



Pocket DNC™

The only DNC system that you can fit in your pocket



<u>Contents</u>	<u>Page</u>
INSTALLING POCKET DNC SOFTWARE	3
<i>MANUALLY RUNNING SETUP PROGRAM</i>	3
USING THE POCKET DNC SOFTWARE	6
<i>LAUNCHING THE POCKET DNC PROGRAM</i>	6
<i>From the Start Menu</i>	6
<i>From the Programs Folder</i>	7
<i>SCREEN LAYOUT</i>	8
<i>RECEIVE A PROGRAM FROM CNC MACHINE TO POCKET DNC</i>	9
<i>SEND A PROGRAM FROM POCKET DNC TO CNC MACHINE</i>	12
<i>SETUP MENU</i>	14
<i>New Setup</i>	14
<i>Baud</i>	16
<i>Parity</i>	16
<i>Data Bits</i>	16
<i>Stop Bits</i>	17
<i>Handshake</i>	17
<i>Start of File</i>	18
<i>Close Delay</i>	18
<i>End of Line (Sometimes referred to as EOB or End of Block)</i>	18
<i>Line Delay</i>	18
<i>Leader</i>	18
<i>Trailer</i>	18
<i>Edit Setup</i>	19
<i>Delete Setup</i>	19
APPENDIX A - LIST OF ASCII CODES	21



Installing Pocket DNC software

Before starting to install the Pocket DNC software you must first synchronize your Pocket PC with your desktop computer. Please refer to your Pocket PC on instructions on how to do this before proceeding. Insert the Pocket DNC CD into your CDROM drive. If the following window (Fig 1) does not appear automatically then you must follow the instructions below for manually running the setup program.

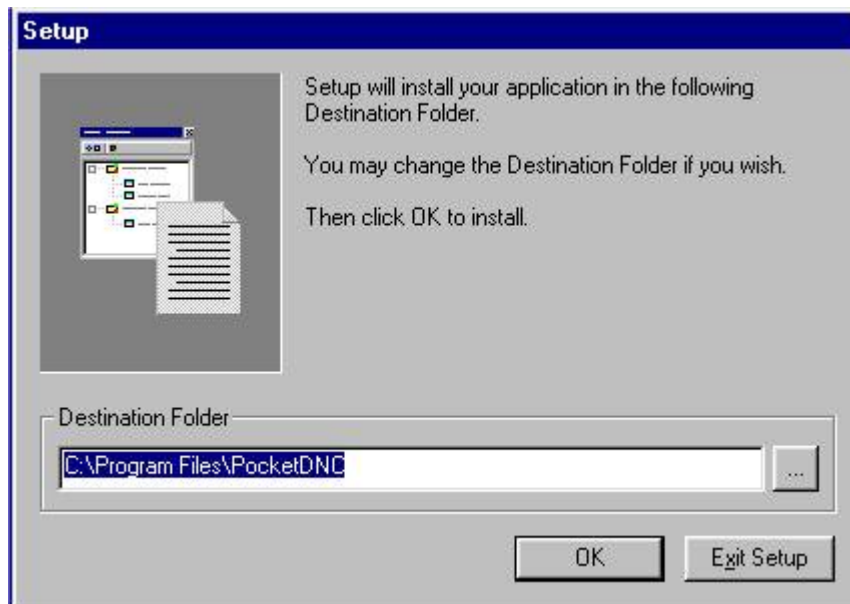



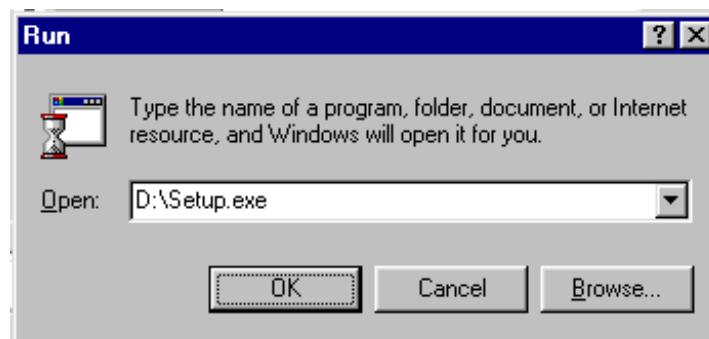
Fig 1

Manually running Setup Program

Click on the  button located at bottom left of screen.

From the menu that appears click on the  option.

In the Open box type in D:\setup.exe as shown below and then click the OK button.





