



## ZEX™ Side-X-Side Nitrous System (Part #82313)

Thank you for choosing ZEX™ products; we are proud to be your manufacturer of choice. Please read this instruction sheet carefully before beginning installation, and also take a moment to review the included limited warranty information.



**NITROUS  
HELP™**  
888.817.1008

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WWW.ZEX.COM

Part #ZEX204  
Revised 6/25/09

Description	Qty.	Description	Qty.
Nitrous Solenoid	1	.021 N20/ Fuel Jet	1
Fuel Solenoid	1	.017 N20/ Fuel Jet	1
Throttle Switch/Solenoid Bracket	3	.016 N20/ Fuel Jet	1
1/4NPT to -4AN Filter Fitting	1	.014 N20/ Fuel Jet	1
1/8NPT Male to 1/4NPT Fem. Fitting	1	Carb Throttle Switch	1
11" Hose, -3AN, .040 Insert	2	Arming Switch	1
4' Hose, -4AN	1	30 Amp Fuse Holder	1
5/16 Fuel Hose	4ft.	30 Amp Fuse	1
Hose Clamps	6	20 Amp Mini Relay	1
Nitrous Nozzle	1	Red 18 GA. Wire	10 ft.
Bulkhead Fitting w/Nut	1	Red 14 GA. Wire	10 ft.
5/16 Barb Tee Fitting	1	4-40 x 5/8 Cap Screw	2
5/16 Barb to 1/4NPT Fitting	1	4-40 Nylon Insert Lock Nut	2
Fuel Pump	1	5/16-18 X 1" Bolt for Bottle Brackets	4
Fuel Pump Bracket	1	5/16 - 18 Nut for Bottle Brackets	4
10lb. Nitrous Bottle w/Valve	1	5/16 Flat Washer	8
Bottle Bracket, Tall	1	Solenoid Screws	4
Bottle Bracket, Short	1	8-32 Socket Head Cap Screw	2
.040 N20/ Fuel Jet	1	#14 x 3/4 Sheet-metal Screw	2
.028 N20/ Fuel Jet	1	10-32 Button Head Cap Screw	4
.025 N20/ Fuel Jet	1	1/8-27 NPT Tap	1
.024 N20/ Fuel Jet	1		

### **Why Our Nitrous System Is Better:**

- A complete nitrous system, designed specifically for the unique requirements of carbureted side-x-side vehicles. Everything is included in this kit for a safe, professional and easy installation.
- Adjustable from 10-25 horsepower. Safe enough for stock engines, powerful enough for serious performance use.
- Unique nozzle design has "Active Fuel Control" built in. This feature monitors bottle pressure and when the nitrous system is engaged, it adds or subtracts enrichment fuel so the engine never runs too rich or too lean.

### **Read this pre-installation guide before installing kit !!!!!!!**

**How the ZEX™ nitrous system works:** The ZEX™ part #82313 nitrous oxide injection system begins with a connection to a supply cylinder containing pressurized liquid nitrous oxide and a connection to an auxiliary fuel pump that's tapped into the vehicle's fuel system. These connections go the nitrous and fuel solenoids. These solenoids are normally closed, but are opened when the nitrous system is armed and the activation switch is depressed by the engine going to wide-open throttle. Once these solenoids open, the nitrous and fuel are delivered to the nitrous nozzle via flexible delivery lines. The amount of nitrous and fuel that is injected through the nozzle is adjustable by means of metering jets installed in the nozzle itself. These metering jets allow for easy changes in horsepower settings.

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**Work safely:** Always wear eye protection and gloves when working with lines or hoses that contain pressurized nitrous oxide or fuel. Never transport nitrous cylinders loose behind a seat or in the back of a pick-up truck. Always disconnect the GROUND side of the battery when working on any electrical components.

**Nitrous oxide won't fix problems you already have:** Before you install your nitrous system, be sure your engine is in good mechanical condition. Intermittent wiring problems, etc., can lead to erratic system performance and possible engine damage.

