CNC SYSTEMS OSP-P300S/P300L

DNC-T3/DT

OPERATION MANUAL

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SAFETY PRECAUTIONS

This machine is equipped with safety equipment to protect persons and machinery from any danger that might happen unexpectedly. However operators are requested to operate the equipment in such a way that no person will use the equipment in the following unsafe manner and cause an accident without knowing the following safety precautions.

This instruction manual and the warning signs attached to the machine cover only those hazards which Okuma can predict.

Be aware that they do not cover all possible hazards.

1. **Precautions Relating to Installation**

- (1) Please be noted about a primary power supply as follows.
 - Do not draw the primary power supply from a distribution panel that also supplies a major noise source (for example, an electric welder or electric discharge machine) since this could cause malfunction of the CNC unit.
 - If possible, connect the machine to a ground not used by any other equipment. If there is no choice but to use a common ground, the other equipment must not generate a large amount of noise (such as an electric welder or electric discharge machine).
- (2) Installation Environment Observe the following points when installing the control enclosure.
 - Make sure that the CNC unit will not be subject to direct sunlight.
 - Make sure that the control enclosure will not be splashed with chips, water, or oil.
 - Make sure that the control enclosure and operation panel are not subject to excessive vibrations or shock.
 - The permissible ambient temperature range for the control enclosure is 5 to 40°C (41 to 104°F).
 - The permissible ambient humidity range for the control enclosure is relative humidity 50% or less at 40°C (104°F) (no condensation).
 - The maximum altitude at which the control enclosure can be used is 1000 m (3281 ft.).

2. Points to Check before Turning on the Power

- (1) Close all the doors of the control enclosure and operation panel to prevent the entry of water, chips, and dust.
- (2) Make absolutely sure that there is nobody near the moving parts of the machine, and that there are no obstacles around the machine, before starting machine operation.
- (3) When turning on the power, turn on the main power disconnect switch first, then the CONTROL ON switch on the operation panel.

3. **Precautions Relating to Operation**

- (1) After turning on the power, carry out inspection and adjustment in accordance with the daily inspection procedure described in this instruction manual.
- (2) Use tools whose dimensions and type are appropriate for the work undertaken and the machine specifications. Do not use badly worn tools since they can cause accidents.
- (3) Do not, for any reason, touch the spindle or tool while spindle indexing is in progress since the spindle could rotate: this is dangerous.
- (4) Check that the workpiece and tool are properly secured.
- (5) Never touch a workpiece or tool while it is rotating: this is extremely dangerous.
- (6) Do not remove chips by hand while machining is in progress since this is dangerous. Always stop the machine first, then remove the chips with a brush or broom.
- (7) Do not operate the machine with any of the safety devices removed. Do not operate the machine with any of the covers removed unless it is necessary to do so.
- (8) Always stop the machine before mounting or removing a tool.
- (9) Do not approach or touch any moving part of the machine while it is operating.
- (10) Do not touch any switch or button with wet hands. This is extremely dangerous.
- (11) Before using any switch or button on the operation panel, check that it is the one intended.

4. Precautions Relating to the ATC

- (1) The tool clamps of the magazine, spindle, etc., are designed for reliability, but it is possible that a tool could be released and fall in the event of an unforeseen accident, exposing you to danger: do not touch or approach the ATC mechanism during ATC operation.
- (2) Always inspect and change tools in the magazine in the manual magazine interrupt mode.
- (3) Remove chips adhering to the magazine at appropriate intervals since they can cause misoperation.Do not use compressed air to remove these chips since it will only push the chips further in.
- (4) If the ATC stops during operation for some reason and it has to be inspected without turning the power off, do not touch the ATC since it may start moving suddenly.

5. On Finishing Work

- (1) On finishing work, clean the vicinity of the machine.
- (2) Return the ATC, APC and other equipment to the predetermined retraction position.
- (3) Always turn off the power to the machine before leaving it.
- (4) To turn off the power, turn off the CONTROL ON switch on the operation panel first, then the main power disconnect switch.

6. Precautions Applicable during Maintenance Inspection and When Trouble Occurs

In order to prevent unforeseen accidents, damage to the machine, etc., it is essential to observe the following points when performing maintenance inspections or during checking when trouble has occurred.

- (1) When trouble occurs, press the emergency stop button on the operation panel to stop the machine.
- (2) Consult the person responsible for maintenance to determine what corrective measures need to be taken.
- (3) If two or more persons must work together, establish signals so that they can communicate to confirm safety before proceeding to each new step.
- (4) Use only the specified replacement parts and fuses.
- (5) Always turn the power off before starting inspection or changing parts.
- (6) When parts are removed during inspection or repair work, always replace them as they were and secure them properly with their screws, etc.
- (7) When carrying out inspections in which measuring instruments are used for example voltage checks make sure the instrument is properly calibrated.
- (8) Do not keep combustible materials or metals inside the control enclosure or terminal box.
- (9) Check that cables and wires are free of damage: damaged cables and wires will cause current leakage and electric shocks.
- (10) Maintenance inside the Control Enclosure
 - a. Switch the main power disconnect switch OFF before opening the control enclosure door.
 - b. Even when the main power disconnect switch is OFF, there may some residual charge in the MCS drive unit (servo/spindle), and for this reason only service personnel are permitted to perform any work on this unit. Even then, they must observe the following precautions. Even then, they must observe the following precautions.
 - MCS drive unit (servo/spindle) The residual voltage discharges two minutes after the main switch is turned OFF.
 - c. The control enclosure contains the NC unit, and the NC unit has a printed circuit board whose memory stores the machining programs, parameters, etc. In order to ensure that the contents of this memory will be retained even when the power is switched off, the memory is supplied with power by a battery. Depending on how the printed circuit boards are handled, the contents of the memory may be destroyed and for this reason only service personnel should handle these boards.

