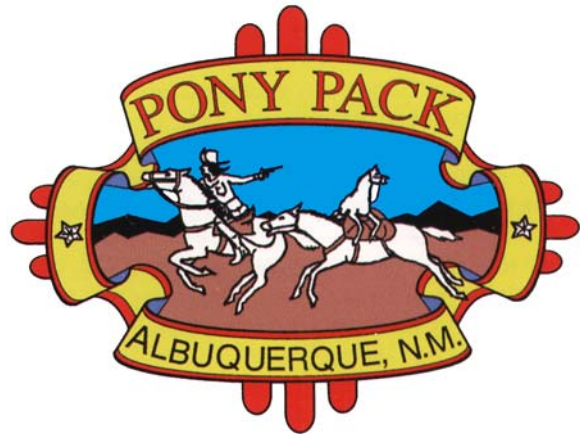


OWNER's MANUAL

Model 2004/06



Pony Pack Inc.
Albuquerque, NM
(505) 243-1381

UNIT SERIAL NUMBER

FOR YOUR IDLE TIME.....

DATE:

FILTER AND BELT INFORMATION

Washable Air Filter	
Wash and Re-oil	As Needed
Pony Pack	105-0515-0

Drop-In Fuel Filter	
Replace	600 Hours
Pony Pack	105-0507-0
Kubota	15231-43560

In-Line Fuel Filter	
Replace	6 Months
Pony Pack	105-0508-0
Baldwin	BF840
NAPA	3389
Kubota	12581-43012

Main Drive Belt Model 2004	
Pony Pack	2004-0110-0
Gates Rubber Co.	K060465

Main Drive Belt-Model 104 & 105	
Pony Pack	105-0113-0
Gates Rubber Co.	K060435
Goodyear	4060435
Dayco	435K6

Oil and Filter	
Replace	150 Hours*
Pony Pack	105-0115-0
AC	PF1127
Baldwin	B179
Carquest	85334
Donaldson	P550162
Fleetguard	LF3462
Fram	PH3593A
Kubota	15853-32430
Lubefiner	PH2802
Mobile	MO4459
Shell	SH521
STP	SO2808
Transcold	2535206
Wix	51064
Yanmar	124450-35100

Water pump Belt	
Pony Pack	2004-0114-0
Gates Rubber Co.	7250
Goodyear	13251
Dayco	15250

*Change oil filter after first 50 hours of use
 Oil capacity with filter change is 2.33 quarts
 Do not use synthetic oil during first 500 hours

ABOUT THIS MANUAL

This manual is intended to help the owner understand the Pony Pack features and operation. It is not an installation manual nor a shop or service manual. Service and maintenance information included herein is limited to routine maintenance procedures and simple troubleshooting which a mechanically inclined owner could undertake.

Pony Pack provides specific installation information to the installing shop whenever possible. Wiring schematics and plumbing guidelines included in the back of this manual are a reference for the owner to pass along to service personnel only. Pony Pack technical assistance is available by calling 505-243-1381.

California Proposition 65 Warning

Diesel engine exhaust and some of its constituents are known to cause cancer, birth defects, and other reproductive harm.

Pony Pack Registration Form

You should have two copies of this form: One in your manual for your records, and one to return to Pony Pack. Please complete this form and mail it in. This information helps us better serve our customers and process warranty claims and parts orders. Send the completed form to:

Pony Pack, Inc.
1407 University, NE
Albuquerque, NM 87102

INTALLATION DATE: _____

SERIAL NUMBERS

PONY PACK SERIAL NUMBER _____

KUBOTA ENGINE SERIAL NUMBER _____

MODULE SERIAL NUMBER _____

SELLER

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE(S)/FAX _____

INSTALLER

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

PHONE(S)/FAX _____

OWNER

NAME _____

ADDRESS _____

CITY/STATE/ZIP _____

TRUCK (YEAR, MAKE, MODEL) _____

ENGINE (MAKE, MODEL) _____

PHONE(S)/FAX _____

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WARRANTY

Pony Pack, Inc. ("Pony Pack") provides the following warranty which defines the extent of protection and assurance to the owner of a Model 104, 105, or 2004 Pony Pack Auxiliary Power Unit ("APU").

THIS WARRANTY HAS BEEN DELIVERED TO THE FIRST OWNER OF THE APU AT THE TIME OF INSTALLATION. IF THERE ARE ANY TERMS, PROVISIONS OR CONDITIONS OF THIS WARRANTY WHICH ARE NOT CLEARLY UNDERSTOOD AT SUCH TIME BY THE FIRST OWNER, THEN THE FIRST OWNER SHOULD OBTAIN SATISFACTORY WRITTEN CLARIFICATION OF THE WARRANTY SIGNED BY AN AUTHORIZED REPRESENTATIVE OF Pony Pack PRIOR TO PLACING THE APU IN SERVICE.

COVERAGE

BASIC COVERAGE:

Pony Pack warrants (subject to all terms, provisions, conditions, and limitations of this Warranty) that each APU will be free from defects in material and workmanship under normal use and service for a period of one year from the date of installation for first use, or 2,000 hours of operation, whichever comes first, with a possible longer period of Warranty for specified components of the APU as set forth below.

PONY PACK'S WARRANTY OBLIGATION:

Pony Pack's sole obligation under this Warranty shall be to repair or replace, at Pony Pack's option, any defective component or material ("Defect") constituting a part of the APU. Upon determination by Pony Pack of the existence of a Defect, such repair and replacement shall be without cost to the first owner of the APU ("First Owner") when performed by Pony Pack at Pony Pack's location or at a qualified, authorized repair facility.

ENGINE, AIR CONDITIONING COMPRESSOR AND ALTERNATOR:

Pony Pack will assign the benefit of any assignable warranties provided by the manufacturers of components of the APU. Copies of all written warranties on the components are attached as an exhibit to this Warranty and each should be read and complied with fully in order to obtain the maximum benefit from any such warranty. Pony Pack makes no warranties or representations concerning the extent or enforceability of any warranty from a manufacturer of components or about any requirements imposed by the manufacturers of components of the APU.

INSTALLATION AND MAINTENANCE:

At the time of installation of the APU, its operation shall be inspected and adjusted. Such inspections and adjustments include but are not limited to checking engine performance, performance of fuel system, coolant pump function, air conditioning system integrity and performance, performance of controls, and electrical system integrity and performance. Proper use of the APU requires that all such inspections and adjustments shall be properly maintained at all times according to the schedules of recommended maintenance outlined in the instruction manual of the APU. As a condition of claiming benefits under this Warranty, Pony Pack reserves the right to require written proof, satisfactory to Pony Pack, in the form of receipts for maintenance on the APU and other service records to establish that all such maintenance and service has been performed as required by this Warranty and as recommended in the instruction manual of the APU.

TERMINATION OR VOIDING OF WARRANTY:

Repair or replacement, other than routine maintenance using approved parts and supplies, or modification of the APU by anyone other than Pony Pack representatives or employees of a qualified, authorized repair facility using authorized parts and materials shall void this Warranty. This Warranty also shall be void if the Defect or necessity for replacement or repair, in Pony Pack's opinion, is due in whole or in part to improper installation of the APU by some entity other than Pony Pack, improper maintenance or service of the APU, modification or alteration of the APU after installation, damage due to accident and/or any other misuse or abuse of the APU. Following expiration of the warranty period, Pony Pack's obligation hereunder shall terminate. Repair and replacement of components of an APU under this Warranty shall not extend the warranty period for the APU or for any component, material or part thereof except as noted in assigned warranties from manufacturers of components of the APU.

EXCLUSIONS FROM WARRANTY

THIS WARRANTY DOES NOT INCLUDE THESE ITEMS:

To better understand our warranty, the following is a description of some conditions which are not covered by this warranty.

NORMAL MAINTENANCE AND REPLACEMENT SERVICES:

Pony Pack is not responsible for the cost of tune up of the APU engine or other maintenance, adjustment and inspection services which may be required including repair or replacement of valves, injectors, fuel system, filters (fuel, air, oil, and water), hoses, and tightening of clamps and fasteners which may loosen in service due to vibration, expansion and contraction due to heating and cooling, and road shocks.

INCIDENTAL AND CONSEQUENTIAL DAMAGES AND COSTS:

Pony Pack specifically denies and disclaims any liability or responsibility under this Warranty or otherwise for injuries to persons or property, traveling expenses, road calls, towing charges, accident repairs, loss of revenue, loss of perishable loads, profits and/or anticipated profits, and loss of truck use. Pony Pack shall not, under any circumstances, be liable for special, incidental or consequential damages.

MAXIMUM LIABILITY:

Pony pack's liability on any and all claims under this Warranty and under any and all theories of liability for any loss or damage arising out of, concerning, resulting, arising from or related to the contract of sale, delivery, service, repair or use of an APU manufactured by Pony Pack shall not in the aggregate exceed the original installed price of the APU.

DISCLAIMER OF OTHER WARRANTY CLAIMS:

This written Warranty is exclusive and in lieu of all other warranties, whether written, oral, or implied. Pony Pack makes no other warranty except as expressly stated herein. There are no other express warranties, implied warranties, warranties of merchantability, or warranty of fitness for particular purpose with respect to the APU unless they are specifically stated herein.

WARRANTY PROCEDURES

NOTICES:

Any notice given by the Owner of an APU to Pony Pack shall be in writing, signed by the Owner and shall be personally delivered to Pony Pack or sent by U. S. Mail, postage prepaid, certified, Return Receipt Requested, to Pony Pack at its business office or transmitted in facsimile to Pony Pack at its business office:

**Pony Pack, Inc.
1407 University, NE
Albuquerque, New Mexico 87102
FAX (505) 243-1384**

Such notice shall be effective (a) immediately upon personal delivery to a representative of Pony Pack at Pony Pack office, (b) three days after being deposited in the mail as to notices which are mailed, or (c) two days after delivery of the notice by facsimile.

