

PRM.SER -System Parameters

This is the file that holds some of the system parameters. Modifications to this file will effect the way in which the OmniTurn will function.

- This file is stored on the system disk on the A: drive.
- Exit the OmniTurn software and go to DOS. This is done by going to the main menu and pressing the left shift and then while holding it press the ESC key. If this does not work you can get to DOS through the word processor. Go to the Automatic mode page, Then make a program active, then press F3 for the editor. Then ESC to make the editor active. Then press F1 to get to the help menu, then press F4 for SHELL. Now you should be in DOS This will get you to C>\or A>\OMNISLID depending on your system. Then type A: return, then type cd\omnislid.
- From A:\OMNISLID type EW PRM.SER and return. This will start the word processor. Work with the file and modify it as if it were a program. Then exit(F1) and save(F2).
- Get back to the OmniTurn restart the control

" +##.#####",20000,20000,300,1,3,15,0,0,1,4000,c:\programs,c:.,0,STD,12,150,50

" +##.#####" FOR
2 DIGITS BEFORE
AND 5 AFTER THE
DECIMAL POINT

NUMBERS ARE ENCODER
COUNTS PER INCH (X & Z)

300 IS MAX FEEDRATE

1 - IS FOR CONSTANT VOLUME THREADING
0 - FOR "OLD" STYLE

**3,15,0 - ARE FOREGROUND AND
BACKGROUND SCREEN COLORS**

0 - MEANS NO PASSWORD, 1 MEANS PASSWORD

**NEXT IS COLLET VARIABLE; 1 FOR PULSED,
0 FOR MAINTAINED (DO NOT CHANGE!)**

NEXT IS DEFAULT TOP SPINDLE SPEED

NEXT IS DRIVE WHERE PART PROGRAMS ARE STORED

NEXT IS DRIVE WHERE TOOL OFFSETS ARE STORED

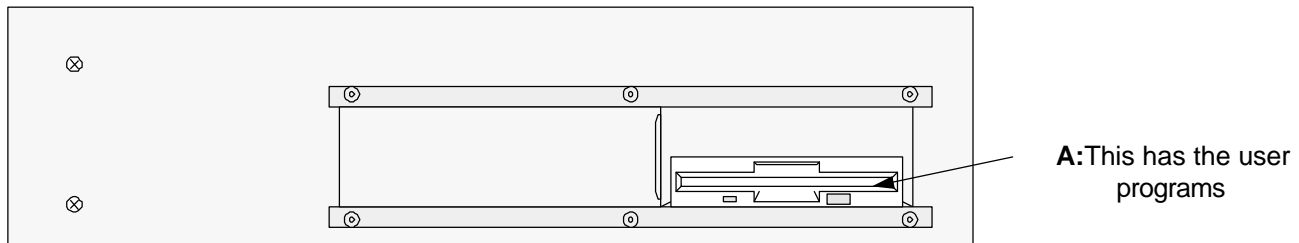
NEXT IS INCH/METRIC DEFAULT (0=INCH, 1=METRIC)

DOS Notes

The OmniTurn is based on a small computer that runs on DOS. This is the same as most computers that people have in their office. Because of this there are a number of procedures that you can perform that make this system very user friendly.

- **DOS Version.** The OmniTurn is shipped with OPENDOS 7.0 We do not include all available DOS commands. There are only a few that are needed for system operations.
- **System specification (for OmniTurn):** 32meg of RAM, 16MB solid state HD, 1.44 MB FLOPPY. (specifications may change without notice)

The computer floppy drive located at the back of the OmniTurn control



• Backing up your disks:

It is regarded good practice to make copies of the disks that are in the computer to insure that if you have a problem with your system that you do not lose all the work you have.

At Screen Prompt: "Do you want to back up your program files (Y/N)" Press Y to back up only programs that have changed since last back up.

TO UPDATE SOFTWARE ON OMNITURN CNC HARD DRIVE:

1. On website OMNITURN.COM go to download software
2. Create SYSTEM DISK for your system per instructions on that page.
3. Power up your Omniturn, then drop to DOS by holding left "Shift" key and pressing "Esc" key.
4. Put new system disk in lower drive. At C:\OMNITURN prompt, type **A:\UPD** then press Rtn.
5. Several files will copy from floppy to hard drive, then "system files copied" message will appear.
6. Set power OFF, wait a few seconds, then set power ON to reboot.

This method insures that you have latest System Disk on hand as well.

Questions?

Call OmniTurn: 541-332-7004

or email service@omniturn.com

Once you have the new system disk in and running:

1. Go to the Automatic mode
2. Make the program you are using active
3. Press F10 for special functions
4. Press L to copy the offsets to the A drive in the TCMP file.

It is good practice to save your offsets once you have them established. This would enable you to run your program right away after a system failure. You would not have to reset the offsets.

