Hummingbird®

Solo ICP Monitoring

Simple · Accurate · Consistent

Your First Choice

Hummingbird®

Solo ICP Monitoring

Hummingbird Solo transforms ICP monitoring with its **simple, accurate,** and **cost-efficient** solution.

Drift-free accuracy[1]

Automatic recalibration every hour

MR conditional bolt

Rezero and troubleshoot in situ

ICP reading independent of patient positioning

Easy to use with one-touch calibration

Hummingbird Solo's unique air bladder addresses historic shortcomings of other ICP monitoring systems

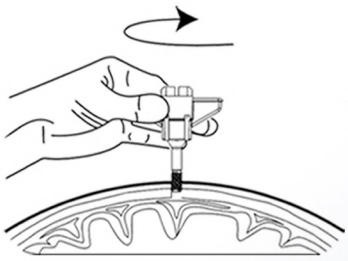
1. Internal data on file with IRRAS.

Simple

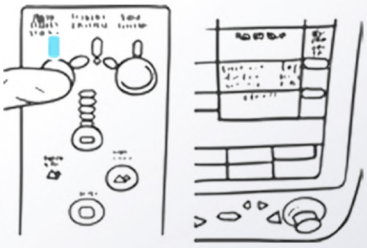
With no zeroing wrench or water bath required, Hummingbird Solo makes workflow simple

Quick 3-step setup simplifies training, set-up, and procedural workflow

I Insert & Zero

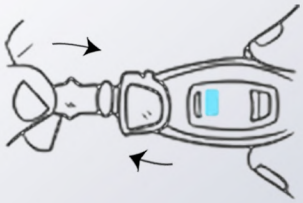


Insert bolt and Catheter



Zero Systems

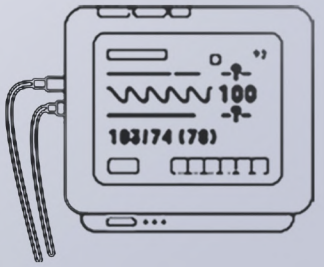
C Connect



Connect Catheter

P Prime

Press Prime System button



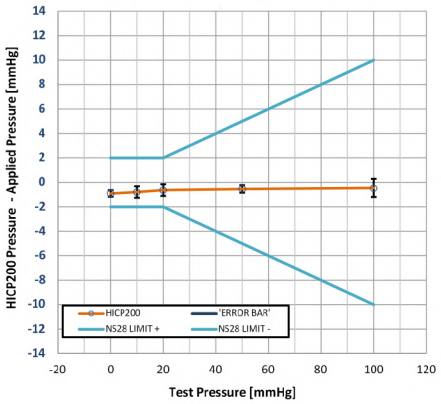
ICP reading transmitted to bedside monitor

Accurate

Increase the confidence in your ICP reading with drift-free accuracy

Hummingbird Solo's unique air bladder ICP sensor and proprietary air optimization algorithm enables:

Drift-Free Accuracy



Offer the only commercially available system that exceeds NS28 standards for ICP accuracy

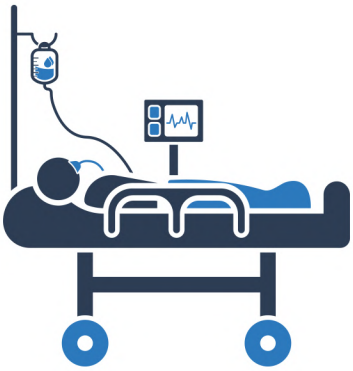
In Situ Recalibration

Automatically recalibrates in situ every hour, which ensures an accurate ICP reading

External Transducer

Unique external transducer allows system to be disconnected and re-zeroed in situ

ICP Reading Independent of Patient Positioning



Accurate ICP measurements independent of patient positioning

Cost-Efficient

Improve healthcare economics with a cost-efficient solution

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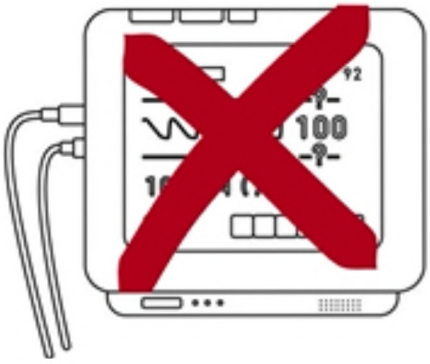
Reduce cost burden of large, standalone capital equipment of other ICP monitoring systems.

