



Interstate Diesel

Ecotip Extended Idle Injectors For EMD Switcher Locomotives





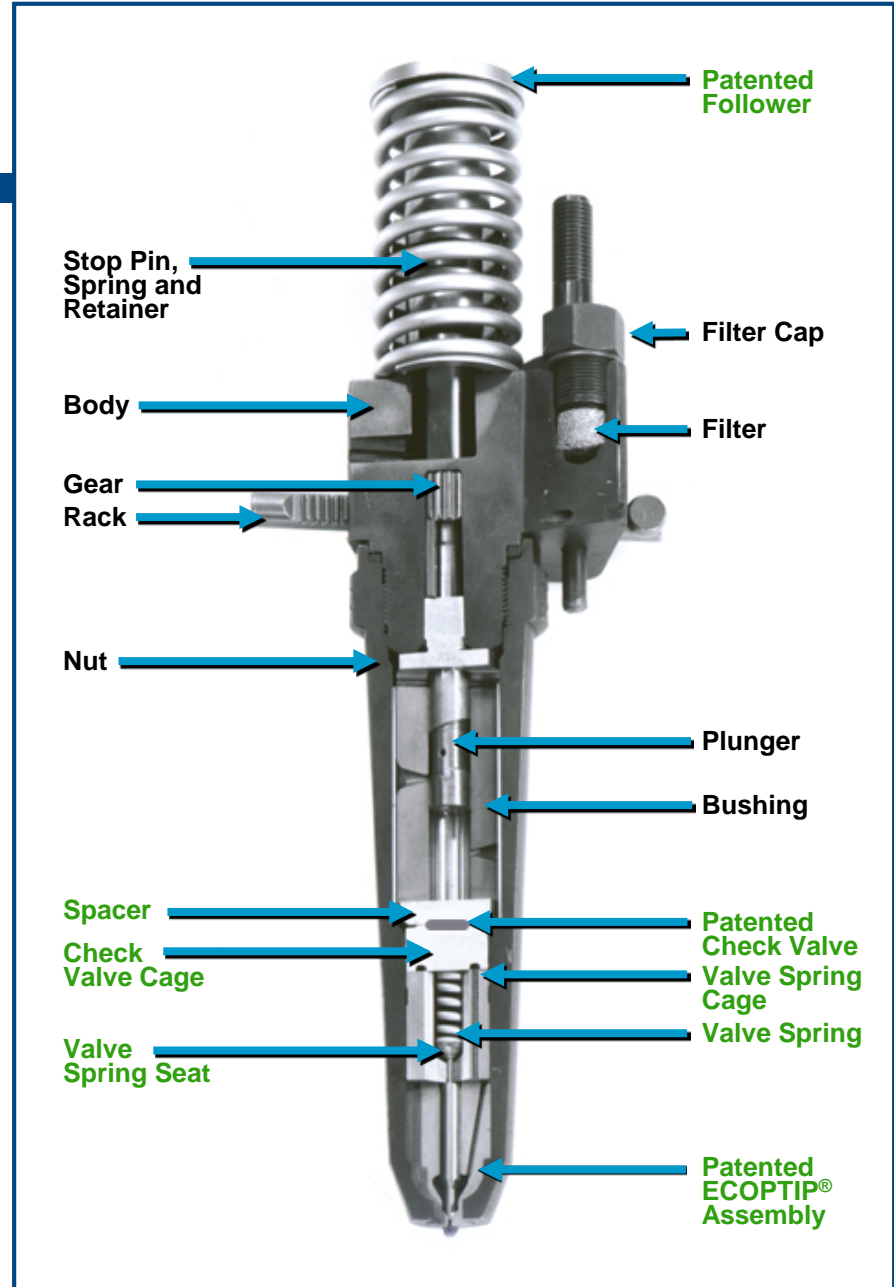
Introduction

Locomotives, especially in switcher applications tend to spend many hours per day idling causing engine lube oil to push out and coat the interior of the stack. Mechanical officers refer to this condition as “souping”. It’s messy, a safety hazard and can cause hot embers to be blown into the air when the loco goes into higher notches.

Interstate Diesel has designed an injector specifically for **Extended Idle** applications which can limit souping and decrease its negative effects.



ECOTIP® Superstack BOM

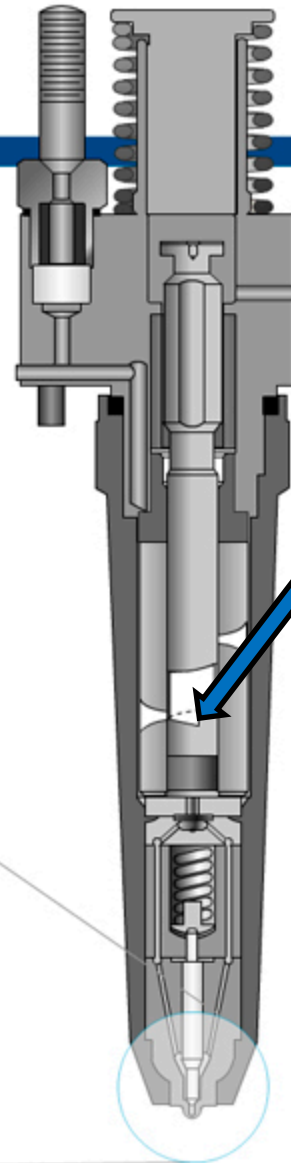
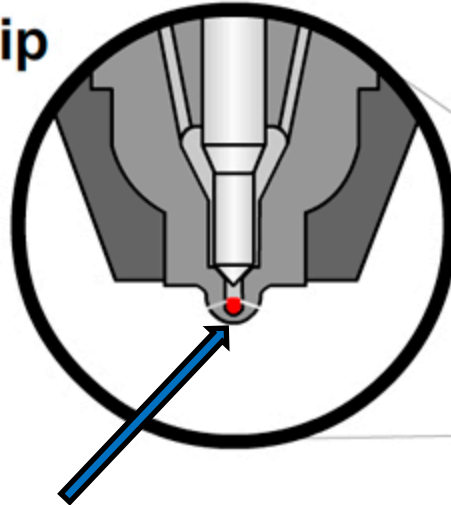




