



LPEFI[®]

Isuzu Warranty Guide

BI-PHASE TECHNOLOGIES, LLC

Warranty Guide

LPEFI[®]

Liquid Propane Electronic Fuel Injection

Bi-Phase Technologies, LLC
2945 Lone Oak Dr., Suite 150
Eagan, MN

(888) 465-0571

Table of Contents

Limited Warranty Statement	2		General user information
Customer Satisfaction	3		
General Warranty Provisions	4		
Time & Mileage Period	5		
Warranty Coverage	6		
Emissions	6		
Parts Covered	7		
How to Get Warranty Service	8		
Emergency Repair	8		
Warranty Registration	8 & 9		
Warranty Policy and Claim Procedures	10		Service provider information
Warranty Claim Flowchart	11		
Warranty Claim Procedures	12&13		
Warranty Claim Form	14		
Safety Recall	15		
Warranty Compliance	15		
Warranty Labor Rates	16 & 17		



LIMITED WARRANTY STATEMENT

For
LPEFI®

Bi-Phase Technologies, LLC, manufacturer of LPEFI®, liquid-phase propane electronic fuel injection, systems for internal combustion engines, warrants all components of the LPEFI® system against defects in materials and/or workmanship for a period of 5 years or 75,000 miles, whichever comes first.

The warranty coverage includes parts and labor to replace those parts, per the published Warranty Labor Guide, and is made only to the original purchaser and for the vehicle upon which the system was first installed. Warranty will be handled through a network of authorized distributors. Reimbursement for the replacement of failed components will be authorized after an inspection has determined the failure was due to a defect in material and/or workmanship. It is the purchaser's responsibility to confirm the system has been properly registered with Bi-Phase Technologies, LLC. To obtain warranty repairs the original purchaser must return to an Authorized Distributor for LPEFI®. Warranty applies only when a failure is due to defects in material and/or workmanship.

Any tampering or changes in the original system design will void the warranty. Any components that are not an integral part of the LPEFI® system are not warranted by Bi-Phase Technologies, LLC. Any failure due to accidental or intentional damage, abuse, or due to the performance of any non-integral part of the LPEFI® system would also not be covered by this warranty. Bi-Phase Technologies, LLC has the exclusive rights to approve or disapprove any warranty claim.

This warranty is the only warranty made to any person by Bi-Phase Technologies, LLC and is in lieu of all other express warranties. **Any implied warranty or merchantability and fitness for a particular purpose are hereby disclaimed.** Under no circumstances is Bi-Phase Technologies, LLC liable to any person for incidental or consequential damages including lost profits or business, loss of time, loss of use, rental fees or towing, whether arising out of breach of warranty or other contract, negligence, strict liability or other tort, or otherwise.

The above limitations or exclusions may not apply to your vehicle or the LPEFI® system because some states do not allow limitations on how long an implied warranty lasts; or they may not allow exclusion or limitation of incidental or consequential damages. This warranty gives you specific legal rights, and you may have other rights, which vary from state to state.

Customer Satisfaction

Your complete satisfaction with your LPEFI® system is our main goal. All of our personnel are thoroughly trained and committed to provide you the best service possible. If you are not satisfied with your LPEFI® system, we want to know.

Step 1

Discuss your concerns with your Utilimaster's Customer Support Group at (800) 237-7806, x 2109. In most cases, a satisfactory solution is found at this step.

Step 2

We recognize that, on some occasions, a customer may not be totally satisfied with the decision or actions. If this is the case, you should call or write Bi-Phase Technologies. The address and telephone number are on the warranty statement in this document. When you call or write please provide the following information:

- Your name, daytime and evening telephone numbers.
- Year, model , vehicle identification number and its current mileage
- The name of your facility and/or service provider.

General Warranty Provisions

The warranty coverage in this guide is offered to the owner of an LPEFI® system installed and originally designed by Bi-Phase Technologies, LLC. If the system installed was not originally designed for the specific vehicle this warranty does not apply. This warranty only covers components of the LPEFI® system. The original vehicle manufacturer's warranty is not affected by the installation of LPEFI®.

Parts replaced under any of the warranties in this guide become the property of Bi-Phase Technologies, LLC. Bi-Phase will make the final decision whether to repair a part or replace it.

