DDCS V3.1 V3 **VER:2021-09-17-112NOR**

Para. Mark	Parameter Definition	Default Value	PVD Setting	Parameter Unit	Parameter Scope	Notes
1) Top Parameters (Totally 3 items)						
#5	Minimum log radius of 4 axis mac	5	5	mm	3~999.999	
#6	A axis rotate reference axis	3	3		0-3	0=X axis,1=Y axis, 2=Z axis,3=not rotate
#104	A axis optimal path when G0 run	0	0		1/0	0=No,1=Yes
#115	Coordinate unit selection	0	0	BOOL	0/1	0：mm；1：inch
#2047	IO output M command Execution	software pro	software pro			
2) Motor Parameters（Totally 16 items）						
#33	Motor start speed	50	50	mm/min	0~999	Motor Speed of first step
#34	X axis pulse equivalency	2560	199	pulse/mm	50~99999.000	
#35	Y axis pulse equivalency	2560	199	pulse/mm	50~99999.000	The Pulses needed for feeding 1mm
#36	Z axis pulse equivalency	2560	199	pulse/mm	50~99999.000	
#38	A axis pulse equivalency	640	33.333	pulse/mm	50~99999.000	
#39	A axis pulse unit	0	1	BOOL	1/0	0=pulse/deg,1=pulse/circle
#40	AB axis Selection	0	0	BOOL	1/0	0=A axis, 1=B axis
#390	X axis DIR signal Electric Level	0	0	BOOL	1/0	1=high, 0=low
#391	Y axis DIR signal Electric Level	1	0	BOOL	1/0	1=high, 0=low
#392	Z axis DIR signal Electric Level	1	0	BOOL	1/0	1=high, 0=low
#393	A axis DIR signal Electric Level	0	0	BOOL	1/0	1=high, 0=low
#416	Time interval between DIR & PUL	7000	10	ns	0~9999.000	Direction is ahead of Pulse
#418	X axis Pulse signal Electric Level	0	0	BOOL	1/0	
#419	Y axis Pulse signal Electric Level	0	0	BOOL	1/0	1=high,0=low
#420	Z axis Pulse signal Electric Level	0	0	BOOL	1/0	
#421	A axis Pulse signal Electric Level	0	0	BOOL	1/0	
3) Manual Control Parameters (Totally 20 items)						
#41	X Axis max speed in M_Ctrl mode	16000	10000	mm/min	99~99999	
#42	Y Axis max speed in M_Ctrl mode	16000	10000	mm/min	99~99999	
#43	Z Axis max speed in M_Ctrl mode	16000	10000	mm/min	99~99999	Limits the speed if using FRO to change the speed
#44	A Axis max speed in M_Ctrl mode	16000	2000	deg/min	99~99999	
#45	X axis start Acc in M_Ctrl mode	9	600	mm/s2	1~9999	
#46	Y axis start Acc in M_Ctrl mode	300	600	mm/s2	1~9999	X,Y,Z,A axis Initial Accelera- tion Speed in Manual control mode.
#47	Z axis start Acc in M_Ctrl mode	300	600	mm/s2	1~9999	
#48	A axis start Acc in M_Ctrl mode	300	600	deg/s2	1~9999	
#100	X axis manual control speed	3000	4000	mm/min	99~99999	
#101	Y axis manual control speed	3000	4000	mm/min	99~99999	X,Y,Z,A axis Feed Speed in Manual control mode.
#102	Z axis manual control speed	2000	4000	mm/min	99~99999	
#103	A axis manual control speed	12000	4000	deg/min	99~99999	
#263	X axis stop Acc in M_Ctrl mode	600	600	mm/s2	9~9999	
#264	Y axis stop Acc in M_Ctrl mode	600	600	mm/s2	9~9999	X,Y,Z,A axis Deceleration in Manual control mode.
#265	Z axis stop Acc in M_Ctrl mode	600	600	mm/s2	9~9999	
#266	A axis stop Acc in M_Ctrl mode	600	600	deg/s2	9~9999	
#2020	Jog-1 moving distance	0.01	0.010	mm	0~999	
#2021	Jog-2 moving distance	0.1	0.100	mm	0~999	4 kinds Jog Moving distance
#2022	Jog-3 moving distance	1	1.000	mm	0~999	
#2023	Jog-4 moving distance	10	10.000	mm	0~999	
4) Automatic Control Parameters（Totally 16 Items）						
#15	Speed Selection	1	1	BOOL	1/0	0: G code; 1:default
#76	default operation speed	3000	99999	mm/min	10~99999	
#77	maximum speed	12000	99999	mm/min	99~99999	The Max. feeding speed
#78	Z axis lifting protection speed	3000	800	mm/min	99~99999	
#79	Z axis dropping protection speed	3000	800	mm/min	99~99999	Limited speed only for Z axis
#80	G0 Speed	3000	1500	mm/min	99~99999	G0 Feeding Speed
#82	Z axis safe height	5	15	mm	0~99	When finish the job Z moves to safety height
#89	Z axis back distance when pause	5	15	mm	0~99	cannot be negative value
#99	operation acceleration	300	300	mm/min2	9~9999	It is recombination Acc Speed
#113	Arc interpolation algorithm select	0	1	BOOL	1/0	0: Hard algorithm ； 1：Soft algorithm
#124	Circular centrifugal acceleration	0	0	mm/min2	0~9999	It is Recombination Acc Speed
#125	Circular speed adjustment factor	0.1	.4	mm/min2	0.1~2.0	Circular Speed=F*#125
#435	X axis protection speed	99999	99999	mm/min	99~99999	Protection Speed at X axis, protection by soft algorithmX
#436	Y axis protection speed	99999	99999	mm/min	99~99999	Protection Speed at Y axis, protection by soft algorithmX
#2031	Uniaxial acc is limited by M_Ctrl s	0	0	1/0	1=yes, 0=no	Uniaxial acc speed protection
#2037	Is FRO valid for G0?	0	0	1/0	1=yes, 0=no	
#2041	G53/G153 function interchange	0	0	1/1	1=yes, 0=no	
#2043	subrutine programming mode		Disable			
5) Coordinate System Parameters（1 Item）						
#16	current coordinate system	1	0	BOOL	0~6	0~5: G54~G59, 6: Mach

