

## Ergo Pack



**Molder:** Composite Products, Inc.

**Moldmaker:** Delta Mold, Inc.

**Material Supplier:** Composite Products, Inc.

**Designer:** Bombardier Recreational Products

**OEM:** Bombardier Recreational Products

**Supporting Documentation:**

[Innovation Award](#)  
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### Product Description

The Ergo Pack is used in conjunction with the hull, subdeck, and seat base to provide the support necessary to allow for an independent suspension system on the personal watercraft. The Ergo Pack allows the personal watercraft to create a "floating" ride independent of the normal motions that the hull and subdeck are subject to in rough waters.



# international plastics design competition



## Why is the product innovative?

This Ergo Pack is innovative because it is part of a system that is brand new to personal watercraft. The Ergo Pack allowed the OEM to develop an independent suspension system that gives the operator of the machine a "floating" sensation as they use it on the water. The Ergo Pack is used as the body of the suspension system. While the hull and the subdeck are taking the abuse of the waves, the Ergo Pack is completely responsible for the comfort and support of the rider(s). There is a front and a rear suspension system that are directly attached to the Ergo Pack independent from the hull and subdeck. The Ergo Pack fully supports up to three riders that utilize the suspension system for the unmatched quality of the ride. There is also a switch on the handlebars of the personal watercraft that allows the operator to stiffen or soften the ride, which the Ergo Pack has to be strong enough to support. The Ergo Pack also allowed for cost savings through its use of the Direct In-Line Compounding process, which saves significant material costs, as well as the ability to allow many purchased components to be assembled directly to the part. Multiple components such as the suspension system, die cast parts, stamped parts, and foam carpeting are applied directly to the Ergo Pack. The tooling method utilized is also unique. The mold utilizes a unique double-shot, triple-gating transfer compression tooling system that is new to in-line compounding and molding. This molding technology allows for control of knit-line locations, fill pressures and speeds, and the ability to mold such a large part in a single-step process. The transfer molding technology with the gate control allows for the part to be molded in a much smaller press than would otherwise be necessary. Besides the large amount of functionality that the Ergo Pack must produce, there is also an aesthetic quality that is achieved by the part. A large portion of the part is visible to the operator, so the textured appearance surface must be free from any visible defects such as glass spots, scuffs, and scratches.