Rigging: The No Frills Basic Rig

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When to use this setup

When you're not planning on getting into character design but you'd still like to have a functional rig that will let you create a wide variety of animations.

Or when you're just too damn lazy to build an advanced rig 8P

Before you Start: Build and Orient your Joints

Just because your Controlls will be on the simpler side doesn't mean you can get away with not having perfect joints!!

Bad joint orientations or layout will make animation a nightmare regardless of your rig. Make sure you've done all of the following:

- Joints are evenly spaced out and clearly follow the direction of the limb.
- Joints are where they're meant to be (no knees in space please)
- There are enough joints for your articulation (you can't bend your elbow without a joint)
- Joints have been oriented properly (either using the Joint Orient tool, or fixing their rotations by hand. Red X line down the bone, Blue Z line all facing the same direction for the limb, etc etc
- JOINTS ARE ALL NAMED CLEARLY!!! If you skip this step then your paint weights experience is going to be pure HELL

Step 1: Setting up your IK Handles

Three IK Handles per side will do us just fine for a simple rig like this.

a) Create an IK Handle (RP Solver, default settings) between the Clavicle and Shoulder joints RENAME IT.

b) Create an IK Handle (RP Solver, default settings) between the Shoulder and Wrist joints RENAME IT.

c) Create an IK Handle (RP Solver, default settings) between the Hip and Ankle joints. RENAME IT.

d) Test out your IK Handles, but remember to Undo those movements so they snap back to default position! That skeleton must not move until you have controllers set up for it.

Step 2: Creating Controls for your feet and hands

Create any shape for your controllers that you'd like. Teardrop, cube, heart, etc. It's important, however, that you can clearly see what that control is meant to be affecting.

a) Create a Control for your wrist. You can have it on the ground plane or around the wrist itself, but the pivot MUST be snapped to the wrist. FREEZE TRANSFORMATIONS!! RENAME IT.

b) Parent constrain your wrist IK to the wrist constroller (ex: select the Wrist Control then shift select the IK Handle and go to Constrain > Parent Constrain. Maintain Offset must be ON)

c) Repeat these steps for the Ankle

NOTE: If you don't want to be COMPLETELY lazy, now is a good time to check out the Rigging: Reverse Foot Roll doco. If so skip "d", the last part of Step 2.

d) Orient constrain your wrist joint to your wrist controller (ex: select the Wrist Control then shift select the Wrist Joint and go to Constrain > Orient Constrain. Maintain offset must be ON). Repeat for the ankle.

Step 3: Creating Controls for your Shoulder

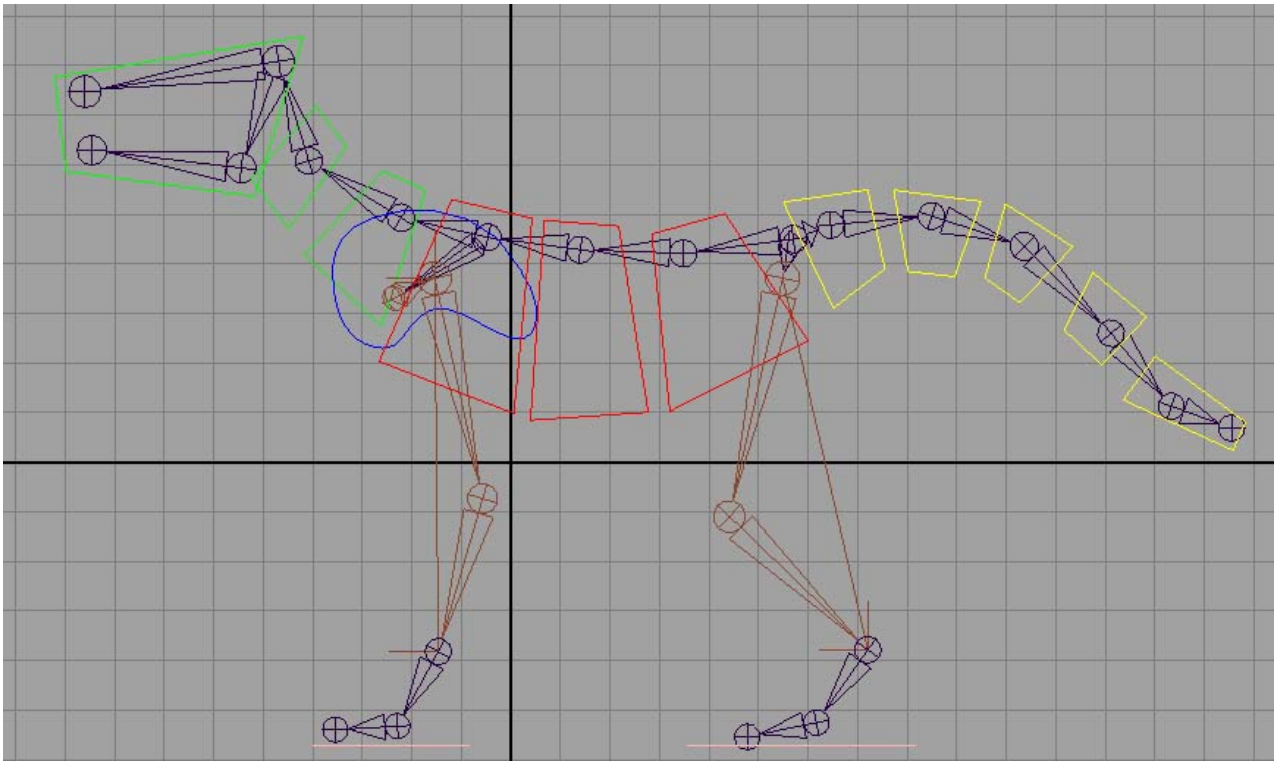
a) Create a Control for your Shoulder. Snap it to the Shoulder Joint and scale it up so that you can easily see it outside the body. FREEZE TRANSFORMATIONS and RENAME IT.