Once the setup starts click on the OK button. The following window (Fig 2) will appear

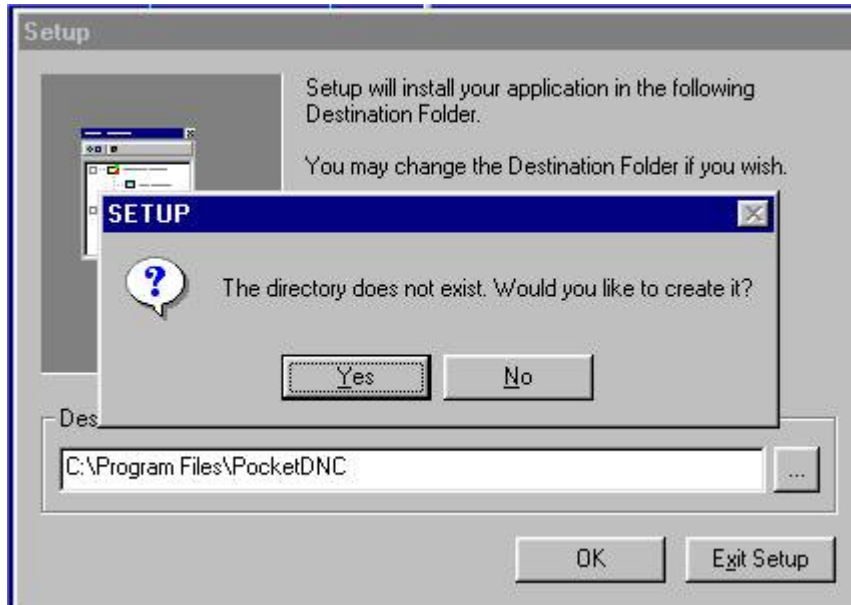


Fig 2

Click on the Yes button and the following window will appear (Fig3)

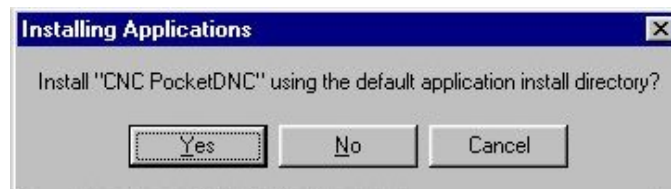


Fig 3

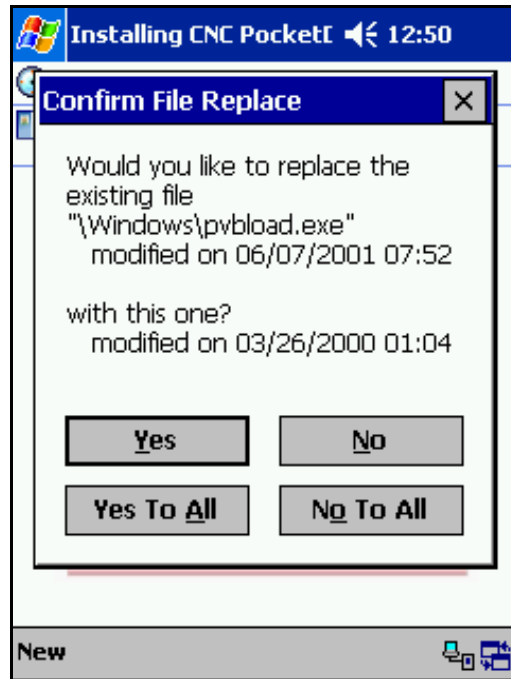
Click on the Yes button and the following window will appear (Fig 4)



Fig 4



Click on the OK button on your PC to exit the setup program. On the Pocket PC unit you must now tap on the No to All button.



Warning

If you tap on the Yes or Yes to All buttons then some of the files on your Pocket PC will be overwritten and you may find that some of your programs cease to function.



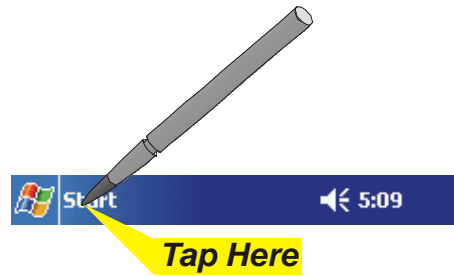
Using the Pocket DNC software

Launching the Pocket DNC Program

From the Start Menu

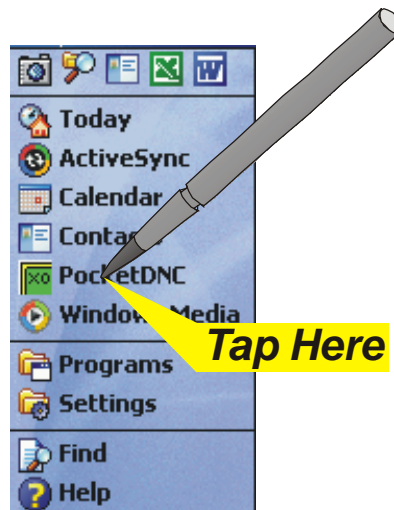
Step 1

Tap on the Start button



Step 2

Tap on the PocketDNC option.

