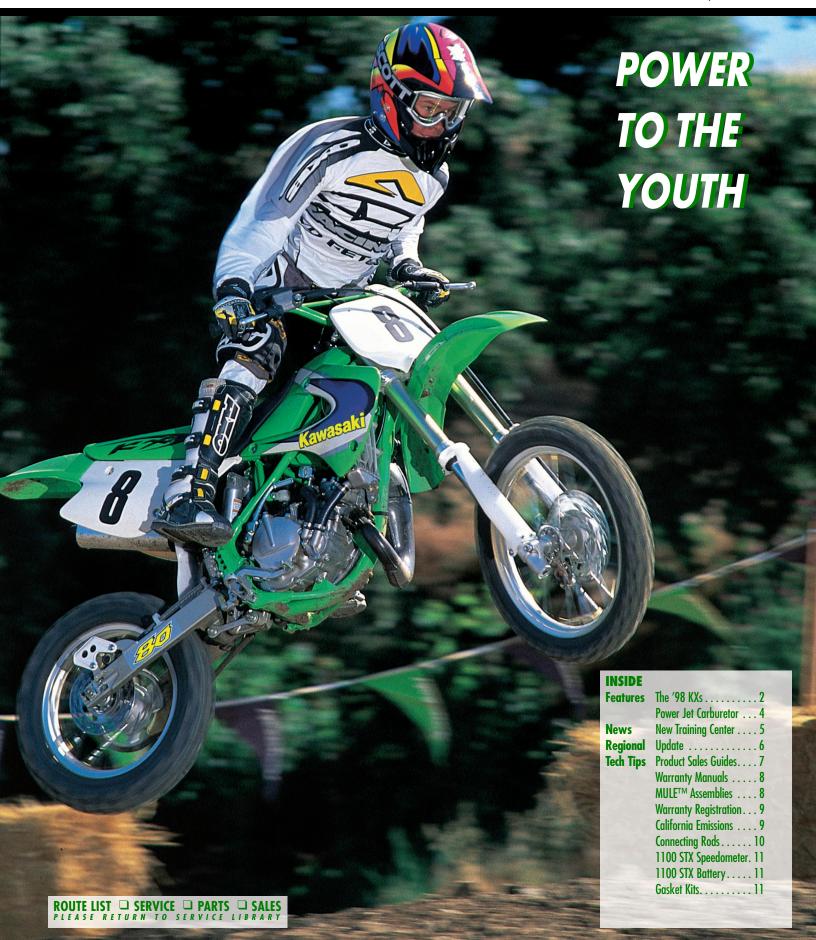
# K-TECH NEWS

**SUMMER 1997** 

THE KAWASAKI TECHNICAL MAGAZINE

VOL. 10, NO. 2



## The '98 KXs: Power to the Youth

by John Griffin Instructional Designer/Instructor

The 1998 Kawasaki KX lineup features dramatic improvements nearly across the board. The KX80 and KX100 sport drastic engine and chassis changes that improve performance in all aspects. The KX125 and KX250 feature engine and chassis changes that Emig and Carmichael used to win the 1997 125cc, 250cc,



The KX100 and KX80 are basically new from the ground up.

National and 250cc SX championships. The KX60 and KX500 feature factory graphics so they look as fast as they really are.

## '98 KX80 and KX100 Engine

For the first time, KIPS valves control the exhaust port height. The KX80 compression ratio varies from 10.3:1 low speed, to

9.4:1 high speed, instead of last year's fixed ratio of 9.4:1. The KX100 varies from 9.6:1 to 8.8:1, where last year's was fixed at 9.3:1. New cylinder heads offer different volume, shape, and a more polished finish for more efficient combustion and less carbon build-up.

These changes give both bikes more horse-power and torque with a much broader power-band. The bikes are easier to ride for all levels of riders with more low-end and mid-range power to match last year's potent top-end power. Riders can concentrate on attacking berms and doubles instead of worrying about falling off the pipe.

The clutch features larger plates to handle the extra power, a new leverage ratio for lighter clutch pull, and a new design for quick servicing. The clutch plates are 9mm

KIPS valves on the KX80 and KX100 provide a wider spread of power to help riders of all skill levels.

#### K-TECH News

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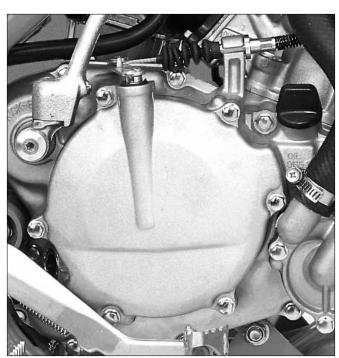
larger in diameter (110mm to 119mm), and the hub rides on roller bearings instead of a bushing for better action and durability. A separate clutch cover allows access to the plates without removing the water pump. The clutch is now a pull-type releasing design like the bigger KXs, so you can remove the plates without removing the basket.

The clutch lever and perch come directly from the KX125/250.

#### Chassis

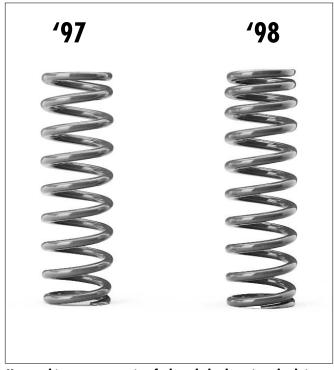
Kawasaki worked from the wheels up, creating a more rigid and functional chassis. New 36mm KYB upside-down cartridge forks have large 49.5mm aluminum upper tubes and 18-way compression damping. The swingarms have bigger beams (50x22mm to 60x24mm) and incorporate cast aluminum drive chain adjuster sections just like the bigger KXs. The rear shock damping rates are revised to work with these changes.

The new chassis rigidity keeps the rider on course through the roughest terrain. Rigidity enables the bike to go where you point it and get the power to the ground by forcing all impacts to the suspension for absorption. Even the footpegs and wheels are beefed up. The footpegs are now cast steel and have larger frame brackets and pivots. Both wheels feature heavier gauge spokes, the rear axle is larger in diam-



A separate clutch cover provides instant access to a larger clutch for '98. The clutch is now a pull-type like the bigger KXs.