- (11) Periodic Inspection of the Control Enclosure
 - a. Cleaning the cooling unit

The cooling unit in the door of the control enclosure serves to prevent excessive temperature rise inside the control enclosure and increase the reliability of the NC unit. Inspect the following points every three months.

- Is the fan motor inside the cooling unit working? The motor is normal if there is a strong draft from the unit.
- Is the external air inlet blocked? If it is blocked, clean it with compressed air.

7. General Precautions

- (1) Keep the vicinity of the machine clean and tidy.
- (2) Wear appropriate clothing while working, and follow the instructions of someone with sufficient training.
- (3) Make sure that your clothes and hair cannot become entangled in the machine. Machine operators must wear safety equipment such as safety shoes and goggles.
- (4) Machine operators must read the instruction manual carefully and make sure of the correct procedure before operating machine.
- (5) Memorize the position of the emergency stop button so that you can press it immediately at any time and from any position.
- (6) Do not access the inside of the control panel, transformer, motor, etc., since they contain high voltage terminals and other components which are extremely dangerous.
- (7) If two or more persons must work together, establish signals so that they can communicate to confirm safety before proceeding to each new step.

8. Symbols Used in Manual

The following warning indications are used in this manual to draw attention to information of particular importance. Read the instructions marked with these symbols carefully and follow them.

A DANGER	Indicate death o	Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury .					
A WARNING	Indicate death o	s a potentially hazardous situation which, if not avoided, could result in r serious injury .					
A CAUTION	Indicate or mod	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury .					
CAUTION	Indicate damage	s a potentially hazardous situation which, if not avoided, may result in a to your property .					
SAFETY INST	RUCTIONS	Indicates general instructions for safe operation.					

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SECTION 1 OVERVIEW OF Ethernet NETWORK SYSTEM DNC-T/DT FUNCTIONS

The system makes the OSP network-connectable through an Ethernet. This function enables the OSP to easily exchange data on machining with a commercial personal computer that runs on Windows NT.

1-1. Features

- Simple interconnection TCP/IP, the standard protocol in the industry, is used as the communication protocol, ensuring an interconnection between the OSP and almost any PC. The OSP is connectable up to eight PCs.
- (2) High-speed file transfer Part program files can be transferred at high speed between a PC and the OSP. Because the industry-standard FTP is used for file transfer, no special program is required in the PC.
- (3) High equipment expandability The OSP is flexible in installation of additional equipment and integration with other systems, such as CAD/CAM.

(4) Easy operation

The NC operator can transfer part program files even if he/she is not versed in Windows NT.

- All information required for log-in, including the user name and the password, is automatically processed.
- Any part program file can be transferred simply by specifying the file name to transfer in program input/output mode.
 - * The password registered in the NC is encrypted in it and cannot be referred to by any third party.

SECTION 1 OVERVIEW OF Ethernet NETWORK SYSTEM DNC-T/DT FUNCTIONS



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1-2. Overview of Functions

DNC-T1

- Part program download function Any part program stored in the machining data server is transferred to the OSP by operating the NC unit.
- Part program upload function Any part program stored in the machining data server can be replaced with a part program edited on the OSP and transferred to the server by operating the UN unit.
- Machining data server directory search function On the NC unit panel, the directory of part program files for the machining data server can be displayed, and the name of any file to transfer can be selected.
- File operation function on machining data server (PC) The following file operations can be performed on the machining data server (PC) through operations from the NC unit:
 - Deleting files
 - Moving directories

DNC-DT* (Optional)

Machining with large part programs
 Permits machining of a die, for example, with a large part program created by CAD/CAM. The
 program select /NC start operations permit machining with a part program of several megabytes
 stored in the machining data server (PC).

The DNC-T/DT functions may be connectable to a UNIX workstation, such as SUN and HP. However, it is necessary to perform a connection test in advance, and they may be found impossible to connect.

DNC-T3 (Optional)

 PC host online machining management function Information, such as the machining data and operation data the OSP's machining management function holds, can be collected through operations from the PC. The operating status of the OSP can be monitored easily.

SECTION 2 METHOD OF OPERATING DNC-T3 (OPTIONAL)

2-1. DNC-T3 Overview

The DNC-T3 offers functions to output the current NC status (operation mode, axis position, selected program, etc.) through operations or by request from the host personal computer, and to simply monitor the NC status on the personal computer. It can also output MacMan report information and trouble information in response to a request from the personal computer. Using these functions requires an application compatible with the DNC-T3 to be installed in the host personal computer.

Since the DNC-T3's functions are operated from the host personal computer, no operations are required on the NC unit. The DNC-T3 incorporates all the functions of DNC-T1. The DNC-T3 has the following functions.

	DNC-T3
Online simple NC moni	tor
NC status:	Outputs the NC status in response to a request from the personal computer.
Report Information:	Outputs report information in response to a request from the personal computer.
Trouble Information:	Outputs trouble information in response to a request from the personal computer.
	DNC-T1
Directory	
Directory	

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2-2. Precautions about DNC-T3 Specifications

To use the DNC-T3's functions, a compatible application such as MacMan-Net must be installed in the personal computer (compatible only with Windows NT/2000/XP Professional but not compatible with UNIX systems).

