

by Patrick Kelly
*Instructional Designer/
Instructor*

Kawasaki is once again making big waves in the watercraft industry with the introduction of not one but two models this year! There is the exciting new performance model, the JH750-B1, known as the Super Sport Xi, and the recreational oriented JT750-A1 or Sport Tourer. Both of these new models confirm Kawasaki's commitment to being the leader in the personal watercraft industry.

Let's start with the technical features of the "Super Sport Xi." The SS Xi is based on our popular standard SS model introduced last year, but features a number of changes to help raise its performance to even higher levels. The Xi engine produces 9 percent more horsepower than the standard SS engine. It achieves this gain through a number of changes, the most visible of which is a twin carburetor intake system. The Xi utilizes two Keihin CDK-III 40mm carburetors with 38mm venturis. These carburetors are unique in the fact that they have three fuel circuits, low, mid-range and high, instead of just a low circuit and a high circuit. The extra mid-range fuel circuit eliminates any lean spots in the fuel delivery,

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KAWabunga!



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Inside!

■ Service tips & more!

KAWabunga!

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allowing the Xi engine to produce a seamless flow of power from idle to full throttle. The carburetors feed the engine through a manifold which uses a large balance tube to connect each intake tract. The balance tube keeps the flow of air through each carburetor smooth by eliminating the start and stop motion of the air. This is because even when one set of reed valves are closed, the air flowing through that carburetor can travel through the balance tube to the other side of the manifold and into the engine. The result is smooth running and crisp throttle response. The twin carburetors are topped off by a large flame arrestor box housing twin flame arrestor elements. Air enters the flame arrestor box through two large intake silencing tubes on each end of the box. This intake system feeds the air/fuel mixture directly into the crankcase through the same large eight petal reed blocks as used on the standard SS.

Twin carbs are not all that's new about this engine though. There are a few other important changes too. Inside the cylinder the exhaust port height has been raised. Timing goes from opening 89° BBDC/closing 89° ABDC to opening 93° BBDC/closing 93° ABDC. This contributes to increased top end performance. In order to maintain the 7.0:1 compression ratio with the raised exhaust port, the Xi uses smaller

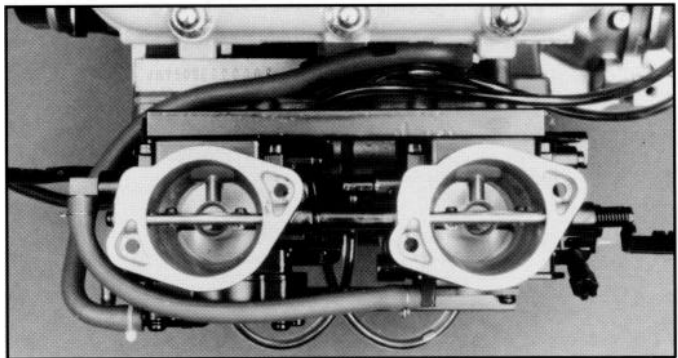
combustion chambers. The smaller combustion chambers are machined instead of cast. This keeps combustion volume consistent between cylinders, improves combustion efficiency and reduces carbon build up.

The exhaust gasses exit the engine through a new exhaust system too. While the Xi and the standard SS both use a dry type exhaust system, the Xi's system has been modified to complement the revised exhaust port timing and help boost top end horsepower even further. The exhaust gas passageways from the exhaust ports through the manifold and head pipe to the expansion chamber have been enlarged to improve exhaust flow. In addition, the divider which separates the two sides of the exhaust manifold now extends the entire length of the manifold.

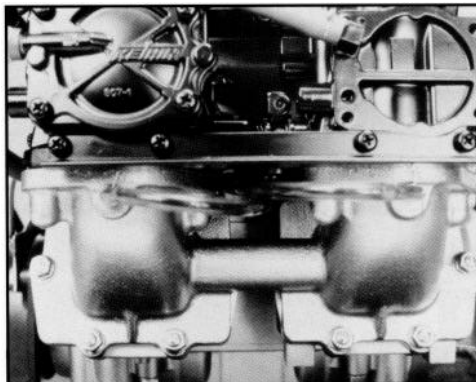
Because the Xi engine produces more horsepower, the pistons and crankshaft were revised for increased durability. The pistons have thicker crowns and more reinforcement around the wrist pin boss while the crankshaft has 2mm larger rod journals. The end of the crankshaft where the coupler screws on was also enlarged 2mm.

The Xi's jet pump was also revised to take advantage of the increased horsepower. A five blade stainless steel impeller replaces the standard SS three blade aluminum one. The stainless steel helps resist the damaging effects of cavitation while the five blades reduce the

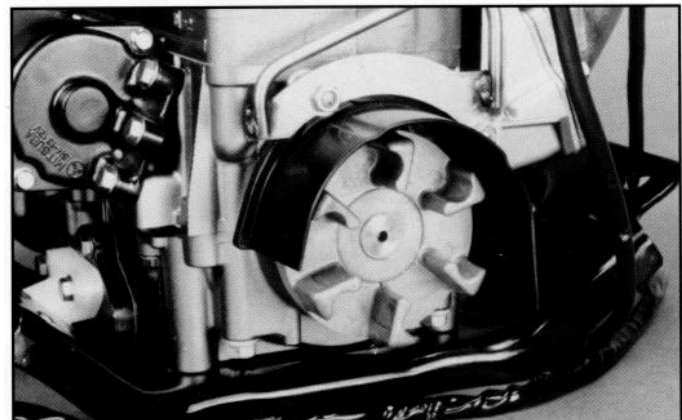
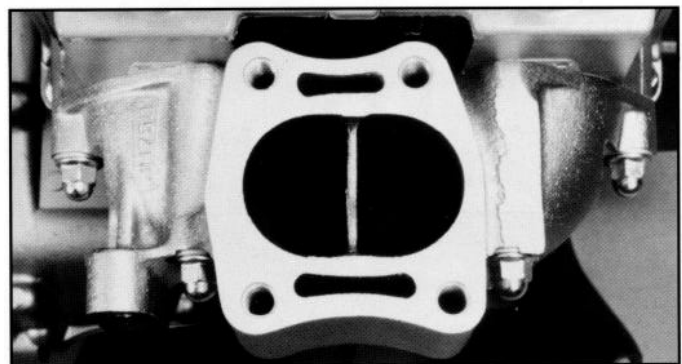
noise generated from the pump. This new impeller is combined with an 80mm diameter pump nozzle



Super Sport Xi boasts dual 40mm carburetors.



