



## Holley EFI 16 Injector Setup (8 Cylinder Engines) Setup of 8 Injectors in 8:2 Amp Peak and Hold Mode

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### 16 Injector Setup (4 Options)

There are several ways to wire and run 16 injectors with Holley EFI HP and Dominator ECUs. It is extremely important to understand the differences, and how these work, as these can affect engine function.

**NOTE:** Injector Drivers will be defined as drivers 1-12. They may be noted alphabetically in wiring diagrams as A-L. 1=A, 2=B, 3=C, etc.

The following are the ECU pinouts:

|               |         |     |
|---------------|---------|-----|
| Injector A/1  | Pin J1B | B19 |
| Injector B/2  | Pin J1B | B26 |
| Injector C/3  | Pin J1B | B25 |
| Injector D/4  | Pin J1B | B13 |
| Injector E/5  | Pin J1B | B7  |
| Injector F/6  | Pin J1B | B4  |
| Injector G/7  | Pin J1B | B5  |
| Injector H/8  | Pin J1B | B6  |
| Injector I/9  | Pin J2B | B26 |
| Injector J/10 | Pin J2B | B7  |
| Injector K/11 | Pin J2B | B13 |
| Injector L/12 | Pin J2B | B19 |

## General Information

This document contains information on various ways to set up 1-3 injector sets on an eight cylinder engine as well as ways to change the peak and hold current settings on the first set (injectors driven off ECU drivers) of injector drivers. It contains information on doing this in software versions V2, V3, and V4, as well as addition methods contained in the V5 version of software. The methods used in V2-4 are retained and are unchanged in V5.

The following is useful information for options 2 and 3 when using multiple injector sets:

**Duty Cycle Activation** – Duty cycle of the first injector set, at which the second set ramps in. For example, if 50% is entered, the second set will not start until the flow of the first set reaches 50% duty cycle. At this point, the second set will turn on, and will linearly increase until both sets reach 100% duty cycle at the same time. See graph below.

### INJECTOR SET 2

Injector Paired Wiring

Injector Type Low Impedance

Rated Flow per Injector 160.0 lb/hr

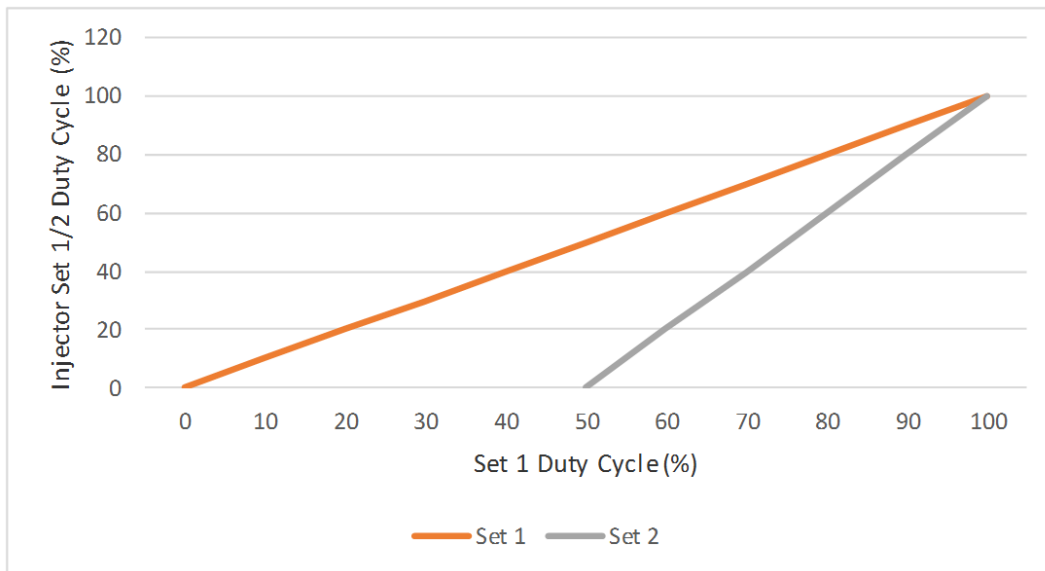
Rated Injector Pressure 43.0 psi

Total Injector Flow 160.0 lb/hr

Duty Cycle Activation 50.0 %

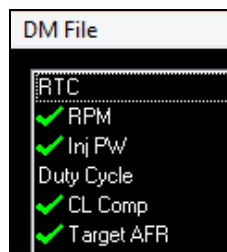
Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |



The following pertains to all methods:

**Duty Cycle Parameter** – The “Duty Cycle” parameter indicates TOTAL fuel system duty cycle based on the sum of all of the injector set FLOWS combined.