**Never defeat operation of the safety relief disc in the nitrous cylinder's valve:** It's required by law and is there for your safety. Never drill, machine, weld, deform, scratch, drop, or modify a nitrous oxide tank in ANY way whatsoever!

**Never overfill nitrous cylinders:** That little bit extra will put you and others at risk of injury. More often than not, when the cylinder warms up, the pressure goes above the limit of the safety relief disc and you lose all the nitrous you just paid for.

**All the power comes from the fuel, not the nitrous:** Nitrous oxide is simply a tool that allows you to adjust how much and how quickly the engine burns the fuel. If the fuel isn't there, the power won't be either.

**Avoid detonation at all times:** Nitrous enhanced detonation is much more damaging than detonation that occurs when naturally-aspirated due to the increased amount of fuel available for releasing energy and the fact that more oxygen is present.

**When system is activated, if something doesn't feel or sound right, BACK OFF:** If you hear any detonation or feel anything unusual, get off the throttle. It's a lot easier to check everything over than it is to just try to drive through it and damage expensive parts. Don't activate or have the system activated when you hit the rev limiter.

**Spark plugs and nitrous performance:** Quite often, factory type, wide-gap, projected nose spark plugs will produce a detonation condition after a few seconds of nitrous use. The solution to the problem is to install spark plugs that have a colder heat range and proper ground strap design for nitrous use. Consult your preferred spark plug manufacturer to ensure you install the correct plugs for the nitrous level you choose to run. Also, due to the cooler and denser inlet air charge that nitrous creates, it may be necessary to close-up your spark plug gaps to eliminate any misfiring. In our experience, .030 to .035 in. spark plug gaps typically will ensure proper ignition. You may be able to run a wider gap, or you may have to close them up, just be aware of this if you start to experience an ignition misfire when you are using your nitrous system.

**Engine Modifications:** The ZEX™ Nitrous System, out of the box, is designed to work as a bolt-on kit for stock or mildly modified vehicles. Mildly modified vehicles would include header upgrades, exhaust upgrades, air filter kits, etc. If major engine modifications have been performed, a fuel pump upgrade will be required for safe nitrous system operation. Major engine modifications would include turbochargers, superchargers, aftermarket cylinder head, head porting, camshafts, intake manifolds, etc. Failure to upgrade the fuel system when using nitrous in these highly modified applications may cause serious lean conditions that can result in severe engine damage.

**Do not use Teflon sealing tape on any fittings in a ZEX™ nitrous system:** It is easy for Teflon tape to get pulled into the system, causing blockages that can ultimately lead to incorrect nitrous system performance and potentially, engine damage. Only use liquid thread sealer for all NPT type fittings. Do not use any thread sealing compound on AN style threads.

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**Do not attempt to start your engine if nitrous has been accidentally injected into the engine while it was not running:** If this occurs, disable all of the ignition coils by unplugging the leads going to them. Push the accelerator pedal to wide open throttle and hold it there. Then, with the throttle wide open, engage the starter and turn over the engine for several seconds to clear the nitrous from the engine. Failure to do this before attempting to restart the engine can lead to a dangerous intake system backfire.

**Do not engage your nitrous system below 2500 rpm:** This ensures that you will not have excessive cylinder pressures that could cause engine damage. The ZEX™ Traction Control Window Switch (part #82085) is ideal for controlling the rpm range that your nitrous system operates in.

**When finished using your nitrous system, close the nitrous bottle valve and relieve the line pressure:** This eliminates the possibility that nitrous could inadvertently accumulate in the intake manifold while the nitrous system is not being used.

