Used CNC Pre-Purchase Inspection Checklist

Vertical mills & CNC lathes · Tim Sproul · usedcnctools.com · Taunton, MA

Buyer: _____ Seller / location: _____ Date: _____
Type: ☐ Remote video ☐ In person Make / model: _____ Asking $: _____

Remote video call script — seller must have ready

☐ Machine powered on and warmed up (spindle warm-up program run) before the call; I want to see a cold power-up too if possible
☐ A second person to hold the camera (phone with good camera, flashlight, stable Wi-Fi or hotspot) while the operator runs the machine
☐ Someone who can run the control: jog, MDI, tool change, open diagnostic / alarm screens
☐ A dial test indicator + mag base, a test bar or clean tool holder, and a few tools loaded in the changer
☐ Covers and doors openable; electrical cabinet key available (power off before any cabinet close-up)
☐ Service records, options list, parameter backup if one exists, and OK to record the call
☐ Plan 60–90 minutes. Slow camera, hold still on each item, read screens out loud

1. Machine ID

☐ Serial / data plate photo — matches listing and title paperwork
☐ Year built: _____ Control & version: _____
☐ Hours — power-on: _____ cutting: _____ spindle: _____ (ratios make sense for age?)
☐ Travels / spindle taper / max RPM match the listing
Score (1–5): ___ Notes: _____

2. Visual, ways, covers, chip conveyor

☐ Overall walkaround: crash damage, cracked castings, fresh paint hiding repairs
☐ Way covers / telescopic covers: dents, tears, binding, chips getting under
☐ Way surfaces & linear guides visible: scoring, rust, dry spots
☐ Chip conveyor / auger runs forward and reverse, no jamming
☐ Door interlocks, windows, work lights
Score (1–5): ___ Notes: _____

3. Spindle

☐ Warm-up run, then run at low / mid / high RPM (e.g. 500 / 50% / max)
☐ Listen for growl, whine, knocking; watch for vibration and heat
☐ Runout on test bar or holder with indicator (if allowed): near ____ at 6" ____
☐ Tool clamp / unclamp, drawbar holds (pull test), air blast through taper
☐ Spindle taper: fretting, pitting, damage (lathe: chuck/collet, jaws, tailstock)
Score (1–5): ___ Notes: _____

4. Axes

☐ Jog each axis full travel, slow and rapid — smooth, no stalls, home OK
☐ Backlash check with indicator, each axis: X ____ Y ____ Z ____
☐ Way lube reaching ways (pump cycles, tank level, lines not broken)
☐ Ballscrew / servo noise, rumble or knocking at rapid; servo load readings steady
Score (1–5): ___ Notes: _____

5. Control

☐ Alarm history screen photographed — repeat alarms noted
☐ Parameter backup exists (or made today) — format: _____
☐ Options list photographed (4th axis, macros, high-speed, probing, etc.)
☐ Memory / backup battery status; no low-battery warning
☐ Keys, buttons, handwheel, display all working
Score (1–5): ___ Notes: _____

6. Tool changer / turret

☐ Cycle every pocket (or index every turret station) — no hesitation or alarms
☐ Arm / carousel alignment, no banging; pocket count: ____
Score (1–5): ___ Notes: _____

7. Coolant, lube, hydraulics, air

☐ Coolant pump runs, tank condition (smell, sludge), through-spindle if equipped
☐ Hydraulic pressure / unit (lathes): gauge reading ____, no leaks
☐ Air supply & regulators, no constant leaks or hissing
☐ Puddles, drips, or oil-soaked areas under and behind the machine
Score (1–5): ___ Notes: _____

8. Electrical cabinet (power off for close-up)

☐ Clean and dry; no burn marks, melted wires, or hack repairs
☐ Cabinet fans / AC working, filters not clogged
☐ Drives and amplifiers — any warning LEDs or replaced modules
Score (1–5): ___ Notes: _____

9. Leveling & foundation

☐ Leveling pads present and tight; precision level check if possible: ____
☐ Floor condition, no rocking
Score (1–5): ___ Notes: _____

10. Test cut (if possible)

☐ Face / pocket / circle or bore test part — finish and chatter noted
☐ Measured result vs. program: _____ (shop gages, not lab-calibrated)
Score (1–5): ___ Notes: _____

Score & verdict

Score each section 1–5 (1 = major problem, 5 = like new). Total: ____ / 50
Biggest risks / likely repair costs: _____
VERDICT: ☐ BUY ☐ NEGOTIATE (target $ _____) ☐ WALK

Disclaimer: This report is my honest opinion of what I could see and test on inspection day. It is not a warranty and does not promise how the machine will run or hold size later. Some problems only show up with teardown, special test gear, or over time. My gages are shop gages and are not lab-calibrated. You make the final buying call.