



# Instruction Manual

JR EAST Train Simulator supervised by East Japan Railway Company / produced by ONGAKUKAN Co., Ltd.

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This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

# 0 Introduction

## About This Game

Ongakukan and JR East have teamed up to bring you a simulator that has a wealth of experience in train driving simulators. You can experience the professional simulator actually used by JR East drivers for training at home.

## Features

- High-definition images of JR East's train lines are captured in live-action. You can drive the train from the same perspective as the driver. You can enjoy driving from the same point of view as the driver.
- The sounds emitted from the trains and tracks in the simulator are recorded by JR East using actual trains, so you can experience the realistic running sounds that a driver would feel comfortable driving.
- The instrument panel displays the speedometer and other data just like the actual vehicle, and operates faithfully according to driving operations, speed, etc. The sound and instrument panel display will switch to that of the vehicle when the type of vehicle being experienced is changed.



# 1 Introduction video, Menu screen

Once you initialise the simulator, the introduction video will play, followed by the main menu screen.



## 【Introduction video】

The opening video introduces an array of images of JR East's crew and trains. Skip by pressing Enter.



## 【Main Menu screen】

**Drive:** Proceed to the simulation.

**Shut Down:** Will close the program.

**Settings:** Displays all the settings.

## 2 Line selection

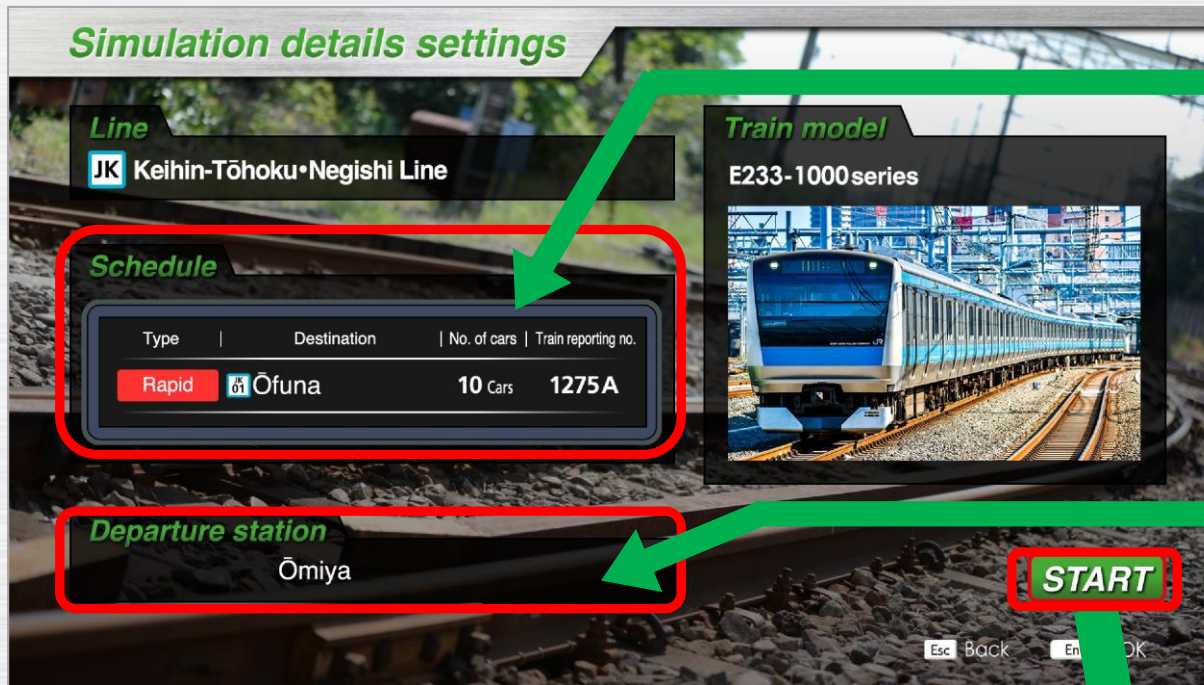
The lines available are displayed in a list.

Once you choose the line to drive on, press [Enter] to confirm.

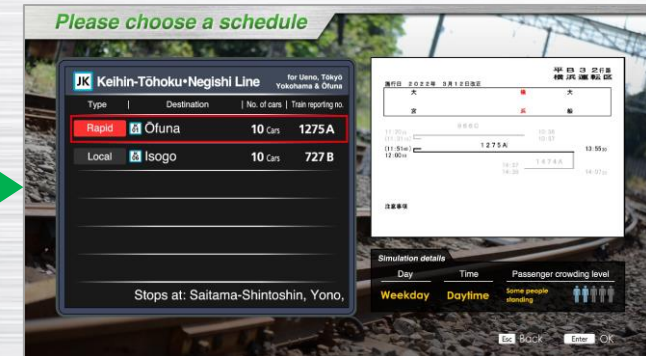


# 3 Simulation details settings

Once you selected the line, you can choose the time schedule and the station from which to start. After confirming the details, press the “start” button to begin the simulation.



Simulation details setting screen



Schedule selection screen



Starting station selection screen

Start simulation

# 4 Driving interface

The session begins while stopped at the selected starting station.

After 20~30 seconds, the doors will close automatically, and you can start driving.

Currently stopping at the station. Please wait until the pilot lamp turns on.



## Driving information (HUD)

Displays the current speed, the distance and scheduled arrival time to the next station.

The number at the bottom shows the incline of the track (a negative number represents a downward slope).

Pressing the [V] key will show or hide the information HUD.

## Stopping position marker

Displayed when entering the station.

The train's position is represented by a moving diamond shaped mark; as the train nears the stopping point, it will appear from the top of the screen.

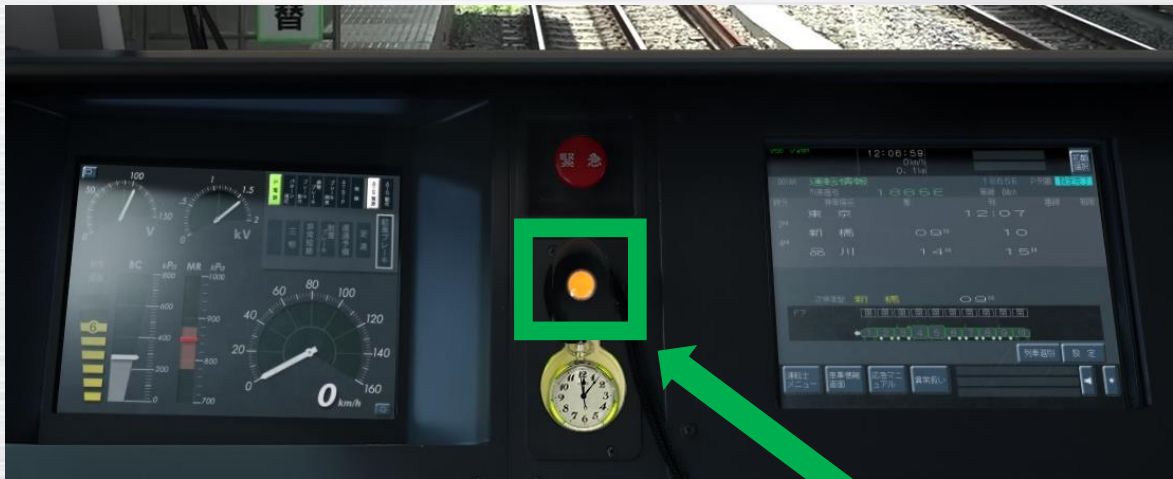
The centre of the green bar is the designated stopping point.