WARRANTY CLAIM PROCEDURE:

In order to claim benefits under this Warranty, Pony Pack must be notified in writing within the applicable Warranty period of the failure of the APU to comply with this Warranty. Any claim under this Warranty must be promptly followed, at expense of the Owner, by delivery to Pony Pack or its qualified, authorized service facility, of the APU (or of the component or material from the APU which is claimed to be defective). Pony Pack reserves the right to inspect for defects of workmanship, parts and materials and its decision with respect to such matters shall be final.

TRANSFER OF WARRANTY:

Pony Pack extends this Warranty solely to the First Owner. Any unused Warranty time of the First Owner may be transferred to a subsequent owner of the APU only after approval by Pony Pack of a written request for the transfer. Any written request for transfer of this Warranty shall disclose the name and address of the intended subsequent owner and shall verify the date of installation of the APU for first use, the total hours of operation of the APU, the condition of the APU and that all recommended maintenance has been performed by qualified, authorized service facilities using only approved parts and materials (excepting only those items of routine maintenance performed by others in accordance with the instruction manual of the APU).

GOVERNING LAW AND RESOLUTION OF DISPUTES:

This Warranty is extended under the laws of the State of New Mexico, the state in which Pony Pack is incorporated, has its primary place of business and has manufactured the APU. All questions concerning the interpretation or enforcement of this Warranty shall be governed and construed according to the laws of the State of New Mexico. By acceptance of this Warranty, the Owner of each APU agrees that any litigation and the resolution of any dispute between Pony Pack and the owner of an APU shall be conducted solely and exclusively in the state or federal courts of the State of New Mexico. Any action of any kind in any other forum or jurisdiction shall be subject to dismissal or to removal, at the discretion of Pony pack, and the party filing such action shall pay all costs including reimbursement of Pony pack's attorneys' fees in obtaining such dismissal or removal.



LIMITED WARRANTY ON INDUSTRIAL ENGINES AND REPLACEMENT PARTS EFFECTIVE SEPTEMBER 2, 1997

OUR WARRANTY TO YOU

We warrant to you, the original purchaser, that all parts (except those referred to below) of your new Kubota industrial engine, and replacement part purchased from an Authorized Kubota Industrial Engine or OEM Distributor in the United States will be free from defects in materials or workmanship during the following periods. (Refer to Service Policy Book for further details.)

1. Industrial engines excluding any oil field engine or application for 2 years or 2000 hours whichever occurs first.
- 1a. For 3 years or 3000 hours, excluding oil field engines or applications, a Major Component Warranty (M.C.W.) parts only, is offered. See Service Policy Book for details of coverage for M.C.W.
2. Replacement parts for 90 days.

WHAT WE WILL DO

We will, at our option, repair or replace any part covered by this warranty which becomes defective, malfunctions or otherwise fails to conform with this warranty under normal use and service during the term of the warranty at no charge for parts of labor. (Parts only for M.C.W.)

WHAT YOU MUST DO TO OBTAIN WARRANTY SERVICE

In order to obtain warranty repairs, you must deliver the product, together with proof of purchase, to an Authorized Kubota Industrial Engine Distributor or Dealer at your expense. The names and addresses of such Authorized Kubota Industrial Engine Distributors are listed in telephone directories or may be obtained by writing or telephoning us.

WHAT THE WARRANTY DOES NOT COVER

This warranty **does not** cover: (See Service Policy Book for further details.)

1. Defects, malfunctions or failures resulting from accidents, abuse, misuse, modifications, alteration, improper servicing or lack of performance of required maintenance service.
2. Normal maintenance services or replacement of maintenance items such as light bulbs, preheater plugs, indicator and resistant coils, filter elements, lubricants, oils, spark plugs, coolant or belts.
3. Installation of replacement parts, unless originally installed by an Authorized Kubota Industrial engine Distributor.
- 3a. Non-genuine Kubota parts.
4. Nihon CAV injection pumps are covered by separate warranties issued by their manufacturer or distributor.
5. Any engines damaged by use of ether, or any starting aid, or greater than a 50/50% solution of antifreeze-water

6. Injection nozzle wear or any engine damage caused by injection nozzle wear or sticking.
7. Damage caused by water entering the engine due to any cause.
8. Used products.
9. Any damage caused by overheating that is not a direct result of a defect in materials or workmanship.
10. Any engine not application reviewed.

THIS IS THE ONLY EXPRESS WARRANTY ON OUR PRODUCTS

We neither assume nor authorize anyone to assume for us any other express warranty. The Distributor/Dealer has no authority to make any representation or promise on behalf of Kubota Engine America Corporation or to modify the terms or limitations of this warranty in any way.

LIMITATIONS ON OUR RESPONSIBILITY WITH RESPECT TO PRODUCTS PURCHASED AND USED FOR PERSONAL, FAMILY OR HOUSEHOLD USE.

Our responsibility is to repair or replace defective parts as stated above; we will not be responsible for any other expenses, losses or inconvenience which you may sustain as a result of the purchase, use, malfunction or defective condition of our products. ANY IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE SHALL BE LIMITED IN DURATION TO THE PERIOD SET FORTH ABOVE. Some states do not allow limitations on how long an implied warranty lasts or the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

LIMITATIONS ON OUR RESPONSIBILITY WITH RESPECT TO PRODUCTS USED FOR RENTAL OR FOR COMMERCIAL, INDUSTRIAL OR AGRICULTURAL PURPOSES.

This warranty is in lieu of all other warranties, express or implied, and of any other obligations or liability on our part. WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXCLUDED. Our responsibility for any and all losses and damages resulting from any cause whatsoever, including our negligence, alleged damaged or defective goods, whether such defects are discoverable or latent, shall be limited to the repair or replacement of defective parts as stated above. IN NO EVENT WILL WE BE LIABLE FOR LOSS OF USE, LOSS OF PROFITS, LOSS OF OR DAMAGE TO CROPS, INCONVENIENCE, COMMERCIAL LOSS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES WHATSOEVER.

KUBOTA ENGINE AMERICA CORPORATION • 505 Scheller Road • Lincolnshire, IL 60069

Safety

Congratulations on your Pony Pack purchase. Please, read this manual completely. Contact Pony Pack or your dealer if you have questions.

Failure to follow the procedures in this manual could void your warranty. Improper installation and usage can cause serious injury to personnel and/or damage to the Pony Pack or the equipment on which it is installed.

If after reading the information contained herein, you still have questions, please contact Pony Pack or your dealer promptly.

SAFETY





Safety is everybody's business and everybody's responsibility. Each truck and Pony Pack installation is different, so assess all safety concerns peculiar to your situation. Be attentive. Watch for hazards and correct them immediately. Use preventative measures. Exercise common sense.

Many of the safety guidelines set forth are applicable to general plant and equipment safety practices. However, this document is specific to Pony Pack products. This information is not a comprehensive shop or equipment safety standard. Pony Pack is not responsible for any accidents that may occur simply because a specific warning has not been made here.

Qualified shops and certified mechanics are familiar with the hazards of working around heavy equipment and diesel engines. Pony Pack recommends that only qualified mechanics install and conduct maintenance and repairs on Pony Packs.

SPECIAL SYMBOLS

Certain special symbols are used throughout Pony Pack documentation to identify potential safety hazards. Pay close attention and read the text carefully whenever you encounter any of these symbols.

	This symbol identifies possible electrical hazards or conditions.
	This symbol identifies possible mechanical hazards or conditions.
	This symbol identifies pinch point hazards. It warns the reader to keep hands and fingers clear of the hazard.
	This symbol identifies situations where the worker may be inclined to take a shortcut or use the wrong tool.

CALIFORNIA PROPOSITION 65 WARNING

Diesel Engine Exhaust and some of its constituents are known to cause cancer, birth defects, and other reproductive harm.

SAFE PONY PACK OPERATION

- Before operating the Pony Pack, read and understand all manuals, including enclosures and insertions for other manufacturer's equipment.
- Always dress for safety. Secure long hair, loose clothing, and jewelry to keep it clear of operating equipment. Have eye protection routinely available and use it when directed or when common sense dictates.

- Disable and discard unsafe components and items that have been removed or replaced during maintenance and repair.
- Follow your company's safety procedures and guidelines at all times.
- Stay clear of the belts on the Pony Pack, even when it is not moving.
- Frequently inspect wires. They must be secured away from moving parts and protected by conduit where possible.
- Frequently inspect the hoses and connections. Look for spots where they may be rubbing. Use cushions and tie straps to protect hoses as needed from abrasion.
- Do not operate the Pony Pack with the cover off, except as needed by qualified maintenance personnel. During such maintenance, all other personnel should stand clear of the unit.
- Do not insert objects, fingers, or tools into the unit. Take extra care to retrieve all tools after working on the unit. Tools and objects left in or on the equipment may seriously damage the Pony Pack and create a safety hazard for persons working in the area.
- Altering the Pony Pack RPM will void the warranty.
- Modifications are not permitted.
- Use only the Pony Pack (AFE brand) air filter oiling agent on the Pony Pack air filter.
- Avoid skin and eye contact with the air filter cleaning solution.
- Never stand on the Pony Pack or use it as a step.

WARNING LABELS

Pay attention to all warnings on the Pony Pack. Never remove or cover warning labels. Never assume the equipment is safe simply because there is no warning label.

SAFE HANDLING OF FLUIDS AND CHEMICALS

Follow manufacturer's instructions and the regulations in your area for safe handling, usage, and disposal of engine coolant (antifreeze), engine oil, Freon, and any other fluids used in your truck or Pony Pack. Most manufacturers will provide a Material Safety Data Sheet, MSDS, for the materials they sell.

