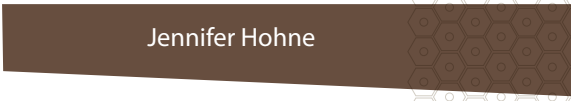


Ergonomic Features and Benefits of the Improv H.E.



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HAWORTH®
ERGONOMICS WHITE PAPER

Ergonomic Features and Benefits of the Improv H.E.

This paper addresses frequently asked questions about the ergonomic features of Improv H.E. and explains why these features are beneficial to the user.

WHY IS HAVING A “WATERFALL EDGE” ON MY SEAT PAN A GOOD THING?

The rounded or “waterfall” edge on the front of your Improv H.E. seat pan is conducive to good blood flow while you are seated. Edges without the waterfall tend to place too much pressure on the back of your leg, which restricts blood flow.

WHAT AM I SUPPOSED TO DO WITH THE “SLIDING SEAT PAN” ON AN IMPROV H.E.?

The sliding seat pan or adjustable seat pan depth was included in the design of the Improv H.E. so a wider range of the population (both short and tall people) would feel comfortable. The seat pan should be adjusted so that it stops short of the backs of your knees. This gives your upper legs maximum support while preventing direct and constant pressure behind your knees. A shorter person will require the pan to be closer to the seat back while a taller person will require the seat pan to be slid away from the seat back. In addition, when you adjust your seat pan, you need not worry about arm support. The arms of the Improv H.E. slide with the seat pan.

WHAT’S THE BIG DEAL ABOUT HEIGHT ADJUSTMENT?

Height adjustment is a key feature for two primary reasons. First, the chair should adjust low enough so that even the 5th percentile female (small) popliteal height (length from the heel to the back of the knee) can put her feet flat on the floor. If she can’t, she runs the risks

of reduced blood flow from increased pressure on her legs, in addition to discomfort caused by her back supporting her leg weight. Alternately, a 95th percentile male popliteal height must be able to adjust the seat high enough so that he is able to maintain ninety degree (or greater) knee and hip angles. If this is not possible, he will experience the same restricted blood flow and discomfort as the female whose chair is too high. When you sit in your chair, you should have the ability to place your feet flat on the floor, your knees should be bent at about 90 degrees, your hip angle should be greater than or equal to 90 degrees, and your lower back should be fully supported. In addition, to accommodate a wider range of heights, the Improv H.E. comes with an extended range option that allows the seat to be adjusted from 15” up to 22”.

I’VE BEEN HEARING A LOT ABOUT “MAINTAINING LORDOSIS.” WHAT IS THAT AND CAN THE IMPROV H.E. HELP ME?

Lordosis is the natural concavity of your spine in your lower back. You will notice from a side view that your back is slightly rounded out (convex) in your shoulder and upper back area and then it dips back in as you move down your spine. This forms what is referred to as the “S-curve” in your spine. A healthy body naturally maintains the S-curve while standing, but when you sit, the bottom of your back tends to round out as your coccyx (tailbone) is curled under. The easily adjustable lumbar support in the Improv H.E. presses against your lower back to help your body maintain lordosis as you sit. There are two ways to adapt the chair’s back support to your needs. The first is to increase/decrease the amount of lumbar protrusion on the H.E. Everyone has a different amount of “dip” (concavity) in his or her lumbar spine and the H.E. protrusion adjustment allows you to accommodate these differences so that you may be comfortably supported without creating pressure points. The second way to adapt the chair is to raise or lower the area of maximum protrusion. Not only does everyone have a different “dip”, but they also have a different “dip height” relative to the seat pan. The H.E. allows you to position the lumbar protrusion of the chair so that it matches the area of greatest “dip” in your spine.

WHAT IS “SYNCHRONIZED TILT” AND WHY IS IT A GOOD FEATURE?

Synchronized tilt means that as you lean back in your chair, the seat pan drops lower by a certain degree. The Improv H.E. has synchronized tilt so that for every 2 degrees you lean back in your chair, the seat pan drops by 1 degree. This is an important feature because as you lean back in your chair, you don't want to lose contact with the seat back; otherwise it becomes difficult to maintain lordosis as described above. The dropping of the seat pan ensures that this doesn't happen. In addition, synchronized tilt reduces or eliminates the occurrence of “shirt-pull”, which is the pulling up on the occupant's shirt by the seat back as the occupant reclines.

This evidence of anthropometric and motor behavior asymmetry is consistent with the preference for asymmetric low-back support identified by Fredericks and Butt (2005). Given that asymmetry is common in both the physical structure and motor behavior of human beings and that there is a preference for asymmetric low back support while seated, what impact does this have on seating comfort and seating design, particularly on the design of backrests?

DO I NEED “FLIPPER ARMS” ON MY CHAIR?

Flipper Arms are not required on your chair and Haworth chairs are available with or without them. However, we strongly recommend you get these specialized arms. The Flipper Arms are soft, rotate 360 degrees, and are height adjustable. These features make the Flipper Arms adaptable to any tasks including keying and mousing. The Flipper Arms also promote better working postures for the 5th to 95th percentile elbow height and help the user avoid muscle fatigue

due to their flexible support capabilities. The Improv H.E. is available without Flipper Arms and these alternative arms are height adjustable.

MY HIPS CONTACT THE ARM POSTS ON MOST CHAIRS AND IT BECOMES PAINFUL AFTER A DAY OF SITTING AT MY COMPUTER. IS THERE ANY WAY I CAN MAKE THIS PROBLEM GO AWAY?

This is a common complaint and it arises from the posts coming into contact with the greater trochanters (bony protrusions) in the hip area. These protrusions are quite sensitive to contact and when they are pressured for an extended period, you may experience numbness, tingling, and pain in that area as well as in the lower extremities. To address this problem, the H.E. can now be equipped with a more functional arm. This arm not only rotates 360 degrees and adjusts up and down, but you can move the entire arm post away from the seat pan to allow extra room for movement.

WHAT IS A “HANG-TAG”?

A hang-tag is a small, pullout instructional aid attached to the seat pan of the Improv H.E. This pullout contains important information about how to adjust your chair while you are seated. The tag may be read by simply pulling out the plastic tab at the base of the seat pan and finding the desired adjustment.

DO I NEED FORWARD TILT?

As with any posture, forward tilt is an acceptable position to maintain for short periods. You don't want to maintain any one posture for more than an hour. The forward tilt option just offers

you more choices so you may assume a variety of postures throughout your day. The Improv H.E. comes with a forward tilt that is lockable in three positions and, from the upright station, the seat back is lockable in two back tilt positions. All of these postures are safe and recommendable for a short time so you should use whatever positions are comfortable for you.

WHAT IS ANSI AND HOW DOES IT RELATE TO THE IMPROV H.E.?

The American National Standards Institute is in charge of writing standards for the design of office furniture (among many other important tasks). When a company is considering the purchase of a piece of office furniture they need to know that that piece of furniture is the most ergonomically sound furniture available. Most companies use the ANSI standards as guidelines on what they should or should not purchase. The Improv H.E. meets all required ANSI standards for seating and is the top of the line in ergonomic seating.