# 5 Driver Console

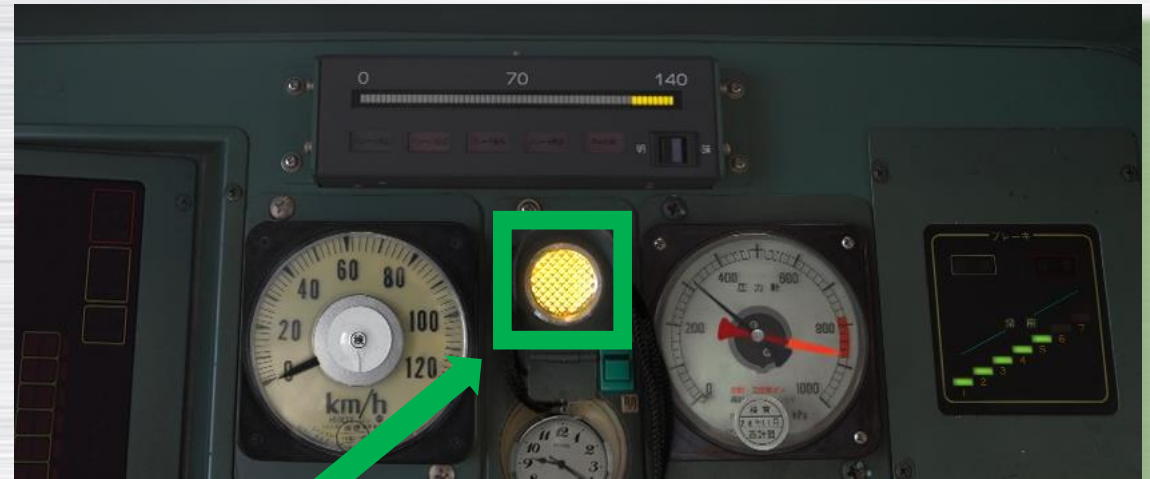
The meters, lamps and information displayed on the driver console are the same as on real trains.

Depending on the train model in use, the displayed meters and signals will change to reflect the correct ones.

When stopped at a station, if the doors are open, the pilot lamp will be off, if the doors are closed, it will be lit up.



E233 series 3000 EMU  
(Tokaido Line)



211 series EMU  
(Oito Line)

**Pilot Lamp**

# 5 Driver Console

In the driver console view mode, it's possible to adjust the zoom, position and visibility of the drivers' console.

Furthermore, the console appearance changes depending on the external light conditions, in reaction to braking etc.



Console zoom and positioning



Default



Console hidden



When driving in a dark area

## Keyboard and mouse controls

- Zoom in/out . . . . . Scroll wheel ↑ and ↓ while holding the Shift key
- Position shifting . . . . . Drag left mouse button while holding Shift key when zoomed in
- Return to default . . . . . Press “C” while holding the Shift key
- Console show/hide . . . . . “C” key

# 5 Driver Console

## Controls with the Xbox controller

**Switch between driver console perspective / Drive controls · · · · · [ View ] Button**

Switching to the driver console perspective mode, it is possible to zoom the console view in and out.

(In this mode, it is not possible to use driving controls. To go back to normal drive controls, press [ view ] button once again)

