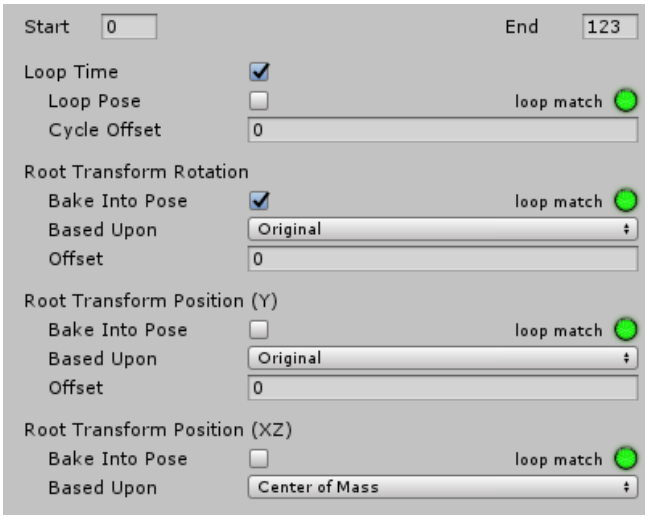
Mocap Online - Unity Animation Notes

Thank you for checking out Mocap Online and our large and growing library. Our new generation of Unity animations have some features worth noting.

For our latest **Unity** packs, all included animations are set to **Humanoid** by default.
The included **MotusMan_v4** character is set to use its own **Avatar**, and is meant to be the Master Avatar for all animations.
All animations are set to use/copy the **"MotusMan_v4Avatar"**.

Fig. 1

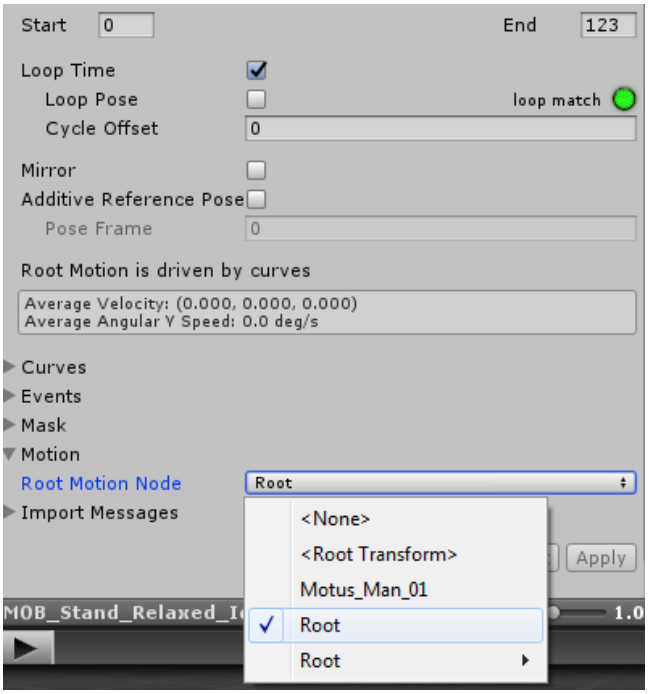


All animations are by default set with: (See Fig. 1)
"Root Transform Rotation" = Original, Bake Into Pose.
This prevents traveling or facing the wrong direction.
"Loop TIme" is checked for animations meant to loop.
Sometimes **"Root Transform Position (Y)" = Original, Bake Into Pose** will need to be set, to prevent the animation from floating in the air or underground. (For example standing then falling to the ground)

All animations are included as **Root motion** and **In-Place**.
There is also true **"Reference" Root motion** now in these animations.

Reference Root Motion

Fig. 2



With Unity's default of Hips root motion, the reference node of the skeleton is ignored and the Hips define the character's travel and facing direction. This can cause issues and animation errors since the Hips don't typically face true forward - causing straight animation loops to turn left or right, or 90 degree strafing animations to travel diagonally, etc. This is what "Original", "Bake Into Pose", and other typical animation settings are designed to counteract and fix.

