

GTI SERVICE NOTE

GTI 113 Rev 3

APRIL, 2015

INTRODUCTION OF NEW GTI MIXERS AND GAS TRAIN PLENUM

As part of the move towards development of the new GTI+ system, Altronic has developed a new line of mixers. Designed as true venturi mixers, these products will serve to enhance the vacuum signal at the mixer, thereby enhancing the ability to achieve desired substitution rates, especially in cases where large intake air cleaners tend to suppress this ability with the conventional GTI mixer.

In addition to the venturi configuration, the new design incorporates a gas chamber around the venturi tunnel that feeds the incoming air stream through a slot in the venturi body. The width of this slot is adjustable, and lockable, via a collar on the outside of the body. This feature replaces the power screw that you are familiar with on the conventional systems.

Due to the superiority of this new design, the GTI product line will begin to supply this new mixer design as standard, both for the enhanced and current systems. The new mixer will initially be made available in 3" through 8" sizes. Larger sizes will be dealt with on an as needed basis. The inlet connection to the mixer is 1.5" male JIC on the 3", 4", and 5" sizes, and two 2" male JIC on the 6" and larger mixer sizes.



TABLE I – New Mixer Part Numbers

Part Number	Description
GMX0030-PV	3" Gas Mixer – 1.5" JIC
GMX0040-PV	4" Gas Mixer – 1.5" JIC
GMX0050-PV	5" Gas Mixer – 1.5" JIC
GMX0060-PV	6" Gas Mixer – 2.0" JIC
GMX0070-PV	7" Gas Mixer – 2.0" JIC
GMX0080-PV	8" Gas Mixer – 2.0" JIC

The design is mounted using the conventional hump hose method that has been in use throughout the GTI product life. Dimensional drawings are included in this publication for your reference and use in planning your installations. The most dramatic change in size takes place in the 3" and 4" sizes due to the gas supply chamber and increased size of the JIC connector.

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It should be noted that the new mixer designs have two ¼ NPT ports in the body. These ports will each contain a ¼-inch NPT plug installed with teflon tape when you receive the mixer. The new GTI+ system will require these ports for two pressure sensors that will be used in the overall system design. For engines with more than one mixer, these sensors will be required in only one of the mixers. The other mixer(s) will require the ports to be plugged. In order to eliminate the need for another set of mixer part numbers, all mixers will be shipped with the plugs installed.

Since all of the sizes of the new design incorporate the fixed power valve function, it will no longer be necessary to order the separate power valve. As such, as a means of splitting the gas supply on V-engines, and in order to reduce the pressure drops that have been identified, which often result in difficulty achieving the desired substitution rate, Altronic will supply a nine (9) inch diameter plenum system for the outlet of the gas train. This new plenum will have outlet plates available with one, two and four ports. All of the outlets will be 2-inch male JIC connections. Unlike the outlet plenum of the STEPCON assembly, the outlets on the 9-inch plenum do not incorporate a power valve, since this function is now contained directly in the mixer.

For cases where the plenum is used in combination with the new 3-, 4-, or 5-inch mixer, a 2-inch JIC female to 1.5-inch JIC male adapter can be ordered (one per mixer) to transition from the plenum outlets to 1.5-inch hose. Drawings of the plenum are included in this publication for your reference.

In order to increase flexibility and reduce the need for added inventory, the plenum will be ordered separately from the inlet and outlet end plates. A hardware kit will be supplied for final assembly and mounting on the gas train. The system will comprise of a plenum body and baffle plate assembly (which includes a complete hardware kit), and you will select either a DN65 or DN80 inlet plate, and a 1-, 2-, or 4-port outlet plate. This is outlined in TABLE II below, along with additional instructions in sections 1 and 2 that follow.

TABLE II – Plenum System Part Numbers

Part Number	Description
GPV0009-KT	9" Plenum Body Kit
G90065	DN65 inlet plate
G90080	DN80 inlet plate
G9120	Single port outlet plate
G9220	Dual port outlet plate
G9420	Four port outlet plate

- Order one part from each color row
- GPV0009-KT (9" Plenum Body Assembly) includes baffle plate and hardware kit
- For use with 1.5-inch hose, order one JIC adapter (2" female x 1.5" male) P/N G11122 per hose
- See 1 and 2 below for information on need of additional adapters
- In the case of the need for a 6-output plenum, please contact the factory

1. Single In-line Power Valve Applications

For cost reasons, it may be practical not to use the plenum assembly for in-line engines equipped with a single mixer. However, since the power valve feature will be in the new mixer, ***you will not need to order the in-line power valve kit.*** To do so, please note the following requirements:

- a) For single in-line power valve application of the Series 50 gas trains:
 - **You will need to order a part number G12044.** This new part is a 2" male NPT by 1.5" male JIC to adapt directly from the outlet flange to the hose.
- b) For single in-line power valve application of DN65 gas trains:
 - For use with 1.5" hose, **you will need to order one piece of part number G12042** (1.5" male NPT x 1.5" male JIC) **along with reducer bushing G11015** (2.5" male NPT x 1.5" female NPT). **You will also need to order one piece of flange adapter G11007. You will no longer need to order power valve GPV1015-KT.**