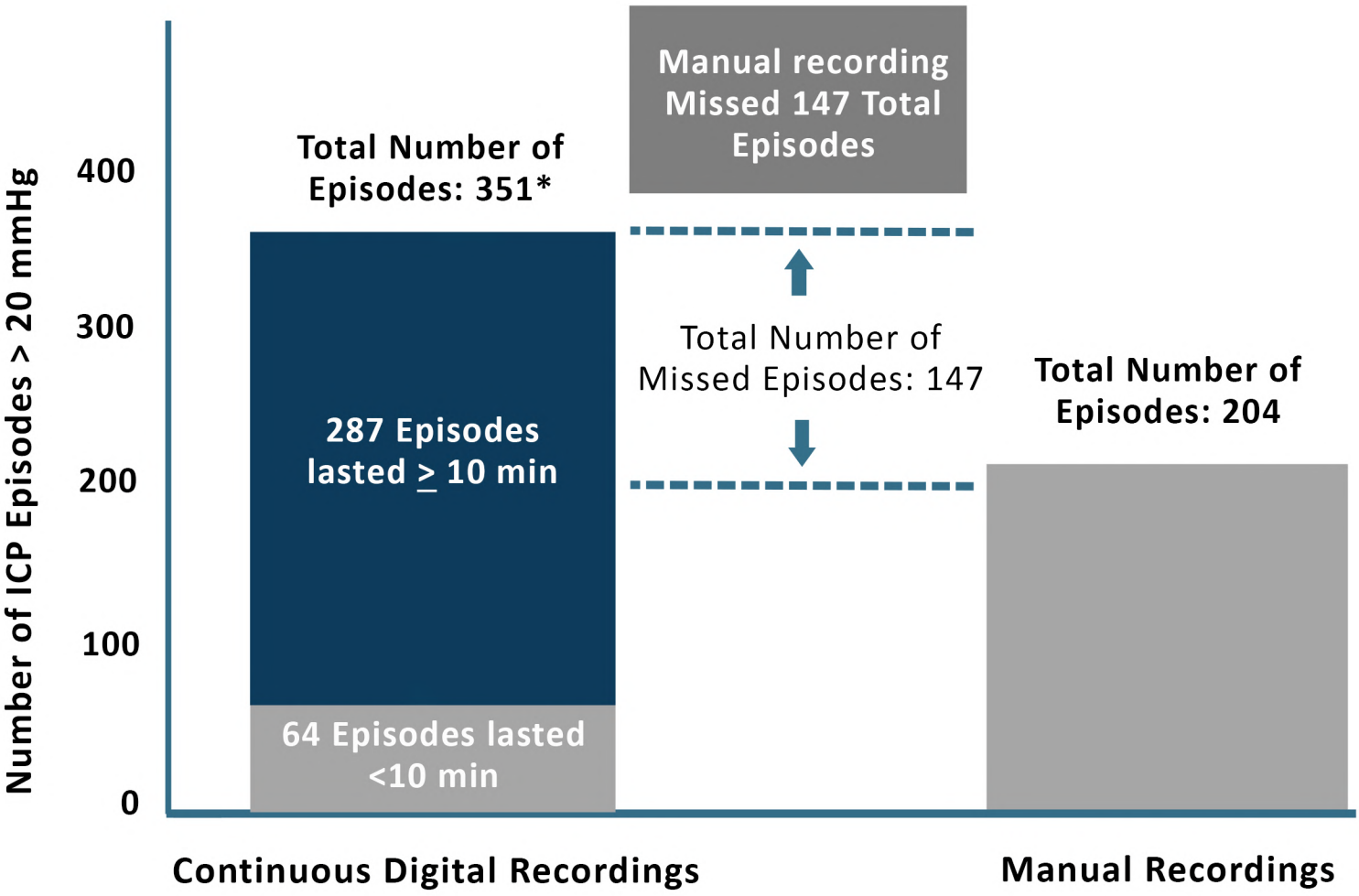


Hummingbird ICP Control Module

Seamlessly transmits ICP data from the Hummingbird catheter to the patient monitor.

