



S3 medical-surgical hospital bed. The S3 medical-surgical hospital bed is a patient-support platform incorporating many safety, patient-centric, and nursing-efficiency features that are simple to use and reliable.

Submitter and manufacturer: Stryker Medical (Portage, MI; www.stryker.com)

Suppliers: Hilco Technologies (Grand Rapids, MI; www.hilcotech.com); Advantage Sintered Metals Inc. (Battle Creek, MI; www.advantagesintered.com); Eimo Technologies (Vicksburg, MI; www.eimotech.com); Quality Tool and Stamping (Muskegon Heights, MI; www.qtstamping.com); Cascade DieCasting/Great Lakes (Sparta, MI; www.cascade-cdc.com)

"As a feature of the bed that is used most often by clinicians and patients, the side rail system was the focus of the S3 product design team," says Richard Derenne, associate engineering product manager, R&D, for **Stryker Medical**. "Every detail was considered-from increasing patient coverage, to meeting the latest entrapment guidelines, to developing a one-handed release, to balancing the weight of the side rail with multiple springs for effortless motion. [The team also incorporated] an easy-to-clean design [and] the only-in-class intermediate patient egress position."

"Our experiences and talents were put to the test in working with the part designs of the Stryker S3 program," says Jet Perelli, president, **Advantage Sintered Metals Inc.** "The geometries were very challenging. The final designs required all of our expertise to achieve the several different levels through molding, sintering, vibrator finish, as well as machining, steam-treating, and assembly operations."

"We currently produce the following castings for the S3 bed: upper and lower transmission housings, brake rings, side rail carriers, and support plates," says Jim Moran, vice president, sales and marketing, **Cascade Die Casting Group Inc.** "We became involved with Stryker's technical teams early in the development of these components and worked together to provide designs that both fit the intended application and, at the same time, provided for a robust and repeatable manufacturing process. By assisting with the design development, we were able to jointly drive down the cost of the casting components by eliminating machining and non-value-added operations, thus optimizing the casting design for fit, form, and function. Die designs were developed and produced locally, which offered quick lead times and outstanding die construction. The castings are produced on 880T UBE high-pressure die-casting machines with the use of process monitoring to ensure product consistency and excellent manufacturing control and reliability."

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