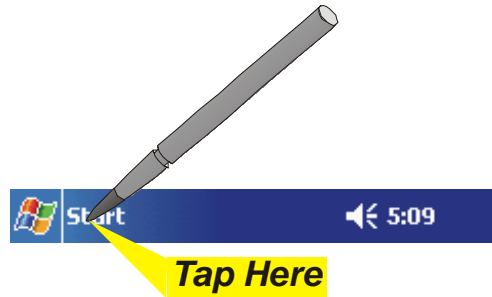




From the Programs Folder

Step 1

Tap on the Start button



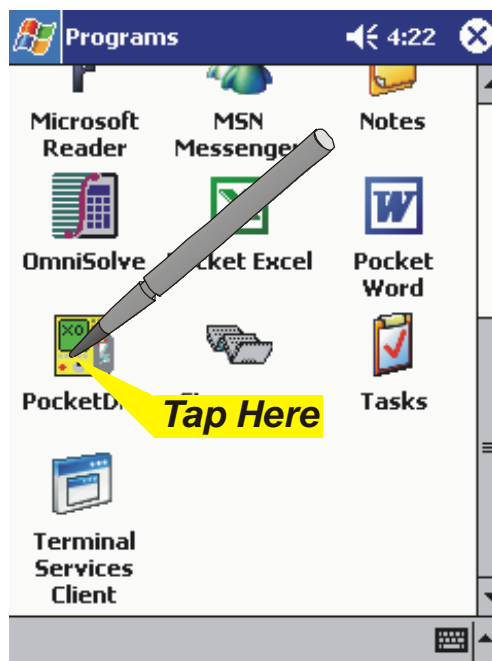
Step 2

Tap on the Programs option.



