

#### The Revolution of Alternative Fuel Vehicle Systems







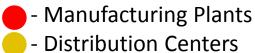




## **Icom's Global Presence**







## **ICOM Manufacturing Italy**



- Founded in 1984
- Invented and patented the toroidal LPG tank
- Holds numerous patents on alternative fuel systems and components
- Sold over 4 million LPG automotive tanks
- Sold over 250,000 JTG liquid propane systems
- ISO 9001 and ISO 14001 Certified
- Holds numerous EN67 certifications
- ASME certified
- Has distribution in 15 countries on 5 continents
- Tier I OEM supplier
- JTGhp Direct Injection System is available for over 100 vehicle platforms for European, Australian & Korean markets







#### **ICOM North America**



- Established its North American operations in 2004.
- Headquarters and Assembly Plant in New Hudson, Michigan
- Assembles the Icom JTG II system and JTGhp system including: Toroidal tanks, Cylindrical Tanks, Fuels Rails, Hoses Regulators and ICU at the New Hudson Plant using a substantial percentage of domestic components
- NFPA 58 Compliant, EPA Certified, Canadian IGAC Certified and E67/01 Certified, Crash Tested, ASME Certified Tanks with patented Icom valve protection collar
- Bifuel & Monofuel Systems



## **ICOM Technology & Training Center**



#### **Icom Alternative Fuels Institute**











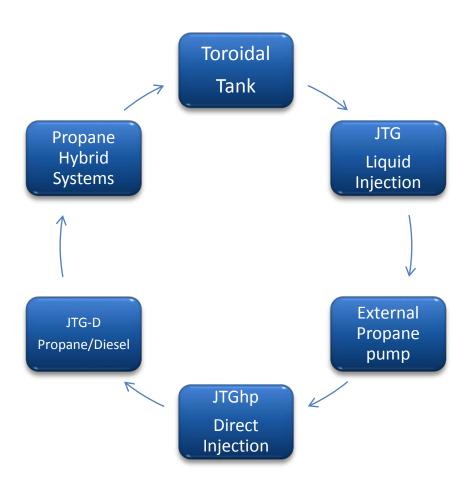
# Icom Systems and Technology in North America

#### **Approximately:**

- 12,000 Propane Systems in use in North America utilizing Icom Technology
- Fleets enjoyed a huge fuel cost savings of \$168,000,000 to date
- Estimated emissions reduction of 30% and Particulate reduced to almost 0
- 124,300,000 gallons of Propane Autogas utilized
- 111,870,000 gallons of gasoline and diesel displaced
- 290,000,000 miles driven
- Icom is working hard with our partners and Dealers to get over 100,000 Icom systems, in the next 5 years



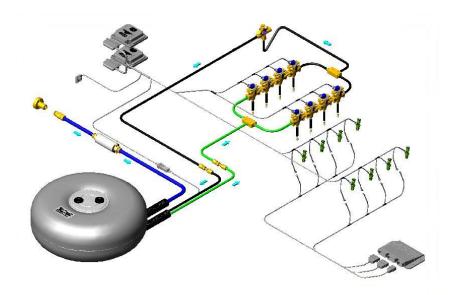
## **Icom Innovations Driving the Industry**





## icom ITG®

Icom invented and patented the revolutionary JTG® liquid propane injection system and electronically-controlled LPG multivalve



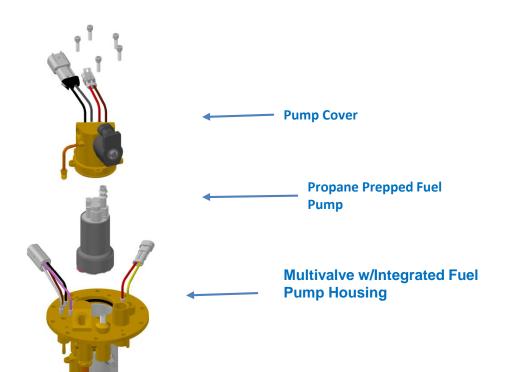
#### **Liquid Propane Injection System**

