



## Joystick Toolkit 0.0.4

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Joystick functions for GNU Octave.

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To download a copy of the GNU Octave Joystick package, please visit <https://gnu-octave.github.io/octave-joystick/>.

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# 1 Installing and loading

The Joystick toolkit must be installed and then loaded to be used.

It can be installed in GNU Octave directly from octave-forge, or can be installed in an off-line mode via a downloaded tarball.

The toolkit has a dependency on the SDL library (<http://www.libsdl.org/>), so it must be installed in order to successfully install the Joystick toolkit.

For Fedora: `yum install sdl2-devel`

For Ubuntu: `apt install libsdl2-dev`

The toolkit must be then be loaded once per each GNU Octave session in order to use its functionality.

## 1.1 Online Direct install

With an internet connection available, the Joystick package can be installed from the octave-joystick website using the following command within GNU Octave:

```
pkg install -forge joystick
```

The latest released version of the toolkit will be downloaded and installed.

## 1.2 Off-line install

With the Joystick toolkit package already downloaded, and in the current directory when running GNU Octave, the package can be installed using the following command within GNU Octave:

```
pkg install joystick-0.0.4.tar.gz
```

## 1.3 Loading

Regardless of the method of installing the Joystick toolkit, in order to use its functions, the toolkit must be loaded using the pkg load command:

```
pkg load joystick
```

The toolkit must be loaded on each GNU Octave session.

## 2 Basic Usage Overview

A list of available joysticks available can be obtained using the `vrjoysticklist` function.

```
> vrjoysticklist
id name                      forcefeedbacksupported
1 logitech dual action      0
```

The ID value is then used to create a joystick object.

```
> joy = vrjoystick(1)
joy =
```

```
Joystick object
ID: 1
Name: Logitech Dual Action
```

The capabilities of the joystick can be read to determine number of axis and buttons are available.

```
> caps(joy)
ans =
```

```
scalar structure containing the fields:
```

```
Axes = 4
Buttons = 12
POVs = 1
Forces = 0
```

The axis and button states can be read for any axis or button number.

```
> a1 = axis(joy, 1)
a1 = 0
```

```
> b1 = button(joy, 1)
b1 = 0
```

## 3 Function Reference

The functions currently available in the Joystick toolkit are described below;

### 3.1 Utility Functions

#### 3.1.1 isvrjoystick

```
retval = isvrjoystick (obj)
```

Check if input value is a vrjoystick object

Function is essentially just a call of `retval = isa(obj, "octave_joystick");`

##### Inputs

*obj* - The object to check

##### Outputs

*retval* is true, if *obj* is an vrjoystick object, false otherwise.

**See also:** vrjoystick.

#### 3.1.2 vrjoysticklist

```
vrjoysticklist ()
```

```
joylist = vrjoysticklist ()
```

Get or print the available joystick devices.

##### Inputs

None

##### Outputs

*joylist* - a list of joystick ID, Name, ForceFeedbackSupported structures.

##### Examples

Display available joysticks

```
vrjoysticklist;
```

Get a list available joysticks to a variable

```
joylist = joysticklist;
```

The list will contain ID, Name and ForceFeedbackSupported entries for each joystick.

**See also:** vrjoystick.

### 3.2 Joystick Functions

#### 3.2.1 @octave\_joystick/axis

```
joy = axis (joy, id)
```

Get the value of axis *id* on joystick *joy*.

## Inputs

*joy* - a previously opened joystick object

*id* - a positive numeric id for the joystick axis to use

*id* can be a vector of ids to allow getting multiple axis.

## Outputs

*value* - value of the axis between -1 .. 1.

*value* will be a vector of values when getting multiple axis.

## Examples

Open device 1 and get value of axis 1

```
joy = vrjoystick(1);  
val = axis(joy, 1)
```

**See also:** vrjoystick.

### 3.2.2 @octave\_joystick/button

```
joy = button (joy, id)
```

Get the value of button *id* on joystick *joy*.

## Inputs

*joy* - a previously opened joystick object

*id* - a positive numeric id for the joystick button to use

*id* can be a vector of ids to allow getting multiple buttons.

## Outputs

*value* - value of the button (0 or 1).

*value* will be a vector of values when getting multiple buttons.

## Examples

Open device 1 and get value of button 1

```
joy = vrjoystick(1);  
val = button(joy, 1)
```

**See also:** vrjoystick.

### 3.2.3 @octave\_joystick/caps

```
info = caps (joy)
```

Get the capabilities joystick *joy*.

## Inputs

*joy* - a previously opened joystick object



## Outputs

*info* - A struct with fields Axis, Buttons, Force, POVs to hold the numeric count of each in joystick.

## Examples

Open device 1 and capabilities

```
joy = vrjoystick(1);
c = caps(joy)
```

**See also:** vrjoystick.

### 3.2.4 @octave\_joystick/close

`close (joy)`

Close opened joystick *joy*.

After closing the joystick querying the device will no longer work.

## Inputs

*joy* - a previously opened joystick object

## Outputs

None

**See also:** vrjoystick.

### 3.2.5 @octave\_joystick/force

`joy = force (joy, id, forcevalue)`

Apply forcefeedback on axis *id* on joystick *joy*.

## Inputs

*joy* - a previously opened joystick object

*id* - a positive numeric id for the joystick forcefeed axis to use

*forcevalue* - force value to use, values should be between -1 .. 1

If *id* is a vector of axis ids, *forcevalue* is expected to be a single value applied to all of the specified axis or a vector of the same size as *id*, with a value for each axis.

## Outputs

None

**See also:** vrjoystick.

### 3.2.6 @octave\_joystick/pov

`joy = pov (joy, id)`

Get the value of pov *id* on joystick *joy*.

## Inputs

*joy* - a previously opened joystick object

*id* - a positive numeric id for the joystick pov to use

*id* can be a vector of ids to allow getting multiple pavs.

## Outputs

*value* - value of the pov as an angle in degrees, or -1 if not pressed.

*value* will be a vector of values when getting multiple buttons.

## Examples

Open device 1 and get value of pov 1

```
joy = vrjoystick(1);  
val = pov(joy, 1)
```

**See also:** vrjoystick.

### 3.2.7 @octave\_joystick/read

```
[axes, buttons, pavs] = read (joy)
```

Get the value of all axes, buttons and pavs joystick *joy*.

## Inputs

*joy* - a previously opened joystick object

## Outputs

*axes* - vector of the axis values.

*buttons* - vector of the button values.

*pavs* - vector of the pov values.

**See also:** vrjoystick, axis, pov, buttons.

### 3.2.8 vrjoystick

```
joy = vrjoystick (id)
```

```
joy = vrjoystick (id, "forcefeedback")
```

Attempt to open a joystick.

## Inputs

*id* - a positive numeric id for the joystick device to use.

"forcefeedback" - String constant to enable forcefeedback.

## Outputs

*joy* - a octave\_joystick object.

## Joystick Properties

A joystick object has the following properties:

ID	The ID of the joystick as used to create the joystick
Name	The name of the joystick device
Status	Status of the joystick ("Open" or "Closed")
ForceFeedbackSupported	Boolean for if the joystick was opened with forcefeedback enabled and supports forcefeedback.

## Joystick Functions

A joystick object provides the following functions:

axis	Get the value of a joystick axis
buttons	Get the state of a joystick button
caps	Get the capabilities of the joystick
close	Close a joystick
force	Set the forcefeedback forces on a joystick
pov	Get the pov values from a joystick
read	Read all state values from a joystick

## Examples

Open device 1

```
joy = vrjoystick(1);
```

**See also:** vrjoysticklist.

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