

JIS

JAPANESE INDUSTRIAL STANDARD

Vocabulary for Numerically Controlled Machine Tools

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In the event of any doubt arising,
the original Standard in Japanese is to be final authority.

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Vocabulary for Numerically Controlled
Machine Tools

B 0181-1986

1. Scope

This Japanese Industrial Standard specifies the main terms to be used in relation to the numerically controlled machine tools.

Remarks 1. This Standard includes the terms for numerically controlled electric discharge machine tools.

2. The corresponding English terms in this Standard are for informative reference.

2. Classification

The terms relating to the numerically controlled machine tools shall be classified as follows:

- (1) Terms relating to numerically controlled machine tools in general
- (2) Terms relating to programming
- (3) Terms relating to information media and coding
- (4) Terms relating to control systems and their characteristics
- (5) Terms relating to machines and their characteristics
- (6) Terms relating to accuracy

3. Terms and Definitions

The terms and their definitions shall be as follows:

- Remarks 1. The number of a term shall be represented by 3 digits. The initial digit designates the classification and the following two digits are a serial number in the same classified group.
2. In the case where two terms represent the same meaning, use in priority according to the order.
 3. For the terms with ambiguous readings, proper readings are shown in parentheses under the particular terms.
 4. The terms underlined in text designate those specified in this Standard.

Corresponding International Standard and Reference Standards: See page 25.

(1) Terms Relating to Numerically Controlled Machine Tools in General

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
101	数値制御, NC	SŪTI SEIGYO, ENU SĪ	Control commanding the tool path for work, processes of operations necessary for working, etc. by the corresponding numerical information.	numerical control, NC	
102	CNC	SĪ ENU SĪ	Numerical control with built-in computer to perform some or all of basic functions.	computerized numerical control, CNC	
103	DNC	DĒ ENU SĪ	Numerical control stored with part programs or machine programs of a numerical controlled machine tool or tools in a common memory and equipped with function to distribute necessary program to the machine on demand of numerically controlled machine tools.	direct numerical control, DNC	
104	位置決め制御	ITIGIME SEIGYO	Control intending only that the tool may reach the required position for workpiece and performing no control of tool path in moving from a position to next position.	positioning control, point to point control	
105	輪郭制御 (りんかくせいぎょ)	RINKAKU SEIGYO	Method to control incessantly the path and velocity of tool to workpiece by relating simultaneously the motions of two or more shafts of numerically controlled machine tools.	contouring control	
106	シーケンス制御	SĪKENSU SEIGYO	Control in which every step of control occurs successively according to the predetermined order.	sequence control	

No.	Term (Japanese character)	Reading	Definition	Informative reference English equivalent
107	プログラマブルコントローラ PC	PURUGURAMABURU KONTORŌRA, PI SĪ	Sequence control equipment of stored program method. Some of these controllers include not only logic operations but also arithmetic operations.	programmable controller, PC
108	フィードバック制御	FĪDOBAKKU SEIGYO	Control in which the controlled variable is compared with the desired value by feedback to perform a corrective action so that they may be in accord. Remark: The feedback designates that a closed loop is formed to return the signal on the output side to the input side.	feedback control
109	サーボ機構	SĀBO KIKŌ	Mechanism which takes the position, azimuth, orientation, etc. of a body as controlled variables to control so that they may follow any changes of desired values. Remark: In the servo mechanism, the <u>feedback control</u> is ordinarily conducted.	servo mechanism
110	適応制御	TEKIŌ SEIGYO	A control method that detects the changes of conditions in working to hold the defined working condition.	adaptive control
111	プレイバック	PUREI BAKKU	To reproduce the operation by instructing manually the tool path, necessary operations etc. for workpiece to store in the numerical control device.	play back

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
112	検出器、 センサ	KENSYUTUKI, SENSA	An apparatus which detects a physical quantity such as position, velocity, etc. and converts to a value corresponding to this physical quantity.	sensor	
113	指令	SIREI	An instruction to initiate a motion or a function.	command	
114	レトロフィット	RETOROFITTO	To remodel the machine tool other than a numerically controlled machine tool to a numerically controlled machine tool, or to remodel an old fashioned numerically controlled machine tool.	retrofit, retrofitting	

