1. What is dyno tuning?

- A **dynamometer (dyno)** measures:
    - Horsepower (HP)
    - Torque
    - Engine speed (RPM)
- Dyno tuning = **adjusting the engine's fuel and ignition mapping** while the bike runs on a dyno
- Goal: **maximize performance, smoothness, and reliability**

"Dyno tuning is basically letting the bike run hard in a controlled environment so you can fine-tune how it breathes and burns fuel."

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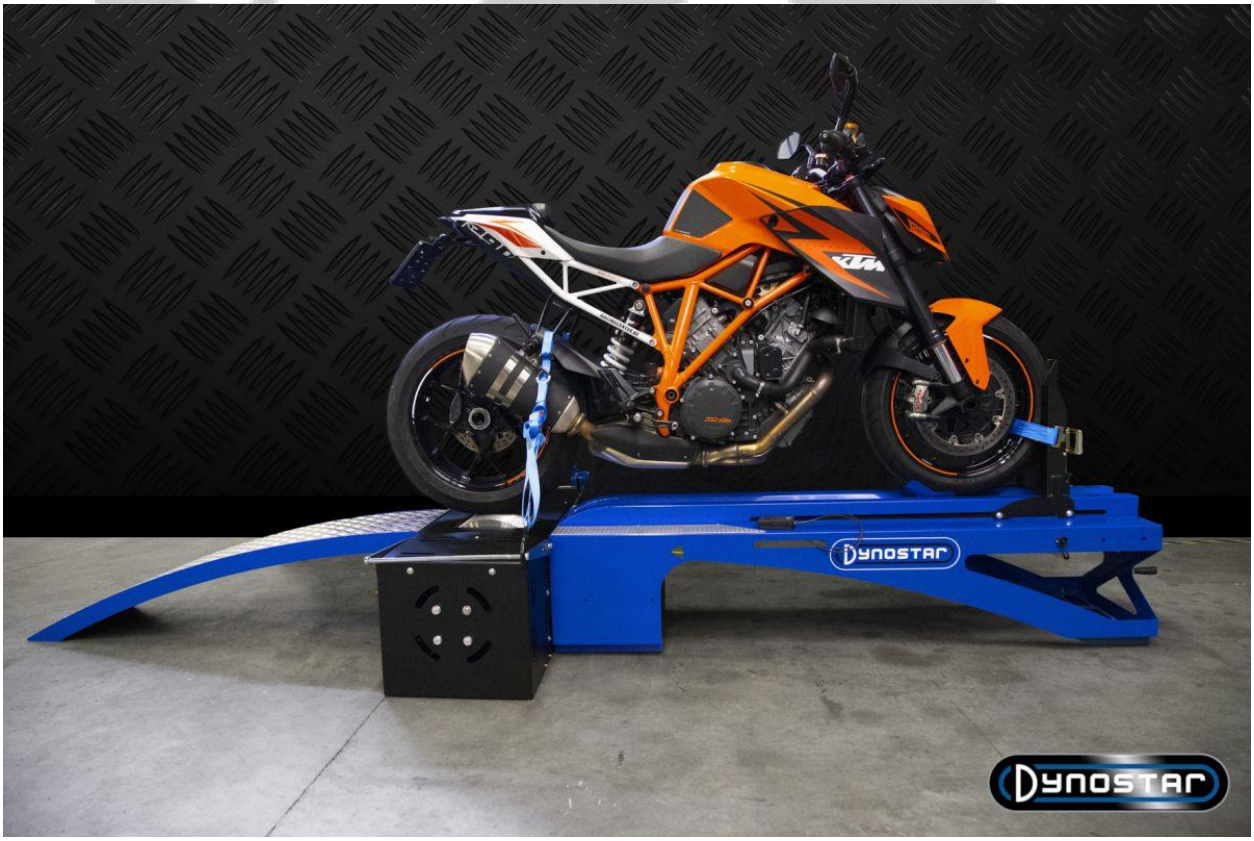
2. Types of motorcycle dynos