**Individual Injector Driver Output** – To review individual injector driver/flow information, review the “Injector #1-28 PPH” (flow for each injector driver) and “Injector #1-28 PW” (pulsewidth for each injector driver). These are found in the data monitor and datalogger views. Individual injector set duty cycles would need to be mathematically calculated based on this data. The injectors outputs used vary on the method.

For more information on the 2 injector set option 4 and single set option 2, refer to the “V5 Software Update Overview” found in the help section.

## 16 Injector Option 1 –

### 8 Injector Drivers – 4:1 Amp Drive – Non-Staged Injector Sets - HP or Dominator ECU:

When to use this: Required when running two sets of injectors on an HP ECU. Use with a Dominator ECU, if you want both sets of injectors to always be active at the same time in a 4:1A mode, as well as if you want individual cylinder trims to be split evenly (vs 16 Injector Option 2).

- Uses Injector Drivers 1-8
- Each driver output is connected to two injectors (wiring split to each).
- Driver 1 is connected to engine cylinder #1. Driver 2 is connected to engine cylinder #2. Driver 3 is connected to engine cylinder #3, etc.

- Individual cylinder fuel trims will modify injector pulse width from the associated individual drivers, which modifies both injectors connected. For example, removing 10% fuel flow from cylinder #5, will lower the injector pulse width of driver #5. The pulsewidth change is based upon the size/flow of both injectors. The ECU will calculate the reduction necessary based on the size of the injectors.
- This can be used for either a HP or Dominator ECU.
- Both sets of injectors need to be high impedance or low impedance. They can't be mixed. Low impedance injectors will be driven in a 4:1 Amp peak and hold mode.

The following is how the software should be set up. Note the following specifics:

- Number of Injector Sets – Enter 3 (even though using 2).
- Injector Type – Select Low Impedance or High Impedance, both sets must be same type.
- Enter the “Rated Flow per Injector” for each set individually as well as corresponding rated pressure for each.
- Injector Set 3 – Set the Rated flow to .1 lb/hr. Set the rated injector pressure to 43. Set the duty cycle activation to 100% (IMPORTANT TO DO). These settings effectively disable the 3<sup>rd</sup> injector set.

### FUEL INJECTOR INFORMATION

**Number of Injector Sets** 3

**Injection Strategy** Sequential

**Enable Injector End Angle Table** ☐

**Injector End Angle** 0.0°

#### INJECTOR SET 1

**Injector Wiring** Dual Individual

**Rated Flow per Injector** 220.0 lb/hr

**Total Injector Flow** 290.5 lb/hr

**Injector Type** Low Impedance

**Rated Injector Pressure** 43.0 psi

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

#### INJECTOR SET 2

**Injector Wiring** Dual Individual

**Rated Flow per Injector** 120.0 lb/hr

**Total Injector Flow** 158.5 lb/hr

**Injector Type** Low Impedance

**Rated Injector Pressure** 43.0 psi

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

#### INJECTOR SET 3

**Injector Wiring** Paired

**Rated Flow per Injector** 0.1 lb/hr

**Total Injector Flow** 0.1 lb/hr

**Injector Type** High Impedance

**Rated Injector Pressure** 43.0 psi

**Duty Cycle Activation** 100.0 %

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

## 16 Injector Option 2 –

### 12 Injector Drivers – 4:1 Amp Drive – Staged Injector Sets - Dominator ECU:

When to use this: Use when needing to stage in the second set of injectors. The first and second set can be high or low impedance, or one of each.

When **NOT** to use this: It is not recommended to use this strategy if both injector sets are **NOT** mounted in the individual cylinder intake runners, **AND** you are using individual cylinder trims. If you are using a set in the runner, and possibly as set above a blower, **AND** you are doing individual cylinder trims, it is recommended to use Option 1.

- Uses Injector Drivers 1-12
- The primary injector set of 8 injectors, is connected to drivers 1-8. Driver 1 is connected to engine cylinder #1. Driver 2 is connected to engine cylinder #2. Driver 3 is connected to engine cylinder #3. Etc.... (first 8 drivers)
- The secondary set of 8 injectors is connected to drivers 9-12. They **MUST** be wired in the following manner. If they are not, individual cylinder trims will not be adjust to each cylinder properly.