6) Spindle Parameters（Totally 9 Items）

#98	maximum spindle speed	24000	12450	rpm	99~99999	Spindle PWM or voltage signal full range is corresponding to speed
#219	If Stop Spindle when pause	0	1	BOOL	1/0	0=No， 1=Yes
#220	Spindle speed selection	0	0	BOOL	1/0	0:by G code,1:default speed
#221	default spindle speed	5777	6000	rpm	10~99999	can be defined
#222	Spindle commands M3/M5 respo	1	yes	BOOL	1/0	0:not response,1:response
#224	Spindle M3/M4/M5 response Dur	3	1	s	0~9	
#227	Spindle switch Active level	1	1	BOOL	1/0	0=Low， 1=High
#422	definition of PWM Electric level	0	0	BOOL	1/0	0=Low， 1=High
#433	PWM rising rate from 0V to 10V	0	1000	BOOL	0~65535	The acceleration time to full speed is #433*0.0005s
#2045	M4 prot definition		0	BOOL	1/0	0=No， 1=Yes

7） Output Signal Parameters（Totally 8 items）

#108	M Bus IO command response	0	0	BOOL	1/0	0=No response ； 1=response
#109	M Bus IO default status	0	0	BOOL	0~4294967295	
#110	M Bus IO Initialization strategy	0	0	BOOL	1/0	0=Mode 1 ； 1=Mode 2
#223	response of M code(M8/M9,M10	1	1	BOOL	1/0	0=No response ； 1=response
#225	delay time of M8/M9	1	1	S	0~9	
#226	delay time of M10/M11	1	1	S	0~9	
#228	M8/M9 active electric level	1	1	BOOL	1/0	0=Low， 1=High
#229	M10/M11 active electric level	1	1	BOOL	1/0	0=Low， 1=High