When collecting the MacMan report information or trouble information through operations from the personal computer, make appropriate MacMan environment settings for the personal computer (such as I/O device names, pathname, and file name).

If you try to use any of the DNC-T1 functions from the NC while the personal computer is monitoring the NC, the NC may fail to connect with the personal computer depending on the timing. In that case, retry the same operation.

The NC cannot be output the machining management data such as environment settings, report information or trouble information while it is collecting such information on receiving commands from the personal computer. If data output is attempted, the following message appears: "Cannot execute during communication with host" A message appears to ask if you really want to delete it. In that case, ensure that the NC is not collecting machining management data before outputting the data.

If the collection of report information or trouble information initiated by the personal computer is forced to terminate also by the personal computer, the following error occurs:

"ALARM D 4056 DNC-T error"

To clear this alarm, press the NC RESET key.

SECTION 3 DNC-DT OPERATION SUPPLEMENT

3-1. Overview

3-1-1. Overview of DNC-DT

DNC-DT is the remote operation function that reads a large part program of several megabytes from the host computer (file server) and uses the program for machining.

- DNC-DT can read part programs of several tens of megabytes and use them for machining.¹
- Possible to designate a program file name by selecting the required file from the directory using the directory function of OSP. Simply locate the cursor on the required filename in the displayed list. There is not need to input complex path name or file name from the operation panel.
- Since DNC-DT rapidly reads all the specified part program files at a time, it hardly affects the network traffic except during transfer of a part program. Even a network failure during machining will not affect the machining operation.
- Sequence restart can be used to restart the program from the interrupted point.
- Part program transfer does not require any special program to be installed in the workstation because the DNC uses FTP (File Transfer Protocol) on TCP/IP, which is given to UNIX as a standard function.
- DNC-DT automatically performs operations required for logging-in such as confirmation of user name and password.²
- ¹ DNC-DT can read files of up to 2GB. However, it is advisable to divide programs into files of several megabytes and run the programs using the schedule program function (optional for OSP) for the reasons below:
 - Program transfer takes too long (from program selection to starting operation).
 - When the machining is interrupted by a trouble or minor data change, restarting the program from the interrupted block is difficult.
- ² The password registered in the OSP is ciphered internally to prevent decipherment by unauthorized third parties.



- (1) When a program is selected, DNC-DT reads the selected part program from the file server (PC/ EWS).
- (2) When the CYCLE START button is pressed, the DNC reads the part program from the operation buffer and performs machining.

3-2. Operation

3-2-1. DNC Operation Panel

Press the MACHINE OPERATION key on the machine operation panel to select DNC. The following function keys appear.

▶ 🛄 S.T.M [<		?		Caps 201 Y C [*] ₂ C 2 1	1/04/28 5:36:15
AUTO OPERATION C	GOTEST1.MIN	1 SPINDLE			
DNC-B/RT			TOUCH SE	COOLANT AIR BLOW	
MA over ride	2 100 % Y-AXIS MODE B-AXIS CLAMF	C-AXIS		₩	
C-AXIS CLAMP S1	<u>}</u> \$2	●C-AXIS CLAMP			
_ بب ď	ר ^מ רר	· · · · ·		I K	
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STEADY REST SHOWER SHOWER	YCLE WARK PIECE MEAS.	MEASUREMENT <+OK> MEASUREMENT < OK> MEASUREMENT <-OK>	T, DNC		œ
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CLAMP/DISCON.					
			_		
COMMUNI- CATION REMOTE OPERATE				CLOSE	
				LE32153R010110	00020001

- (1) COMMU. ON/OFF Switch
 - a. COMMU. ON Set this switch to ON and turned ON the power. The communication lamp lights, indicating that the DNC can communicate with the file server.
 - b. COMMU. OFF If the power is turned ON with this switch OFF, the DNC cannot communicate with the file server.
 - * The function key shows the communication ON or OFF status.
- (2) BUFFER RUN ON/OFF Switch
 - a. BUFFER RUN ON Buffer operation is possible while this switch and the DNC communication switch are ON. In that case, the buffer operation lamp lights.
 - * Buffer operation is a function of DNC-DT that performs machining by executing a large part program read from the OSP.
 - * Set this switch to ON when performing machining by running a large part program with DNC-DT.
 - b. BUFFER RUN OFF Buffer operation is disabled.

- * Even if this switch is turned OFF during buffer operation, the buffer operation status remains ON until the selected operation is completed.
- * The function key shows the buffer operation ON/OFF status.

3-2-2. How to Perform Buffer Operation

Procedure : -

- 1 Set the DNC COMMU. switch to ON.
- **2** Turn on the power to the NC unit.
- **3** Select the automatic operation mode.
- **4** Set the remote operation switch to ON.
- 5 Press the function key [F1] (PROGRAM SELECT) to select "USER SUB PROGRAM".
- **6** The MAIN PROGRAM SELECT (DNC-DT) screen shown below appears.
- 7 Select the file to be used for buffer operation using the cursor. Then, press [F7] (OK).

[Supplement]

If the file to be used for buffer operation is stored in another directory, move the cursor to the objective directory. Then, press the [WRITE] key to display the directory.