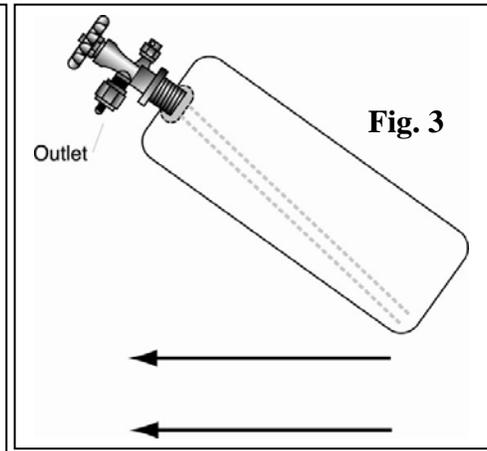
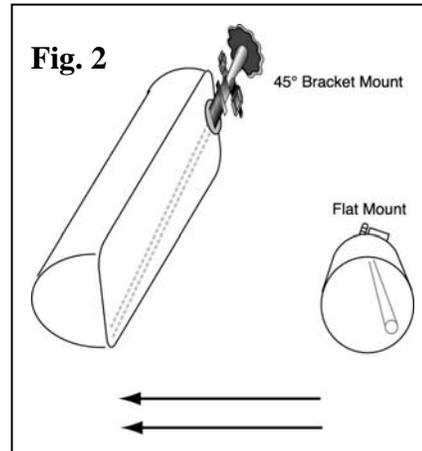
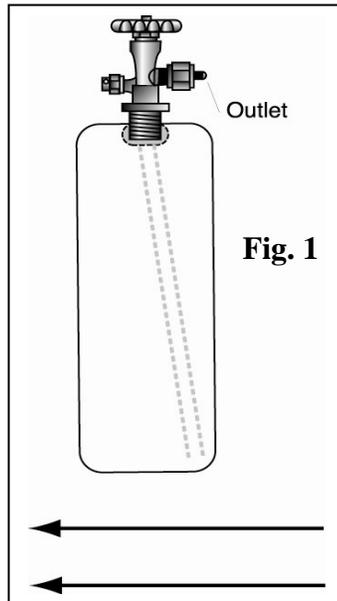
**Do not run excessive bottle pressures:** Excessive bottle pressures, over 1100 psi, are dangerous to your engine. Your ZEX™ nitrous system is calibrated and optimized to operate from 900-1000 psi. Exceeding this will not improve performance. Over 1100 psi also runs the danger of locking the nitrous solenoid closed due to excessive pressure working against the valve's plunger. If this happens, you must cool the nitrous bottle down to lower the pressure. This will allow the valve to operate properly again.

**Start with the lowest horsepower setting and work your way up:** This ensures if you have any tuning issues to work out on your vehicle, they will get sorted out with a smaller shot of nitrous that will be less likely to damage your engine. Once you have the vehicle working well on the smaller shot, you can then safely start to step up your nitrous kit horsepower.

**How to adjust power levels:** The ZEX™ Nitrous System is designed for multiple power levels. Metering jets installed in the nitrous nozzle control these power levels. To change the power output, all you need to do is install the appropriate set of jets. The correct combination of jets is listed on the tune-up sheet at the end of this instruction manual.

## **Installation Instructions:**

- 1. Decide where to put everything -** Before you start to install the various components of this kit, you'll have to locate the best locations of each component by trial fitment and careful measurement. First, decide where you want to mount the nitrous and fuel solenoids. Remember, the stainless steel braided lines that connect the solenoids to the nitrous nozzle are 11 inches long. Observe and mark the location on the intake manifold, between the carburetor and the cylinder head, where you would like to put the nitrous nozzle. The arming switch should be installed in a position convenient to the driver, but not in an area where it could be accidentally armed. Next, decide where and how you'll mount the nitrous supply bottle, check Fig. 1, 2, and 3 for technical restrictions on bottle mounting locations and positions. Finally, have a reputable performance shop fill your nitrous bottle with automotive grade nitrous oxide before you begin. Do not overfill the nitrous bottle!

