PIP

Instruction Manual

PIP INSTRUCTION MANUAL

Contents

DESCRIPTION OF PIP

From the outside **PIP** looks like a box with wheels, a **keypad**, and a little light on the top.

In fact **PIP** is a small computer and you can tell it to do things.

This is called **programming PIP**.

By pressing the keys on the keypad, you can make **PIP**:

move **FORWARDS**

move **BACKWARDS**

turn **LEFT**

turn **RIGHT**

play a **NOTE**

PAUSE

FLASH the light

If you give it the right commands **PIP** can be like a bus to carry play people round the floor, it can play tunes, or it can be like an alarm clock. There are many things that you can make **PIP** do.

USING PIP

First place **PIP** in the middle of the floor and turn it on. **PIP** will flash its light and **sing**. To test that **PIP** is working properly, press the **Test** key.

PIP should play a tune, go forwards to make a square, pause for two seconds, flash the light five times, go backwards to make a square, play another tune and sing. If it is working you can start to make a program, if not, see page 14.

PROGRAMMING PIP

PIP is a very simple computer, it can only do things after you have told it what to do.

You have to enter a list of things you want **PIP** to do and then tell **PIP** to **Go**. **PIP** will do the things in order until it reaches the end of the list.

The list of things for **PIP** to do is called a **program** and is like a recipe in cooking. The **program** or recipe for a tune is a list of musical notes for **PIP** to make. The **program** for a dance is a list of movements and turns for **PIP** to do.

You tell **PIP** what to do by pressing keys on the keypad. There is a key for every command that **PIP** can be given.

THE KEYPAD

Whenever you press a key, there will be a sound.

* If you press a key that is allowed, you will hear a **beep**.

* If you press a key that is not allowed, **PIP** will **grumble** at you.

* When you press **Go** and your program has run successfully, **PIP** will **sing** to you.

Ten keys have numbers. These keys are used to tell **PIP** how **far** to move, how **much** to turn, how **long** to wait, how **many** times to flash the light, or how **many** times to repeat.

The number keys also have the names of musical notes on them and are used to tell **PIP which** note to play.

There is a test key:- **Test**.

There is a key to tell **PIP** to run:- **Go**.

There are three keys to control **PIP**'s memory:- **CM, CE, RM**.

There are nine keys to tell **PIP what** to do.

↑ FORWARDS   ↓ BACKWARDS

↰ LEFT   ↱ RIGHT

♪ NOTE   ☼ FLASH

RPT REPEAT   END END of Repeat

🕐 PAUSE

Test

Test is the key that tells **PIP** to do its song and dance and flash its light. It shows that all is well and will let you see if **PIP** is struggling with a thick carpet or has a flat battery.

Go

Go is the button that tells **PIP** to start its program. After you press **Go, PIP** will carry out the instructions you gave it. If all the instructions are carried out properly **PIP** will **sing** to you at the end, if there is a mistake in your program **PIP** will **grumble** at you.

You can make **PIP** stop its program by pressing any key, after this **PIP** will **grumble** at you. If you do not take your finger from the **Go** button quickly enough when you start **PIP** off, **PIP** will **grumble** at you.

If you have not entered a program **PIP** will do nothing, and then **sing** to you.

CONTROLLING PIP'S MEMORY.

There are three keys for telling **PIP** when to forget instructions and when to remember them.

CM

CM stands for **C**lear **M**emory. This key will make **PIP** forget all the instructions in its program. When you press **CM PIP** will forget everything you have told it.

CE

CE stands for **C**lear **E**ntry. If you make a mistake in entering a program you can rub it out with **CE**. **CE** tells **PIP** to forget the last command. Every time you press **CE**, **PIP** will forget the last command in its program, so if you press **CE** often enough **PIP** will forget everything.

If you press **CE** when **PIP** has nothing in its memory, **PIP** will **grumble** at you.

