Adjusting the LEC Gap/Actuator Timing on the 3244 Engine

Applies to

Trendsetter 3244 engine, used in:

- ☑ Trendsetter 3244 (TS3, TS3/8, TS8)
- ☑ Platesetter 3244
- ☑ Trendsetter Autoloader (3244)
- ☑ Trendsetter/Proofsetter Spectrum (3244)
- ☑ Trendsetter 400/800 – MPE and MCE

Description

This document describes how to adjust the leading edge clamp (LEC) gap and LEC flow control valve on the Trendsetter 3244 engine.

Tools and parts

- Feeler gauge
- 16mm/19mm combination wrench
- UHMV tape (PN 56-1036)



WARNING: Failure to follow the safety policies and procedures for field engineers may create a dangerous situation that could result in serious injury as well as damage to the output device. For more information, see: http://techplanet.creo.com/output/computer_to_plate/all_ctp/nav/safety.htm

Steps

To adjust the leading edge clamp:

1. Make sure the leading edge clamp (LEC) actuator bar is retracted by typing `act lec off` (MPE) or `lec off` (MCE).
2. Loosen the lock nut on the LEC rod-end far enough to allow access to the LEC.
3. Rotate the drum so that the groove on the drum clamp is aligned with the push bar on the LEC actuator bar.
4. Activate the LEC valve to push the LEC against the drum clamp.
5. Remove the roller. (This makes it easier to measure the gap.)
6. Use a feeler gauge to check the gap between the drum and the drum clamps.

Device	Center (mm)	Middle (mm)	Ends (mm)
Base Trendsetter	1.2 ±0.1 mm	1.3 ±0.1 mm	1.4 ±0.1 mm
Platesetter 3244	1.7 ±0.1 mm	1.8 ±0.1 mm	1.9 ±0.1 mm

7. If the gap is within spec for all clamps, proceed to the instructions for adjusting the LEC flow control valve (page 3).
8. If the gap is not correct, rotate the drum to the LE backbone engagement position as indicated by `set al lepos` (MPE) or `set mh LoadPos` (MCE), and hold (`drum move 16XXXX h`).

9. Activate the LE backbone cylinders using `lec on`.
10. Idle the drum with the `drum idle` command. The drum will be held in position by the LE backbone.
11. For each clamp body, measure the gap (the distance between it and the drum).

To adjust the LEC gap if it is incorrect but constant for all clamps

If the gap is the same (either too big or too small) across all clamp bodies, correct it by adjusting the rod ends. If the gap is incorrect but differs between clamps, see the procedure in the next section *("To adjust the LEC gap if it is not constant for all clamps").*

1. Make sure the clamp is extended (LE Clamp switch in OFF position).
2. Remove the shoulder bolts so you can turn the rod ends.

   To increase the gap, turn the rod ends (both sides) clockwise.

   To decrease the gap, turn the rod ends (both sides) counterclockwise.
3. Re-measure the LEC gap, and if it is within spec, reinstall the shoulder bolts at the rod ends.

If you cannot attain the correct gap by turning the rod ends (one turn makes the gap too large or too small), use a wrench to turn the piston with respect to the rod end:

1. Loosen the rod end lock nut with a 19 mm wrench.
2. Turn the piston with a 16 mm wrench.

   To increase the gap, turn the piston counterclockwise.

   To decrease the gap, turn the piston clockwise.
3. Re-measure the LEC gap, and if it is within spec, hold the piston in place and tighten the lock nut snug against the piston.

To adjust the LEC gap if it is not constant for all clamps

If the gap is not constant across all clamp bodies:

1. Remove the LE backbone push bar that corresponds to the clamp that opened the least.
2. Install a strip of UHMW tape (56-1036) and reattach the push bar.
3. Replace the backbone and recheck the gap for each clamp body. If it is not within spec, repeat the procedure.
4. Tap the push block with a screwdriver when the backbone is against the clamp to ensure that it is seated fully in the clamp
5. Once all clamps open within spec, remove the backbone once again and tighten the push block screws. Be careful not to let the push blocks move.
6. Install one 3/8" nut on each shoulder bolt and tighten against the LEC until snug.

To adjust the LEC actuator timing:

For original (TS3) 3244 engine:

1. Turn the LEC control valve on and off (using the `lec on|off` command) and check that both sides of the actuator contact the clamps at the same time.
2. If both sides do not contact the clamps at the same time, turn the LEC control valve on and off again, and a stopwatch to check the timing. The timing should match the following specs as closely as possible.

   Retraction: 0.6 seconds ± 0.1

   Extension: 0.5 seconds ± 0.01
3. If the timing is not within the above tolerances, adjust the flow control valves so the timing is correct and both actuation cylinders retract and extend at the same time.
4. When the adjustment is complete, lock the flow control valves.

For TS3/8, TS8 engine (with shaft encoder):

Note: The newer TS3/8 engines (with shaft encoders) have different flow control systems from the original TS3 engines. The TS3 engines have flow control valves on both ends of the actuator, whereas the TS3/8 engines have a flow control on one end of the engine and a fixed orifice on the other end. Therefore, on the TS3/8 engines, you do not have the option of "setting" the speed. Rather, you must adjust the flow control on one cylinder so its speed matches that of the cylinder with the fixed orifice. (this fixed orifice has been selected to match the factory timing specs as closely as possible).

1. Turn the LEC control valve on and off and check that both sides of the actuator contact the clamps at the same time.
2. If necessary, adjust the flow control valve on the LEC cylinder to match the speed of the fixed orifice on the other side.

   When correctly adjusted, both actuation cylinders should retract and extend at the same time.

When adjustment is complete, lock the flow control valves.

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