

# FOUNDATIONS OF FLIGHT | HEAD-DOWN FORWARD MOVEMENT



Brought to you by Niklas Daniel and Brianne Thompson of AXIS Flight School at Skydive Arizona in Eloy. Photos by Brianne Thompson. Information about AXIS' coaching and instructional services is available at [axisflightschool.com](http://axisflightschool.com).

## Prerequisites

- ▶ Backfly forward and back track
- ▶ Hold a neutral shelf head-down position (see March 2013 "Foundations of Flight—Head-Down Variations")

## Purpose

- ▶ Necessary skill for success at head-down formation jumps (VFS and MFS)
- ▶ Essential for breaking off from a head-down jump (see June 2012 "Foundations of Flight—Head-Down Breakoff")
- ▶ Prerequisite for in-facing carving and other angle-type jumps
- ▶ Floating or diving to a formation

## Execution

Start in a comfortable head-down shelf position oriented perpendicularly to the aircraft's line of flight. A jumper can use various parts of the body to create a forward drive while in a head-down orientation. Applying inputs from just one sector will achieve a small movement, while combining several inputs will move the jumper farther and more quickly. By combining all of the body's flight surfaces to drive in a single direction, a flyer can cover vast distances (which is useful for breaking off from big formations and performing angle jumps).

### Head and Torso

Align your head so that the air makes first contact with the crown of your head. To move forward, move your forehead toward the horizon in front of you. Tilt your torso so that you feel the most air pressure on the back of your body. This means that when you tilt or turn your body during a maneuver you must maintain your head's position using your neck muscles; your head must move independently from your torso. Look through your eyebrows to keep the crown of your head in the airflow and avoid flying on your forehead.



Starting Position (Shelf)



Forward Drive



Forward Drive and Abrupt Stop

### Hips

When flying in the head-down orientation, you should have already engaged your core by balancing your hips above your head. Once you've initiated a forward drive, you may need to apply more muscle tension in the glutes to maintain this balance. This tension is also what will allow you to tap into the power of your legs.

### Legs and Arms

The shelf position has a lot of potential for forward power, as both legs will be behind you and primed to create movement. By extending both legs and pressing your calves firmly into the wind, you can cover vast horizontal distances very quickly. While pressing your legs into the wind and engaging the glutes, simultaneously press the palms of your hands into the relative wind. You should feel the air pressure on the inside of your forearms.

A rapid forward drive causes a lot of built-up momentum, so you will have to apply the brakes early to stop at the desired target.

Remember that there are three stages to a controlled movement: initiation, coast and stop by countering the initiated drive (i.e., drive backward to stop a forward drive). If you need to stop abruptly, bring both legs to the front of your body to initiate a backward drive.

Once you are able to tap into a strong horizontal drive, you can use this to either float to or dive after a formation by incorporating pitch control. The more vertically aligned your head and hips are with the relative wind, the faster your fall rate will be and more vertical distance you'll cover. The more perpendicularly your body is aligned with the oncoming airflow, the more horizontal distance you'll cover.

*The authors intend this article to be an educational guideline. It is not a substitute for professional instruction.*