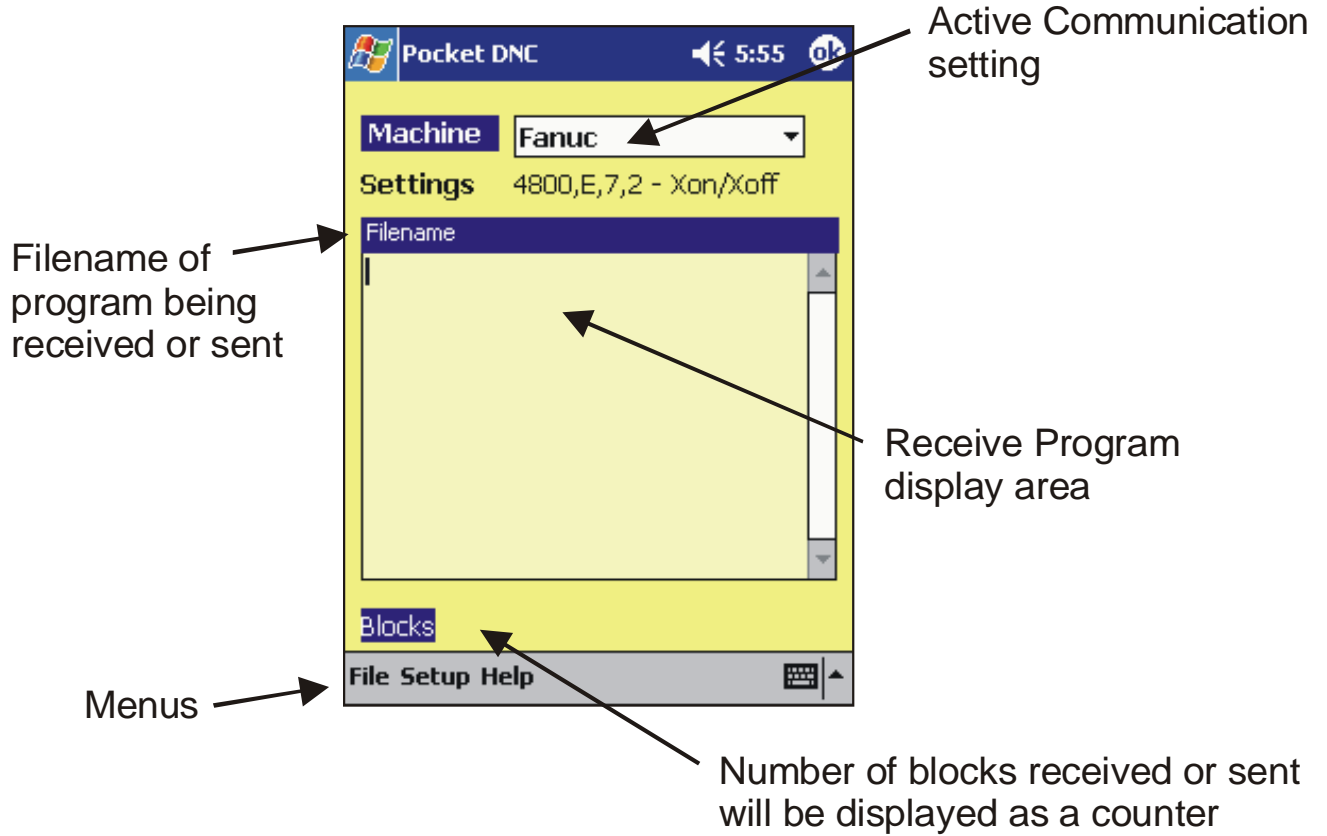
Step 3

Tap on the Pocket DNC Icon





Screen Layout

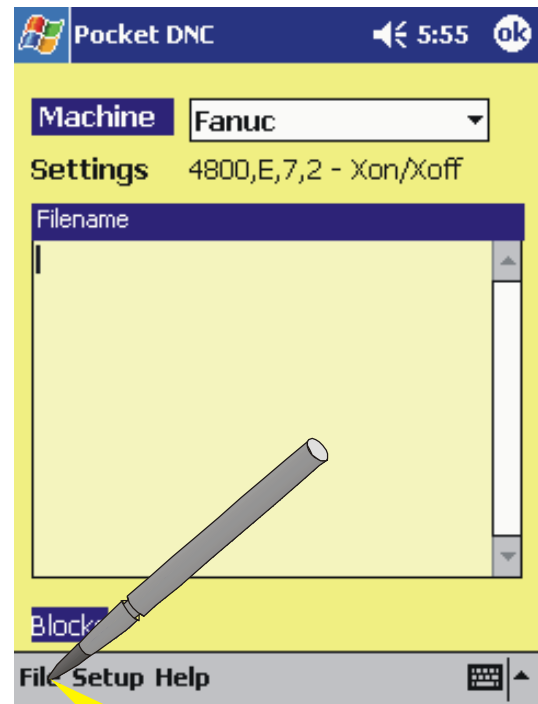




Receive a program from CNC machine to Pocket DNC

Step 1

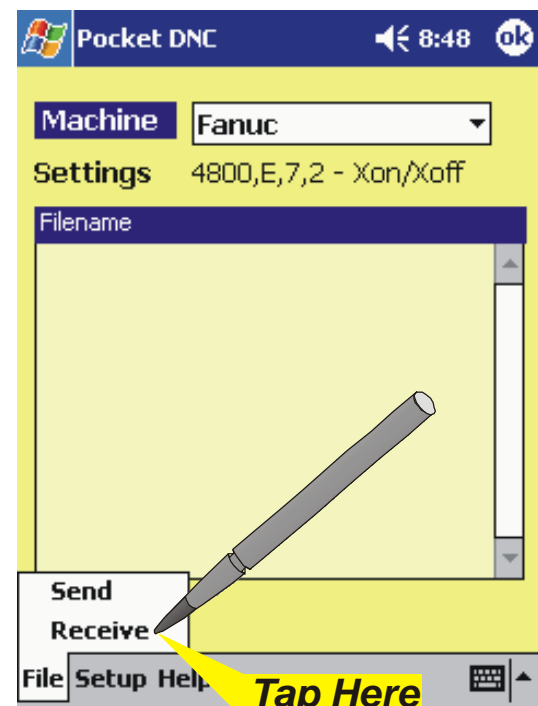
Tap on File menu



Tap Here

Step 2

Tap on the Receive option.



Tap Here



Step 3

Tap in the name box and then use the keypad area to tap in a filename. Select a folder in which to store the program, the folder name is normally the name of the machine tool. Tap in the Location box to store the program in either the internal or storage card memory. Tap on the OK button when you have set the options required.

Use keypad to tap in filename

Select a folder in which to store program

Select either Internal or storage card memory

Tap Here when ready

Step 4

You can now select if you want to display the program after it has been received. This is useful to ensure that the entire program has been received successfully by scrolling to the bottom and verifying that the M30 is present.

Warning the process of displaying the program after receive does slow down the process so for very large programs we recommend that you don't display the program during the receive process but check it later.

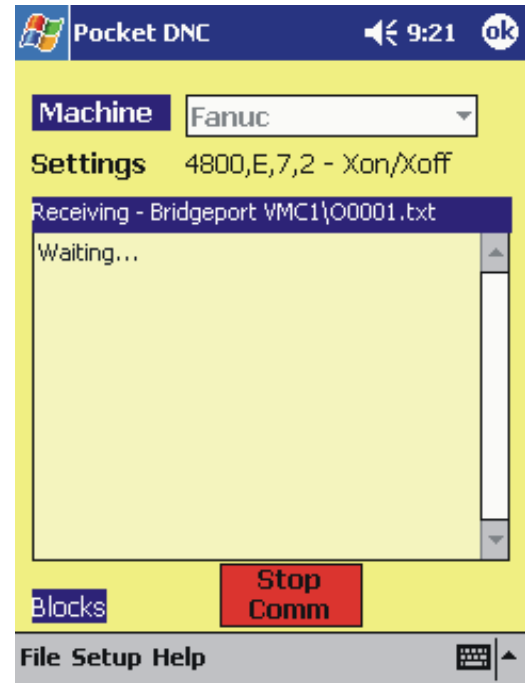
Tap Here



Step 5

The Pocket DNC is now ready to receive the program from the machine tool. On the CNC machine press the buttons to activate the punching of the program. As the program is being received a block counter will be displayed at the bottom of the screen.

To abort the receive operation tap on the Stop Comm button at bottom of screen.

