

# “Ténéré 700” Development Target & Objectives

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## Abstract

The “Ténéré 700”, launched in 2019, has been highly acclaimed for its unique value proposition — offering true off-road performance combined with excellent on-road versatility. For the MY25 model, development focused on enhancing rider control, off-road capability, and electronic integration, while staying true to the core values of the Ténéré family. Key technical objectives included achieving EU5+ emissions compliance, improving suspension performance, and introducing rider-selectable power modes.

These advancements further strengthen Yamaha’s leadership in the sub-1,000 cm<sup>3</sup> On-Off segment.

## 1

## INTRODUCTION

We updated the well-received “Ténéré 700” model by equipping it with the EU5+ compliant “CP2” liquid-cooled 689 cm<sup>3</sup> engine, while maintaining its performance and adopting a lightweight chassis.

As a global model, it is scheduled for production and release in various countries.

Building upon the foundation of the “MY 2019 Ténéré 700”, the MY 2025 model was developed under the concept of “The Real Adventure Motorcycle for a Global Market”, aiming to achieve a high-level balance between off-road capability, on-road comfort, and electronic control features, while preserving the core values of the “Ténéré” spirit.

## 2

## DEVELOPMENT TARGET

At the beginning of the development of the “Ténéré 700 MY 2025”, we revisited the reasons behind the global success of the “MY 2019 Ténéré 700” and identified the core features that resonated with riders worldwide.

The concept of “Renewal through Continuity” guided our approach: to evolve the model while preserving its essential character.

Key attributes such as compactness, lightweight design, riding ergonomics, suspension performance, and off-road capability were retained, while targeted improvements were made based on rider feedback and internal evaluations.

To enhance the riding experience, development efforts focused on the following areas:

- Riding position
- Suspension setting (front fork and rear suspension)
- YCCT(Yamaha Chip Controlled Throttle) ECU mapping
- ABS(Anti-lock Brake System) with 3 selectable modes
- TCS(Traction Control System) with ON/OFF settings

These improvements were achieved through collaborative testing and validation among YMRE(Yamaha Motor R&D Europe), YMC(Yamaha Motor Co., Ltd.), YMENV(Yamaha Motor Europe NV), and selected suppliers.

The goal was to maintain the intuitive and confidence-inspiring ride of the original model, while adapting to evolving rider expectations and regulatory requirements.



Fig. 1 Functional Styling and Design Update – Vehicle Overview: "Ténéré 700" (Model Year 2025)

C-Chamfer shape approach (Fig. 1):

- Inside this area: Shape and surface focused on rider movement
- Outside this area: Shaped for a good air flow management

Development activities were primarily conducted at YMRE in Italy in collaboration with YMC and YMENV.

Joint tests were conducted by YMRE, YMC and YMENV during this period (Fig. 2).



Fig. 2 Development Test Structure and Collaboration Framework

## 3 DEVELOPMENT CONTENT

### 3-1. Chassis

The basic chassis structure (Fig. 3) was inherited from the previous model, with two changes.

A larger muffler bracket pipe with a reinforcement patch was adopted to increase rigidity of the structure.

Additionally, a passing-through type carrier mounting boss was implemented to achieve a better load distribution.

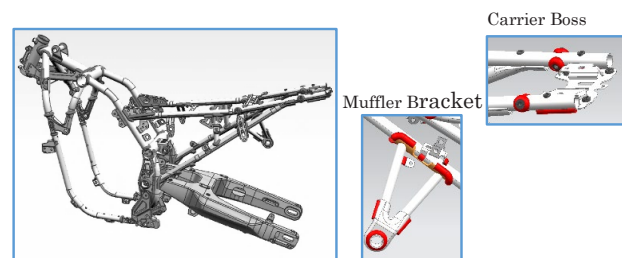


Fig. 3 Chassis changes: Muffler Bracket and Carrier Boss

### 3-2. Suspension

Suspension performance was significantly improved to enhance off-road capability while maintaining comfort and stability during on-road riding.

The front suspension (Fig. 4) features a  $\varnothing 43$  mm upside-down fork manufactured by KYB, with a stroke length of 210 mm.

It includes spring preload adjustment, as well as compression and rebound damping adjustability.

Air bleeding is also supported to facilitate maintenance.

The rear suspension (Fig. 5) adopts a link-type configuration with 200 mm of wheel travel and 101 mm of suspension stroke, contributing to improved load absorption.

A lightweight and rigid full-aluminium swingarm is employed, paired with a KYB aluminium cylinder unit featuring a piggyback tank.