(LEFT)
Xi dual carburetor manifold with balance tube.
(BELOW)
Extra-large passageways in the Xi's exhaust manifold.



Both new watercraft models have larger crankshaft ends where the coupler attaches.

(4mm larger than the standard SS nozzle) to increase the thrust of the Xi 10.5 percent from the standard SS. The Xi's thrust is an impressive 628 pounds.

The hull, outwardly identical to the one found on the standard SS, does feature a few additions to reduce water drag and increase top speed. The jet pump cover has been angled upward 2.8° in the back to raise the bow up out of the water further. This is combined with hull stabilizers located at the stern of the craft which raise the stern higher in the water. The result is less water drag on the hull. The stabilizers also contribute to increased stability at high speed. To help compensate for various rider weights and water conditions, the jet pump's output can be angled downward to trim the attitude of the boat in the water. The nozzle angle can be adjusted to one of three positions, neutral or level, down 7.5° or down 15°, by a knob located on the port side of the craft.

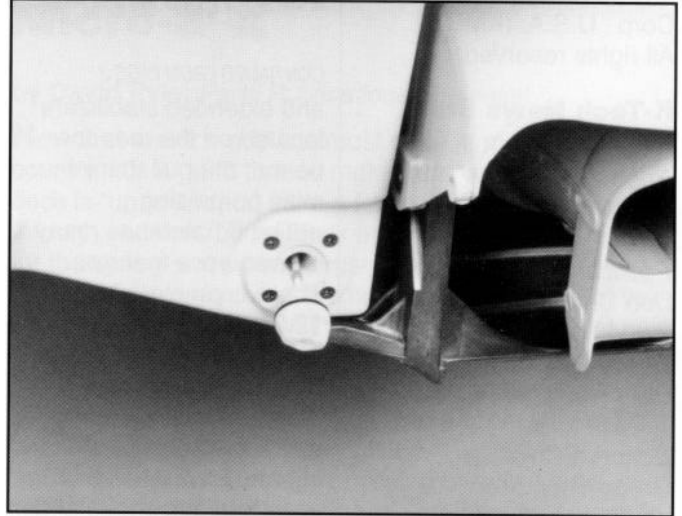
The Xi is joined by an all new boat, the Sport Tourer. The Sport Tourer, or ST, is Kawasaki's first three person tandem watercraft, and is destined to set the standards for this popular class of watercraft. The ST's engine is designed to produce a large amount of low and mid-range horsepower, while still having a healthy top end. This was achieved by utilizing the Xi's cylinder and cylinder head combined with a single carburetor instead of two. This single carburetor is the same Keihin CDK-II

40mm unit found on the standard SS model. The carburetor breathes through a large intake silencer similar to the one used on the standard SS. The ST also benefits from the Xi's modified exhaust system, but it takes the system one step further to better suit the ST's need for strong low and mid-range performance. It utilizes a resonance chamber located in the exhaust manifold to further increase the head pipe volume. This improves low end performance with a minimum sacrifice of top end performance. The ST also shares the Xi's reinforced pistons and stronger crankshaft. The result is an engine that produces strong low and mid-range horsepower while still achieving a peak output of 70 horsepower at 6250 rpm.

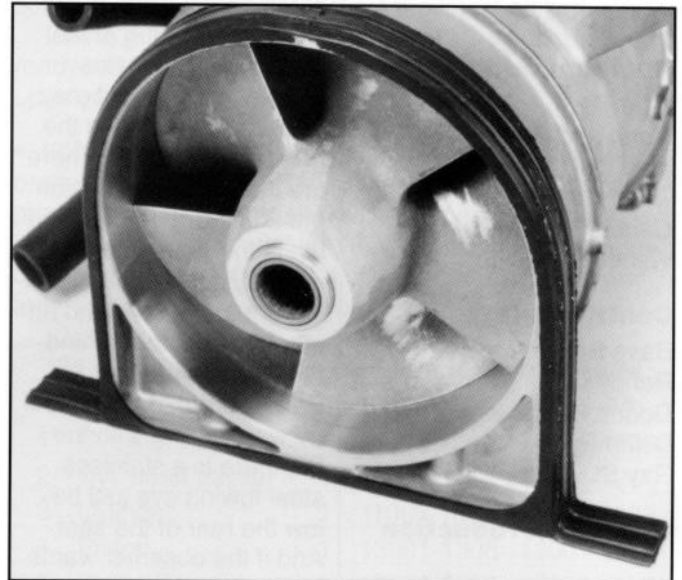
The ST jet pump has been customized to suit the needs of the craft as well. It is similar to our other 750 jet pumps, but it utilizes a five blade aluminum impeller. The five blade impeller keeps noise levels from the pump to a minimum and helps to make the ST the quietest Kawasaki watercraft ever. For good low end thrust, the pump nozzle is even larger still, at 82mm. The ST's thrust is a generous 595 pounds.

The ST features a large new V-type hull for excellent handling characteristics and a smooth ride combined with exceptional static stability. The hull features a long inner chine to improve handling while minimizing water spray,

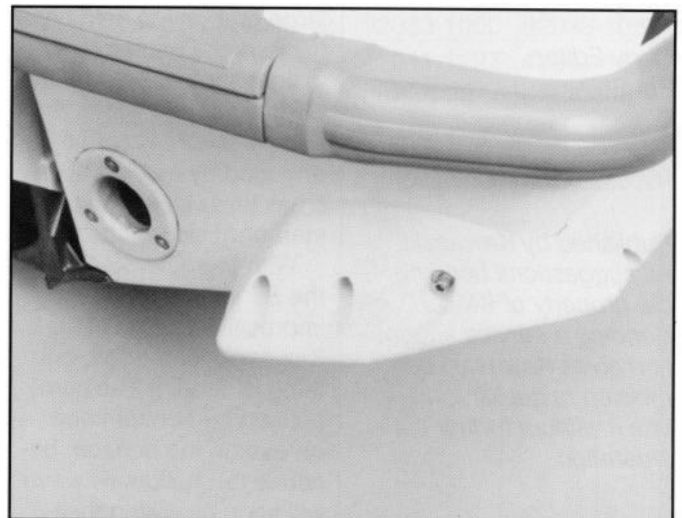
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Convenience? How 'bout this drain plug on the ST.