8 The selected part program is read from the file server.

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⊙x	MAI	N PRC	GRAM		USER SUB PRO	GRAM					
٥Z		1	A.MIN	~	1 NOT	SELECT	<u>^</u>	PROGRAM NAME			
OC		2	AA.MIN								
۵.		3 📘	AAA.MIN								
O BA		4	B.MIN					SETUP-DATA RE	ADING		
		5 📘	BB.MIN					🔚 do not			
◯ SPIN	10	6 📘	BBB.MIN								
⊙ M-A×	a 📃	7 📘	DRAIN.MIN								
Fr		8 📘	GOTEST1.MIN							6. 875	
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Ð			FILE NAME	SORT			REF	NESH O	K (CANCEL	

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- (a) Job title
- (b) Directory
- (c) Path
- (d) OK button

3-2-3. Selecting a Device

To change the device, press the function key [F1] (DEVICE). The selectable devices are TC:, TCA: to TCH: and HD0:.

		S.T	.M 1	<u>[0]</u>	•	÷	I '	?	_***	C 1	Caps Lock		2011/04/28
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						P	ROGRAM S	EL. Y	IGF-DATA SI	EL. Y SCHEI	ULE SEL.)	
Øх	M	MATH DDO	CRAM			LISED S		M				-	
ΟZ	<u> </u>	1	A MIN		A	1	NOT SE	U ECT	A	PROGRAM N	ME		
		2	AA MTN			-	NOT DE						
OC		3	AAA, MTN							I			
O RA		4	B.MIN							SETUP-DAT/	READING		
U BA		5	BB.MIN							🗐 do not			
O SPI	IND	6	BBB.MIN										
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SET						_						_	
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	MD1	1	тс		HD0						ОК	CANCEL	
(I)													
									í			LE32153D010	1100040001

3-2-4. Changing the File Name Pattern in the Directory

or of V AUTO OPERATION 1 SPINDLE X ACTUAL POSITION 1mm Ν 0 MAIN PROGRAM SELECT MAIN PROGRAM USER SUB PROGRAM PROGRAM NAME 1 📄 A.MIN 1 NOT SELECT FILE PATTERN CHANGE 2 🖹 AA.MIN 3 📄 AAA.MIN FILE NAME PATTERN 4 DRAIN.MIN *.MIN 5 MULTUS-1.MIN 6 MULTUS-2.MIN OK 7 📄 T-A.MIN 8 📄 T-B.MIN 9 📄 XA.MIN 10 📄 XB.MIN Ŧ MD1:*.MIN MD1:*.SUB OK SET FILE OK CANCEL Þ LE32153R0101100050001

To change the file name pattern, press the function key [F2] (FILE NAME).

3-2-5. Machining

The NC starts machining when the CYCLE START button is pressed. When the CYCLE START button is pressed during machine stop due to NC RESET, the NC executes the read part program and restarts machining from the beginning. If you use sequence restart at this case, machining can be restarted from the interrupted block.

3-2-6. Caution

- When a new part program is read from the part program server, the previously read part program remains undeleted (in the multi-file mode).
- Directories are delimited with "\" instead of "/" (slash).
- Assign a file name in the machining file server according to the following OSP rules. DNC cannot read the illegal file names.
 - File Name : Max 16 upper-case alphanumeric characters starting with an alphabet (Lowercase characters are not usable for file names, but can be used for directory names.)
 - Extension : Max three alphanumeric characters, starting with an alphabet, specified after the file name delimited with "."

3-3. SCHEDULE PROGRAMS

If a part program is larger than the operation buffer size, it is recommended that you divide the part program by the unit of machining process or machining section, and let the schedule program read and execute the sections one after another.

3-3-1. Selecting a Schedule Program

Procedure : -

- **1** Create a schedule program in the part program server or MD1:.
- **2** Select the automatic operation mode.
- **3** Press the function key [F1] (PROGRAM SELECT) to select "SCHEDULE SEL.".
- Press CYCLE START. The DNC sequentially reads the part programs specified by the schedule program to perform machining.
 If both the DNC COMMU. switch and the DNC BUFFER RUN switch are set to "ON" in this case, the main program will be read from the file server. If not, the main program will be read from MD1: (memory). When the device from which the main program will be read is designated in the schedule program, the main program will be read from that device.

3-3-2. Sample Schedule Program

SAMPLE.SDF

PSELECT TC:\machine\SPACETURN\PROGRAM1.MIN PSELECT TC:\machine\SPACETURN\PROGRAM2.MIN PSELECT MD1:PROGRAM3.MIN END

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The above is an example of the "SAMPLE.SDF" schedule program for machining with PROGRAM1 and PROGRAM2 stored in the part program server and PROGRAM3 existing in MD1:.

SECTION 4 ALARMS AND ERRORS LIST

2280 SUB PROGRAM program name

No subprogram name is designated in the sequence containing CALL or MODIN statement. Or the subprogram name designated in such a sequence is not registered in the program name registeration stack.

After power supply use, it is not changed to automatic operation mode, and ATC macro instruction (G171, M321) command is designated.

[Object]

SYSTEM

[Codes]

1->No subprogram name is designated.

2->The subprogram name has not been registered to the program registeration stack.

Or, it is not changed to automatic operation mode after power supply use, and ATC macro instruction (G171, M321) command is designated.

The subprogram given name which is called by G code macro instruction-M code macro instruction was modified after program selection performance of automatic operation mode.

Probable faulty location

1)CALL, MODIN sequence

Program Example:

CALL ->[Code]1

CALL O ->[Code]2

^^^^Unregistered subprogram

2)Unless there is macro subprogram on running buffer, ATC macro instruction (G171, M321) can not be performed. When it is changed to automatic-running mode after power supply use, running buffer registration of macro subprogram has carried out. After program selection in automatic mode, a subprogram to be called by G code macro or M code macro command specified in the program was renamed. To call the renamed subprogram, the program must be re-selected in automatic mode.