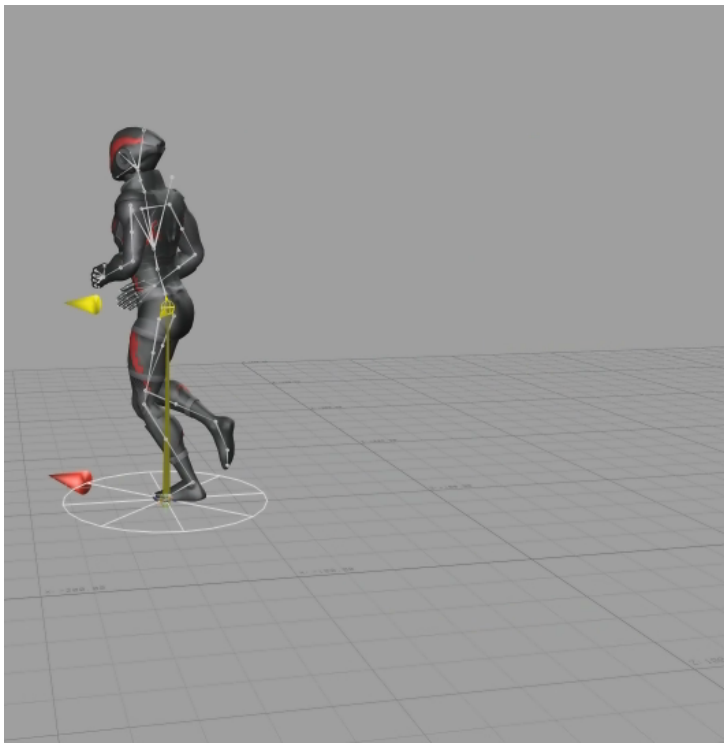
Reference Root Motion is where the actual reference node(Root) is animated to follow directly under the character and always face correctly and consistently forward. It can be used to reliably define the character's Root Transform and ground contact.

Setting the **"Motion > Root Motion Node >" to "Root"**, will make all of the other Animation settings disappear since the "Root" is now taking care of all Root Transform motion instead of the "Hips", negating having to set it all manually to behave correctly(as in traveling or facing the wrong direction). (See Fig. 2)

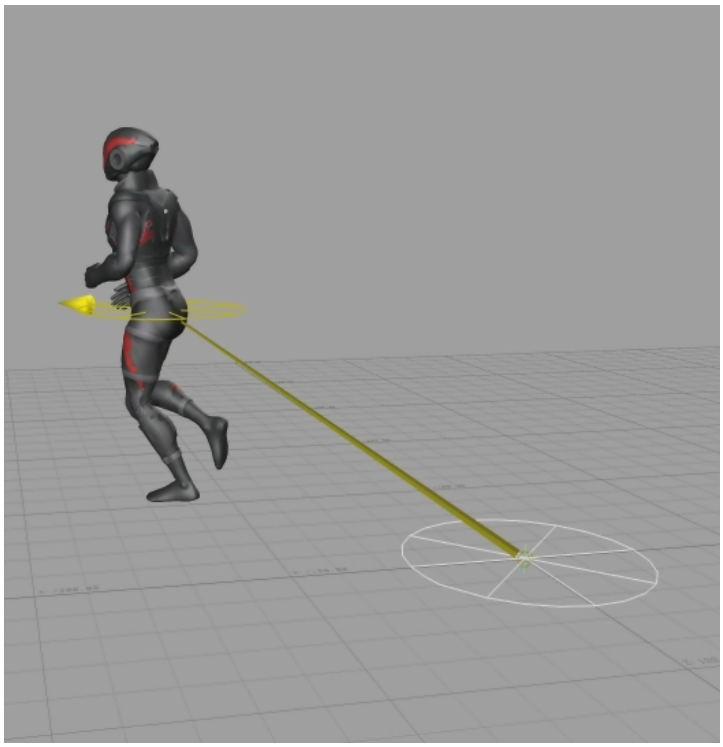
Please check out the following examples.