Example firing order: 1-8-4-3-6-5-7-2

Wire injector drivers 9-12 as follows:

|           |            |   |
|-----------|------------|---|
| Driver 9  | Pin J2B-26 | Cylinders 1 and 6 (1 <sup>st</sup> and 5 <sup>th</sup> in firing order) |
| Driver 10 | Pin J2B-7  | Cylinders 8 and 5 (2 <sup>nd</sup> and 6 <sup>th</sup> in firing order) |
| Driver 11 | Pin J2B-13 | Cylinders 4 and 7 (3 <sup>rd</sup> and 7 <sup>th</sup> in firing order) |
| Driver 12 | Pin J2B-19 | Cylinders 3 and 2 (4 <sup>th</sup> and 8 <sup>th</sup> in firing order) |

**IMPORTANT!** The Individual cylinder fuel trims methodology in this mode is designed to account for the situation where the primary injectors are too small to deal with individual cylinder fuel trims (for example a primary set of 24 lb/hr and a secondary set of 160 lb/hr along with large cylinder trim percentages). Consequently, both the primary and secondary injector flows are modified (AFTER the secondary set is above the duty cycle activation point) by an equal flow percentage. Due to the fact that the second set of 8 injectors is driven by 4 drivers, and two cylinders are tied to one driver, when one cylinder is modified, the other cylinder on a common driver will have its flow modified as well. To offset this change, this primary injector of this “other cylinder” is modified to offset and rebalance the flow to that “other cylinder”. Due to this fact, it is **NOT** recommended to use this strategy if both injectors are **NOT** in the same intake manifold runner.

- This can be used **ONLY** for a Dominator ECU
- Both sets of injectors set can be either high or low impedance, or one of each. Low impedance injectors will be driven in a 4:1 Amp peak and hold mode.

The following is how the software should be set up. Note the following specifics:

- Number of Injector Sets – Enter 2.
- Injector Type – Select proper type for each set. Can be either or both.
- Enter the “Rated Flow per Injector” for each set individually as well as corresponding rated pressure for each.
- Enter the “Duty Cycle Activation”. Duty cycle of the first set, at which the second set is started to ramp in.

**FUEL INJECTOR INFORMATION**

Number of Injector Sets
2
Injection Strategy
Sequential

Enable Injector End Angle Table
Injector End Angle
0.0°

**INJECTOR SET 1**

Injector Wiring
Individual
Rated Flow per Injector
120.0 lb/hr

Injector Type
Low Impedance
Rated Injector Pressure
43.0 psi
Total Injector Flow
158.5 lb/hr

Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

**INJECTOR SET 2**

Injector Wiring
Paired
Rated Flow per Injector
220.0 lb/hr

Injector Type
Low Impedance
Rated Injector Pressure
43.0 psi
Total Injector Flow
290.5 lb/hr

Duty Cycle Activation
60.0 %

Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

## 16 Injector Option 3 –

### 12 Injector Drivers – 8:2 Amp Drive First set, 4:1 Amp Drive Second set (or high impedance) – Staged Injector Sets - Dominator ECU:

When to use this: Use when needing to stage in the second set of injectors and run the first set in a 8:2 Amp Peak and Hold and second set in 4:1 Amp peak and hold (or high impedance injectors). The first set of injectors is a design that can utilize an 8:2 Amp peak and hold mode, and the second set 4:1 Amp low impedance or high impedance.

When **NOT** to use this: It is not recommended to use this strategy if both injector sets are **NOT** mounted in the individual cylinder intake runners, **AND** you are using individual cylinder trims.

- Uses Injector Drivers 1-12
- The primary injector set of 8 injectors, is connected to drivers 1-8. Driver 1 is connected to engine cylinder #1. Driver 2 is connected to engine cylinder #2. Driver 3 is connected to engine cylinder #3, etc. – first 8 drivers). It is recommended to feed all 8 injectors with a 10-12 gauge feed wire (or twin 14 ga) due to the higher current drive.
- The secondary set of 8 injectors is connected to drivers 9-12. They **MUST** be wired in the following manner. If they are not, individual cylinder trims will not be adjust to each cylinder properly.

