorn users. Over the past three years we have accumulated a great deal of experience of IDE, and the latest versions of our products make full use of this. Other suppliers can now offer you IDE, but nowhere will you find better service or value for money than at ICS.

We have implemented the IDE system as fully as possible and tested it with a range of IDE (or AT) hard discs. However no IDE interface can be guaranteed to work with every possible IDE disc, and we strongly recommend you to use discs supplied or approved by us. An up-to-date list of discs we have tested is available upon request from our service address (please supply a stamped, addressed envelope).

If you still have the old 'Arthur' operating system you **MUST** upgrade to RISC OS before using an *ideA* product.

Hard discs with 16 heads, 65,535 cylinders and up to 254 sectors may be used: (Certain older discs only work with up to 1023 cylinders). Up to two devices may be connected to the *ideA* interface (subject to the correct power supply being available).

Installing an ideA Upgrade

WARNING

Please read right through the Installation Instructions before you start. There are separate sub-sections for different computer models.

A hard disc is very delicate. Do not drop, knock or jolt it, and do not use it except as described in this booklet. Have something soft handy to rest it on while fitting, such as a folded cotton towel.

A computer containing a hard disc must also be protected from knocks. The original computer box may not give adequate protection during transport.

Observe all antistatic precautions when handling electronic components: Read the section 'Antistatic precautions' BEFORE you begin. Try to use the right screwdriver for each screw otherwise you may damage its head: No. 1 and No. 2 Pozidriv screwdrivers are all you should need.

**NEVER SWITCH OFF A COMPUTER
WHILE IT IS READING OR WRITING TO A HARD DISC.**

**NEVER MOVE A COMPUTER OR EXTERNAL
CASE CONTAINING A HARD DISC WHILE IT IS SWITCHED ON.**

Either of the above actions may cause damage which would not be covered by our guarantee. If the worst does happen, contact an approved dealer or our own service department for advice:

If you do not feel confident about fitting an upgrade, an Acorn dealer should carry out the work for a small fee.

YOU MUST KEEP THE ORIGINAL PACKING MATERIAL

This may be required if part of an *ideA* has to be returned.

**FAILURE TO USE THE ORIGINAL PACKING WHEN RETURNING GOODS
COULD INVALIDATE YOUR WARRANTY:**

NOTE: If you have received a Utilities disc it may include one or more ReadMe files containing important new information: Please read all such files before you do any further. The Utilities may already be installed on your hard disc:

Antistatic precautions

When two insulating materials of unequal electric affinity are rubbed together they become charged, one material acquiring the electrons lost by the other. One material becomes positively charged and the other negatively charged: This procedure is known as triboelectrification: The charge generated just by walking across a carpet can reach 35,000 volts; damage to electronic components can be caused by as little as 20 volts!

If a human becomes charged in the above manner, contact with an electrically conducting surface will provide a discharge path for that charge. If the discharge path is through an electronic component or assembly, damage or degradation can result. Damage will be obvious, but degradation may be almost impossible to identify yet could shorten the life of a product considerably.

Static-sensitive components or assemblies should be handled in a static-controlled area. There are kits available just for this purpose, but for the occasional home user they would prove too expensive.

A home-based, static-controlled area can be assembled using either a metal tray or a sheet of tin foil, which must be connected to ground potential.

DO NOT **UNDER ANY CIRCUMSTANCES** CONNECT A WIRE INTO A STANDARD PLUG TOP. THIS IS VERY DANGEROUS!

Special plug tops are available which have just the ground connections exposed, so that a wire can be connected safely. Contact your local hardware supplier or ICS for availability and price.

Once you have established your static-controlled area, make physical contact with the grounded area before work commences and at regular intervals throughout the procedure.

Parts list

Please check that you have the following before you start. *ideA* upgrade kits with a hard disc supplied by ICS contain all necessary items. If you bought an *ideA* interface on its own you may need to order some items separately: Please note that dealers often buy an interface from us but add a hard disc themselves:

- A User Registration Form.
- The *ideA* User's Guide and Installation Instructions.

A300 / A400 / A500 / A5000

- A conductive plastic bag containing an *ideA* interface circuit board, together with an LED (light-emitting diode) and lead, two cable ties, a small piece of 'tack' and two M3 'twit& screws plus four 6-32 UNC screws: Leave these in the bag until needed:
- IDEARCEX only: A blank half-width expansion port panel, back panel T piece, two M2.5 x 6mm screws and washers and two spacers.
- For second hard disc only: A Y power adaptor.
- Optional: A protective bag containing an IDE hard disc. Leave this in the bag until needed: IDEARCEX: The disc could be attached to your *ideA* interface card, depending on what was ordered.

—Optional: A bag containing a fan, filter, filter cover, four M4 x 40mm screws, four M4 nuts and four rubber grommets. If your computer already has a working fan you will not need these parts; we will make a small refund if you return them to us unused and undamaged. We strongly recommend you not to operate an internal hard disc without a working fan.

—IDEARCIN only (optional): A hard disc cradle.

—Optional: Utilities disc, supplied when an interface is ordered on its own.

A3000 External (internal interface for external disc)

—A conductive plastic bag containing an *ideA* interface circuit board.

—A bag containing two M3 screws and nuts and two M2.5 screws and washers.

—An adaptor allowing the interface to be used without a piggy-backing expansion card.

—Optional: An external case with or without a hard disc.

—Optional: Utilities disc, supplied when an interface is ordered without a hard disc.

A3000 Series Internal

—A conductive plastic bag containing an *ideA* interface circuit board, which may already have a hard disc attached to it.

—A plastic bag containing two M2.5 screw and washers.

—Optional: A plastic bag containing a fan, two M3 screws, washers and nuts.

—Optional: Utilities disc, supplied when an interface is ordered on its own.

WARNING: We recommend that a fan be fitted if you have a fully expanded A3000, e.g. with a network card, extra internal memory *and* an external podule.

Removing a cover

Isolating the computer

DANGER

Dangerous voltages may be exposed inside the case of a computer when the cover is removed. Disconnect the computer from the mains before removing the cover. A3000 Series and A4000 internal upgrades must only be fitted by an Acorn-approved Component Level Service Centre

Switch off the computer at the rear and disconnect it from the mains supply by unplugging the power supply cable.

MAKE CERTAIN THE COMPUTER IS PHYSICALLY DISCONNECTED FROM
THE MAINS POWER SUPPLY

Unplug from the mains any peripherals that are attached, such as a printer or monitor, and physically disconnect them from the computer.

Disconnect the keyboard from the computer, if it is a separate item.

A300 / A400 / A500 Series

Remove the top cover of the computer as described in the computer user guide. There are five screws: three at the back and one on either side towards the front. (Whenever you remove screws keep them separate from any other screws which are around and make sure you can remember where they came from).

Carefully slide the cover right off (it slides off towards the rear), and place it safely out of the way.

A5000

With the A5000 turned upside down, remove the six screws which hold the top cover in place. These can be found along the left- and right-hand edges.