Root Motion comparison:

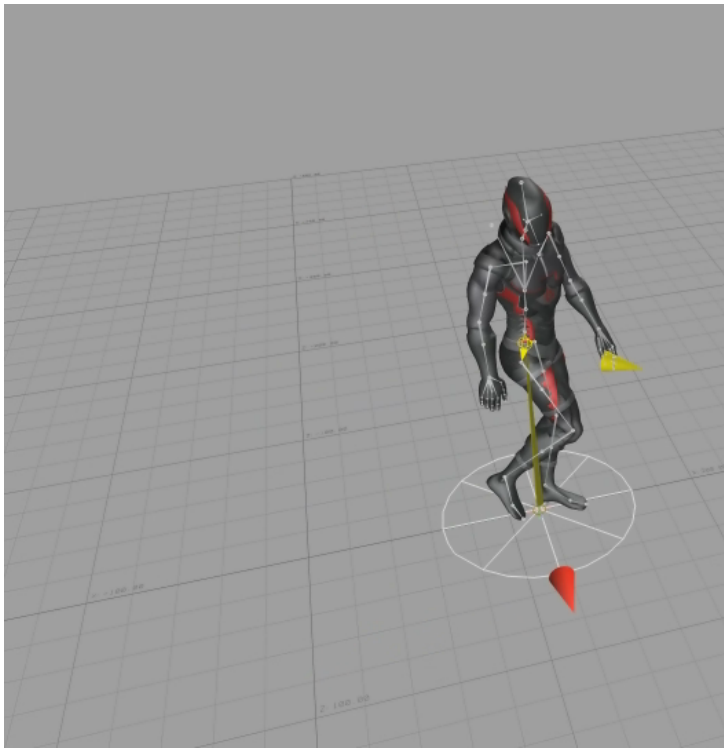
Reference Root Motion: Turn R135 Run Fwd