Zoom in / Zoom out · · · · · [LT] / [RT] when in perspective mode

Shift position · · · · · Move the [R Stick] when in perspective mode

Reset to default · · · · · [Y] when in perspective mode

Hide/Show console · · · · · [A] when in perspective mode

[Back/View] Switch between driver console perspective  
/ drive controls

[LT] Zoom in

[RT] Zoom out

[Y] Reset to default

[A] Hide/Show console

[R Stick] Shift position in all directions

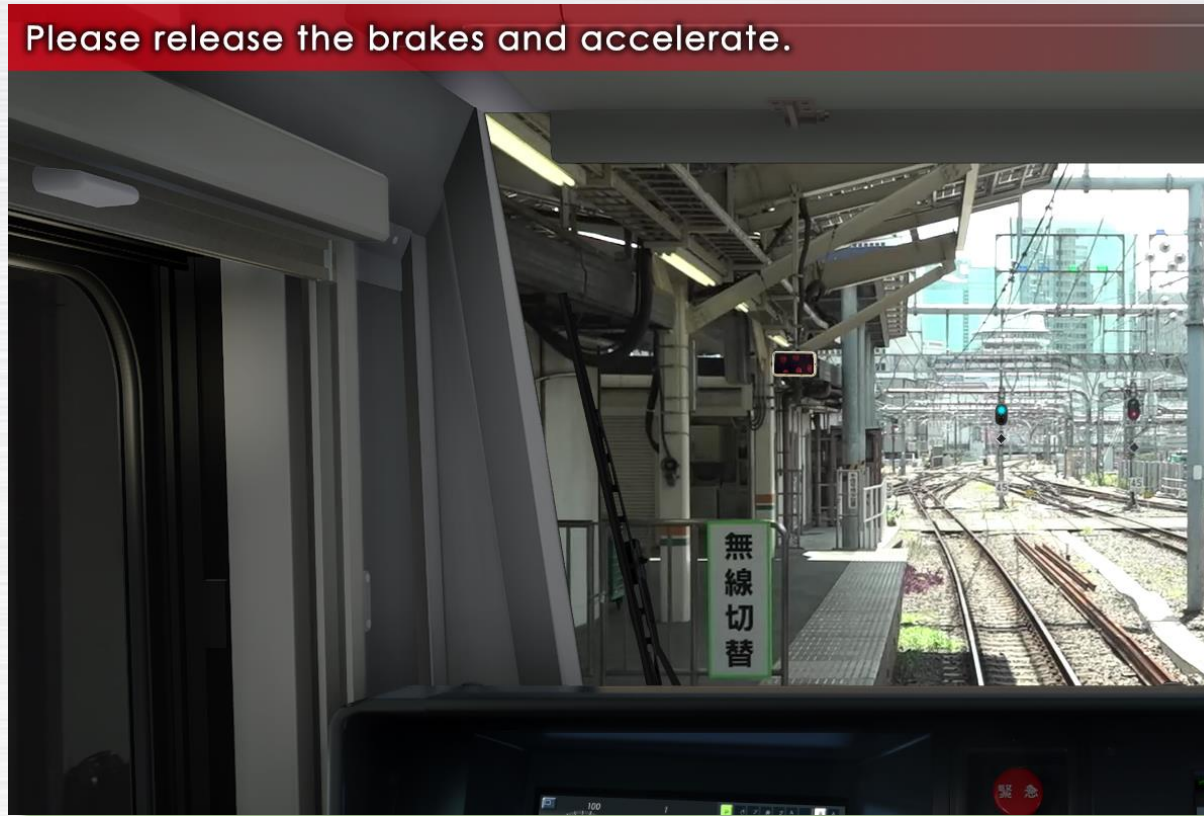


## 6

## Driving① Departure

When at a station, once the doors close the pilot lamp will turn on.  
(In the case of DMU, there will also be a departure signal buzzer from the conductor.)

You can then accelerate and depart.



If you idle when the pilot lamp is lit, after a while the operation guide will pop up.

(can be turned off from the settings menu)

# 7 Driving<sup>②</sup> Traveling

Drive until the next station. (\*) .....By default setting, it is done automatically.

## Signalling confirmation and Safety systems

- Going over the speed limit or not respecting the signals will result in automatic
- If the emergency brakes activate automatically, put the brakes in the “Emergency” position manually. Once you release them, the automatic brakes will release too. (\*)
- ◆ In the **ATS-Ps installed section, the automatic brakes not release just by putting the brakes in the “Emergency” position .**  
See next page for the description of ATS-Ps.

## EB alarm

- **Inactivity for over 1 minute while in motion will cause an alarm to ring.**  
If there is no activity (pressing the deadman reset switch reset button, sound the horn etc.) for 5 seconds while the alarm is ringing, the driver is considered incapacitated (deadman switch) and the emergency brakes will activate. (\*)



Signalling on the tracks.



In the case of some safety systems(ATC, for example), There are not any signalling on the tracks, so the speed limit is shown as a yellow triangle on the speedometer.

# 7 Driving<sup>②</sup> Traveling

**ATS-Ps system** (Oito line etc.) (\*) .....By default setting, it is done automatically.

The train models that support ATS-Ps are equipped with a display as shown below.  
Your speed and speed limit of the own train are displayed with lamps.

When entering the speed limit section, the bell will ring and the chime sounds “Ding Dong...” to alert the driver.

The driver must operate one or more brakes within 5 seconds and press the ATS confirmation button to make the train aware that it has been confirmed. (\*)

At this time, the bell will stop ringing, but the chime will continue to sound until it passes through the caution section and the driver will stop it manually.

If the confirmation operation of the bell sound is delayed or when driving at a speed that makes it impossible to stop before a stop signal, the emergency brakes will activate and the train will stop.

To release the brakes, the driver must operate the ATS reset switch with the brake in “emergency” . (\*)

After the train passes through the warning section and stops at the next station, press the alarm stop button (X key) to stop the chime sound.

## Your Speed

If the speed up and reach right speed limit display, emergency brake will activate.



## Speed limit display

The speed allowed is shown.  
When approaching a stop signal, this display also gradually descend from right to left.

# 7 Driving<sup>②</sup> Traveling

## KiHa 54 series driving operation ( Keyboard ) \* If using a gaming controller, please set up the layout using the optional buttons.

### • Simplified and realistic operation of the handles

In the settings screen, under the “KiHa54 handle operation” tab it is possible to switch between “simplified” and “realistic” operation. By doing so, you will be able to operate the automatic air brakes and gear shift handles.

The “simplified” setting allows to use the same controls of other 2-handle trains (like the 211 series).

**Automatic air brakes** : control the braking of the whole train, it changes the braking power by applying air pressure.

「M」 key: drive, 「,」 key: keep, 「.」 key: NB, 「/」 key: EB

**Gear shift handle** : Like in cars and bicycles, the gear shift controls how the rotation of the engine is transmitted to the wheels. The gears are ordered in "shift change" (mainly used during departure and medium speed), "Neutral", "Direct" (mainly for medium and higher speed). Since in the KiHa 54 series, the choice of the gear happens automatically depending on the speed, when accelerating put the gear in the "shift change" or "direct" positions.

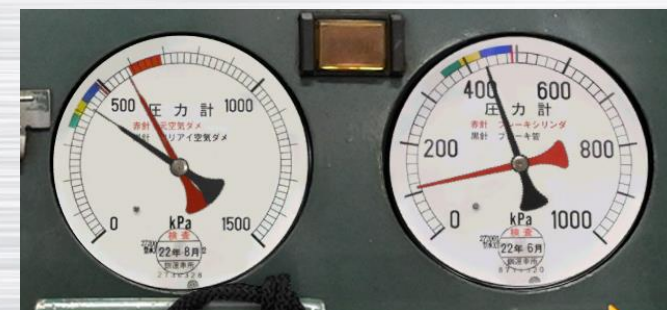
「R」 key: shift towards “direct” , 「F」 key: shift towards “shift change” gear

### • Pressure gauges of the KiHa54 series

There are 2 different pressure gauges on the KiHa 54 series. In the picture on the right, the gauge on the left indicates the ER pressure (black hand) and MR pressure (red hand) of the reserved air, while the gauge on the right shows the BP pressure (black hand) and BC pressure (red hand) of the brakes. Like in other models, what indicates the braking power is the red hand on the left (BC pressure).

In the automatic air brakes, as the air pressure (BP pressure) indicated by the black hand grows, the brakes will loosen, and the number indicated by the red hand (BC pressure) will reduce.

Furthermore, once the black hand (BP pressure) reaches a certain number, the red hand (BC pressure) will be unable to rise anymore, and it won't be possible to brake more than what is currently applied. If the BP pressure decreases too much, loosening the brakes will require longer too, so it's better to operate the brakes so the black hand does not go below 300.



Black hand : BP pressure  
Red hand : BC pressure

# 7 Driving<sup>②</sup> Traveling

## KiHa 54 series driving operation ( Keyboard ) \* If using a gaming controller, please set up the layout using the optional buttons.