# New for '98



## Kawasaki puts progressive fork and shock springs back into the mainstream.

eter, and the rear hub even has two bearings on the drive side.

The rear brakes are improved with a forged aluminum pedal (instead of steel) with two seals at the pivot for smooth, controlled action. A new rear brake disc and pads offer great stopping power with less rusting. A new front brake hose gives the brake a solid, precise feel.

Kawasaki finished off the bikes with detail changes to make daily life easier. The airbox has more room for your hands. A new base plate and retaining bolt make installing the air filter a breeze. The airbox cover is now fastened with machine screws instead of self-tapping screws. The front number plate is held on with one bolt instead of three. A KX125/250 fuel petcock is easier to turn on and off. New seals and collars in the Uni-Trak help keep the dirt out.

The KX80 and KX100 are about as close to miniature works bikes as they come.

#### '98 KX125 Engine

Kawasaki went all out on this motor. The cylinder features two exhaust ports instead of four and a new one-valve

Continued on page 12

## Power Jet Carburetor System

by John Griffin
Instructional Designer/
Instructor

The 1998 KX125 and KX250 use a new Keihin Power Jet system. The digital igniter activates an electric solenoid, closing a new fuel passageway in the carburetor above 9600rpm (KX125) and

8100rpm (KX250). The solenoid reopens the passageway as the revs drop below 9400rpm and 7900rpm, respectively. Approximately 10% less fuel gets to the engine above the prescribed RPMs compared to a normal carburetor. Peak power is slightly

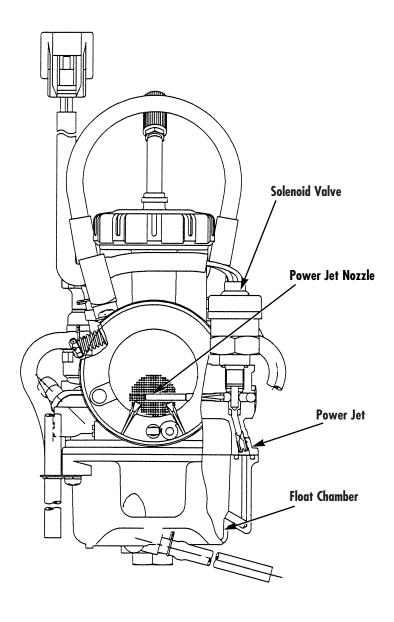
increased but the big benefit is pushing the power curve an extra 750- to 1000rpm before tapering off.

A coil on the stator (similar to a lighting coil) sends power through a voltage regulator to the solenoid. The igniter provides a ground for the solenoid at the proper rpm. The igniter is now located in the airbox to further separate it from the ignition coil. Shifter cart dealers take note to separate these two components by at least a foot or more. Resistor spark plugs are mandatory.

**Tuning:** At rpms below the activation point, the fuel flow of the power jet and main jet combined is about equal to the flow of just the main jet in normal carburetors. For example, the '98 KX250 uses a #158 main jet and #55 power jet, where the '97 KX250 used a #165 main jet. Only #50 and #55 power jets are available from Kawasaki, but other sources have optional size jets.

I believe a desert racer could install a larger main jet and smaller power jet to retain crisp low speed response while keeping it rich enough on top to keep the engine cool. Since the power jet nozzle flow is not affected by the needle, it may prevent engine seizures that occur with the dramatic fuel drop from the needle reentering the nozzle as the rider closes the throttle.

Attend our **Team Green '98** training class for more instructions on this intricate system.



## New Kawasaki Training Center in Latin America

by Rob Taylor Instructional Designer/Instructor, Special Tool Coordinator

June 1997 was an important month for Kawasaki Motors Corp., U.S.A. It marked the opening of the first KMC training center outside the United States. The training center is located in San Jose, Costa Rica, and is a first for the motorcycle industry in Latin America. We held a two-week training class covering Kawasaki motorcycles, ATVs, Jet Ski watercraft and Mules. Twenty-two students from Panama, Mexico, Columbia, Costa Rica, El Salvador, Paraguay, Puerto Rico, Argentina, Chile, Guatemala and Nicaragua attended.

From the beginning, it was clear that friendships were forming between the students. They continuously helped each other, went to meals together,



and supported each other when needed. They took great pride in representing their countries at the new training center.

Special thanks to the following organizations who helped make this vital program possible: Purdy Motor S.A., the Kawasaki distributor in Costa Rica; Motorcycle Mechanics Institute in Orlando, Fla.; and the Ken Cook Company in Mil-

Trained technicians play an important part in the success of a dealership. All departments rely on the ability of technicians to service new product or sell parts by selling service to customers. When the service department is not up to par, the whole dealership is off the mark. Fortunately, many technicians can stay upto-date by attending factory training schools with dealership support. Imagine if a technician had to travel thousands of miles to receive factory training, or any training at all.

waukee, Wis. Purdy Motor generously provided a building, work benches, desks, and everything necessary to set up a classroom and shop. MMI provided an



experienced Spanishspeaking instructor, and the Ken Cook Company translated lesson plans and handouts into Spanish.

KMC is dedicated to service training in Latin America, as well as many other support systems now in development. I look forward to the next training class and hope all the original students will attend, as well as new technicians.





PISCATAWAY/ GRAND RAPIDS

#### **Electronic Specialties Inc.**

Dealers often ask me, where can I get my electrical test equipment repaired? The cost of new equipment is continuously rising, and many dealers have broken multimeters and CDI test equipment. In some cases, repairs are cheaper than replacement.

If you have a bad load coil unit in your Kawasaki CDI

tester, which is needed to check CDI box output to the ignition coil, there is a way to replace it. You can make one yourself by using a one ohm, eight watt resistor with an alligator clip attached to the end of the resistor. You should be able to buy the parts at an electronics store.

The other source for repairs of all types of electronic equipment is Electronic Specialties Inc.