The ST 750's advanced five-blade aluminum impeller.



Hull stabilizers on the ST work exactly as advertised.

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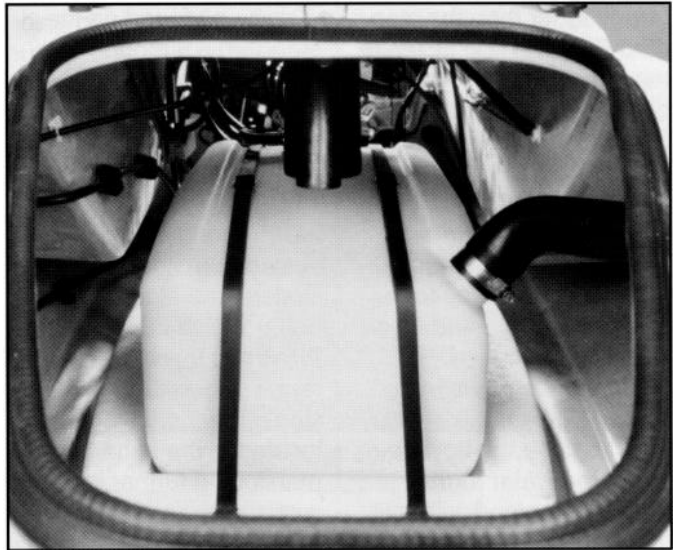
KAWABUNGA!

CONTINUED FROM PAGE 3
 and extended stabilizers
 located on the rear cor-
 ners of the hull to mini-
 mize porpoising.

The ST also has many
 convenience features.
 There is an extra large
 12.2 gallon fuel tank for ex-
 tended riding times. Cen-
 trally located gauges
 monitor fuel level, and
 warn of engine overheating
 and low oil level. Large
 easy to reach choke and
 fuel petcock knobs are lo-
 cated on the sides of the
 craft. A drain plug at the
 rear of the boat helps
 drain any water that may
 have accumulated in the
 hull before storage. There
 are three storage bins on
 the ST. A large removable
 bin in the front of the craft,
 a handy compartment just
 in front of the seat and an-
 other bin located behind
 the seat in the stern.

Should a person wish to
 try water skiing with the
 ST, there is a stainless
 steel towing eye just be-
 low the rear of the seat.
 And if the observer wants
 to face backwards, there
 are handy footrests and a
 large grab rail to hold on
 to. To make maneuvering
 in tight spots a breeze, the
 ST is equipped with a re-
 verse system. Reverse is
 engaged by moving a
 small lever located on the
 starboard side of the boat.

With the new SS Xi and
 the ST joining an already
 impressive line up of
 Kawasaki watercraft, one
 thing is certain. The com-
 petition had better keep
 an eye on the horizon, be-
 cause the Kawasaki wave
 will soon be rolling their
 way! □



Extra-large 12.2-gallon ST fuel tank.



And for the passengers: a grab rail on the ST.



Observer footrests are unique to the ST.

VIDEO

The all-new "Ignition Systems" video

by **Ray St. John**
Supervisor, Technical Writing

An all-new video covering the operation and application of Kawasaki ignition systems is now available. If you belong to the Tech Training Video Club, you may already have received your copy of "Kawasaki Ignition Systems." The tape explains how Kawasaki's many different ignition systems work and which product lines and models have each kind of system. Ignition systems used in Kawasaki motorcycles (both on and off-road), ATVs, watercraft, utility vehicles and portable generators are covered. The overall emphasis is on introductory level information, though the tape may be profitably viewed by all levels of technicians, from the new guy to the experienced old-timer.

The "Troubleshooting Kawasaki Ignition Systems" manual will soon be

available also. When it is, we'll send everyone who bought the video a free copy.

Order "Kawasaki Ignition Systems" by calling Kawasaki's Service Training and Communications Department at (714) 770-0400, ext. 2472. We'll put your copy in the mail and bill you \$35.95, plus shipping, handling and applicable sales taxes, if any.

If you'd like to save 30 percent on this tape, call the number listed and join our Tech Training Video Club. There's no membership fee and no dues, just savings on every video tape we offer. You'll receive up to four new videos a year at the reduced price of \$25. Some videos are even less!

We'll only send videos covering your product mix. We guarantee it: you won't get anything you can't use. And you won't miss anything that could help your technicians make a profit, either. □

Service Contest #2 details - see page 7 ...

Micro-

by **David Pyle**, *Parts Publications Specialist*

Now that winter's grip is almost gone in most of the country, it is a good time to make sure your Micro-K deck is "up to speed." Take a few minutes now to go through your microfiche deck and make sure it is ready for the spring and summer rush.

The easiest way to do this is to take advantage of the Micro-K index supplied with each monthly mailing of new microfiche. The index shows the last issue date for each fiche, so simply go through your deck and make sure all of your fiche are current. This is also a great way to tell if your deck is missing any microfiche.

If you need to replace any missing or out-of-date fiche, order them by part number. Our inventory of microfiche is updated whenever a new microfiche is issued, so you will automatically receive the latest edition.

Taking a few minutes now to make sure your deck is ready will save valuable time when customers are lined up at your parts counter!