### · Operations between departure and the next station:

1. After the doors close, the conductor will signal with the buzzer,  
**move the gear shift handle to “change” or “direct”** ,  
and using the **[ M ] key, release the brakes into drive position.** ( the BC pressure will indicate 0kPa )
2. Depart by putting the master controller in P1 position, and after some distance, you can change to P4~P5.  
After reaching the desired speed, put the master controller in N position and maintain speed.  
In this situation, by putting the **gear shift handle to “N”** the rotations of the engine are not transmitted, and the train will move purely by inertia.
3. when about 600m before the next station, **put the brake handle to the “keep” position using [ , ].**  
At about 500m remaining, apply the brakes **using the [ . ] key to put the brakes in the “NB” position**  
(they do not work right away so operate them early)  
Use the **[ , ] key to put the handle in the “keep” position** and maintain a BC pressure of 100~150kPa.  
(when braking, let's try to keep the black hand of the pressure gauge between the blue and yellow area on the gauge face)
4. While paying attention to the remaining distance,  
**use the 「M」 and 「 , 」 keys to alternate brake release and “keep” (and maintain BC brake pressure),**  
and repeat until you reach the stopping point.

### · Locomotive (holding) brakes

By pushing the speed suppression switch ( 「D」 key) when the master controller is at P1 or higher, returning the master controller handle to 「N」 will activate the locomotive (or holding) brakes.  
When this happens, the “B” lamp on the console will turn on. To reset, put the handle back to P1 or above.



E.g. of brakes pressure gauge during operations

Black hand : between blue and yellow (BP pressure)

Red hand : 100~150kPa (BC pressure)

## 8

## Driving ③ Stop

The objective is to stop at the marked stopping point at the next station.

If you stop within a margin of 5 metres from the stopping point (can be configured from the settings menu), the doors will open.

If you go past the stopping point, the simulation will automatically take you to the correct position.  
(From the settings menu, this operation can be changed to manual)



# 9 Pause

While driving, press the Escape key to pause, and once again to resume.

From the pause screen, you can select a different station.

You can also end play, by choosing [End play], and the game will go back to the main menu.



Pause screen

# 10 Mouse and Keyboard controls

## Mouse Controls

Braking/Throttle down · · · · · Scrollwheel UP ↑ / Scrollwheel DOWN ↓

(If the KiHa 54 series handle operation is set to “realistic”, the brakes will have 4 positions: drive → keep → NB → EB)

Release brakes/Throttle up · · · · · Scrollwheel UP ↑ / Scrollwheel DOWN ↓

Neutral gear (no brakes or throttle) · · · · Scrollwheel click

## Keyboard Controls

### · 1-handle driver console controls: (e.g. E233 series)

Emergency Brakes · · · · · [1]

Braking/Throttle down · · · · · [Q]

Neutral gear · · · · · [S]  
(no brakes or throttle)

Release brakes/Throttle up · · · [Z]

### · 2-handle console controls: (e.g. 211 series)

Emergency Brakes · · · · · [/]

Braking · · · · · [.]

Release brakes · · · · · [,]

Neutral gear (no brakes) · · · [M]

Throttle up · · · · · [Z]

Throttle down · · · · · [A]

Neutral gear (no throttle) · · · [S]

### · KiHa 54 series controls

Brakes: EB position · · · · · [/]

Brakes: NB position · · · · · [.]

Brakes: “keep” position · · · · · [,]

Brakes: “drive” position · · · · · [M]

Increase acceleration · · · · · [Z]

Reduce acceleration · · · · · [A]

Neutral gear · · · · · [S]

Gear shift handle set to “Direct” · · · [R]

Gear shift handle set to “change” · · · [F]

# 10 Mouse and Keyboard controls

## Keyboard Controls

### • Other controls:

\* Not available for the train model that doesn't have the equipment.

Show/Hide cabin view . . . . . [C]

Show/Hide HUD . . . . . [V]

Pause game . . . . . [Esc]

Reverser Forward/Reverse . . . . [Up ↑] / [Down ↓]

Deadman switch reset . . . . . [E]

Horn (Level 1) . . . . . [Enter] / [BackSpace]

Horn (Level 2) . . . . . [BackSpace] \*Only for models with 2 levels

ATS confirmation Button . . . . . [Space]

Alarm stop Button . . . . . [X]

ATS Reset Switch (Service) . . . . . [Y]

ATS Reset Switch (Emergency) . . . . [U]

Communication buzzer . . . . . [B]

Inching Button . . . . . [I]

Cruise control/Speed suppression (2) Button . . . . [W]

Speed Suppression (1) Button . . . . . [D]

Hill start Button . . . . . [K]

TASC off switch . . . . . [T]

# 11 Xbox Controller control

[Back/View] Switch between driver console perspective / Drive controls

[Start/Menu] Pause

[LT] Horn

Half push . . . Horn (Level 1)

Deep push . . . Horn (Level 2)

\*Only for models with 2 levels

[RT] Deadman switch reset

[LB] ATS confirmation Button

[RB] Alarm stop Button

[Left stick] Reverser

↑ . . . Forward

↓ . . . Reverse

[Y] Speed Suppression (1) Button

[B] Cruise control/Speed suppression (2)

[A] Braking \*Only for two-handle type

[X] Release brakes \*Only for two-handle type

[Directional pad] Master controller

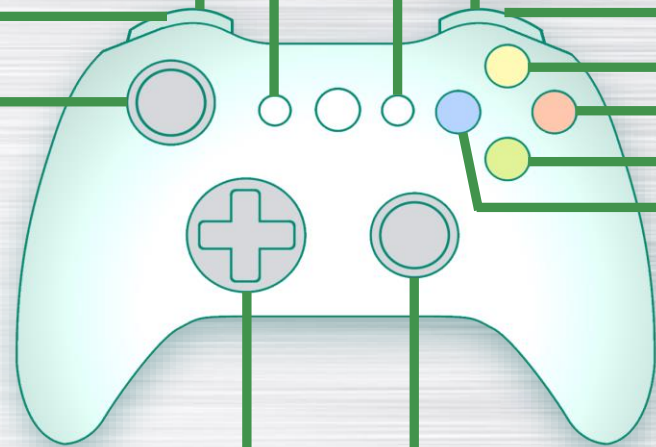
↑ . . . Main handle throttle down

← . . . Main handle neutral gear (no throttle)

→ . . . Main handle emergency position

↓ . . . Main handle throttle up

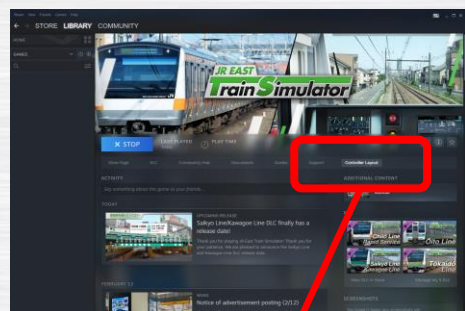
[Right stick] Hill start Button



# 12 Controller layout

This simulator can be operated with any Steam supported controller.

