Body Force

This page provides information on the Body Force component.

Overview

The **Body Force** creates a force to pull the fluid toward or away from a **geometry object.**

A positive **Strength** value produces a force that pulls fluid toward a geometry object, and can be used to make the fluid form the shape of the geometry; for example, making a liquid simulation form the shape of a letter, number, or logo for an interesting effect.

Note that the force is pronounced outside the body, but the inside is replaced with a mechanism that suppresses the fluid's escape.

Meanwhile, negative **Strength** values repel the fluid away from the geometry object.

UI Path: ||Create panel|| > Helpers > Phoenix FD category > BodyForce button
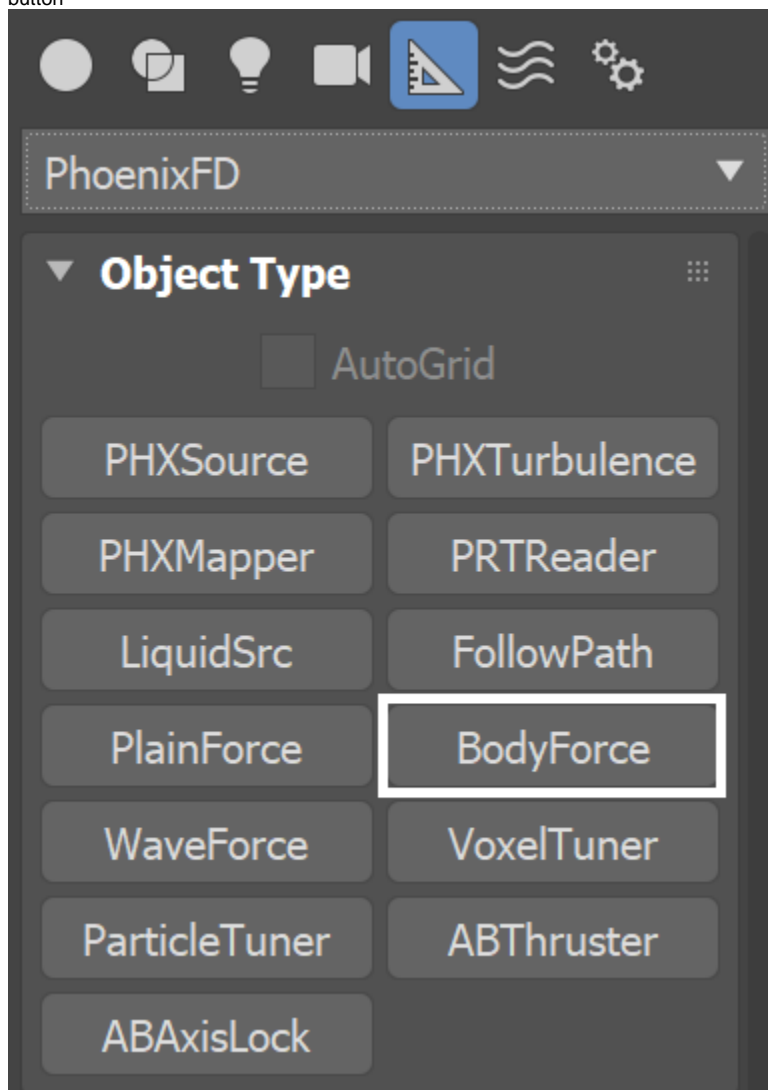
Parameters

Body | *body* – Specifies the geometry object used as an attractor.

Strength | *strength* – Specifies the force intensity. This parameter mostly affects the points outside the body. The fluid accelerates constantly towards the body until reaching it.

You can set the **Strength** parameter to a negative value so the fluid gets repelled by the body.

Max distance | *maxdist* – Specifies the distance at which the force disappears. Note: This value can be animated when needed.

Fade start | *fadestart* – Specifies the relative distance (as part of the **Max Distance**) where the force starts to weaken.

Suppress orb. | *orbitsupp* – Specifies the drag force that suppresses velocity components that are different from the direction toward the body. This force works only outside the body. It only allows the fluid to move towards and away from the body, but does not allow the fluid to orbit the body.

Internal damp | *veldamp* – Specifies the amount of damping applied to velocities inside the body that are above the **Damp min vel.** threshold. This parameter is used to prevent the escape of the fluid from the body. If this value is set to 0, the fluid attracted to the body will pass right through the body, then it will be attracted back towards the body, pass through it again in the opposite direction and so on. This parameter is not affected by the **Strength** of the Body Force.

Damp min vel. | *dampstart* – The fluid velocity above which the **Internal damp** force works. This parameter allows slower fluid to keep moving without being damped. It does not affect the **Spread Speed**.

Spread Speed | *insidespreading* – Specifies the rate at which the fluid fills an object's volume evenly, in world units per second. This parameter is not affected by the **Strength** of the Body Force.

Affect | *affect* – Specifies the affected components of the simulation separated by commas. The supported elements are:

> **Liquid** - affects the Liquid particles in a Liquid simulation.
> **Splashes** - affects the Splash particles in a Liquid simulation.
> **Foam** - affects the Foam particles in a Liquid simulation.
> **Mist** - affects the Mist particles in a Liquid simulation.
> **Air** - affects the space in a Liquid simulation where there are no Liquid particles, when **Simulate Air Effects** is enabled in the Dynamics rollout. All particles such as Foam, Splash or Mist outside the liquid volume will be influenced.
> **Temperature** - affects the voxels in a Fire/Smoke simulation where the Temperature is different than the default 300 Kelvins. The higher the temperature above 300 or the lower it is below 300, the stronger the effect of the force would be. You can find out more about Phoenix Grid Channel Ranges here.
> **Smoke** - affects the voxels in a Fire/Smoke simulation where there is Smoke. The denser the smoke, the stronger the effect of the force would be.
> **Fuel** - affects the voxels in a Fire/Smoke simulation where there is Fuel. The denser the fuel, the stronger the effect of the force would be.
> **Velocity** - affect the voxels in a Fire/Smoke simulation where there is high Velocity. This way you can affect Drag particles.

Affect Names are *not* case sensitive and any unknown element found in the list is ignored.

▼ Object

Body   None

Strength   100.0

Max Distance   1000000.0cm

Fade Start   1.0

Suppress Orb.   0.5

Internal Damp   0.5

Damp Min Vel.   20.0cm

Spread Speed   400.0cm

Affect   Smoke,Temperature,Li