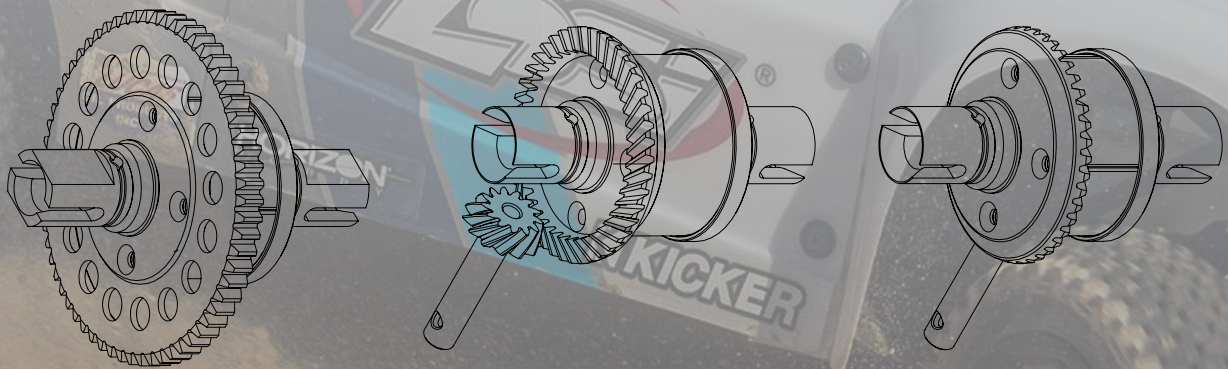




Torsen LSD

- for Losi 5ive-T



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How to Choose Your Torsen Configurations?

On a large-scale gas vehicle like the Losi 5T, differential configuration is more than a technical choice — it defines how the car behaves and how much driving pleasure you can extract from it. The Torsen mechanical LSD, known for its linear response, predictable torque biasing and zero-maintenance design, gives the 5T a completely different personality depending on where it is installed. Whether you run it in the front, center, rear, or in various combinations, each setup transforms the steering feel, traction balance and overall dynamics of the truck. The following section explores how each configuration changes the driving experience and which scenarios it is best suited for.

Configuration 1: Rear Torsen Only (Front/Center remain stock gear diffs)

Recommended Setup:

- **Front Diff:** Stock gear diff (medium or light oil)
- **Center Diff:** Stock gear diff (heavier oil to stabilize front–rear torque balance)
- **Rear Diff:** Torsen LSD

Driving Characteristics:

- **Smoother and more planted corner exit:** When left–right traction is uneven, the Torsen sends more torque to the wheel with grip, reducing single-wheel spin.
- **A “smarter” rear end:** Unlike thick-oil rear diffs that cause understeer, or light-oil diffs that make the rear loose, the Torsen follows the ground naturally.
- **Improved throttle control:** Especially during half-throttle exits, the car feels less aggressive and more stable.

Best Suited For:

- Medium- to high-grip dirt, artificial soil, or tracks with ruts and bumps
- Drivers who control rotation with throttle but don’t want the rear to step out too easily
- Losi 5T used for track running, off-road racing, or practice sessions—ideal for experiencing Torsen benefits without major setup changes

Not Ideal For: Very low-grip surfaces (loose sand) + drivers who rely on “tail-out” rotation
→ A more locked-style rear diff may be preferable.

Configuration 2: Center Torsen Only (Front/Rear remain stock gear diffs)

Recommended Setup:

- **Front Diff:** Stock gear diff (medium oil)
- **Center Diff:** Torsen LSD
- **Rear Diff:** Stock gear diff (slightly heavier oil to stabilize the rear)

Driving Characteristics:

- **Smarter front–rear torque distribution:** Under throttle, the Torsen sends more torque to the end with traction, reducing front or rear wheelspin.
- **More linear acceleration:** Especially after bumps or jump landings, the car avoids sudden traction loss.
- **Overall stability improvement:** On a large 4WD platform like the 5T, the center diff is the “main distributor,” and the Torsen greatly enhances adaptability.

Best Suited For:

- **Tracks with constantly changing grip:** hardpack, loose dirt, ruts, jump landings, elevation changes
- Long-distance endurance runs or practice sessions
- Drivers who already understand stock diffs and want to upgrade the car’s “core behavior”

Not Ideal For: Drivers who rely heavily on center-diff oil tuning to adjust front/rear balance → The Torsen reduces this “oil-based tuning space” and becomes more self-adjusting.

Configuration 3: Center Torsen + Rear Torsen (Front remains stock)

Recommended Setup:

- **Front Diff:** Stock gear diff (medium oil)
- **Center Diff:** Torsen LSD
- **Rear Diff:** Torsen LSD

Driving Characteristics:

- **Maximum adaptive traction:** Torque is dynamically distributed front–rear and left–right.
- **Excellent corner-exit grip and acceleration stability:** Especially in linked, complex, or long corners.
- **More detailed feedback:** Small throttle or steering corrections translate into smoother traction changes.

Best Suited For:

- Technical tracks with many corners and rhythm changes
- Intermediate to advanced drivers familiar with the 5T's stock behavior
- Those who prefer “stable fast” over “aggressive fast,” ideal for endurance or long practice sessions

Notes: Drivers used to locked-style diffs may initially feel the car is “too smooth,” but lap times usually improve.