Carefully turn the computer the right way up and remove the top cover (it slides off towards the rear), and place it safely out of the way.

A3000 Series

Internal modifications to the A3000 series should only be carried out by Acorn-approved Component Level Service Centres. You may invalidate your Acorn guarantee by opening the computer. ICS provides a fitting service and we strongly recommend you to use this or consult a qualified dealer.

A3000

Remove the top cover of the A3000 by undoing the two screws at the back and the single screw underneath. The lid will then hinge forward and may be removed completely by unclipping the three plastic clips along the front edge.

A3010 / A3020

The A3010 and A3020 have three fixing screws underneath the front edge: Once these screws have been removed the lid lifts off from the front, hinging backwards: Unclip the plastic lugs at the rear. There are then two false expansion slot back panels to remove, one plastic and one metal. They will both slide upwards:

External hard disc case

Remove the four fixing screws: two are located at the front of the case and two at the rear. Looking from the front, slide the lid to the left about half its width and then upwards: Unplug the LED connector from the small printed circuit board located at the front right-hand side of the case: This procedure is necessary to avoid damage to the LED. Place the lid in a safe place.

Fitting a fan

A300 / A400

If a working fan is not already fitted in your computer, we strongly recommend you to fit one before using an internal or external hard disc.

Locate the bag containing the fan and its fittings.

The fan is fitted to the front left hand side of the computer, just in front of the power supply.

Take the four M4 screws and insert them, from the outside, into the four mounting holes.

Hold each screw in place while you push a rubber grommet onto it. These help keep fan noise to a minimum.

Examine the fan itself. You will find two arrows: one indicates the direction of rotation and the other the direction of air flow. Place the fan onto the four screws with the air flow arrow pointing into the computer. The wires should be next to the power supply, facing towards the rear of the computer.

Put the filter into the filter cover and place the assembly onto the four M4 screws so that the filter is trapped between the fan and the filter cover. Ensure that the fan will still rotate before continuing. (The filter should be replaced before it becomes clogged with dirt, ideally once a month: Replacement filters can be ordered in packs of ten from ICS).

Fit the four M4 nuts to secure the fan: Use a screwdriver to tighten the screws gently: Do not over-tighten them.

Find the connector labelled PL12 on the left of the main computer circuit board: Plug the wires coming from the fan onto this connector. They will only fit correctly one way round.

A3000

Remove the internal *ideA* interface card (there are two screws to remove): Make a note of how the interface card was fitted: At the end of the card where the disc is (or would be) fitted you will find two holes and a three-way connector. The fan bracket should be fitted below the circuit board with the fan upright and secured using the two M3 screws, washers and nuts supplied. Fit the fan connector to the three-way plug. It will only fit correctly one way round. Refit the *ideA* interface card.

Fitting an LED

A300 / A400 / A500

The LED is not required if you have an IDEARCEX with an external disc, although it can be fitted to provide local indication of disc activity.

The LED provided replaces the existing power LED on the front plastic fascia assembly of the computer. You will probably need to remove this assembly to fit it.

To free the fascia assembly you must remove five screws. There are three underneath the front of the computer and one on each side near the front. The last two are hidden when the top cover is in place. The screws underneath are best removed by resting the computer on its side before the top cover is removed.

After removing the five screws, ease the fascia assembly forward. Do this very gently because there are wires attached to it. Notice where these wires are plugged onto the main circuit board just in case they come adrift.

The LED is attached to the fascia with a small amount of glue, but you should be able to ease it out. Coil up the LED with its wire and tie it out of the way using one of the cable ties provided.

Fit the new LED to the same slot in the fascia, and use the small piece of tack supplied to hold it in place. Route the cable through the front of the computer alongside the power supply.

If you have difficulty replacing the LED the fascia can be further disassembled by undoing the screws visible inside it.

Replacing the fascia assembly can be a little fiddly. Be patient and do not force it. Put a spare floppy disc in the floppy drive without pushing it right in: this will help to guide the fascia into position. The floppy drive eject button sometimes falls off and you may wish to fix it on with a drop of superglue.

As you push the fascia home, check that you do not trap any wires. Have a look at the front edge of the circuit board near the bottom of the computer: this should engage in plastic slots in the fascia panel. When the fascia is in place check that the floppy drive eject button works.

Replace the five fascia assembly screws.

(After completing the installation you might very occasionally find that the floppy drive does not work properly because the fascia assembly is not quite in the right position, even though it may look correct. Remove the fascia and try again.)

A5000

To fit the LED to the A5000 it is necessary to remove the plastic front fascia. Do this by releasing six plastic clips (part of the front panel moulding): They are visible

inside the front of the metal chassis, three along the top edge and three along the bottom.

Once the front fascia has been removed, ease out the green LED (it will have been glued in place). Replace it with the *ideA* LED, and use the small piece of tack supplied to hold it in place. The *ideA* LED will give both power and disc access indication.

Refit the front fascia by carefully clipping it into place, routing the LED wire through the metal chassis to the *ideA* interface.

A3000 Series

There is no provision with this series of computers for fitting a disc activity LED, except when using an external disc. The disc activity LED for one of the *ideA* range of external discs is on the front panel of the disc case.

Fitting an *ideA* interface

IDEARCEX

The *ideA* external interface is a standard half-width expansion card and will fit into any of the four positions available on a *four-layer* four-slot backplane. If you are fitting this interface to the external expansion socket of an A3000 you will need an external expansion case. Contact ICS or your local dealer for details.

WARNING: If your *ideA* interface card has a hard disc fitted you will need to take precautions as listed at the front of this document relating to the handling of hard discs.

Remove any blank panels as appropriate. If you remove a full width blank panel you will need the half-width blank panel and T piece. Prepare the *ideA* card for installation by fitting the half-width blank panel if required. Insert the *ideA* card from the rear, and push it home into the chosen connector: Secure the back panel of the card with the two M2.5 x 6mm screws and washers provided.

NOTE: If you are fitting your interface card to an A300 / A440 Series computer, you will need to fit the small spacers between the back panel and the computer at each end of the full width of the back panel: This is to correct a small error in the physical dimensions of these machines. Later models (A400/1, A540, A5000 etc) have the error corrected and do not require the spacers:

IDEARCIN

If your computer already has a backplane fitted, skip the next section and go on to 'Fitting an IDEARCIN interface with a backplane'.

Fitting an IDEARCIN interface without a backplane (A300 Series only)

Before fitting the *ideA* interface without a backplane you must remove the small black jumper link, LK1. This link can be found next to the blade terminal labelled +5V(RED) on the *ideA* interface board. A safe way to store the link is to place it on one pin only.

WARNING: IF YOU DO NOT REMOVE LK1 FROM THE *ideA* INTERFACE BOARD YOUR COMPUTER COULD BE DAMAGED

You will find a bunch of cables attached to the side of the power supply with a cable tie. Some of these are needed to power the *ideA* interface and hard disc. Use a pair of scissors to cut the cable tie, taking care not to cut or damage any of the cables themselves.

