

# The New SL-V Injector

**Reduce the cost and  
increase the performance  
of Centro-Matic® Automated  
Lubrication Systems**

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- Use thicker lubricants
- Run supply lines longer distances and reduce your supply line diameter
- May eliminate switching greases in changing climates
- Twice the life, twice the guarantee
- 6000 PSI pressure capability

Patent No. 6,705,432

**TWO YEAR  
WARRANTY**

# The Lincoln Legacy Continues

In 1937, Lincoln engineers developed the SL-1 injector, and from the start, mining and construction industries relied on its precision and durability. Millions made in St. Louis operate efficiently in the most unforgiving applications, proving their worth in hot, wet, heavy and dirty environments.

## Imitated but Never Duplicated

After 65 years, our SL-1 injector remains the standard in the lubrication industry. Lincoln will continue to sell and stand behind the SL-1 injector, now and into the future. We've enhanced its performance with eight major series changes, and now we're introducing the next generation in our long line of hard-working, dependable injectors—the SL-V.

## SL-V

- **Use thicker lubricants**

The SL-V is capable of pumping all types of lubricant; however, high viscosity lubricants are almost always preferred. The SL-V is capable of reliably dispensing #2 grease at 68°F through 100 feet of quarter inch tube.

- **100 percent compatibility with SL-1**

The SL-V injectors can be used to upgrade old style SL-1 systems without concern. They can also be mixed within the same manifold.

- **Lasts twice as long compared to other injectors**

Reduced number of wear parts and a 6000 psi pressure rating are just two of the key features that have SL-V injectors lasting over twice as long.

- **Reduced injector ownership cost**

Receive the benefits of a Centro-Matic® system while reducing total system costs. You can use SL-V injectors on SL-1 systems and help drive down the costs of your current systems an injector at a time, or do a complete upgrade for maximum return.

- **Premium performance: 6,000 PSI capability**

Sturdy design, special seals, and quick venting make the SL-V capable of operating at pressures up to 6000 psig. This is nearly double the current operating range of the SL-1.

- **Two year warranty**

Lincoln is so confident that the new SL-V injector will last twice as long as other injectors, we are backing it up with a two year warranty. This is double our standard warranty.

## Used in These Markets:

- Mining
- Heavy Industry
- Steel
- Paper
- Sugar



# Increase Your System's Performance

The SL-V is a high-performance, manifold-mounted injector with a patented two-chamber design. One of the most impressive features of the new injector is its short vent time. The SL-V vents as much as 80 times faster than other injectors (see chart below). The benefits of this quick venting capability enable you to pump thicker greases, run longer supply lines and may eliminate switching greases in fall and winter.

## Use Thicker Lubricants

High viscosity lubricants are almost always preferred. The SL-V is capable of working at higher pressures and resetting at higher supply line pressures, allowing higher viscosity lubricants to be used.

## Run Longer Supply Lines

The longer the supply line, the longer it takes the supply line energy to dissipate, which increases minimum time between lube events. The SL-V's superior venting performance has outperformed two-line systems with half the plumbing cost.

## Improves Venting Performance of SL-1 Systems

By incorporating SL-V injectors into your SL-1 system, you can greatly improve your venting capabilities.

