Power Solutions International, Inc.

Warranty Policy and Procedures Manual & Certified Engine Responsibility

NOTE: THIS MANUAL MAY BE UPDATED FROM TIME TO TIME BY POWER SOLUTIONS, INC.

Products included in this manual are shown below both mobile and stationary nonroad engine products.

- **0.97L**
- **0.998L**
- **1.6L**
- **2.0L**
- **2.4L**
- **3.0L**
- **4.3L**
- **5.7L**
- **6.0L (Industrial)**
- **8.8L**

Power Solutions International, Inc.
201 Mittel Drive
Wood Dale, IL 60191

Effective Date: August 2005
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PSI WARRANTY STATEMENT AND COVERAGE

MANUFACTURER'S WARRANTIES: To the extent that the Products or portions or parts thereof may be covered by manufacturers' warranty, Power Solutions, Inc. ("PSI" or "Supplier") hereby agrees to use commercially reasonable efforts to assign all rights and benefits under such manufacturers' warranties to Buyer, if assignable, and agrees to use commercially reasonable efforts to assist Buyer in the coordination of any claims under such warranties. Supplier does not adopt or guarantee or represent that the manufacturer will comply with any of the terms of the warranty of such manufacturer. Buyer shall be subject to all conditions and limitations of such manufacturer's warranties. A summary listing of the current manufacturer's warranties (identified by general component type) is set forth in this Manual. Manufacturer's warranties are subject to change from time to time.

PSI LIMITED WORKMANSHIP WARRANTY: PSI warrants to the Buyer that the components installed by PSI will be properly installed in accordance with PSI's standard specifications for a period beginning upon the shipment of the Products by PSI and ending upon the first to occur of (i) one (1) year from the date of shipment of the Products by PSI or (ii) six (6) months from the date the Products are placed in service. There is no warranty in cases of negligence, abuse, abnormal usage, misuse, corrosion, over-loading, altered Products, accidents, fair wear and tear, failure to follow Supplier's instructions or improper installation, storage or maintenance. PSI's limited workmanship warranty is subject to the exclusions and limitations provided herein. Buyer's remedies for breach of the PSI limited workmanship warranty are specifically limited to the remedies provided for herein.

DISCLAIMER OF WARRANTY: Except as expressly provided herein, Supplier makes no further warranty of any kind with respect to the Products. SELLER DISCLAIMS AND EXCLUDES ALL WARRANTIES, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OF CONFORMITY TO SPECIFICATIONS, MODELS, SAMPLES OR OTHERWISE. SELLER WILL NOT BE LIABLE FOR ANY GENERAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES, INCLUDING WITHOUT LIMITATION ANY DAMAGES FOR LOSS OF USE OR LOSS OF PROFITS.

BUYER'S REMEDIES: Supplier's liability for any breach of any provision hereof is limited to either (i) repair or replacement of any nonconforming components of the Products, or (ii) upon return of the nonconforming Products to Supplier, credit to the Buyer of the amount paid therefore, whichever Supplier shall elect. Supplier's liability arising for any reason under this Agreement shall in no event be greater in the aggregate than the price paid by Buyer for the Products during the immediately preceding twelve (12) month period and, except as otherwise provided in this Power Solutions, Inc. Certified Engine Responsibility, Warranty and Procedures Manual, shall not include any labor, shipping or other costs incurred in connection with any repair, replacement, reinstallation, or reshipment.

BUYER'S REMEDIES (continued): Buyer shall provide Supplier access to the Products as to which Buyer claims a purported defect or nonconformance. Supplier's obligation to repair, replace or credit shall only apply to Products that examination by Supplier or Supplier's representatives determines to have been defective under ordinary and normal use. Upon request by Supplier, Buyer shall, at Buyer's own risk and expense (subject to reimbursement as set forth herein), promptly return the Products in question to Supplier's facility. Any Products that are repaired or replaced by Supplier shall be re-delivered to Buyer at Supplier's risk and expense. Supplier shall not be required to repair or replace more than the Products actually found by Supplier to be defective. No allowance shall be made for any expenses incurred by Buyer in repairing defective parts or supplying any missing parts except on the written consent of Supplier. Buyer is responsible for determining the suitability of Supplier's products for Buyer's use or resale, or for incorporating them into objects for applications that Buyer designs, assembles, constructs or manufactures. THE REMEDY SET FORTH IN THIS PARAGRAPH SHALL BE BUYER'S SOLE AND EXCLUSIVE REMEDY AGAINST SUPPLIER AND BUYER WAIVES ALL OTHER REMEDIES AGAINST SELLER. Buyer shall not debit, deduct, or withhold payment for issues regarding warranty work or parts or engines. This includes Product sent for warranty purposes. Warranty issues are separate from payment of invoices that are due within the payment terms. Warranty issues are to be resolved through Supplier's Warranty Department.

LIMITATION OF LIABILITY IN GENERAL In no event whatsoever shall Supplier or any of its shareholders, directors, officers, affiliates, predecessors, successors and assigns, be liable to Buyer or any third party or any of their shareholders, directors, officers, affiliates, predecessors, successors and assigns, for any incidental, indirect, consequential, exemplary or special losses, damages, costs or expenses of any kind relating in any way to the manufacture and sale of the Products, the use of or inability to use such Products, or acts or omissions in connection herewith (including, without limitation, lost profits or the use of or the loss of use of any of the Products or other property). In no event shall Supplier's liability arising under this Agreement for any reason exceed, in the aggregate, the purchase price of the Products purchased hereunder during the immediately preceding twelve (12) month period.

