To our distinguished owner

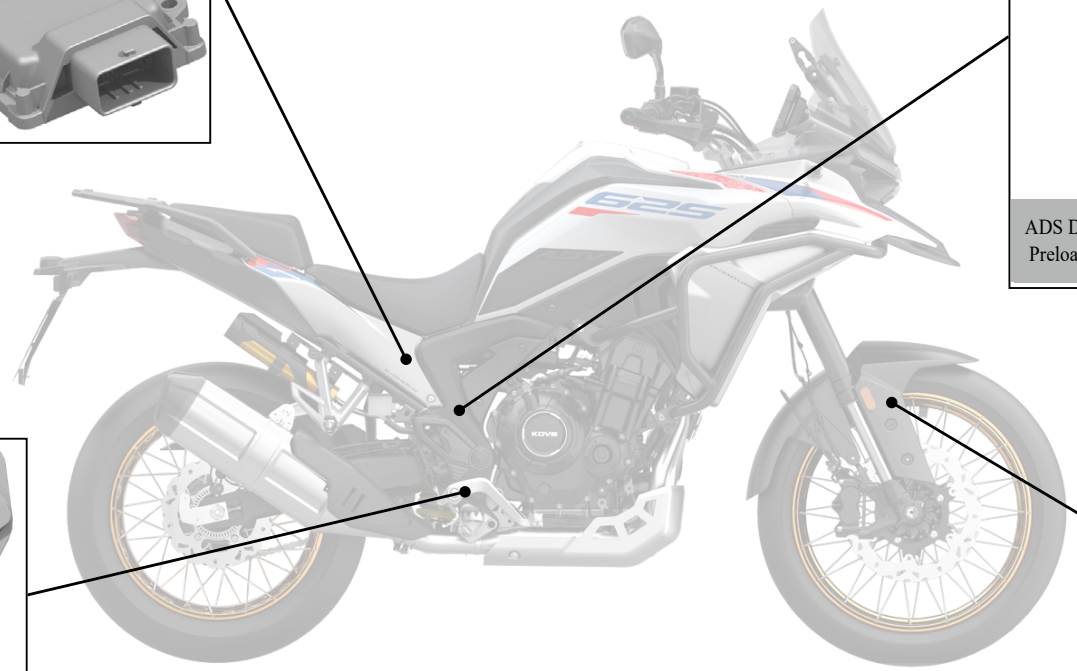
625X Electronic Suspension Instruction Manual
First Edition (December 2025)

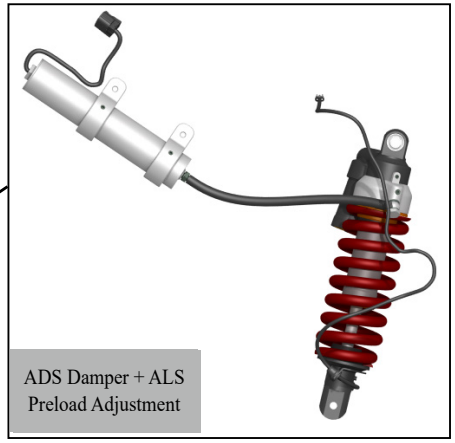
This Instruction Manual contains the introduction of the basic configuration of 625X **Electronic Suspension System.**
The contents and pictures are for reference only, please refer to the physical object.
Due to the production time, user needs and design improvements, the actual components may be different from the contents of the Manual. We reserve the right to make changes at any time, and we will no longer notify and assume any obligations. Sorry for any inconvenience caused.

The adaptive damping system is the "crown jewel" of modern motorcycle electronic control systems. Through the coordinated operation of sensors, control units, and actuators, it achieves a revolutionary leap in suspension performance from "fixed" to "adaptive," significantly enhancing motorcycle safety, comfort, and handling limits.

System Composition and Control Principles

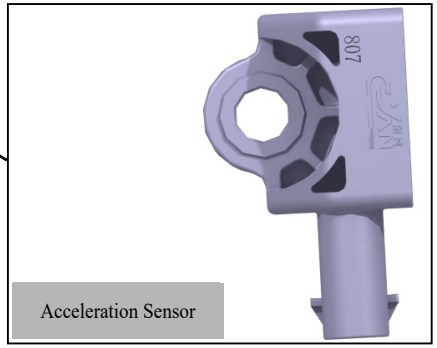
Rear damping controller (with built-in IMU)