• **New software updates.** Nobody is perfect, we are constantly making improvements to our software. In order to take advantage of this all you have to do as a user is load a new disk in the back of the control. When updates occur they will be sent to you with instructions and comments on the additions and changes included in the update.

• **BIOS SETUP** - On some of the older systems you will have to adjust the BIOS of your system. You will know that you have to do this when you try and start the system with a new system disk and they won't work. If you are replacing a 5-1/4" disk drive with a 3-1/2" you will have to perform these changes! This is done when the computer is first turned on. Then it asks if you want to make changes. Normally you don't do anything and the system goes past this and it starts the OmniTurn software. Follow the instructions on the screen to make changes.

Change the following:

Disable -shadow All shadow RAM
Enable -memory relocation
Set A: and B: Floppy disks to 1.44 Meg

If you get an error "Memory Size Mismatch" after changing the Bios, please store the BIOS setup again and the problem should go away.

See the BIOS setup descriptions at the end of this section

• **Disk storage:**

The lower DRIVE is where the A: disk is inserted. This has the system software needed to run the OmniTurn. Below find a list of the files found on this disk

AUTOEXEC.BAT

```
path= c::a:\dos;a\omni-chk;a\omnislid;a\calcaid
prompt $p$g
copy command.com c:
cd \omnislid
dir omni* > bdir.txt
copy *.* c:
cd \omni-chk
copy *.* c:
cd \calcaid
copy *.* c:
cd \omnislid
c:
set comspec= c:\command.com
omni2
```

CONFIG.SYS

```
DEVICE= \DOS\HIMEM.SYS
DEVICE= \DOS\ramdrive.SYS 1344/E
```

/DOS -This directory has the DOS information needed by the computer to run. We use 5.0

/OMNI_CHK

```
OMNI_CHK.EXE
CHKHERE
```

/CALCAID -

CALCAID.EXE -This is the CAM program used for programming the OmniTurn
PRM.SER

/OMNISLID -This has the files for running the OmniTurn

OMNISLID.EXE -OmniTurn software

EW.EXE -Word processing software

HELPE.DEF -Help pages for the word processor

RULER.DEF -Info needed for word processor

PRM.SER -parameter file for setting system functions (text file, edit with EW)

TCMP - the table of numbers used for tool offsets, it is a text file and can be edited with the word processor. It should have 32 pairs of numbers.

SECTCMP - the table of secondary tool offsets, also has 32 pairs of numbers, it is a text file and can be edited with EW

IOCFG.DAT - A text file used to define additional M function format for the I/O card

Mn..USR - the definition of the M function, a text file

B: USER PROGRAMS -The upper drive is where the B: disk is inserted. This has all of the user programs.

Older systems have no directories on this disk. All files are stored on the root directory.

Since we found that there is a limitation to the number of files stored in the root we have changed to using a directory B:/NCFILES. To change your system software to have it save programs to this directory you have to change the PRM.SER file. Please refer to the page on this file at the end of this chapter.

All programs are ASCII files with no extension

file.GEO -are geometry files stored from CALCAID

file.& -are backup copies of programs stored with the word processor

file.TOF -are tool offsets that have been stored for the program

file.SOF -are secondary offsets stored for the program

C: The OmniTurn software constructs a RAM disk C: drive. This is not a hard disk, it is only temporary.

All information stored on this drive is lost when the system is shut down. This "disk" is used to speed up the operation of the word processor. Whenever the program is modified or tool offsets are corrected the information is stored to the A: drive. If you ever want to go to DOS and work on any of the files remember to save all work to the correct permanent drive.

When the OmniTurn is turned on the system creates the C drive and copies everything that is in the A:\OMNISLID directory to the new C:\. The OMNISLID.EXE or OMNI2.EXE is executed from here.

Getting to DOS

Depending on your system there might be two ways to get to DOS.

First Method

- Get to the main menu
- Press and hold the left shift, while holding the shift key press ESC

Second Method (shell)

- In order to get to DOS first go to the "MD" screen.
- Then type the command EXIT, press enter, then cycle start
- The control will eventually stop and show:

C:>

- You are now in DOS on the RAM disk, C:

• **Off-line work - programming or word processing** - System requirements: (1) 1.44 meg floppy drive, 286 system or later, DOS 3.2 or later.

• **Off-line Programming:**

If you do have a DOS base computer you can use the software in the OmniTurn for programming in the office. If your computer has a Hard Drive you can copy the Calcaid (CALCAID.EXE) and Word processor (EW.EXE) and the Verification software (OMNI-CHK.EXE) from the system disk in the OmniTurn.

To do this take the A: (3-1/2" disk) disk and place it in the disk drive of your computer.

- * Make a new directory name OMNI.