Summary of PSI Component Manufacturers' Coverage

Component	Coverage	Comments
GMPT Engines	3 years or 3500 hours from in service date	All warranties start no later than 12 months from product ship date from PSI. In the event the engine is not put into service 12 months after ship date, the warranty will automatically begin.
Mitsubishi Engines		
PSI Engines		
Emissions Warranty	Emissions Warranty – 3 years or 2500 hours	
	High Cost Parts Emissions Warranty – 5 years or 3500 hours	High cost parts determined by Consumer Price Index (CPI), OEM purchase price of part, and labor SRT
Terminal Tractor Application (Non-Road) Base Engine	2 years or 2,500 Hours from in service date	Warranty starts no later than 12 months from product ship date from PSI.
SORE Engine (.97L)	Emissions Warranty - 2 years Engine Warranty – 2 Years	
Non Certified Engine Fuel Systems & Control Modules	2 Years from In-Service Date	
Starters	12 Months or 2000 Hours	Parts Replacement Only
Alternators	12 Months or 2000 Hours	Parts Replacement Only
Service Parts Warranty Coverage		
Service engines	24 Months or 2,000 Hours	Labor allowed in accordance with Labor Time Guide
Aftermarket Service part	90 Days from sale to end user	Parts Replacement Only

Warranty Policy Adjustments: PSI may from time to time, at its sole discretion, provide coverage for claims on engines or parts that fall outside of the stated warranty. This coverage is granted at the sole discretion of PSI and is handled on a case-by-case basis. Warranty Policy Adjustment claims require the prior written approval of PSI in all cases.

CALIFORNIA AND US EPA EMISSION CONTROL WARRANTY STATEMENT
YOUR WARRANTY RIGHTS AND OBLIGATIONS

The **California Air Resources Board, United States Environmental Protection Agency,** and Power Solutions, Inc. are pleased to explain the **emission control system warranty** on your 2009 or later large spark-ignition (LSI) engine. In California, new LSI engines must be designed, built and equipped to meet the State's stringent anti-smog standards. Power Solutions, Inc. must warrant the emission control system on your LSI engine for the periods of time listed below provided there has been no abuse, neglect or improper maintenance of your LSI engine.

Your emission control system may include parts such as the carburetor, regulator or fuel-injection system, ignition system, engine computer unit (ECM), catalytic converter and air induction system. Also included may be sensors, hoses, belts, connectors and other emission-related assemblies.

Where a warrantable condition exists, Power Solutions, Inc. will repair your LSI engine at no cost to you including diagnosis, parts and labor.

MANUFACTURER'S WARRANTY COVERAGE

The 2009 and later large spark-ignition engines are warranted for **2500 hours** or **three years,** whichever occurs first (**3500 hours** or **five years** for high cost warranty parts). If any emission-related part on your engine is defective, the part will be repaired or replaced by Power Solutions, Inc.

OWNER'S WARRANTY RESPONSIBILITIES

As the equipment and LSI engine owner, you are responsible for the performance of the **required maintenance listed in your owner's manual**. Power Solutions, Inc. recommends that you retain all receipts covering maintenance on equipment and LSI engine, but Power Solutions, Inc. cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the equipment or LSI engine owner, you should however be aware that Power Solutions, Inc. may deny you warranty coverage if equipment or LSI engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

Your engine is designed to operate on gasoline and/or LPG. Use of any other fuel may result in your engine no longer operating in compliance with California's and the US EPA’s emissions requirements.

You are responsible for presenting your equipment or LSI engine to a Power Solutions, Inc. distribution center or authorized repair facility as soon as a problem exists. The warranty

repairs should be completed by the dealer as expeditiously as possible.

If you have any questions regarding your warranty rights and responsibilities, you should contact Power Solutions, Inc. via telephone at **1-800-551-2938** or contact Power Solutions, Inc. in writing at:

Power Solutions, Inc.
201 Mittel Drive
Wood Dale, IL 60191

DEFECTS WARRANTY REQUIREMENTS:

The warranty period begins on the date the engine or equipment is delivered to an ultimate purchaser.

General Emissions Warranty Coverage. Power Solutions, Inc. must warrant each LSI engine to the ultimate purchaser and each subsequent owner that the engine is:

(1) Designed, built, and equipped so as to conform with all applicable regulations adopted by the Air Resources Board and the US EPA; and
(2) Free from defects in materials and workmanship that causes the failure of a warranted part for a period of two years.

The warranty on emissions-related parts will be interpreted as follows:

(1) Any warranted part that is not scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). If any such part fails during the period of warranty coverage, it must be repaired or replaced by the manufacturer according to Subsection (4) below. Any such part repaired or replaced under the warranty must be warranted for the remaining warranty period.
(2) Any warranted part that is scheduled only for regular inspection in the written instructions required by subsection (d) must be warranted for the warranty period defined in Subsection (b)(2). A statement in such written instructions to the effect of "repair or replace as necessary" will not reduce the period of warranty coverage. Any such part repaired or replaced under warranty must be warranted for the remaining warranty period.
(3) Any warranted part that is scheduled for replacement as required maintenance in the written instructions required by subsection (d) must be warranted for the period of time prior to the first scheduled replacement point for that part. If the part fails prior to the first scheduled replacement, the part must be repaired or replaced by the engine manufacturer according to Subsection (4) below. Any such part repaired or replaced under warranty must be warranted for the remainder of the period prior to the first scheduled replacement point for the part.
(4) Repair or replacement of any warranted part under the warranty must be performed at no charge to the owner at a warranty station.
(5) Notwithstanding the provisions of Subsection (4) above, warranty services or repairs must be provided at all manufacturer distribution centers that are franchised to service the subject engines.
(6) The owner must not be charged for diagnostic labor that leads to the determination that a warranted part is in fact defective, provided that such diagnostic work is performed at a warranty station.
(7) The manufacturer is liable for damages to other engine components proximately caused by a failure under warranty of any warranted part.
(8) Throughout the emissions warranty period defined in Subsection (b)(2), the manufacturer must maintain a supply of warranted parts sufficient to meet the expected demand for such parts.

