WestTune WTMD-06Master – Wiped Film Distillation Parameters

Machine: WTMD-06Master (Steel, 3-Phase)

Feedstock: Ethanol-Extracted Cannabis Crude

Operator: [Your Name/Team]

Parameter	Pass 1 – Terp Strip	Pass 2 – Main Pass	Pass 3 – High-Purity Polish
Evaporator Temp	145–170°C	165–175°C	170–180°C
Condenser Temp	50–60°C	60–75°C	70–85°C
Feed Tank Temp	80–90°C	80–90°C	80–90°C
Feed Rate	1.0–2.0 Hz	1.0–1.5 Hz	0.5–1.5 Hz
Scraper Speed	25–35 Hz	25–30 Hz	20–28 Hz
Vacuum Pressure	5.0E-1 to 1.0E-1 mbar	1.0E-2 to 5.0E-3 mbar	1.0E-2 to 5.0E-3 mbar
Cold Trap Temp	-40°C to -60°C	-40°C to -60°C	-40°C to -60°C
Heat Tapes (L/R)	95°C	95°C	95°C
Feed Line Heat	80–90°C	80–90°C	80–90°C

Notes:

• Startup Best Practices:

• Always run the scraper at a low speed (5–10 Hz) during heat-up. This prevents blade warping, sleeve scratching, and resin sticking.

• Allow the system to reach steady-state temps before increasing scraper speed to operating range (25–35 Hz).

• Never run the evaporator dry — this means do not operate the system under full heat and vacuum with an empty evaporator chamber.

• The 'evaporator dry' warning refers to running at process temperatures without any feed oil present on the heated surface, which can cause hot spots, blade damage, or seizing.

• It is safe and necessary to warm up the evaporator sleeve empty (no crude) with the scraper spinning slowly (5–10 Hz).

• The recirculator (heating bath) should be filled with appropriate heat transfer fluid before startup — this ensures the jacketed sleeve heats uniformly.

• Once at temp, the feed tank and lines should be warmed to deliver crude steadily so the film forms immediately on first contact.

• Scraper speed is machine-limited to 35 Hz max. Values above this are not recommended.

• Scrapers should be spinning on low while warming up.

• Monitor distillate clarity and smell at each pass to identify tail fractions or purity loss.

• Feed rate should remain on the slower side to maintain separation quality and vacuum stability:

• Terp Strip (Pass 1) allows higher rates (1.0–2.0 Hz), as purity demands are lower.

• On Passes 2 and 3, start low (e.g. 0.5–1.0 Hz) and only increase gradually.

• Monitor vacuum pressure and cold trap activity — spikes or overflow can signal overfeeding.

• Vacuum System Tips (Applicable to WTMD-06Master):

• Always verify that your cold traps are clean and at target temperature (-40°C to -60°C). Ice buildup or warm traps compromise vacuum.

• Pump oil should be clear or light amber. Dark oil indicates contamination and reduces vacuum performance.

• Watch for pressure spikes when feeding. They indicate too much volume, entrained volatiles, or insufficient pump-down time.

• Confirm all vacuum joints and gaskets are clean and properly sealed before each run.

• Set feed tank temperature between 80–90°C to reduce oil viscosity and promote steady flow.

• Use 80°C for standard crude.

• Increase toward 90°C for thicker oil, longer feed paths, or when running slow feed rates.

• Avoid exceeding 90°C unless you're confident the crude is winterized and clean, as overheating can degrade volatiles. Values above this are not recommended.

• Adjust condenser temperature proportionally with evaporator temperature to optimize separation and prevent losses to cold trap.

• Regularly clean cold traps and inspect pump oil to maintain vacuum integrity.