Measures to be taken

In the CALL and MODIN sequence, designate only the subprogram name registered in the program name registration stack.

[Related Specifications]

User task 2 / ATC

2511 Remote buffer operation

A program in remote buffer operation is illegal.

[Object]

SYSTEM

[Codes]

1->There was not a receiving program.

2->There is not head % block.

3->There is only head % block.

4->Program block data has ended that there is not EOB(LF) code.

5->Record length is too long.

6->In a program, IF or GOTO statement exists.

7->At the time of cycle start, an adaptive control communication is illegal.

8->LAP instruction fitted in a program.

9->MODIN/MODOUT instruction fitted in a program.

A->On a FTP function busy, remote buffer operation was used.

B->COPY instruction fitted in a program.

2602 SCHEDULE PROGRAM main program load

An error occurred when a main program was selected in schedule program.

- [Object]
 - NONE

Character-string

NONE

[Codes]

- <Example 1> Main program selection screen (lathe)
- 5200: An attempt to select a program during the execution of a main program.
- 5201: Main program file was not found.
- 5202: Main program name was not found.
- 5203: Subprogram name was not found.
- 5204: Subprogram name was not found after CALL Subprogram name exceeded 5 characters.
 - G and M load macro was not defined.

5209: The end of program code was not specified at the end of a file.

- 5210: Program stack overflow
 - Program buffer overflow

5211: The program buffer size excluding the schedule program and library program was less than 32K byte.

5215: More than 158 characters are contained in one block.

5231: Mismatch between the end of file and the end of record

Probable faulty location

Main program selected by schedule program

Measures to be taken

Modify the program that is to be selected by the schedule program.

2631 DNC-DT Path name

Program selection by DNC-DT failed because of faulty file name.

The total characters of device name, path name, and file name exceeds 120.

- [Object]
 - NONE

Character-string

NONE

[Codes]

Х

X=1: Faulty file name

X=2: Faulty extension code

X=3: Over 120 characters

X=5: Device assignment at the time of delete is not HD0.

Probable faulty location

SCHEDULE PROGRAMS

Measures to be taken

Review the schedule program.

2634 DNC-DT Delete error

By delete automatic formatting of a schedule program, delete of file was not performed normally. [Object]

NONE		
Character-string	3	
NONE		
[Codes]		
FFFFFFFF:	Without file, or a	file protection
4056 DNC-T Error		
[Object]		
NONE		
Character-string]	
NONE		
[Codes]		
XXYYZZZZ		
XX	: Number of the	e module where an error occurred
YY	: Error cause n	umber
XX =		
	1	Starting up the communication device
	2	Shutting down the communication device
	3	File open
	4	File close
	5	Read from a stream
	6	Write to a stream
	7	Moving the file pointer
	8	Checking the end of file
	9	Checking the file error
	А	Clearing the file error
	В	Directory open
	С	Directory close
	D	Reading directory information
	E	Moving the directory pointer
	F :	Acquiring the current position of the directory pointer
	10	Deleting the file
	11	Renaming the file
	12	Acquiring the free space of the device
	13	Executing the command
	14	Acquiring data by communication parameter item
	15	Acquiring the device sector size
	16	Acquiring file information
	17	Acquiring the OPS file attribute
	18	Changing the protect status
	19	Setting the DNC-T file attribute
	1A	Starting up the communication device in server mode
	1B	Shutting down the communication device in server mode
	1C	Accepting a processing request from the host

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SECTION 4 ALARMS AND ERRORS LIST

- 1D Response to the machining management execution command
- 1E Uploading machining management data
- 1F Generating a COM task

Error causes (ZZZZ is 0 except when YY = FF.)

YY =

- 02 Communication parameter file open error06 DSR ON timeout
 - 09 Communication parameter file read error
 - 0D Communication parameter file write error
 - 0E Board not installed
 - 11 Already activated
 - 13 Incorrect device name
 - 16 Illegal communication parameter item set value
 - FF Communication error

ZZZZ = 006F

- 0072 Incorrect descriptor passed to the TCP/IP driver
 - 0073 Incorrect parameter passed to the TCP/IP driver

Insufficient buffer in the TCP/IP driver

- 0074 No free port in the shared memory
- 0075 Not connected
- 007B Abort ignored
- 0086 ftp_ms_net_drecv_f abnormal end
- 0087 ftp_ms_net_dsend_f abnormal end
- 0090 ftp_ms_dread abnormal end
- 0097 IP address error
- 0099 Interrupt due to timeout
- 009A Disconnection from the remote host
- 009B OS (MORE) initialization abnormal end on the TCP/IP board
- 009C Packet driver or TCP/IP module initialization abnormal end on the TCP/IP board
- 009F FTP module initialization abnormal end on the TCP/IP board
- 00A0 Socket interface module initialization abnormal end on the TCP/IP board
- 00A1 TCP/IP board initialization abnormal end
- 00C9 FTP Title error
- 00CA FTP user certification error
- 00CB FTP PORT command error
- 00CC FTP LIST command error
- 00CD FTP NLST command error
- 00CE FTP RETR command error
- 00CF FTP STOR command error
- 00D0 FTP SIZE command error
- 00D1 FTP QUIT command error
- 00D2 FTP TYPE BIN command error
 - 00D3 FTP TYPE ASC command error
 - 00D4 FTP CWD command error

00D5	FTP DELE command error
00D6	FTP MKD command error
00D7	FTP RMD command error
00D8	FTP NLST data transfer error
00D9	FTP LIST data transfer error
00DA	FTP GET command error
00DB	FTP PUT command error
00DC	FTP PWD command error

XXYYZZZZ = FFFFFFFF means a specification error.