(9) Any replacement part may be used in the performance of any warranty maintenance or repairs and must be provided without charge to the owner. Such use will not reduce the warranty obligations of the manufacturer.

(10) Add-on or modified parts that are not exempted by the Air Resources Board and US EPA and may not be used. The use of any non-exempted add-on or modified parts will be grounds for disallowing a warranty claim. The manufacturer will not be liable to warrant failures of warranted parts caused by the use of a non-exempted add-on or modified part.

(11) The manufacturer issuing the warranty shall provide any documents that describe that manufacturer's warranty procedures or policies within five working days of request by the Air Resources Board.

Emission Warranty Parts List.

- Fuel Metering System
- Fuel injection system.
- Air/fuel ratio feedback and control system.
- Carburetor system (internal parts and/or pressure regulator or fuel mixer or injection system).
- Air Induction System
- Intake manifold(s) or air intake system.
- Turbocharger systems.
- Air Filter
- Ignition Control System
- Engine Wire Harness
- Ignition coil and spark plugs.
- Positive Crankcase Ventilation (PCV) System.
- PCV Valve.
- Catalyst System
- Exhaust manifold.
- Catalytic converter.
- Engine Control Module (ECM).
- Electronic Pressure Regulator (EPR).
- Miscellaneous items Used in Above Systems
- Vacuum, temperature, and time sensitive valves and switches.
- Sensors used for electronic controls.
- Hoses, belts, connectors, assemblies, clamps, fittings, tubing, sealing gaskets or devices, and mounting hardware.
- Pulleys, belts and idler

OEM RESPONSIBILITIES FOR PSI SUPPLIED LSI OR SORE ENGINES:

As the OEM installing the certified engine sold by PSI, Buyer is required to document and provide certain information to both the end user of the Product and PSI. The actions required by the OEM are listed in section 2. Buyer will bear the responsibility of insuring that their products that ship from their factory with the PSI certified engine installed comply when they ship.

Buyer/OEM Requirements:

- Comply with installation guidelines specified by PSI
- Record and maintain records of all certified engines installed and delivered to end users
- Complete an End of Line (EOL) hot test in accordance with Appendix 1 or Appendix 2
    - Appendix 1 applies to mobile certified customers
    - Appendix 2 applies to stationary certified customers
- Share data specific to the certified engine and the equipment which it is installed in
- Comply with the roles and responsibilities outlined in Appendix 3
-

2A Certified engine installation requirements.

In the event PSI has specific installation requirements of the certified engine into the OEM equipment, the OEM/Buyer must meet the installation requirements.

2B Record keeping

The OEM/Buyer must record and maintain accurate records of all certified engines installed and delivered to the end users. This data may be reviewed at the request of PSI and should be readily available. The required data will be specified on the PSI supplied End of Line test document, required data may be changed from time to time at the discretion of PSI.

2C End of Line (EOL) test requirements

The OEM/Buyer is required to perform an End of Line hot test at the OEM production facility. The purpose of the EOL test is to ensure the engine is still in compliance with the emissions regulations after installation is complete into the OEM application. The OEM/Buyer is responsible for performing the EOL test and repairing any non-conformances on the engine prior to the machine shipping from their facility. The test must be performed on every engine/machine. The EOL test will be specified in a separate document (Appendix 1 or Appendix 2) provided to the OEM/Buyer. In some situations, PSI will require the OEM/Buyer to record engine performance data. This requirement will be documented on the End of Line (EOL) hot test document. The OEM/Buyer will be required to share the data in a format and at a frequency that PSI prescribes.

2D. Data collection and reporting for the certified engine and equipment assemblies

The OEM/Buyer is required to provide PSI with a monthly engine shipment report. The monthly engine shipment report will show every machine shipped with the certified engine in a specific month. This report should be provided to PSI by the end of the first week of each month and should contain the previous month's shipments. The monthly shipment report should be documented on the PSI supplied monthly engine shipment report template. The template contains the following fields and should be filled out completely before sending the report to PSI. Failure to comply with this process is a violation and will result in the engine not being registered for warranty.

- Chassis or Equipment serial number
- Engine serial number
- Engine control module (ECM) serial number
- Catalytic convertor serial number
- Date of shipment from OEMs facility
- Ship to zip code of equipment

2E Engine modifications

The OEM/Buyer is not allowed to modify the engine or engine assembly.

2F OEM compliance Audit

PSI may, at its discretion, perform a compliance audit at the OEM/Buyer's location. The purpose of the audit is to ensure the OEM/Buyer is in compliance with the policies outlined in this manual. PSI personal or designated representative will perform the audit; the OEM/Buyer will be advised of the audit schedule.