Clinical Importance for Continuous ICP Monitoring

Continuous ICP waveforms can provide qualitative information regarding brain compliance.[1]



Study Background

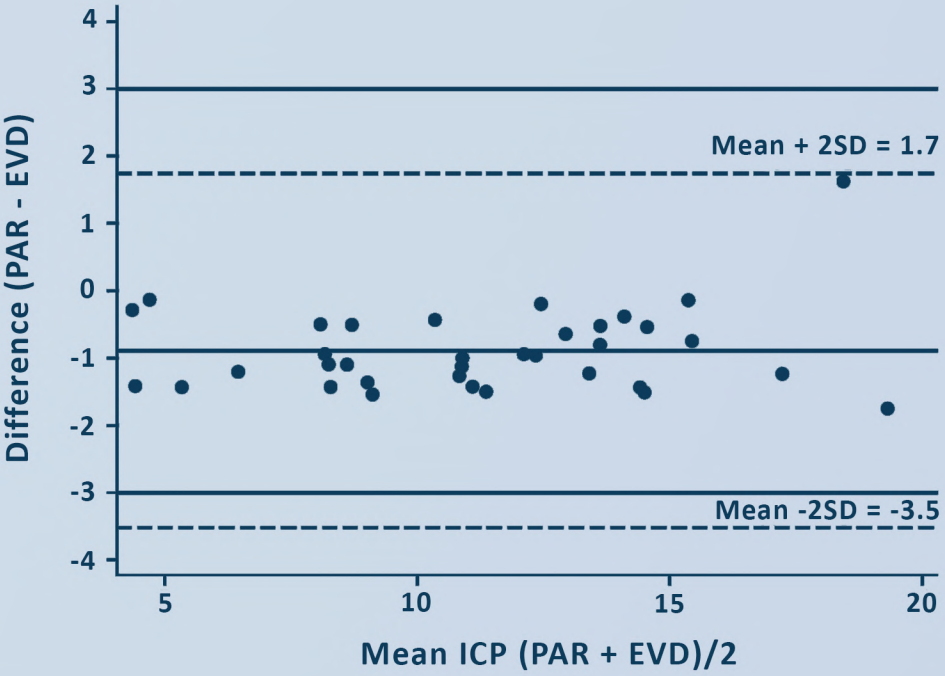
In a retrospective study of 32 traumatic brain injury (TBI) patients, the authors concluded that manually recorded end-hour ICP measurements result in the omission of a significant number of important episodes of high ICP, some for a long duration. Manual recording methods, therefore, provide a clinical picture that may not be accurate or informative of the true pattern of unstable ICP in patients with TBI.[1]

1. Zanier E, Otolano F, Ghisoni L, Colombo A, Losappio S, and Stocchetti N: Intracranial pressure monitoring in intensive care: clinical advantages of a computerized system over manual recording. Critical Care 2007, 11:R7 (doi:10.1186/cc5155).

** All 351 episodes lasted at least 5 minutes*

Comparison of parenchymal and ventricular intracranial pressure readings utilizing a novel multi-parameter intracranial access system

Tracey Berlin, Cristina Murray-Krezan, and Howard Yonas



Bland-Altman plot of the difference between mean parenchymal (PAR) and mean ventricular (EVD) ICP measurements against the mean of PAR and EVD in each patient in the study.

On average, measurements from each method fell within ±3 mmHg of each other.

From a total of 2,259 observations, statistical analysis revealed congruence (within ±0-3 mmHg) of **93%** of readings **comparing parenchymal** and **ventricular ICP**.

The results of this study support the **recommendation to use the parenchymal ICP component for routine ICP monitoring.**

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Berlin et al.: Comparison of parenchymal and ventricular intracranial pressure readings utilizing a novel multi-parameter intracranial access system. SpringerPlus 2015 4:10.