#### JTG® System Advantages:

- 1) The JTG® system is 'plug and play' the fuel tank, fuel rails and hoses are preassembled.
- 2) No need to alter OEM ECU in any way.
- 3) Propane injectors calibrated to match gasoline injectors in amount of energy delivered with fuel.
- 4) Complete standard OBDII factory diagnostics.
- 5) Propane injection system not affected by temperature changes.
- 6) No cutting, splicing nor soldering required only three electrical connections needed to operate the JTG® system



### JTG<sup>®</sup> MultiValve



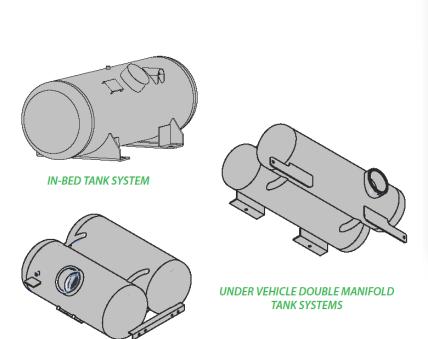
The Advanced JTG
Multivalve with Integrated Fuel
Pump

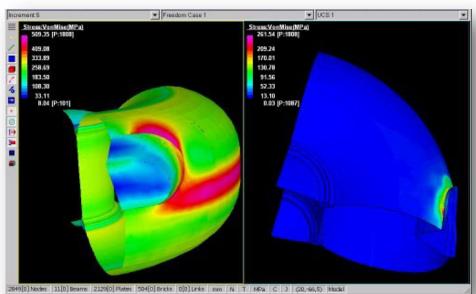
Developed and Patented by Icom for improved serviceability – no need to depressurize fuel tank to access fuel pump Increased flow rate for fast filling



## **Propane Tanks**

The ICOM JTG® system can utilize virtually any propane vehicle tank including cylindrical, manifold and toroidal. All tanks include the ICOM patented recessed valves for the ultimate in protection and safety.





Icom utilizes the most advanced technology and state-of-the-art tools to design its fuel systems and components.



#### **EPA Certifications**

The Icom JTG II system is EPA Certified for over 700 2009-2015 vehicle platforms including many Ford models.

## The Total Solution for any Type of Fleet!



E150 E250 E350 Transit Connect



Crown Victoria



F 150 F450 F250 F550 F350 F650



**Ford Expedition** 



Lincoln Navigator



E450



F59 (Bakery, Linen, FedEx type box trucks)



#### **EPA Certifications**

ICOM JTG Liquid Injection Bi-Fuel Propane System is EPA certified for most 2010-2015 GMC and Chevrolet Light trucks and SUV's equipped with the 4.8L, 5.3L, some 6.0L engines.



Chevy Silverado GMC Sierra



Chevy Tahoe GMC Yukon Chevy Suburban Chevy Avalanche



Chevy Express GMC Savana



## Projected 2015 New Certification Program



**Ford Transit** 



Ford F150 5.0L



GM 6.0L, 4.3L (Van, Pickup & HD)



Ford Explorer, Taurus, Transit, Lincoln MKZ 3.7L



## **Icom Customer AAustin Express**

- 150 vehicles
- \$6,000.00 per day saving
- 1.2 Million dollars savings per year for fuel
- 600,000 gallons of foreign oil displaced per year
- Projected 200 vehicles by 2014 with 2 million dollars savings per year
- Continue to add new Icom Systems





## **Direct Injection: THE FUTURE IS HERE**

Direct
Injection
Gasoline
engines have
particulate
matter

✓ Direct Injection gasoline vehicles started becoming prevalent on light duty vehicles since 2012 in the USA and most all light duty vehicles will be Direct Injection in the coming years. Direct Injection means the combustion is injected directly into the combustion chamber instead of the manifold as done for decades. This allows for smaller engines with more power and torque, improved fuel efficiencies and improved emissions.