RM

RM stands for **R**estore **M**emory. Sometimes you might press **CM** or **CE** by mistake and **RM** can help you recover your work. **RM** will restore **PIP**'s program to the last complete program it had. If you have entered an instruction after rubbing something out, **PIP** cannot restore the old program.

FORWARDS AND BACKWARDS

The ↑ and ↓ keys are used to tell **PIP** to move **forwards** or **backwards**. After you press these you must press some numbers to tell **PIP** how many centimetres to go.

Try this little program:-

Press **CM,** press ↑ , press **1**, press **0**, press **Go**.

PIP will move **forwards** 10 centimetres and then **sing**.

You can make the program longer by pressing ↓ , then **1**, then **0**, then **Go**.

PIP will do the old commands and then the new ones. It will move **forwards** 10 centimetres, then **backwards** 10 centimetres. If all is well it will then **sing**.

The numbers you give **PIP** for distances can be as much as 999. If you try to enter the number 0, **PIP** will **grumble**.

TURNING

The ◄ and ►keys tell **PIP** to turn **left** or **right**. After these you must enter a number to tell **PIP** how many **degrees** to turn. 360 **degrees** make a complete circle.

You can make **PIP** go anywhere using the **turn, forwards** and **backwards** arrows. This program will make **PIP** follow a square path:-

CM, ↑ ,1,0,◄ ,9,0, ↑ ,1,0,◄ ,9,0, ↑ ,1,0,◄ ,9,0, ↑ ,1,0, ◄ ,9,0, **Go**.

FLASH

The ☿ key will tell **PIP** to **flash** its light. You will need to give **PIP** a number to tell it how many flashes to make.

NOTE

The ♪ key will tell **PIP** to play a **note** of a tune. You must tell **PIP** which **note** to play after each ♪ . The **notes** are shown on the keyboard next to the numbers.

PAUSE

The ⏱ key will tell **PIP** to **pause** for a while. You must give **PIP** a number after the ⏱ key to tell it how long to **pause**. **PIP** will wait for one second for every 10 in the number you give it.

If you enter this program:-

CM,⏱ ,5,0, ☿ ,2,Go,

PIP will do nothing for 5 seconds and then **flash** twice.

If you chose the right numbers for **pause** you can make **PIP** behave like an alarm clock and wake you up with a tune and some flashes after a little sleep.

REPEATING COMMANDS

Sometimes you will want **PIP** to carry out a list of commands several times. For example, you can make **PIP** move in a square by pressing:-

CM, ↑ ,1,0, ↱,9,0, ↑ ,1,0,↱ ,9,0, ↑ ,1,0,↱,9,0, ↑ ,1,0, ↱,9,0, Go.

PIP can make the same movements if you tell it to **repeat forwards** 10 centimetres and **turn right** 90 degrees four times. This is done by pressing:-

CM, RPT,4, ↑ ,1,0, ↱,9,0, END, Go.

RPT stands for **RePeaT**. The **RPT** key needs to be followed by the number of times the commands are to be repeated. The list of commands to be repeated must be followed by the **END** key. Each **RPT** needs a matching **END** to tell **PIP** when to stop repeating.

We can repeat groups of commands that are to be repeated. So to move in a square three times press:-

CM,RPT,3,RPT,4, ↑,1,0, ↱,9,0, END, END,Go.

PIP can use **RPT** inside a **RPT** sequence, inside a **RPT** sequence, but it cannot "nest" any deeper than this.

There must be a matching **END** for every **RPT**, and the **RPT**s must not "nest" too deeply, or **PIP** will **grumble** at you when it runs the program and finds the mistake.

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PLAYING TUNES WITH PIP

You can play ten different **notes** with **PIP**, the same as the first **notes** people learn to play on the recorder.

The **notes** are:-

C	D	E	F	F#	G	A	B	C	D

They are played by pressing ♪ and then one of the number keys:-

0	1	2	3	4	5	6	7	8	9
C	D	E	F	F#	G	A	B	C	D

To play several **notes** to make a tune, press ♪ and a number for each **note**.