This error will be displayed if any of the following errors occur in the personal computer: Processing was terminated forcibly during machining management data collection by the personal computer.

During writing of machining management data:

An attempt was made to overwrite a write-protected file; The directory set in environment setting does not exist; Disk write was inhibited; or Writing failed (insufficient free space, etc.).

writing failed (insufficient free space,

5003 DNC-T Error

[Codes]

- 1 The specified command character (function) is not supported.
- 2 command syntax
- 3 The format of the file name specified in the host is incorrect, or the host file name does not match the OSP file name format when the output file name is omitted.
- 4 IO_Data_Link_File is not selected. No device is specified, or the device format specified is incorrect.
- 5 The specified path does not exist.
- 6 The OSP file name does not match the OPS file name format.
- 7 No output file is specified, or "*" or "?" is included in the output file name.
- 8 Option designation is incorrect.
- B When copying a file, an attempt was made to copy it from OSP to OSP or from EWS to EWS.
- E The file name contains an illegal character, or the entered file name specifies only up to the path name.
- 01 The communication parameter file contains an illegal setting (an illegal variable name is displayed).
- 02 Communication error (*)
- 03 Shutting down the communication device Communication device error or specified communication channel not installed (*)

Additional code to(*)above

Display format 5003 DNC-T Error 102'XX,YY,ZZZ'

- XX :Number of the module where an error occurred (decimal)
- YY,ZZZ :Error cause number (decimal)
- XX =
- 1 Starting up the communication device

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- 2 Shutting down the communication device
- 3 File open
- 4 File close
- 5 Read from a stream
- 6 Write to a stream
- 7 Moving the file pointer
- 8 Checking the end of file
- 9 Checking the file error
- 10 Clearing the file error
- 11 Directory open
- 12 Directory close
- 13 Reading directory information
- 14 Moving the directory pointer
- 15 Acquiring the current position of the directory pointer
- 16 Deleting the file
- 17 Renaming the file
- 18 Acquiring the free space of the device
- 19 Executing the command
- 20 Acquiring data by communication parameter item
- 21 Acquiring the device sector size
- 22 Acquiring file information
- 23 Acquiring the OPS file attribute
- 24 Changing the protect status

Error causes (ZZZ is not defined except when YY = 255.)

YY =

- 2 No device, directory or file exists.
- 4 No free space on the disk or disk error
- 8 Operation cannot be executed.
- 9 Communication parameter file read error
- 13 Communication parameter file write error
- 14 Board not installed
- 17 The file or directory already exists, or the file name is incorrect.
- 19 Incorrect device name
- 22 Illegal communication parameter item set value
- 255 Communication error

ZZZ =

- 111 Insufficient buffer in the TCP/IP driver
- 114 Incorrect descriptor passed to the TCP/IP driver
- 115 Incorrect parameter passed to the TCP/IP driver
- 116 No free port in the shared memory
- 117 Not connected
- 123 Abort ignored
- 134 ftp net_drecv_f abnormal end
- 135 ftp net_dsend_f abnormal end
- 144 ftp dread abnormal end

- 151 IP address error
- 153 Interrupt due to timeout
- 154 Disconnection from the remote host
- 155 OS initialization abnormal end on the TCP/IP board
- 156 Packet driver or TCP/IP module initialization abnormal end on the TCP/IP board
- 159 FTP module initialization abnormal end on the TCP/IP board
- 160 Socket interface module initialization abnormal end on the TCP/IP board
- 161 TCP/IP board initialization abnormal end
- 201 FTP Title error
- 202 FTP user certification error
- 203 FTP PORT command error
- 204 FTP LIST command error
- 205 FTP NLST command error
- 206 FTP RETR command error
- 207 FTP STOR command error
- 208 FTP SIZE command error
- 209 FTP QUIT command error
- 210 FTP TYPE BIN command error
- 211 FTP TYPE ASC command error
- 212 FTP CWD command error
- 213 FTP DELE command error
- 214 FTP MKD command error
- 215 FTP RMD command error
- 216 FTP NLST data transfer error
- 217 FTP LIST data transfer error
- 218 FTP GET command error
- 219 FTP PUT command error
- 220 FTP PWD command error

5211 Program Buffer Overflow

The program is too large to be stored in the program buffer.

[Codes]

1-> Program is too large. Or, the subprogram to be registered in the library is larger than the library program buffer size.

2-> MSB is too large.

3-> MSB is unusable because of limited memory size.

Probable faulty location

1) Faulty program

Measures to be taken

1) Create a program within the program buffer size (standard: 30 m).

2) If this alarm occurs when registering the library program, respecify and enlarge the library program buffer size.

5223 Program Buffer Overflow

Character-string

NONE

[Codes]

1 The schedule program selected a program which is larger than the buffer size.

3 The memory size allocated as a buffer for operating the main program is 16.5 KB or smaller.

Measures to be taken

Check the size of each program. Check the maximum tape length that can be run.

5252 Buffer operation mode

When buffer operation is turned ON or during buffer operation in the DNC-B mode, one of the following operations has been attempted.