Compression and rebound damping are adjustable, and a convenient preload adjustment knob is provided for a quicker setup.

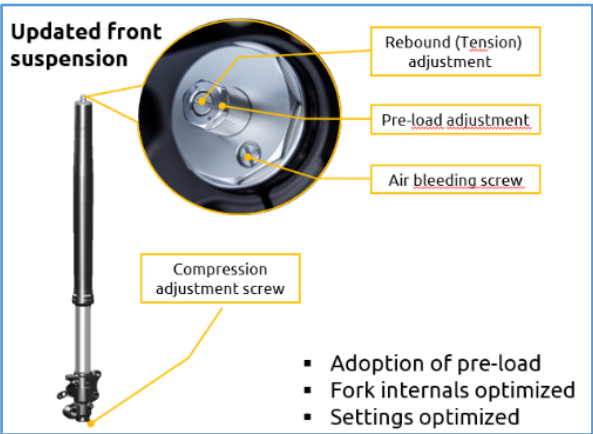


Fig. 4 Front Suspension: Configuration and Adjustment Features

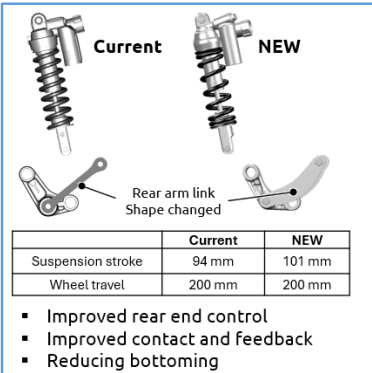


Fig. 5 Rear Suspension: Configuration and Adjustment Features

### 3-3. Wheel/Brake

The brake system and wheel configuration were carried over from the previous model, featuring a 21-inch front wheel and an 18-inch rear wheel.

This setup was retained to maintain all the excellent characteristics of maneuverability, stability, and overall vehicle dynamics across a wide range of riding conditions.

### 3-4. Off-road Oriented Features

To enhance off-road performance and rider operability, several dedicated features were newly adopted.

A one-piece rally seat (Fig. 6) combined with a redesigned fuel tank and cap improve rider mobility and vehicle integration.

The ABS (Anti-lock Brake System) is switchable across three modes, allowing preferable braking control in off-road conditions (Fig. 7).

A USB Type-C port was added to improve connectivity and convenience (Fig. 7).

An aluminium skid plate (Fig. 8) ensures protection against obstacles, with a ground clearance of 240 mm.

The knuckle visors (Fig. 9) were redesigned to improve handling.

Wide foldable foot pegs (Fig. 10) with removable rubber inserts allow adaptation to various terrain conditions.

The clutch cover (Fig. 11) was revised to improve rider leg movement, and the side stand switch was repositioned.