8） Home Parameters（Totally 32 Items）

#49	HOME times	1	2	BOOL	1~5	
#50	HOME signal Effective when HOM	0	0	BOOL	1/0	0：Ignore HOME ； 1：Continue HOME
#51	Enable limit signal when HOME	0	0	BOOL	1/0	1:Disable ； 0：Enable
#52	Enable X Home Searching functio	1	1	BOOL	1/0	0：Disable ; 1：Enable
#53	Enable Y Home Searching functio	1	1	BOOL	1/0	0：Disable ; 1：Enable
#54	Enable Z Home Searching functio	1	1	BOOL	1/0	0：Disable ; 1：Enable
#55	Enable A Home Searching functio	1	1	BOOL	1/0	0：Disable ; 1：Enable
#56	X axis Home speed	1600	1200	mm/s	99~99999	
#57	Y axis Home speed	1600	1200	mm/s	99~99999	Signal Axis Homing Speed
#58	Z axis Home speed	1600	1200	mm/s	99~99999	
#59	A axis Home speed	800	2000	mm/s	99~99999	
#60	X axis Home signal Electric Level	0	0	BOOL	1/0	
#61	Y axis Home signal Electric Level	0	0	BOOL	1/0	0=Low， 1=High
#62	Z axis Home signal Electric Level	0	0	BOOL	1/0	
#63	Z axis Home signal Electric Level	0	0	BOOL	1/0	
#64	X axis Home direction	0	0	BOOL	1/0	
#65	Y axis Home direction	0	0	BOOL	1/0	0：Reverse direction home (--) 1：Forward direction home (++)
#66	Z axis Home direction	0	1	BOOL	1/0	
#67	A axis Home direction	0	0	BOOL	1/0	
#83	X axis back distance after Home	10	0	mm	0~99	After homing, each axis needs to move away from the home switch f
#84	Y axis back distance after Home	10	0	mm	0~99	
#85	Z axis back distance after Home	10	0	mm	0~99	
#86	A axis back distance after Home	0	0	deg	0~360	
#116	X-axis zero signal source select	0	0	mm	0~99	
#117	Y-axis zero signal source select	0	0	mm	0~99	0：HOME signal ；
#118	Z-axis zero signal source select	0	0	mm	0~99	1：Forward Direction limit signal ； 2：Reverse Direction limit signal
#119	A-axis zero signal source select	0	0	mm	0~2	
#126	Home reminder after booting	0	1	BOOL	0/1	0:No ； 1:Yes
#2024	X axis Home offset	0	0	mm	-999~999	
#2025	Y axis Home offset	0	0	mm	-999~999	After finishing Homing,the new position can be set as a value(off- set
#2026	Z axis Home offset	0	0	mm	-999~999	
#2027	A axis Home offset	0	0	deg	-999~999	
#2078	Home sequence		ZXYA			

9) Probe Parameter（Totally 20 items）

#68	Tool Setting function mode	0	1	BOOL	1/0	0: Disable; 1:mode 1; 2: mode 2; 3: mode 3
#69	Thickness of tool sensor	1	0	mm	0~200	
#70	Probe signal electric level	0	0	BOOL	1/0	0=Low， 1=High
#71	Initial tool's position	0	0	BOOL	1/0	0：current position ； 1：fixed position
#72	Initial probe position on X axis	0	0	mm	-19998	
#73	Initial probe position on Y axis	0	0	mm	-19998	Initial Postion of the probe sensor in Mach Coordinate
#74	Initial probe position on Z axis	0	0	mm	-19998	
#75	back distance after probe	5	5	mm	-19998	
#2000	Cutter diameter	6	6	mm	0~999	Cutter/probe sensor diameter
#2001	Tool plate thick for X	0	0	mm	0~999	
#2002	Tool plate thick for Y	0	0	mm	0~999	The thickness of the block which used as Probe Plate.
#2003	Tool plate thick for Z	0	0	mm	-999~999	
#2004	shift of X axis before probed	20	20	mm	-999~999	
#2005	shift of Y axis before probed	-20	-20	mm	-999~999	This parameter group is used for next probe move
#2006	Z position before X(Y)-axis probec	-5	-5	mm	-999~999	

