

Machine controller changes output signal  
(DO): SL01B from "1" to "0".

DO: SL01B 1→0

Solenoid valve SL01B (tool unclamp) is de-energized and enters neutral condition.

Hydraulic pressure supply to hydraulic cylinder is released.

Compressed disk spring released and draw bar moves backward with piston.

Collet grasps tool holder.

Chip jammed in spindle taper or flange contact surface?

Yes

No

Tool holder is seated in spindle properly.

Tool holder not seated in spindle taper.

Limit switch LS601 (tool seating confirmation) changes from "0" to "1".

DI: LS601 0→1

Limit switch does not detect dog LS601 = "0".  
(Tool seating confirmation incomplete)

Machine controller confirms completion of tool seating.

Alarm is triggered.  
(Cleaning of tool holder and spindle taper required.)

Tool clamping is commanded.

Solenoid valve SL01A (tool clamp) is energized.

DO: SL01A 0→1

Hydraulic oil supplied to front of hydraulic cylinder and piston moves backward away from draw bar.

Limit switch LS00 (tool clamp) changes from "0" to "1".

DI: LS00 0→1

Tool clamping completed.