Direct
Injection
Propane has
almost
ZERO
particulate
matter.

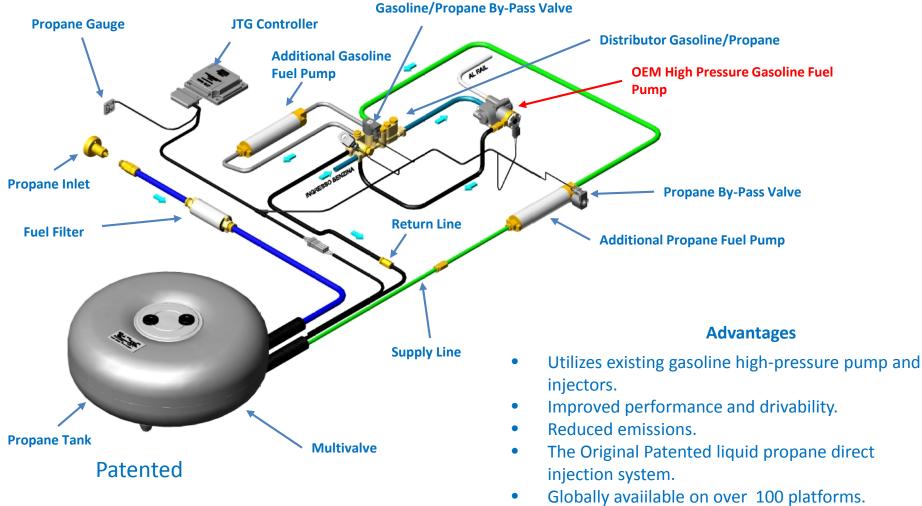
✓ The patented Icom JTGhp Liquid Injection Direct Injection System has been EPA Certified for the 2014 Chevrolet 5.3L Pickups and Tahoe and has been awarded a Propane Education & Research Council Grant to integrate and certify the Ford Ecoboost Family of Direct Injection vehicles.

#### **Breath easy with Propane Autogas!!!**





#### Liquid Propane Direct Injection System





# Direct Injection North American Applications

Coming 2015



**Chevrolet Impala, Caprice 3.6L Ecotec** 



Ford F150 3.5L EcoBoost



Chevrolet Silverado, Tahoe 5.3L Ecotec3

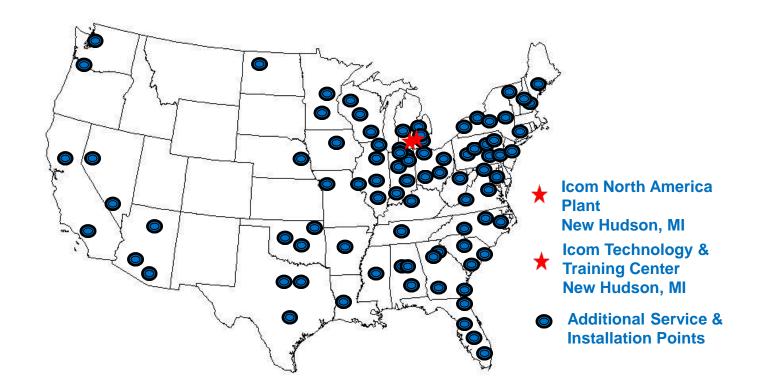


Ford Taurus, Explorer, Transit and MKT 3.5L EcoBoost





#### **Icom Installation & Service Points - USA**







Icom JTG systems are distributed, installed and serviced across Canada.

**UPS Canada utilizes Icom Monofuel Systems through-out Canada.** 

- ✓ Applicable Icom JTG II components are Canadian IGAC Certified to -40 Degrees & for Safety and Durability
  - ✓ Icom Tanks are Canadian CRN Registered



## Thank You for your interest!

With the proper use of alternative fuels, we can enjoy increased energy security, increased employment in an emerging sector, and decreased emissions.



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