Identify the hard disc power cable. It has four wires going into a four-way plastic connector. There are also single red, black and yellow wires.

Connect the red and black wires to the *ideA* interface blade terminals. The terminals are clearly marked OV(BLACK) and +5V(RED).

**FITTING THESE WIRES THE WRONG WAY ROUND
WILL DESTROY THE *ideA* INTERFACE**

Find the expansion connector located towards the right-hand side of the computer just over half-way back from the front of the main circuit board. (This is where a backplane would normally be connected). The *ideA* interface plugs into the connector with the components towards the front of the computer. The interface will only fit correctly into the connector one way round. For the moment leave the 40-way ribbon cable, attached to the interface, where it lies.

Using one of the cable ties supplied, secure the remaining yellow wire so that it cannot come into contact with the power supply or the surface of any circuit board.

Fitting an IDEARCIN interface with a backplane

Before fitting the *ideA* interface with a backplane you must check that the small black jumper link, LK1, is in place. This link can be found next to the blade terminal labelled +5V(RED) on the *ideA* interface board.

**WARNING: IF LK1 IS NOT FITTED
THE *ideA* INTERFACE COULD BE DAMAGED**

A300 users: The backplane must be a four-layer type. If in doubt, contact your supplier:

Plug the *ideA* interface into a free socket on the backplane, with the components facing upwards. The interface will only fit correctly into the connector one way round: For the moment leave the 40-way ribbon cable, attached to the interface, where it lies:

A5000 users: It is possible to use the standard IDEARCIN interface with a hard

disc in the second disc position, leaving the original disc connected to the Acorn ADFS interface. There is also a special version of IDEARCIN with an extended ribbon cable, which can be connected to both discs at once.

A3000 Series

There are two types of *ideA* upgrade for the A3000 series of computers: IDEA3IN and IDEA3EX.

The IDEA3IN interface circuit board fits as a standard internal expansion card. It may have a 2½" hard disc attached to it; if not it can be recognised by having an eeprom on the opposite side of the board from the main components.

The IDEA3EX circuit board has components on one side only. It also uses the internal expansion slot, but is designed to fit 'piggy-back' onto another expansion card, such as one of the disc buffers made by Baildon Electronics or PRES Ltd. (contact us for details of other expansion cards which support piggy-backing): An IDEARCEX can still be fitted on its own, using the adaptor provided.

When fitting either of these interfaces you will need to 'dress' the internal wiring. This means that any wiring that will obstruct the expansion sockets must be moved out of the way. Always route or place the wires in such a manner that they will not become trapped during final assembly.

IDEA3IN

Insert the *ideA* expansion card so that the four connectors align and mate with the expansion card sockets on the main circuit board.

Secure the expansion card back panel, using the original or replacement screws and washers:

IDEA3EX

If no main expansion card is fitted you will need to use the optional adaptor: This is marked with an arrow which lines up with a similar one on the *ideA* card.

If there is a main expansion card fitted, remove it carefully. Remove any back panel and associated brackets from the main expansion card: Remove the false back panel secured with adhesive tape to the *ideA* back panel. Join the two cards and secure the brackets to the main expansion card using two M3 screws and nuts: Fit the combined unit so that the four connectors align and mate with the expansion card sockets on the main circuit board.

Secure the expansion card(s) back panel, using the original or replacement screws and washers:

Fitting a hard disc

Re-read the earlier section titled *Installing an ideA upgrade*, then unpack your hard disc.

WARNING: The ribbon cable which connect the interface to the hard disc will only fit correctly one way round but it is possible, by using excessive force, to damage the pins on the disc and fit the cable incorrectly. **THIS WILL DAMAGE THE DISC.**

We know of two kinds of hard disc connector. Type one is shrouded, with a notch cut out of the shroud to accept the polarising 'bump' on the ribbon cable connector. Type two just has an open group of pins. Type one may have all forty pins present but pin 20 is usually removed to provide extra polarisation. If your hard disc does not have pin 20 removed you will need to extract the small plastic pin from the corresponding hole on the ribbon cable connector. Use a small sharp pin or something similar: (There are two connectors on the ribbon cable; only remove the polarising pin from the connector you are going to use).

External cased hard disc

All that is needed to install an external hard disc is to connect the ribbon cable to the connector on the *ideA* interface card and the power cable to a suitable power outlet.

NOTE: The power cord may come with a plug already fitted or provided separately: If you have to fit the plug please follow the instructions attached to the plug or the cable, regarding the colour coding of the three wires. **WARNING: FOR SAFETY REASONS AN EXTERNAL HARD DISC MUST BE EARTHED.**

If you are connecting an external disc to an interface card which has a disc attached to it already, follow the instructions about link settings provided with your second disc. A data sheet on link settings can be obtained by sending a stamped, addressed envelope to our service department.

Operation of an external hard disc

The power supply fitted inside an external hard disc housing, once connected to the computer, is controlled by the computer. If the computer is turned off the external disc will be powered down. This will be indicated by reduced brightness of the front power LED. Once the computer is turned on the hard disc will spin up and the front power LED will be at full brightness. The front power LED will turn red to indicate disc activity.

NOTE: We recommend that either the external hard disc is turned on first, or the computer and the external hard disc are turned on together.

Internal hard disc: A300 / A400 / A500

If you are fitting an internal hard disc into an A540 you may need an alternative cradle: if you are unsure about which cradle you have contact ICS or your local

supplier for further information.

Locate the mounting cradle and mounting screws. If you have more than one set of mounting screws, now is the time to select the correct ones. Do this by gently trying one of each set of screws, in turn, in the holes in the side of the hard disc.

Look at the mounting cradle to see how it fits in the computer. It sits next to the floppy drive on the bridge near the front, open side up, with the tapered corners to the front. It is fixed to the bridge by two screws. Two special taptite screws are provided, which are similar to self-tapping screws in that they form their own thread. Insert the screws now (without the cradle) to form the thread, and then remove the one further from the floppy drive: Loosen the other screw several turns and leave it in place.

CAREFULLY place the hard disc into its mounting cradle. The side of the disc with the electronic components on faces downwards. The connector, on one end of the hard disc, should be at the untapered end of the cradle. Adjust the position of the disc until two screw holes on its side line up with two holes on each side of the cradle. When correctly positioned the disc should be completely inside the cradle and must not be touching the base of the cradle.

If your hard disc is a low-profile 1-inch type you should select the lower mounting position so that a second disc can be added easily at a later date:

Secure the hard disc using the correct mounting screws.

Gently lower the cradle and disc assembly onto the bridge in the computer and fix it with the two screws. A magnetised screwdriver will help to prevent screws dropping out of sight. Check to make sure that you do not trap any cables:

Connecting the cables

Connect the hard disc power cable to the socket on the hard disc. It will only fit correctly one way round.

Connect the LED cable to the two-pin connector on the *ideA* interface. It will only fit correctly one way round.