Example firing order 1-8-4-3-6-5-7-2

Wire injector drivers 9-12 as follows:

|           |   |
|-----------|---|
| Driver 9  | Cylinders 1 and 6 (1 <sup>st</sup> and 5 <sup>th</sup> in firing order) |
| Driver 10 | Cylinders 8 and 5 (2 <sup>nd</sup> and 6 <sup>th</sup> in firing order) |
| Driver 11 | Cylinders 4 and 7 (3 <sup>rd</sup> and 7 <sup>th</sup> in firing order) |
| Driver 12 | Cylinders 3 and 2 (4 <sup>th</sup> and 8 <sup>th</sup> in firing order) |

**IMPORTANT!** The Individual cylinder fuel trims methodology in this mode is designed to account for the situation where the primary injectors are too small to deal with individual cylinder fuel trims (for example a primary set of 24 lb/hr and a secondary set of 160 lb/hr along with large cylinder trim percentages). Consequently both the primary and secondary injector flows are modified (AFTER the secondary set is above the duty cycle activation point) by an equal flow percentage. Due to the fact that the second set of 8 injectors is driven by 4 drivers, and two cylinders are tied to one driver, when one cylinder is modified, the other cylinder on a common driver will have its flow modified as well. To offset this change, this primary injector of this “other cylinder” is modified to offset and rebalance the flow to that “other cylinder”. Due to this fact, it is **NOT** recommended to use this strategy if both injectors are **NOT** in the same intake manifold runner.

- This can be used **ONLY** for a Dominator ECU
- The primary set of injectors has to be a design that can be run in a 8:2 Amp drive mode. The second stage set can be a 4:1 Amp drive low impedance injector, or a high impedance.

The following is how the software should be set up. Note the following specifics:

- Number of Injector Sets – Enter 3 (even though there are only 2 sets)
- Injector Type – Select low impedance for injector set 1. Select high or low impedance for injector set 3.
- Enter the “Rated Flow per Injector” for sets 1 and 3 as well as corresponding rated pressure for each.
- Enter the “Duty Cycle Activation”. Duty cycle of the first set, at which the second set is started to ramp in.
- IMPORTANT – For Injector Set 2. Set the “Rated Flow Per Injector” to .1 lb/hr. Set the “Rated Injector Pressure” to 43 PSI.

### FUEL INJECTOR INFORMATION

**Number of Injector Sets** 3

**Injection Strategy** Sequential

**Enable Injector End Angle Table** ☐

**Injector End Angle** 0.0°

#### INJECTOR SET 1

**Injector Wiring** Dual Individual

**Rated Flow per Injector** 500.0 lb/hr

**Total Injector Flow** 456.4 lb/hr

**Injector Type** Low Impedance

**Rated Injector Pressure** 90.0 psi

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

#### INJECTOR SET 2

**Injector Wiring** Dual Individual

**Rated Flow per Injector** 0.1 lb/hr

**Total Injector Flow** 0.1 lb/hr

**Injector Type** Low Impedance

**Rated Injector Pressure** 43.0 psi

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

#### INJECTOR SET 3

**Injector Wiring** Paired

**Rated Flow per Injector** 160.0 lb/hr

**Total Injector Flow** 211.3 lb/hr

**Injector Type** High Impedance

**Rated Injector Pressure** 43.0 psi

**Duty Cycle Activation** 60.0%

**Injector Off Time**

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |



## 16 Injector Option 4 –

8 ECU Injector Drivers, External Injector Driver Box (554-142/143) – Both Sets can have current drive configured as needed – Independently Staged and Sequential Injector Sets - Dominator ECU, V5

Software Required: V5

When to use this: Use when needing to run two sets both sequential. Use when needing complete control of when both sets are phased in and out. Both sets can have injector current drive configured from many different settings.

- Wire injectors as normal, except make sure the main injector power feed wire (to and from relay if used) is 10-12 Ga (or two 14 Ga wires). 20 gauge to each individual injector is acceptable, although larger does no harm.
- 1) Select the custom injection type. Choose your number of injectors (1, 2, or 3) then click configure injector sets

The screenshot shows the configuration software interface for the Dominator ECU V5. The interface is organized into several sections, each with a red header:

- ENGINE**: Includes 'Number of Cylinders' (8) and 'Engine Displacement' (454 CI).
- LOAD SENSING**: Includes 'Speed Density'.
- WIDEBAND O2 SENSOR**: Includes 'Sensor Type' (Bosch) and 'Number of Sensors' (1).
- STARTUP SETTINGS**: Includes 'Clear Flood TPS' (35.0%) and 'Enable Fuel Prime' (checkbox).
- FUEL SYSTEM**: Includes 'Injection Type' (Custom), 'Fuel Pump Prime' (5.0 sec), and a 'Configure Injector Sets' button. The 'Injection Type' dropdown and the 'Configure Injector Sets' button are circled in red.
- FUEL INJECTOR INFORMATION**: Includes 'Number of Injector Sets' (1) and 'Injector End Angle' (0.0°). The 'Number of Injector Sets' dropdown is circled in red.