Bi-Phase may use factory–remanufactured parts rather than new parts for some warranty repairs. Those parts, like new parts, are covered for the remainder of the limited warranty.

The warranties in this guide do not cover:

- The failure of any part due to:
 - ✓ Abuse, misuse, accidental damage, or acts of God.
 - ✓ Improper installation or maintenance
 - ✓ The installation of any part that is not an original factory replacement part.
 - ✓ Use of vehicle in competition or racing events.
 - ✓ Any part failure that is not a part of the LPEFI® system.
 - ✓ By modifying the original design & installation procedure.
 - ✓ Failures due to any kind of fuel contamination

General Warranty Provisions continued...

- Any vehicle with an odometer that has been altered so it is impossible to determine the actual mileage.
- Any incidental expenses or inconvenience you may suffer due to the loss of use of your vehicle.
- Towing expenses
- Vehicles not registered with Bi-Phase Technologies, LLC within 30 days of the original installation date, the point of sale or the point of delivery.
- Any original equipment of the vehicle that is not related to the LPEFI® system.
- Any part of the vehicle that is covered by the original vehicle warranty or other implied warranties.
- The replacement of maintenance items such as, but not limited to, spark plugs, filters, hoses, belts, coolant or lubricants

Time and Mileage Period

This warranty begins on the date of the original installation and/or the date the vehicle including the LPEFI® system is put into service in one of the following ways:

- The LPEFI® system is installed at a licensed and/or certified installer.
- The vehicle is purchased from the original manufacturer's dealer network as an offered option.
- The vehicle is leased equipped with the LPEFI® system.

Your LPEFI® system is covered for 5 years or 75,000 miles, whichever comes first.

General Warranty Provisions continued...

Warranty Coverage

Bi-Phase Technologies, LLC will replace any part that is defective in material or workmanship under normal use. All repairs/replacements made under this warranty are free of charge. The replaced or repaired parts are covered only until the original LPEFI® warranty expires. Bi-Phase Technologies will pay for freight on authorized warranty parts using the most economic method. (No overnight/express freight will be pre-paid).

Emissions

Your vehicle is covered by a manufacturer's emissions warranty. If your vehicle fails a Smog Check or an EPA-approved short test, it should be taken to an authorized distributor. Take along a copy of the test report. Under normal circumstances, your original vehicle manufacturer's dealer will repair any component causing degradation in emission performance. However, if a component of the LPEFI® system is causing degradation in emissions performance it should be taken to your authorized service provider. If it is determined that the failure of any LPEFI® system component is causing the emissions degradation it will be repaired or replaced. If it is determined that a component not covered by this warranty is the cause a claim should be made with the original vehicle manufacturer.

If the original vehicle manufacturer's dealer or an authorized LPEFI® system distributor cannot repair your vehicle or honor your claim within a reasonable period of time, contact Bi-Phase Technologies, LLC for assistance (see step 2 in "Customer Satisfaction") or you may write to:

Manager, Vehicle Program and
Compliance Division (6405J)
Environmental Protection Agency
401 M Street S.W.
Washington, DC 20460
(Attention: Warranty Claim)

Emissions warranties are different in California and Massachusetts and may differ from state to state.

General Warranty Provisions continued...

Parts Covered

- Fuel Injectors
- Fuel Injector Rails
- LPDM, Liquid Propane Delivery Module (includes fuel pump)
- Fuel delivery hoses
- Fuel delivery control module/tank control box
- Fuel Tank(s) including all valves and appurtenances

Note that maintenance items such as filters are not covered under this warranty. Maintenance items are the owner's expense.

Product Improvement

Bi-Phase Technologies reserves the right to make product improvements or changes at any time, without incurring any obligation to make such changes or improvements to any other vehicle.

How to Get Warranty Service

You should contact your Utilimaster's Customer Support Group at (800) 237-7806. If your vehicle cannot be driven, if it is a problem of the LPEFI® system, you are responsible for any towing fees. However, if an authorized service provider is nearby it is a good chance they will help you. It also would be recommended that the vehicle be towed to the original vehicle manufacturer's dealer i.e....Isuzu. (*Note: Always check the fuel level first.*)

Emergency Repairs

Bi-Phase recognizes that your vehicle could develop a serious problem needing immediate repair at a facility other than an authorized dealer. In this case, it is recommended that you call Bi-Phase Technologies directly at (888) 465-0571 during normal business hours in the central time zone.