They repair all brands of multimeters, emission testers, gauges, and CDI test equipment. They have also developed a hand-held tachometer for two- and four-stroke engines. It can be used wireless, with an inductive pickup, or with a capacitive clip lead.

So, dust off your test equipment and have a busy and profitable summer. I look forward to talking with you either on the Hotline or at one of our training classes, which resume in the fall.

Fred DeHart 201 Circle Drive N. #107 Piscataway, NJ 08854 (908) 469-1221

**Contact Electronic Specialties at:** 

Phone: 815-675-1812 Fax: 815-675-2905

2449 Pierce Drive Spring Grove, IL 60081



ATLANTA/DALLAS

#### **Very Special Tools**

I would like to share my version of two very special watercraft tools. I define very special tools as those that are not available anywhere, the ones we fabricate.

The first tool is used to remove and install the 27mm nut on steering cables. If you have ever tried to remove this nut, you will appreciate this tool. A similar tool was shown in K-Tech about 3 years ago, but there is not enough clearance to use that on the newer watercraft.

I weld a new 27mm socket to an 18" length of 1" OD steel tubing (18" is more than needed, but was convenient since the home improvement store sold the tubing in 36" lengths). Next, I weld an old 3/8 drive socket on the other end. To use the tool, remove the

cable end, then slide the 27mm socket over the cable up to the nut. You can use a ratchet to quickly remove the cable nut and a torque wrench to properly install the nut.

The second very special tool is used with a hoist or lift to remove an engine from the hull. I learned removing my first JH900 engine, that it was too heavy, with too little clearance exiting the engine compartment for one person.

I make a lift ring using an eye bolt and a spark plug. I cut off the threaded part of a 1/2'' shank eye bolt and grind off the plating where it will be welded. I chip out the porcelain from an old 3/4'' reach spark plug and weld the eye bolt as shown. To use this tool, I install the lift ring in the center cylinder and use a hoist to lift the engine easily, by





myself. Some technicians combine lift rings in the #1 and #3 cylinders to help keep the engine flat.

Lifting the engine by one spark plug hole will not damage the cylinder head as long as all the threads of the tool are used and only the engine is lifted. **Do not** lift the entire watercraft with this lift ring. The engine weighs less than 200 lb., while the pressure against the spark plug when running varies between 400 and 600 lb. So there is a good margin of safety.

Walter Rainwater 6110 Boat Rock Blvd. S.W. Atlanta, GA 30378 (404) 349-2000



**IRVINE/SEATTLE** 

#### **Special Tools Part Numbers**

With the training season over, I would like to thank all of you who attended the training classes in the West region. I met many new technicians as well as the regulars. The first season for the new training classes was quite successful, especially the Master level courses. We are busy adding new information and materials to the curriculum for next year's training season as well as some new specialty courses at a new training location. I will let you know more on this later in the season in a training bulletin. Be sure to sign up early as many classes were full last year.

Now some current news on special tools. As many of you found out, the part number for the flywheel holder on the 900 and 1100 Jet Ski® watercraft has changed. The old part

number T57001-1223 has changed to 57001-1403. Unfortunately, the name and purpose of the tool has changed from flywheel holder for the JH and JT 900/1100 to flywheel puller for the KVF400 Prairie without any notice. Yes, this tool is still the same and works on both the Jet Ski and Prairie's flywheel. The tools required to assemble the Prairie's cases came from several models. One of them, P/N 57001-1092 (steering stem bearing driver adapter) was used on late 1970's KZ-style motorcycles and was dropped when these models were discontinued. We reactivated the tool to include it as part of the crankcase assembly tool for the Prairie. This took some time but is now available.◆

Robert Taylor 9950 Jeronimo Road Irvine, CA 92618 (714) 770-0400

## Keeping Current

## 1998 Product Sales Guides Available

By Ray St. John Supervisor, Technical Writing

By now, you have received the first of the 1998 Product Sales Guides. If you carry motorcycles as one of your Kawasaki product lines, you've probably noticed the Street Motorcycle Product Sales Guide has a "black-and-white" cover (with a little yellow title box). The All-Terrain Vehicle, Off-Road Motorcycle, and Portable Generator books have



color covers.

So, why isn't there a color cover on the Street Motorcycle Sales Guide? The "black- and-white" cover means there is more to come in the street motorcycle line-up. You'll see those models in a new Product Sales Guide at the Dealer Meeting in October.

The new book will have a full-color cover and will include all the new products for 1998. The 1998 Watercraft and Utility Vehicle Product Sales Guides will also be presented at the Dealer Meeting

If you'd like to order more copies of any 1998 Product Sales Guide, just give Kawasaki Tech Services a call at 714/770-0400, extension 2463 and ask for Kiki. She'll sell you the available books for a nominal charge, based on KMC's printing costs. No shipping. No handling. But there is sales tax for most states.◆

## Kawasaki Warranty Flat Rate Manuals Now Available on Paper

by Dave Corey Writer/Producer

Here is some good news for those of you who can't always carry a microfiche viewer around in your pocket: Warranty Flat Rate Manuals are now available on paper for all Kawasaki product lines. The new manuals are printed as 8 1/2" x 11" paper booklets and are available from parts inventory.

With the new print-ondemand technologies available today, it is costeffective for us to print in small quantities. This means that we will be reprinting these manuals several times a year and the flat rate information will be updated each time. Because of this, when you order a manual, it may not be as current as the microfiche but it will not be really out of date either. Just remember that the flat rate microfiches are updated four times a year and they will have the most current flat rate information on them.



Part Number	<u>Description</u>	Dlr. Cost*	Pkg. Qty.	
99960-0077-01	Motorcycle Warranty Flat Rate Manual	\$20.00	1	
99960-0078-01	01 Jet Ski Watercraft and Marine Product Warranty Flat Rate Manual		1	
99960-0079-01	ATV Warranty Flat Rate Manual	\$5.00	1	
99960-0034-04	Utility Vehicle Warranty Flat Rate Manual	\$6.57	1	
99960-0056-01	Portable Generator Warranty Flat Rate Manual	\$2.99	1	
* See the Parts Retail Price Guide for latest prices.				

