

Pogo Stick Controller - Documentation

Version: 1.1

Unity Compatibility: 2021.3+ (Supports URP/HDRP)

Overview

The Pogo Stick Controller is a physics-based character controller that simulates realistic pogo stick movement with advanced stunt capabilities.

This asset includes:

- Dual control modes (Manual and Automatic bouncing)
- Advanced air stunts and rotations
- Customizable physics and gravity
- Dynamic character tilt and balancing
- SFX/VFX integration for impacts

Best suited for:

- Parkour games
- Physics-based platformers
- Arcade-style obstacle courses

Features

- Two control modes: Key-Pressed and Continuous bouncing
- Stunt system with locked rotation axes
- Auto-balancing recovery system
- Jump force accumulation for variable-height jumps
- Input buffering for responsive jumps
- Dynamic gravity with fall acceleration
- Visual squash/stretch effects
- Multi-layer impact system for SFX and VFX

Getting Started

Requirements

- Unity 2021.3 or higher
- DOTween (included in the package)

Quick Setup

1. Import the PogoStickController package into your project
2. Locate the prefab:
Assets/PogoStickController/Prefabs/PogoStickPlayer.prefab
3. Drag the prefab into your scene
4. Assign ground layers in the Spring component
5. Press Play and test the mechanics

Controls

Input	Action
WASD / Arrow Keys	Move & Tilt
Space (Hold/Release)	Charge and Release Jump (KeyPressed Mode)
Mouse X	Rotate in Air (Stunt Control)
Right Mouse Button	Reset Position
R Key	Trigger Auto-Balance

Core Components

PogostickController

Main component handling pogo stick physics, stunts, movement, and control logic.

Controller Mode Settings

Property	Description	Default
Controller Type	Choose between KeyPressed or Continuous	KeyPressedBased
Continuous Jump Force	Bounce force in Continuous mode	15
Continuous Jump Delay	Minimum time between automatic bounces	0.2 seconds

Stunt Settings

Property	Description
Lock Stunt Axes	Restricts rotation on X/Y/Z axes
Air Stunt Torque	Controls rotation force while airborne

Physics Settings

Property	Default	Description
Fall Gravity	35	Downward force applied when falling
Gravity Lerp Speed	5	Smooth transition to fall gravity
Clamped Velocity	-	Limits overall movement speed (optional)

Visual Settings

Property	Description
Max Tilt Angle	Maximum angle the character leans while moving
Tilt Smoothness	Speed of transition between tilt angles

Spring Component

Handles ground contact detection and suspension bounce. Helps determine when to trigger pogo jumps.

Advanced Configuration

Extending the Controller

You can access and modify behavior using public methods and properties:

```
PogostickController pogo = GetComponent<PogostickController>();
```

```
// Force a jump  
pogo.ApplyJump(20f);
```

```
// Check grounded status  
bool grounded = pogo.IsGrounded;
```

```
// Change control mode at runtime  
pogo.controllerType = PogostickController.ControllerType.Continuous;
```

Custom Impact Effects

To add new bounce effects:

1. Expand the PogoStickBounceEffectHandler array
2. Add a new entry
3. Assign a collision layer
4. Attach AudioClip and ParticleSystem
5. Optionally assign impact color properties

Troubleshooting

Common Issues

Problem	Solution
Character gets stuck	Increase spring stiffness and damping
Stunts feel unresponsive	Increase Air Stunt Torque value
Continuous jumps too fast	Increase Continuous Jump Delay
Visuals don't tilt properly	Adjust Tilt Smoothness and Max Tilt Angle

Performance Tips

- Use simple colliders (Box or Capsule) for ground
- Limit active Particle Systems in SFX/VFX
- Tune physics update rate in Project Settings > Time

License

This asset is governed by the Standard Unity Asset Store EULA.

Support

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