For example, to play the first line of "Three Blind Mice" you do this:-

CM, ♪ ,2, ♪ ,1, ♪ ,0, ♪ ,2, ♪ ,1, ♪ ,0, Go.

All the **notes** are the same length and there are no pauses between them. Most tunes will sound better if some of the **notes** are made longer (perhaps two or three times as long) and some **pauses** are put between them.

For example, try "Three Blind Mice" like this:

What you press	Note	Comments
CM		**Clear Memory**
RPT 2		**RePeaT** twice
♪ 2	**E**	**Note** 2
♪ 2		**Note** 2 again,
		a longer **note**
♪ 1	**D**	**Note** 1
♪ 1		**Note** 1 again,
		a longer **note**
♪ 0	**C**	**Note** 0
♪ 0		**Note** 0 again, longer
♪ 0		**Note** 0 again, longer
♪ 0		**Note** 0 again,
		a very long **note**
END		**END** of repeat
Go		

You will find the rest of this tune and others in the PIP SONG-BOOK.

WHY IS PIP GRUMBLING OR SINGING ?

When you are keying in the program PIP will **grumble** at you:-

* If you have not entered **any** numbers after an instruction, or a note after ♪ , and you try to enter another instruction.

* If the memory is full. You are only allowed to enter thirty-nine separate commands in one program.

* If you press **CE** when the memory is already empty.

* If you press 0 after a command that needs a number.

* If **PIP** has been left on for two minutes and no key has been pressed. **PIP** will continue to **grumble** and flash the light every two minutes, unless you press a key or turn it off.

* If you try to enter too many numbers after a command. You can enter up to three numbers after ↑ , ↓ , ◄ , ► , ♡ and ⊕. The largest amount you can use here is 999.

You can enter up to two numbers after **RPT** which means the largest number of repeats you can use at once is 99.

You can only enter one note each time after ♪ .

When you press **Go**, **PIP** will **grumble** at you:-

* If you have entered a command without an amount.

* If you have entered a **RPT** without a matching **END**

* If you have entered an **END** without a matching **RPT**

* If you have tried to use more than three nested **RPTs/ENDs**.

When you press **Go**, **PIP** will **sing**:-

* When your program has run without any mistakes in it.

PIP'S BATTERY

PIP has a battery inside to turn the wheels. It is a special type of battery that can be recharged, so it can be used over and over again.

PIP has a special charger for its battery. The charger must be plugged into **PIP**'s charger socket and then into the mains. Make sure **PIP** is switched off and then, when you turn the mains on at the charger, **PIP**'s red charging light will come on. The charging light will go off when the battery is fully charged.

PIP can be charged at any time, you do not have to wait until the battery is flat. You can leave **PIP** connected to the charger even when it is fully charged.

If you use **PIP** a lot you should try and charge it up whenever it is not in use. Even a very short charge can help keep **PIP** going, it likes its ''tea breaks'' just as you do.

WHEN PIP WILL NOT WORK

* Is **PIP** turned on?

* If nothing at all happens when you turn **PIP** on...

Is the battery flat?

* If the light and the beeper work but **PIP** does not move, or moves irregularly...

1. Is **PIP** struggling with a thick carpet?

2. Is the battery flat?

3. Is there a lot of fluff caught under **PIP**?

* When the battery goes flat **PIP** will usually twitch and sometimes flash its light. This is the most probable cause of all problems.

CARE OF PIP

PIP needs very little maintenance. The most important thing is to keep the battery charged up. You cannot over-charge PIP but the battery may be damaged by leaving PIP fully discharged for long periods. If you do not use PIP for long periods you should charge it up every 6 months to keep the battery in the best possible condition.

Should your PIP become dirty it is quite all right to clean it with a damp cloth or even with a spray furniture polish.

Please try to keep PIP away from sand and water. You are unlikely to damage PIP by spilling liquids on the top but you may be able to damage it by running it on a wet or sandy surface.