## MULE™ Engine and Gear Case Assemblies



by Jeff Hoeppner Parts Data Coordinator

Due to the unique demands of utility vehicle customers, we now offer major engine and drive train assemblies for MULEs. Although MULE utility vehicles have proven extremely durable, in an abusive commercial environment where they are used for long hours,

year round, failures are inevitable. In these cases, it is far more efficient simply to have a spare engine or gear case handy to replace rather than having the vehicle down while internal repairs are made. The assembly needing repair can then be checked and repaired thoroughly while still having the ability to use the MULE.

	<u>KAF300-B/C</u>	KAF620-A/B	<u>KAF620-C</u>
ENGINE ASSY.	70290-2176-LF	70620-2007-EG	70620-2007-EG
RR. GEAR CASE	N/A	13101-1196	13101-1194
FR. GEAR CASE	N/A	N/A	13101-1220

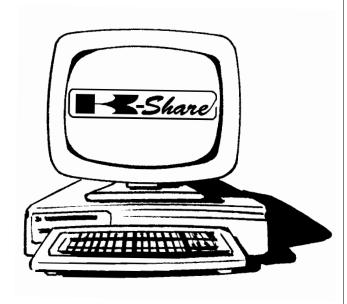
# Making Warranty Registration a Priority

by Don Church Manager, Service Training and Communications

During the busy season, it is easy to let "paperwork" slide. But please, don't put off warranty registrations.
Entering accurate customer information through K-Share is easy. It's important to register each Kawasaki within three days of retail sale for several reasons:

- \* Eligible customers get Kawasaki rebate checks ASAP (so they can buy accessories).
- \* You get credit for any salesperson incentives or sales promotions.
- \* If Kawasaki initiates a repair campaign, we must notify customers immediately.
- \* You may not be able to process warranty requests because the unit is not registered.

Accuracy of the customer information you provide is critical. Here are tips based on the most common errors:



- \* Use the customer's primary residence where they receive mail. Some have a few residences.
- \* If the customer is not the addressee at the address, use "C/O" (in care of) after the addressee's name.
- \* If the customer has a P.O. Box, it's likely their mail is not deliverable to their physical address. Register them using the P.O. Box number. Note: If it's a P.O. Box enter P.O. Box not just Box. There is a difference; Box is sometimes used with a Route.
- \* If the customer gives you a P.O. Box number and street address, put the P.O. Box before the street address.
- \* Rt., CR, or General
  Delivery are often not
  good enough by themselves; get an address
  number or P.O. Box
  number if possible.
  Here are a few more

details to watch out for:

- \* Verify the city and zip code match. Use the fivedigit zip and four-digit extension if possible.
- \* Don't forget suite or apartment numbers.
- \* Add street address directions—E., S.W., etc.
- \* Spell names and addresses accurately.
- \* Split words that are hyphenated.
- \* Ask your customer if they are in the process of moving.
- \* Ask your customer if the address they provided is their mailing address.

By following these tips, the customer information you provide Kawasaki will be processed quickly for everyone's benefit. Thanks for "lending us an ear."

### How Do California Emissions Affect Me?

by John Griffin Instructional Designer/ Instructor

You may not live anywhere close to California, but you need to know about the emission equipment Kawasaki uses there. Why? California (CA) models can be sold in the other 49 states, but 49 state models cannot be sold there. This means that Kawasaki, like most manufacturers, build more CA models than we plan to sell. It is common for dealers in New York or Florida to be selling CA model motorcycles.

For 1998, Kawasaki now offers CA model ATVs and KLX300Rs. The only changes to these models is the routing of crankcase and valve cover vapors into the airbox. The carburetion is also slightly altered and now uses emission standard jets. These jets are precision manufactured and anodized for long wear.

Kawasaki sells all KX models as closed course competition units in California. The '98 KDX200 and KDX220R, like the KE100, will not be sold in California. All 1998 MULEs™ sold in the U.S. meet California emission standards.◆

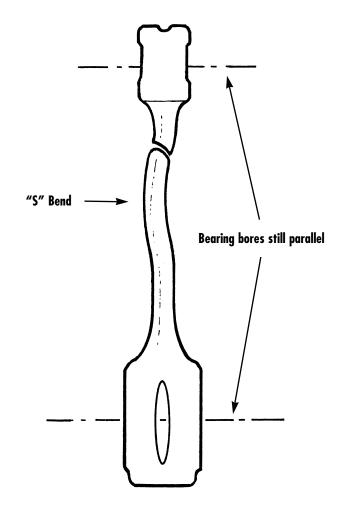
# **Bent/Broken Connecting Rods**

by Gregg Thompson Product Support Supervisor

On the Hotline, all of us have gotten calls from dealers who had disassembled an engine because of poor running or abnormal vibration and found a bent connecting rod. Often the dealer technician has no idea what caused the rod to bend. In the case of two-stroke engines, the technician will sometimes take a guess that a ring caught a port and bent the rod. I don't think so.

For the rod to bend, the piston has to be stopped just before it reaches TDC. There the crankshaft has way more leverage pushing on the rod than at any other place in the stroke. The ratio of crankshaft rotation to piston travel is very high (lots of crankshaft rotation, very little piston travel).

If you run across a bent connecting rod in an engine you are working on, the chances are it was caused by a hydraulic lock—liquid in the combustion chamber. Theoretically if some large object (such as a valve head in the case of a four-stroke engine) got into the combustion chamber, it could cause a rod to bend. But in fact, even a valve head



can be smashed and jammed into the top of a piston, but a liquid cannot. A liquid (gasoline or water/ coolant) cannot be compressed and it distributes the pressure so evenly across the piston crown that there is no mark of any kind left on the piston. The volume of liquid only needs to be slightly more than the total volume of the combustion chamber. Usually the cause of the event exits the cylinder the first time the exhaust port is

open, leaving no trace of itself.

