



“It was great to have a job with no major challenges. Solstice N40 was nearly an exact drop-in for R404A, so only a little adjustment time was needed.”

— John Heckert, TDH Refrigeration

A Drop-In Replacement: It's Really That Easy

Solstice® N40 Refrigerant (R-448A)



THE CHALLENGE

TOPS Supermarkets wished to utilize a low-GWP refrigerant in its equipment designed for R404A — without changing equipment.

THE SOLUTION

Solstice N40 proved to be the energy-efficient, low-GWP solution they were seeking.

Clear Choice

TOPS Supermarkets are known for their fresh produce and outstanding community involvement, so choosing a refrigeration equipment refrigerant with excellent performance and low global warming potential (GWP) made a lot of sense. When contractor TDH Refrigeration recommended Honeywell Solstice® N40 refrigerant, the choice was clear. In supermarket trials conducted in the U.S. and Europe, Solstice N40 demonstrated three percent lower energy consumption in low-temperature applications and five to 16 percent lower energy consumption in medium-temperature applications compared to R404A.

“Add in the fact that Solstice N40 has a GWP about two-thirds lower than the R404A, and it was obvious to us that the choice would be better for our business as well as better for the community,” said Chris Watson, Director Construction & Maintenance at Tops Markets LLC.

Confidence

The 42,000 square-foot TOPS store in Walworth, NY, was constructed with refrigeration equipment designed for R404A. But when TOPS desired a more efficient, low-GWP choice, TDH Refrigeration recommended Solstice N40.

Despite its performance and environmental benefits, the decision to use N40 wouldn't have been made if the process was difficult. “It was a new store,” notes John Heckert, VP and Head of Service for TDH Refrigeration, “so we needed a solution that didn't require another investment in equipment. Solstice N40 was perfect because it's a simple drop-in replacement. We didn't need to make any TXV or condenser changes.”



The Project

TOPS Supermarket

It used to be that a switch in refrigerant choice required a switch in equipment, but Honeywell changed that with Solstice N40. So when TDH Refrigeration was challenged with using a low-GWP refrigerant in equipment designed for R404A, it wasn't as challenging as it might have been.

"First, one of the great things about Solstice N40 is that it's an HFO blend for both low- and medium-temperature refrigeration equipment, such as supermarket freezer cases," said Heckert. "Not all new refrigerants can do that. And second, we'd been successful using Solstice N40 as a replacement for R-22 with very little adjustment, and we were confident it would be similar with R404A equipment."

No TXV, condenser or oil changes were needed to use Solstice N40. "It is almost an exact capacity match to R-22, so we needed very little time to adjust valve positions in those applications. In this one, because the valves are sized larger than

R-22 valves, we spent a bit more time. But once the valves were adjusted properly, there were no issues and the equipment is running well."

Because the store is new and recently opened, there's no comparison data available regarding energy savings. "But we feel great about the choice," notes Chris Watson. Since Solstice N40 has consistently demonstrated energy savings of up to 16 percent over R404A, we know we're getting great value. And as far as helping the environment, well, there's no comparison at all. Solstice N40 is clearly superior."



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