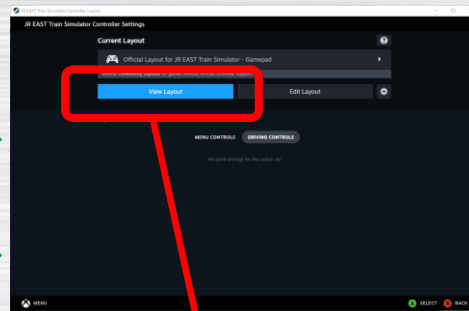
After connecting the controller, you can edit the layout of the buttons from Steam's 「Controller Layout」 page.



Controller Layout

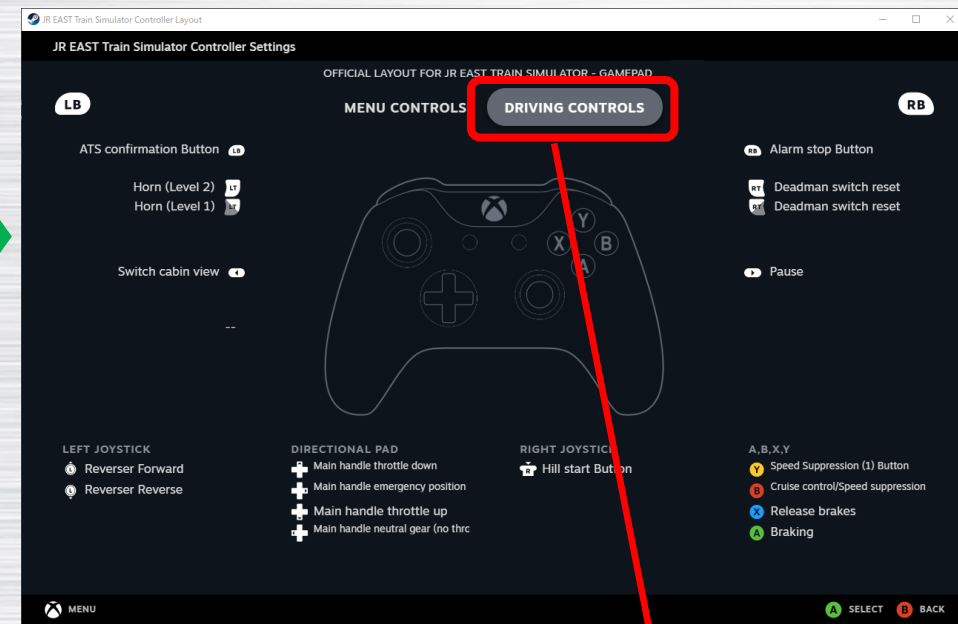
From the Steam library page, select 「Controller Layout」

It is possible to change the controller layout while operating the simulator from the Steam overlay (Shift+Tab) and selecting 「controller settings」



View Layout

In the controller setting screen, select 「View Layout」



DRIVING CONTROLS

Select 「Driving Controls」

# 13 ZUIKI MASCON registration and configuration

This simulator can be operated using the ZUIKI MASCON by ZUIKI Inc.

When using the ZUIKI MASCON for the first time, follow these instruction for its connection and configuration.

These settings will be recognised automatically at every following use.

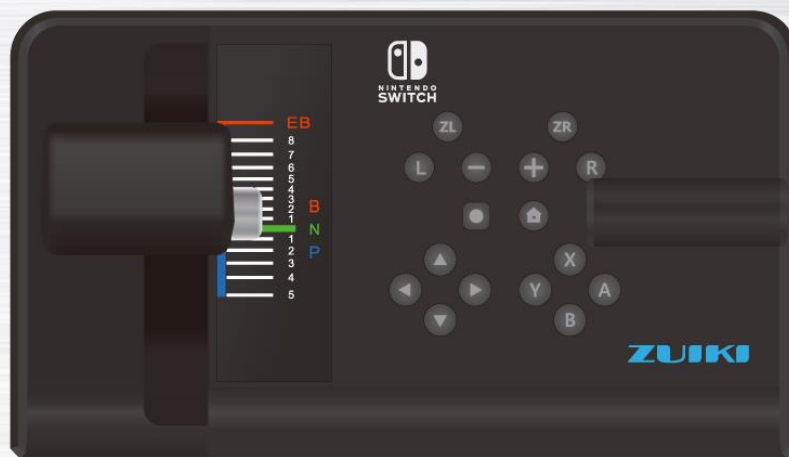
1 . Connect the ZUIKI MASCON to the PC



2 . Register the controller to the Steam client



3 . Configure the button layout into the Steam client



【Supported serial numbers】 ZKNS-001, ZKNS-002, ZKNS-011, ZKNS-012  
(check the bottom of your controller)

# 13 ZUIKI MASCON registration and configuration

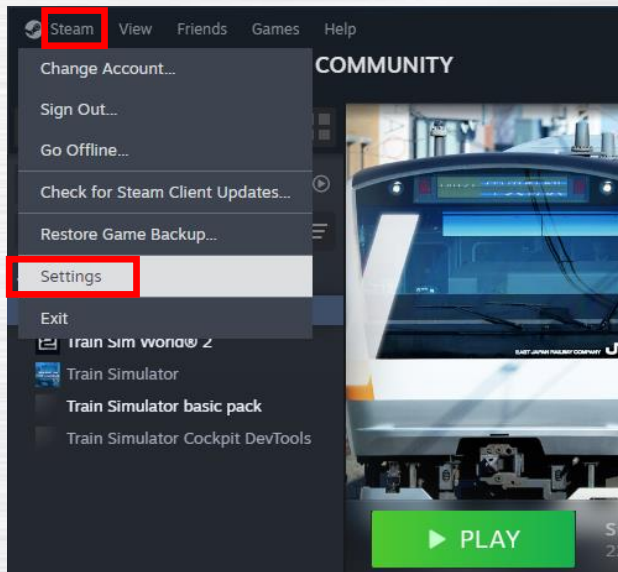
## 1. Connect the ZUIKI MASCON to your PC

- ① Set the lever on the ZUIKI MASCON to the “N” position and connect to the PC’s USB port
- ② Check that the “ZUIKI” mark on the controller lights up blue

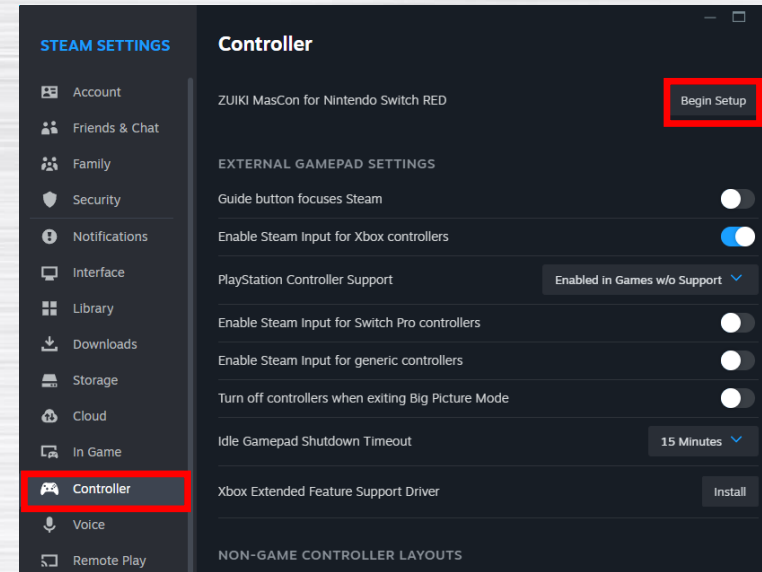
## 2. Register the controller into the Steam client

\* The ZKNS-001 controller is already registered so you can skip this step. (Proceed to the step “3.” )

- ① Start the Steam client, and from the top menu click “Steam” → “Settings”
- ② On the left hand menu of the Steam settings page, click “Controller” .  
Once you confirm that the name of the ZUIKI MASCON is listed, click “Begin Setup” .