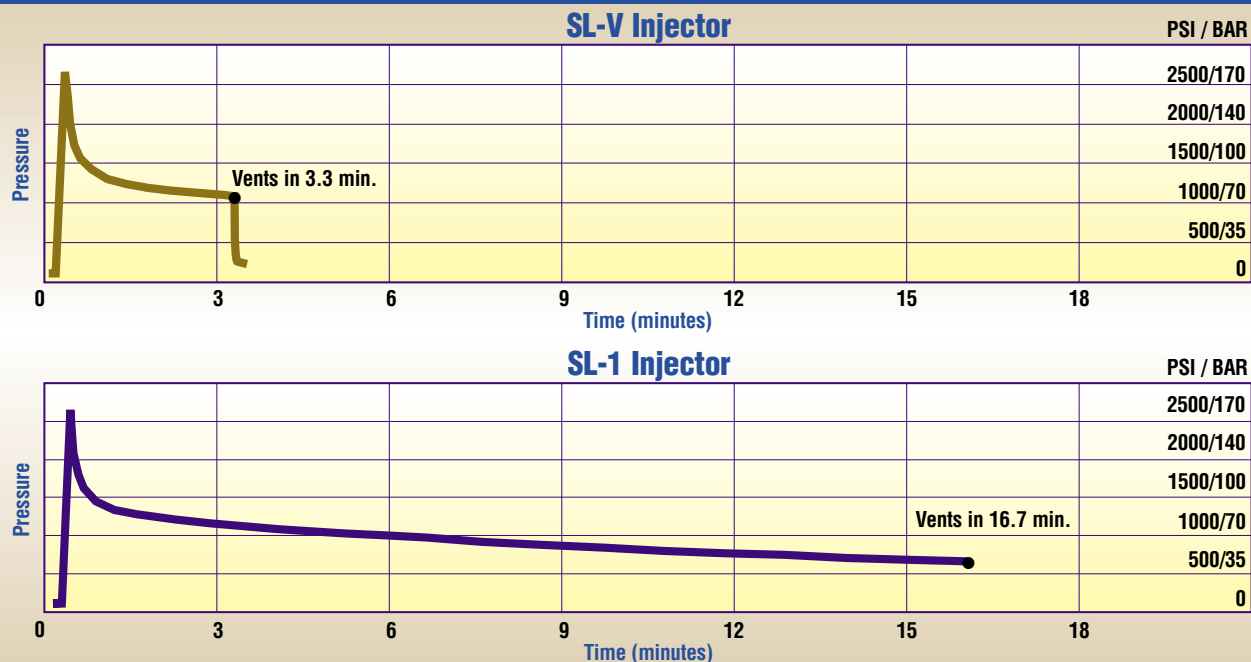
## Eliminate Switching Greases in Fall and Winter\*

A lubricant's viscosity increases as the temperature drops, reducing the lubricant's capability to flow. The SL-Vs increased venting performance can allow you to use your summer grade grease in the winter except in extreme temperatures.\* Even if a grease change cannot be eliminated, the SL-V offers you greater flexibility to choose the timing of the grease change.

\*The SL-V vents successfully using NLGI #2, 5% Moly grease at 0°F (-18°C) using a 50' (15m), 1/2" (12mm) hydraulic hose supply line.

### SL-V vs. SL-1 Vent Time

Banks of Four Injectors, 100 ft. (30.5 m) 1/4" (6mm) Tubing, NLGI #2 Lithium-Based Grease at 68°F (20°C)



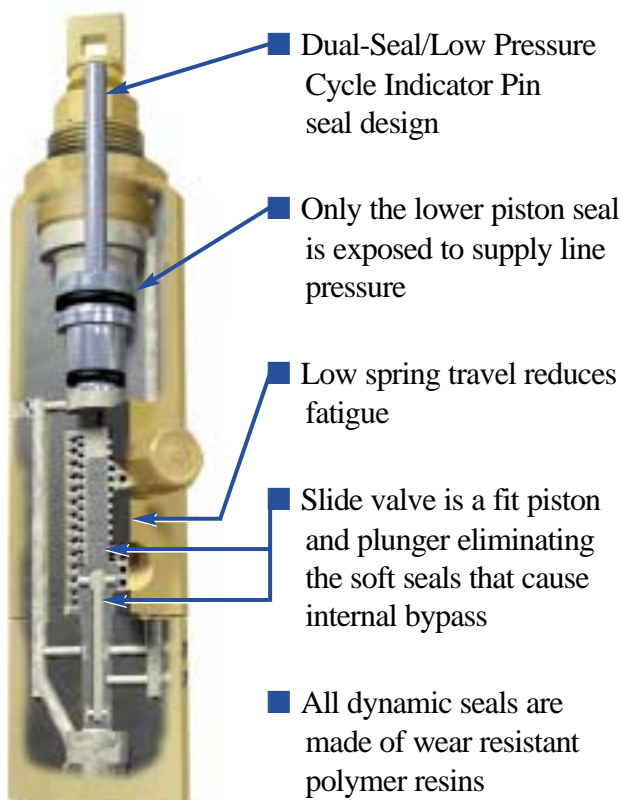


# Reduce the Ownership Cost of Centro-Matic® Systems

Centro-Matic lubrication systems have proven themselves by increasing production and reducing maintenance costs around the world. Now get all the benefits of a Centro-Matic system and reduce the costs associated with maintaining the system. The SL-V is 100 percent compatible with the SL-1 injector allowing switch out of your existing injectors as they wear out or do a complete system upgrade without any plumbing changes.

