

In January 2012, Ken Grossman, founder of North America's largest craft beers, Sierra Nevada Brewing Co., decided to expand the company's operations to the East Coast. Founded in 1980, this Chico, California-based company is one of America's premier brewers, and after years of expansion, Sierra Nevada is one of the world's most recognized beer brands. Expansion, however, has not come without cost. The company has been nearing capacity for years and demand for its popular beers has showed no signs of slowing. In addition, freight costs to both the East Coast, as well as Europe, have continued to increase.



According to Don Schjeldahl, site coordinator for Sierra Nevada, "As the market grew in the East and capacity constraints started to be reached in Chico, it became obvious that what is needed is a new brewery and it should be built in the East to address cost and service issues...Every strategy had to run through the carbon footprint filter." Rather than keep expanding their brewery, Grossman thought it would be a lot more fun to get bigger by becoming a part of a beer-centric community on the East Coast. Asheville, North Carolina turned out to be the perfect location.

The new brewery in Mills River, North Carolina has the potential to expand to a full brewing capacity of up to 600,000 barrels a year. Thus, one of the first major priorities for the brewery was the design and installation of a new bottling hall. According to Brian Grossman (co-manager of the Mills River plant) this new, state-of-the-art facility includes a 900 bottle per minute, a three lane keg line, as

well as pilot keg line to support the small brewhouse that will be connected with a restaurant. The new facility in North Carolina currently allows Sierra Nevada to produce 300,000 barrels per year, supplementing the nearly 1 million barrels produced in Chico.

According to Grossman, the packaging facility "is the most technologically advanced section of a brewery...necessary to ensure the best quality product is packaged and shipped out the door to the right place at the right time with the right labels."

Sierra Nevada chose to collaborate with Greenville, SC-based Hartness International on the line design of the new plant. Hartness' Systems Group (HSG) assisted Sierra Nevada in making the best decisions on how to optimize the automation processes and in selecting the appropriate packaging equipment to meet the company's production requirements.



DYNAC is a proven system with about 4,000 installations worldwide in a variety of industries. Top brands in the world use DYNAC to "power their lines".



Sierra Nevada Brewing Company (Sierra Nevada) is the nation's second largest private craft brewery, producing nearly 1 million barrels of beer a year and cashing in more than \$200 million in sales. Founded in 1980, Sierra Nevada now ranks as the seventh-largest brewery in America, with its signature Pale Ale available in all 50 states.

Sierra Nevada has recently opened a new East Coast brewery in Mills River, N.C. with the objective of producing up to 800,000 barrels per year, relieving pressure off the Chico brewery, as well as cutting expenses on cross-country transportation.

Sierra Nevada has been the recipient of numerous awards for its extensive line of beers. Critics have proclaimed Sierra Nevada beer to be "among the best brewed anywhere in the world." The company recently installed Hartness' DYNAC accumulation tables, conveyors, GlobalPack rotary packer, robotic palletizing system, and stretch wrapping system in their new Mills River, N.C. brewery.



A Carolina Collaboration

Hartness International is one of the world's leading suppliers of end of line packaging equipment and integration solutions. Hartness is well-known for its commitment to innovative equipment and total customer satisfaction. Hartness is also a long time equipment supplier to Sierra Nevada, but this was the company's first experience with Hartness' systems team. Hartness is based in upstate of South Carolina, only an hour from the Sierra Nevada facility in North Carolina. This Carolina connection (well, and especially the close proximity of engineers and specialists) gave Sierra Nevada and Hartness great confidence that the project would be successful.

According to Cory Ross, Senior Project Manager for Sierra Nevada, "Hartness, as an integration group, [are] really open to working with you on design-build, however you want to do it. They can either offer purchasing of equipment and management of the whole project, but in our case, we like to buy Best-in-Class. We like to buy directly from OEMs. And we like to work with an integrator in that process to really get the best line that we can. So, as far as flexibility, I think their group is probably one of the better aligned with that concept. . . And so far, everything that we've been doing with them has been working well."