Connect the ribbon cable from the *ideA* interface to the connector on the rear of the hard disc:

Tidying up

GO THROUGH THESE INSTRUCTIONS AGAIN AND CHECK THAT EVERY
STEP HAS BEEN CARRIED OUT CORRECTLY

When you are satisfied that all is well, refit the computer lid. Go on to the section about Initialising the hard disc:

Internal hard disc: A5000

Remove any internal expansion cards that you may have fitted: Place these in their original antistatic bags or containers, if available, and into your antistatic area.

Locate and remove the four screws which secure the expansion back plane, and remove the backplane.

Disconnect the two ribbon cables, one connected to the hard disc on the left-hand side of the computer and one connected to the floppy disc drive on the right-hand side of the computer. Also remove the respective power cables.

You are now ready to remove the tray which supports both the hard and floppy discs. This tray is secured by one screw which will be found at the front centre of the tray, on the inside of the computer. Carefully remove the tray by lifting the back upwards and then out towards the rear. Place it in your antistatic area.

If you are adding a second hard disc go on to *Fitting a second hard disc*.

Replacing the original A5000 hard disc

Place the tray so that the hard disc fixing screws can be removed. Remove these screws carefully while holding the disc. Once the original disc is clear of the tray place it in your antistatic area on something soft such as a folded cotton towel. At the first opportunity place it into the antistatic bag or container which your replacement hard disc arrived in.

If your replacement disc was supplied by ICS it will have been formatted and provided with link setting instructions. Check that the links are set correctly. If your disc came from another source you should contact your supplier if instructions have not been supplied:

Fit your replacement disc into the position vacated by your original disc, using the appropriate fixing screws.

Replace the tray into the A5000. This can be a little tricky! First point the front of the tray into the computer from the rear, with the back of the tray lifted up slightly. Then slide the tray forward into position, lowering the rear as you do so. When it is almost in place align the front pegs and the rear hooks with their locating slots, before final positioning: Secure the tray with the single fixing screw:

Reconnect the ribbon cable to the floppy disc drive, then connect the ribbon cable from the *ideA* interface to the hard disc.

Now go on to *Finishing off*:

Fitting a second hard disc

Unpack your second hard disc and temporarily place it in your antistatic area. Check that the links of both your second and original hard discs are set correctly.

Connect the ribbon cable to your second hard disc. Connect a free plug from the Y power adaptor to your second hard disc.

Place the computer upright on its left side (you may need someone to steady it at this stage). Position your second disc underneath where the floppy disc drive would normally be, with the front of the disc facing the front of the computer. Align the disc mounting holes with the four fixing holes in the baseplate of the

A5000, and secure using the four screws provided. This positioning may require some patience!

Replace the computer on its base and lay the ribbon cable from your second hard disc in approximately its final position, interleaving the floppy disc drive ribbon cable so that both can be accessed. Remove the original hard disc ribbon cable and put it in a safe place for possible future use.

Replace the tray into the A5000. This can be a little tricky! First point the front of the tray into the computer from the rear, with the back of the tray lifted up slightly. Then slide the tray forward into position, lowering the rear as you do so. When it is almost in place align the front pegs and the rear hooks with their locating slots, before final positioning. Secure the tray with the single fixing screw.

Complete the connection of the ribbon cable to the original hard disc.

NOTE: Even though we fit polarising pins to your replacement ribbon cable, it is still possible to fit it incorrectly! Take care and double-check.

Connect the Y power adaptor to the original hard disc supply cable, positioning it in the space behind the original hard disc from underneath.

Finishing off

Connect the power cables to the floppy disc drive.

Connect the LED cable to the two-pin connector on the *ideA* interface. It will only fit correctly one way round:

Refit and secure the expansion back plane.

Refit any internal expansion boards.

Relocate your A5000 to its working position and re connect any necessary cables.

Tidying up

GO THROUGH THESE INSTRUCTIONS AGAIN AND CHECK THAT EVERY
STEP HAS BEEN CARRIED OUT CORRECTLY

When you are satisfied that all is well, refit the computer lid: Go on to the section about Initialising the hard disc:

Fitting an alternative filing system eprom

When using the IDEFS to access an IDE hard disc connected to the built-in interface provided in the A3020, A4, A4000, A5000 etc, you should check that use of the same hard disc by ADFS has been properly disabled. This means that the configuration item IDEDiscs (*not* IDEFSDiscs) should be set to zero, and FileSystem should be set to IDEFS (not ADFS).

Note: When fitting the eprom, it **MUST** be fitted the right way round. Failure to do this will result in the eprom being destroyed. At one end of the eprom you will see

a small notch. This **MUST** be at the same end as the notch or mark on the socket into which the eprom is being fitted. This notch also indicates which end pin 1 is at.

Wizzo4

WIZZO4 is designed for use with the A4 computer. The eprom fits into the fifth column rom socket, accessed by removing the expansion cover on the left hand side of the computer. Separate fitting instructions will be provided with this upgrade.

Wizzo5

WIZZO5 is designed for use with the A5000 computer. The eprom fits into the socket labelled '5TH COL ROM'.

The socket will accept a 32-pin device but we have supplied you with a 28-pin device. Fit the eprom into the lower 28 sockets, leaving pins 1, 2, 31 and 32 free.

LK15

Link 15 can be found to the northeast of the '5TH COL ROM' socket. This link will need altering to enable the system to recognise the presence of your new eprom. The default position is with a jumper over pins 1 and 2. This jumper must be replaced over pins 2 and 3 for the supplied eprom size.

Now go on to the section titled *The IDE filing system (IDEFS)*.

Initialising a hard disc

Once your computer has been reassembled and placed into its normal working position, you will be ready to test your installation.

A formatting application called !IDEFormat is provided either on your hard disc or on a separate floppy. Do not run this yet — you may not need to.

Formatting a hard disc will delete any files it may contain, so it is best not to keep !IDEFormat on your hard disc in case it is run by mistake.

Keep a copy on a floppy disc instead

!IDEFormat is based on Acorn's own hard disc formatting program HFORM, and you should find a chapter on this in your computer User Guide. Formatting an IDE hard disc is usually very simple; you will never need to record any 'defects' for example.

Hard discs supplied by ICS

A hard disc supplied by ICS will have been formatted and 'soak-tested' already. The soak-testing is designed to ensure that all the components in your system work correctly. You will not need to reformat a disc unless the data on it has become badly corrupted, or you wish to change the partitions.

Switch on your computer and allow a few seconds for everything to warm up. The *ideA* interface automatically makes itself known to the operating system and loads two modules ('IDEFS' and 'IDEFiler').

The first time you switch on you will probably see a message saying that the IDEFS cmos configuration memory is corrupt and that default configuration values have been used (this message is also given after an R or Delete power-on reset). This is normal. If you are using an IDEARCIN in an A310 without a backplane you may see the message four times. This is also normal.