## Double Your Injector Life

Reduced number of wear parts and a 6,000 psi pressure rating are just two of the key features that have SL-V injectors lasting over twice as long. This will reduce your overall injector cost and the time needed to replace injectors. SL-V injectors come with double our standard warranty.



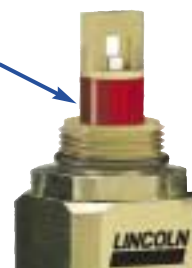
## Reduce Excess Lubricant Consumption

The SL-V provides accurate and repeatable output. After 600,000 cycles of operation, the injector output is still within the original specification.

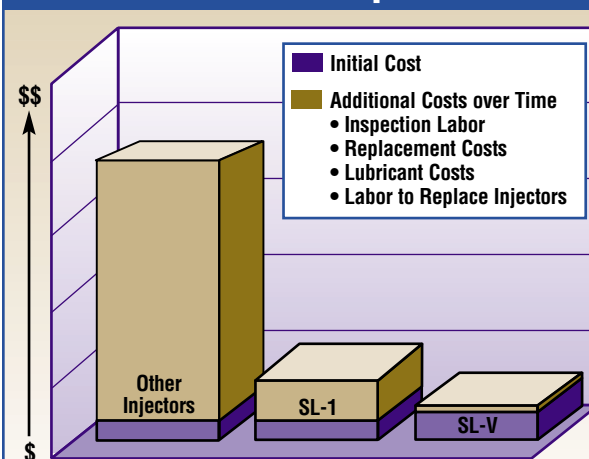
## Reduce Centro-Matic System Maintenance Costs

New features will reduce the time spent on preventable system maintenance:

- Spectrum adjustment system consists of a set of color-coded anodized aluminum sleeves that provide an easy way to adjust the output of the injectors and gives a clear indication of the output setting. This allows for easy system design and preventative maintenance
- Impact resistant polycarbonate protective cap seals the cycle indicator pin area away from contaminants and allows visual inspection of injector operation
- Visual bypass indicator will eliminate the need to inspect injectors for internal bypass



## Total Cost of Operation

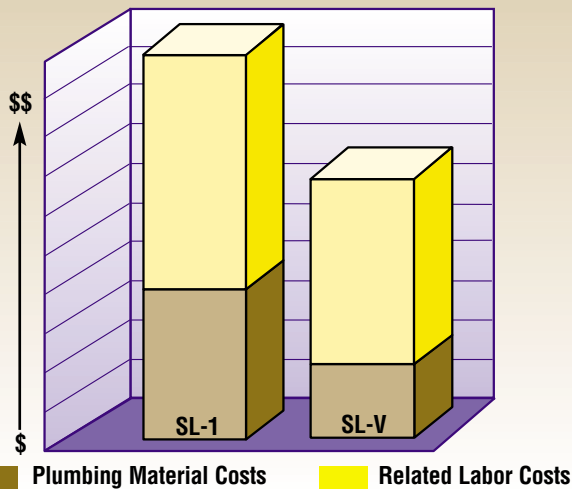


SL-V can save you as much as 66 percent over the life of the injector compared to the SL-1 and 95 percent compared to a competitor's imitation injector.

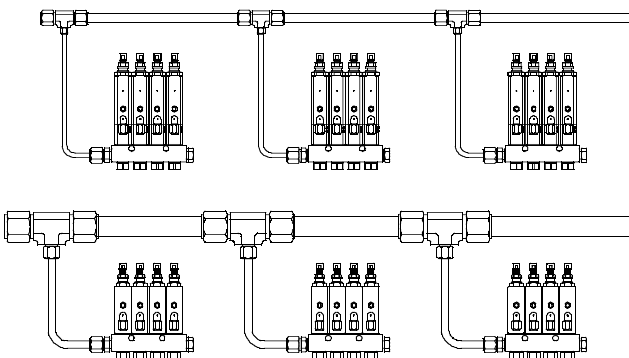
# Reduce Plumbing Costs of New Lubrication Systems

Installing an automatic lubrication system requires more than a pump, controls and injectors. You need supply line, fittings and more to complete the installation. In the past, especially for very large applications, the cost to purchase and install the supply line required made a single line system too expensive. Often a two-line system was installed instead because it required smaller diameter supply lines. With the SL-V injector, you can now use a single line system for many larger applications. Use smaller diameter supply lines and run one supply line instead of two. This can save you more than half the plumbing costs (see chart below) as compared to a two-line system.