2G OEM Equipment requirements

The OEM/Buyer is required to have the appropriate equipment which is capable of performing the End of Line (EOL) test along with the recording and sharing requirements outlined in section 2D of this manual.

The equipment must be capable of interfacing with a data line to allow the End of Line (EOL) test data to be uploaded at the request and discretion of PSI.

REQUIREMENTS FOR SUBMITTING A WARRANTY CLAIM

The OEM/Buyer must substantiate the in-service date for all engine and service part claims. PSI, at its sole discretion, may require the Service Dealer, Distributor or

OEM/Buyer to provide a proof of purchase receipt.

The engine **In-Service date** should be registered in the PSI Cloud Based Portal or at the public customer portal (www.psiengines.com/service)

The OEM/Buyer must assess all repairs for warranty eligibility. PSI, at its sole discretion, may audit the OEM/Buyer for compliance with its warranty policy.

The OEM/Buyer must file all claims with PSI within 30 days of the date of repair.

The OEM/Buyer must maintain, in readily available format, all claim supporting records for 12 months from the credit/payment date of the claim. Supporting records from denied claims should be archived and maintained for 4 years from the date the claim was denied.

The OEM/Buyer must adhere to the Warranty Parts Return Program procedures specified in this manual. Any parts not requiring return must be retained for 90 days following the repair.

Claims must be submitted to PSI by the OEM or OEM dealer directly in the PSI Cloud based warranty system.

Requirements of the Retail Purchaser

The retail purchaser shall notify the OEM/Buyer or PSI of any such defective part that the purchaser obtains knowledge of within 30 days from the time the purchaser obtains such knowledge.

Warranty Parts Return Program

Parts are required to be returned to PSI within 30 days after the date PSI provides an RMA.

OEM/Buyers are required to return certain components that are replaced under warranty.

A list of mandatory return parts is shown below. Reimbursement for freight is allowed on approved warranty claims provided parts are returned by United Parcel Service ("UPS") ground or other economical, nationally recognized delivery service. In addition, freight receipts are considered claim supporting documentation and must be held with the claims supporting records in accordance with the retention policy for supporting documentation.

PSI warranty representatives will send an electronic reminder to the submitter, for any parts requiring return, while processing the claim. It is in the submitter's best interest to ship the mandatory return parts back to PSI as soon as possible when the RMA is issued.

Credit or payment for any claim will not be processed until the parts have been received back by PSI. The parts and package being returned to PSI must both be clearly marked with the PSI Warranty RMA number. Parts should be shipped to: Warranty Department, Power Solutions, Inc., 1465 Hamilton Pkwy, Itasca, IL 60143.

Mandatory Return Parts List

Alternators
Starters
Electronic Modules
Wire Harnesses
Fuel Pumps
Fuel Regulators
Fuel Mixers
Catalytic Converter Mufflers
Solenoids
Fuel Trim Devices
Injectors and Fuel Rails
Injector Throttle Bodies
Fuel Lock Offs
Governors
Electronic Throttle Bodies
Sensors
Carburetors
Engine Assemblies

Additional components may require return. PSI retains the right to modify the Mandatory Return Parts List from time to time, or request parts be returned that are not on the list. These returns will be requested during claim processing, and an electronic message will be sent to the submitter from the PSI Warranty System.

Warranty Exclusions

The following items are not reimbursable under the PSI warranty terms.

- Any repair on an engine that has exceeded the hour or time limitation of the stated warranty.
- Any failure that is a result of the **application** and not a defect in the materials or workmanship from PSI as deemed by PSI.
- Failures attributed to the use of coolant which does not meet the PSI coolant specification requirements
- Failures attributed to the use of engine oil which does not meet the PSI coolant specification requirements
- Failures that occur due to a result of lack of maintenance
- PSI may deny any claims that in their sole discretion are the result of misapplication of the engine or part.
- Units that are under development (i.e. prototype projects, engineering projects, validation projects)
- Any repair on an engine where the hours of operation or in-service date has been misrepresented.
- Any repair on an engine if the hour meter has been altered so that the true hours on the engine cannot be determined.
- Any repair on an engine where the date of service has been misrepresented to place an out-of-warranty engine inside the warranty period.
- Engines damaged by an Act of God or force majeure.
- Routine maintenance repairs including maintenance that may fluctuate based on environmental and variations in how the application is utilized.
- Repairs required due to improper storage precautions.
- Repairs caused by damage due to poor workmanship outside of PSI.
- Adjustments made to improve performance beyond PSI estimated normal standards.
- Use of other than genuine OEM parts, unless in an emergency.
- Repairs to parts that, upon analysis, are found not be defective.
- Repairs to engines used for re-powering on-road vehicles, marine vessels, or any application not reviewed or approved by PSI.
- All consequential expenses, including, but not limited to, those resulting from equipment failure such as lodging, food, downtime, or replacement equipment rental.
- Using an emergency engine in a prime or continuous duty application.
- Any misapplication or misuse of the product as deemed by PSI
- Towing or transportation expense for moving an engine or engine-powered equipment from the customer location to the repair location.
- Prototype, development, validation, and engineering project engines
- Engines used in Marine Applications

Service Labor Rates

Subject to the terms and conditions contained in this manual, the service labor rate is that rate that will be applied to all warranty repairs performed by the OEM/Buyer at Supplier's request. PSI will establish service labor rates with the OEM/Buyer. These rates shall be equal to Buyer's retail labor rate and will be limited to the average geographical labor rates that are already established in the OEM/Buyer's area of operation. In no case shall the labor rate exceed $90.00/hr USD.