ADS Damper + ALS Preload Adjustment

Height Position Sensor



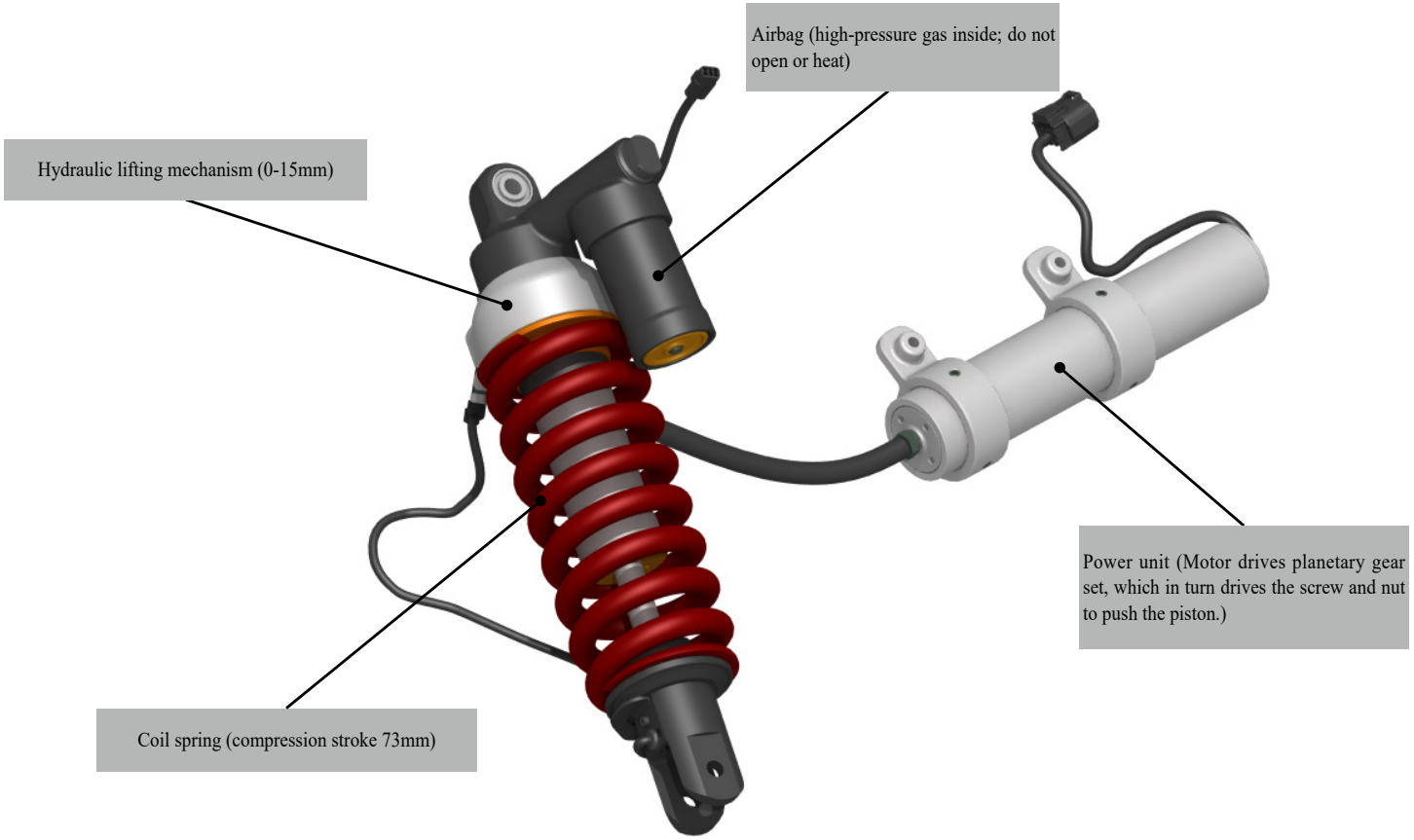
Acceleration Sensor

Perception → Acceleration sensors, height position sensors, and the IMU collect the information

