

Acorn v4.6 CNC12 Machine Configuration parameters:**1-27-21**

Acorn specific CNC12 parameters have been created to mostly facilitate Acorn Wizard functionality and introduce new features and options to Acorn above and beyond the “stock” CNC12 parameters. Below is a list of Acorn CNC12 specific parameters most are not covered in the v4.14 CNC12 Mill and Lathe operator manuals. Keep in mind this is not an exclusive list, there are many “stock” Mill and Lathe CNC12 parameters that are documented in the v4.14 operators manuals that also apply to Acorn so be sure to check them out (Mill Operator Manual Chapter 15.3 and Lathe Operator Manual Chapter 12.3) for the complete list of stock CNC12 parameters. Keep in mind most Acorn users will not be changing these values manually unless they are configuring an ATC as the v4.20 Wizard will automatically set most of these parameters based on the selection made in the Acorn Wizard.

CNC12 Parameter Number	Parameter Notes
P48	LATHE: Set g98 as default mode if set to 1, if set as 0 then g99 is default mode. See operator manual for info on G98 and G99
P148	Keyboard Jogging controls.
P150	Run Time Graphics (RTG) ON, with CNC12 start up. Set by Acorn Wizard, also has other functionality choices not set by Acorn Wizard.
P153	Disable/Enable Probe Protection when using VCP jogging or keyboard jogging. Default is ON =1
P160	Enhanced ATC Default 0: 0 = Off, 1 = Nonrandom, 2 = Random
P161	Max # of Tool Bins. Default 0. See ATC documentation for more information. https://centroidcncforum.com/viewtopic.php?f=63&t=1340
P218	USB MPG. if non-zero value, start UsbMpg Pipe client with CNC12
P219	VCP options. if non-zero value, start VCP with CNC12
P302	Used by Acorn to check the last state of RTG. So, for example if P150 is set to RTG ON, but user turns off RTG in the RUN menu of CNC12 P320 keeps track of that so next time CNC12 starts it returns to the user selected state.
P400	Allow cycle start in run menu. 0= disabled (disallow), 1= enabled (allow)
P401	Forget last loaded job on cnc12 startup. 0= disabled (remember last g code program ran), 1= enabled (forget last g code program ran), set by Acorn Wizard
P403	Disable keyboard jogging legend. 0= Display legend, 1= hide legend
P404	TT-1 probe automeasure memory bit used by CNC12 to allow both the TT and probe to be used at the same time.
P405	Tool Touch Off Type. 0=Mechanical, 1= Conductive, 2= TT-1, 3= TT-2. Set by Acorn Wizard
P406	Probe State When Tripped. 0 = Closed, 1 = Open, Set by Acorn Wizard
P407	Tool Touch Off State When Tripped. 0 = Closed, 1 = Open, Set by Acorn Wizard
P409	Probe Type. 0=mechanical, 1= conductive, 2= DP4, Set by Acorn Wizard
P410	Display Probing reminder message to plug in the probe and make sure it is working before each probing cycle. 0= disabled, 1= enabled.
P411	Wireless MPG model type selection. 0= CWP-4, 1= WMPG-4
P412	Spindle Back Gear Mode, 0= Disabled, 1= Enabled
P413	Park Button Override (Uses park.mac) 0= disabled, 1= Enabled. Setup by Wizard.
P414	Home File Type. 0= Default, 1= Custom, 2= Paired Axes Auto Squaring, 3= Custom Paired Axes Auto Squaring.
P415	Ether1616 Configuration Bits, Set by Acorn Wizard. Default 0: +1 A0, +2 A1, +4 A2, +8 A3, +16 A4, Set by Acorn Wizard
P416	Used by wizard to set the Spindle Inhibit mode for probe and Tooltouch. 0=No Spindle Inhibit, 1=Probe and TT inhibits spindle, 2 = Tooltouch only inhibits, 3 = Probe only inhibits.
P417	G code preview when the G code file is loaded. if set to 1
P418	Keyboard jogging: Enter key = cycle start if set to 1
P420	Enable spindle Analog output range to be 0-5 vdc if set to 1
P421	Clean Filter Message Timer in days 0= OFF, 1= 1 day, 30 = 30 days, etc..
P500	Acorn Axis Pairing Mode, Set by Acorn Wizard. Set by Acorn Wizard
P501	Acorn Axes Squaring Auto or Manual. Set by Acorn Wizard
P502	Acorn Axes Squaring Distance, Set by Acorn Wizard