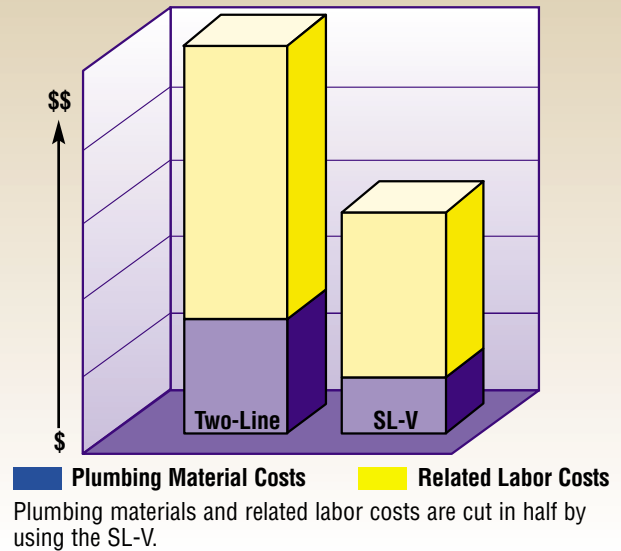
## Run Smaller Diameter Supply Lines



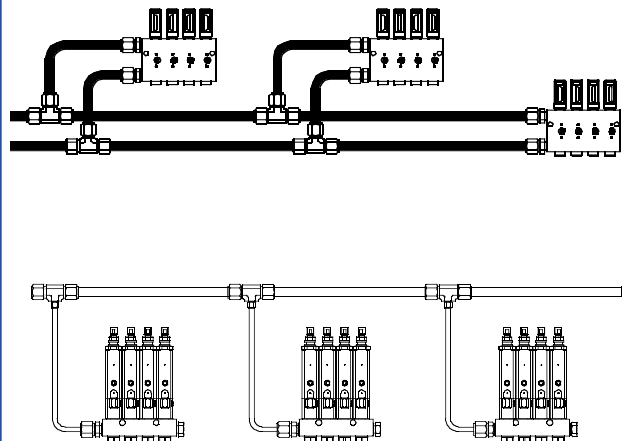
The smaller the supply line diameter, the longer it takes the supply line energy to dissipate, which increases vent time. The SL-V's superior venting performance allows smaller diameter supply lines to be used because it vents at a much higher pressure, absorbs excess energy in the supply line and resets faster.



## Run One Supply Line Instead of Two



The SL-V injector performs better than a two-line system, providing an economical alternative to two-line systems by eliminating half of the supply line cost.



# Centro-Matic 101

Our Centro-Matic® systems and components are made to match your application. Systems can service one machine, different zones on one machine or even several separate machines. Regardless of the application, the principle of centralized lubrication remains the same: a central pump station automatically delivers lubricant through a single supply line to the injectors.

## System Operation

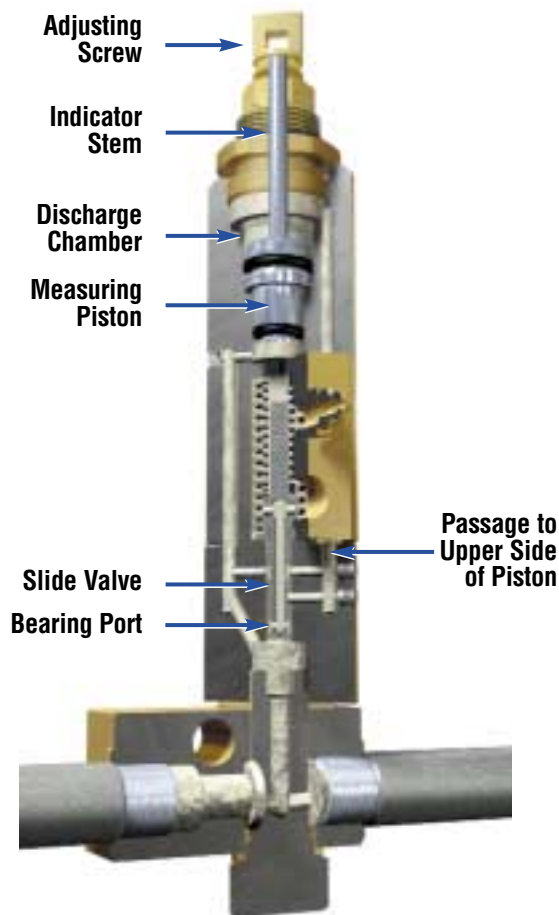
A Centro-Matic lubrication system typically is called a single-line parallel system because it has a single supply line and each injector acts independently of each other. Here are its key features:

- A single supply line that reduces plumbing costs over other styles of systems
- The system can be easily expanded
- The output of each injector can be adjusted
- If a single point is blocked because of a crushed line or tight bearing, the rest of the system continues to operate
- Injector operation can be viewed via visual indicator pin

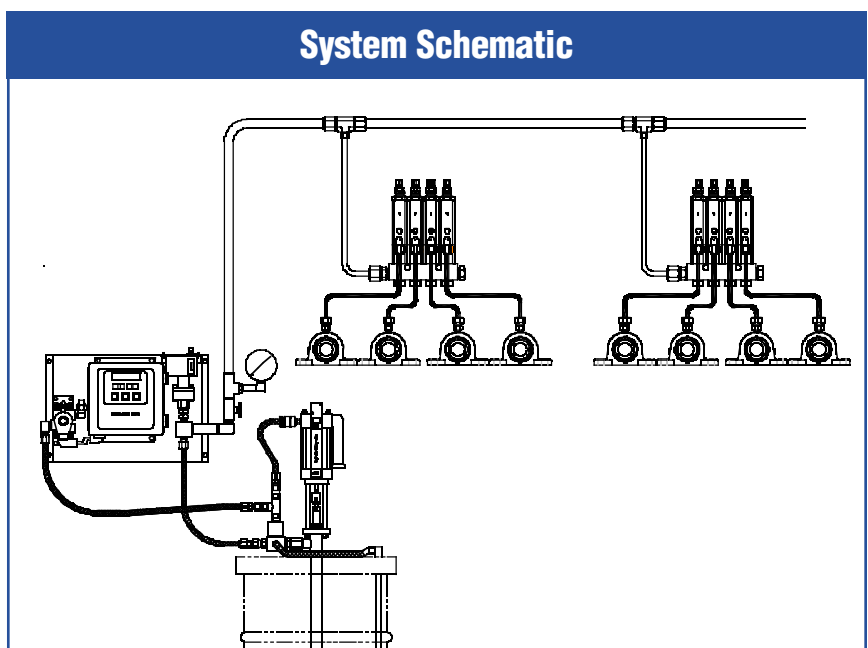
## Injectors

Injectors need to reset after each lubrication cycle. The supply line pressure must drop to below the rated reset pressure of the injectors. If it doesn't, the injector won't dispense the proper amount of lubricant during the next lubrication cycle. Three variables affect the resetting of injectors:

- Thickness (viscosity) of the lubricant
- Supply line length and diameter
- Temperature



## System Schematic



# SL-V Injector Operation



## Stage 1

- The discharge chamber is filled with lubricant from the previous cycle
- Under pressure of incoming lubricant, lubricant is directed to both sides of the measuring piston through the slide valve
- The port to the bearing is closed in this position which prevents the measuring piston from moving
- The indicator stem will be at its innermost position, having pulled away from the stop in the adjusting screw



## Stage 2

- Pressure has built up and has moved the slide valve in position shown. This closes the flow passage to the upper side of the piston (larger diameter) while simultaneously opening the port to allow lubricant to flow out of the injector to the bearing
- Pressure from the supply line continues to apply pressure to the lower portion of the measuring piston, which cause a pressure difference across the measuring piston thus allowing it to move upward