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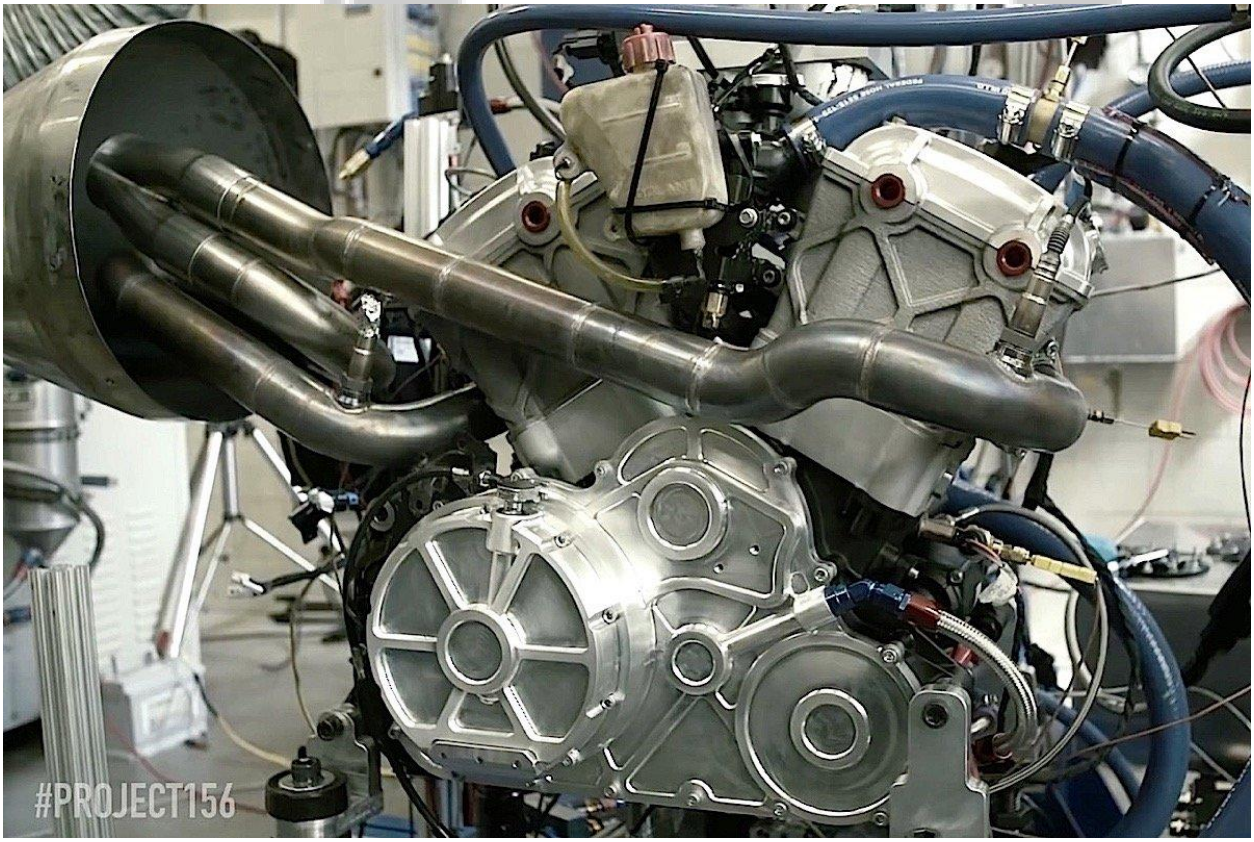
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- **Rolling road dyno**
    - Bike stays intact
    - Rear wheel spins a roller
    - Most common for street bikes
- **Engine dyno**
    - Engine removed from the bike
    - Extremely precise
    - Mostly used by race teams and manufacturers

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3. Why dyno tuning matters

- Corrects **lean or rich fuel mixtures**
- Improves:
    - Throttle response
    - Power delivery
    - Rideability
- Prevents engine damage (especially after mods)
- Makes aftermarket parts actually *work* together

Common mods that *need* dyno tuning:

- Exhaust systems
- Air filters
- Big bore kits
- ECU flashes

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4. How dyno tuning works (step by step)

1. Bike is strapped onto the dyno
2. Baseline run is performed
3. Air–fuel ratio (AFR) is monitored
4. ECU or fuel controller is adjusted
5. Multiple runs until optimal results are reached

Key terms to explain:

- AFR (Air–Fuel Ratio)
- ECU
- Fuel maps
- Ignition timing

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5. Reading dyno charts

Explain:

- **Horsepower curve** – top-end performance
- **Torque curve** – how strong the bike feels
- Smooth curves = good tuning
- Dips = fueling or ignition issues

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6. Dyno tuning vs street tuning

Dyno tuning

- Controlled environment
- Repeatable results
- Safer at high RPM

Street tuning

- Real-world conditions
- Limited by traffic and safety
- Less precise

Most pros use **dyno first, street fine-tuning after**.

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7. Myths & misconceptions

- "Dynos lie" → They're tools; consistency matters
- "More HP is always better" → Usable power matters more
- "Factory tune is perfect" → Emissions laws say otherwise

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8. Who should get a dyno tune?

- Riders with engine mods
- Track/race bikes
- Bikes running poorly
- Anyone who wants smoother, safer performance

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9. Conclusion

- Dyno tuning = **performance + safety + efficiency**
- It turns mods into real gains
- It's not just for racers—street riders benefit too