- KMC no longer packages together all the individual parts for '91-'93 KX80-R1/2/3 and T1/2/3 models comprising a "100cc conversion kit." The parts themselves, however, are still available. They are listed by part number on grid N-I of the microfiche for these models, and are detailed in the following chart:

'91-'93 KX80 100cc conversion kit details				
No.	Description	Qty	R1/2/3 P/N	T1/2/3 P/N
1	Cylinder head	1	11001-1336	11001-1336
2	Cyl. head gasket	1	11004-1214	11004-1214
3	Cylinder	1	11005-1633	11005-1633
4	Piston	1	13001-1308	13001-1308
5	Piston ring set	1	13008-1107	13008-1107
6	Piston pin	1	13002-1018	13002-1018
7	Piston pin circlips	2	92033-1050	92033-1050
8	Rear sprocket	1	42041-1227 (48-tooth)	42041-1245 (52-tooth)

MERCHANDISE

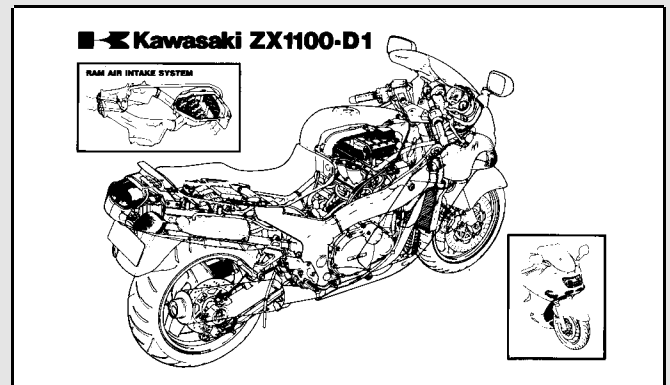
Phabulous phantom view ...

To help celebrate the arrival of the new ZX-11D, we're producing a 34x22 inch black and white poster of this incredible new motorcycle.

This phantomview illustration shows off a lot of the details of this fine motorcycle.

To get your copy, call Kawasaki's Service Training and Communications De-

partment at (714) 770-0400, ext. 2472. We'll carefully roll it up, put it in a mailing tube, and have it on its way to you double-quick! Your parts account will be billed \$3.99 for each poster you order, plus \$1.95 shipping and handling (just one charge for up to 20 posters) and any applicable sales taxes. - *Ray St. John*



Award Winners K-TECH NEWS Service Contest #1

TECHNICIAN	DEALERSHIP	LOCATION
Russell Attaway	Motions Kawasaki	Marietta, GA
Bubba Bean	Coast Cycles	Gulfport, MS
Shannon Beeson	Dixon Cycle	Scott City, KS
David Bjork	Capitol Kawasaki	Columbia, SC
Martin Blais	Mid Cities Kawasaki	Paramount, CA
Michael Bobonic	Mid Cities Kawasaki	Paramount, CA
James Brantley, Jr.	Regency Kawasaki	Jacksonville, FL
Dennis Burgess	Mac's Cycle	Clarkston, WA
Gary Bustillos	Kawasaki Country	Norco, CA
Dennis Clanton	Jerry Ferrell Kawasaki	Medina, OH
Gary Clayo	Laurel Highlands Kawasaki	Lomont Furnace, PA
Dave Costa	Fairfield Kawasaki	Fairfield, CA
Rose Criley	Davis Cycle	Butler, PA
Jeffrey Davis	Freedom Kawasaki	Grandview, MO
Bob Dermont	Springfield Cycle Sports	Springfield, IL
Greg Deskins	Mark IV Kawasaki	Wytheville, VA
John Dohnal	Watson Motorsport	Midlothian, IL
Elliot Drisko, Jr.	Hudson Valley Motorcycle	Millwood, NY
Steve Earl	Towncenter Motorcycle	Oregon City, OR
Gary Eckard	Keystone Kawasaki	Duncansville, PA
Billy Eisenacher	Motions Kawasaki	Marietta, GA
Doug Engle	Northern Kawasaki	Cloquet, MN
Jerry Farmer	Springfield Kawasaki	Springfield, MO
Doug Farnen	Doug's Cycle Shop	Salisbury, MO
Kenny Gay	Shawnee Kawasaki	Shawnee, KS
Daniel Harrington	Kawasaki of Ocala	Ocala, FL
Keith Harrison	Kawasaki Vista	Dayton, OH
James Hayes	Burcham Kawasaki	Colonial Height, VA
Mike Herman	Jerry Ferrell Kawasaki	Medina, OH
Harold Hill	Anderson Kawasaki	Anderson, N
Curtis Hillman	Shawnee Kawasaki	Shawnee, KS
Jerry Hoffman	Rainbow Kawasaki	Rogers, AR
Craig Hoover	Keystone Kawasaki	Duncansville, PA
Jerold Hopper	D & H Cycle	Cullman, AL
Rena Hopper	D & H Cycle	Cullman, AL
Dennis Jacobs	Coast Cycles	Gulfport, MS
Bee Johnson	Wayne's Cycle Kawasaki	Waynesboro, VA
Karl Johnson	Oak Creek Motorsports	Oak Creek, WI
Ray Johnson	Jerry Ferrell Kawasaki	Medina, OH