① Click “Steam” → “Settings”



② Click “Controller” → “Begin Setup”

# 13 ZUIKI MASCON registration and configuration

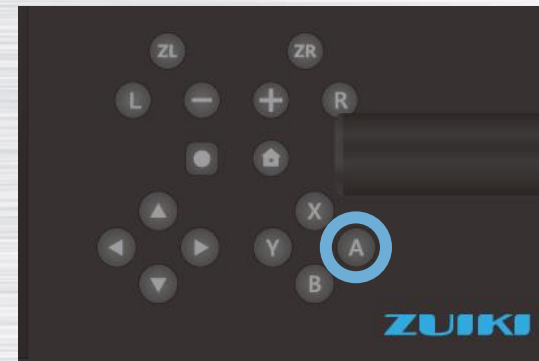
## ③ Register the button layout for the ZUIKI MASCON.

Follow the instructions on screen as listed below,  
pressing the corresponding buttons and operating the handle when required.

※Note that the buttons illustrated on screen and the ones on the controller are in different positions. (see below)

Please follow the directions based on the button name and not its position

(If “Press the A button” appears on screen, press the “A” button on the ZUIKI MASCON)

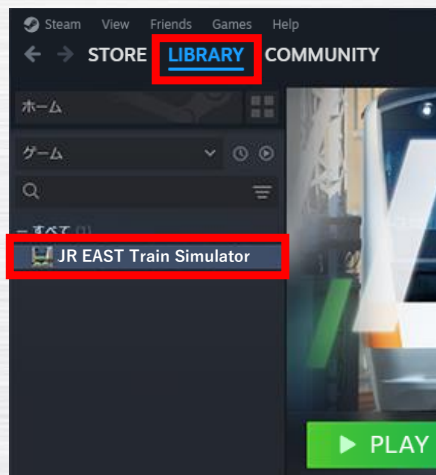


- A → B → X → Y, (direction pad) left, right, up, down . . . . . press the button with the same name
- Left stick: left, right . . . . . skip by pressing A
- Left stick: up . . . . . push the handle from N to EB and return to N
- Left stick: down . . . . . pull the handle from N to P5 and return to N
- Press left stick . . . . . skip by pressing A
- Right stick: left, right, up, down, press . . . . . skip by pressing A
- For Left bumper press L, for Left trigger press ZL, for Right bumper press R and for Right trigger press ZR.
- For left center button press – (minus), for right center button press + (plus), for the central button press home, for the bottom center button press the round mark.
- After the screen changes to input testing, you can check if the handle and buttons respond correctly to input.
- Return the handle to N position, click “Setup device inputs” and return to the Steam client top page.

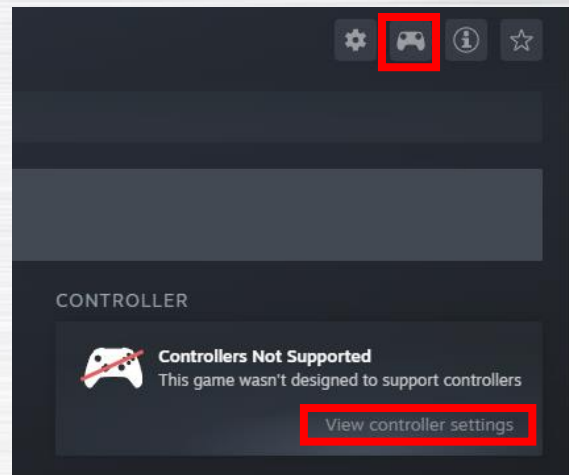
# 13 ZUIKI MASCON registration and configuration

## 3. Configuration of the button layout in the Steam client (button function designation)

- ① After checking that the “ZUIKI” mark on the controller is lit blue, start the Steam client
- ② Go to “Library” in the Steam client and select “Train Simulator” from the menu on the left.
- ③ Once the “Train Simulator” page is open, click on the controller symbol or “View controller settings” on the right hand side of the screen.
- ④ If the Steam input screen appears, click “next” and “OK” and then continue.  
(it will show the first time ZKNS-002, ZKNS-011 and ZKNS-012 are connected)



② Click “Library” → “JR East Train Simulator”



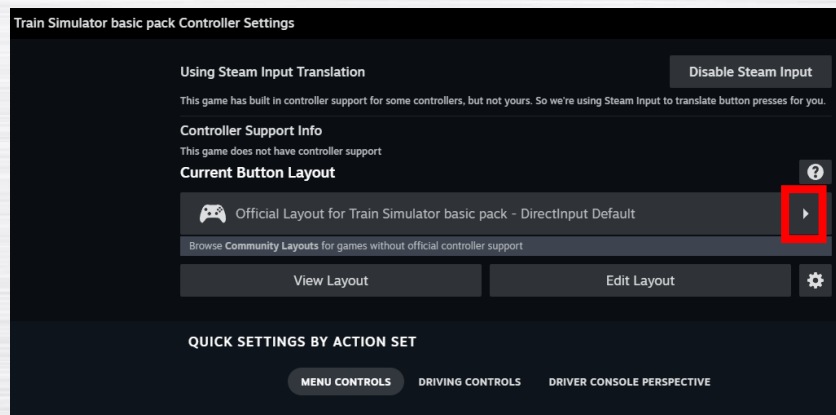
③ Click the controller symbol or “View controller settings”



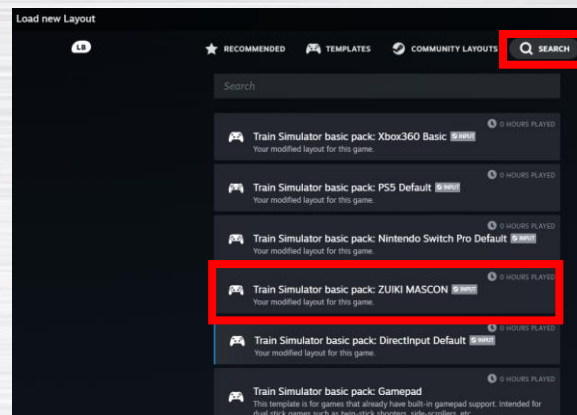
④ If the Steam input screen appears, click “next” and “OK” and then continue