If the problem can be resolved by a local service technician through communication *with Bi-Phase Technologies reimbursement will be considered after an investigation of the event is complete.*

Warranty Registration

To validate the warranty a Post Inspection Form must be filled out completely and returned to Bi-Phase Technologies within 30 days of purchase or installation. For factory-installed systems, this form is submitted to Bi-Phase at installation. The information on the card is important for many reasons. It is required by government regulation and certification for purposes of tracking quality, EPA compliance, safety recall, serial number and vehicle identification conformity.

Limitations and Disclaimers

All of the limited warranties in this guide are subject to the following limitations and disclaimers.

Bi-Phase Technologies disclaims any responsibility for loss of time or use of the parts or vehicle in which the parts are installed, transportation or any other incidental or consequential damage. Any implied warranty of merchantability and fitness for a particular purpose is limited to the duration of the written warranty.

The above limitations or exclusions may not apply to your vehicle or the LPEFI® system because some states do not allow limitations on how long an implied warranty lasts; or they may not allow exclusion or limitation of incidental or consequential damages.

These warranties give you specific legal rights, and you may have other rights, which vary, from state to state or country.

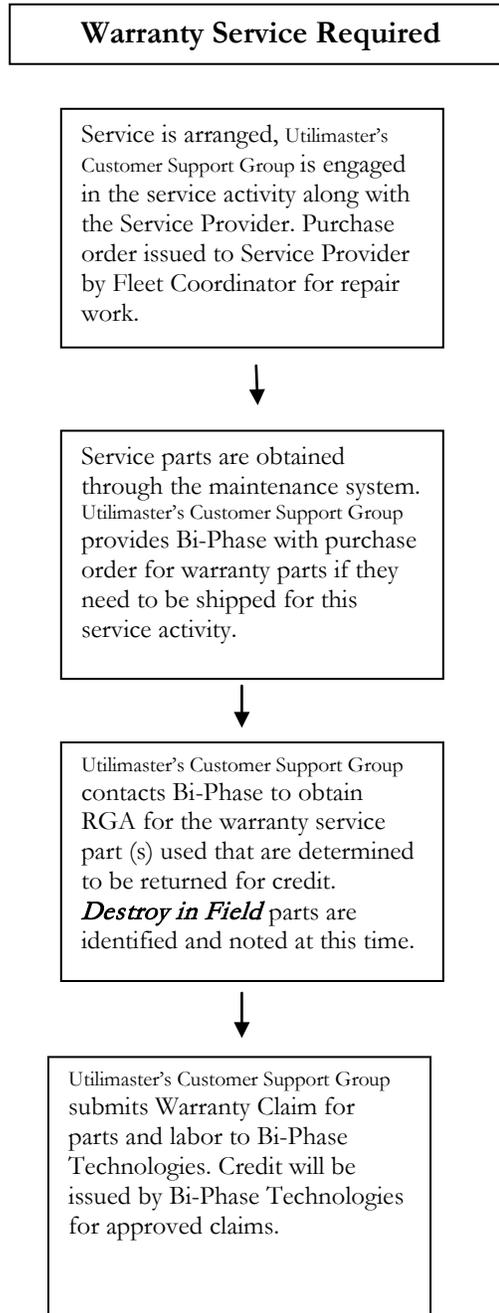
Warranty Policy and Claim Procedures

The warranty is provided by Bi-Phase Technologies, LLC. It is the intention of Bi-Phase Technologies to uphold the provisions of this warranty while following the guidelines of our “Customer Satisfaction” statement. However to provide a warranty of such, it is necessary to have certain policies and claim procedures in place to protect all persons involved and assure they are treated equally. The Warranty is an assurance given by the seller/manufacturer that the product being sold is exactly as represented in the sales agreement. The warranty is like insurance to the purchaser, a promise by which the seller/manufacturer will perform after the sale if a problem arises. It is believed that the equipment, LPEFI® system, is of good quality and will provide excellent service. If this warranty is ever exercised the provisions and procedures set fourth in this Warranty Guide will be followed. It is important that all parties involved understand this warranty and agree to the provisions as a condition of purchase.