- 2) Select the proper injector option under the system type dropdown for the injector set

**Injector Set To Edit** Set #1

**INJECTOR SET #1**

Number of Injectors: 8 Firing Strategy: Sequential

System Type: **Billet Atomizer 700 (90PSI)**

Rated Flow per Injector: 700.0 lb/hr Final Flow per Injector: 700.0 lb/hr

Rated Injector Pressure: 90.0 psi Final Injector Set Flow: 5600.0 lb/hr

Actual System Pressure: 90.0 psi

Minimum Injector Opening Time: 1.20 msec

**DRIVER SETUP**

Type: Custom Peak Current: 8.750 mA Peak Timeout: 5.0 msec

Hold Current: 2.500 mA

- 3) Configure the actual system pressure and all the “use for” options. If you do not enter the “use for” you will not have any cranking fuel and the engine will not fire.

**NOTE:** If using Holley PN 554-142/143 for the first set of injectors, it is best practice to set the “Driver Type” to “Saturated”. This is ONLY if you are using the external driver box for Set #1.

**Injector Set To Edit** Set #1

**INJECTOR SET #1**

Number of Injectors: 8 Firing Strategy: Sequential

System Type: Billet Atomizer 700 (90PSI)

Rated Flow per Injector: 700.0 lb/hr Final Flow per Injector: 700.0 lb/hr

Rated Injector Pressure: 90.0 psi Final Injector Set Flow: 5600.0 lb/hr

**Actual System Pressure: 90.0 psi**

Minimum Injector Opening Time: 1.20 msec

**DRIVER SETUP**

Type: Custom Peak Current: 8.750 mA Peak Timeout: 5.0 msec

Hold Current: 2.500 mA

**USE FOR**

Use for Prime Shot ☐ Prime Percentage: 100%

Use for Cranking Fuel ☐ Cranking Percentage: 100%

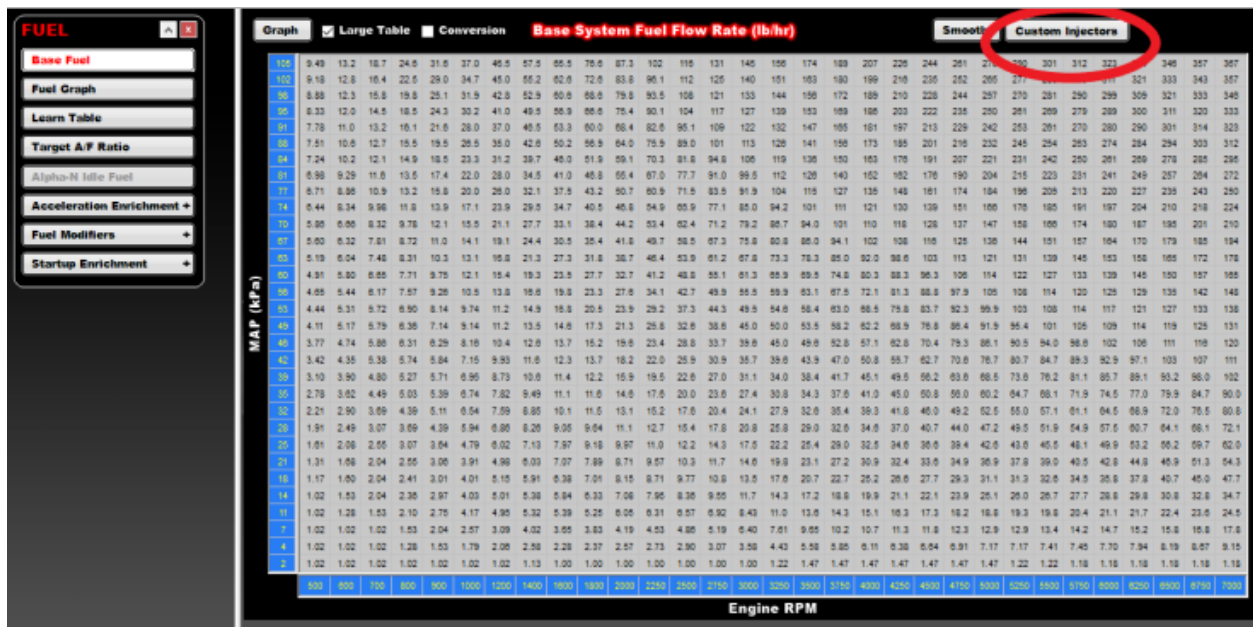
Use for Individual Cylinder Correction ☐