Functioning Injector

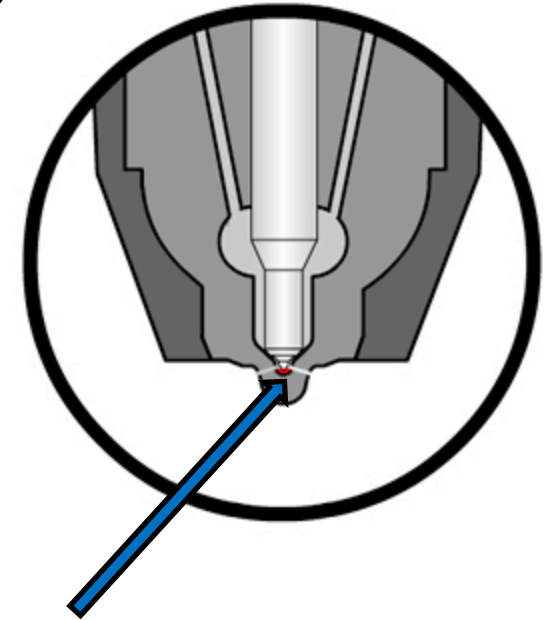
The Ecotip design eliminates wasted fuel while reducing smoke

Standard Tip



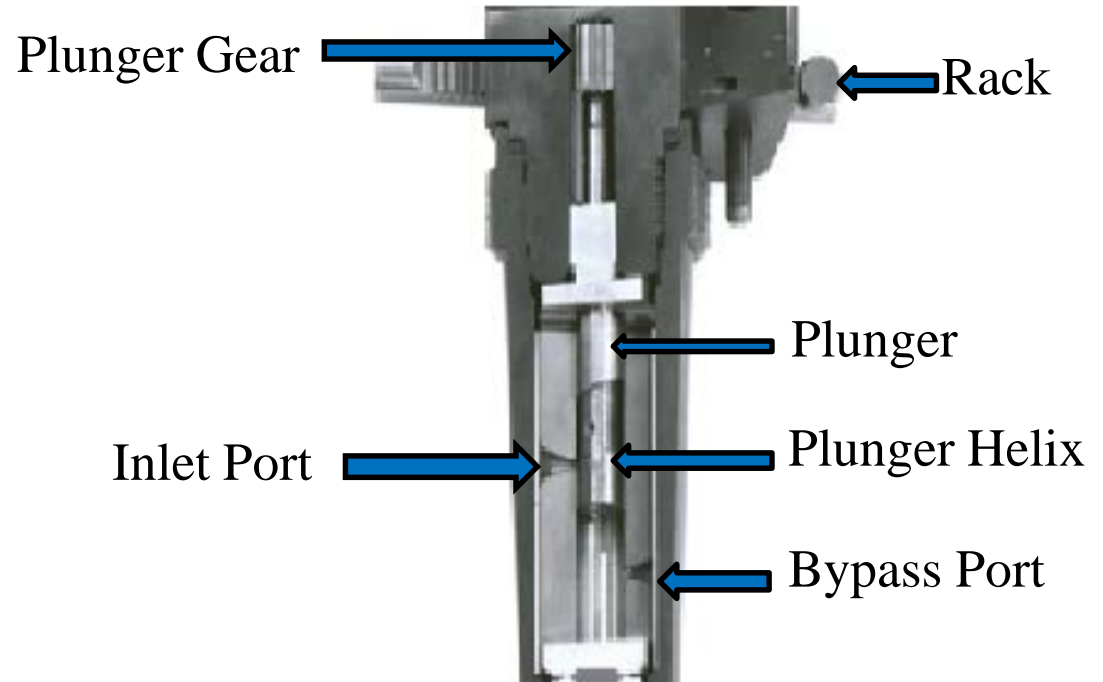
Note the helix cut on the plunger is angled to change timing through 8 notches

Ecotip





As notch changes, the injector rack moves in and out turning the plunger. As the cam follower pushes the plunger down, it closes the inlet and bypass ports. The position of the helix cut determines the amount of fuel and timing of injection. Pictured is the plunger at the start of injection.





Goal: Reduce Souping

Extended Idle Injector Components:

- Exclusive plunger helix design
 - Decreases fuel at notches 1 – 4
 - More efficient fuel burn
 - Full fuel at notches 5 – 8
 - Full HP in higher notches
- Patented Ecotip Superstack
 - Reduces smoke
 - More efficient fuel atomization



Benefits

1. Decrease risk of trackside fire
2. Diminish chance of fines
3. Reduce oil on car bodies
 - Less cleaning
 - Lower labor costs
 - Safer work environment
4. Reduce ring and liner wear
5. Accommodates both light and heavy loads
6. Increase overall locomotive performance



Applications

Standard UTEX	Extended Idle	Engine Model
8478049	4991632	567A,B,AC, 16-567BC, 8-567CR, 6-567U, 12-567C@800RPM: 567A,B,E @800RPM
8478045	4991629	645E,E1,E2,E6,E8; 645D1@200HP; 567C,E,645C @900RPM
8478048	4991635	8,16-567C, 567D1 & 120576C@835RPM
8578046	4992064	654E3,4,5,7 @900RPM



Questions?

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