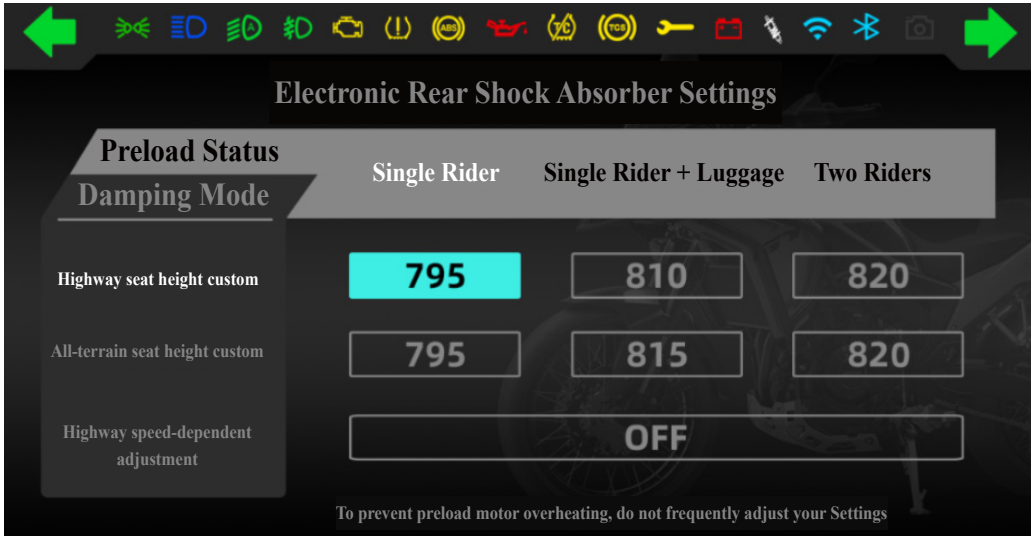
Thinking → Data is transmitted with ECU

Execution → Commands are sent to the damper solenoid valve. Based on the selected riding mode and signals from the acceleration and height sensors, the system assesses road conditions, adjusts the solenoid valve opening, and regulates the flow of damping oil to control damping force.

Component Structure



Instrument Control Logic



Highway speed-adaptive adjustment:

- When speed increases from <50 km/h to ≥50 km/h and is maintained for over 3 seconds, preload height is set to 820mm;
- When speed decreases from ≥50 km/h to below 30 km/h, height is reduced from 820mm to 795mm;
- During riding, when switching from non-speed-adaptive mode to speed-adaptive mode, the strategy is as follows: If speed <30 km/h, preload height adjusts to 795mm;
- If speed ≥50 km/h and maintained for over 3 seconds, preload height adjusts to 820mm;

If speed is between 30 km/h and 50 km/h, preload height before switching will be maintained.

Electronic Suspension Settings	Preload status/ damping mode	Highway seat height custom	① The user can select different preload states and damping modes for combined use; ② The preload height is factory default; the user can adjust the seat height to a suitable level according to their needs (except for highway speed-dependent adjustment); ③ About seat height customization: Adjustment range: 795mm~820mm; Adjustment method: After selecting the seat height to be adjusted, press the "Confirm" button twice until the background color turns red, then use the "Up/Down" buttons to adjust to the appropriate seat height; ④ The highway speed-dependent adjustment mode can only be set in the parked state; ⑤ To prevent the power unit motor from overheating, do not frequently set the electronic suspension mode, as this may cause irreversible damage.
		All-terrain seat height custom	
		Highway speed-dependent adjustment	

Troubleshooting

Fault phenomenon	Possible reasons	Troubleshooting method
Shock absorber abnormal knocking	Loose connecting bolts and internal wear in dampers	Tighten the bolts and, if necessary, have them replaced by an KOVEMOTO authorized service center
No damping change	Sensor malfunction, ECU fault, actuator jamming	Read the fault code with a diagnostic instrument, inspect the harness and plugs, and test the actuator operation
Excessive body roll	Aging shock absorbers, fatigued springs	Check the performance of the shock absorber and, if necessary, have them replaced by an KOVEMOTO authorized service center

Safety Precautions

- Before operation: Ensure the vehicle is parked on the level ground and securely supported to prevent accidental slipping.
- During maintenance: Release the internal pressure of the shock absorber before disassembly to prevent injury from high-pressure oil spray.

Maintenance

Key Precautions

- Avoid prolonged overloading and frequent driving on rough roads to reduce the load on shock absorbers. When parking, try to stop on a level ground surface to avoid uneven stress on the vehicle body.
- When cleaning the vehicle, avoid directly rinsing the shock absorber's electronic interface with a high-pressure water jet to prevent water ingress and short circuits.
- When replacing the shock absorber, select an original or compatible model to ensure proper compatibility between the electronic system and mechanical structure.

Regular Professional Maintenance

Electronic System Inspection

Use a professional diagnostic instrument to read the fault codes from the shock absorber control module (ECU), check whether the sensors (body height, acceleration) and solenoid valves are functioning properly, and clear the fault codes promptly.

Regular Inspection

1.Visually inspect the shock absorber for leaks every month;
2.Check bolt tightness every 10,000 kilometers;
3.Follow the disassembly, assembly steps, and torque specifications outlined in our company's "Maintenance Manual."