P503	Acorn Axes Squaring, Set by Acorn Wizard
P504	Acorn Axes Squaring Deadband, Set by Acorn Wizard
P505	Acorn Axes Squaring Salve Input, Set by Acorn Wizard
P506	Acorn Axes Squaring Master Input, Set by Acorn Wizard
P507	Acorn Axes Squaring Slave Axis, Set by Acorn Wizard
P508	Acorn Axes Squaring Master Axis, Set by Acorn Wizard
P800	Acorn DB25 Map Enable, Set by Acorn Wizard
P801-804	Acorn Step 1-4. DB25 Pin Mapping, Set by Acorn Wizard
P805-808	Acorn Dir 1-4. DB25 Pin Mapping, Set by Acorn Wizard
P809-812	Acorn PLC 1-4DB25 Pin Mapping, Set by Acorn Wizard
P813	Acorn DB25 Header Selection, Set by Acorn Wizard
P814	Acorn pwm output frequency
P815	Acorn pwm options: 1st bit is inverting output, 2nd bit is Max S set to 100, 3rd bit is apply floor only during velocity adjust
P817	Acorn pwm duty cycle floor (min. PWM that is takes to turn Laser on) 0-50
P820	Machine Type ***Currently Not Used***Mill = 0, Lathe = 1, Router = 2, Plasma = 3, Waterjet = 4, (future) etc...
P821	Slaved Home Pair, Set by Acorn Wizard
P822	Home All Input, Set by Acorn Wizard. Limit used for HomeAll Function.
P823	ZRI Input ***Currently Not Used*** Defines the limit used for all ZRI signals.
P824	Limit All Input set by Acorn Wizard. Limit used for all limit switches wired to same input.
P826-829:	Tool Turret Position Bit 1-4, refer to Tool Turret setup documentation. refer to Tool Turret setup documentation here. https://centroidcncforum.com/viewtopic.php?f=63&t=1340
P830	: ATC Type ***Currently not used, will be needed when ATC types are combined into 1 unified PLC***. 0 = none. 1 = incremental, 2 = incremental w/sync, 4 = absolute 3bit, 8 = absolute 4bit, 16 = switched reverse, 32 = self reversing
P831-846	Tool Turret Position 1-16, refer to Tool Turret setup documentation. https://centroidcncforum.com/viewtopic.php?f=63&t=1340
P848	Turret Reverse Timer, Default = 1500, refer to Tool Turret setup documentation.
P849	Tool Change Time Out Timer Default =10, refer to Tool Turret setup documentation.
P850	Time Delay to Start Counting, refer to Tool Turret setup documentation.
P851	ATC Time Before Reversing, refer to Tool Turret setup documentation.
P855	MPG Performance Mode. Set by Acorn Wizard in MPG menu
P856	Jogging Option at start up. Set by Acorn Wizard, in CNC control preference menu. Bit wise. Choose Jogging preference on start up in Acorn Wizard.
P857	: Z Following Options ***Currently Not Used***
P890	LightStack lights. Parameter 890 toggles the lights from being solid to flashing when activated. P890=1 Solid when activated P890=0 Blinking when activated
P941-946	Limit Inputs 1-6. used by PLC program to determine which inputs to invert when using the VCP Limit Defeat Button.
P960	Divider for Charge Pump Freq. (hz) ex. 1,2000000/ param960= charge pump freq. Example: If param 960 = 96 charge pump freq is 12,500 hz
P962	USB Jogging Control. 0= PC Keyboard Jogging with Legend, =1 Disable PC keyboard Legend and use X keys or other USB jogging device, 2= use Contour Shuttle
P961	Set by Acorn Wizard, Step direction and enable inversion. Bit wise parameter to set by Wizard in Advanced tab to invert Step, Direction and Enable.
P964-967	Used by Acorn Paired and Axes Autosquaring. Set by Acorn Wizard
P968	: Acorn Step and Direction Frequency in (Hz). Allowed Values: 0 = 200000 Hz, 1 = 1200000 Hz, 2 = 600000 Hz, 3 = 400000 Hz, 4 = 300000 Hz 5 = 240000 Hz, 6 = 200000 Hz, 12 = 100000 Hz, ; 30 = 40000 Hz, 60 = 20000 Hz, 100 = 12000 Hz
P975	Time Between Tool Positions. This is for the Time-based-Lathe turrets. The time it takes to go from tool to tool. only used for basic Time Based Tool Changer Turrets.
P985	Door Safety Interlock Mode selection. 0=Disabled, 1= Slowjog while door open, =2 system stop while door open

P990	Spindle Brake Timer (ms). Default is 250ms, Spindle Brake delay in milliseconds us used to delay the spindle brake to avoid vfd faults. Acceptable parameter value range is 1-3000, A value of 0 defaults the delay time to 250 ms, typical values are 150 to 500 ms.
P991	Axis motor Drive Fault Timer (ms)Set by Acorn Wizard
P992	Chuck Timer (ms). Used to Turn off Outputs if no inputs selected or used as a fault out timer
P994	Partchute Timer (ms) / Spindle Lock Timer (ms) ***Not Implemented Fully***. Used to turn off outputs if no inputs selected or used as a fault out timer
P995	Cut Off Timer (ms) . Used to Turn off Outputs if no inputs selected or used as a fault out timer

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