b) Point constrain the shoulder joint to your Shoulder Control (ex: Select the Shoulder Control, shift select the Shoulder Joint and go to Constrain > Point. Make sure Maintain Offset is ON).

Step 4: Create Controls for Each Point of Articulation in Spine, Tail, Neck and Head

Hope you kept your bones simple and straightforward!!

a) Create a control for each point of articulation along the neck, spine and tail. Immediately name them appropriately (ex: ctrl_tail_1_01, ctrl_tail_2_01,



ctrl_chest_01, ctrl_midsection_01, etc).

b) Each control MUST have it's pivot snapped to the bone it will be articulating. FREEZE TRANSFORMATIONS!!

c) Group each control to itself and rename it (ex: select ctrl_tail_1_01 and go CTRL + G to group it to itself. Rename that group grp_ctrl_tail_1_01)

d) Orient Constrain each bone to the **control** (not the group) that's on top of it (ex: select ctrl_tail_1_01 then shift select jt_tail_1_01 and go Constrain > Orient Constrain. Maintain Offset must be on). EXCEPT FOR THE SPINE

e) SPINE ONLY: Parent constrain each joint of the spine to the control (not the group) that's on top of it (ex: select ctrl_hip_1_01 then shift select jt_hip_1_01 and go Constrain > Parent Constrain. Maintain Offset must be on). You should have a Chest, Sternum, Midback, and Hip in your spine.

Step 5: Tying it all Together

If you've been testing your new controls you'll notice that they only orient the bone they're constraining, not the full chain. That's what we're going to set up.

WORKING IN THE OUTLINER!! (in order to select groups)

a) **The Tail:** Starting from the base of the tail and working down to the tip, Parent Constrain the GROUP of each control to the Control above it (ex: select ctrl_tail_1_01 and in the Outliner CTRL CLICK grp_ctrl_tail_2_01 and go Constrain > Parent Constrain).

b) **The Neck:** Starting from the base of the Neck (Lower Neck Control) and working up to the head, Parent Constrain the GROUP of each control to the Control above it (ex: select ctrl_neck_01 and in the Outliner CTRL CLICK grp_ctrl_head_01 and go Constrain > Parent Constrain, select ctrl_lowerneck_01 and in the Outliner CTRL CLICK grp_ctrl_neck_01 and go Constrain > Parent Constrain, etc

c) The Spine:

- Parent Constrain the Midback Control GROUP to the Hip Control (select ctrl_hip_01 and in the Outliner CTRL CLICK grp_ctrl_midback_01 and go Constrain > Parent Constrain)
- Parent Constrain the Chest Control to the Midback Control GROUP (select ctrl_midback_01 and in the Outliner CTRL CLICK grp_ctrl_chest_01 and go Constrain > Parent Constrain)
- Parent Constrain the Lower Neck Control GROUP to the Chest Control (select ctrl_chest_01 and in the Outliner CTRL CLICK grp_ctrl_lowerneck_01 and go Constrain > Parent Constrain)

- Parent Constrain the Tail Base Control GROUP to the Hip Control (select ctrl_hip_01 and in the Outliner CTRL CLICK grp_ctrl_tailbase_01 and go Constrain > Parent Constrain)

- Parent the two Shoulder Controls to the Chest Control

d) Create a World Control and parent the root joint, the Hip Control and both wrist and ankle controls to it. The aim is to have control that you can use to move the entire rig around.