In the case of our twostroke watercraft engines, the liquid is always water. Water gets in the engine through the intake when the engine compartment gets too full of water. Water can also enter from the exhaust: but in our current watercraft exhaust pipes, cooling water enters the exhaust stream so far from the engine that it is very unlikely any significant volume of water would ever make its way

back to the engine.

Sometimes customers manage to ignore the rodbending event and subsequent vibration and poor running. They continue to ride the watercraft until the rod finally breaks. A bent rod will always break if run long enough. But you can still usually tell if the rod was bent before it broke.

A connecting rod that was bent from a hydraulic lock always ends up with the wrist pin bore still nearly parallel with the axis of the crankshaft. This is because when the rod bends, the piston holds the small end of the rod in its proper position. The resulting "S" bend in the rod is usually still detectable even after the rod has broken. If you hold the two pieces of the broken rod together and the rod is bent but the wrist pin bore is still nearly parallel with the crankshaft, it's a pretty good bet the engine was "hydrauliced" some time prior to the rod breakage.

Damage caused by a hydraulic lock is generally not covered by warranty (no defect); so if you run into one with this problem within its warranty period, you'd better call us and discuss it before making any commitments to the customer.

## 1100 STX Speedometer Errors

by Rob Taylor Instructional Designer/Instructor Special Tool Coordinator

The Hot Line has received calls reporting inaccurate speedometers on the JT1100-A1. Speedometer fluctuations, inaccurate speed indications, and the speedometer dropping back to zero above a particular speed are all indications of this problem. Adding to the confusion is the new digital meter and how to troubleshoot it. Fortunately, the problem is usually the setup of the hull sensor, not the meter.

As with any component attached to the hull, alignment is critical. If the speedometer sensor is mounted so it protrudes below the hull line, or is too high, the speedometer will not operate correctly. The left bottom corner of the sensor body must be even with the bottom surface of the hull. To align the sensor, loosen the bolts attaching the sensor body to the mounting bracket, move the sensor until it is flush with the hull. Be sure to use a non-permanent locking agent on the mounting bolts. Also, remove any debris or iron buildup on the paddle wheel.◆

# F 5 mile/h 85 4 kr E

## Where's the Battery?

Rob Taylor Instructional Designer/Instructor Special Tool Coordinator

Have you ever gone searching for the hour meter's backup battery on the 1100 STX Jet Ski watercraft? Apparently, some technicians have done just that. After hunting for a while (especially in the meter assembly), the battery was

never found. This prompted quite a few calls to the Hot Line. So where is the battery? There is no battery!

The system uses a readwrite memory chip that is located in the meter assembly. The memory chip is continuously updated as the watercraft is operated. If the battery ever goes dead or is disconnected, the chip stores the latest information before power is lost. If the hour meter does not retain the information when the battery is disconnected and then reconnected, it can only be one thing: the memory chip. Unfortunately, the complete meter assembly must be replaced.◆

## **Gasket Kits Are Back**

by Jeff Hoeppner Parts Data Coordinator

Back by popular demand, complete gasket sets are available for selected current models. They're not only convenient, but economical and profitable. A list of applicable models is listed below and we will be adding the illustra-

tions and part numbers to the microfiche as the information becomes available. If the information is not on your microfiche yet, don't panic. Parts lists, illustrations, and applications are available on Parts Bulletin "MC 97-01." ◆

Ousker kirs for Select Mouers				
<u>MODEL</u>	<u>YEAR</u>	KIT PART NO.		
VN1500-D	1996 & UP	99995-1393		
VN800-A	1995 & UP	99995-1394		
VN800-B	1996 & UP	99995-1394		
ZX1100-D	1993 & UP	99995-1396		
ZX1100-E	1995 & UP	99995-1396		
ZX1100-F	1996 & UP	99995-1396		
ZX600-F	1995 & UP	99995-1397		
КХ250-К	1994 & UP	99995-1399		

Gasket Kits for Solect Models

## Power to the Youth

Continued from page 3

KIPS that works like a KX250 center valve. The new KIPS alters port height 6mm, compared to 5mm in '97. The connecting rod is 2mm shorter for better primary compression. The piston is 7 grams lighter (130g to 123g) for quicker response and it has an intake window for more top-end.

Other big news is the addition of the Power Jet Carburetor (see sidebar). The carburetor bore is also 1mm larger (35mm to 36mm) for more top-end power. New ignition and magneto increase output for the power jet system.

#### '98 KX250 Engine

The designers extracted one more horsepower out of the motor this year by

revising the exhaust port layout and adding a Power Jet Carburetor. The center exhaust port and KIPS valve are now wider (41mm to 43mm), and the sub-exhaust ports and rotary KIPS valves are smaller (21mm to 17mm). Since the center KIPS valve is the most effective port-altering device, a larger center valve improves power across the board.

A more powerful ignition uses a much smaller (and lighter) rotor to energize the power jet. A heavier crank nearly offsets the loss, for a slight reduction in overall flywheel effect versus the '97. This change results in quicker engine response, less vibration, and longer main bearing life. The connecting rod offers improved lubrication through a larger oil groove on the big end and an additional oil hole on the small end. The piston-



The KX125 cylinder features only two exhaust ports regulated by one center KIPS valve.



The KX250 motor is massaged with revised exhaust ports, KIPS system, more powerful ignition, new crankshaft, different reed valve, and stronger engine cases.

to-ring tolerances are tighter for improved ring seal and more power.

#### '98 KX 125/250 Chassis

The chassis (and center of gravity) is 5mm lower for improved cornering and traction. This change was accomplished by raising the forks 5mm in the triple clamps and shortening the lower shock clevis 1.5mm. Suspension travel has not been affected.

It has been over a decade since anyone has used progressive springs on modern motocrossers, but Kawasaki re-introduces them for '98. The rear shock spring is triple rate, while the fork

springs offer a steady progressive winding. New damping rates work with the springs to provide plush action with much more resistance to bottoming.