#2007	Back distance when the tool touc	1	1	mm	0~999	
#2008	Back distance when the tool touc	1	1	mm	0~999	
#2009	Back distance when the tool touc	1	1	mm	0~999	
#2010	center of tool plate	9	9	mm	0~999	
#2011	Probe feedrate	20	20	mm/min	10~999	

10) Hard Limit Parameters（Totally 16 items）

#400	Limited siganl active of X--	1	1	BOOL	1/0	0：Disable; 1：Enable
#401	Limited siganl active of Y--	1	1	BOOL	1/0	0：Disable; 1：Enable
#402	Limited siganl active of Z--	1	1	BOOL	1/0	0：Disable; 1：Enable
#403	Limited siganl active of A--	1	1	BOOL	1/0	0：Disable; 1：Enable
#404	Limited siganl active of X++	1	1	BOOL	1/0	0：Disable; 1：Enable
#405	Limited siganl active of Y++	1	1	BOOL	1/0	0：Disable; 1：Enable
#406	Limited siganl active of Z++	1	1	BOOL	1/0	0：Disable; 1：Enable
#407	Limited siganl active of A++	1	1	BOOL	1/0	0：Disable; 1：Enable
#408	Effective electric level of X--	0	0	BOOL	1/0	0=Low; 1=High
#409	Effective electric level of Y--	0	0	BOOL	1/0	0=Low; 1=High
#410	Effective electric level of Z--	0	0	BOOL	1/0	0=Low; 1=High
#411	Effective electric level of A--	0	0	BOOL	1/0	0=Low; 1=High
#412	Effective electric level of X++	0	0	BOOL	1/0	0=Low; 1=High
#413	Effective electric level of Y++	0	0	BOOL	1/0	0=Low; 1=High
#414	Effective electric level of Z++	0	0	BOOL	1/0	0=Low; 1=High
#415	Effective electric level of A++	0	0	BOOL	1/0	0=Low; 1=High

11) Software limit Parameters（Totally 9 items）

#374	Enable software limit	0	0	BOOL	1/0	0：Disable; 1：Enable
#375	Soft-limited postion value of X--	100	0	mm	-9999~9999	The group Parameter will trigger the limit signal of negative direction
#376	Soft-limited postion value of Y--	-400	0	mm	-9999~9999	The limit values refer to the machine coordinates, not the work piece
#377	Soft-limited postion value of Z--	-20	-120	mm	-9999~9999	
#378	Soft-limited postion value of A--	0	100	deg	-9999~9999	
#379	Soft-limited postion value of X++	100	400	mm	-9999~9999	The group Parameter will trigger the limit signal of Positive direction.
#380	Soft-limited postion value of Y++	400	300	mm	-9999~9999	
#381	Soft-limited postion value of Z++	20	0	mm	-9999~9999	
#382	Soft-limited postion value of A++	0	10	deg	-9999~9999	
#2030	Soft-limited stop mode	0	0			0：deceleration; 1：emergency
#2032	Soft-limited pre-judgment coeffic	1	1		0.5~2.0	
#2033	Soft-limited pre-judgment conffic	1	1		0.5~2.0	
#2034	Soft-limited pre-judgment conffic	1	1		0.5~2.0	When triggered the soft limit,in order to control the stop speed,we s
#2035	Soft-limited pre-judgment conffic	1	1		0.5~2.0	
#2038	Enable software limit alarm in the idle state		1			0:No ； 1:Yes

12) MPG Parameters（Totally 8 Items)