Labor Time Reimbursement

Labor time will be allowed per PSI component supplier's manufacturer's warranty guidelines. When a standard repair time ("SRT") exists, the SRT will be visible in the cloud based warranty system in the labor tab.

In no case will labor time to gain access or close access to an engine or piece of equipment be reimbursable by PSI. Labor times are equivalent to replacing a part from an exposed engine. PSI will not reimburse for labor to gain access or close access to an engine or a piece of equipment.

When a repair operation is not listed in a labor time standard manual, reimbursement will be based on actual time. Actual time must be fully explained on the claim. Such time must be realistic and consistent with accepted industry practices. Actual time submitted may be adjusted at the sole discretion of PSI.

Travel Policy

PSI will reimburse for travel provided PSI's manufacturers' warranty from the component supplier allows this reimbursement. In general, stationary applications which require a base engine repair are allowed up to 100 miles travel reimbursed at current IRS mileage reimbursement plus up to 2 hours travel labor capped at a maximum of $90/hr.

Mobile products or non-base engine repairs on stationary products are not subject to travel reimbursement.

Parts Reimbursement

Subject to the terms and conditions contained in this manual, PSI will reimburse the OEM/Buyer at their acquisition cost of the part.

Occasionally, an emergency repair may require the use of service parts supplied through other channels. PSI will review these instances on a case-by-case basis. If PSI elects to extend coverage for parts on such repairs, reimbursement will be limited to the acquisition cost, up to the cost of like PSI parts. In cases where the base engine has failed, the engine should be replaced with a service engine, not a fully dressed engine. Costs associated with using a completed dressed engine is not reimbursable. Ground freight will be covered on approved claims if submitter claims the ground freight costs.

Transportation costs for returning Mandatory Return Parts is reimbursable at actual cost, providing parts are returned via United Parcel Service ground or other nationally recognized delivery service. Service agents must have freight receipts available upon request of PSI.

Returning Denied Parts (30 Day Window)

In instances where a warranty claim is denied due to the determination of a non-warrantable failure, or if the returned part or engine is classified as 'No Trouble Found' (NTF), PSI reserves the right to reject the claim. **Upon denial of the claim, the claimant has a 30-day period from the date of denial to request the return of the part(s) or engine**. To initiate a return, the claimant must submit a written request within this 30-day period, accompanied by the following specified information. Should the claimant fail to meet these requirements within the allotted timeframe, PSI will proceed to scrap the part(s) or engine. It is important to note that PSI bears no obligation or responsibility for the return of the part(s) or engine after the expiration of the 30-day period.

<u>Required information</u>

- Full contact information
- Company Name, Address, phone number.
- UPS Account Number or provide PSI with a return label with shipping prepaid

For engine returns or parts over 70LBS the requestor is responsible for issuing a Bill of Lading (BOL) and arranging the return freight to their destination. The BOL should be provided to the PSI Warranty department within 30 days of the date of claim denial.

WARRANTY REGISTRATION

Responsibilities for Registration

OEM's, OEM Dealers, or end users all have the ability to register the engine warranty. Failure to register the engine warranty may result in the product receiving a shorter warranty than allowed per the standard warranty terms in this document.

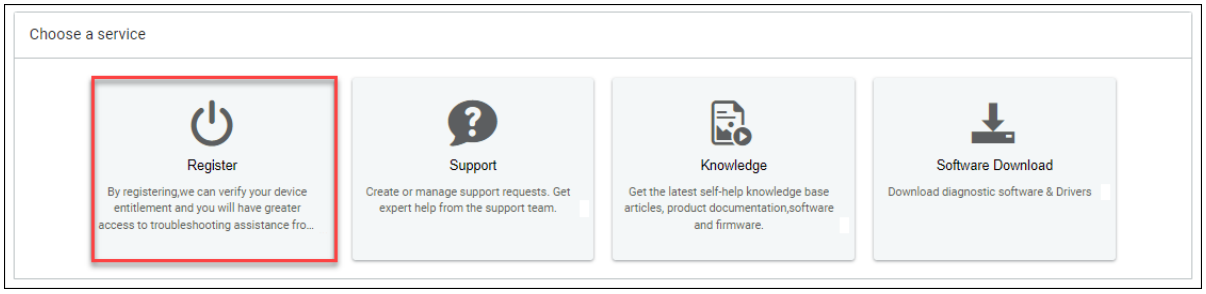
In-Service Dates are automatically calculated based on the date of sale from PSI to OEM Customer. The calculation is such that the in-service date will automatically be estimated as 90 days from the date of sale. The OEM, OEM Dealer, or End user is responsible for registering the engine in which the correct/accurate in-service date will then be applied to the engine warranty. Failure to register the engine with the correct in-service date may lead to a shorter warranty term for the product since the in-service date may be at a later date than what is calculated automatically.

How to Register an Engine

OEM Customers can use the credential based PSI Portal to update the in-service date

OEM Dealers or End Users will use the non-credential based website www.psiengines.com/service to register the engine warranty.

The training video on this process can be viewed in the public portal knowledge section which is also linked here.



Warranty Start Date & Shelf Life Warranty

The warranty period begins on the engine's **In-Service Date** (the date it is sold to the end user). If the engine is not placed into service within **12 months of the ship date from PSI**, the warranty will automatically begin **12 months after the ship date**.