TECHNICIAN	DEALERSHIP	LOCATION
Michael Kagan	New York Motorcycle	Queens Village, NY
David Kerschinske	Stevens Motor Sport	Omaha, NE
Alan Lake	Hyannis Kawasaki Cape Cod	Hyannis, MA
James Logan	Milam's Kawasaki	Pine Bluff, AR
Kent Lox	Duke's Kawasaki	Fairfield, IA
Bobby Lytton	Mark IV Kawasaki	Wytheville, VA
Todd Lytton	Mark IV Kawasaki	Wytheville, VA
Mike Martin	Ryan Kawasaki	Bakersfield, CA
Ed Matheson	Towncenter Motorcycle	Oregon City, OR
Tom McAllister	SLO City Cycles	San Luis Obispo, CA
John Meador	Sport Center of Grand Jct	Grand Junction, CO
Daivd Moon	Leer's Kawasaki	Waterloo, IA
Frederic Moss	Glider City Cycles	Elmira, NY
David Myers	Springfield Kawasaki	Springfield, MO
Royce Nielsen	Milam's Kawasaki	Pine Bluff, AR
Steven Petersen	Hitching Post Kawasaki	St. Paul, MN
Chris Pierce	Coast Cycles	Gulfport, MS
Cris Pierson	Elk City Kawasaki	Elk City, OK
Glenn Pugh	Davis Cycle	Butler, PA
Larry Randall	Grand Prix Kawasaki	Santa Clara, CA
Rick Reed	Beaumont Kawasaki	Beaumont, CA
Steve Reno	Duke's Kawasaki	Fairfield, IA
Jeff See	M & M Cycle	Kalamazoo, MI
Joseph Stowell	Joe Brooks Kawasaki	Ionia, MI
Brian Stuebgen	Davis Cycle	Butler, PA
David Stuebgen	Davis Cycle	Butler, PA
Jim Stuhr	Shawnee Kawasaki	Shawnee, KS
Rayburn Sumner	Forsyth Kawasaki	Winston-Salem, NC
Eric Sunday	Jerry Ferrell Kawasaki	Medina, OH
Cecil Sutton	Bellevue Kawasaki	Bellevue, WA
Randy Sutton	Coast Cycles	Gulfport, MS
Les Travers	Burcham Kawasaki	Colonial Height, VA
Jim Tribou	Wayne's Cycle Kawasaki	Waynesboro, VA
Terry Vargason	Cycle Industries	Iowa City, IA
Paul Weis	Peninsula Kawasaki	San Mateo, CA
Jamie White	Rehmer Cycle	Versailles, OH
Douglas Whitehead	Milam's Kawasaki	Pine Bluff, AR
Terry Wolford	Mark IV Kawasaki	Wytheville, VA

Service Contest #1: The results are in!

We had a great response to our *K-Tech News* Service Contest #1, which appeared as an insert in our last issue (Vol. 5 No. 4). In the "diploma" on page 6 are the names of the technicians who scored 85 per-

cent or better. All will be receiving an award-and if your name is there, congratulations!

If your name does not appear, please don't give up; keep trying. You still have a chance to win.

Service Contest #2 is included in this issue and #3 will follow soon. Each test is graded separately, so even if you didn't enter Contest #1, you can still win awards by entering the next two.

The deadline for mailing in Contest #2 (inserted into the center of this issue) is **May 14**. Better get out your sharp pencils.

And once again, congratulations to all winners of the first exam! - *Ed*.

SERVICE CONTEST RULES

Ready for *K-Tech News* Service Contest #2? Good, because here it is! Whether you took the first test or are a newcomer to the competition, it's time to sharpen your pencils, review the rules listed below and get to it.

Contest Rules

- Contest #2 answer sheets must be mailed to the address printed below on or before May 14th.
- The Service Contest is open to any full-line dealership Service Department personnel.
- The contestant may use any materials and information available to answer the test questions.
- If more than one service person from a dealership wishes to enter the contest, it is the dealership's responsibility to copy the answer sheet for its additional personnel. Facsimiles of the answer sheet will be accepted.
- There is a deadline for each test and return postage is the responsibility of the contestant.

- Any contestant who scores higher than 85 percent will receive an award for that test.
- Names of those technicians scoring an 85 or better in Service Contest #1 appear on page 6. The names of those scoring an 85 or better in Contest #2 will appear in the next issue, as will the questions and worksheet for Contest #3.
- In order to compete for the grand award, all three tests must be completed and returned by their respective deadlines. The contestant with the highest overall score total for all three tests will win the grand award. In case of a tie, there will be a run-off.
- Send completed tests to:

Service Contest

Kawasaki Motors Corp., U.S.A.
9950 Jeronimo Road
Irvine, CA 92718.

Once again, good luck to all!



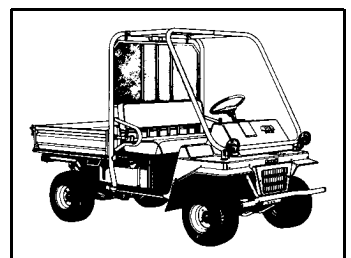
The award for Service Contest #1?
This ratcheting magnetic screwdriver
— with five bits!—from Snap-on Tools.

PARTS & ACCESSORIES

Big generator for big MULE™

All you MULE™ dealers, listen up: Although it's not in stock yet, we have it on good authority that there will be an optional High Output generator kit available soon for the MULE 2510 and 2520. This generator has a rated output of 50 amps.

At \$449.95 (suggested retail) it's not cheap, but the price does include everything needed to install it and make it functional. If you have an interested customer, the Part number is 99995-1289. It's not known at this time when they will be in stock here at KMC. - *Gregg Thompson*



The Tech Hot Line is busy: We need your help ...

by **Gregg Thompson**
Sr. Product Support Specialist

The Technical Hot Line staff is starting off on another busy season, which again reminds us to tell you how hard it is to answer phones non-stop (from 50 to 80 calls per technician every day!) while maintaining a cheerful, positive attitude.

The single most frustrating thing for Hot Line technicians is simply not being able to keep up with all the incoming calls. In order to keep up the pace, all calls must be handled as efficiently as possible. You can help a lot by having all the necessary information in front of you when you call. Please observe the following guidelines (as they apply) when calling the Hot Line for assistance:

- If you are calling for the first time on a unit with a particular problem, we will always need your **dealer number**, the **vehicle model number**, **frame number** (last six numbers of the VIN) and **mileage**.
- If you have called before on this unit for the same problem, you should already

have a **log number**. The log number allows us to instantly bring up all the information previously entered into the computer for this particular vehicle and problem. *If you have a log number, give it to us at the beginning of the call!* We don't even need your dealer number; it's already in the log.

- If you are calling for warranty claim authorization, have the claim(s) in front of you completely filled out including **model** and **frame numbers**, **mileage**, **failure date**, and **job codes**.