KUBOTA ENGINE MANUAL

The central Pony Pack component is a Kubota two-cylinder diesel engine. Pony Pack includes the *Kubota Diesel Engine Operator's Manual* with every Pony Pack sold. The same manual covers three Kubota engine models. The Pony Pack uses the Z482-E.

THIS MANUAL


The different sections in this manual discuss most aspects of a Pony Pack operation and routine maintenance. Photos and diagrams help provide clarity. Understand that the photos show general features and may not depict the exact orientation or appearance of each installation. Pages and foldouts at the back of this manual are included as a reference to assist qualified mechanics.

DISCLAIMER

It is very important that the truck's A/C, coolant, and fuel systems be free of leaks and contamination before installing a Pony Pack. Pony Pack, Inc. is not responsible for damage to any truck systems due to faulty equipment, contamination, Freon, fuel, or coolant leaks, or Pony Pack installation or operation not in accordance with this manual.

Operating Instructions

This document explains how to preheat, start, and operate model 2004 Pony Packs. A properly installed Pony Pack is designed to operate without keys in the truck ignition. If for some reason the Pony Pack shuts down, all Pony Pack 12 volt functions will disengage to prevent battery drain.

	Never start or operate the Pony Pack with the cover removed. Only qualified shop personnel should operate the Pony Pack without the cover in place.
---	---

The Pony Pack control panel has four switches, an hour meter, and a green indicator light.

CONTROL PANEL



Pony Pack control panel

Hour Meter: The hour meter runs when the unit is running.

Green Light: The green light stays illuminated while the unit is preheating or running.

A flashing green light indicates a system malfunction. For more information, remove the cover and see what red light on the module is lit.


IGN/OFF switch: Pony Pack ignition.

START switch: Preheats and starts the Pony Pack.

CAB HEAT/OFF switch: Turns the in-line coolant pump on or off for cab heating.

MAIN/AUX switch: Transfers all heating, ventilating, and air conditioning functions between the truck engine (MAIN) and Pony Pack (AUX).

START-UP PROCEDURE

	Never start the Pony Pack with the MAIN/AUX switch in the AUX position. This may turn on A/C or electric loads and overload the starter.
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1. Turn the Pony Pack IGN switch on. The green light will blink on and off once.
2. Push the spring-loaded START switch to the right and release. The green light will illuminate indicating automatic glow plug operation. Holding the START switch does not affect the preheat duration.

NOTE: Preheat duration is automatically determined by the coolant temperature in the Kubota engine.

3. When the green light goes off, hold the START switch to the right until the unit sounds like it is revving under its own power. THE UNIT WILL NOT START UNTIL THE GREEN LIGHT SHUTS OFF.

4. When the green light stays on, the unit is running. NOTE: If you do not start the unit within five minutes of preheating, repeat steps 1, 2 and 3.
5. If the unit does not start, turn the Pony Pack ignition switch off and back on to reset the control module.

SHUTDOWN PROCEDURE

The CAB/HEAT switch should be OFF and the MAIN/AUX switch should be in MAIN position before shutting off the Pony Pack.

To shut off the Pony Pack, turn the IGN/OFF switch to OFF.

CAB HEAT PUMP OPERATION

The cab heat switch controls only the electric pump installed in the heater supply line. The dashboard heater controls determine temperature, fan speeds, etc.



Do not operate the cab heat pump if the heater core supply valve is off. Operating the cab heat pump without coolant flow causes it to cavitate and subsequently burn out.

AIR CONDITIONING OPERATION

The A/C system on a truck requires constant 12 volt power to operate the compressor, blower motors, thermostat, and climate control components. A properly installed Pony Pack provides 12 volt power to these components as needed for the system to operate properly.

A Pony Pack equipped truck has two A/C compressors. The MAIN/AUX switch on the Pony Pack control panel switches between the compressors. Activating one system deactivates the other. In other words, both compressors can never operate simultaneously.

When the MAIN/AUX switch is in the AUX position, the truck air conditioning sensors and dashboard controls activate the Pony Pack compressor as

needed for cooling. When the switch is in the MAIN position, the truck air conditioning sensors and controls activate the truck compressor as needed for cooling.

Obviously, since an A/C compressor is a belt driven accessory, the truck engine must be running to use the truck compressor. Likewise the Pony Pack must be running to use the Pony Pack compressor. If both the truck and Pony Pack are running, switching the MAIN/AUX switch determines which compressor operates.



On trucks equipped with the Index Industries Air Conditioning Protection and Diagnostics System, APAdS (Volvo 610, 660, 770 and some other makes/models with factory or aftermarket APAdS systems), BEFORE switching the MAIN/AUX switch in either direction, the dashboard A/C control MUST BE TURNED OFF to prevent a false malfunction code on the APAdS module. The momentary power interruption registers as a false loss of electrical power to the A/C system causing technicians to waste time looking for a bad connection that does not exist.

SIMULTANEOUS OPERATION

A properly installed Pony Pack should operate whether the truck engine is running or not. Two scenarios are listed below.

- Occasionally, a driver may engage Pony Pack cooling while driving to reduce the compressor and cooling fan parasitic loads on the truck engine.
- The Pony Pack will keep the batteries charged in the event the truck alternator fails.

Maintenance

Properly maintain your Pony Pack for peak, trouble-free performance. Follow all safety guidelines. If you are unsure about any maintenance procedure, contact Pony Pack or consult a qualified mechanic. Failure to conduct scheduled maintenance may void the Pony Pack warranty. Approved filters and belts are listed on the inside cover of this manual.



Conduct all maintenance procedures with the Pony Pack turned off.

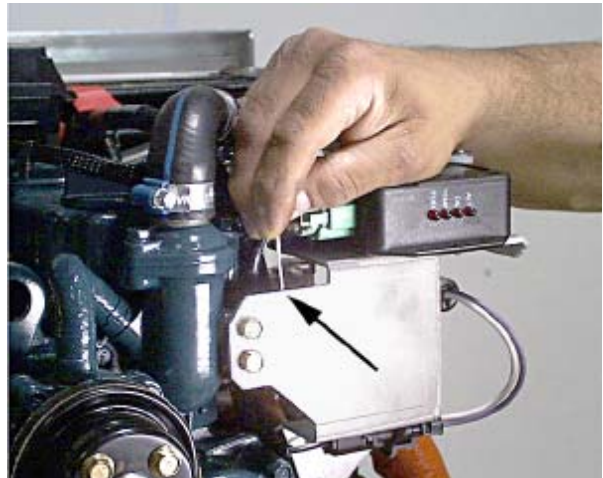
SERVICE MODE

By design, the Pony Pack electronic control system shuts down electrical functions (fuel pump, heat exchanger motor, fan, coolant pump etc.) if the engine is not started within two minutes of turning the IGN/ON switch to the ON position. (This prevents battery drain in the event the Pony Pack shuts down.) It is possible to initiate a service mode which will energize some of the electrical components as needed to purge air from the fuel system or perform other diagnostics. Follow these steps to get the Pony Pack control system into the service mode.

1. Turn the IGN/OFF switch to IGN.
2. Within two minutes, momentarily ground the short white wire from the green module connector by carefully touching the end of it to the metal module bracket.
3. The ignition circuit will remain on for 15 seconds and the module OIL LED will flash for 15 seconds then go solid. The fuel pump will run for an additional 15 seconds each time the white wire is grounded to the bracket.



The reset wire is a short white wire in the green module connector.



Touch the white wire to the corner of the module bracket.

OIL CHANGE



The oil drains more completely when hot. Avoid touching hot engine surfaces while changing the oil and filter. Use gloves, a rag, or a wrench to remove the oil filter.

BREAK-IN

The Kubota engine break-in period is approximately 500 hours. During this period, you may experience some oil consumption. Change

the engine oil and filter after the first 50 hours of use and every 150 hours thereafter.

REGULARLY SCHEDULED OIL CHANGE

Change the Kubota engine oil every 150 hours. Replace the filter at every oil change. Use a 22 mm socket to remove the drain plug.



Remove the drain plug with a 22 mm socket.



Unscrew the filter cartridge. Use the bottom one inch of an oil or antifreeze jug to catch any oil that spills out of the filter and engine. Use rags to keep oil out of the alternator.

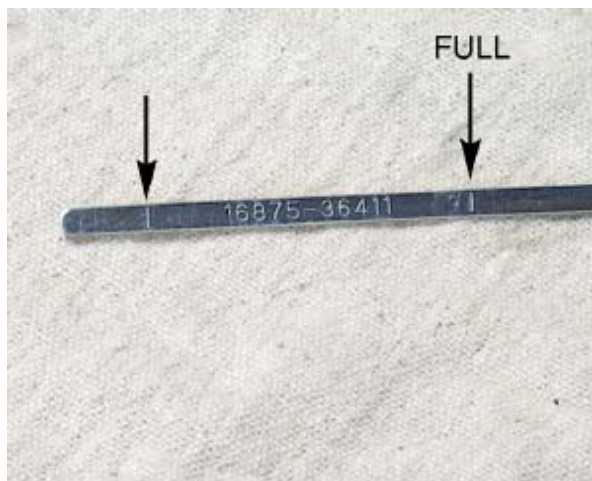


Always cover the alternator to prevent oil from dripping into the windings. Engine oil has a documented detrimental affect on alternator performance.

Cut off the bottom one inch of a used oil or antifreeze jug. Position it under the oil filter to catch the small amount of oil that spills out. Unscrew the filter cartridge. Wipe the gasket surface on the engine with a clean rag. Apply a

thin film of oil to the new filter gasket before installing it. Tighten the new filter by hand.

Add oil. The capacity is 2.33 (two and one-third) quarts.



Close-up of the end of a dipstick.

OIL TYPE

Use the same oil in the Pony Pack as in the truck engine. Pony Packs are shipped from the factory with Rotella T 15W-40 in the crankcase.