## Stage 3

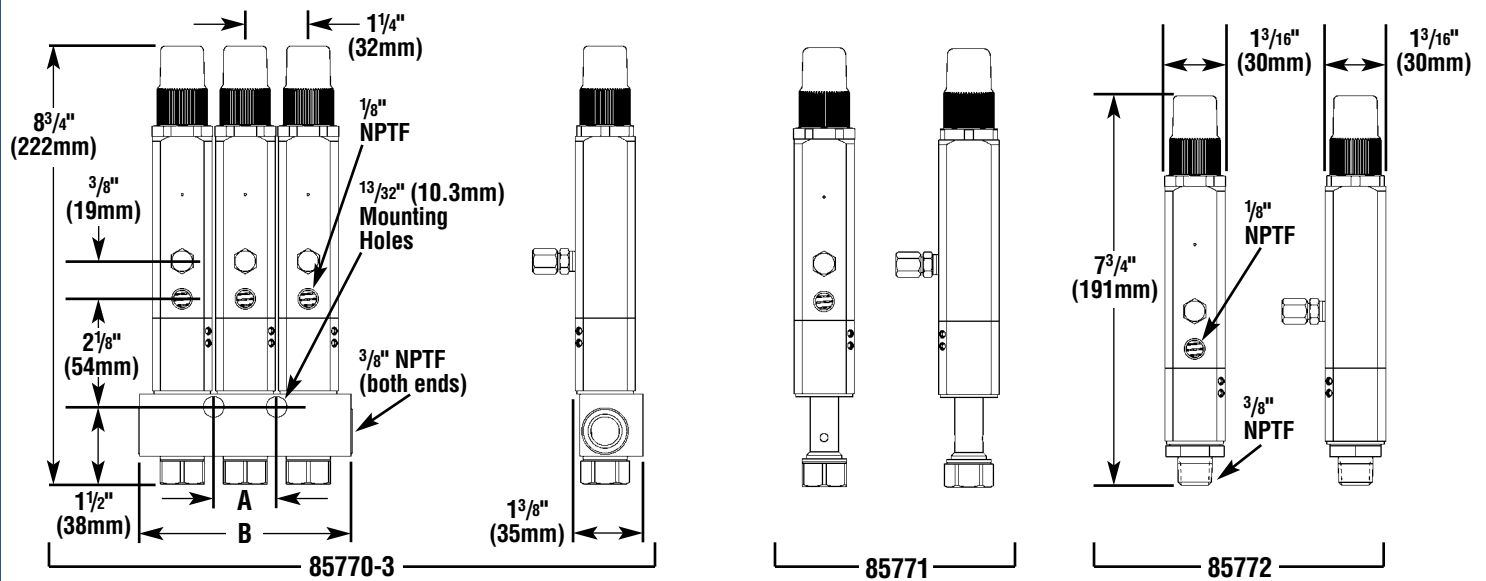
- Movement of the measuring piston is shown caused by the pressure on the lower side of the measuring piston dispensing lubricant out to the bearing
- The indicator stem will move up against the stop in the adjusting screw when all lubricant has been delivered to the bearing



## Stage 4

- As the pressure in the supply line is vented down to 1,000 psi, the slide valve moves back to its rest position
- Flow of lubricant to the bearing is closed and simultaneously allows lubricant to flow to the upper (larger diameter) of the piston
- The displacement of fluid on the lower side of the measuring chamber is also allowed by the slide valve to flow to the upper side of the piston
- The injector is recharged by the residual pressure in the supply line to the upper portion of the measuring chamber

# SL-V Injector Technical Specifications



## Specifications:

Series	Material	Output		Operating Pressure				Connections	
		Min	Max	Min	Max	Typical	Vent	Manifold Inlet	Injector Outlet
SL-V	Carbon Steel	0.015	0.08	1850 psig 128 bar	6000 psig 415 bar	2500 psig 170 bar	1000 psig 70 bar	3/8" NPTF(F)	1/8" NPTF(F)

## Manifold Type Injectors:

Model	Type	Number of Outlets	Dimension A		Dimension B	
			in.	mm	in.	mm
85770-1	One Injector Manifold	1	Single Mounting Hole		2 1/2	63
85770-2	Two Injector Manifold	2			3	76
85770-3	Three Injector Manifold	3	1 1/4	32	4 1/4	108
85770-4	Four Injector Manifold	4	2 1/2	63	5 1/2	140
85770-5	Five Injector Manifold	5	3 3/4	95	6 3/4	171
85770-6	Six Injector Manifold	6	5	127	8	203
85771	Replacement for manifold injectors					
85772	Single injector/no manifold (3/8" NPTF(M) inlet)					

## Spectrum Adjustment Sleeves:

Model Number	Output in <sup>3</sup> (cc)	Ratio from Minimum Output	Ratio from Maximum Output	Sleeve Color
N/A	0.015 (0.25)	1	0.2	NA
85785-1	0.030 (0.50)	2	0.4	red
85785-2	0.045 (0.75)	3	0.6	silver
85785-3	0.060 (1.00)	4	0.8	gold
85785-4	0.075 (1.25)	5	1.0	green



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