(common to protocol A, B)

a) NC program batch transfer (disabled only for remote operation)

b) Sequence number search

c) Sequence number search by placing cursor

d) Schedule program sequence No. search

e) Schedule program selection

f) Program selection (only for remote operation method (2) in protocol A)

g) Standard/enlargement scale setting for animation

h) When carrying out program selection in remote operation method (2) in protocol A, main program name or subprogram name has been specified.

[Codes]

1->An attempt to execute a) is made.

2->An attempt to execute b) - f) is made.

3->An attempt to execute h) is made.

4->An attempt to execute g) during remote operation is made.

Probable faulty location

Operation error

5355 Initial Program Load

Character-string

NONE

[Codes]

XXXXYYYY

XXXX: Physical sector number where the above error occurred YYYY: Error number

Measures to be taken

Refer to the error list and follow the measures described at the error number indicated by the code.

5374 DNC-DT Path name

Program selection by DNC-DT failed because of faulty file name. The total characters of device name, path name, and file name exceeds 120. [Object] NONE Character-string NONE [Codes]

- 1 Abnormal file name
- 2: Improper filename extension
- 3: Over 120 characters

Probable faulty location

Command line

Measures to be taken

Review the command line.

5375 DNC-DT Program select

An alarm occurred during program selection by DNC-DT.

[Object]

NONE

Character-string

NONE

[Codes]

XX: application error number 800000YY: communication error number XX=6F: Small buffer size in TCP/IP driver XX=72: Faulty descriptor transferred to TCP/IP driver XX=73: Faulty parameter transferred to TCP/IP driver XX=74: No empty port in the shared memory XX=75: Unconnected XX=7B: Abort command ignored XX=7D: "ftp ms open" abnormal termination XX=7E: "ftp_ms_close" abnormal termination XX=7F: "ftp_ms_type" abnormal termination XX=80: "ftp ms user" abnormal termination XX=81: "ftp_ms_pass" abnormal termination XX=82: "ftp ms acct" abnormal termination XX=83: "ftp ms delete" abnormal termination XX=84: "ftp ms fopen" abnormal termination XX=85: "ftp ms fopen uni" abnormal termination XX=86: "ftp_ms_net_drecv_f" abnormal termination XX=87: "ftp ms net dsend f" abnormal termination XX=88: "ftp_ms_fclose" abnormal termination XX=89: "ftp_ms_abort" abnormal termination XX=8A: "ftp_ms_chdir" abnormal termination XX=8B: "ftp ms mkdir" abnormal termination XX=8C: "ftp ms rmdir" abnormal termination XX=8D: "ftp ms pwd" abnormal termination XX=8E: "ftp ms cdup" abnormal termination XX=8F: "ftp ms dopen" abnormal termination XX=90: "ftp_ms_dread" abnormal termination XX=91: "ftp ms dclose" abnormal termination XX=97: IP address error XX=98: No IP address XX=99: Interruption by time out XX=9A: Disconnection command from the remote host

XX = 9A. Disconnection command norm the remote host XX = 0B: Apparently, terminated initialization of OS (MODE) on TCD/I

XX=9B: Abnormally terminated initialization of OS (MORE) on TCP/IP board

XX=9C: Abnormally terminated initialization of packet driver or TCP/IP module on TCP/IP board

XX=9D: Abnormally terminated initialization of TELNET client module on TCP/IP board

XX=9E: Abnormally terminated initialization of TELNET server module on TCP/IP board

XX=9F: Abnormally terminated initialization of FTP module on TCP/IP board

XX=A0: Abnormally terminated initialization of socket interface module on TCP/IP board

XX=A1: Abnormally terminated initialization of TCP/IP board

YY=13: Incorrect channel number

YY=16: Wrong parameters for initialization; program not started up; improper program name

YY=11: Program already started up

YY=06: Time-out in initialization of TCP/IP board (TCP/IP board inoperable); Device which cannot be renamed; Device of which protect cannot be canceled; Device from which file system information cannot be taken; Unknown (unsupported) command

YY=0D: Communication board not mounted

YY=02: Program not found

YY=08: Execution failed

YY=17: Option L was specified, but a file with the same name existed in MD1: and the file was protected. Therefore, the file could not be deleted.

YY=18: Opening a file failed when a file was created in MD1: by designation of option L.

YY=19: Closing a file failed when a file was created in MD1: by designation of option L.

YY=20: Putting a file failed when a file was created in MD1: by designation of option L.

YY=21: Deleting a file failed when a file was created in MD1: by designation of option L.

Probable faulty location

Application error, faulty file name

Measures to be taken

Correct the communication hardware, software or program selection method.

5426 DNC-DT Path Name

Character-string

NONE

[Codes]

- 1 Abnormal file name
- 2 Abnormal extention
- 3 More than 120 characters

9014 Device name is incorrect.

Wrong device name is entered in the device change window that appears in the window for selecting a main program or a schedule program.

Measures to be taken

Enter a correct device name. Ex.) MD1:, FD0:, FD1:, FD2:, FD3:

9073 Can not Edit. DNC Remote Buffer Mode

Character-string NONE [Codes] NONE

9074 Can not Select Directory Character-string NONE [Codes] NONE

9075 Illegal Device Name. Please Set Only TC:, TCA:-TCH:.

Character-string NONE [Codes]

NONE

SECTION 5 DNC-T/DT PARAMETER SETTING

5-1. Network Options

When this key is pressed, the Network Connections screen appears. Make required settings according to the procedure described below.