First go back to the root directory by typing CD\return

Then type MD OMNI and return

Go to that directory by typing CD\OMNI

- * Place the system disk from the OmniTurn in the A: or B: drive.

Make that drive active by typing A: return

Then change-to the OMNISLID directory by typing CD\OMNISLID

- * Now copy the files from this directory to the new OMNI directory on your hard drive. Type:

COPY A:PRM.SER C:\OMNI and return

Before using any of the following programs rest this file to save to the correct drive! See a page about setting this file on one of the following pages in this chapter.

COPY A:EWEXE C:\OMNI and return

Change to CALCAID directory by typing CD\CALCAID

Then type

COPY A:*. * C: and return

Change to the verification directory CD\OMNI-CHK

Then type

COPY A: *. * C:\OMNI

• **Word processing off line:** you can input and edit your programs on a computer in your office. You can use the word processor that you are used to like Word Perfect. (Save the file as an ASCII file) Then bring the disk out to the OmniTurn, put it into the B: drive and run it. The rules that you must follow are:

-Save the program in ASCII format

-The name must have no extension

TEST. valid

TEST.DNE illegal

-The program must have no commas ", "

-After the M30 or M02 command there must be a carriage return

If you want to use the word processor that is in the OmniTurn you can copy it into your hard disk. This can be done by following the same instructions as in the previous paragraph.

Then you can write programs at your desk and put them onto the program disk in the OmniTurn.

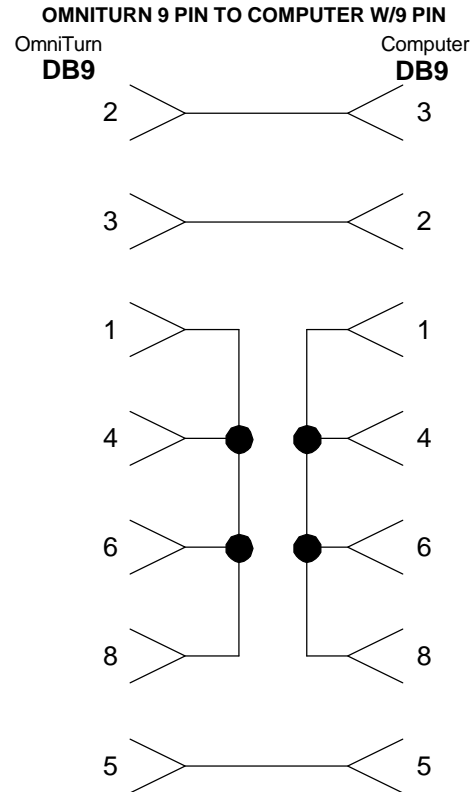
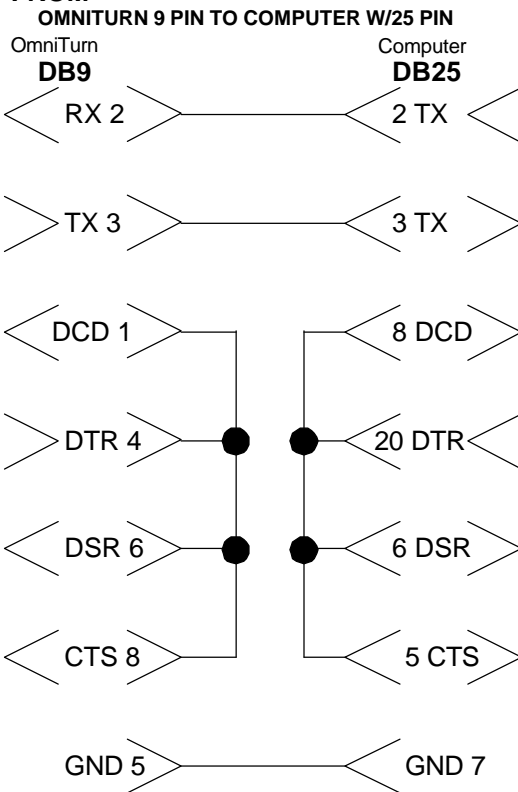
• **Printing a program off line:**

To print a program from your computer you could use the command:

TYPE FILENAME> PRN

RS-232 Cable Default settings -2400, 8, 1, N

FROM



OmniSupport - the modem is optional

The software to run the OmniSupport is supplied in all OmniTurns. When the control is shipped the OmniSupport software is not turned on since it takes the control longer to start up if it is activated. If you need to modem into the factory turn the OmniSupport on by following the procedure below:

Turning on OmniSupport on and off

- Install a modem in any of the open slots in the computer
- The OmniSupport is turned on from DOS. To get to DOS first go to the "main" screen.
- Then hold down the left shift and press "ESC"
- The control will eventually stop and show: C:>
- Type: A: and return
- The screen will show A:>
- To turn OmniSupport on type: **PHONE** and return
- To turn OmniSupport off type: **NOPHONE** and return
- Now turn the control off and restart. When the control is restarted it will have the OmniSupport switched how you want it.
- To activate the OmniSupport hold the right shift down and press the "ESC". Then follow the instructions on the screen.