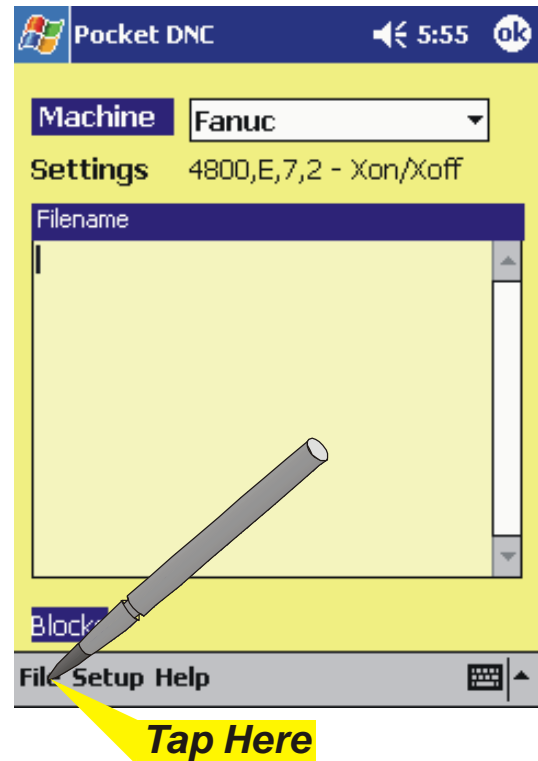




Send a program from Pocket DNC to CNC machine

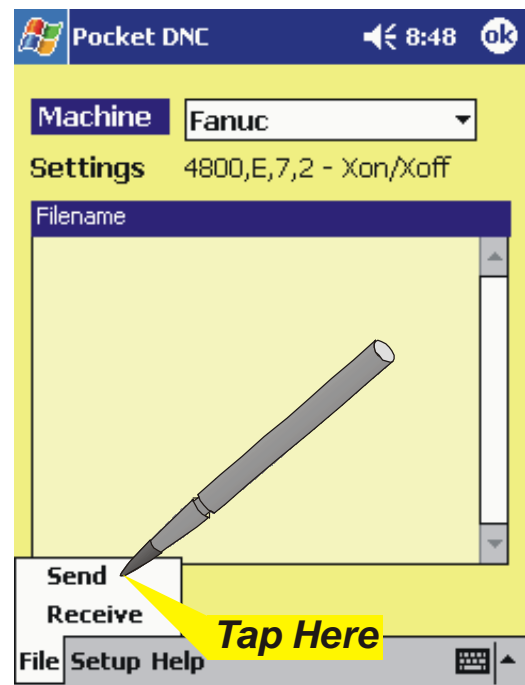
Step 1

Tap on File menu



Step 2

Tap on the Send option.

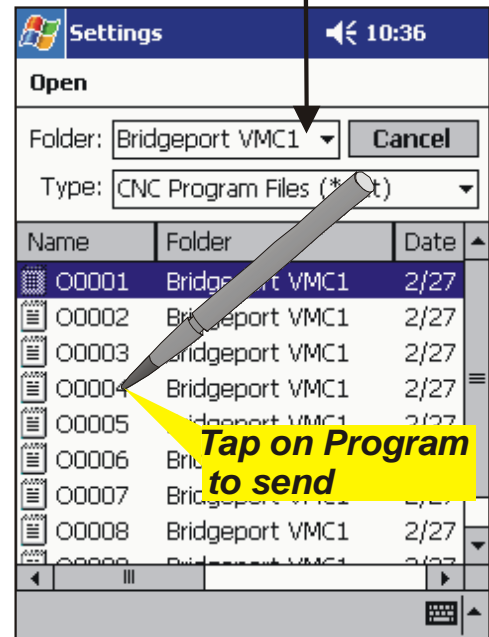




Step 3

Select the machine folder and then tap on the name of the program you wish to send to the CNC machine tool.

Select the machine folder

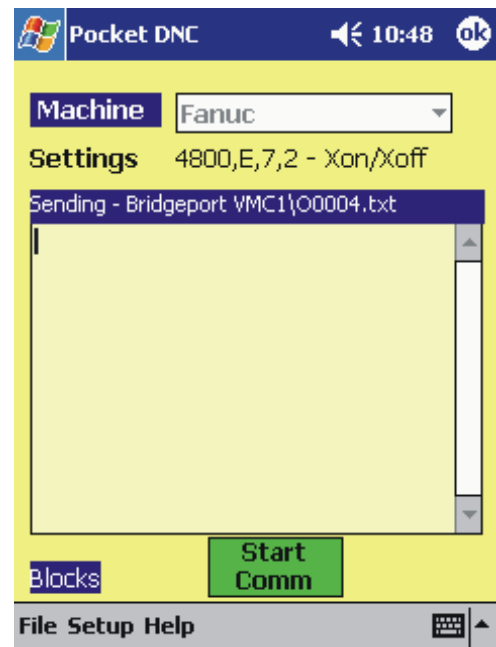


Step 4

The Pocket DNC is now ready to send the program to the machine tool. On the CNC machine press the buttons to activate the reading of the program.

To start sending the program from the Pocket DNC tap on the Start Comm button at bottom of screen.

As the program is being sent a block counter will be displayed.





Setup Menu

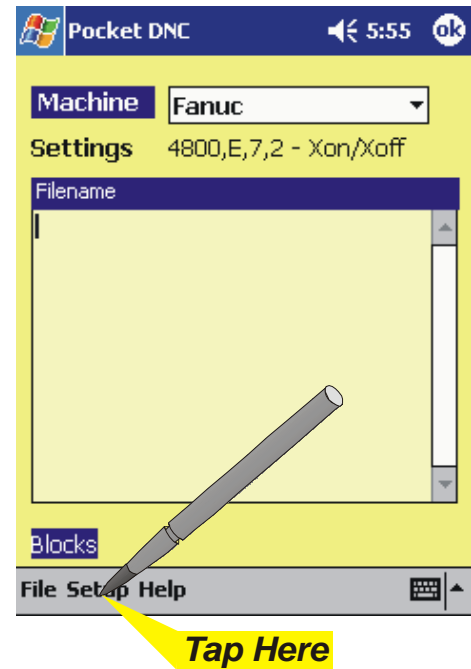
Before the Pocket DNC can be used to send and receive programs its communications parameters need to be configured to suite you range of machine tools.