Warranty Procedures

Service Parts Warranty Procedure

Service parts receive a part only warranty. Labor, failure due to wear, and travel are not covered by PSI.

Warranty claims for service parts should be processed through the PSI warranty department. The claim should indicate that it is for a service parts warranty. All warranty claims should include the original invoice and should include a date stamp on the invoice.

The service part warranty is 90 days from the invoice date to the end user or 90 days from the date the dealer installs the service part in cases where the dealer performed the repair.

The part purchase date should be filled out in the claim as the date the part was sold to the end user or date the dealer installed the service part. The invoice for the sale of the part should be uploaded into the claim. The invoice number should be documented in the claim itself.

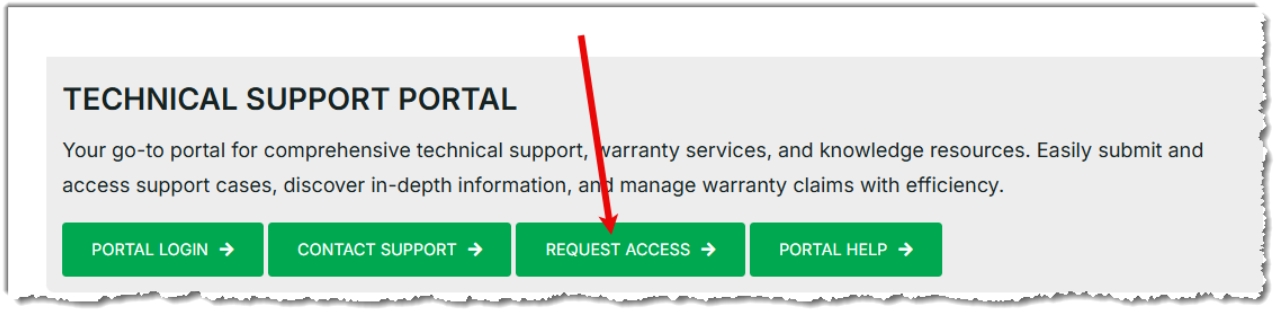
Sublet Repairs

Reimbursement for sublet repairs is at the actual cost of the repair within the guidelines of the labor SRT guidelines.

Claim Submission

All warranty claims must be submitted through the **PSI Cloud-based portal**. OEM dealers supported directly by PSI (Tier 1 support) may submit claims directly to PSI. OEM dealers supported by the OEM (Tier 1 support provided by the OEM) must submit claims to the **OEM**, not PSI.

If you require credentials to the cloud based system please reach out to PSI by submitting a request for access at https://psiengines.com/support/



Warranty Pre-Approval

Generally, pre-approval is not required from PSI. PSI will typically not provide a pre-approval or denial when requested. In situations where PSI does require pre-approval we will communicate this requirement to you based on the situation.

Claim Reminders

Claims must be received by PSI electronically within 30 days of the repair date. Failure to comply may result in claim denial.

PSI may request additional information during claim processing, and the OEM must answer all such requests within 14 days. Failure to comply may result in claim denial.

OEMs must maintain, in readily available format, all supporting documents for claims for 12 months from the credit/payment date of the claim. Supporting documents for denied claims are required to be archived and maintained for 4 years from the date the claim was denied. All claims and supporting documents are subject to audit by PSI. If supporting documents are not available, or do not support a claim, the claim is subject to charge-back.

If an engine is not registered in the PSI Warranty System, a proof of purchase receipt must be supplied by the customer to the Dealer.

Sublet labor, freight or non-PSI part receipts must be retained by the OEM. Any OEM submitting manual claims must attach such receipts to the claim.

PSI reserves the right to alter our Policies & Procedures from time to time at our sole discretion.

Engine Serial Number Identification:

All PSI engines are fitted with a PSI serial number tag that contains the serial number of the engine. This serial number is required to transact all warranty registrations and warranty claims. The illustration below shows a PSI serial number tag with a description of the information. In this example the engine serial number is 3P0L24298.

APPENDIX 1 – Mobile Product

OEM END OF LINE TEST PROCEDURE

CERTIFIED PRODUCT

INSPECTION

Perform a complete inspection of the engine prior to testing. Check the following items for conformity.

1. Mixer and Throttle body assembly checked for damage during installation
2. EPR mounted securely
3. All electrical connections which are installed must be fully seated and locked into place with the connection tabs
4. Ensure the harness is secured properly to the engine, the harness must not interfere with the operation of the engine
5. All fluid levels are to capacity
6. All fuel lines (LPG and Gas) are routed correctly and secured

Engine Prep

1. Install the diagnostic test cable
2. Start engine (Engine must be started on both fuels if it is a dual fuel application)
3. Allow engine to idle
4. Bring the engine to a mid throttle position, then let it return to idle.
   a) If the engine does not return to idle the engine fails hot test

LPG FUEL SYSTEM HOT TEST

1. Bring the engine to operating temperature (Thermostat setting).
2. Engine is operating at desired OEM idle requirements
3. Monitor the HEGO sensor; it must oscillate rapidly between 25-975 Mv
4. Raise the engine to 1800 rpms or discreet high speed throttle setting
   a. Monitor the HEGO sensor; it must oscillate rapidly between 25-975 Mv
   b. Maintain the engine speed for 60 seconds or until Closed Loop 1 is between + 2% or - 2%
   c. Check the Adaptive 1 value, this must be within +/- 12 to pass
5. Return the engine to idle
6. Disconnect the electric fuel lock-off.
   a. The engine must stop! If it does not, the engine failed the hot test and the issue must be diagnosed using the Diagnostic service manual.
7. Reconnect the lock-off
8. Start the engine

a. With the engine idling, disconnect the Engine Coolant Temperature (ECT) Sensor at the connector.
b. The MIL light should illuminate within two seconds of having sensor disconnected
c. Reconnect ECT sensor and clear the codes.