Fig. 6 Seat: One Piece Rally Seat and New Fuel Tank Design

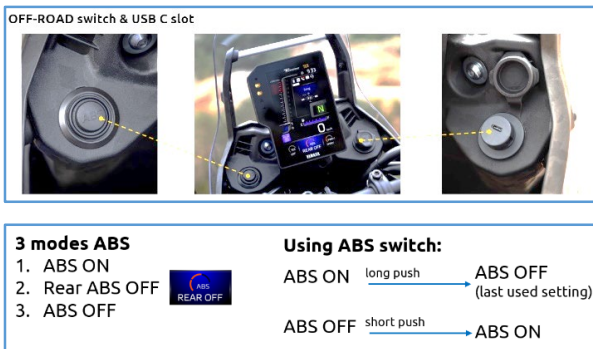


Fig. 7 Cockpit area: Switchable ABS Function and USB Type-C Port



Fig. 8 Aluminium Skid Plate and Ground Clearance



Fig. 9 Updated Knuckle Visor

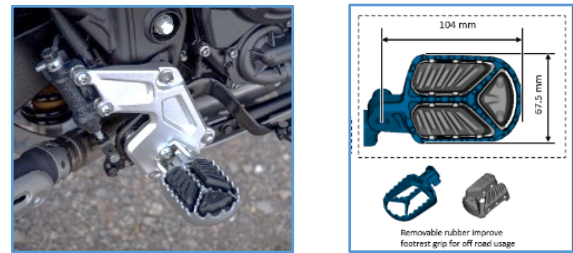


Fig. 10 Wide Foldable Foot Pegs with Removable Rubber

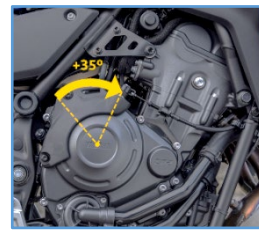


Fig. 11 Revised Clutch Cover Design

### 3-5. Engine

The "CP2" engine, a 689 cm<sup>3</sup> liquid-cooled parallel twin-cylinder unit, has been refined to comply with the latest emission regulations while maintaining its peak output of 54 kW at 9,000 rpm (Fig. 12). Torque delivery has been optimized across the entire rpm range, with specific improvements at low rpm achieved through intake duct redesign (Fig. 13), contributing to improved handling in off-road situations. Transmission gear shapes have also been revised (Fig. 14) to enhance shift feel and rider feedback.

This engine incorporates Yamaha Chip Controlled Throttle (YCC-T) technology (Fig. 15), allowing riders to select between two riding modes: SPORT (PWR1) and EXPLORER (PWR2). The SPORT (PWR1) mode is designed for riders who prefer a sharp and responsive throttle feel in all riding conditions. It preserves the snappy and exciting throttle response characteristic available in previous models, while maintaining the renowned smoothness and ease of the "Ténéré" engine family.

On the other hand, the EXPLORER (PWR2) mode is suitable for riders who enjoy a more laid-back riding style, regardless of their experience level. This mode also



provides practical support when riding on wet roads or off-road surfaces, where precise control of engine response is required, such as on loose stones, slippery ground, or muddy terrain.

The development and refinement of these power modes represents several months of joint effort by YMRE, YMENV, and YMC, with the cooperation of all involved parties enabling the achievement of the targeted performance.

The Traction Control System (TCS) offers two selectable modes via dedicated handlebar switches: TCS OFF and TCS ON. Activating TCS helps/assist vehicle control on wet or slippery off-road surfaces. The system operates smoothly and is not overly intrusive, ensuring that engine torque reduction is gradual and predictable. TCS intervenes more frequently when the rider selects the PWR-1 SPORT mode, and less so when PWR-2 EXPLORE is chosen. During development, particular attention was paid to ensuring that TCS operation would not cause any unexpected sensations or discomfort during riding.

Additionally, the optional quick shifter (Fig. 16) supports both upshift and downshift operations, providing even smoother gear changes.

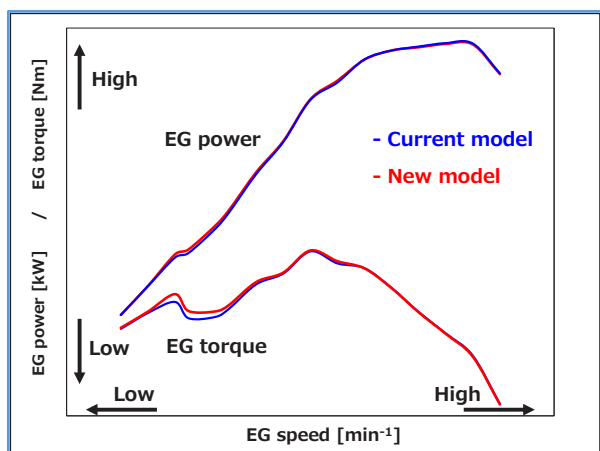


Fig. 12 "CP2" Engine: Output Characteristics and Emission Compliance EURO5+

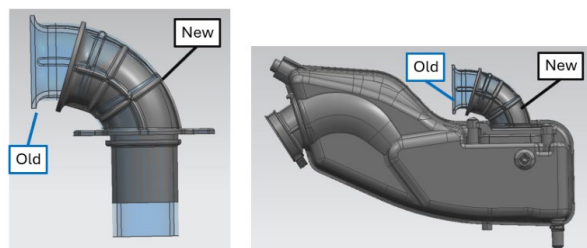


Fig. 13 Intake: Torque Improvement by Optimized Duct Shape

The number of convex dogs and concave dogs in the gears has increased from five to six (1<sup>st</sup> to 3<sup>rd</sup> gears), to reduce shocks.

The dog angle has also been changed (4<sup>th</sup> to 6<sup>th</sup> gears) to reduce vehicle behavior in response to throttle ON/OFF.

These revisions enable smoother gear shifts.