#428	Enable the ESTOP signal on MPG	1	1		1/0	0: Disable,1: Enable
#429	Electric level of ESTOP on MPG	0	0		1/0	0=Low; 1=High
#430	MPG interface type	1	1		1/0	0：Seria ； 1：Standard
#431	MPG Precision	0.004	0.01		0.001~0.01	This value is bigger,each step of the handwheel is bigger
#432	Standard MPG signal Electric Leve	1	0		1/0	0=Low; 1=High
#434	A/B phase signal level on MPG	0	0		1/0	0=Low; 1=High
#448	MPG control mode	0	1		1/0	0=Open; 1=Close
#2028	The % of the change in value per ;	10	10		1~100	The change rate of FRO&SRO by MPG the value is higer,the change is
#2044	The Initial State of the MPG		0			0:No ； 1:Yes

13) External Button Parameters（Totaly 7 items）

#423	Enable signal of extended ESTOP	1	1		1/0	0=Disable 1 ； 1=Enable
#424	Electric level of ext-ESTOP signal	0	0		1/0	0=Low， 1=High
#425	Enable extended START&PAUSE	1	1		1/0	0=Disable 1 ； 1=Enable
#426	Electric level of Ext-key1	0	0		1/0	0=Low， 1=High
#427	Electric level of Ext-key2	0	0		1/0	0=Low， 1=High
#446	Define the Function of Ext-key1	0	0		0~3	0: START; 1: Find Middle; 2: "extkey1.nc" ; 3: JOG-D
#447	Define the Function of Ext-key2	0	0		0~3	0: PAUSE; 1: ZERO; 2: "extkey2.nc" ; 3: S/P ctrl
#2046	extended function key filter coeffient		0			

14) Backlash Parameters（Totally 8 Items）

#437	Enable of X axis backlash	0	0	BOOL	1/0	0:Disable,1:Enable
#438	Enable of Y axis backlash	0	0	BOOL	1/0	0:Disable,1:Enable
#439	Enable of Z axis backlash	0	0	BOOL	1/0	0:Disable,1:Enable
#440	Enable of A axis backlash	0	0	BOOL	1/0	0:Disable,1:Enable
#441	X axis backlash distance	0	0	mm	0~0.999	
#442	Y axis backlash distance	0	0	mm	0~0.999	Set the backlash return as you need for each axis.
#443	Z axis backlash distance	0	0	mm	0~0.999	Tip: experiment with the settings and check the results
#444	A axis backlash distance	0	0	deg	0~9.999	

15) Tool Offset（Totally 32 Items）

#267	H00 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	

#268	H01 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#269	H02 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#270	H03 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#271	H04 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#272	H05 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	This H group is for
#273	H06 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	Tool Length Compensation
#274	H07 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#275	H08 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#276	H09 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#277	H10 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#278	H11 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#279	H12 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#280	H13 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#281	H14 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#282	H15 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#283	D00 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#284	D01 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#285	D02 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#286	D03 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#287	D04 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#288	D05 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#289	D06 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#290	D07 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#291	D08 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#292	D09 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#293	D10 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#294	D11 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#295	D12 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#296	D13 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#297	D14 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	
#298	D15 Tool Offset	0	0	BOOL	-999.999 ~ 999.999	

16) System Setting（Totally 12 Items）

#1	Language setting	1	1	BOOL	0~2	0：Eng； 1：中国； 2：Русский
#2	Display response during working	4000	4000	BOOL	400-10000	If just normal size the value 400 is ok;but if very tiny lines with big file
#3	Function of tool path key	0	0	BOOL	0/1	0：tool path； 1：Try cutting
#88	Enable of beep	1	1	BOOL	0/1	0: Disable; 1:Enable
#114	Jog support in continuous mode	2	2	BOOL	0/1	0：Mode 1；1：Disable；2：Mode 2
#120	U disc Partition type	with partition				
#218	Cycle Start key mode selection	0	0	BOOL	0/1	0：Pause start；1：Restart
#238	IO input filter time width	10	20	ms	0.001-9999.999	
#250	Real track paint enable	1	1	s	0/1	0: disable; 1：enable
#253	Track paint mode	0	1	BOOL	1/0	0: Statue Mode; 1: Line Mode
#495	Interpolation period	0.005	0.005	s	0.002-0.010	
#2029	color reversal	0	0	BOOL	0/1	0: No; 1: Yes
#2039	Specified line scan increment	0				