An icon for the IDE hard disc will appear on your icon bar, labelled with the name of the disc. The !IDEFormat program initially gives each disc the name 'IDEDisc4'. You can change the name later using the menu from the disc icon on the icon bar. If you have two IDE discs, or two or more partitions, they must be given different names or RISC OS will become confused.

There is a chance (depending on the contents of cmos ram) that two IDE icons may appear even though you have fitted only one hard disc. This will be corrected when you have made the configuration settings described further on.

Creating multiple disc partitions

If you have version 3.00 or later of IDEFS you can split each hard disc into several logical partitions. On the desktop icon bar there will be one icon for each partition you create, up to a maximum of four. This is useful because the protection system applies independently to each partition.

You could for example split a 20 Mb disc into a 5 and 15 Mb partitions. The 5 Mb partition could have normal read/write access (keep the !Scrap application here) and the 15 Mb partition could have read-only access (keep your other applications here, including !System and !Fonts). Most applications will work quite happily from a read-only disc providing that !Scrap can be written to, except when you are saving configuration settings. This will defeat most viruses and all but the most determined of unauthorised human interference.

Note that to change the partition list involves reformatting the entire (physical) disc, so you must ensure that all data on the disc has been backed up first.

Using the IDEFormat application

To start reformatting your disc or to change the partition table, double-click with Select on !IDEFormat.

NOTE: An unformatted disc will generate an error message. This is normal.

The formatting process takes only a few seconds. (Discs are in fact formatted by the makers and are just initialised at this stage).

The program will present details about the disc and possibly how it was formatted before. If you are only changing the partition table you can ignore most of this. Then you will **see** a menu listing six options, which are as follows:

1. Add to partition table

Use this option to add new partitions to the partition table. You can have up to four partitions. You will not be allowed to allocate more disc space to the partitions than actually exists on the disc itself.

At the prompt, type in the sizes in whole megabytes of each partition, pressing Return after each one. Any fraction of a megabyte of disc space that may be left over will be added automatically to the last partition in the list. When you have finished, press Return at the prompt to return to the main menu. If you make a mistake in the entry of partition sizes these can be deleted individually using option **2** from the main menu.

Once you have changed the sizes in the partition list, use option **6** from the main menu to initialise these partitions. The old one(s) will not be accessible any more and you will see unhelpful error messages if you try to use a disc whose partition list does not match the partitions actually created on the disc.

2. Delete from partition table

Use this option to free space previously allocated to specific partitions. At the prompt, enter the number of a partition that you wish to free. You can then use option 1 from the main menu to allocate the freed space to new partitions.

3. Edit drive parameters

You should only use this option if you are formatting a disc that was not supplied by us. This option will prompt you for alternative values (giving the current setting as a default) for the disc shape (i.e. number of cylinders, heads and sectors per track).

It will then ask for the parking cylinder number. Unless you have a WD93044 or ST157 disc (which are the only ones we have seen that are not auto-parking) you should specify the maximum cylinder number minus one.

The next parameter you will be asked for is the multiple mode block size. This refers to the number of sectors that will be transferred on one interrupt, and must be a power of two (or use zero to disable the feature). This feature is *not* supported by all discs. If you try to use a value which is not accepted then you will get errors when you try to initialise the disc. For discs which do not support multiple mode you should use a value of zero. Most discs which do support this mode work fastest with a setting of 8; there are one or two large discs (300 Mb or more) which work fastest with a setting of 16. If a setting other than zero is used extensive testing will be needed to check correct operation. Some discs accept 8 or 16 but produce errors when copying.

The next two parameters asked for are the interface timing parameters. The only supported values for these are 0 or 1. The 16-bit interface refers to the IDEARCIN interface; the 8-bit interface is the IDEA3IN. The timings specified for accessing the disc registers varies according to the manufacturer and disc model. All the discs we have seen will work on the slower setting (0); some discs will also work on the

faster setting (1). If you try using 1 and get errors, go back back to 0.

The final parameter is the pre-seek option. This provides a work-around for certain discs (e.g. NEC D3756 100 Mb) which have a bug in the firmware on the disc itself. In principal, all discs should work equally well with either setting (0 or 1; 0 is faster). The D3756 only works reliably with a setting of 1.

NOTE: we have found some discs labelled externally as D3756 which actually identify themselves as D3755s; these discs do not need this option set.

After you have selected your parameters, you must use option 6 to reinitialise the disc, otherwise the new values will be forgotten.

4. Change the drive interleave

Most discs operate with a fixed interleave of 1:1 (which is the fastest possible setting). Using this option with such discs will not actually change the interleave as the command will be ignored. However some discs will fill up with zeros, so you should ensure that all your data has been backed up first. These discs will need reinitialising afterwards using option 6, and will also need the partition table written back onto the disc using option 1.

The only disc we know of which needs this option is the PrairieTek PT120A, for which the optimal setting is 3 (ie 3:1). Other settings can be tried if your computer has been upgraded with ARM3.

5. Remap bad blocks

This option will perform a verify on the disc, but any blocks which return errors when read will be swapped with spare blocks. Management of disc defects and bad blocks is performed by the electronics on the disc itself, not by the IDEFS.

NOTE: If you have problems with bad blocks then be warned that your disc is probably on its last legs and about to die completely, so make sure your back-ups are fully up to date!

6. Initialise drive

This option is used to create the boot block, map and root directory for each partition on the disc. Note that this will do all the partitions together, i.e. it will completely clear all the files previously on the disc. You should set up your partition table before using this option.

0. Exit

Use this option to exit from the format program when you have finished.

Hard discs not supplied by ICS

Hard discs from other sources may or may not be formatted. If yours is not, then use the !!DEFormat application as described above. The program recognises many IDE discs automatically and should pick the correct parameters.

Unfortunately some discs do not identify themselves correctly to the program. (They disguise themselves so that PCs can understand them). All may seem correct until you start to use the disc, when strange symptoms may appear. If this happens, read on. Beware particularly that some discs (e.g. from Conner) specify the total physical capacity of the disc, including space used by the disc itself for its automatic defect management. If you try using this space (at the end of the disc) you will experience errors.

You will need a 'translate table' which should be available from the supplier of the disc (i.e. the number of cylinders, heads and sectors). When you have this, run !FormatIDE and select the **Edit drive parameters** option, answering with the appropriate details. Unless your disc is of a very old design it will be auto-parking, in which case the parking cylinder should be specified to be the number of cylinders minus one. The remaining parameters should normally be left at the default of zero.

If you need to change the interleave of your disc, run !FormatIDE and initialise the disc, changing the drive parameters if needed, then select **Change interleave**. An interleave setting in the range 1 to 4 may be chosen. In most cases a value of 1 will give the best overall performance.

You should be aware that if you see discs advertised at very low prices they are probably being dumped on the market, possibly because that type is obsolete, but probably because it is unpopular with PC manufacturers. Compatibility is a problem with certain models, mostly older designs. Reliability continues to be a problem with certain models and certain manufacturers. *All* IDE discs contain embedded microprocessors (just like SCSI discs); these need software, which inevitably contains bugs or 'features'. Just because a particular disc seems to work satisfactorily in a PC running MSDOS does *not* mean that the disc is fully working.

