

The Cummins ISX
reappears under the
hood of Navistar's
ProStar+. With
predictable result.

By Jim Park

It's as if they had never been apart. Red engines have been fixtures under Navistar hoods since the late '90s. Before that, they were beige or black. Except for the recent hiatus, you have to go back some 75 years to the days when Cummins and International trucks weren't almost synonymous in North America.

But Cummins and Navistar haven't exactly been strangers since the truck maker decided to tackle EPA's 2010 emissions rules with its proprietary EGR-only solution—the MaxxForce 13 and 15 engines. That decision came in August of 2008, and the (soon-to-be) SCR-equipped ISX was delisted for U.S. and Canadian 2010 model-year trucks. The company however continued building ProStars with EGR-only ISX and ISM engines for the Mexican market—along with other chassis configurations and various Cummins engines in markets around the globe.

Navistar announced in July 2012 that it would discontinue its EGR-only approach, and bring the SCR-equipped Cummins ISX

TOGETHER AGAIN



CONCRETE EVIDENCE: Loaded with bags of cement, our test truck tipped the scales at 122,460 lb.

engine back into databooks by the spring of 2013, reuniting the ISX and the ProStar.

Tom Smith, director ISX/SCR integration at Navistar told us they had a few dozen pre-production trucks in customers' hands for trials and testing before Thanksgiving. The first batch of nearly 300 fleet-ready trucks began rolling off production lines in January and February.

"The ISX with SCR is a mature and proven product," Smith says. "We did not need to spend a great deal of time in technology development, but we did spend several months in validation and durability tests as well as customer satisfaction trials. We had to make it feel like the powertrain had been in the truck all along."

Which of course, it had, just not in the U.S. or Canada. Adding the SCR aftertreatment device and the DEF tank was not a large undertaking, Smith says.

AN EASY FIT:

The pre- and post-2010 ISX aren't much different externally.



SPEC SHEET

2014 ProStar+ 6x4 Sleeper

- Engine:** Cummins ISX 485 hp / 1,850 lb ft
- Transmission:** Eaton Fuller RTLO(F) 18918B 18-speed manual w.double overdrive, double low
- Front axle:** Hendrickson Steertek NXT 14,000 lb
- Tires:** Michelin XZA3+ 275/80R22.5 Load range H
- Steering:** TRW (Ross) PCF60
- Rear axle:** Meritor MT-40-14X 4DER-P, 3.90:1 ratio
- Suspension:** International Ride Optimized (IROS) 52-in. spread 40,000 lb
- Tires:** Michelin XDA3 11R22.5 Load range G
- Aftertreatment:** Horizontal switchback, under right-hand door
- BBC:** 122 in. **Wheelbase:** 230 in.
- Dry weight:** 18,258 lb (calculated)

Test Drive

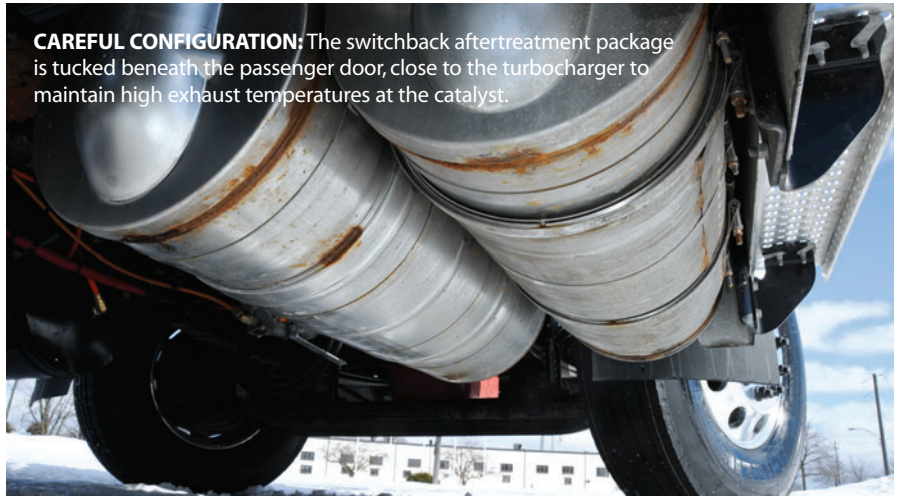
“The DEF tanks and fuel tanks were a bit of a challenge,” he admits. “Customer surveys indicated they wanted the DEF tank on the left-hand side of the truck since that is where most on-island DEF pumps are. We switched the position of the battery and storage boxes with the fuel tanks. The standard DEF tank position is behind the battery box, with the DPF/SCR module under the RH door where a storage box used to be. The fuel tanks are now aft of the cab under the sleeper.”

A Drop-in Solution

Trying to make its EGR-only solution to EPA 2010 may have caused a few gray hairs at Navistar, but dropping a compliant ISX between the frame rails must have been a bittersweet moment. It would work, right out of the box, that they knew for sure. The chassis modifications needed to accommodate the additional plumbing and the new component routing was simply an engineering exercise.