Make sure there is a good **description** that includes the following three elements: the **trouble** (the

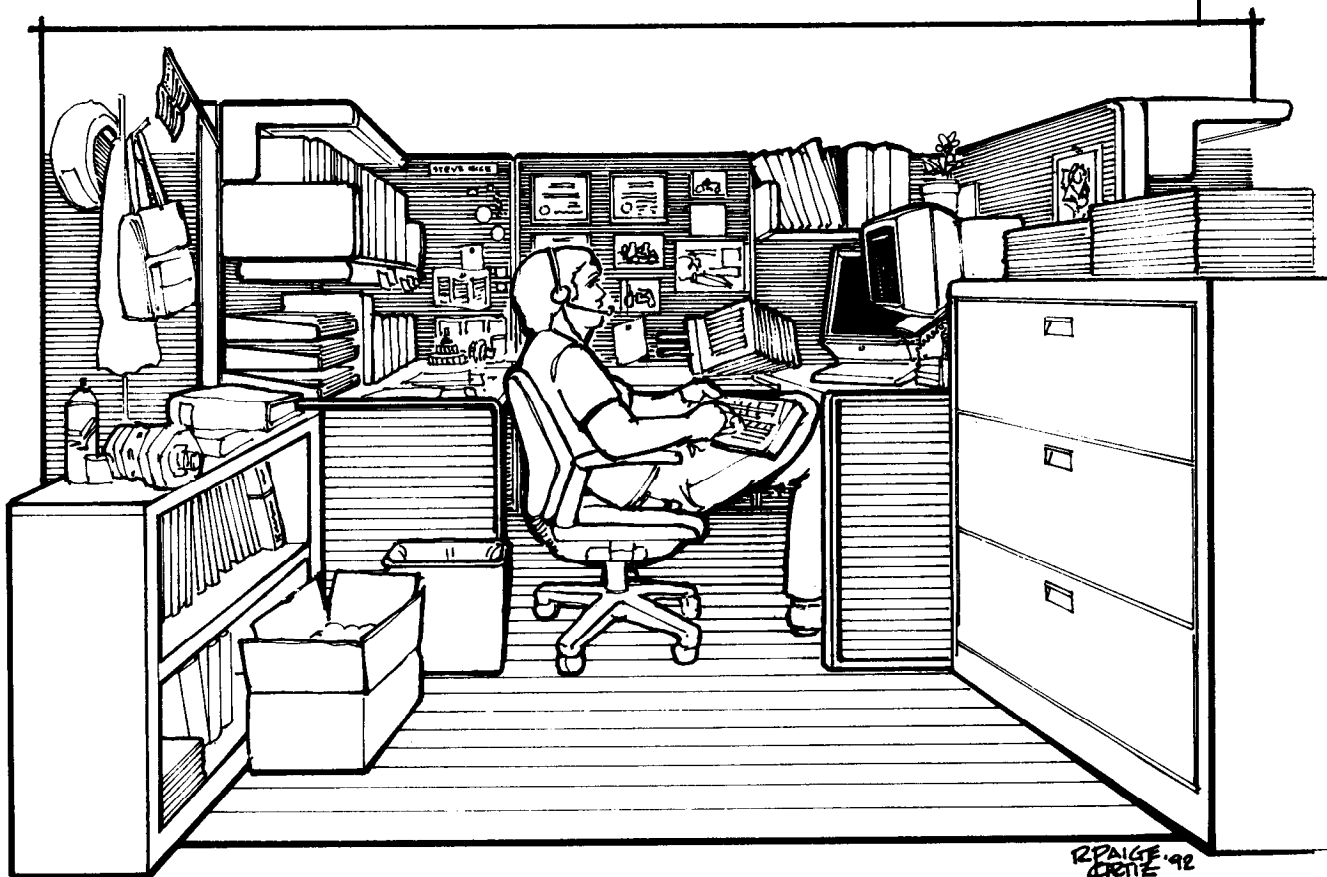
symptoms the unit was exhibiting or the customer's complaint); the **cause** (what was mechanically wrong with the unit to produce those symptoms); and the **work performed** to solve the problem.

- If you are calling for **technical assistance**, it's usually best for us to talk to the technician who is doing the work. It is very inefficient for us to talk to the service manager or service writer if he/she has to keep going back to the technician in order to get accurate answers to our questions. (The breakdown in communication that can occur from having an extra person between us and the guy with the

wrench in his hand, can result in not just longer phone calls, but *extra* phone calls-something nobody needs during the busy season!)

- If you are calling to get some paperwork done such as claim authorization, please try to avoid our peak hours. The phones are not as busy between 7:30-9:00 a.m. and 2:30-3:30 p.m. Pacific time as they are at other times during the day. If you can call then, it will be easier for us and for you.

Remember, the more efficient we are, the less time you will spend on the phone listening to our local weather and traffic reports! □



Two-minute generator diagnostics

by Jerry Heil
Training Development
Coordinator

Here is a quick test that can help you diagnose a generator that has either no or very low electrical output. To perform the test you will need a voltmeter, a good 12 volt battery, a resistance load (such as an electric heater), and a special tool which you can make yourself for less than \$5.00.

Make the tool as shown in the drawing at right using a 4 amp/400 volt bridge rectifier (Radio Shack P/N 276-1173).

In this "two-minute test" you will bypass the AVR (Automatic Voltage Regulator) and check voltage output from various coils. In step one of the test you will use the 12v battery to create the field in the rotor, and in step two you will jump the generator's sub-coil voltage straight into the rotor.

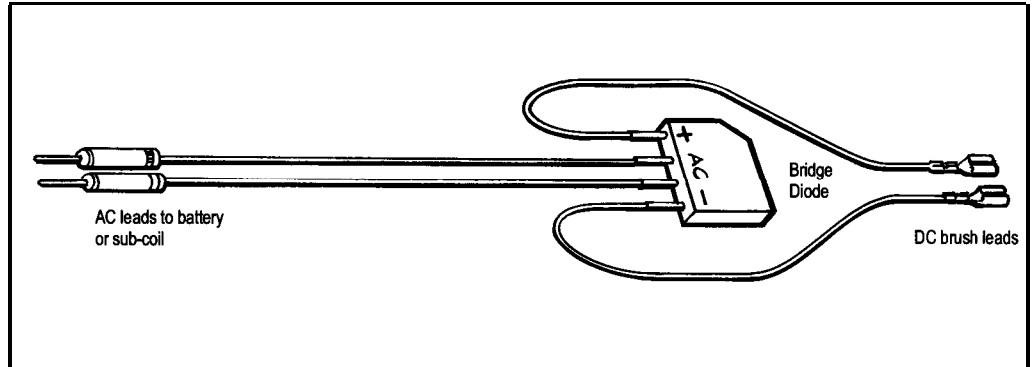
First, remove the generator cover and disconnect the AVR wires. Then connect the DC leads from your homemade special tool to the leads coming from the rotor brushes. Be careful not to reverse polarity.