If you decide to use the *ideA* with a hard disc we have not recommended ourselves this must be at your own risk, but we will be glad to hear how you get on.

The IDE filing system ('IDEFS')

Your computer uses a filing system to read and write discs. There are several different filing systems and your computer will be configured to use one of them by default. Most users will have 'ADFS' as their default filing system.

You may never have thought about filing systems before, but now you have an *ideA* product you will sometimes need to be aware of ADFS and IDEFS.

The first time you try to catalogue your new IDE hard disc (by pointing to the IDE hard disc icon and clicking Select) you may see an error message.

This error will be prevented if you first give the operating system command *IDEFS which makes IDEFS the current filing system.

To enter an operating system command from the desktop press function key F12 to obtain the command line, then type the command followed by Return. The *

can be omitted.

Configuring the default filing system

If your IDE hard disc is to be your only or principal hard disc you will almost certainly want IDEFS to be your default filing system. This is partly so that the computer can automatically find important files such as !System which you will be putting on the hard disc.

The default filing system is the one the computer will use when looking for a Boot file at initialisation.

To make IDEFS the default filing system, first quit any applications which are running, then give the operating system command

```
*Configure FileSystem IDEFS (Or *Configure FileSystem 49)
```

Now press Ctrl Reset (hold down Ctrl while you tap the Reset key). Next time you switch on and catalogue your hard disc there should be no error message.

You can still catalogue ADFS discs by clicking Select on their icons, and for most purposes you will not need to think about filing systems again.

When you need to use a filing system name

Your computer User Guide explains what a 'pathname' is. In its full form it includes a filing system name followed by a colon, for example adfs : or idefs . There are certain times when you need to include this.

From the command line

To copy a file from an ADFS floppy disc to an IDE hard disc you would normally 'drag' its icon as described in the computer User Guide.

Occasionally you might wish to copy a file by using an operating system command. If you had an ADFS hard disc you could type

```
*Copy :0.$.Original :4.$.Duplicate
```

Because you have an IDE hard disc you need to be more specific, for example:

```
*Copy adfs::0.$.Original idefs::IDEDisc4.$.Duplicate
```

Actually, if you have made IDEFS the default filing system and not changed the current directory, you need only type

```
*Copy adfs::0.$.Original Duplicate
```

Similarly, to catalogue a floppy disc from the command line you would need to type

```
*Cat adfs::0 or just *.adfs::0 .
```

Hint: if you first give the operating system command *-adfs-Drive 0 (or build this command into a Boot file), you can catalogue a floppy with *.adfs:

In programs

Properly written desktop applications should not cause problems. However, any BASIC or other programs which issue filing system commands without specifying the filing system name might not work. If the program is on a floppy disc you can probably cure this by giving the operating system command `*ADFS` before you run it. If this does not work the program itself may need to be modified.

In boot files and similar utilities

!Boot files or applications may need changing if copied onto an IDE hard disc. If, for example, you have a !Boot application created on an ADFS hard disc by Data Store's !Runner you will need to modify !Boot, !RunDT and any !StartUp files. Change all occurrences of `adfs:` to `idefs:` and if necessary alter references to the name of the hard disc.

Applications such as !BackDrop may need to be set up afresh.

In special cases

If you find an application which does not seem to work please let us know. Some programs use methods of protection which make assumptions about filing systems. This was the case with some early versions of Ovation for example. It is for the publishers of such software to put matters right but we will do our best to help.

Configuration settings

These settings are made by typing an operating system command and then pressing Ctrl Reset as described earlier. (It does not matter whether you use upper-or lower-case letters in these commands, and you can usually type `*co.` instead of `*Configure`).

IDEFSDiscs

Give the command `*Configure IDEFSDiscs 1` to tell the computer that you have an IDE hard disc. If you have two IDE hard discs type 2 instead of 1 (you will not be able to format the second disc until you have done this).

When two IDE hard discs are fitted one (drive 4) is the master and the other (drive 5) is the slave. Hard discs from different manufacturers will not necessarily work together in this way, so please check with us before you buy.

IDEDiscs

The command `*Configure IDEDiscs 0` tells the computer that you have no ADFS IDE hard discs fitted. Use this if you are fitting the IDEFS as a replacement for ADFS in an A4, A3020, A4000 or A5000 computer.

HardDiscs

The command `*Configure HardDiscs 0` tells the computer that you have no ADFS ST506 hard discs fitted. Use this if you are fitting an IDE hard disc as a replacement for an ST506 disc in an A440 or A400/1 Series computer.

IDEFSDirCache

This sets the amount of computer memory which will be used to remember where files are on a hard disc. The default value is 0 which results in a size being picked automatically according to the memory size of the machine. If you have plenty of memory in your computer `*configure IDEFSDirCache 16K` (or even 32K) will improve the speed at which the the directory viewer windows are displayed, particularly for directories that contain a lot of applications.

IDEFSDrive

The command `*Configure IDEFSDrive 4` will cause drive 4 to be selected when you turn your computer on. This will be your IDE hard disc, assuming you have set IDEFS to be the configured filing system. This is the disc or partition the computer will use when looking for a Boot file at initialisation.

IDEFSBuffers

This command is only available from version 3.00 of IDEFS. The command `*Configure IDEFSBuffers 16` will enable background mode operation with sixteen file buffers. There can be up to 255 buffers, each of which occupies 1072 bytes in RMA memory. If zero is specified, only one buffer is allocated and background mode operation will not occur. Enabling this mode will permit the use of interrupts from the hard disc.

There is some confusion over what is meant by 'background mode operation'. In RISC OS 3, all file handling operations in the desktop operate in windows which multitask. This facility works for all disc filing systems, including the RISC OS 2 versions. However, this is not 'background mode operation'! This phrase refers to the ability of the Filecore module in RISC OS (2 and 3) to perform (semi-)intelligent buffering of file data during file operations.

In particular, it will carry on reading in data (using interrupts from the disc) after control has been returned to your program with the part of the file requested. Subsequent requests for file data by the program may return much more quickly because the data is already in memory. Similarly, when writing out data to a file, Filecore will buffer the data and allow the program to continue; the data is actually copied to the disc under interrupt, as and when the disc is ready.

This read-ahead and write-behind facility is only available if the filing system can cope with operating under interrupts, and if the number of buffers is configured to more than zero (i.e. using `*Configure IDEFSBuffers`). In RISC OS 3, this is used particularly by the desktop filing system when copying files, resulting in faster

operation and smoother multi-tasking.

IDEFS operating system commands

A list of all the IDEFS commands can be seen if you give the operating system command `*Help IDEFS`.

****IDEFS***

This command makes IDEFS the current filing system, as has already been mentioned. You will rarely need to use it if IDEFS is your configured filing system.