# 13 ZUIKI MASCON registration and configuration

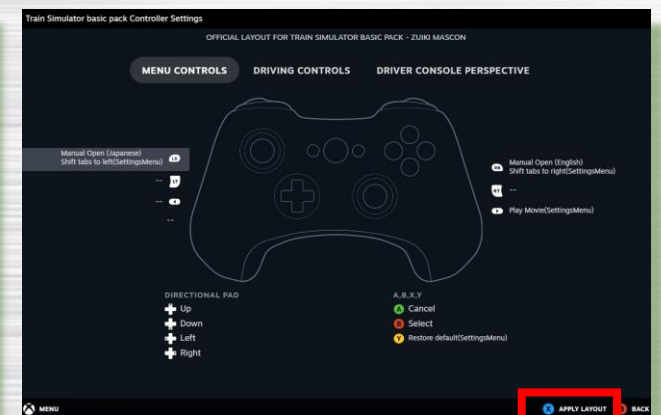
- ⑤ Once the “Train simulator Controller Settings” pop-up appears, click the “▶” on the right side of the “Current Button Layout” section.
- ⑥ The “Load new Layout” screen will appear, and clicking “Search” , a list of layouts will be shown. From the list, select the one for the ZUIKI controller.
- ⑦ Once the controller layout appears, click “X apply layout” on the bottom right, and return to the top page of the Steam client.  
The controller is now set up and ready to use.



- ⑤ In the “Train simulator Controller Settings” screen click the ▶ on the right side of the “Current Button Layout” section



- ⑥ In the “Load new Layout” screen, click “search” and select the Zuiki layout

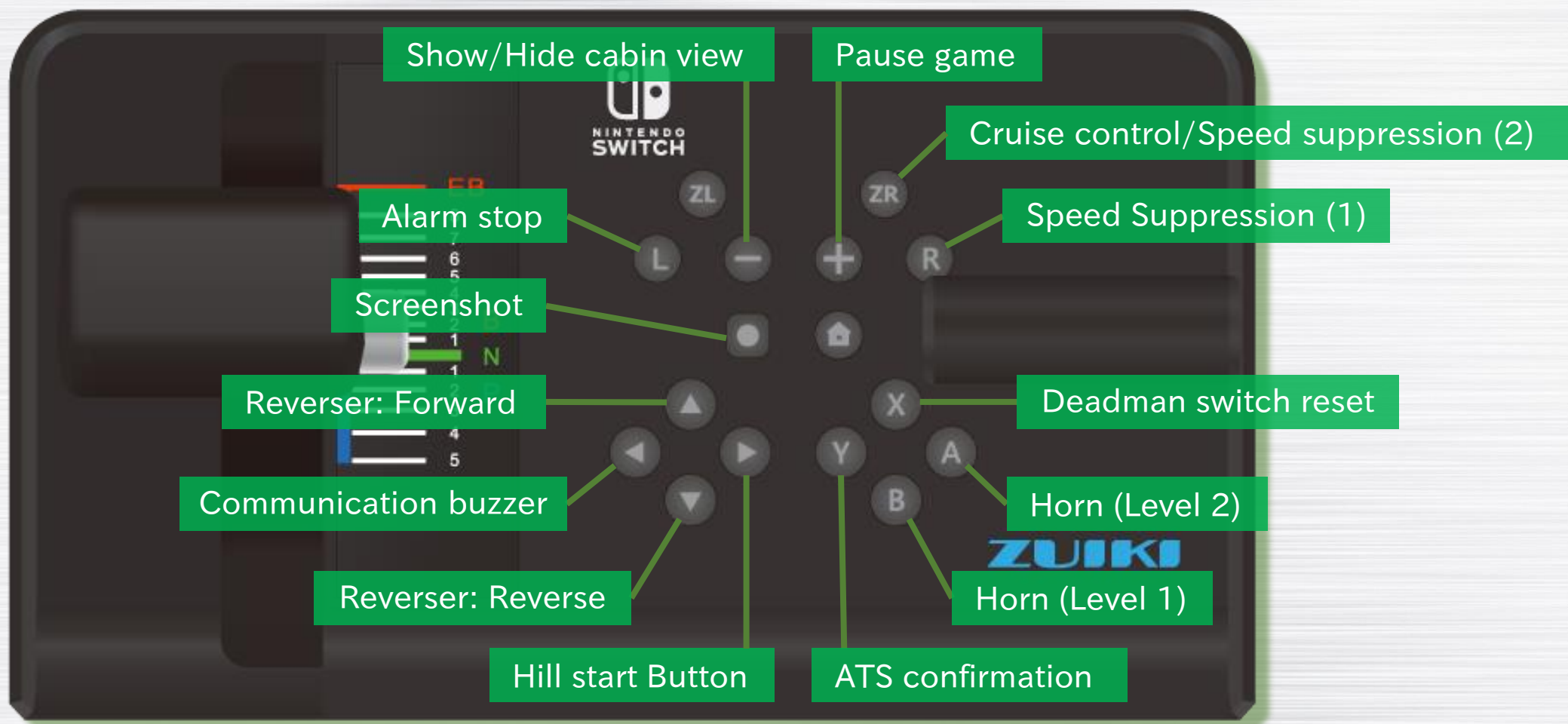


- ⑦ Once the controller layout appears, click “X apply layout” on the bottom right, and return to the top page of the Steam client.

# 13 ZUIKI MASCON registration and configuration

The default layout for the ZUIKI MASCON is as follows:

(It is also possible to personalise your controller layout freely from the Steam Client controller settings.)