**INJECTOR OFF TIME**

4) Repeat for injector sets 2 and 3



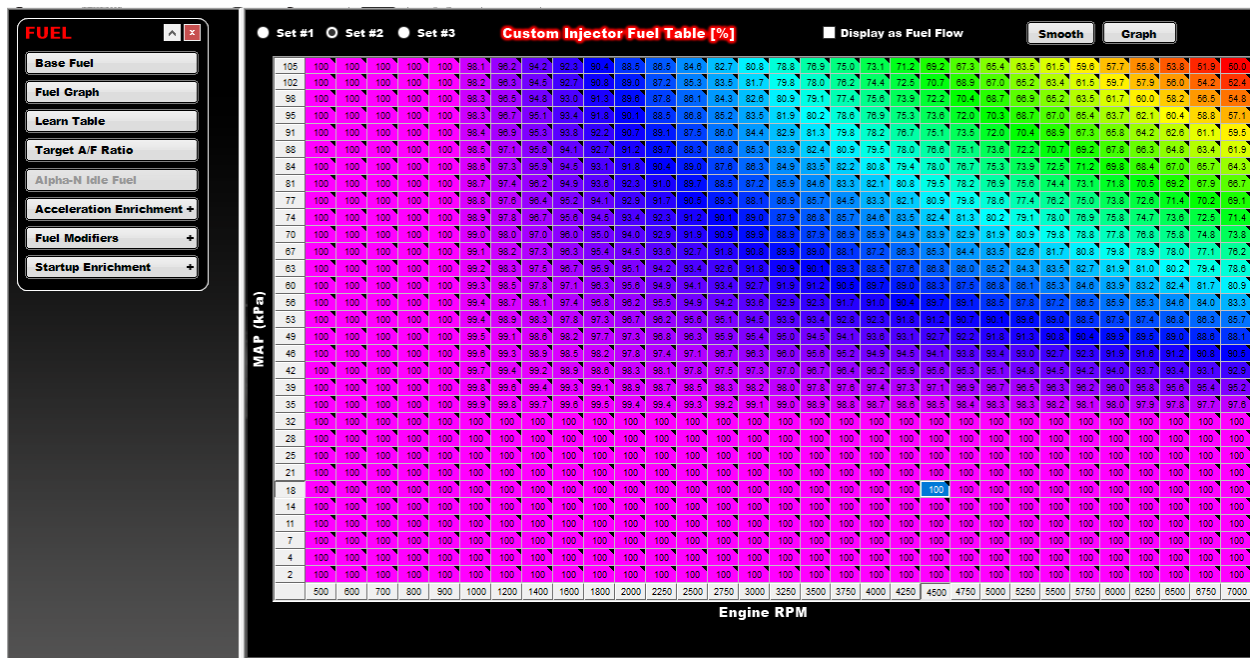
5) Go to the base fuel table and press the custom "injectors button"



6) Fill injector set tables 2 and/or 3 with the percent of the base fuel table you want each injector set to contribute.

#### Notes:

- If you put a percentage value in a table that makes that injector set go static, that value will turn red.
- Understand that the percentage you enter is percent of fuel flow.



## Notes:

- The Base Fuel Table is edited as always done, as it changes to global/total fuel the engine will receive. To edit total fuel, you must edit the Base Fuel table. The other tables are used to edit how the percentage of fuel is split between the injector sets.
- The display as fuel flow check box will change the percent to lb/hr which can be edited as well. This does NOT change the global/total fuel, raising or lowering it for a single injector set will shift the percentage to the other set.
- Set #1 is a view only table and will display how much fuel is being used by injector set #1 after set 2 and/or set 3 have been modified.