****IDEFSPowerSave*** [[:]<drive number>] <delay>

Some IDE hard discs can be told to stop spinning in order to save power if they have not been accessed for a given length of time (the 'timeout period'). This command is followed by an optional drive number (with an optional ':'), and a number in the range 0 to 255 which sets the timeout period in multiples of five seconds. `*IDEPowerSave : 4 6` sets the timeout period to 30 seconds for drive 4, while `*IDEPowerSave : 4 0` turns the feature off for that drive. The power saving delay is set independently for each IDE drive. The delay can also be set from the menu of each IDE drive icon.

Some hard discs will ignore settings below a certain value, such as 12 (for 60 seconds). The command will have no effect on discs which do not support power saving, but some of these discs may reply with an error message.

We recommend a PowerSave value of 60 (representing five minutes).

****IDEFSProtect*** <drive> [RO | RW | NO] [<password> [<password again>]]

This sets the level of access allowed to the specified IDE hard disc. The access can be set to RO (read only), RW (read/write), or NO (no access). If the access mode is omitted then protection is disabled. The setting comes into operation when the machine is next reset. The setting can only be changed if the disc is currently unprotected. The password can contain letters and digits.

NOTE: you should either repeat the password on the one line, separated with a space, or repeat the whole line twice. If you only specify the password once you will be prompted with the message 'Now repeat that to confirm choice of password', after which you should re-enter the command.

****IDEFSUnProtect*** <drive> <password>

This overrides the access protection for the specified IDE hard disc. The password supplied must match the current password. If successful, normal read/write access will be restored for the duration of the current session.

NOTE: If you are using the computer entirely outside the desktop you may need to

*Mount the disc before it will accept your password!

***IDEFSReProtect** <drive>

This applies the current setting for access protection for the specified IDE hard disc. The setting can only be applied if the disc is currently unprotected.

NOTE: Passwords are case-sensitive!

NOTE: *IDEFSProtect, *IDEFSUnProtect and *IDEFSReProtect

These commands are also available via the menu from the icon bar icon for each IDE disc in the desktop. While the protection is disabled or unlocked, the Protect submenu is available and will show with a tick which protection type is currently set.

The *IDEFSProtect command is used only to set or change the password and the level of protection required for a disc. Once specified, it does *not* come into effect immediately, but when the machine is next reset or switched on, and each time subsequently until explicitly changed. You can also use the *IDEFSReProtect command to bring the setting into immediate effect, or choose **Reprotect** from the icon bar menu.

When setting a new password you are required to supply the new password twice, so that if you make a mistake while typing you will not be locked out by an unknown password. There are two ways of confirming the password. One is simply to enter a space after the password and then to repeat the password before finally pressing Return. Alternatively, you can enter the command with the password typed once and press Return, then immediately repeat the command with the same password to confirm your intentions.

The *IDEFSUnProtect command is used to override the protection level, i.e. to return to normal read/write access at the beginning of each session. Once unlocked, it remains unlocked only until the computer is next turned off or reset. *IDEFSProtect will not be accepted until *IDEFSUnProtect has been entered in this session with the correct password, unless the current setting is 'disabled'.

By specifying read/write access with a password, you can effectively disable the protection system, but in a way that will also stop somebody else from reinstating it to lock *you* out!

Other filing system commands

All other filing system commands should work just as they do under ADFS, except for those which do not apply to hard discs such as *Backup and *Format .

***ShutDown**

You should make a habit of using this command before you switch off a computer which has a hard disc. It 'parks' the disc heads in a safe position to prevent

possible damage. (Most IDE hard discs will in fact park themselves automatically if you forget). It also ensures that all files on the disc which were in use have been closed properly and that any associated file buffers in memory have been copied out to the disc. It also logs you off any network filesystems you may be connected to.

Alternatively, you can click Menu over each hard disc icon you have and Select the **Dismount** option.

With RISC OS 3.00 onwards, **Shutdown** is available from the Acorn icon on the icon bar.

****Bye and *Dismount***

Do not be confused or misled by comments which sometimes appear in magazines about these commands. *Shutdown, *Bye and *Dismount all do the same thing, but: *Dismount only applies to the current (or specified) drive of the current (or specified) filing system; *Bye applies to *all* the drives of the current (or specified) filing system; *Shutdown applies to *all* the drives of *all* the filing systems. (See the RISC OS Programmer's Reference Manual).

RISC OS 3

RISC OS 3.00

If you have this version of RISC OS, we strongly recommend that you upgrade immediately. There are some nasty bugs in version 3.00 which can result in loss of data on discs.

RISC OS 3.1x

The RISC OS 2 versions of IDEFS will continue to provide RISC OS 2 style operation quite happily under RISC OS 3. The multi-tasking versions of the Free and Verify options from the disc drive icon menus, introduced with RISC OS 3, work only for filing systems that have been updated specially (e.g. using *ShowFree with IDEFS versions prior to 3.10 cannot work). IDEFS version 3.1 onwards has been updated to take advantage of all the new features of RISC OS 3.1, but this new version cannot work with RISC OS 2.

From version 3.10 of IDEFS, all text including menus and error messages that can be seen in the desktop has been copied into a separate Messages file. Those messages which are identical to ones used by ADFS are read from the ADFSfiler messages file in the RISC OS 3 rom; the rest are read from the file Resources:\$.ThirdParty.IDEFS.Messages. If you wish to change this text, e.g. into another language, this file can be replaced by changing the system variable <IDFSfiler\$Path> and then reinitialising the IDEFS and IDEfiler modules.

The RISC OS 3 Configure application

Note that **the Hard disc drives** configuration window in this application applies only to Acorn interfaces and software, and does not work with IDEFS. Do *not* use this application to configure the number of IDEFS discs fitted. The box for IDE hard discs should not contain any disc icons unless you also have hard discs which are being accessed through ADFS.

Desktop Boot files

The **Desktop boot** option on the icon bar Acorn icon menu does not work properly. It assumes that you are wanting to boot from an ADFS drive 4.

You should create the Boot file in the normal way, by dragging the file into the directory viewer of the root directory of the hard disc or partition of your choice. But you also need to ensure that the configured FileSystem is IDEFS and that your chosen disc is the configured drive (see details above for *Configure FileSystem and *Configure IDEFSDrive).

You should select the disc (if it is not already the current one) using the command `*Dir idefs: :x . $` (replacing x with the number of the disc or partition). Then use the command `*Opt 4 3` or `*Opt 4 2` (whichever is appropriate) to enable that disc to boot.

Some general advice about hard discs

Backing up

If you have never used a hard disc before you will revel in the luxury of being able to store lots of files in one place and access them in moments.

There is however a price to be paid! Because you are putting so many eggs in one basket, you risk losing a great deal of information if anything goes wrong. Even hard discs which have been tested may develop a fault, and there is a law which states that the probability of a fault increases according to the square of the time elapsed since you last backed up.