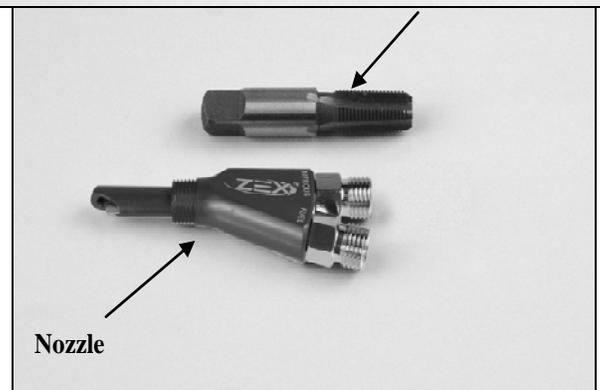
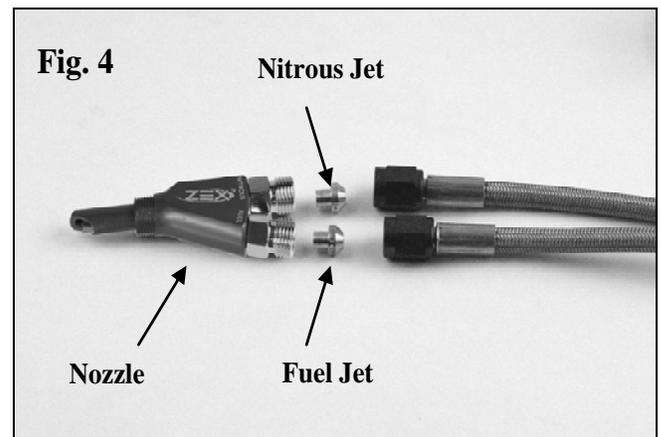


2. **Mount Nitrous Supply Bottle** – Mount the nitrous supply bottle with the outlet facing down. Index the pickup tube with bottle position. (Refer to fig. 1, 2, and 3). ZEX™ nitrous bottles are designed with the bottom of the siphon tube at the bottom of the bottle towards the outlet. Always mount the bottle so that as your vehicle accelerates, the liquid flows toward the pickup tube.

3. **Mount Nitrous Delivery Line Under the Vehicle** - When routing the nitrous delivery line under the vehicle, try to use the subframe as a conduit. This protects the line and eliminates the need to use clamps. The supplied cable ties work if you can run the line higher in the under-body so that it's safe from road level obstacles. For the pro-race look, you can use steel loom clamps with rubber sheathing to fasten the line to the body.

4. **Mount Nitrous and Fuel Solenoids** - Keeping in mind the length restrictions of the nitrous nozzle feed lines, mount the nitrous and fuel solenoids in a suitable location. Connect the nitrous delivery line to the nitrous solenoid's inlet fitting.

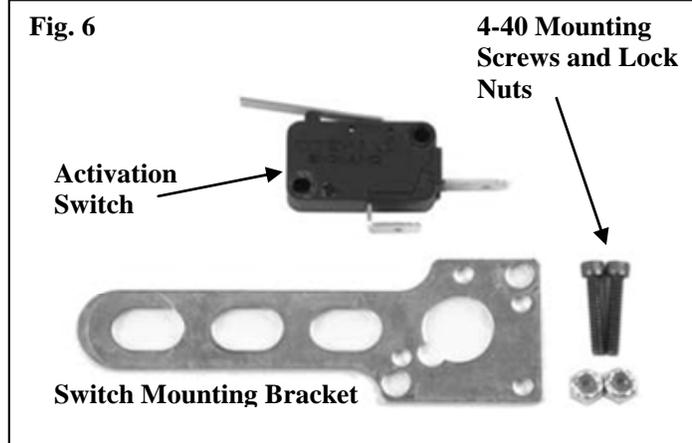
5. **Install Nitrous Nozzle** – Install the nitrous nozzle (Fig. 5) in the intake manifold, between the carburetor and cylinder head. Locate the most convenient spot, making sure this location won't interfere with any other components, and mark it. Remove the manifold from the engine and drill an 11/32 in. hole in that spot. Tap the hole with the included 1/8 NPT tap and screw in the nozzle. Be sure to remove any drill shavings since they can severely damage your engine if ingested. Once you



have everything bolted back together, place the appropriate tuning jets in the nozzle (Fig. 4) and attach the 11 in. long, -3AN hoses to the nozzle jet fittings.