## Wiring up a 2<sup>nd</sup> and 3<sup>rd</sup> set of Injectors

The following tables show how to wire a second and third injector set using the custom injector strategy in V5 and Holley PN 554-142/143 external injector driver box (an external driver box is required) on an eight cylinder engine. Refer to the instructions for PN 554-142 for other wiring as well as driver box to injector wiring. This tables below are for ECU to driver box wiring (which may not be in the 554-142 instructions, refer to it for all other wiring).

| Injector Set 2   |         |            |     |
|------------------|---------|------------|-----|
| ECU J2B - (PWM-) |         | Driver Box |     |
| Cylinder         | J2B Pin | Cylinder   | Pin |
| Cylinder 1       | B12     | Cylinder 1 | A27 |
| Cylinder 2       | B6      | Cylinder 2 | A28 |
| Cylinder 3       | B8      | Cylinder 3 | A29 |
| Cylinder 4       | B21     | Cylinder 4 | A31 |
| Cylinder 5       | B5      | Cylinder 5 | A33 |
| Cylinder 6       | B11     | Cylinder 6 | A4  |
| Cylinder 7       | B3      | Cylinder 7 | A5  |
| Cylinder 8       | B9      | Cylinder 8 | A6  |

| Injector Set 3   |         |  |            |     |
|------------------|---------|--|------------|-----|
| ECU J2B - (PWM+) |         |  | Driver Box |     |
| Cylinder         | J2B Pin |  | Cylinder   | Pin |
| Cylinder 1       | B24     |  | Cylinder 1 | A27 |
| Cylinder 2       | B25     |  | Cylinder 2 | A28 |
| Cylinder 3       | B2      |  | Cylinder 3 | A29 |
| Cylinder 4       | B1      |  | Cylinder 4 | A31 |
| Cylinder 5       | B4      |  | Cylinder 5 | A33 |
| Cylinder 6       | B10     |  | Cylinder 6 | A4  |
| Cylinder 7       | B22     |  | Cylinder 7 | A5  |
| Cylinder 8       | B23     |  | Cylinder 8 | A6  |

## 8 Injector Setup (Two Options)

### 8 Injector Option 1 –

**8 Injectors – 8 ECU Injector Drivers – 8:2 Amp Drive – Single Injector Set – HP or Dominator ECU V2-V5 Software:**

**Software Required: V2, V3, V4, or V5**

When to use this: When running a single set of injectors with a HP or Dominator ECU, and needing an 8:2 Amp peak and hold drive.

- Wire injectors as normal, except make sure the main injector power feed wire is 10-12 Ga (or two 14 Ga wires). 20 gauge to each individual injector is acceptable, although larger does no harm.

The following is how the software should be set up. Note the following specifics:

- Number of Injector Sets – Enter 3 (even though there is only 1 set)
- Injector Type – Select low impedance for injector set 1. Select high or low impedance for injector set 3, doesn't matter.
- Enter the "Rated Flow per Injector" for sets 1 properly.
- For injector sets 2 and 3 enter .1 lb/hr for "Rated Flow per Injector" and 43 PSI for "Rated Injector Pressure".
- Enter 100% for the "Duty Cycle Activation".

**FUEL INJECTOR INFORMATION**

Number of Injector Sets 3
Injection Strategy Sequential

Enable Injector End Angle Table
Injector End Angle 0.0°

**INJECTOR SET 1**

Injector Wiring Dual Individual
Rated Flow per Injector 500.0 lb/hr

Injector Type Low Impedance
Rated Injector Pressure 90.0 psi

Total Injector Flow 456.4 lb/hr

Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

**INJECTOR SET 2**

Injector Wiring Dual Individual
Rated Flow per Injector 0.1 lb/hr

Injector Type Low Impedance
Rated Injector Pressure 43.0 psi

Total Injector Flow 0.1 lb/hr

Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 2.48  | 2.17  | 1.86  | 1.62   | 1.43   | 1.25   | 1.15   | 1.05   | 0.96   | 0.87   | 0.79   | 0.73   | 0.67   | 0.62   | 0.58   | 0.53   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

**INJECTOR SET 3**

Injector Wiring Paired
Rated Flow per Injector 0.1 lb/hr

Injector Type High Impedance
Rated Injector Pressure 43.0 psi

Total Injector Flow 0.1 lb/hr
Duty Cycle Activation 100.0 %

Injector Off Time

|       |       |       |        |        |        |        |        |        |        |        |        |        |        |        |        |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.00  | 0.00  | 0.00  | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   | 0.00   |
| 8.0 V | 8.8 V | 9.6 V | 10.4 V | 11.2 V | 12.0 V | 12.8 V | 13.6 V | 14.4 V | 15.2 V | 16.0 V | 16.8 V | 17.6 V | 18.4 V | 19.2 V | 20.0 V |