Externally, there's not a great deal of difference between the pre- and post-2010 ISX. The addition of the aftertreatment

CAREFUL CONFIGURATION: The switchback aftertreatment package is tucked beneath the passenger door, close to the turbocharger to maintain high exhaust temperatures at the catalyst.



module meant pushing a few things around on the frame to make room for it. But, it still boasts a pair of 26-in., 120-gal fuel tanks and a 23-gal DEF tank, so little was given up there.

Actually, moving the tanks back beneath the sleeper solved one challenge we saw on previous ProStar models: steer axle weight. With the ISX coming in at roughly 500 lb heavier than the MaxxForce 13 engine, they really had no choice. According to the spec

sheet, this ProStar weighs 10,565 lb dry. That is no oil, no fuel, no DEF, etc. It's worth noting that the truck comes with a 14,000-lb front axle and load-range H tires. We weren't able to get an actual bobtail axle weight for the truck, but it still appears to be heavy up front.

The product brochures say the MaxxForce 13 weighs 2,400 lb dry, while the ISX 15 comes in at 2,964 lb dry plus 220 lb for the aftertreatment module.

THE POWER TO



VITAL SUPPLIES: The 23-gallon DEF tank sits on the LH side between the battery box and the fuel tank.

According to Smith, this configuration is actually lighter up front than the tanks-forward MaxxForce setup.

Thousands of ISX-equipped ProStars were produced prior to January 1, 2010, so it was a matter of dusting off the old plans and shelving, for the time being anyway, the parts needed to make the MaxxForce 13 fit between the frame rails.

The Cummins ISX will be available in ratings of 400, 425, 450, 485, 500, 525 and

550 horsepower, with 1,450, 1,550, 1,650 or 1,850 lb ft of torque.

Out on the Road

As you may have gathered from the photo, our test drive wasn't exactly a walk in the park for the ISX. The five-axle trailer we pulled, courtesy of Nationwide Freight Systems of Brantford, ON., was loaded with bags of cement and tipped the scales at 122,460 lb.

Our test engine was rated at 485 horsepower and 1,850 lb ft, so the load was perhaps a bit disproportionate for the rating. But there are fuel-conscious fleets in Canada pulling that kind of weight with less than 500 hp engines. It's all about the torque, really, and that certainly wasn't lacking at 1,850. One thing is certain, exhaust temperatures would help to keep the regens to a minimum.

I had a couple of hours with the truck, so I ran it on some two-lane roads as well as some four-lane divided "interstate" type highways. To keep it interesting, I drove it over the Burlington Bay Skyway Bridge and up what the locals call the "Clappison Cut" on Hwy. 6 near Hamilton, Ont. It's a nasty seven-percent climb that begins at the bottom of a freeway off ramp—which means you hit the bottom of the hill with your brakes on. It's pedal to the metal the rest of the way up.

I came off the freeway in 6th gear, eased through the turn and before I could gain any rpm at all, the grade pushed me down into the low side of the gearbox. I was into 3rd gear before I knew it and slogging my



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way up. Midway up, the grade levels to about four percent, where I snuck in an upshift. A bit risky, but at 1,800 rpm, I figured I had time to stuff it into 4th gear before gravity dragged me to a stop. Wrong. I barely got it back into 2nd gear in time after realizing 4th was out of the question. I did manage two up shifts on the shallower grade before cresting the top of the hill.

The engine fan came on mid-way up the hill at 210 degrees, and remained on until the crest in our sub-15-mph, high-output pull. I have to say it was darned quiet, despite the 1,500-rpm engine speed.

Despite that bit of excitement, the rest of the drive was predictable and uneventful; just the way I like it. The ISX cruised like a champ at 1,500 rpm at 100 km/hr. With peak torque at 1,200, there was plenty of wiggle room on the modest freeway grades.

Upshifting in the low side of the Eaton Fuller 18-speed was accomplished at less than 1,000 rpm with ease, and on the high side, I was close to 1,700 a few times, but most of the upshifts were at



1,500 or less. Bottom line, it's a good economical engine in the right hands.

This was the second EPA-2010 configured Cummins ISX I have driven in the past year, and I can honestly say there were no differences in performance. I can't speak to regens or fuel economy in either case because I only had the trucks for a few hours each. However, since Navistar uses Cummins' Aftertreatment package, and it's tucked up close to the turbocharger

to maintain exhaust temperature, I can't imagine it performing any differently from competitors' trucks in that regard.

Anyone who is used to and happy with the ProStar/Cummins ISX in pre-2010 trim will be happy with what has emerged from the reunion of these to industry favorites. Nothing really new. No surprises. Just the power and performance you'd expect from a 15-liter engine wrapped in the ample creature comforts of the ProStar+. **TT**



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