A NOTE ABOUT SYNTHETIC OIL



Do not use synthetic oil in the Kubota engine during the first 500 hours of operation. Thereafter, synthetic oil use is permitted. Synthetic oil use does not increase the oil change interval.

AIR FILTER



The air filter element is a washable re-useable air filter. DO NOT THROW IT AWAY.



Pony Pack air filter and cleaning kit.

A new Pony Pack comes with a cleaning kit. Inspect the air filter. Wash and oil it when it is dirty or when restricted air flow causes the engine to smoke. A collapsed air intake hose may indicate restricted air flow.

AIR FILTER REPLACEMENT

Follow these steps to change the air filter.

1. Loosen both hose clamps on the air intake hose.
2. Rotate the hose connection on the engine clockwise. Remove the filter from the filter sleeve.



Air intake hose rotated up to access the filter.

3. Install the cleaned and oiled filter into the filter sleeve.
4. Rotate the air intake hose back into place and tighten both hose clamps.

AIR FILTER CLEANING



Only use AFE brand air filter cleaner and filter oil. Use of pressurized water, compressed air, open flame, hot air dryers, gasoline, or other caustic cleaning solutions will void your warranty.

Follow the instructions on the cleaning agent and oil bottles to clean the filter element. Those instructions are repeated here.

1. Spray on the cleaner and let stand 10 minutes.
2. Rinse with tap water. Let dry completely.
3. Apply AFE Oil to the filter. Leave about 1/2 inch gap from the edge. Oil will spread to the edges in about 45 minutes to one hour. Check for light areas and apply a small amount if needed. Uniform oil coloring through filter media ensures properly oiled filter.

Uniform oil coloring through filter media ensures properly oiled filter.



Keep your AFE air filters oiled and never operate your vehicle when the filter is not oiled. Do not over oil. The included cleaning kit should be good for ten cleanings.

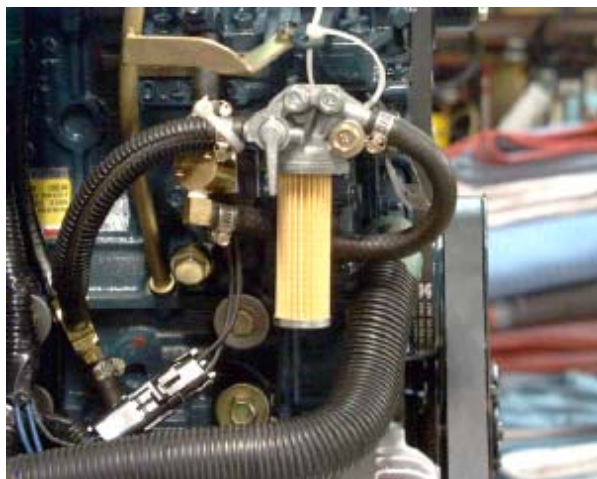
Additional filters and cleaning supplies are available from Pony Pack.

FUEL FILTERS

The Pony Pack utilizes two fuel filters: in-line between the truck fuel tank and Pony Pack, and a drop-in filter and bowl assembly preceding the engine injector pump.

DROP-IN FUEL FILTER

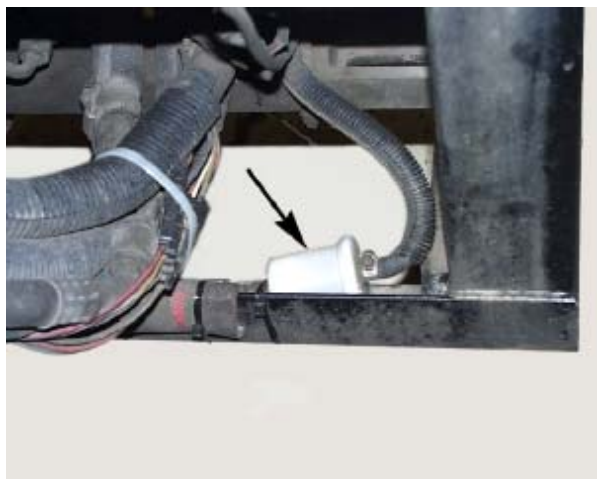
Pony Pack recommends replacing the drop-in fuel filter every 600 hours. Use channel lock pliers to unscrew the filter bowl nut. When finished, finger-tighten the filter bowl nut then add 1/4 turn with channel lock pliers.



Drop-in filter bowl removed

IN-LINE FUEL FILTER

Change the in-line fuel filter every six months, or more often if you suspect it may be dirty or you had a bad tank of fuel. Loosen the two hose clamps that hold the filter in place, pull out the old filter, and install the new filter.



In-line fuel filter at the rear of the unit.

PURGE THE AIR FROM THE FUEL SYSTEM

Always purge the air from the system after servicing either fuel filter. The photo below shows the three screws that are loosened one at a time to purge air from the fuel system.



Leave the fuel bowl pet-cock in the vertical position. It serves no useful purpose within the Pony Pack fuel system. More recent Pony Packs have the pet-cock removed.



Three purging screws: (1) and (2) on the aluminum filter body and (3) on the injector pump.



Screws 1 and 2 install into an aluminum body. Barely tighten them to prevent stripping out the housing. Some drivers find that finger tight is adequate and they never use a wrench.

1. Use the bottom one-inch cut from a plastic oil bottle to catch fuel that drips out. Cover the compressor with rags to prevent diesel fuel from spilling onto it.
2. Touch the white wire from the green module connector to the module bracket to begin the service mode and start the fuel pump. (Note: Toggle the IGN/OFF switch to IGN.)



Purging the air out of the fuel system: The right hand is on the service button. The left hand is bleeding the air. Note the rags in place to keep fuel off the compressor.

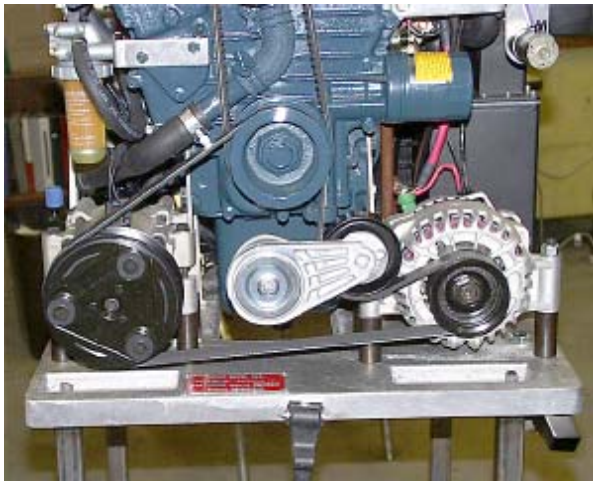
3. Open screw number 1 between a half and full turn.
4. Keep it open until fuel drips steadily from behind the screw, and tighten the screw
5. Repeat for screws 2 and 3.

Depending on the Pony Pack fuel plumbing arrangement, a low fuel level in the tank may introduce air into the fuel system.

BELT MAINTENANCE



Disconnect the main power cable to the Pony Pack before servicing the belts.

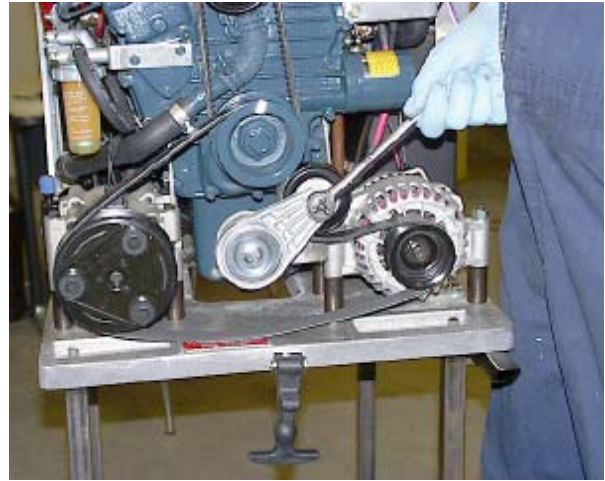


Pony Pack belts and Tensioner

DRIVE BELT

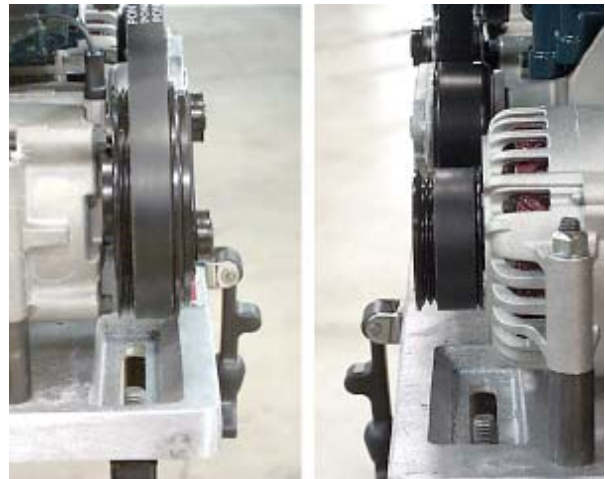
Change the belts whenever they become cracked, old, or worn. Follow these steps to replace drive belt.

1. Raise the tensioner with a 3/8 ratchet handle or breaker bar.
2. Remove the old belt and release the tensioner.



Raise the tensioner pulley up to install a new belt.

3. Install a new belt over the compressor, engine, and alternator pulleys.
4. Raise the tensioner and slide the new belt under the pulley. Release the tensioner.
5. Verify that the belt tracks in the front grooves on the compressor and the rear grooves on the alternator.



Proper belt tracking on the compressor (left) and the alternator (right) pulleys.

WATER PUMP BELT

1. Follow the previous steps to remove the drive belt.
2. Loosen and remove the four water pump pulley screws (10 mm wrench). You can prevent the pulley from turning by placing a screwdriver between two of the bolt heads. Squeezing the belt will also prevent the pulley from turning.
3. Pull the pulley off the hub and Remove the belt



Remove the four water pump pulley bolts. The screwdriver method is used to keep the pulley from turning.