GASONLINE FUEL SYSTEM HOT TEST

1. Bring the engine to operating temperature (Thermostat setting)
2. Engine is operating at desired OEM idle requirements
    a) Monitor the HEGO sensor; it must oscillate rapidly between 25-975 Mv
3. Raise the engine to 1800 rpms or discreet high speed throttle setting a) Monitor the HEGO sensor; it must oscillate rapidly between 25-975 Mv.
4. With the engine at 1800 RPM, check total fuel correction, it must be Adaptive = (+/- 12%)
5. Return the engine to idle
6. With the engine idling, disconnect the Engine Coolant Temperature (ECT) Sensor at the connector.
7. The MIL light should illuminate within two seconds of having sensor disconnected
8. Reconnect ECT sensor and clear the codes.

POST SYSTEM HOT TEST

1. Record Bar Code Data:
2. Use the End Of Line Bar Code Template (example below).
3. Scan Vehicle Serial ID Data Bar Code
4. Scan Engine Serial ID Bar Code
5. Scan ECM Serial ID Bar Code
6. Scan Catalyst Serial ID Bar Code
7. Date Shipped (Must be MM/DD/YYYY)

Vehicle Serial	Engine Serial	ECU SN	CatCon SN	Ship Date	Shi to Zip Code	Ship to State	Ship to Country

1) Apply the supplemental emissions label if required.

APPENDIX 2 – Stationary Product
END OF LINE TEST PROCEDURE

Summary:

Beginning 1/1/2009, all stationary applied spark-ignited engines supplied by Power Solutions Inc. will be EPA and CARB certified. There are many requirements and regulations that are associated with this changeover, one of them being data reporting and an end of line test for each engine that is built and installed into a generator, pump, or any other stationary application. All OEM's using the PSI stationary certified engine will be required to follow the guidelines set for the EOL (end of line) testing and data reporting. This reporting will be mandatory for all fuels including NG, LP, and LPV.

Purpose:

The purpose of the EOL test is to identify any assembly deficiencies, malfunctioning components, or operational issues that may cause the engine to perform outside the regulated emission guidelines. It also serves as an information collection for the component serial numbers and shipping location.

Hardware/Software:

For OEM's to perform the PSI EOL test, there will be both hardware and software requirements to ensure the successful collection of engine data. The required is as follows:

Hardware		Peripherals		Software
CPU - 2 Ghz		Monitor		PSI Econtols Software
RAM - 512MB		Keyboard		Internet Access
Disk Capacity - 10GB		Mouse		
NIC		Handheld Barcode Scanner (LS2208 reccommended)		
1 - Serial COM Port		8.5 X 11 plain paper printer (can be networked)		
1 - PS2 Port		Barcode Label Printer (if desired) (Intermec PM4i)		
3 - USB Ports				
Econtrols Communication Cable				

Engine Records:

There is a defined set of records that will need to be captured off of each engine. The following information will need to be recorded by the OEM:

Ship Date
Engine Serial Number
Electronic Pressure Regulator Serial Number
Engine Control Module Serial Number
Mixer Serial Number
Catalyst Serial Number (if applicable)
Zip Code (where the product is being shipped)
Country
Application Serial Number
PSI Part Number
Calibration Number
Time/Date Stamp at the time of testing

This information will need to be recorded and supplied to PSI via the online database. (Other options may be available for OEM's not utilizing the online database.)

Note: There will also be available fields in the reporting database that will allow OEM's to capture and populate additional fields at their request.

Engine Prep (Post Installation)

Prior to starting the engine, the OEM should consider performing a standard pre-start check of the engine. The following items should be checked:

- Mixer and Throttle Body assembly checked for any shipping or assembly damage
- Regulator mounted and secured tightly
- ECU mounted and secured
- LPG fuel filter properly installed and secured (if applicable)
- All fuel lines are installed and routed correctly
- Leak check the fuel system
- Electrical connections are connected and seated properly
- All harness routings are clear of hot objects such as turbochargers and exhaust manifolds
- All fluids are checked (oil, coolant, etc..)
- Check all air inlets/cleaners for damage and tightness

Engine Test

The engine test procedure will be called out in the PSI test cell manual and will be supplied by PSI to all OEM's using the PSI certified stationary engines. This manual will be a step by step guide of how to capture and record the necessary data involved with the end of line test.

NOTE: Engines equipped with dual fuel will need to be checked and tested while operated on each fuel. **Engine Data**

There will be several sets of engine performance data that the PSI collection software will be gathering during the hot test. Some of these parameters are (but not limited to):

Engine Operating Temperature
Pre Oxygen Sensor Reading
Post Oxygen Sensor Reading
Closed Loop 1
Adaptive 1
MAP Pressure
Barometric Pressure
Intake Air Temp

The PSI software will collect this data during the hot test, evaluate it, and give the engine either a pass or fail status. Engines that receive a "fail" evaluation will be required to be diagnosed, repaired, and retested to a "pass" status prior to shipping the engine.