The unit is supplied with a number of pre-configured files, which you can use as examples.

New Setup

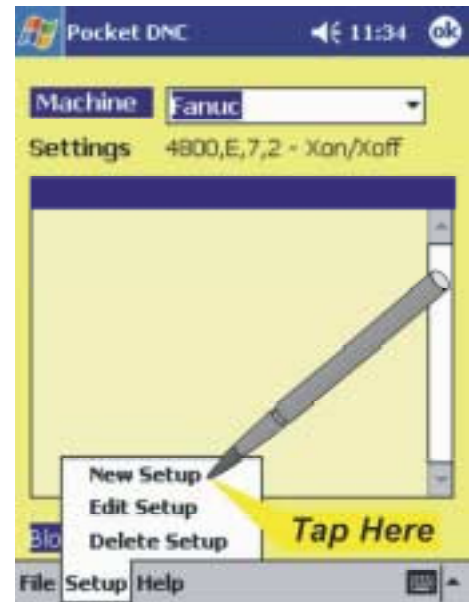
Step 1

Tap on Setup menu



Step 2

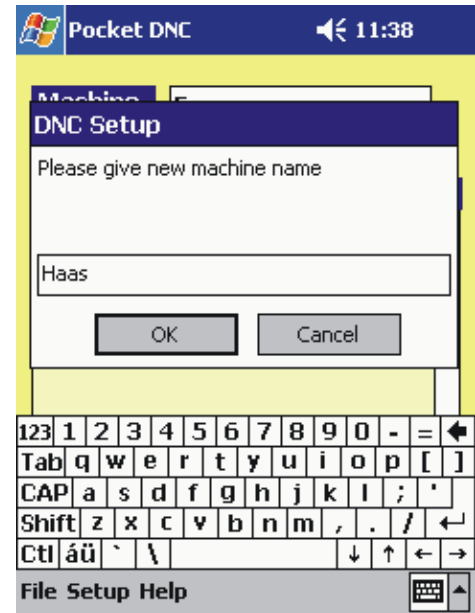
Tap on the New Setup option.





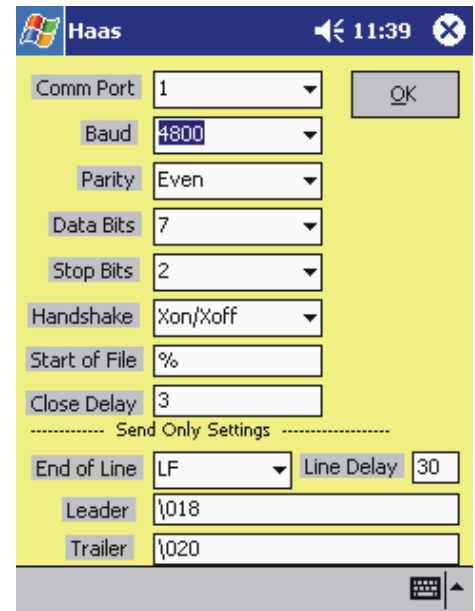
Step 3

Using the keypad tap in the name you wish to call the new setup file and then tap the OK button.



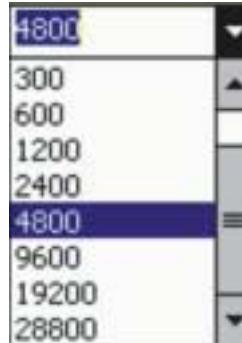
Step 4

Please refer to the Glossary of terms for RS232 communications.





Baud



The baud rate is the speed at which the CNC program is transferred between the Pocket DNC and the machine control. The most popular setting being 4800, which corresponds to a transfer rate of approximately 480, characters a second.

Parity



The parity bit maintains the 'evenness' or 'oddness' of the number of 1 bits in a character. Thus when a character with EVEN parity is transmitted over a communication line it should still have an EVEN number of 1 bits at the receiver. If an error occurs during transmission, which changes a 1 bit to a 0 (or vice versa), the total number of 1 bits will be no longer be EVEN and the receiver can detect the error.

You can see from this that it is very important for the sender and receiver to be configured for the same type of parity. Parity checking in this way is not very effective. For example, if two bits in a character are corrupted then the parity will be correct at the receiver.

The most common setting for parity is Even

Data Bits



Data bits sometimes referred to, as word length is the total number of bits, which are recognised as comprising a unit of data transfer, a word.

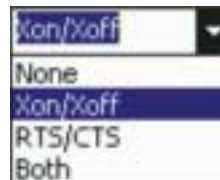


Stop Bits



During data transfer, 1 1.5 or 2 extra bits may be added onto the end of each character by the RS232 interface so that the receiving equipment can detect the end of the character. These are the stop bits and, depending on the quiescent state of the line, may be 0's or 1's. The generation of the stop bits at the sender and then their removal at the receiving equipment, is totally transparent to the user and is carried out by the RS232 interfaces.