#### 6. Throttle Activation Switch -

Assemble the throttle switch to the throttle switch bracket using the 4-40 bolts and nylon lock nuts (Fig. 6). Do not over-tighten the bolts as damage to the throttle switch can result. The throttle switch bracket is made of easily formed material. Attach the end of the bracket to one of the carb studs and bend the bracket in such a way as to allow the carburetor's throttle arm to contact and depress the switch arm at wide open throttle.



7. **Install Auxiliary Fuel Pump** – Using the supplied fuel pump mounting bracket, mount the fuel pump in a location that places it around the bottom of the fuel tank area. Locating the pump in this area will allow it to be gravity fed after it primes itself. If the fuel pump is mounted above the fuel tank, problems with pump cavitation and poor flow can occur. Using the supplied 5/16 tee fitting, cut the main fuel feed line, insert the tee and secure it to the auxiliary fuel pump's inlet with the supplied 5/16 fuel hose and clamps. Connect the auxiliary fuel pump's outlet to the inlet fitting on the fuel solenoid using the supplied 5/16 fuel hose and clamps. **TECH NOTE: THE AUXILIARY FUEL PUMP'S OUTLET IS THE END WITH THE ELECTRICAL CONNECTIONS!**

8. **Wire It** - Once you have mounted all of the components, you are ready to wire the nitrous system. Refer to Fig. 7 at the end of this instruction manual for the proper wiring schematic.

#### 9. Check Fuel and Nitrous Pressure Lines

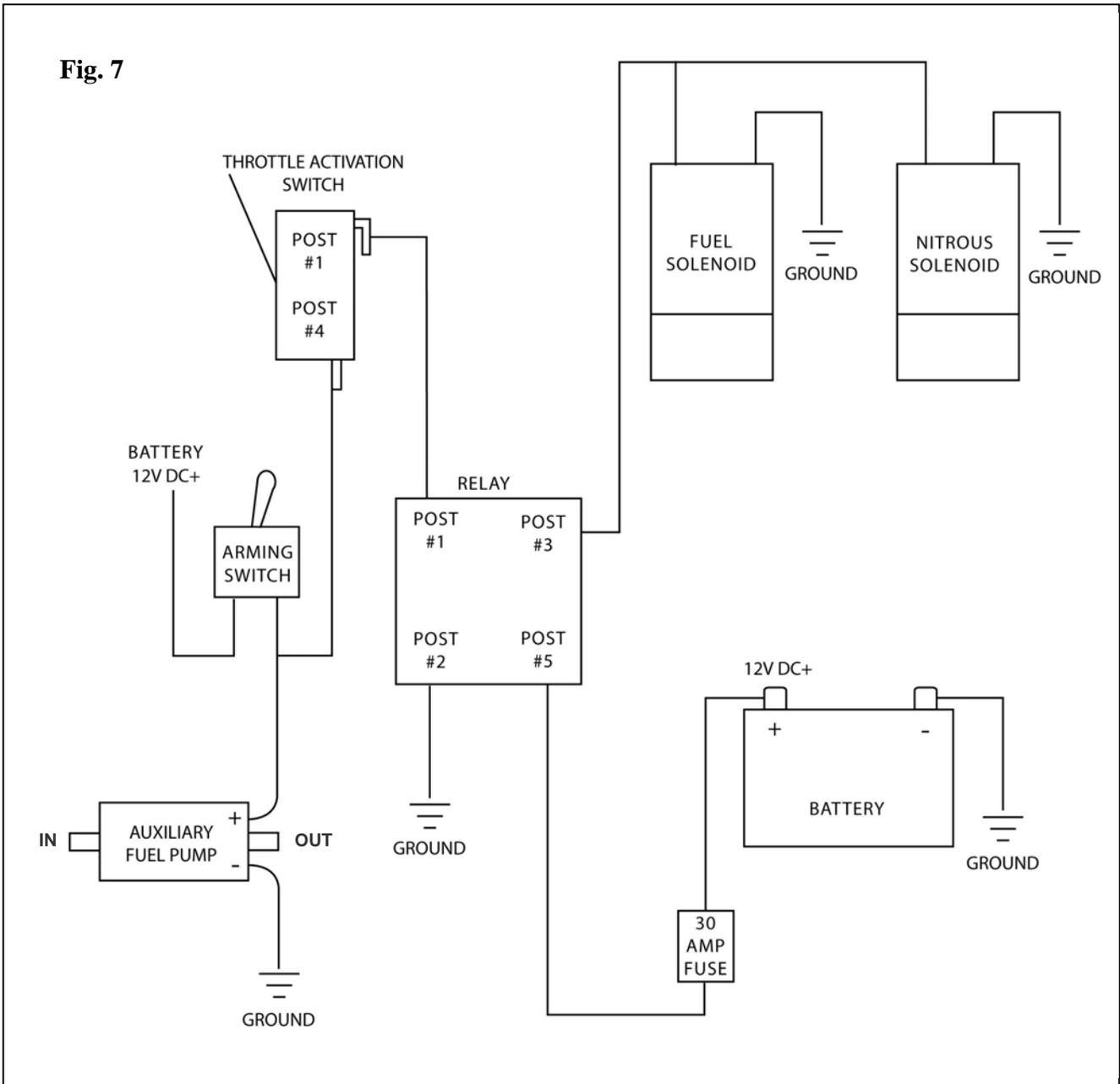
- A. Perform a final inspection of all plumbing and electrical connections to ensure that they are correct.
- B. Ensure that the nitrous bottle is turned off and the line pressure is relieved.
- C. Start the engine and observe all fuel connections for any leaks. Fix any fuel leaks before proceeding.
- D. Turn off the engine.
- E. Open the nitrous bottle valve. Listen carefully for any leaks as your valve is opened. Leaks in the nitrous supply line will be obvious because they will be covered in frost.
- F. If everything checks out, close the nitrous bottle and relieve the line pressure.