HSG (Hartness Systems Group) is a network of experts, possessing a combined and broad range of varied industry expertise from bottling to manufacturing; which proved to be very beneficial for Sierra Nevada. In a recent interview, Ron Herbert, Manager of Projects for HSG, highlighted the passion of both companies for what they do and touted HSG's 'consultative approach' around working closely with Sierra Nevada. HSG was dedicated to understanding Sierra Nevada's specific manufacturing needs; carefully considered all aspects of the new project and offered solutions to its unique demands. Hartness' industry-leading line design and control engineers produced a distinct design that included best in class filling and labeling OEM machine centers which were not supplied by Hartness. "One of the cores of "best in class" design is being able to work with other equipment vendors," Herbert stated. "We've integrated other OEM machine centers, we're familiar with their project management teams, we're familiar with the machine center characteristics, and we've had success integrating them in the past."

Hartness' equipment was vital to running a smooth line. Sierra Nevada chose such proven and innovative equipment as the DYNAC accumulation systems, GlobalPack rotary packer, high level robotic palletizing systems, and stretch wrappers for this new high speed line. While Sierra Nevada has been a customer of Hartness case packers for nearly two decades, this marked the company's first purchase of Hartness DYNAC. The DYNAC is an innovative, first in/first out buffering and accumulation system that also enables the simplification of line control. With world-class DYNAC technology, Sierra Nevada had the ability to run the line continuously with accurate traceability. The DYNAC absorbs micro stops, all the while maintaining the fluidity of the line.

"DYNAC accumulation really defines the line controls. First-in, first-out gives us the ability to run in the 90% and above range. That's a percent of efficiency on a glass line that really isn't common."

-Cory Ross
Senior Project Manager
Sierra Nevada



Sierra Nevada Brewing Company

Industry: Alcoholic beverage

Founded: 1980

Headquartered:

Chico, CA and Mills River, N.C.

Employees:

Chico, CA- more than 500; Mills River, N.C. – 95 full time and 80 part-time employees.

Beers produced:

Sierra Nevada Pale Ale, and Torpedo IPA, Porter, Stout, Kellerweis, four seasonal beers, Estates Ale, Harvest Ales, Ovila Abbey Ales, Rain Check Spiced Stout, and a host of draught-only specialties.

Production:

Chico, CA – More than 800,000 barrels per year;
Mills River, N.C. - 300,000 barrels per year

Annual sales:

More than \$200 million

Herbert stated, "The core of the control system on this line is the DYNAC centric philosophy. There are two DYNAC accumulation tables on this line, providing a buffer between machine centers... increasing line efficiency." Ross concluded, "DYNAC accumulation really defines the line controls. First-in, first-out gives us the ability to run in the 90% and above range. That's a percent of efficiency on a glass line that really isn't common... And that's something that we've never had until this line." The DYNACs gently fill the conveyor and maintain consistent population of product on the line without inducing pressure; dramatically reducing damage to the product. The DYNAC systems are seamlessly integrated into the rest of the line utilizing Hartness-provided mechanical conveyor. The combination of conveyor and DYNAC-centric line controls ensure the quality of the package remains as pristine as the beer itself.



Sierra Nevada also chose Hartness equipment technology for the end of its line, selecting Hartness to provide both case packing and robotic palletizing. Hartness' GlobalPack offers a continuous motion place packing solution, further protecting labels from scuffing or damage. Sierra Nevada was so satisfied with the performance of their two GlobalPacks at their Chico location that GlobalPack was again chosen for their new showplace in North Carolina. Hartness' robotic automation team provided two of its high-speed, high level robotic palletizers to ensure gentle product handling and flexibility at the end of the packaging line.

Hartness' deliverables included the collaborating with the customer on the line design, procuring the palletizers, the stretch wrappers, manufacturing the conveyor, and integrating with the original equipment manufacturers selected and procured by Sierra Nevada. HSG managed the installation of the conveyor and commissioned the line. With Hartness' input via HSG, Sierra Nevada was able to reach their end goal of not only being able to present a functional line, but a very attractive one as well. Hartness and Sierra Nevada were a perfect alliance between two progressive, ambitious companies forging a relationship that created better performance for each partner.

As a Result ...

Sierra Nevada was so pleased with the Best-in-Class application that the same machine centers with the same OEM, including the DYNAC - centric philosophy Hartness supplied on the bottling line, will be implemented in the upcoming can line, projected for the fall of 2014.