Procedure : -

1 Select the icon "Local Area Connection" on the Network Connections screen. Then, select Property from the File menu.



Fig.5-1 Network Connections screen

2 The dialog box "Local Area Connection Properties" appears. Select Internet Protocol (TCP/IP) and click [Properties].

🛨 Local Area Connection Properties 💦 🙁
General Authentication Advanced
Connect using:
Realtek RTL8139 Family PCI Fast Ethernet NIC
Configure
This connection uses the following items:
Microsoft IPv6 Developer Edition
Network Monitor Driver
Install Uninstall Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication
across diverse interconnected networks.
Show icon in notification area when connected
-
OK Cancel
LE32153R0101400010003

Fig.5-2 Local Area Connection Properties dialog box

- **3** Internet Protocol (TCP/IP) Properties dialog appears. Set required parameters according to the network configuration.
 - (1) When using DHCP protocol

Select an option by clicking "Obtain an IP address automatically" and "Obtain DNS server address automatically."

Internet Protocol (TCP/I	P) Properties ? X
General Alternate Configuration	
You can get IP settings assigned auto this capability. Otherwise, you need to the appropriate IP settings.	matically if your network supports ask your network administrator for
Obtain an IP address automatication	ally
\square^{C} Use the following IP address: —	
[P address:	
Sybnet mask:	
Default gateway:	
Obtain DNS server address auto	
Outer the following DNS server as	ddresses:
Ereferred DNS server:	
Alternate DNS server:	
	Ad <u>v</u> anced
	OK Cancel

LE32153R0101400010004

Fig.5-3 Settings when DHCP is used

SECTION 5 DNC-T/DT PARAMETER SETTING

(2) When not using DHCP protocol

Select an option by clicking "Use the following IP address" and "Use the following DNC server address" and set the following parameters:

IP address (*1)	Set the IP address of OSP.
Subnet mask (*1)	Set the subnet address of the network to which the OSP is connected.
Default gateway	Set the gateway address.
Preferred DNS server	Set the preferred DNS server.
Alternate DNS server	Set the alternate DNS server.

(*1): Not omissible

General	
You can get IP settings assigned a this capability. Otherwise, you need the appropriate IP settings.	utomatically if your network supports I to ask your network administrator for
O Obtain an IP address automa	tically
IP address:	192.168.1.100
S <u>u</u> bnet mask:	255 . 255 . 255 . 0
Default gateway:	· · ·
C Obtain DNS server address a	utomaticallu
— ● Use the following DNS server	r addresses:
Preferred DNS server:	
	· · ·
	Ad <u>v</u> anced
	OK Cancel

Fig.5-4 Setting example when DHCP is not used

5-2. Setting DNC-T1

When this key is pressed, the DNC-T Device Setting screen appears. Make the following settings.



(1) Set the following parameters for the connected device.

DEVICE NAME	Set the device name (TCA: to TCH:)
REMOTE PATH	Set the path of the connected device. Click the [>>REF] button and select the shared destination as the connected device.
USER NAME	Set the user name used for connection.
PASSWORD	Set the password used for connection.

DNC Device Setting		×
DEVICE NAME:	TCA:	
REMOTE PATH:	\\domain\share >> <u>R</u> EF	
USER NAME:	user	
PASSWORD:	****	
	<u>A</u> PPLY <u>Q</u> UIT	
	LE32153R0101400020	0002

Fig.5-5 DNC connection destination setting screen

(2) When setting the work area, you can confirm the following parameters. (DNC-DT specification only)

Do not change these parameters because they are fixed for OSP.

DEVICE NAME	HD0: is selected.
REMOTE PATH	G:\HD0 has been set as a path for work area.

DNC Device Setting	×
DEVICE NAME:	HD0:
REMOTE PATH:	G:/HD0 >> <u>R</u> EF
USER NAME:	
PASSWORD:	

Fig.5-6 DNC Work area setting screen

SECTION 6 SYSTEM MANAGEMENT

6-1. Network Connection Method

To connect the OSP with the network, insert the Ethernet cable into the control cabinet through the hole in the cabinet. Then, connect the Ethernet cable to the Ethernet repeater in the cabinet.

6-2. Sharing a Holder in the Host PC

Share the host PC's folder where the part programs are stored.

Procedure : -

1 Right-click the folder to be shared and select [Sharing and Security].



2 Click the [Sharing] tab and select the option [Share this folder]. Press [Apply] button and then [OK].

TCA Properties		
General Sharing Security Customize		
You can share this folder with other users on your network. To enable sharing for this folder, click Share this folder.		
C Do not share this folder C Share this folder		
Share name: TCA		
<u>C</u> omment:		
User limit:		
C Allow this number of users:		
To set permissions for users who access this folder over the network, click Permissions.		
To configure settings for offline access, click Caching		
OK Cancel Apply		

LE32153R0101500020002

SECTION 7 SELECTING DNC-B

7-1. Operation

Press the DNC key on the additional panel. The following function keys appear.



To select DNC-B

Press the function key [F3] (DNC-B VALID). When DNC-B becomes valid, the upper left lamp lights.



To select DNC-DT

Press the function key [F4] (DNC-DT VALID).



It is necessary to re-supply the power after selecting DNC-B or DNC-DT.

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This manual may be at variance with the actual product due to specification or design changes.

Please also note that specifications are subject to change without notice. If you require clarification or further explanation of any point in this manual, please contact your OKUMA representative.