10. **Check Fuel Quality & Ignition Timing** - The last thing to do before enjoying your new nitrous system is to ensure that premium fuel (92 R/M Octane or better) is in the fuel tank, 1-2 step colder heat range spark plugs are installed and your ignition timing has been verified. Remember, all recommended ignition timing retard amounts, in the Tune-Up Specs, are calculated off of the base, stock ignition timing. If an optimized ignition curve has been tuned into the engine, add an additional 2 degrees of ignition retard to the recommended amount. If the correct ignition timing retard amount is not used for the higher horsepower settings, severe engine damage may occur from detonation.

**ZEX™ #82313 Nitrous System Tune-Up Specs**

	10hp	15hp	20hp	25hp
<b>Nitrous Jet (950psi)</b>	14	17	21	25
<b>Fuel Jet</b>	16	24	28	40
<b>Ignition Retard (deg.)</b>	0	2	4	6

**Fig. 7**



### Limited Warranty

ZEX™ warrants that all of its products are free from defects in material and workmanship, and against excessive wear for a period of (1) one year from the date of purchase. This **limited warranty** shall cover the original purchaser.

**ZEX's obligation under this warranty is limited to the repair or replacement of its product.** To make a warranty claim, the part must be returned within (1) one year of purchase to the address listed below, freight prepaid. Items covered under warranty will be returned to you freight collect.

**It is the responsibility of the installer to ensure that all of the components are correct before installation. We assume no liability for any errors made in tolerances, component selection, or installation.**

**There is absolutely no warranty on the following:**

- A) Any parts used in racing applications;
- B) Any product that has been physically altered, improperly installed or maintained;
- C) Any product used in improper applications, abused, or not used in conjunction with the proper parts.

**There are no implied warranties of merchantability or fitness for a particular purpose.** There are no warranties, which extend beyond the description of the face hereof. ZEX™ will not be responsible for incidental and consequential damages, property damage or personal injury damages to the extent permitted by law. Where required by law, implied warranties or merchantability and fitness are limited for a term of (1) one year from the date of original purchase.

This warranty gives you specific legal rights and you may also have other legal rights, which vary from state to state.