(2) Terms Relating to Programming

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
201	プログラミング	PUROGURAMINGU	This designates a process to prepare a part program. There are the <u>manual programming</u> and <u>automatic programming</u> .	programming	
202	パートプログラム	PĀTO PURO-GURAMU	A program to execute the working of specified part by a numerically controlled machine tool. As for this program, there are one written in a program language easy to understand by man and one written according to the <u>tape format</u> .	part program	
203	マニュアルプログラミング	MANYUARU PUROGURAMINGU	To prepare a <u>machine program</u> manually without use of computer.	manual programming, manual part programming	
204	自動プログラミング	ZIDŌ PURO-GURAMINGU	To transform the part program written in program language into a <u>machine program</u> using a computer.	automatic programming, computer part programming	
205	マシンプログラム	MASIN PURO-GURAMU	A program written according to <u>tape format</u> . Input directly in the numerical control device to control the numerically controlled machine tool.	machine program	
206	プロセスシート	PUROSESU SĪTO	Sheet in which a machine program is written according to <u>tape format</u> at <u>manual programming</u> .	process sheet	

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
207	メインプロセッサ	MEIN PUROSESSA	A computer program which carries out the input data of the <u>part program</u> , executes geometrical calculation, determine <u>tool path</u> and prepares the <u>CL data</u> independent on the particular <u>numerically controlled machine tool</u> .	main processor, general purpose processor	
208	ポストプロセッサ	POSUTO PURESSA	A computer program which prepares a <u>machine program</u> adapted to a definite <u>numerically controlled machine tool</u> by taking the <u>CL data</u> output from the <u>main processor</u> .	post processor	
209	アブソリュートプログラミング	ABUSORYŪTO PUROGURAMINGU	Method of programming with using <u>absolute dimensions</u> .	absolute program- ming	
210	インクレメンタルプログラ ミング	INKUREMENTARU PUROGURAMINGU	Method of programming with using <u>incremental dimensions</u> .	incremental program- ming	
211	アブソリュートディメンション	ABUSORYŪTO DIMENSYON	Values which specify the position with coordinate values of a coordinate system.	absolute dimension	
212	インクレメンタルディメン ション	INKUREMENTARU DIMENSYON	Values which specify the position with incremental values from the immediately prior position.	incremental dimension	
213	工具経路	KŌGU KEIRO	Path described by the motion of a specific point on a tool.	tool path	
214	CLデータ	SĪ ERU DĒTA	Data of the <u>tool path</u> determined by the <u>main processor</u> in a system of <u>automatic program- ming</u> .	cutter location data, CL-data	

(3) Terms Relating to Information Media and Coding

No.	Term (Japanese character)	Reading	Definition	Informative reference	
				English equivalent	
301	数値制御テープ, NC テープ	SŪCHI SEIGYO TĒPU, ENU SĪ TĒPU	A punched tape recorded with the machine program to be applied to the numerical control device as input to control the numerically controlled machine tool.	numerical control tape, NC tape	
302	テープフォーマット	TĒPU FŌMATTO	Determined arrangement of data on the numerical control tape.	tape format	
303	ブロック	BUROKKU	A set of words separated by a function character indicating EOB in machine program.	block	
304	ブロック長	BUROKKU TYŌ	Total number of characters in one block.	block length	
305	ブロックフォーマット	BUROKKU FŌMATTO	The defined arrangement of words and characters in a block.	block format	
306	ワードアドレスフォーマット	WĀDO ADORESU FŌMATTO	A tape format in which each word contains a character for address to discriminate.	word address format, address block format	
307	固定ブロックフォーマット	KOTEI BUROKKU FŌMATTO	A tape format in which the total number of words, total number of characters and the sequence of words in a block are definite.	fixed block format	
308	可変ブロックフォーマット	KAHEN BUROKKU FŌMATTO	A tape format in which the total number of words and total number of characters in a block are not fixed.	variable block format	