Start the engine and, when the rpm stabilizes, touch the AC leads of the tool to the battery posts—polarity doesn't matter here—and check the voltage output of the following:

NOTE: Don't connect the 12v battery to the rotor (brushes) for more than 10 seconds at a time. Do let the rotor cool for a minute after one voltage application before con-

necting the battery again.

For step two of this test, connect your special tool AC leads to the sub-coil leads coming from the stator and perform the same voltage checks. Compare your readings to the ones on Chart 1 below.



- Main coil (at the 120VAC outlet)
- DC coil (at the 12v DC outlets)
- Sense coil (usually the light green and blue wires coming from the stator assembly to the AVR)

Compare your readings to the numbers on Chart 1.

necting the battery again. For step two of this test, connect your special tool AC leads to the sub-coil leads coming from the stator and perform the same voltage checks.

Compare your readings to the ones on Chart 1 below.

As before, don't connect the sub-coil to the

your electric heater into the other 120VAC outlet while you're checking the main coil voltage. The voltage should remain about the same.

If all your voltage readings are similar to the numbers in the chart, the AVR is probably the source of your problem. You can verify this by performing the AVR test described in the Summer 1992 (Vol. 5 No. 2) issue of *K-Tech News*.

If your readings are significantly different, refer to Chart 2. □

	Step one: Rotor powered by battery	Step two: Rotor powered by sub-coil
Main coil	about 75VAC	about 190VAC
DC coil	about 8VDC	about 20VDC
Sense coil	about 18VAC	about 20VAC

Step	Test Condition	Conclusion	Action
Step one: Rotor powered by battery	Voltage is low on all coils	Faulty brushes or rotor	Check condition of brushes, replace rotor
	All coils have good voltage	Rotor is good	Go to step two
	Sense coil voltage is low	Faulty voltage adjust circuit if applicable or bad stator	Check voltage adjust circuit, replace stator
	DC or main coil voltage is low	Stator is probably bad	Replace stator
Step two: Rotor powered by sub-coil	All coils are low	Sub-coil is bad	Replace stator
	All coils have good readings	AVR is bad	Replace AVR

Generators: inductive loads vs. resistance loads

by **John Pomo**
Product Support Specialist

Suppose a customer comes into your shop wanting to buy a generator. He tells you it will be used to run a ½-hp well pump that requires a continuous 1000 watts to run.

No problem, a GA1400 should have power to spare for that job, right?

NOT!

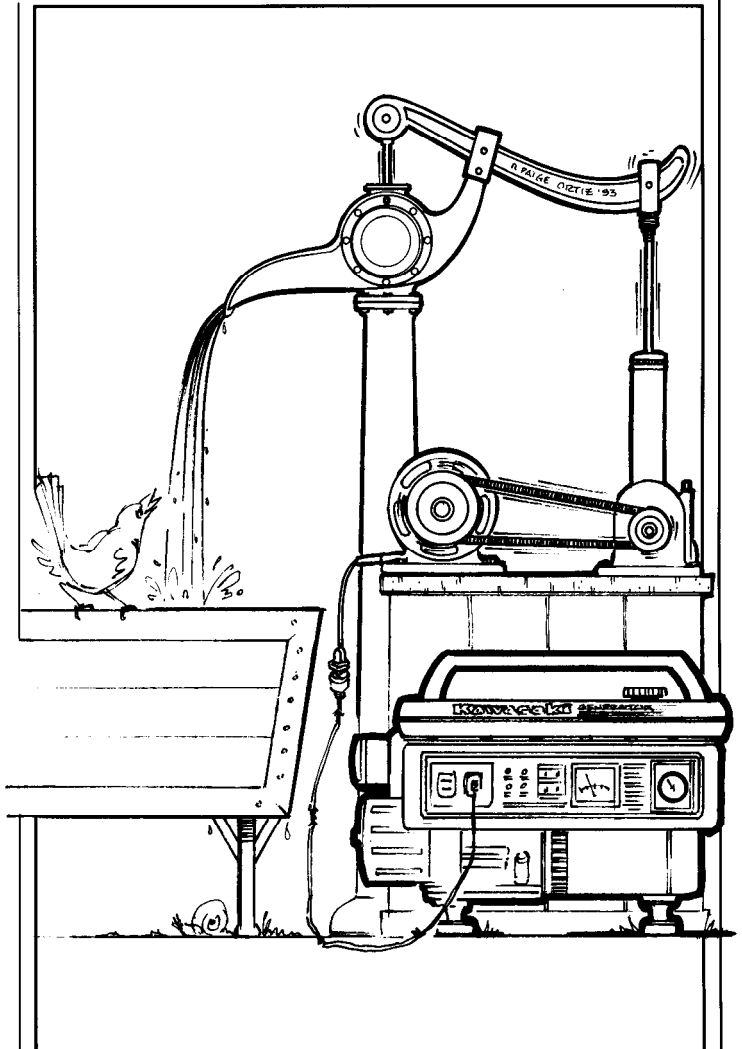
A very important factor that must be considered when choosing a generator for a specific job is the "start-up wattage" of the electrical load. In the above situation, an electric motor is what's using the current. An electric motor is an inductive load which uses a lot more current starting up than when running. In some cases, especially where the motor is heavily loaded at start up (as with a pump or compressor motor), the current draw can be *double* what it is during continuous running! The gen-

erator must supply enough power to get past the start-up load or the generator *and* the motor it's turning will just labor and groan until one of them expires.

Your customer's well pump probably needs 2000 watts to start up so you'd better sell him a GA2300 or GE2200. He'll be happier if his new generator does what he bought it to do.