Bi-Phase Technologies, LLC will monitor the performance of the warranty. Bi-Phase will administer the warranty and has the right to appoint outside administrators. These administrators could be original vehicle dealers or may be specialized service companies. These specialized service companies will be called LPEFI® Authorized Service Provider. Any failure of this warranty should be reported to Bi-Phase Technologies, LLC.

Follow the chart on the next page to help you with the correct procedure depending on your area and service provider system.

Warranty Policy and Claim Procedure Flowchart



Warranty Policy and Claim Procedures, continued...

The following procedures will describe the warranty claim processes for identified on the previous flowchart.

Contacting Bi-Phase Technologies – Initial Phase

Initial contact with Bi-Phase Technologies for warranty service, arranged through Utilimaster’s Customer Support Group, will occur when they are submitting a purchase order for warranty parts (either for stocking parts or a special order for a specific service activity), or for diagnostic assistance.

Return Goods Authorization

Utilimaster Customer Support Group arranging warranty service on a Bi-Phase LPEFI system must call Bi-Phase Technologies to obtain a Returns Good Authorization if warranty parts are to be returned for credit, or if a determination if the “destroy in the field” policy will be used at this time. A Bi-Phase Technician will verify the warranty return and issue a RGA number. This RGA number must appear on the box or the return will be refused at the receiving dock. Bi-Phase Technologies will either send out a pre-paid return label for the warranty part with the new part, or allow the return freight to be added to the warranty claim form described below.

Warranty Claim Form

The Warranty Claim Form must be submitted, completely filled out, for warranty reimbursement to take place if service is arranged by the Utilimaster Customer Support Group. The more information received the better chance of timely reimbursement. Contact Bi-Phase Technologies to obtain blank warranty claim forms. The Warranty Claim Form is one-page and has minimum space for in depth information. Additional information is welcome and sometimes required to explain the charges. The Warranty Claim Form is multi-purpose. It reimburses the Utilimaster's Customer Support Group and gives us statistical information for evaluating product strengths and weaknesses pertinent to product support and improvement. When submitting the Warranty Claim Form all parts must be returned that were identified by Bi-Phase representatives. If the parts are not returned, the part charges will not be reimbursed and the warranty claim could be denied. Some parts will be determined as "destroyed in the field" parts and will not be required to be returned for credit. The warranty form has a section to designate returned parts. The form also has a section for freight on returned parts. This section should be filled out with the shipping cost to return the parts to Bi-Phase Technologies (if a pre-paid return label was included with the warranty part this section remains blank). The labor section should be filled out using the service provider's warranty hourly rate, times the Bi-Phase Technologies allowed labor rate, for every warranty service activity as outlined in this guide.

Warranty Policy and Claim Procedures, continued...

Safety Recall

If a problem arises where safety is at risk a recall will be issued. The recall will be evaluated and the systems will be identified by serial number. Careful documentation of each piece of the system will assure accurate tracking.

All efforts to prevent the need of a safety recall are made. Testing and quality inspection of each component is done before a system is shipped. If a problem is identified, by either Bi-Phase or a component manufacturer, the components and materials are tracked by shipment or lot numbers. We also track all material received and document the systems where it is used so that we can identify the systems that may have a potential problem, where they are and respond quickly.

Warranty Compliance

The authorized service provider is responsible for the quality of warranty repairs and service. Each warranty claim will be reviewed in detail for accuracy of the repair. If a part or component is free of defects in material and/or workmanship, no warranty reimbursement will be allowed. Incorrect diagnosis is not warrantable.

Each authorized service provider may be audited for warranty and service compliance by a Bi-Phase Technologies Representative. All parts replaced under warranty should be returned or authorized to destroy in the field by a Bi-Phase Representative. Visits will be on an as-needed basis.

The Bi-Phase Representative will review warranty claim accuracy, service or maintenance accuracy, needs for training, customer satisfaction, facility cleanliness and the availability of tools and literature required in a professional automotive facility. They will also review any disputed claims and answer any questions the authorized service provider might have.

Customer surveys and ASP surveys will be conducted to confirm customer satisfaction with the product, the warranty handling and the overall service they get from the ASP and/or Bi-Phase Technologies.