RAM BIOS Setup For a 286 Computer

Date:
Time:
Floppy A: 1.44 Mb 3 1/2"
Floppy B: 1.44 Mb 3 1/2"
Hard Disk C:
Hard Disk D:
Primary Display: Monochrome
Keyboard: Installed
Video BIOS Shadow: **Disabled**
Scratch RAM Option: 1
Main BIOS Shadow: **Disabled**
Turbo Speed: Enabled
EMS Function: Enabled
AT Bus Clock Mode: Asynchronous

Amibios Bios Setup for 386SX and Up

Standard Setup

Time
Date
Hard Disk C: Not Installed
Hard Disk D: Not Installed
Floppy Drive A: 1.44 MB 3.5
Floppy Drive B: 1.44 MB 3.5
Primary Display: Monochrome

Advanced Setup

Typematic Rate Program: Disabled
Typematic Rate chars/sec: 15
Above 1 MB Memory Test: Disabled
Memory Test Tick Sound: Enabled
Memory Parity Error Check: Disabled
Hit < Del > Message Display: Enabled
Hard Disk Type 47 Ram Area: 0:300
Wait For < F1 > If Any Error: Enabled
Numeric Processor Test: Disabled
Floppy Drive Seek at Boot: Enabled
System Boot Sequence: A:, C:
Fast Gate A20 Option: Disabled
Password: Setup
Video RAM Shadow C000, 32K: Disabled
System RAM Shadow F000, 64K: Disabled
Cyrillic cache: Disabled

Networking the OmniTurn Controls

Why Network?

Getting programs to and from a control has always been a problem. There are a number of ways to get a program into a control: - Manually enter the program at the control keyboard - Run a RS-232 cable and transfer the file - Use floppy disk storage and transfer the disk - Network the control with computers in the office The ability to connect the OmniTurn control to other computers has a number advantages over the other methods.

- When networked the OmniTurn will automatically look to the network server for its programs. You do not have to "transfer" programs to the control. When the networking is setup the OmniTurn control is configured so that it looks to its own directory on the server. The operator of the OmniTurn will not have to do anything. This is better than the RS-232 method.
- When transferring files over a RS-232 connection a number of functions must be done by the operator: Set the control to receive, go to the other computer and send the file, go to the OmniTurn and terminate the session. This is not difficult but if you have to get files all the time it can be tedious.
- Another advantage is that if the program is corrected by the operator the changes are automatically saved to the network.
- The person in charge of the OmniTurns can put only what files that are to be run in the directory for each OmniTurn. When the network is setup it is easy to have each control go to its own directory. This lessens the chance of an operator running the wrong program.

Which Network to choose?

The OmniTurn control is based on a 386 PC. This makes networking them with other computers very easy. There are a number of different network operating systems (NOS) available on the market. We have had experience with Novell Netware v3.12 and find it works very well and is easy to setup. If you have a network up and running in your office and need assistance in getting the OmniTurn plugged in, have your systems personnel give us a call and we will be happy to offer whatever help we can.

Configuring the OmniTurn

Since the OmniTurn is a PC in most cases all you will have to do is add a network card to the control and some software to the system disk. With the OmniTurn software you will have to adjust the PRM.SER file to look to the server for its programs. There are instructions in the OmniTurn manual in chapter 7 DOS notes on what to do.

Setting up new networks

There are a number of customers who have asked us to setup networks for them. We strongly feel that it is not in the best interest of our customers to have us setup networks. New computer systems and software should have someone close at hand to answer questions and help with hardware problems. Because of this we suggest that users needing a new computer system and network purchase it from a local vendor and have it installed by them. We would be very happy to help with specifying what you need and make sure that what you are getting is what is called for. The actual connection of the OmniTurn to the network is very simple and can be done in minutes.

Basic system configuration for networking

Computer: Here we list a simple system that will work in supporting a network for the OmniTurn. With the changing computer market it is possible to get a lot more computer for just a little bit more money.

- 16MB RAM memory

- 256KB Cache

- 512 MB Hard disk

- 14" monitor -

- CD-ROM (this makes loading the NOS much easier)

- 3.5" disk drive

- Keyboard and mouse

10Base-T Concentrator: SMC ELITE 3512TP 10Base-T Concentrator. This stackable hub has 12 plus 2 port repeaters with retiming on all ports. The Concentrator is easy to install.

Network Interface Cards (NIC): SMC EtherEZ 10Base-T ISA Adapter card

Novell Netware ver 3.12: 5 or 25 user on CD-ROM