Remove the four water pump pulley bolts. The belt squeeze method is used to keep the pulley from turning.



Water pump belt removal

4. To install a new water pump belt, put the new belt into the groove on the main drive pulley. Angle the water pump pulley as shown in the next photo, and slide it over the hub.



Angle the pulley onto and over the hub.

5. Tighten the four bolts.
6. Install the drive belt.



Do not over tighten the four water pump pulley bolts. They will break.

WASHING

For maximum performance wash the Pony Pack on a regular basis. Most drivers wash the Pony Pack whenever they wash the truck. A clean Pony Pack is easier to service and troubleshoot.



Always hold the high pressure sprayer at least two feet from the unit. Too much pressure can damage components and bend condenser fins.



Use only soap and degreaser to clean the unit. **DO NOT USE ACID.** If there is a particularly dirty area, spray it with degreaser before washing. Give the unit plenty of time to dry before restarting.

CONDENSER/RADIATOR

A clean condenser and radiator ensure effective airflow across the coil tubes. A dirty radiator and condenser can cause high-temperature shutdowns and decreased A/C cooling efficiency. Buildup in the condenser fins rinses out easily if first sprayed with engine degreaser or brake cleaner. Let the cleaner stand for 10 minutes before rinsing with a plain water hose.

SEASONAL OPERATION

A/C SYSTEM MAINTENANCE

During the cooler months, it is a good idea to operate the A/C system in both the MAIN and AUX modes to circulate the compressor oil in the system and lubricate all the seals. Running the defroster will also engage the compressor to remove moisture from the air. Do this every two or three weeks.

AC Clutch Switching

The truck control system engages the A/C compressor clutch either by energizing the clutch power wire; *power switching*, or closing the clutch ground circuit; *ground switching*.

Power switching is the most common arrangement. The Pony Pack A/C compressor clutch is a power switching clutch. Unless the factory knows a Pony Pack is destined for a ground switching truck, Pony Packs are set up for the power switching arrangement. Changing the Pony Pack to accommodate a ground switching truck requires relocating a terminal in the Module-Cab Harness.

HOW TO IDENTIFY POWER AND GROUND SWITCHING ON A TRUCK

Locate the harness connection on the truck's A/C compressor. A single wire harness plug indicates a power switching clutch that employs a frame ground. Two wires indicate that the clutch does not employ a frame ground and can be either power switching or ground switching. Usually, a two-wire harness plug indicates ground switching.

The surest way to determine if a truck is ground or power switching is to locate the thermostat in the cab compartment. Remove one of the two thermostat wires. Set the dash controls to engage the A/C clutch. (Truck IGN on). Use a test light (clipped to ground for a power switching truck) to determine which of the two thermostat wires sends the signal to engage the clutch. If you suspect the clutch is ground switching, clip the test light to a power source and do the same thing. The thermostat output circuit is what gets split to the lower center terminal on the Pony Pack, switch 4.



Single-wire harness plug on a truck compressor.



Two-wire harness plug on a truck compressor

POWER SWITCHING TRUCKS

Freightliner
Early International
Early Volvo
Mack
Peterbilt, R12 units, before mid 1994
Volvo
Western Star

GROUND SWITCHING TRUCKS

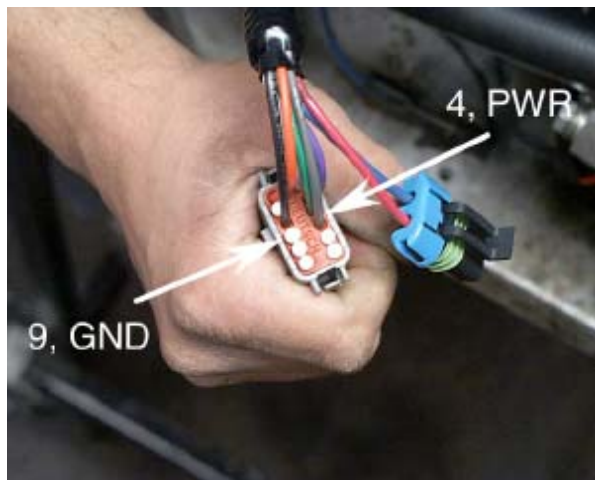
International
Kenworth
Peterbilt, R134 units, after mid 1994

CHANGING THE CLUTCH SWITCHING ARRANGEMENT ON A 2004 PONY PACK

The unit schematic at the back of this manual shows the gray module connector. It is labeled CAB, GRY. It is the gray plug on the end of the module, close to the air intake hose. Unplug it from the module and pull it out towards the left side of the unit. You will likely need to unplug the two-wire harness connector with the red and blue wires.

This procedure describes how to change the harness from a power switching arrangement to a ground switching arrangement. Simply do the opposite to change from ground to power.

1. Locate the gray where it enters the back of the connector. If you look closely, you can actually see tiny numbers on the connector body that identify the terminal locations. In the photos, we are showing how to move the terminal from the number 4, Power Switching location to the number 9, Ground Switching location.

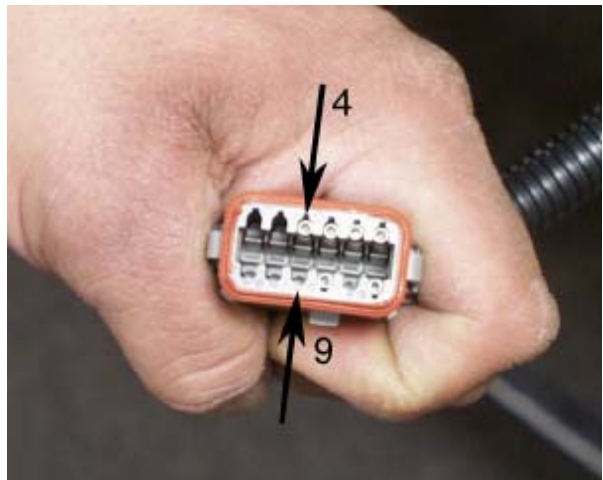


Module connector in the Module-Cab Harness: The gray wire is in the number 4, power switching location.

2. Carefully use a narrow screwdriver to pry the green plastic faceplate off the connector. Work the screwdriver under one corner and down the side of the connector.



Pry off the green faceplate.



Faceplate removed. You can see the terminals.



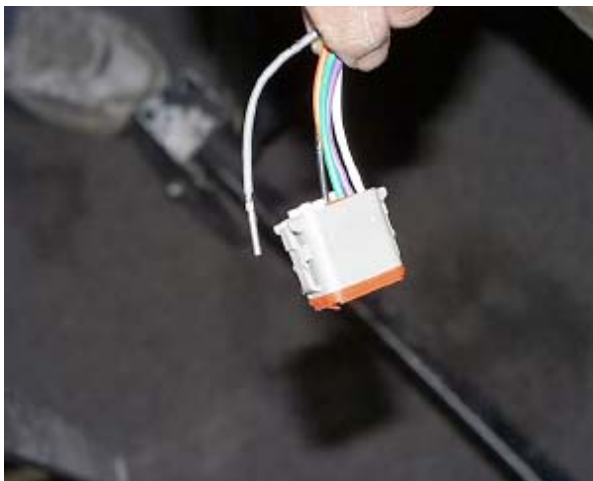
Remove the cavity plug. Save it for replacement

3. Remove the white cavity plug from the number 9 location. You can pry it out from the back or push it out with a pick from the inside.
4. Look into the connector and you will see small barbs that keep the terminals from pulling out the back of the connector. Use a pick or small screwdriver and gently nudge the number 4 barb towards the center and pull on the gray wire from the back.



Use a pick or small screwdriver to push the barb out of the way.

5. Gently pull the gray wire out the back of the connector. It will slide out of the rubber seal.



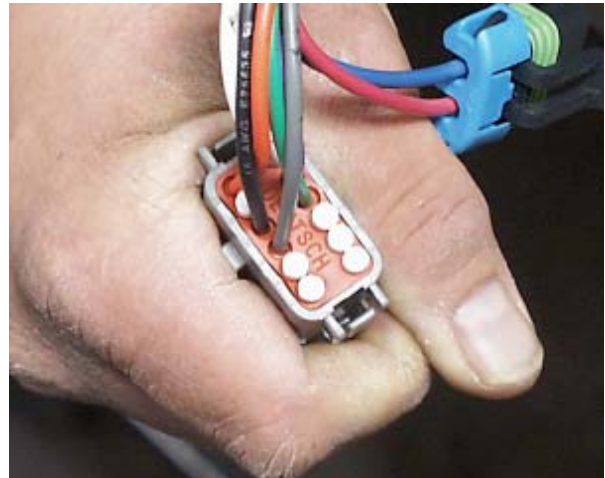
Gently pull the wire all the way out of the seal.

6. Poke it back through the seal at the number 9 location. Push it through until it seats. You should hear "click."



Move it over to the number 9 position and gently push it through the seal until you hear it click in place.

7. Replace the cavity plug in the empty position.



Once it is pushed all the way in, replace the cavity plug in location 4.

8. Gently insert the green faceplate back into the front of the connector and press it in until it clicks.
9. Plug the module connector back into the module.
10. Plug the two-wire connector back into the adjacent harness.

Troubleshooting

This troubleshooting section only covers scenarios that are relatively easy to diagnose for a mechanically inclined person. It is targeted for Pony Pack owners who wish to troubleshoot their Pony Pack to a certain extent before taking it to a mechanic. Occasionally, after diagnosing the problem, it may be best to let a qualified mechanic verify the diagnosis and repair the unit.



If you are unsure about any of the steps in this section, leave the troubleshooting to a qualified mechanic. If you choose to work on your own unit, be sure to follow common-sense safety measures and the specific safety guidelines set forth at the front of this manual.



Pony Pack load center with the lid open to show the fuses and relays.