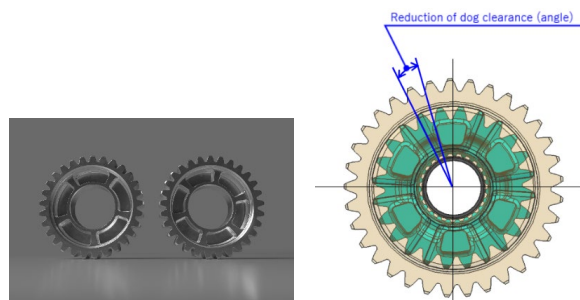


Fig. 14 Improved Shift Feel through Transmission Gear Redesign

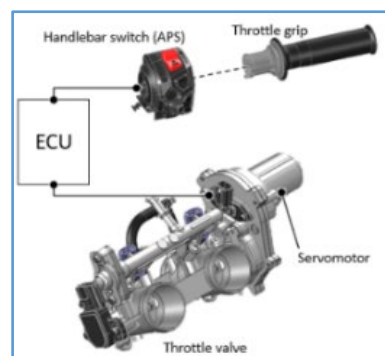


Fig. 15 Riding Mode Selection via YCC-T



Fig. 16 Quick Shifter with Up/Down Functionality

### 3-6. EL Components

To reinforce the off-road and adventure image of the vehicle, electrical components were newly designed in reference to the “DAKAR” competition model.

The headlamp (Fig. 17) adopts a distinctive layout consisting of four LED modules mounted on robust aluminum brackets, achieving both high visibility and a rugged design identity. This configuration enhances the vehicle’s presence in urban and off-road environments.

The switch handles (Fig. 18) and Human-Machine Interface (HMI) were redesigned to improve operability. A newly introduced joystick enables intuitive navigation of display menus and supports a wide range of functions with enhanced tactile feedback.

A vertically oriented 6.3-inch meter (Fig. 19) was adopted, emphasizing simplicity, visibility, and reliability. The meter allows independent adjustment of key riding parameters via the joystick, including:

- ABS: ON/Rear OFF/OFF
- TCS (Traction Control System): ON/OFF
- Engine Power Map: SPORT/EXPLORE

In addition to core riding functions, the meter supports smartphone connectivity via Bluetooth. Riders can view turn-by-turn navigation, answer calls, control music playback, and check real-time weather forecasts along the planned route.

These features contribute to a more personalized and versatile riding experience, suitable for both adventure and daily use.



Fig. 17 Four-LED Headlamp Configuration and Visibility

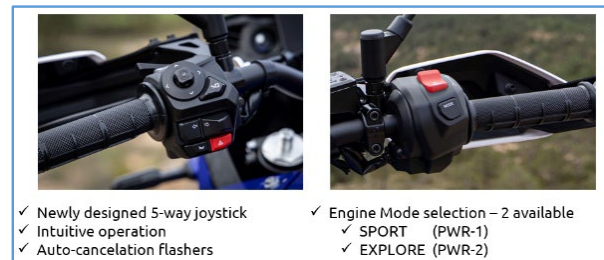


Fig. 18 New Switch Handle and HMI Interface



Fig. 19 Meter, 6.3-Inch Vertical Meter and Connectivity Features

## 4 CONCLUSION

After a rigorous development process, the project met all technical and performance targets. Final specifications include a vehicle weight of 208 kg (with full fuel and fluids) and 189 kg dry, with a front/rear weight distribution of 49%/51%.

The seat height is 875 mm, with a narrow profile to improve ground reach.

The riding position remains the same as previous model, intuitive and natural. The rider can appreciate the revised design, seat, and fuel tank shape, which allow more freedom to move fwd. All package is contributing to agile handling and ease of control across a wide range of conditions.

The engine and chassis deliver a harmonious response, providing clear feedback and a controllable, satisfying riding experience.

A European press launch was held in Agafay, Morocco, where journalists praised the model’s controllability on various surfaces and its distinctive styling.

The market—including both media and customers—recognized Yamaha’s unique approach of maintaining a lightweight, functional, and off-road-oriented design philosophy.

This achievement was made possible through close collaboration across the entire value chain, including product planning, design, engineering, testing, business and cost planning, quality assurance, procurement, manufacturing, marketing, sales, and service, and reflects a shared commitment to delivering a product that meets the expectations of riders around the world.

The development of the new “Ténéré 700” not only reaffirmed the model’s core strengths, but also provided valuable insights into rider needs, design priorities, and system integration.

These insights are expected to inform and support future product development and refinement, particularly in the areas of off-road capability, user interface, and platform versatility, contributing to the continued evolution of Yamaha’s adventure and off-road strategy.

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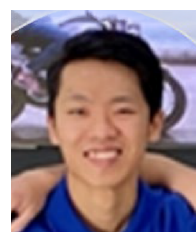
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