Configuration 4: Front Torsen + Center Torsen (Rear remains stock)

Recommended Setup:

- **Front Diff:** Torsen LSD
- **Center Diff:** Torsen LSD
- **Rear Diff:** Stock gear diff (slightly heavier oil)

Driving Characteristics:

- **More stable turn-in and better front-end grip on exit:** The front Torsen reduces understeer by sending torque to the wheel with traction.
- **Smart front–rear distribution:** The car “bites” better without sudden front-end lock.
- Ideal for drivers who prefer precise steering and clean apex lines.

Best Suited For:

- High-grip tracks (astro, carpet, hardpack, sugar tracks)
- Drivers with smooth throttle control who rely on line precision

Not Ideal For: Low-grip tracks where rotation requires rear slip → The front Torsen may make the car too stable to rotate.

Configuration 5: Full Torsen Setup (Front/Center/Rear all Type-B)

Recommended Setup:

- **Front Diff:** Torsen LSD
- **Center Diff:** Torsen LSD
- **Rear Diff:** Torsen LSD

Driving Characteristics:

- **Fully adaptive torque distribution:** Front–rear and left–right continuously optimize traction.
- **Extremely smooth and linear handling:** No sudden locking or snapping.
- **Highest driver skill requirement:** The car rewards precise throttle and clean lines.

Best Suited For:

- Drivers already familiar with Torsen behavior
- High-level racing or endurance sessions
- Those who prioritize tire efficiency, stability, and average lap time over peak aggression

Not Recommended As a First Upgrade: Switching all three diffs at once makes it hard to identify which change affects the handling.

Practical Recommendation: Where Should Players Start?

Players can choose the most suitable configuration based on their driving style and experience.

Entry / Experience Package: Rear Torsen Only

- Improved corner-exit traction and a more stable rear end
- Very easy to drive; minimal adjustment to driving habits required

Intermediate / Performance Package: Center Torsen Only

- Smarter front-rear torque distribution and more stable acceleration
- Ideal for frequent track running and endurance practice sessions

Advanced / Race Package: Center + Rear Torsen

- Balanced traction, stability, and tire efficiency
- Suitable for drivers chasing consistent lap times and long-run performance

Flagship / Full Package: All Three Torsen Diffs

- Maximum intelligent torque distribution across the entire drivetrain
- Designed for experienced Torsen users and high-level drivers seeking ultimate control

5 Ways to Control Torsen Locking Force?

About Torsen Locking Force

The Torsen B-type differential has no internal adjustment for torque distribution or locking force.

Unlike an open gear diff, you cannot tune it by changing oil.

However you can influence how the Torsen behaves through external conditions.

A Torsen works based on:

Throttle input + Left/right traction difference + Gear geometry

Below are five ways you can control how much the Torsen locks.

1. Throttle Input (Engine Power)

Torsen locking comes from:

Input torque × Gear engagement angle = Self-locking force

- More throttle → stronger locking
- Less throttle → freer, more like an open diff

This is why a Torsen feels smooth, linear, and easy to control.

2. Bigger Left/Right Traction Difference → Stronger Locking

The Torsen's core logic: "Send more torque to the wheel with grip."

So:

- One wheel slipping → the other gets more torque
- Bigger traction difference → stronger locking
- Smaller traction difference → behaves more open

This is what makes a Torsen "smarter" than a gear diff.

3. Tire Choice Changes Torsen Behavior

A very common thing players overlook:

- Softer / grippier rear tires → easier to lock
- Harder / slippery tires → freer diff

In simple terms: "More rear traction = stronger Torsen locking."

4. Suspension Setup Affects Torque Distribution

Especially the rear suspension:

- More rear downforce → easier to lock
- Rear wheel lifting / hopping → harder to lock

Examples:

- Stiffer rear shocks → wheel lifts easier → weaker locking
- Softer rear shocks → wheels stay planted → more stable locking

5. Center / Front Diff Setup Changes How the Rear Torsen Works

For example:

- Center diff too light → torque jumps front/back → rear Torsen becomes unstable
- Thicker center diff → more stable torque input → smoother Torsen behavior

This is why we recommend: Rear Torsen + slightly thicker center diff oil

How Does Oil Viscosity Affects the Torsen?

Changing oil does not change the Torsen's torque bias ratio (TBR) or true locking force. But it does affect:

3 Points to Note:

1. Rotational Drag

- Thicker oil → more drag → slower but smoother response
- Thinner oil → less drag → faster, more lively response

This affects "feel," not actual locking force.

2. Low-Throttle Sensitivity

At small throttle:

- Thicker oil → more stable, less twitchy
- Thinner oil → more reactive, easier to shift torque left/right

This changes the trigger behavior, not the TBR.

3. Temperature Stability

- Thick oil stays consistent at high temps
- Thin oil becomes even thinner → faster response

Tuning Tips for Players

Want a smoother, more stable Torsen? → Use slightly thicker oil

Best for:

- Large vehicles (like Losi 5T)
- Endurance runs
- Hot weather
- Beginners

Want a quicker, more responsive Torsen? → Use slightly thinner oil

Best for:

- Technical tracks
- Drivers who like a "connected" feel
- Cold weather