

# FOCUS ON:

## SERVO Drill Press Model -708 Quill Feed

### What is the -708 Programmable Micro-Driller? What can a microprocessor-controlled quill feed do for me?

The -708 is a factory installed programmable control for Servo's manual miniature drill presses. It allows you to automate the process of hole drilling and is most effective on deep hole "peck" drilling.

**NOTE** Peck drilling is used when drilling deep holes to prevent shavings from tangling with the drill bit and breaking it. It is called "peck drilling" because of the up and down motion allowing the drill to take small pecks at a time. Each peck goes slightly deeper into the material then withdraws to pull the chips out of the hole.

The -708 has its own controller, which allows easy programming using the keypad. As few as four or as many as ten parameters are used to define the drilling cycle.

### Parameter List for Programming the Micro-Driller

1)	FFFF	Feed rate. Measured in inches or millimeters per minute.
2)	UUUU	Upper surface of part. The jog buttons can be used to lower the drill to the surface of the work.
3)	LLLL	Lower surface of part (depth of hole).
4)	PPP1	Peck increment.
5)	PPP2	Peck increment used when "tapering" pecks are used. See note below.
6)	CCCC	Clearance value. The distance the drill clears the surface between pecks.
7)	oooo	Offset. The amount the drill stops short of the last peck to prevent the drill from crashing into the chips at the bottom of the hole.
8)	HHHH	Hold time in seconds. The hold is measured after the drill retracts from the hole between pecks. It is used when oil needs to be applied to the drill bit using a brush.
9)	DDDD	Center drill depth. This is used if a center-drilling action needs to be done prior to drilling the hole. This parameter is used with the FFF1 value below.
10)	FFF1	Feed rate for center drilling action.

The first four parameters above are required for all programs. The others allow you to fine tune the drill cycle for better control of the drilling motion.

**NOTE** When deep hole drilling is done, it is often desirable to remove less material per peck as the drill goes deeper into the part. This is easily done using the -708 peck driller. The PPP1 parameter is always used to define the peck size. The PPP2 parameter is optional and allows you to program a larger peck value. When the -708 runs it will begin by using the PPP2 value as the first depth then, as it peck drills, it will remove less and less material (per peck) until it reaches the full depth at which point the peck size will equal the PPP1 value. Fortunately the -708's microprocessor takes care of this "tapering" action which makes it easy to program and use.

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The "prog" mode is used to program the -708. Parameters are entered by typing in the values and pressing the "enter" key. The display has a fixed decimal point and numbers are entered by filling in the blanks. For example, to enter 5 as the feed rate, press 0500 which will look like 05.00 then press "enter". The "next" button or "last" button is then pressed to enter the next parameter.

The "auto" mode is used to run the program. Press the enter key when ready. Make sure the spindle is switched on using the switch on the left side of the spindle assembly prior to running the drill cycle. Also, make sure the proper belt range is being used and the RPM dial is set. The spindle does **not** automatically go on and off with the program.

The "single" step mode performs one peck and retraction at a time. It then pauses, waiting for the operator to press the "enter" key again. It then does one more peck and retracts. The operator can switch from "single" step to "automatic" mode to complete the cycle, if desired.

The control has a "ream" mode. Be careful of this as it causes the peck cycle to be ignored. The ream mode plunges the drill to full depth in one peck then feeds the drill out of the hole (instead of retracting at rapid).

The "reset" button is used for interrupting cycles. It will cause the drill to stop at its current position. The spindle rotation, however, will **not** stop. The spindle has a separate control. After reset is pressed, switch to "prog" to withdraw the drill from the work or press "enter" to resume operation.

### Programmable Micro-Driller Specifications

Spindle Motor Type:	Variable Speed, Brush type DC
RPM Range:	200 to 4000 on low belt range 1000 to 20,000 on high belt range
Capacity (chuck model):	0 to 0.125"/0 to 3 mm
Capacity (collet type):	0.004" to 0.252"/0.1 mm to 6.4 mm
Quill Travel:	1.4"/35.6 mm
Spindle Runout:	0.0002"/0.005 mm TIR
Feedrate Range:	0.01 to 30 ipm/0.25 to 750 mm/min.
Peck Steps:	0.001" to 1.4"/0.02 mm to 35.6 mm
Maximum Pecks per Hole:	1400
Accurate Hole Depths:	±0.001"/0.02 mm
Maximum Quill Force:	35 lbs./16 kg
LED Numerals:	5/8"/15.9 mm high
Power (Spindle):	110 Volt, 50/60 Hz, single phase
Power (Control):	110 Volt, 50/60 Hz, single phase



The -708 Programmable Micro-Driller can be installed on any model of Servo's drill presses either at the time of purchase or you can return the drill press to Servo Products to be retrofit. Select either inch or metric input. An optional foot switch is also available.

### For Additional Information

Contact your Servo dealer or Servo Regional Sales Manager or  
Servo Products Company Technical Support:  
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