A/C TROUBLESHOOTING

The last section in Troubleshooting is titled *A/C System Overview*. Detailed air conditioner troubleshooting and analysis requires special tools and is best left to qualified mechanics. The overview section is provided to assist mechanics in their diagnosis.

LOAD CENTER

New on the model 2004/06 pony pack is a circuit protection load center which is populated with relays and fuses. The diagram on the inside of the load center lid identifies the circuit for each fuse and relay.

When troubleshooting, replace blown fuses with same amperage fuses. The fuses are all mini-automotive fuses. The relays are all 20 amp 4-pin micro relays.



Load center power and ground studs: The Power Stud is the larger of the two.

FAULT INDICATORS

In nearly all circumstances, when the Pony Pack shuts down for unknown reasons, a red LED on the module will remain illuminated as long as the ignition switch is on. Hence, if the unit shuts down, leave the ignition toggle switch in the ON position. Remove the unit cover and see which fault indicator LED is illuminated. Troubleshooting procedures for each LED indicator follow.



Module and Fault Indicator LED's

SERVICE MODE ON MODEL 2004/06 PONY PACKS

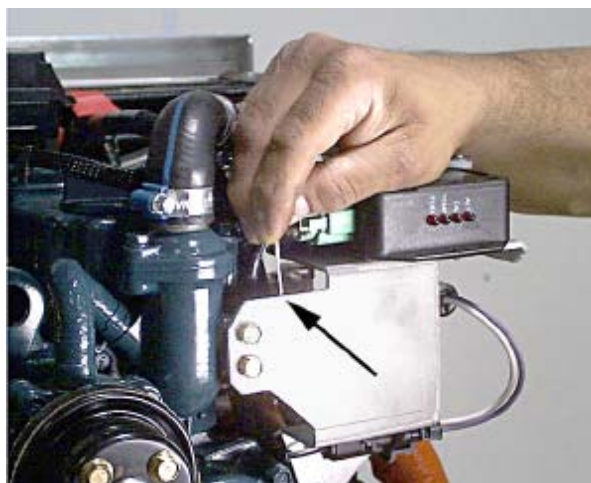
Once the ON/IGN switch is toggled to the ON position, the electric fuel pump on the Pony Pack will run for two minutes in anticipation of the driver starting the unit. Also, blower motors in the truck dash and the cab heat pump will run if they are switched on. Additionally, the hour meter will roll. If the driver does not start the Pony Pack, the fuel pump and related electrical items will all turn off and stay off until the driver again either toggles the IGN/OFF switch to the IGN position or toggles the START switch to the right to preheat the glow plugs.

If you look closely, there is a short white wire, four inches long, coming out of the green plug in the module. Making electrical contact between this wire and the module bracket (before the two-minute timeout mentioned above) starts the SERVICE MODE so a mechanic may test various Pony Pack functions.



White reset wire; model 2004/06 Pony Pack.

The Pony Pack stays in SERVICE MODE until the engine is started or the ON/IGN switch is turned off. In service mode, electrical system components have power for 15 seconds a time. Touching the white wire to the module bracket begins another 15 second electrical power up period.



Reset wire contacting module bracket starts SERVICE MODE.

Starting the Pony Pack or toggling the IGN/OFF switch to OFF will exit the service mode.

OVERTEMPERATURE SHUTDOWN

TEMP fault indicator LED is on.

Note: If the Pony Pack is experiencing an over-temperature shutdown AND the auxiliary A/C performance is marginal or poor, a dirty condenser and radiator or fan failure are the likely culprits.

CHECK HARNESS CONNECTIONS

1. Check the harness/fan connection at the rear of the unit.



Harness fan connection behind the unit

2. Check the harness/coolant fluid sensor connection (at the thermostat housing).



Coolant fluid sensor in the Kubota thermostat housing

3. Check the fan fuses in the Pony Pack load center; F1 and F7.

TEST THE FAN

1. Unplug the fan at the rear of the unit.
2. You must figure out a wire arrangement to apply direct 12V electricity to the red (power) and black (ground) wires inside the fan connector.
3. If the fan runs when direct 12 volt power is supplied, it is good. If a tachometer is available, measure the fan rpm. It should be 2700 rpm or higher.

INSPECT THE CONDENSOR

While you are testing the fan, inspect the condenser and radiator for dirt, grime, or debris that would impede air flow through the condenser and radiator. Smashed or folded over fins will also impede air flow. If the fan cannot pull air through the radiator to cool the engine, the Pony Pack will have an over temperature shut down. A clean condenser will also improve the Pony Pack air conditioning performance.

STUCK THERMOSTAT

A stuck Kubota thermostat will result in an over-temperature shut down. If you suspect the thermostat is the problem, you can remove and inspect it. Look for a shiny wear spot on the plunger shaft that would indicate the thermostat has been rubbing.



Close-up of a stuck thermostat

Be careful not to damage the gasket. If the thermostat is not dragging, leave it alone. To be sure, it should open in boiling water.

CLOSED SHUT-OFF VALVES

Pony Pack recommends that installers place shut-off valves where the Pony Pack supply and return hoses are installed at the engine. Occasionally, mechanics or drivers may shut these valves off and forget to open them back up. One or both valves shut off will cause an over temperature shutdown.

AIR IN THE COOLANT SYSTEM

Any time the truck coolant is removed or the coolant system is open somewhere other than the radiator or overflow tank, it is likely air will enter the coolant system. If the air pocket migrates to

the Pony Pack, an over temperature shutdown will occur.



Shut-off valves on the engine

Always remind your truck mechanic about the Pony Pack. Insist on running the Pony Pack anytime the truck coolant system is opened. Let it run for at least 10 or 15 minutes. Purging the air from the Pony Pack is best left to a qualified mechanic. The procedure follows.

First check the coolant level in the truck. Next, bleed the air out of the system at the Pony Pack with the Pony Pack shut off and the truck engine running.

A good technique is to remove the coolant hose at the thermostat housing. Use clamping vise grips to keep the coolant from running out.

1. Clamp both hoses.
2. Loosen the hose clamp at the thermostat nipple just enough that you can ease the hose off just one side of the nipple. This allows steam and air to vent.
3. Once the steam is released, you can ease the hose completely off the nipple. Steam will continue to vent.
4. Unclamp the inlet hose to the Kubota water pump BUT be prepared to clamp it shut quickly. Frothy coolant coming out of the thermostat housing means that there is air in this side of the system. Eventually, the coolant level in the Pony Pack will rise to the top of the thermostat housing.
5. Bleed air from the hose you removed by unclamping it. A gurgling noise

and steam indicate air being purged from this side.

6. When coolant starts to come out of the hose, quickly place it over the thermostat nipple and tighten the clamp.



Clamp locations

7. Wash antifreeze off of belts and unit.
8. Start the unit, let it run. It may be necessary to repeat these steps one more time. If this does not solve the over temperature situation, consult a qualified mechanic to locate the source of air which is entering the Pony Pack coolant loop.

The main drive belt may squeal because it is wet; especially if the A/C compressor engages. You may also notice steam due to the coolant boiling off engine parts. Both these symptoms will go away as the unit runs.

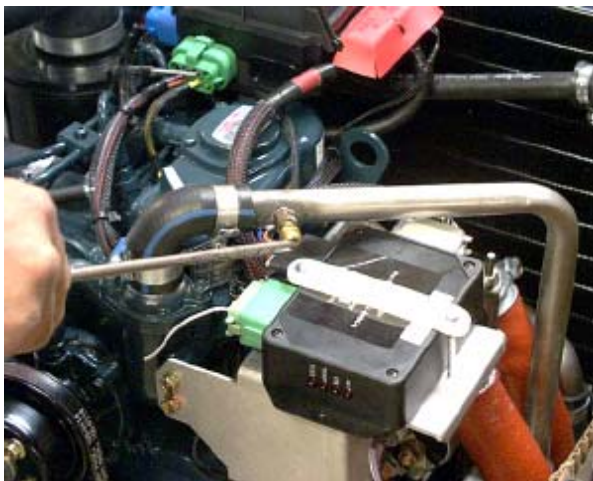
PURGE AIR FROM THE COOLANT SYSTEMS WITH A PURGE VALVE

Follow this procedure for late model 2004 and 2004/06 Pony Packs. These units have a stainless steel coolant tube between the Kubota thermostat and the heat exchanger inlet. There is a Schrader valve brazed to the side of the tube specifically for bleeding the air from the coolant system.



Engine coolant under pressure may be extremely hot and can cause severe burns. Never press the Schrader valve with your fingers. Always use a tool from the side to press the valve stem. Keep hands and fingers away from the direct line of spray that results when the valve is pressed.

To bleed the air, simply remove the cap and use a long screwdriver or similar tool to press and hold the Schrader valve stem in until a steady stream of coolant squirts out. Be sure to hold your hands off to the side to prevent contact with the hot coolant or steam.



Use a screwdriver to bleed the air out of the Pony Pack coolant system.

FUEL SHUTDOWN

At the time of this writing, the Fuel LED is not programmed in the module to be operational. If the unit shuts down for lack of fuel, most likely the OIL LED will illuminate. If the OIL LED comes on, first check the oil level. If the oil level is correct, then the likely problem is air in the fuel system. Air in the sediment bowl is a sure indication of air in the fuel system.

PURGE THE AIR FROM THE FUEL SYSTEM

Air in the fuel system is the most likely cause for a fuel shutdown. See *Purge the Air from the Fuel*

System on page 8 of this manual in the *Maintenance* section.

INSPECT THE PUMP

If you do not hear the electric fuel pump humming, it may be the problem. Check the single wire harness connector between the electric fuel pump and the unit harness.

CHECK FUSES

Check the Ignition Circuit fuse: F9.