**\*Please do not use the ZL button.**

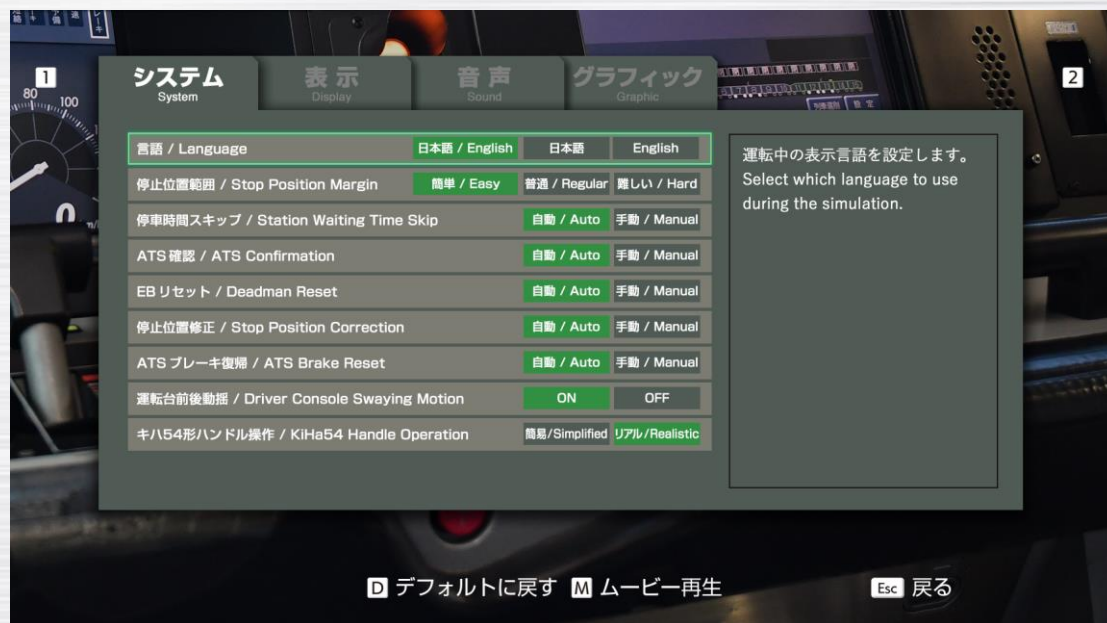
# 14 Setting

You can change or adjust all kinds of settings on this screen.

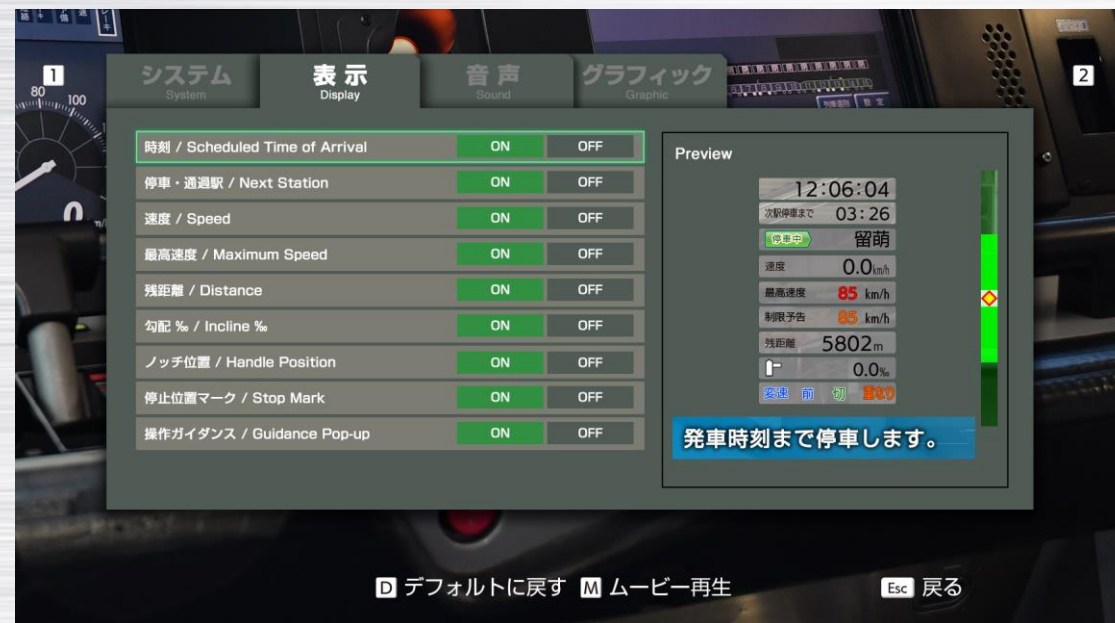
When you select a setting item, a description of the setting and a preview are displayed on the right.

Restore Default . . . Reset settings to default

Play Movie . . . . Play the introduction video



System setting screen



Display setting screen



The E233 series is a Direct Current electric train that made its appearance in 2006, and the 1000 model was based on the Series 0 model developed for the Chuo line rapid service, for use on the Keihin-Tohoku line.

As “durability” , “comfort” , and “better announcements and performance” are shared concepts across the trains of the 233 series, it adopts many universal design and accessibility features, like lower hanging straps and luggage racks in the first car and near the priority seats, as well as longer handrails, and a clear indications marking the priority seats area; compared to the other series it has a smaller gap between the carriage and the platform, more comfortable seating and more space available to each seated passenger.

The master controller consists of one lever, and the driver controls the speed of the train using the single handle on the left side of the console. It employs the D-ATC train protection system, and the signals and traffic signals are not physical, but appear directly on the speedometer screen.



# 16 Train model introduction: E233 Series 3000 model



The E233 series 3000 model is a Direct Current electric train that made its appearance in 2008, derived from the Chuo line rapid service model 0, it was developed to be used on the Tokaido, Takasaki and Utsunomiya Lines.

Designed to be used coupled with the E231 series, in use since 2000, things like its acceleration were set up to match with the E231; the standard setup is a 10 car train with two 2-level green cars.

The master controller consists of one lever, and the driver controls the speed of the train using the single handle on the left side of the console. For the safety system, it uses the ATS-P system, and the driver follows the signalling along the rails while driving.



# 17 Train model introduction: E233 Series 0 model



The E233 series is a Direct Current electric train that made its appearance in 2006, and its first model, the model 0, was developed to be used on the Chuo line rapid service.

For better reliability, all the critical safety and mechanical systems like the pantograph are redundant (doubled), so that if one fails, there is a backup that allows for uninterrupted service. The frontal part is constructed to absorb impacts, so that in case of a collision the driver and the passengers are protected from breakages.

The master controller consists of one lever, and the driver controls the speed of the train using the single handle on the left side of the console. For the safety system, it uses the ATS-P system, and the driver follows the signalling along the rails while driving.





The 211 series is a semi-long seat electric train that made its appearance in 1985. Aiming for an energy conserving, low maintenance train, the interiors and equipment in use until then were fundamentally revised, for example the frame was made of lightweight steel and regenerative braking was introduced.

1000 and 3000 model were Initially designed for the Takasaki/Utsunomiya lines, since the Oito line runs through Nagano prefecture, part of the equipment of the 3-car setup was modified to be snow-resistant, along other modifications like changing to smaller pantographs to fit narrow tunnels, and rewrapping of the exterior.

The master controller is a two-handle type, and the driver controls the acceleration with the handle on the left side of the console, and brakes with the one on the right.

For the safety system, on the Oito line it uses both the ATS-P and ATS-Ps systems, and the driver follows the signalling along the rails and ATS-Ps indicator on the driver console while driving.