## 8 Injector Option 2 –

**8 Injectors – 8 ECU Injector Drivers – Software Adjustable Amp Drive – Single Injector Set – HP or Dominator ECU – V5 Software:**

**Software Required: V5**

When to use this: When running a single set of injectors with a HP or Dominator ECU, and needing a programmable peak and hold drive (choices are saturated, 4:1, 8:2, or fully programmable peak and hold values), as well as running Billet Atomizer 700+ lb/hr injectors. *Refer to the V5 Software Overview instructions for more detail.*

- Wire injectors as normal, except make sure the main injector power feed wire is 10-12 Ga (or two 14 Ga wires). 20 gauge to each individual injector is acceptable, although larger does no harm.

The following is how the software should be set up. The settings below are specifically for 700+ lb/hr billet atomizer injectors. Select your injector in “System Type” for Holley recommended base settings. A knowledgeable person can change the “Driver Setup” as desired.

- 1) Select the custom injection type then click configure injector sets. Select “Custom” for the Injection Type. Then select “Configure Injector Sets”.

The screenshot shows a vehicle tuning software interface with several sections. Red boxes and circles highlight specific elements:

- ENGINE**: Number of Cylinders (8), Engine Displacement (555 CI).
- LOAD SENSING**: Speed Density.
- FUEL TYPE**: Fuel (Methanol).
- WIDEBAND O2 SENSOR**: Sensor Type (NTK), Number of Sensors (2), Sensor Averaging (Right Only).
- STARTUP SETTINGS**: Clear Flood TPS (80.0%), Enable Fuel Prime (checkbox).
- FUEL SYSTEM**: Injection Type (Custom), Fuel Pump Prime (10.0 sec). A red circle highlights the **Configure Injector Sets** button.
- FUEL INJECTOR INFORMATION**: Number of Injector Sets (1), Enable Injector End Angle Table (checkbox), Injector End Angle (0.0°).

At the bottom right, there are readouts for **Fuel Flow** (3092.7 lb/hr) and **100% Fuel Flow** (3092.7 lb/hr).

2) Select the billet atomizer 700 option under the system type dropdown.

**INJECTOR SET #1**

Number of Injectors: 8 Firing Strategy: Sequential

System Type: Billet Atomizer 700 (90PSI)

Rated Flow per Injector: 700.0 lb/hr Final Flow per Injector: 700.0 lb/hr

Rated Injector Pressure: 90.0 psi Final Injector Set Flow: 5600.0 lb/hr

Actual System Pressure: 90.0 psi

Minimum Injector Opening Time: 1.20 msec

**DRIVER SETUP**

Type: Custom Peak Current: 8.750 mA Peak Timeout: 5.0 msec

Hold Current: 2.500 mA

**USE FOR**

Use for Prime Shot ☒ Prime Percentage: 100%

Use for Cranking Fuel ☒ Cranking Percentage: 100%

Use for Individual Cylinder Correction ☒

3) Configure the actual system pressure and the “use for” options

Back Injector Set To Edit Set #1

**INJECTOR SET #1**

Number of Injectors: 8 Firing Strategy: Sequential

System Type: Billet Atomizer 700 (90PSI)

Rated Flow per Injector: 700.0 lb/hr Final Flow per Injector: 700.0 lb/hr

Rated Injector Pressure: 90.0 psi Final Injector Set Flow: 5600.0 lb/hr

Actual System Pressure: 90.0 psi

Minimum Injector Opening Time: 1.20 msec

**DRIVER SETUP**

Type: Custom Peak Current: 8.750 mA Peak Timeout: 5.0 msec

Hold Current: 2.500 mA

**USE FOR**

Use for Prime Shot ☐ Prime Percentage: 100%

Use for Cranking Fuel ☐ Cranking Percentage: 100%

Use for Individual Cylinder Correction ☐

**INJECTOR OFF TIME**

Do NOT change any of the “DRIVER SETUP” values if using Billet Atomizer 700+ lb/hr injectors. These are ideal for these injectors.

199R11696

Date: 11-13-18