INSPECT HOSES AND FUEL FILTER

If the electric fuel pump is operating but no fuel is coming out, a blockage in the Pony Pack fuel supply hose or a clogged in-line fuel filter (behind the unit) is the likely cause.

If the unit repeatedly shuts down for fuel due to air in the system, a loose clamp, cracked fuel hose, or cracked in-line fuel filter is most likely the cause. Inspect all fuel hoses from the source to the injector. Look for loose clamps, cracks, or leaking fuel.

NOTE: Depending on the Pony Pack fuel plumbing arrangement, a low fuel level in the tank may introduce air into the fuel system.

FUEL SOLENOID CHECK

Follow the steps for purging the air from the fuel system. Fuel should spray from around screw number 3 at the injector pump. No fuel means the fuel solenoid is not opening.



Fuel solenoid.

Tapping on the solenoid may dislodge whatever is holding it closed. If this does not work, replace the solenoid.

OIL SHUTDOWN

OIL fault indicator LED is on.

CHECK THE ENGINE OIL LEVEL

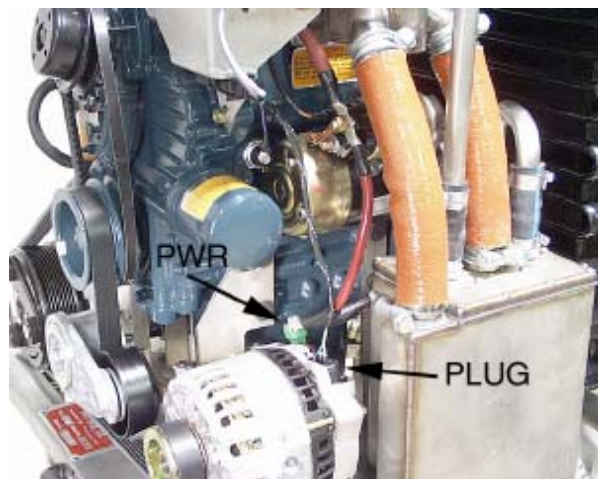
The Pony Pack holds 2-1/3 quarts of oil (including filter). Pull the dipstick and check the oil level. If the oil level is low, add oil to the proper level and restart the unit. If it continues to shut down, have a qualified mechanic determine the problem and repair the unit.

ALTERNATOR SHUTDOWN

ALT fault indicator LED is on.

CHECK THE ALTERNATOR CONNECTOR

Make sure the harness connector is seated all the way into the alternator connector. The harness connector has three wire locations but only two are used. A cavity plug is installed in the center location.



Unit harness, Power, and Ground connections at the alternator

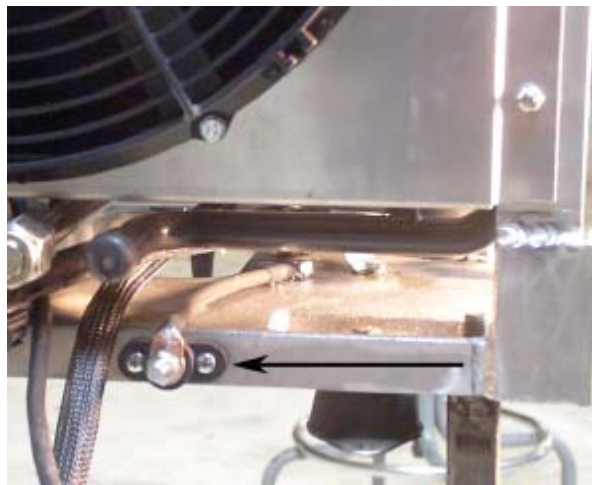
INSPECT THE MAIN POWER AND GROUND CABLES

The main power lead from the truck is a 2 gauge cable. A 4 gauge cable connects the alternator and starter power studs. A black ground cable is connected between the load center and a bolt location in the bell housing. Another black ground cable runs between the bell housing and ground post at the back of the Pony Pack. Make sure all power and ground cables are secure, not

corroded, and adequately crimped into their end lugs. Make sure the nuts and fasteners that hold them in place are tight. Make sure the cable connections at the batteries are secure as well.



Cable connections at the stud on top of the alternator.



Ground stud at the rear of the Pony Pack: Attach the truck battery ground here

SMOKE IN THE EXHAUST ENGINE RUNNING ROUGH

WHAT IS YOUR ELEVATION?

The Kubota engine generally runs a little rougher and smokes more at elevations above 8,000 feet. Pony Packs are manufactured in Albuquerque, New Mexico at 5000 feet. Pony Packs leave the factory with very little if any visible exhaust.

Observe your unit's performance at different elevations to determine if the symptom is due to altitude. Let the unit run for at least 15 minutes so you know it is warm.

CHECK THE AIR FILTER

A dirty air filter is the first and most common cause of smoking and rough engine operation. Clean or replace the air filter.

UNIT KEEPS RUNNING

If the unit does not shut down or diesels and coughs before finally shutting down, either the return check valve is allowing fuel to flow even after the fuel solenoid is closed or the fuel solenoid is stuck open.

TEST THE CHECK VALVE

With the unit running (or dieseling) and the ignition switch off, use a pair of needle nose pliers to squeeze the hose between the number one injector and the fuel check valve. If squeezing the hose shuts the unit down instantly, replace the check valve.



Squeeze the hose between the fuel return check valve and the injector pump

TEST THE FUEL SOLENOID

With the unit running (or dieseling) and the ignition switch off, disconnect one of the fuel solenoid wires from the unit harness. If the unit continues to run, the solenoid is stuck open. Try tapping on the solenoid to dislodge whatever is keeping it open. If this does not work, replace the fuel solenoid.



Unplug one of the fuel solenoid wires from the unit harness.

STARTER ENGAGES, UNIT WON'T START

CHECK FUSES

Start: F5

Glow: F3

PPI IGN: F9

CHECK THE AIR FILTER

An extremely dirty air filter can prevent the engine from starting.

CHECK THE FUEL SUPPLY

Follow the instructions in this section under *Fuel Shutdown*.

INSPECT THE MAIN POWER AND GROUND CABLES

Inspect all the power and ground cables as mentioned in the *Alternator Shutdown* section.

A/C SYSTEM OVERVIEW

Most air conditioning problems are best left to qualified mechanics. If the shop does not have a *Pony Pack Service Manual*, they should call Pony Pack. With that in mind, here is a brief Pony Pack A/C system overview.

SWITCH 4

Wiring a Pony Pack is straightforward except for the lower right switch on the control panel. Pony Pack refers to this as "switch four." This switch is wired uniquely for each brand and model of truck.

The truck-specific switch four wiring schematic is included at the back of this manual if it was known at the time of purchase.

In simple terms, switch four determines which compressor; truck (MAIN) or Pony Pack (AUX) cycles the refrigerant through the truck/Pony Pack air conditioning system.

FAN

The Pony Pack fan pulls air through the condenser and radiator. Keeping the radiator and condenser clean maximizes the Pony Pack's A/C efficiency. Of course if the fan is not coming on, the Pony Pack will not cool.

PRESSURE SWITCHES

Like most mobile A/C systems, the Pony Pack uses pressure switches to control the compressor clutch engagement and fan. The high pressure, fan, and low pressure switches are shown in the following photo. A unit wiring schematic, included with this manual, shows how the pressure switches are wired into the system. Additionally, it shows the pressure settings for each switch



Pressure switches.

TEST THE FAN SWITCH CIRCUIT

To test the fan switch circuit, unplug the fan switch from the harness and use the reset wire to set the electronics into service mode. Use a paper clip or wire to cross the fan switch plug. The fan should come on for 15 seconds each time the reset wire is grounded.



Crossing the fan switch plug in the harness to test the fan switch circuit.

REFRIGERANT

Installing a Pony Pack increases the refrigerant capacity of the truck's A/C system. The Pony Pack condenser, hoses, and compressor all add volume. Adding a Pony Pack increases the overall system capacity by between 1/2 and 3/4 lbs. Most trucks have a sticker on the firewall, doorjamb, or condenser that lists the manufacturer's recommended refrigerant charge.

The A/C system with the larger condenser will likely cool the truck better. The Pony Pack has the larger condenser.



Hi and lo pressure service ports for hooking a set of refrigerant gauges to the Pony Pack.

CHECK FUSES

Fan: F1, F7

A/C Clutch: F2

Parts and Service

The logical first place to go for parts and service is your original Pony Pack installer. For the names of good service shops around the country, contact Pony Pack directly or visit www.ponypack.com.

Replacement filter and belt information, including cross-reference data, is listed on the inside cover of this manual.

For parts, call or email Pony Pack:

- Phone: 505-243-1382
- Email: sales@ponypack.com

RECOMMENDED SPARE PARTS

Below is a list of recommended spare parts. It consists mostly of filters and service items.

- Main drive belt
- Water pump belt
- Oil filters
- Oil (whatever you use in the truck is fine)
- Drop-in fuel filter
- In-line fuel filter
- Spare washable air filter and cleaning kit

PARTS LIST

The next three pages list the major Pony Pack assembly items. It does not include minor parts such as fasteners. If you cannot find a specific item on the list, contact Pony Pack.

FASTENERS

Pony Pack uses metric grade 10.9 fasteners to attach the engine, compressor, and alternator to the base plate. If you remove any of these items, replace them with new identical fasteners.



Using ungraded fasteners may result in damage, failure, or injury, etc.