APPENDIX 3 Roles & Responsibilities

Product Development

Activity	PSI Responsibility	OEM Responsibilities
Emission/Fuel System Definition	• PSI to specify engine and fuel/emission control system BOM to comply with applicable emission regulation.	• Review and approve complete engine and fuel/emission system BOM • Order engine prototype and pilot
Emissions System Calibration	• PSI will provide as part of the certified engine assembly an emissions calibration that meets the	• To provide their specific application based calibration requirements to PSI.
Emissions System Durability (EPA/CARB)	• PSI is responsible for providing a certified system that has been tested to the applicable emission regulation's durability period.	• OEM may be asked to assist in coordinating end user fleets for fleet durability testing at PSI request
Vehicle Packaging	• PSI will provide component/engine packaging guideline to the OEM. PSI will work with OEM to provide CAD drawings as required.	• OEM to provide equipment design information to allow packaging of engine and emissions/fuel system. • OEM to follow all packaging guidelines provided by PSI to insure end equipment compliance with applicable
Vehicle Performance & Drivability	• PSI to develop engine performance calibrations that meet the OEM's requirements while conforming to applicable emission regulations.	OEM must to provide vehicle performance requirements to PSI. OEM must complete PSI Application Review Form and provide completed form back to PSI. • OEM may need to provide vehicles for performance
Emissions Certification	• PSI to provide emission labels on engines that meet the applicable emission regulations for all OEM equipment that have been approved for production use by PSI.	• OEM is responsible to insure that production of equipment with PSI certified engines is conducted in a manner to insure the engine's compliance with the applicable regulations. • OEM is also responsible to install supplemental emission label as required.
Engine Cooling	• PSI specifies equipment cooling system performance requirements. These requirements are listed in the PSI Application Review Form.	• OEM to specify a vehicle cooling package based on engine heat rejection requirements. • OEM must document engine cooling

Commercialization & Certified Engine Requirements

Component	Description	Responsibilities	
		PSI/ (MOR)	BUYER (OEM)
LOI / Supply Contract	Required supply contract	PSI requires signed contract.	OEM needs to commit to and sign agreement
Logistics	Certified Engine dressing/testing must comply to CARB/EPA requirements Method must be approved by CARB/EPA	PSI will dress engines. Engines will be shipped from PSI to the OEM's desired location. Catalysts will be shipped direct from PSI with the engine assembly PSI will specify OEM hot testing requirements	OEM needs to inform PSI of ship to locations. OEM is responsible for all shipping costs out of PSI
Documentation / Manuals	Service Manual; Operators Manual; Installation Guidelines; Installation Drawing	PSI to provide applicable documentation to the OEM at an agreed upon price	OEM will utilize documentation per agreement.
Labeling	Emission Control System Label; PSI Engine S/N Label	PSI to apply required applicable emission labeling to the certified engine.	OEM will ensure labels are visible in equipment and will add a supplemental emission control system label as required.

Component	Description	Responsibilities	
		PSI/ (MOR)	BUYER (OEM)
Catalyst Assembly	Installation of a catalyst assembly to the engine/equipment	PSI will either provide catalyst assemblies as part of the certified engine assembly or as a ship loose part with the certified engine	The OEM is responsible to insure in all cases that the correct catalyst assembly is installed with the certified engine in the equipment. The OEM will bare all emissions compliance repercussions if they fail to perform this step.
In-field Audit Testing	The sampling and testing of in- field engine to insure ongoing compliance to the applicable emission	PSI will be responsible for conducting in-field audit testing as required by the regulatory authorities	The OEM may be asked to assist PSI in conducting in-field audit testing
Data Reporting Requirements	The reporting of engine and engine component serial numbers and the equipment serial numbers and shipping information	PSI will require OEM's to provide serial number data and shipping information for production equipment shipped from their facility with a PSI certified engine. PSI will specify a report format to include all information required. PSI will require OEM's to record this information as part of their production process. PSI will train OEM's as required	The OEM is responsible to perform the reporting requirements as specified by PSI. The OEM must provide the end of line data reports to PSI on a monthly basis or as directed by PSI
End-of-Line Test (EOL)	End of production line engine test requirements	PSI will specify an end of line engine test procedure for the OEM to follow. PSI will outline all equipment required for the OEM to purchase PSI will train OEM on conducting the end of line test.	The OEM is responsible to purchase all equipment necessary, as specified by PSI, to conduct the end of line test. The OEM is responsible to insure that every certified engine that leaves their facility in a piece of equipment has been tested, has passed the PSI end of line test, and records are kept.
Production Line Test	Random Sample; C-2 Test;	PSI is responsible to	The OEM may be asked
(PLT)	Production Quarter Reporting	execute their PLT plan and file all necessary paperwork with regulatory authorities	to provide engine assemblies back to PSI for PLT's.
Warranty/Tracking Database Reporting	Captures applicable data to track and support certified engine systems	PSI will maintain warranty database.	The OEM will file warranty claims to PSI as outlined in the PSI Warranty and Policy Procedures Manual
Service Parts	Parts availability and lead time	PSI will provide service parts to support OEM requirements.	OEM will procure all service parts directly from OEM will maintain a sufficient quantity of service parts on hand.
Warranty	Emissions Warranty	PSI will provide the OEM with emissions warranty statements, as outlined in the PSI Warranty and Policy Procedures Manual.	OEM to extend "same" emissions warranty to their end-users.