If a hard disc needs to be returned to us for repair it is unlikely that we will be able to recover any files it contains. We are unable to accept any liability for data lost in this way.

Backing up can be tedious, but you really cannot do it too often.

Speed

Comparing the performance of hard discs is difficult, and tables of speed test results do not tell the whole story. If you have only used floppies up to now any hard disc will seem very fast!

The *ideA* interface works with most of the hard discs we have tried so far, but the results of speed tests vary considerably. Some discs perform very well in 2- and 16-colour modes but are unacceptably slow in 256-colour modes.

Some discs perform quite well but use rather too much power.

In choosing which discs to recommend to our customers we have of course considered speed and value for money, but have also taken into account a disc's reputation for reliability and the quality of the manufacturer's guarantee.

If you require data transfer rates of more than 1500 kb/sec you will need a 16-bit interface, a MEMC1A and a disc such as a recent Maxtor (e.g. LXT340A or LXT535A). To achieve 2400 kb/sec you need something like a Seagate ST3600A 500 Mb disc. These speeds are for operation in mode 0. Other modes will be slower (possibly much slower) unless you also have an ARM3, in which case transfer rates are very similar in all video modes.

Creating a DOS partition

If you have version 1.60 or later of Acorn's PC Emulator, *do not* use the following procedure. Read instead the information which came with the PC Emulator.

Other users must have version 1.33 or later of the PC Emulator. If your version is 1.33 or greater, but less than 1.60, then use the following procedure.

Copy the !PC directory from your PC Emulator disc into the \$ or root directory of your hard disc. It must remain in this position. Display the !PC directory (by holding down Shift while you double-click on it). Delete any files named !xxxxRun2, where xxxx is a filing system name: e.g. !ADFSRun2, !SCSIRun2. Follow the instructions given in ReadMe1st.

Ensure that the !IDEFSDisc application is in your \$ or root directory. (It can be removed after you have created the DOS partition).

Read all the messages to be found in the !PC and IDEFS_PC directories.

To create the partition double-click on the !IDEFSDisc application icon. Information about other actions you may need to perform are contained in the messages mentioned above.

Troubleshooting

If your *ideA* package fails to work it may be that your Podule Manager has been switched off. Check this by giving the operating system command `*Modules` and look for an item labelled `Podule`. If it does not appear give the command `*RMReInit Podule`.

Certain games (mostly older ones) do not work properly in machines with SCSI or IDE hard discs fitted. If you have a problem you can disconnect the IDEFS system using the operating system commands `*unplug IDEFS` and `*Unplug IDEFiler`. Then reset your computer before using your game from floppy disc. When you have finished, use the commands `*RMReInit IDEFS` and `*RMReInit IDEFiler` and reset the computer to restore the IDEFS system.

Before contacting your supplier or the service department, check **AND DOUBLE-CHECK** that the installation has been carried out correctly and that all leads and connectors are pushed home fully. If in doubt, remove the installation and start again, following the instructions in this manual.

Please do not ask for help before you have read this Guide thoroughly, together with any ReadMe files on a Utilities disc.

Problems can sometimes result from conflict with other expansion options. Before contacting your supplier or the service department, eliminate all possibility of such conflict. We cannot help with a problem unless it can be isolated.

If you do need to contact your supplier you must have certain information readily available.

Our Service Department will not be able to help you without the following information:

- The type of your interface, e.g. IDEARCIN or IDEA3IN.
- The version of your *ideA* interface. This can be found by reading the text written on the interface card.
- The version of your *ideA* software. This can be obtained either by typing `*Help IDEFS` from the command line, or by noting all the text printed on the IDEFS eprom. This is the (only) device on the *ideA* interface which has a label attached.
- The make, type and capacity of your hard disc(s). Most of this information can be obtained by using the IDEIdent utility or by reading the details printed on the disc itself.

Returns procedure

Goods bought direct from us

Faults present when you receive goods

When you receive one of our products you should try it out as soon as possible and report any problems within seven days. We will of course make good any missing parts or damage in transit free of charge if you have let us know promptly. Please retain all original packing and enclosed items.

Please note that we do not supply goods on an approval or 'sale or return' basis unless we have specifically agreed this in writing with you.

Faults discovered later

All goods supplied by us are guaranteed for twelve months. Within this period we will repair (or at our option replace) any goods which do not perform properly through no fault of yours.

If your equipment fails to perform properly please telephone our Service Department with the information described above under *Troubleshooting*. Please also have your receipt or invoice or delivery note to hand.

If the problem cannot be resolved you will be given a Returns Number and the address of our Service Department, and told which items to return.

GOODS SENT BACK WITHOUT A RETURNS NUMBER OR TO THE WRONG
ADDRESS WILL BE RETURNED TO YOU AT YOUR EXPENSE

Pack the goods securely, preferably in the original packaging. This is very important with hard discs. Enclose a full description of the fault together with your name and address for return. Seal the package. Write the Returns Number and the address of our service department clearly on the outside.

We may ask you to mail your package to us, in which case you should insure it with the Post Office. Please check that the insurance is adequate - do not just use Recorded Delivery for example. We may arrange for certain items to be collected.

Goods covered by warranty will be repaired or replaced and you will be charged only for collection if appropriate. If the goods are not covered by warranty you will have to pay for all repairs and carriage.

Unfortunately we cannot accept responsibility for any goods lost or damaged in transit to us. Neither can we accept responsibility for faults resulting from damage or incorrect use while goods are in your possession.

Goods not bought direct from us

Please contact your supplier in the first instance if you have any problems. If this does not achieve a satisfactory result then telephone our Service Department. We will need to see a proof of purchase before any warranty repairs can be dealt with.

Version numbers

Hardware	Firmware	Computer	RISC OS
IDE1V5	3V1x	A3x0/4x0/5x0/5000 Internal	3
IDE1V5	3V0x	A3x0/4x0/5x0/5000 Internal	2 & 3
IDE1V4A	3V1x	A3x0/4x0/5x0/5000 Internal	3
IDE1V4A	3V0x	A3x0/4x0/5x0/5000 Internal	2 & 3
IDE1V2/3	2V0x	A3x0/4x0/5x0/5000 Internal	2 & 3
IDE1V2/3	1V14	A3x0/4x0/5x0/5000 Internal	2 & 3
IDE2V2	2V0x	A3x0/4x0/5x0/3000/5000 External	2 & 3
IDE2V2	1V14	A3x0/4x0/5x0/3000/5000 External	2 & 3
IDE2V3	3V1x	A3x0/4x0/5x0/3000/5000 Internal/External	2 & 3
IDE3V5	3V1x	A30x0 Internal/External	3
IDE3V5	3V0x	A30x0 Internal/External	2 & 3
IDE3V3/4	2V0x	A30x0 Internal/External	2 & 3
IDE3V3/4	1V14	A30x0 Internal/External	2 & 3
IDE4V2	2V0x	A30x0 External (Internal card)	2 & 3
IDE4V2	1V14	A30x0 External (Internal card)	2 & 3