Handshake



Typically if this is not set correctly then a number of characters from the CNC program may be lost during transmission. If characters are lost during transmission then the program will not run correctly on the machine.

Xon/Xoff (Sometimes referred to as DC codes)

A simple form of data transfer protocol, which is used to control the flow of data. If the receiving system wishes to stop the transmission, for example, to save the data it has already received into a disc file, then it sends an XOFF signal to the host. When the sender receives an XOFF signal, it stops transmission and will not resume until it receives an XON signal from the receiver. XOFF is usually the ASCII character 19 (CTRL-S) and XON is ASCII 17 (CTRL-Q).

RTS/CTS (Sometimes referred to as hardware handshake)

A method of controlling the transfer of data between two devices by means of hardware signals. Hardware flow control is the preferred means of regulating the flow of data between the Pocket DNC and the CNC machine control. It works by using the clear to send (CTS) and request to send (RTS) signals on the RS232 interface to start or stop the flow of data in each direction. In order to operate correctly hardware flow control requires a suitably wired connecting cable.



Start of File

Type into this box the characters that signify the start of the program. Normally this is the % sign.

Close Delay

This value is in seconds and is the period of time that the DNC software waits after receiving the last character before closing the file. This also means that if there is a pause in data transmission when receiving a program to the Pocket DNC of 3 seconds then the file will be closed. If you find that you are not receiving a complete program then increase this value.

End of Line (Sometimes referred to as EOB or End of Block)

When receiving a program the Pocket DNC will always store the program with a CR (carriage return) and LF (line feed) as the end of line so that it displays better on the screen. When sending back to the CNC control we add the required End of Line characters. Normally this is set to CRLF.

Line Delay

This is the period of time in milliseconds that the DNC software pauses after sending each line of program. This delay is only used when sending a program to the machine control. As some controls receive a line of program it then moves this information around in its memory which causes the port to loose a couple of characters. If you find that a program that has been sent to the control has lost any data try increasing this value or check that the Handshake is working properly.

Leader

This is a list of characters that are to be sent to the control immediately before the program. To enable you to enter codes that are not normally available on the keypad these must be entered as ASCII codes and proceeded with a back slash (\). (See Appendix A for list of ASCII codes)

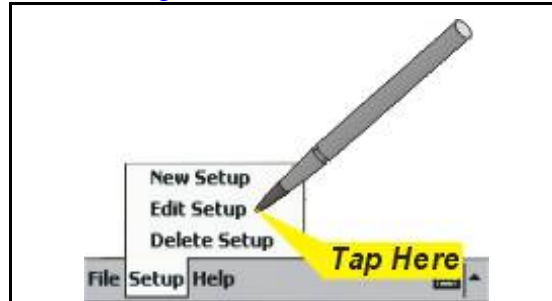
Trailer

This is a list of characters that are to be sent to the control immediately after the program. To enable you to enter codes that are not normally available on the keypad these must be entered as ASCII codes and proceeded with a back slash (\).(See Appendix A for list of ASCII codes)



Edit Setup

This will allow you to edit the settings for the active Machine.



Delete Setup

Step 1

Tap on Setup menu



Step 2

Tap on the Delete Setup option.





Step 3

A message will be displayed to ask if you are sure that you want to delete the current setting file. Tap on Yes to confirm deletion or No to abort the operation.



Step 4

As the current setting file is now deleted you must select one of the remaining setting files to make it active.