The 1998 Kawasaki KX models feature an infusion of technology learned from winning the toughest championships. Our reputation stands for: great bikes right out of the box; balanced bikes that turn great and are stable;plush suspension, and outright performance. It doesn't matter what class you race, Kawasaki is the bike to own in '98.◆



We want to officially thank all of the dealers who participated in Kawasaki's '97 Service Training Program. We appreciate your commitment to excellent service and CRAIG'S JET SKI

SANTA FE SPRINGS, CA

CUNNINGHAM CYCLE WORLD

FAYETTEVILLE, NC

CUNNINGHAM GOLF CAR CO.

LOUISVILLE, KY

CYCLE SPORTS KAWASAKI

SALEM, OR

CYCLE SPORT CENTER

ORLANDO, FL

F & R SPORTS CENTER

DODGE CITY, KS

FAIRFIELD KAWASAKI

FAIRFIELD, CA

FAY MYERS KAWASAKI

DENVER, CO

FORSYTH KAWASAKI

WINSTON-SALEM, NC

FREEWHEELING CYCLE

KENMORE, NY

HILLSBORO KAWASAKI

HILLSBORO, OR

HILLSIDE MOTORSPORTS KAWASAKI

ENFIELD, NH

HILTON HEAD KAWASAKI

BLUFFTON, SC

HONDA SUZUKI KAWASAKI WEST

TAMPA, FL

HOOKSETT KAWASAKI

HOOKSETT, NH

the sacrifices you made to send technicians to our classes. We are confident your customers benefit from the knowledge your technicians gain through factory training.

Look for our '98 Training Schedule at the Dealer Meeting in Orlando (Oct. 9-12).

The 1998 models offer new technology, which means important new training material. Lastly, prepare for a '98 Service Update Seminar coming to a location near you.

44 KAWASAKI	ARIZONA JET SKI	CAPITOL KAWASAKI	CYCLE CENTER OF FREMONT	FUN BIKE CENTER	HOUSE OF KAWASAKI
Eatonton, ga	Phoenix, az	Columbia, SC	Fremont, Ca	San Diego, ca	San Diego, Ca
A ACTION MOTOR SPORTS	ART'S KAWASAKI	CARL'S CYCLE SALES	CYCLE CITY KAWASAKI	G.N. GONZALES KAWASAKI	HUDSON KAWASAKI
GREELEY, CO	Zephyr Hills, Fl	BOISE, ID	HEYBURN, ID	Gonzales, la	Hudson, NH
A.J. FOYT KAWASAKI	B & B CYCLE, INC.	CASINO BEACH MARINA KAWASAKI	CYCLE SPORTS & SERVICE	G.N. GONZALES KAWASAKI	INDUSTRIAL VEHICLE SALES
Houston, TX	Norfolk, Ne	Storm Lake, Ia	MT. PLEASANT, PA	Baton Rouge, la	Pontiac, mi
ACTION SPORTS KAWASAKI	BABBITT'S SPORT CENTER	CASTAIC SKI & SPORT KAWASAKI	CYCLE CENTER	GARBER KAWASAKI	ITHACA REC. SPORTS KAWASAKI
College Station, TX	Muskegon, Mi	CASTAIC, CA	Globe, Az	Hesston, Ks	Newfield, ny
ACTION JET SKI WEST	BAY AREA KAWASAKI	CENTRAL NEW YORK KAWASAKI	CYCLE MOTION KAWASAKI	GARBERS HONDA	JENKINS MACHINERY CO.
VENICE, FL	Hayward, ca	Elbridge, ny	MIDDLETOWN, NY	Fairbury, Ne	Concord, Ca
ACTION KAWASAKI	BEAUMONT KAWASAKI	CENTRAL VERMONT KAWASAKI	CYCLE WORLD KAWASAKI	GARTON TRACTOR & KAWASAKI	JIM BENNETT KAWASAKI
SHAWNEE, OK	BEAUMONT, CA	Rutland, Vt	SAVANNAH, GA	Turlock, ca	IUKA, MS
ADAMS MOTORSPORTS KAWASAKI	BENTLEY YAMAHA SUZUKI	CHAMPION KAWASAKI	CYCLES OF PALM BEACH KAWASAKI	GATTO KAWASAKI	JIM MURRAY'S KAWASAKI SALES
Montgomery, Al	Canonsburg, Pa	COSTA MESA, CA	West Palm Beach, Fl	Tarentum, pa	Scranton, Pa
AINSWORTH KAWASAKI	BERT'S KAWASAKI	CHARLOTTE KAWASAKI	CYCLES OF BOULDER, INC.	GOLD COUNTRY KAWASAKI	JIM'S MARINE & CYCLE, INC.
AINSWORTH, NE	Azusa, ca	Matthews, NC	Boulder, Co	Auburn, Ca	Sheridan, Wy
AL GASKILL KAWASAKI	BIG RED KAWASAKI	CHEYENNE SPORT CENTER	DAL-KAWA CYCLE SALES	GOODTIMES KAWASAKI	JOHNSON'S CYCLE & AUTO
EAST POINTE, MI	Eatontown, nj	CHEYENNE, WY	HENDERSONVILLE, NC	Sacramento, ca	Fremont, Ne
ALAMO CYCLE-PLEX KAWASAKI	BIKE WORLD KAWASAKI	CHICO JET SKI	DAVIS CYCLE SALES	GRAND HAVEN KAWASAKI	JONES KAWASAKI SALES & SERVICE
SAN ANTONIO, TX	Sunnyvale, ca	CHICO, CA	BUTLER, PA	Grand Haven, mi	Laurel, MS
ALCOA GOOD TIMES KAWASAKI	BLOCKER KAWASAKI	CLEAR LAKE KAWASAKI	DOUG'S CYCLE SHOP	GRAND LAKE MOTOR SPORTS	JORGY'S KAWASAKI REC CENTER
Alcoa, TN	Parryville, pa	Fremont, in	SALISBURY, MO	Grand Lake, Co	STOCKTON, CA
ALEX CYCLE SHOP	BOB THOMAS' KAWASAKI	CLIFF'S CYCLE CENTER	DUFF SHELLEY KAWASAKI	GRANDVIEW TRACTOR & KAWASAKI	K & H KAWASAKI
Warren, Oh	North Huntingdon, Pa	Bremerton, Wa	American Fork, ut	Grandview, wa	Little York, ny
ALFORDS SPORT CENTER MCCOMB, MS	BOB'S MARINE & JET SKI	COAST CYCLES	EAST END JET SKI	GREAT BEND HONDA	K & N KAWASAKI
	Bellevue, IA	GULFPORT, MS	HAMPTON BAYS, NY	GREAT BEND, KS	Wichita, KS
ALL AMERICAN KAWASAKI	BOONE ACTION KAWASAKI	COLBOCH HARLEY-DAVIDSON SALES	EDDIE HILL'S KAWASAKI	GULFSIDE KAWASAKI	KAWASAKI OF HOLLYWOOD
SANTA CRUZ, CA	Boone, NC	Morristown, TN	Wichita Falls, TX	Orange Beach, al	HOLLYWOOD, CA
ALL SEASONS SPORTS	BREWER KAWASAKI	COLUMBIA TRACTOR, INC.	ELK CITY KAWASAKI	HACIENDA MOTORCYCLES	KAWASAKI BIG BOYS TOYS, INC.
ROCK SPRINGS, WY	HENDERSON, NC	CLAVERACK, NY	ELK CITY, OK	Safford, Az	OGDEN, UT
ALLSPORT KAWASAKI	BURBANK KAWASAKI	COMMONWEALTH CYCLES	ELLIOTT KAWASAKI	HAMME KAWASAKI	KAWASAKI OF DURHAM
Decatur, Al	Burbank, Ca	ARLINGTON, MA	Mandeville, la	Gastonia, NC	Durham, NC
ANAHEIM KAWASAKI	BUTCH'S JET SKI SHOP	CONCORD KAWASAKI	ELYS KAWASAKI	HARRISON'S MARINE & KAWASAKI	KAWASAKI OF OCALA
ANAHEIM, CA	Grand Rapids, Mi	Concord, Ca	Hutchinson, KS	Wayland, mi	OCALA, FL
ANDERSON SALES & SERVICE, INC.	CAL COAST MOTORSPORTS KAWASAKI	CORVALLIS FORD NEW HOLLAND	ENUMCLAW KAWASAKI	HEBELER SALES & SERVICE	KAWASAKI OF PHILLIPSBURG/EASTN
Bloomfield Hills, Mi	VENTURA, CA	CORVALLIS, OR	ENUMCLAW, WA	PENDLETON, NY	Phillipsburg, nj
APEX SPORTS, INC.	CAMROD	CRAIG'S KAWASAKI	EXCEL MOTORCYCLES & WATERCRAFT	HIGH COUNTRY CONNECTION	KAWASAKI OF JONESVILLE
COLORADO SPRINGS, CO	New York, Ny	Bountiful, ut	DENVER, CO	Salida, CO	JONESVILLE, LA