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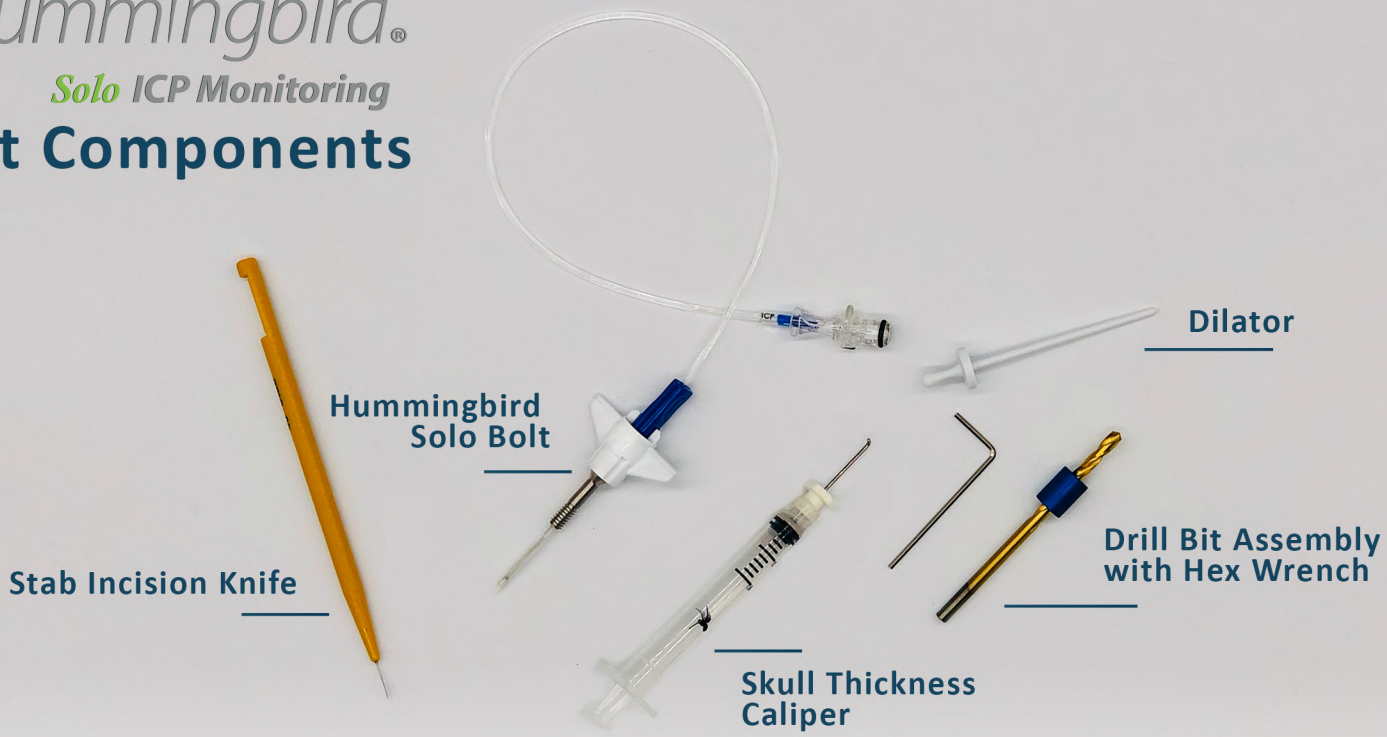
Kit Components



HUMMINGBIRD ORDERING INFORMATION

Product #	Product Name	Product Description
HUMMINGBIRD BOLT-BASED MONITORING SYSTEM		
H110	**Hummingbird Solo ICP Monitoring**	Bolt-Based system that combines both access and parenchymal ICP measurement.
HUMMINGBIRD MULTIMODAL MONITORING SYSTEM		
H610	**Hummingbird Quad ICP Monitoring with Drainage**	Multimodal Monitoring system that combines access through a single twist-drill hole, providing CSF drainage, parenchymal ICP monitoring, and your choice of two probes.
HUMMINGBIRD ICP CONTROL MODULE		
HICP200	**Hummingbird ICP Control Module**	Control module that transmits needed ICP data from Hummingbird catheter to patient monitor.

IRRAS

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