Appendix A - List of ASCII codes

Null	NUL	Ctrl @	0	00000000	0
Start of Heading	SOH	Ctrl A	1	00000001	1
Start of Text	STX	Ctrl B	2	00000010	2
End of Text	ETX	Ctrl C	3	00000011	3
End of Transmit	EOT	Ctrl D	4	00000100	4
Enquiry	ENQ	Ctrl E	5	00000101	5
Acknowledge	ACK	Ctrl F	6	00000110	6
Bell	BEL	Ctrl G	7	00000111	7
Back Space	BS	Ctrl H	8	00001000	8
Horizontal Tab	TAB	Ctrl I	9	00001001	9
Line Feed	LF	Ctrl J	10	00001010	0A
Vertical Tab	VT	Ctrl K	11	00001011	0B
Form Feed	FF	Ctrl L	12	00001100	0C
Return	CR	Ctrl M	13	00001101	0D
Shift Out	SO	Ctrl N	14	00001110	0E
Shift In	SI	Ctrl O	15	00001111	0F
Escape	DLE	Ctrl P	16	00010000	10
Control Code1	DC1	Ctrl Q	17	00010001	11
Control Code2	DC2	Ctrl R	18	00010010	12
Control Code3	DC3	Ctrl S	19	00010011	13
Control Code4	DC4	Ctrl T	20	00010100	14
Negative Acknowledge	NAK	Ctrl U	21	00010101	15
Synchronous Idle	SYN	Ctrl V	22	00010110	16
End of Transmit Block	ETB	Ctrl W	23	00010111	17
Cancel	CAN	Ctrl X	24	00011000	18
End of Medium	EM	Ctrl Y	25	00011001	19
Substitute	SUB	Ctrl Z	26	00011010	1A
Escape	ESC	Ctrl [	27	00011011	1B
File Separator	FS	Ctrl \	28	00011100	1C
Group Separator	GS	Ctrl]	29	00011101	1D
Record Separator	RS	Ctrl ^	30	00011110	1E
Unit Separator	US	Ctrl _	31	00011111	1F
Space			32	00100000	20
Exclamation	!	Shift 1	33	00100001	21
Double Quote	"	Shift 2	34	00100010	22
Pound Sign	£	Shift 3	35	00100011	23
Dollar Sign	\$	Shift 4	36	00100100	24
Percent Sign	%	Shift 5	37	00100101	25
Ampersand	&	Shift 7	38	00100110	26
Single Quote	'	'	39	00100111	27
Left Bracket	(	Shift 9	40	00101000	28
Right Bracket	)	Shift 0	41	00101001	29
Asterisk	*	Shift 8	42	00101010	2A
Plus Sign	+	Shift =	43	00101011	2B
Comma	,	,	44	00101100	2C
Minus Sign	-	-	45	00101101	2D
Period	.	.	46	00101110	2E
Forward Slash	/	/	47	00101111	2F
Zero	0	0	48	00110000	30
One	1	1	49	00110001	31
Two	2	2	50	00110010	32
Three	3	3	51	00110011	33
Four	4	4	52	00110100	34
Five	5	5	53	00110101	35
Six	6	6	54	00110110	36
Seven	7	7	55	00110111	37
Eight	8	8	56	00111000	38
Nine	9	9	57	00111001	39
Colon	:	Shift ;	58	00111010	3A
Semicolon	;	;	59	00111011	3B
Less-Than	<	Shift ,	60	00111100	3C
Equals Sign	=	=	61	00111101	3D
Greater-Than	>	Shift .	62	00111110	3E
Quest Mark	?	Shift /	63	00111111	3F
At Sign	@	Shift 2	64	01000000	40



Capital A	A	Shift A	65	01000001	41
Capital B	B	Shift B	66	01000010	42
Capital C	C	Shift C	67	01000011	43
Capital D	D	Shift D	68	01000100	44
Capital E	E	Shift E	69	01000101	45
Capital F	F	Shift F	70	01000110	46
Capital G	G	Shift G	71	01000111	47
Capital H	H	Shift H	72	01001000	48
Capital I	I	Shift I	73	01001001	49
Capital J	J	Shift J	74	01001010	4A
Capital K	K	Shift K	75	01001011	4B
Capital L	L	Shift L	76	01001100	4C
Capital M	M	Shift M	77	01001101	4D
Capital N	N	Shift N	78	01001110	4E
Capital O	O	Shift O	79	01001111	4F
Capital P	P	Shift P	80	01010000	50
Capital Q	Q	Shift Q	81	01010001	51
Capital R	R	Shift R	82	01010010	52
Capital S	S	Shift S	83	01010011	53
Capital T	T	Shift T	84	01010100	54
Capital U	U	Shift U	85	01010101	55
Capital V	V	Shift V	86	01010110	56
Capital W	W	Shift W	87	01010111	57
Capital X	X	Shift X	88	01011000	58
Capital Y	Y	Shift Y	89	01011001	59
Capital Z	Z	Shift Z	90	01011010	5A
Left Bracket	[	[	91	01011011	5B
Back Slash	\	\	92	01011100	5C
Right Bracket	]	]	93	01011101	5D
Caret	^	Shift 6	94	01011110	5E
Underscore	_	Shift -	95	01011111	5F
Back Quote	`	`	96	01100000	60
Lower-case A	a	A	97	01100001	61
Lower-case B	b	B	98	01100010	62
Lower-case C	c	C	99	00100011	63
Lower-case D	d	D	100	01100100	64
Lower-case E	e	E	101	01100101	65
Lower-case F	f	F	102	01100110	66
Lower-case G	g	G	103	01100111	67
Lower-case H	h	H	104	01101000	68
Lower-case I	i	I	105	01101001	69
Lower-case J	j	J	106	01101010	6A
Lower-case K	k	K	107	01101011	6B
Lower-case L	l	L	108	01101100	6C
Lower-case M	m	M	109	01101101	6D
Lower-case N	n	N	110	01101110	6E
Lower-case O	o	O	111	01101111	6F
Lower-case P	p	P	112	01110000	70
Lower-case Q	q	Q	113	01110001	71
Lower-case R	r	R	114	01110010	72
Lower-case S	s	S	115	01110011	73
Lower-case T	t	T	116	01110100	74
Lower-case U	u	U	117	01110101	75
Lower-case V	v	V	118	01110110	76
Lower-case W	w	W	119	01110111	77
Lower-case X	x	X	120	01111000	78
Lower-case Y	y	Y	121	01111001	79
Lower-case Z	z	Z	122	01111010	7A
Left Brace	{	Shift [	123	01111011	7B
Vertical Bar	|	Shift \	124	01111100	7C
Right Brace	}	Shift]	125	01111101	7D
Tilde	~	Shift `	126	01111110	7E
Delta	Δ		127	01111111	7F