- For use with a 2" hose, **you will need to order one piece of part number G12043** (1.5" male NPT x 2.0" male JIC) **along with reducer busing G11015** (2.5" male NPT x 1.5" female NPT). **You will also need to order one piece of flange adapter G11007. You will no longer need to order power valve kit GPV1015-KT.**
- c) For single in-line power valve application of DN80 gas trains:
- For use with a 2" hose, **you will need to order one piece of part number G12046** (3.0" male NPT x 2.0" female NPT) **along with one piece of adapter G12045** (2.0" male NPT x 2.0" male JIC). **You will also need to order one piece of flange adapter G11008. You will no longer need to order power valve kit GPV2230-KT.**

2. Dual Power Valve Applications

You will **no longer need to order** the standard dual power valve kits that you have been using with the current mixer design. On four mixer applications, you will also **not need to order the pipe fitting kit (G20015 or G20016)** that splits the gas train outlet to the inlet of the two dual power valves. All of these are taken care of by the combination of the new mixer design and plenum.

TABLE III - Referenced Part Numbers

Part Number	Description
G12044	2" male NPT x 1.5" male JIC
G12042	1.5" male NPT x 1.5" male JIC
G11015	2.5" male NPT x 1.5" female NPT
G11007	Flange Adapter, 2.5" DN65
G12043	1.5" male NPT x 2" male JIC
G12046	3" male NPT x 2" female NPT
G12045	2" male NPT x 2" male JIC
G11008	Flange Adapter, 3" DN80
GPV1015-KT	Power Valve Kit, 1.5"
GPV2230-KT	Power Valve Kit, 3"
G20015	HDW Kit, 4-mixer DN65
G20016	HDW Kit, 4-mixer DN80

In the Interim Period before release of the Enhanced System

It is our intention to consume the supply of current mixers in the interim period prior to the release of the GTI+ system. As these parts are consumed, we will transition to the supply of the new mixer and plenum configuration for the current gas trains. **We recommend that you contact the factory during this period prior to issuing system quotes** to determine which configuration to quote.

Moving Forward

The new mixer design will also be incorporated into the GTI+ system that will be released soon. The plenum will be a standard part of the gas train of the GTI+ system to act as a gas buffer for the proper performance of the design with the fast acting AGV5-2L fuel valve. For this system, the inlet plate for the plenum will be a 2-inch ANSI configuration. This information will be covered in more detail in upcoming mailings.

SERVICE BULLETIN

GTI Enhanced Mixer

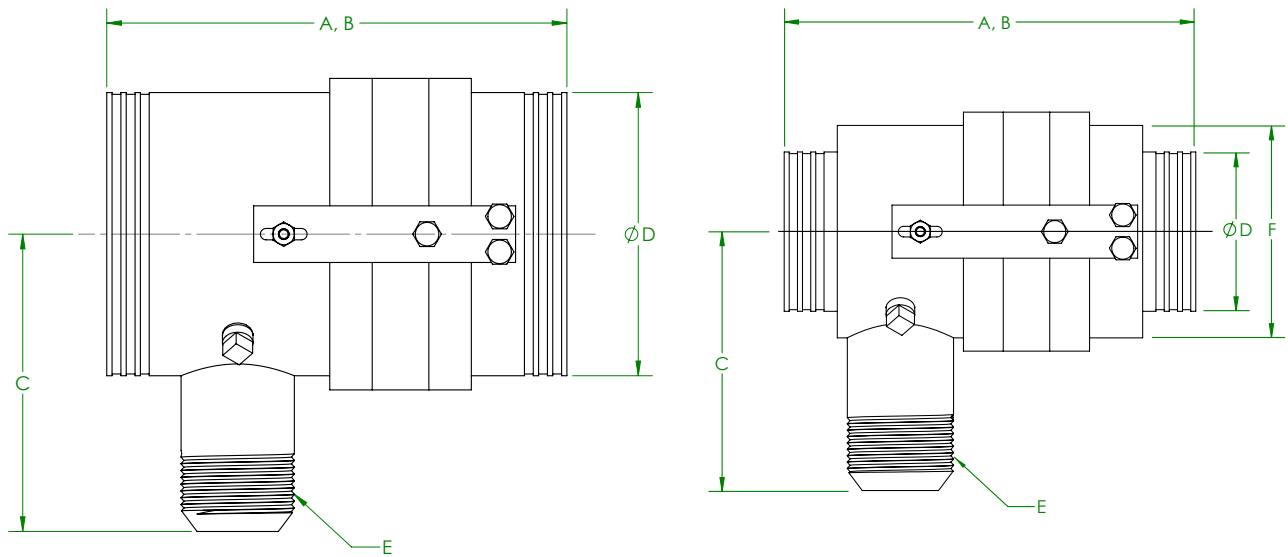


TABLE III – Mixer Dimensions

Part Number	A/B Min/Max	C	D	E	F
GMX0030-PV	7.375/7.875	4.88	3.00	1.5 JIC	4.00
GMX0040-PV	7.250/7.750	4.88	4.00	1.5 JIC	N/A
GMX0050-PV	7.625/8.125	5.25	5.00	1.5 JIC	N/A
GMX0060-PV	7.750/8.250	5.88	6.00	2.0 JIC	N/A
GMX0070-PV	8.50/9.00	6.38	6.00	2.0 JIC	N/A
GMX0080-PV	8.50/9.00	6.88	8.00	2.0 JIC	N/A

All dimensions in inches

GTI 9-Inch Plenum