KAWASAKI SPORTS CENTER	KAWASAKI OF MONTEREY	MAC'S CYCLE	PIONEER MOTORSPORT KAWASAKI	SIGMUND'S KAWASAKI	TEXAS CITY KAWASAKI
LAKE FOREST, CA	MONTEREY, CA	CLARKSTON, WA	SARDINIA, NY	CENTRAL CITY, PA	TEXAS CITY, TX
KAWASAKI OF NEW BERN	KAWASAKI OF ROCKY MOUNT	MARK'S OUTDOOR SPORTS	PLANO KAWASAKI	SISTER LAKES KAWASAKI	THE FIRST TURN
NEW BERN, NC	Rocky Mount, NC	Alamosa, co	Plano, TX	Sister Lakes, mi	CROWLEY, LA
KAWASAKI OF ST. GEORGE	KAWASAKI SPORT CENTER	MATTOON KAWASAKI	POINT CYCLE KAWASAKI	SKAGIT VALLEY KAWASAKI	TIME RENTAL SALES & SERVICE
ST. GEORGE, UT	POMPTON PLAINS, NJ	Mattoon, Il	PITTSBURGH, PA	Burlington, wa	No. Logan, ut
KAWASAKI OF TWIN FALLS	KAWASAKI TERRITORY	MICHAEL'S KAWASAKI	POMONA VALLEY KAWASAKI	SMITH POWER EQUIP. & KAWASAKI	TOMS RIVER JET SKI
TWIN FALLS, ID	STUART, FL	Carson City, NV	Ontario, ca	Hayesville, NC	Toms river, nj
KAWASAKI OF YAKIMA	KAWASAKI OF BOUND BROOK	MID CITIES KAWASAKI	PORT ANGELES KAWASAKI	SMITTY'S KAWASAKI CYCLE	TREASURE COAST KAWASAKI
YAKIMA, WA	Bound Brook, NJ	Paramount, ca	Port Angeles, wa	Imperial Beach, ca	FT. PIERCE, FL
KAWASAKI OF OCEANSIDE	KELLY'S KAWASAKI	MILLENNIUM CYCLEWORKS KAWASAKI	POWAY KAWASAKI	SONOMA KAWASAKI	TRI-COUNTY EQUIPMENT CO.
OCEANSIDE, CA	MESA, AZ	Lilburn, ga	Poway, Ca	WINNEMUCCA, NV	Poseyville, in
KAWASAKI OF CARROLLTON	KENT KAWASAKI	MOSES LAKE KAWASAKI	QUINSEY KAWASAKI	SOUTH BAY KAWASAKI	TUCSON CYCLE & SKI KAWASAKI
Carrollton, TX	Kent, wa	Moses Lake, wa	El Cajon, Ca	National City, Ca	Marana, az
KAWASAKI OF ROANOKE RAPIDS	KEYSTONE KAWASAKI	MOTION KAWASAKI	R & R JET SKI	SOUTH VALLEY KAWASAKI	TUCSON KAWASAKI
ROANOKE RAPIDS, NC	Duncansville, pa	Hammonton, nj	Hollywood, Fl	Draper, ut	TUCSON, AZ
KAWASAKI OF RAMSEY	KLAMATH MOTORSPORTS KAWASAKI	MOTIONS KAWASAKI	R & R JET SKI SOUTH	SOUTHERN CYCLE KAWASAKI	TWIGG CYCLES
RAMSEY, NJ	Klamath Falls, or	Marietta, ga	North Miami Beach, Fl	Kenner, La	Hagerstown, MD
KAWASAKI EAST	KREHBIELS COUNTRY STORE	MOTOSPORTS OF UKIAH	RAY C'S	SPORT CENTER OF GRAND JUNCTION	TWO WHEEL WORLD
Indianapolis, in	Aberdeen, Id	UKIAH, CA	Lapeer, mi	GRAND JUNCTION, CO	Woodbury Heights, NJ
KAWASAKI OF RALEIGH	LAKE CHARLES KAWASAKI	NEWGATE KAWASAKI	REDWOOD CITY KAWASAKI	SPRUILL KAWASAKI	VALLEY KAWASAKI
RALEIGH, NC	Lake Charles, la	Ogden, ut	REDWOOD CITY, CA	Mt. Pleasant, TX	Phoenix, az
KAWASAKI OF WEST SWANZEY	LAKE POWELL KAWASAKI	NORTH WASHINGTON IMPLEMENT CO.	RIVERFRONT KAWASAKI	ST. AUGUSTINE CYCLE CENTER	VESCO'S KAWASAKI
KEENE, NH	Page, az	Lynden, wa	Yuba City, Ca	ST. AUGUSTINE, FL	Brigham City, Ut