Part Number	Description	Vendor	Vendor Number
-------------	-------------	--------	---------------

General			
2004-0102-AS	Base plate Assembly	Pony Pack, Inc.	
2004-0103-0	Frame Stiffener	Pony Pack, Inc.	
2004-0142-0	Aluminum Silencer	Pony Pack, Inc.	
2004-0151-P	Mounting Frame Painted	Pony Pack, Inc.	
2004-0152-0	Unit Mounts	Karmann Rubber, Co.	K6950-32
2004-0205-0	Cond/Rad Bracket	Pony Pack, Inc.	
2004-0600-0	CS Module Bracket	Pony Pack, Inc.	
2004-0601-0	Load Center Bracket	Pony Pack, Inc.	
2004-0602-0	Spacer Bracket	Pony Pack, Inc.	
2004-0603-0	Fuel Filter Bracket	Pony Pack, Inc.	
2004-0604-0	Tensioner Bracket	Pony Pack, Inc.	
2004-0606-0	HE Motor Bracket	Pony Pack, Inc.	
2004-0615-0	Offset Engine Mount	Pony Pack, Inc.	

Kubota			
2004-0100-AS	Z482 Engine w/Accessories	Kubota Engine America	
2004-0115-0	Oil Filter	Kubota Engine America	70000-15241
15451-96670	Drain Plug Gasket	Kubota Engine America	15451-96670
15707-33750	Drain Plug	Kubota Engine America	15707-33750
15841-39010	Switch, Oil Shut down	Kubota Engine America	15841-39010
16001-53000	Z482 Injector Nozzle	Kubota Engine America	16001-53000
19837-63010	.8 KW Starter	Kubota Engine America	19837-63010
16851-65512	Z482 Glow Plug	Kubota Engine America	16851-65512

Drive-train			
2004-0107-0	76 mm Flat Idler Pulley	Gates Rubber Co.	38006
2004-0108-0	Idler Tensioner Assembly	Gates Rubber Co.	38137
2004-0110-0	Drive Belt	Gates Rubber Co.	K060465
2004-0114-0	Water Pump Belt	Gates Rubber Co.	7250

Fuel System			
2004-0133-0	Air Intake Hose	Pony Pack, Inc.	
2004-0420-AS	Electric Fuel Pump Ass'y	Kubota Engine America	17476-52032
2004-0503-0	12 VDC NC Solenoid Valve Raw	Pony Pack, Inc.	
2004-0504-AS	Brass Check Valve Ass'y	Pony Pack, Inc.	
2004-0506-AS	Fuel-Filter Assembly Modified	Pony Pack, Inc.	
2004-0508-0	In-Line Fuel Filter	Kubota Engine America	12581-43012
2004-0515-0	Washable Air Filter	Pony Pack, Inc.	
2004-0516-0	Sleeve for Washable Filter	Pony Pack, Inc.	
2004-0517-0	Air Filter Cleaning Kit	Pony Pack, Inc.	
15231-43560	Drop-In Fuel Filter	Kubota Engine America	15231-43560

Coolant System			
2004-0120	Radiator to Water Pump Hose	Pony Pack, Inc.	
2004-0124-0	Thermostat Elbow Hose	Pony Pack, Inc.	
2004-0125-0	3/4" Heater Tube, SS, 1 Bend	Pony Pack, Inc.	
2004-0128-0	3/4" Heater Tube, SS, 3 Bends	Pony Pack, Inc.	
2004-0258-0	Radiator	Pony Pack, Inc.	
15531-73010	Thermostat	Kubota Engine America	15531-73010
15676-73270	Thermostat Gasket	Kubota Engine America	15676-73270
15841-72870	#3 Water Pipe (400&482)	Kubota Engine America	15841-72870

Part Number	Description	Vendor	Vendor Number
15841-73432	Water Pump Gasket	Kubota Engine America	15841-73432
19069-73032	Z482 Water Pump	Kubota Engine America	19069-73032

Air Conditioning

2004-0200-0	Ford Compressor	Ford	F7LZ-19703-AA
2004-0204-0	Aluminum Fan Shroud	Pony Pack, Inc.	
2004-0205-0	Cond/Rad Bracket	Pony Pack, Inc.	
2004-0207-0	AC Accumulator Assembly-Ford	Pony Pack, Inc.	
2004-0208-0	AC Hose Assembly-Ford	Pony Pack, Inc.	
2004-0213-0	Tee, Suction, 10 MO, FO, MO	ATCO	6263
2004-0214-0	2004 Block Assembly	Pony Pack, Inc.	
2004-0215-0	2004 Discharge Hose	Pony Pack, Inc.	
2004-0216-0	2004 Muffler Can Assembly	Pony Pack, Inc.	
2004-0217-0	2004 Suction Hose	Pony Pack, Inc.	
2004-0218-0	2004 Suction Extension Tube	Pony Pack, Inc.	
2004-0245-0	Tee, Suction 12 FO, 10 MO	ATCO	3-0074
2004-0257-0	Condenser	Pony Pack, Inc.	
AIRC-FC03	AC Pressure Relief Valve	Ford	F65H-19D644-A1A
ELEC LP 1	Low Pressure Cut-Out Switch-BLK	Pony Pack, Inc.	
ELEC HP 1	High Pressure Cut-Out Switch-GRA	Pony Pack, Inc.	
ELEC FAN	Fan Switch	Pony Pack, Inc.	
Call	Shunt Valve Assembly	Pony Pack, Inc.	

Heat Exchanger and Exhaust

2004-HE01	HE Box w/Lid	Pony Pack, Inc.	
2004-HE02	HE Manifold	Pony Pack, Inc.	
2004-HE03	1-1/4 ID Silicone Coated Fiberglass	Pony Pack, Inc.	
2004-0300-G	HE Flange Gasket	Pony Pack, Inc.	
2004-0309-0	Single Exhaust Manifold Gasket	Pony Pack, Inc.	
2004-0330-0	Water Bundle w/Brass Nipples	Pony Pack, Inc.	
2004-EXH01	Automotive Muffler	Arvin Meritor	BT037830
2004-EXH03	5/16 x 1-1/2 in Std. Duty Exhaust Clamp	NAPA	733-5325
2004-EXH02	Universal Exhaust Hanger	NAPA	732-1009
2004-R36	Muffler Clamp	Pony Pack, Inc.	
HOS-SS09-01	1-1/8 in ID SS Interlocked Hose-7.25" long	Pony Pack, Inc.	
HOS-SS09-02	1-1/8 in ID SS Interlocked Hose-8.25" long	Pony Pack, Inc.	
HOS-SS12-01	1-1/2 in ID SS Interlocked Hose-4 ft long	Pony Pack, Inc.	

2004 Electrical

2004-0260-0	16 in Straight Blade Fan	SPAL Mfg. Co.	30102046
2004-0400-0	Ford Alternator	Ford Service	3C3Z-10346-EARM
2004-0401-0	Load Center	Pony Pack, Inc.	
2004-0404-0	Control Module, CS3V	Pony Pack, Inc.	
2004-0406-AS	Control Panel Assembly	Pony Pack, Inc.	
2004-0407-0	Single Pole O-None-Off Switch	Carlingswitch	2FA53-73/Tabs
2004-0409-0	Double Pole On-None-On Switch	Carlingswitch	2GL51-73/Tabs
2004-0410-AS	Green LED Assembly	Pony Pack, Inc.	
2004-0411-0	40 Amp Relay	Aromat	CB1-12V
2004-0412-0	Single Pole Momentary Off-On	Carlingswitch	6FA53-73/Tabs
2004-0419-AS	Cab Heat Pump	Pony Pack, Inc.	
2004-0421-0	Coolant Fluid Thermistor	AC Delco	213-310
2004-0430-AS	HE Linear Actuator	Pony Pack, Inc.	
2004-0431-0	Actuator Relay Harness	Pony Pack, Inc.	

Part Number	Description	Vendor	Vendor Number
2004-0432-0	Actuator Spring Yoke	Pony Pack, Inc.	
2004-0445-0	Alternator-Starter Cable	Pony Pack, Inc.	
2004-0446-0	Base plate-Ground Cable	Pony Pack, Inc.	
2004-0447-0	Alternator-Power Cable	Pony Pack, Inc.	
2004-0461-AS	2004 Module-LC Harness	Pony Pack, Inc.	
2004-0462-AS	2004 LC-Power Harness	Pony Pack, Inc.	
2004-0463-AS	2004 LC-Distribution Harness	Pony Pack, Inc.	
2004-0464-AS	2004 Module-Unit Harness	Pony Pack, Inc.	
2004-0465-AS	2004 Module-Cab Harness	Pony Pack, Inc.	
2004-0466-AS	2004 LC-Fan Harness	Pony Pack, Inc.	
2004-0477-AS	Noise Filter Assembly	Pony Pack, Inc.	
ELEC-LPHP	Pressure Switch Linkup Harness	Pony Pack, Inc.	

2004/06 Electrical

		Pony Pack, Inc.	
2006-0443-AS	LC Ground-Engine Cable	Pony Pack, Inc.	
2006-0444-AS	LC-Power Cable	Pony Pack, Inc.	
2006-0445-AS	Alternator-Starter Cable	Pony Pack, Inc.	
2006-0446-AS	Engine-Ground Cable	Pony Pack, Inc.	
2006-0447-AS	Alternator-Power Cable	Pony Pack, Inc.	
2006-0460-AS	2006 Cab Harness	Pony Pack, Inc.	
2006-0461-AS	2006 Module-LC Harness	Pony Pack, Inc.	
2006-0463-AS	2006 LC-Distribution Harness	Pony Pack, Inc.	
2006-0464-AS	2006 Module-Unit Harness	Pony Pack, Inc.	
2006-0465-AS	2006 Module-Cab Harness	Pony Pack, Inc.	
2006-0466-AS	2006 LC-Fan-Ignition Harness	Pony Pack, Inc.	

Unit Cover

2004-0701-AS	Unit Cover Assembly	Pony Pack, Inc.	
2004-0704-0	WARNING Sticker	Pony Pack, Inc.	
2004-0705-0	NO STEP Sticker	Pony Pack, Inc.	
2004-0706-0	Logo Plate	Pony Pack, Inc.	
2004-0710-0	Cover Handle	Pony Pack, Inc.	
2004-0780-A	Rubber Latch Handle Ass'y	Pony Pack, Inc.	