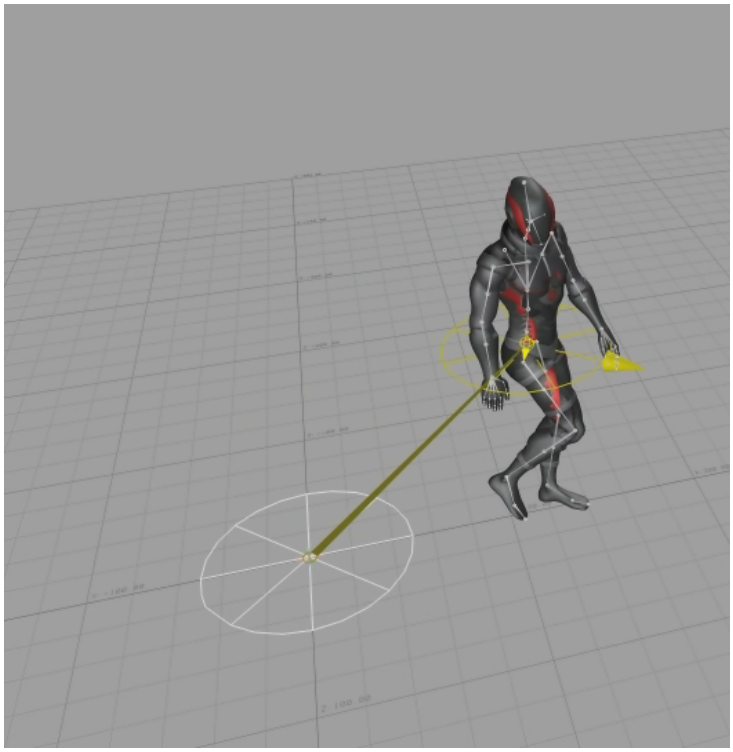
Hips Root Motion: Turn R135 Run Fwd



Reference Root Motion: Walk Strafe 90 Left



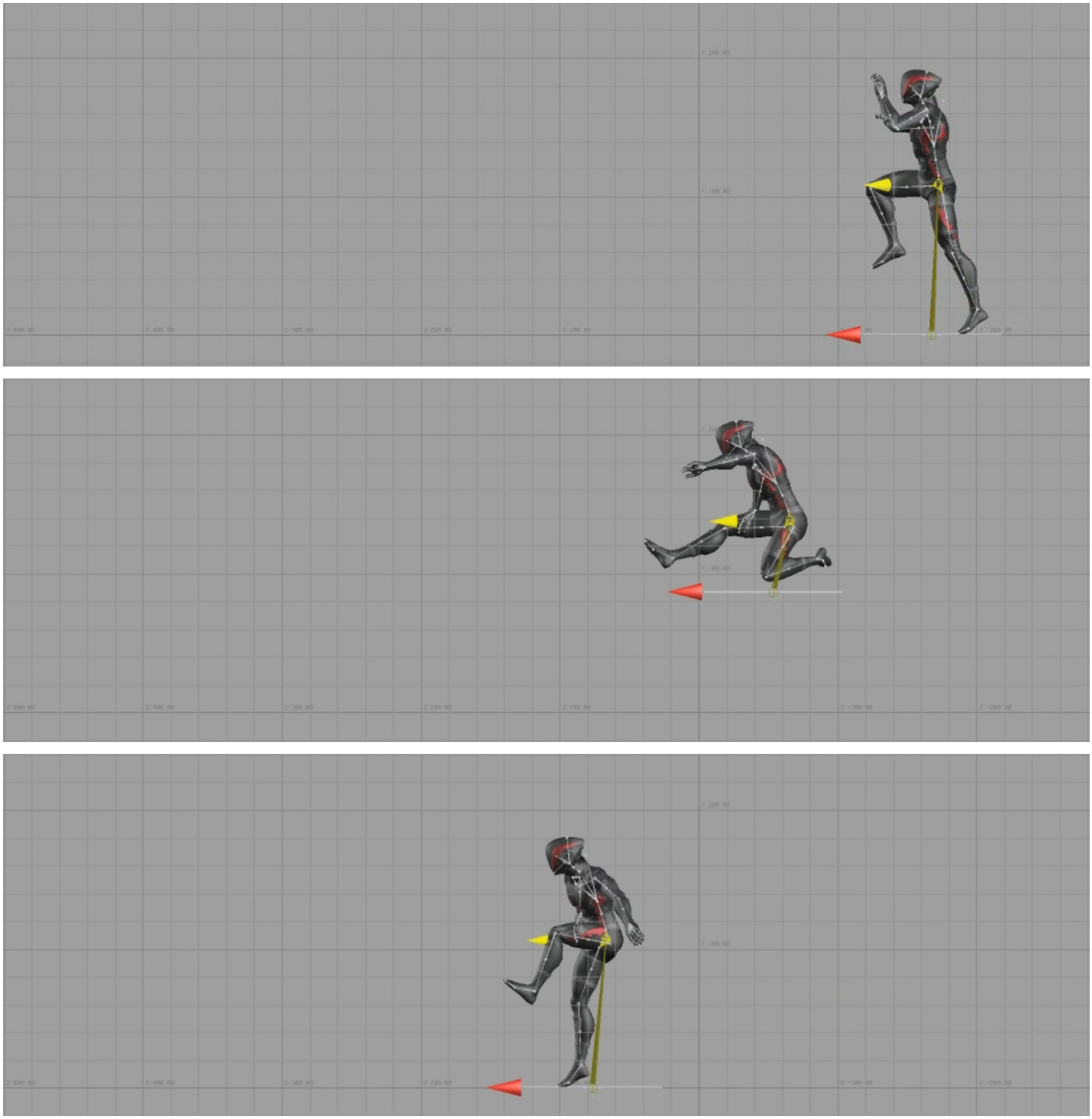
Hips Root Motion: Walk Strafe 90 Left



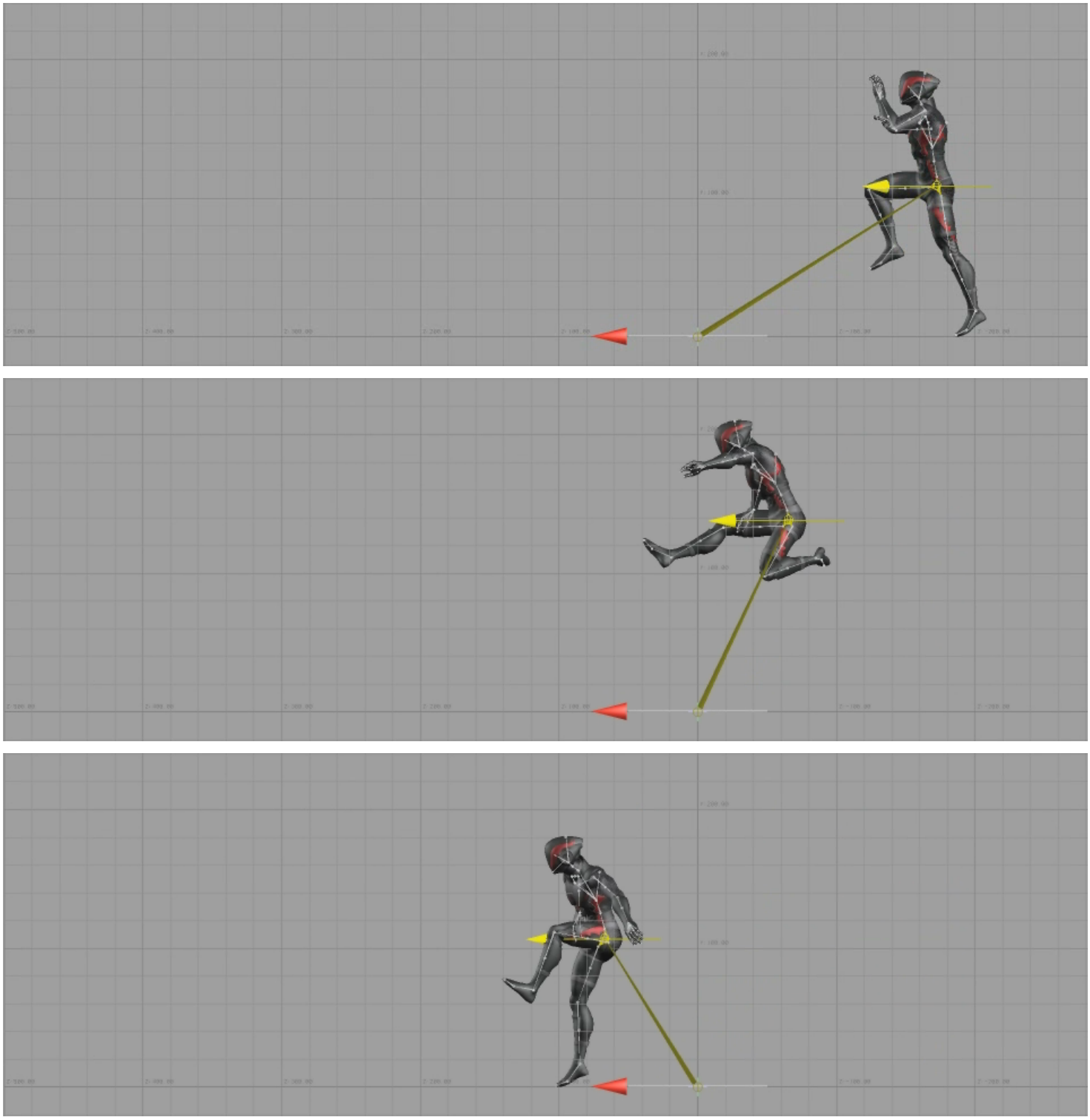
JUMPING

The Reference Root also defines ground contact as it follows vertically under the bottom of the feet.

Reference Root Motion: Sprint Jump



Hips Root Motion: Sprint Jump



In motion you can see the **Hips directional arrow** bounce around a lot during movement, whereas the **Root directional arrow** is smooth and still, but the images hopefully get the concept across.

Reference Root motion will look virtually the same as regular **Hips Root motion** and generally integrate exactly the same with other animations not using Reference Root motion. But it will have its own advantages and idiosyncrasies.

NOTE: The animations do not come set to **“Root”** by default, as most folks are not familiar with this function and feature. We encourage you to try it out and experiment, see what it can do for you.

AVATAR ADJUSTMENTS

The **Avatar** system retargets motion from **MotusMan** to your **Character**. Different **Characters** and **Skeletons** may have different **Stances** and **T Poses**. This can cause some unwanted pose differences between Avatars, such as arms too far out or in, and same thing for foot placement.

Go into your Character's **"Rig > Configure >"** and in the **Scene Viewport** you can select bones and rotate them to an adjusted position to compensate for the stance and pose difference. Be sure to click "Done" when you are finished. It may take a little trial and error but should pay off with a better looking retarget between Avatars. We suggest you experiment.

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