Warranty Labor Rates

A list of warranty labor procedures below shows the labor code and the time allowed for warranty reimbursement. If there are any procedures not addressed please call Bi-Phase Technologies for the correct labor code. The labor code must be entered on the warranty claim along with the description and time allowance.

The time allowed is measured in tenths of an hour. When figuring total time multiply the hours by the labor rate. **For example** Labor Rate = \$70.00 X 4.2 hrs = \$294.00

Diagnosis

Labor Code	Description	Time Allowed
D001	Install Scan Tool (Diagnosis & Document)	.3
D002	Install 3 Switch (Diagnose & Document Results)	.3
D003	Install Fuel Pressure Gauge (Diagnose & Document Results)	.3
D004	Misc. Electrical Diagnosis with Multi-Meter	.3
D005	Perform recommended Drive cycle & Document Fuel Trim ST & LT (Before & After Repair)	.6
D006	Inspect for Injector Leak, Follow Procedures	.2
D007	Diagnose Fuel Transfer System	.5
D008	Diagnose Fuel Level Sending Unit	.2

Engine Components

Labor Code	Description	Time Allowed
E021	R&R Left Side Injector Rail Assembly	.5
E022	R&R Right Side Injector Rail Assembly	.5
E024	R&R 8 Insulator Cup O-Rings, On Bench	.5
E026	R&R One Injector from Rail , On Bench	.1
E027	R&R ECT or flashed PCM where applicable	.5

Tank System

Labor Code	Description	Time Allowed
T050	Evacuate Tank for Repair & Refill After	2
T051	R&R LPDM	1
T055	R&R Fuel Pump	.3
T056	R&R Vapor or Liquid Service Valve	.4
T057	R&R Pressure Relief Valve on Tank	.4
T058	R&R Fixed Liquid Level Gauge, Bleeder	.4
T059	R&R Overfill Protection Device, Fill Valve (80%)	.4
T060	R&R Liquid Level Float Assembly	.4
T061	R&R Fuel Level Sending Unit	.1
T062	R&R Tank	3
T063	R&R Remote Fill Line	.3
T064	R&R Remote Fill Valve	.3
T065	R&R Secondary hose	1
T066	R&R Primary hose	1

Fuel Pump Control Box

Labor Code	Description	Time Allowed
F080	R&R Fuel Pump Control Box	.5
F081	R&R Fuel Pump Control Wiring Harness	.5
F083	R&R Fuel Transfer Box	.4

Notes:

1. Any diagnosis not related to the LPEFI® system will not be reimbursed by this warranty.
2. Allowed diagnosis times can only be claimed when related to the repair or replacement of an associated part.
3. Fuel contamination is not warranty; however in some cases a fuel quality test may be required but only with the authorization of Bi-Phase Technologies. All testing will be arranged and conducted by the decision of Bi-Phase Technologies.
4. Multiple labor codes are allowed, however no overlapping will be reimbursed. All claims will be reviewed and if overlapping of labor is discovered the claim will be rejected and the ASP will need to resubmit if reimbursement is desired.

WARRANTY

CLAIM

FORM

		Warranty Claim				
		Bi-Phase RGA # _____				
		Vendor Purchase Order # _____				
Date _____		Depot: _____				
Authorized Service _____						
Address: _____				City: _____		
State: _____		Zip Code: _____		Tele: () _____ Fax: _____		
Truck # _____		Year: _____		VIN: _____ Odometer: _____		
Engine: _____		ASP Invoice/Repair Order Number: _____				
Description of Problem: _____						
Parts Itemized:						
Qt.	Part #	Serial #	Description	Price	Extended	Part Being Returned Y - N
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				\$	\$	
				Total	\$	
Labor Itemized						
Item	Labor	Description	Time	Cost		
				\$		
				\$		
				\$		
				\$		
				\$		
				\$		
				\$		
				\$		
				\$		
				\$		
Total Labor = Authorized Labor Rate = \$ _____ x Time				\$		
Freight				\$		
Total Claim Amount				\$		
Authorized Signature _____			Date: _____			
Notes:						
* All claims must be submitted within 30 days of the service						
Bi-Phase Technologies 2945 Lone Oak Drive Suite 150 Eagan, MN FAX 651-681-4441						