KAWASAKI HOUSE OF CYCLES	LAKEVIEW MARINA JET SKIS	NORTH COUNTY JET SKI	RIVERHEAD KAWASAKI	ST. CHARLES JET SKI	VICKERY MOTORSPORTS INC.
NATCHEZ, MS	Noblesville, in	ENCINITAS, CA	RIVERHEAD, NY	St. Charles, mo	Denver, co
KAWASAKI OF POMPANO BEACH	LAKEWAY POWER SPORTS	NORTH BAY KAWASAKI	ROCKFORD KAWASAKI	STAR CITY MOTOR SPORTS, INC.	WATERTOWN KAWASAKI
Pompano Beach, Fl	GILLETTE, WY	Santa Rosa, Ca	ROCKFORD, MI	Lincoln, Ne	WATERTOWN, NY
KAWASAKI OF SENECA	LANTZ RENTAL & OUTDOOR EQUIP.	NORTHLAND KAWASAKI	ROMERO'S LAWN MOWER SALES	STEVENS MOTOR SPORTS,INC.	WENATCHEE CYCLE CENTER
SENECA, SC	CODY, WY	Flagstaff, az	New Iberia, la	OMAHA, NE	WENATCHEE, WA
KAWASAKI POWERSPORTS	LARRY'S KAWASAKI	ONEKAMA JET SKI	RON GREENE KAWASAKI	STOCKTON FORD NEW HOLLAND	WEST COAST KAWASAKI
Vallejo, Ca	Parkersburg, WV	ONEKAMA, MI	Mt. Pleasant, ut	STOCKTON, CA	Paso Robles, ca
KAWASAKI OF YUMA	LAUREL HIGHLANDS KAWASAKI	ORANGE COAST FORD TRACTOR, INC.	ROSENAU POWERSPORTS KAWASAKI	STORR TRACTOR CO.	WHITTIER KAWASAKI
Yuma, Az	Lemont Furnace, Pa	Orange, Ca	Dearborn Heights, mi	Somerville, nj	WHITTIER, CA
KAWASAKI SPORT MOTORS	LEBANON KAWASAKI	ORLANDO KAWASAKI	SAN JUAN JET SKI & MARINE	STREIT'S KAWASAKI	WILD RIDE SPORTS KAWASAKI
Pocatello, ID	Lebanon, mo	Orlando, Fl	Flora Vista, NM	Gainesville, Fl	Grenada, MS
KAWASAKI OF STATESVILLE	LINTON KAWASAKI	OUTDOOR SPORT, INC.	SAN DIEGO TURF	SUBURBAN JET SKI	WILDCAT KAWASAKI
STATESVILLE, NC	Linton, in	Grand Island, Ne	San Diego, Ca	Warrington, Pa	COLORADO SPRINGS, CO
KAWASAKI OF OAKLAND	LIVERPOOL KAWASAKI	PALMETTO KAWASAKI	SANDERS KAWASAKI	SUN ENTERPRISES	WINDHAM KAWASAKI
OAKLAND, CA	Liverpool, ny	Hialeah, Fl	New Castle, Pa	Thornton, Co	Windham, Nh
KAWASAKI OF SANTA BARBARA	LONG BEACH KAWASAKI	PASCO CYCLE	SATCH SALES	SUN SPORTS UNLIMITED, INC.	WOLFE CYCLE SPORTS, INC
GOLETA, CA	Long Beach, Ca	Port Richey, Fl	Menands, ny	Gunnison, Co	HASTINGS, NE
KAWASAKI OF HICKORY	LYNNWOOD KAWASAKI	PAW PAW KAWASAKI	SCOTT'S KAWASAKI	SURBURBAN SALES & RENTAL CNTR	WOODBRIDGE KAWASAKI
HICKORY, NC	Lynnwood, wa	Paw Paw, mi	LAS CRUCES, NM	COCKEYSVILLE, MD	Linden, nj
KAWASAKI OF RENO	M & M CYCLE	PEMBINE KAWASAKI	SECORD LAKE MARINA JET SKI	TEAM SAVAGE KAWASAKI	WOODS KAWASAKI FUN CENTER
RENO, NV	Kalamazoo, mi	PEMBINE, WI	Gladwin, mi	Clearwater, Fl	AUSTIN, TX
KAWASAKI EXPRESS	M & R KAWASAKI	PIEDMONT KAWASAKI	SIERRA CYCLES	TEAM BOZEMAN	Z'S MOTOR SPORTS
Warner Robbins, Ga	Roosevelt, ut	Salisbury, NC	SIERRA VISTA, AZ	BOZEMAN, MT	CRAIG, CO
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