Electric motors with less work to do during start-up (such as drill motors or electric saws) aren't as bad but can still use 25-75 percent more current during start-up than during normal running. Resistance loads (such as light bulbs or an electric heater with no fan) use even less but even they have a start-up wattage greater than their continuous wattage.

Beware! Take the time to ask a few questions before selling that generator. A little information can go a long way toward customer satisfaction. □



PARTS

Shocking news: generator accessories!

Two new generators recently introduced by Kawasaki (the GE2200A and GE4300A) come stock **without** the 12 volt DC terminals found on our other generators. However, the terminals, panel and wiring harness are available as a kit or assembly (depending on which model) from our Accessories Department.

Adding the DC terminals gives the customer the ability to charge batteries. Since both of these

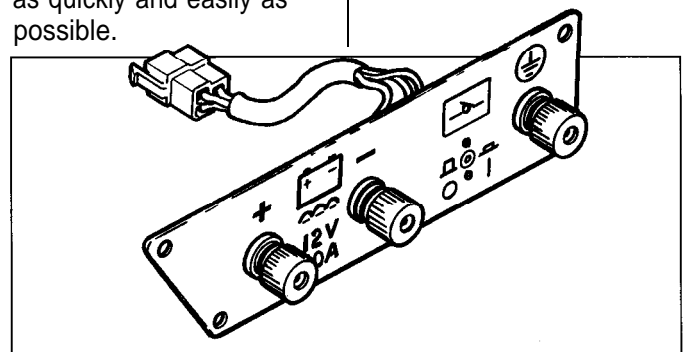
generators are already set up for DC output, installation of the kits is relatively easy.

The assembly for the GE2200A (P/N 39180-2850) attaches in the blank on the lower right hand corner of the control panel. After mounting the DC terminal panel on to the control panel, all that is left is to plug it into the wiring harness.

The kit for the GE4300A (P/N 99916-2103) is a bit more complicated to in-

stall as it does require removal of the control panel. However, complete installation instructions are included to make the job go as quickly and easily as possible.

Don't forget to check out the '93 Accessories Catalog for other exciting new generator accessories. - David Pyle



Decal eraser

by **Gregg Thompson**
Sr. Product Support Specialist

In the never-ending search for a better method of watercraft decal removal (which comes in a close second to the never-ending search for a better mouse trap), we have found and tested a tool which doesn't require the use of any chemicals. The tool is made by 3M Company and is called the Scotch Brite™ Graphics Removal Disc. It comes in 4 inch and 6 inch diameter sizes.

the decal, it kind of erases the decal and adhesive leaving the paint undamaged. The stack of eight discs cleans a path that's only about 1/2"-1" wide so it still takes some time to remove a large decal. But our feeling is that it's probably a little faster than our best method using chemicals and scrapers.

Perhaps the biggest benefit of this method is that it's not nearly as messy as using chemicals, plus you don't need to worry about other factors such as the decal tem-



The tool actually consists of eight, very thin, soft rubber discs stacked together on a mandrel. It can be mounted in an electric drill or air tool but should not be spun faster than 4000 rpm. The closer to 4000 rpm the better, but most pneumatic grinders will spin much faster than that and the Graphics Removal Disc will sling apart from centrifugal force. We recommend you use a fast electric drill motor.

As you hold the edge of the spinning disc against

perature or what the chemical fumes might be doing to your hairline.

It's just another example of better living through latex.

Our experience has been that the 6-inch disc works much faster than the 4-inch one. Either disc size should be available from your local tool supply or you can order the 6-inch version from Kawasaki using P/N T57001-288 for the disc and T57001-289 for the mandrel. □

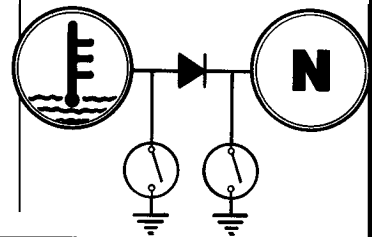
TECHNICALITIES

KLX650-C1 temperature warning light

Don't be surprised if, after servicing a new KLX650-C1, you discover that the temperature light comes on even though the engine is cold. In order to inexpensively provide a warning light test for it, the temperature light was wired through a diode to the neutral light. The temperature warning light comes on any time the neutral light is on. The diode in the circuit prevents

the reverse from occurring. If the temperature light comes on when the neutral light *isn't* on, then it's time to check out the cooling system.

- Gregg Thompson

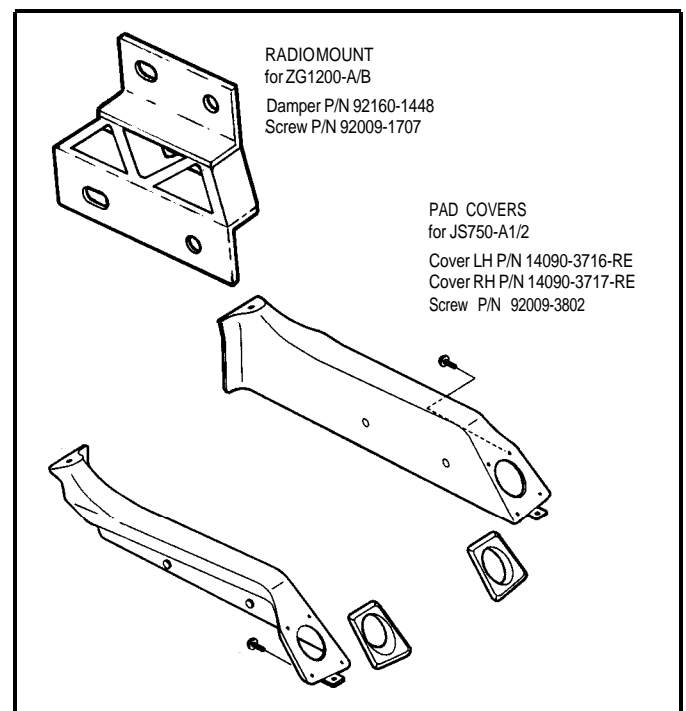


PARTS

Small parts at last

Recently, Kawasaki made some small parts available that previously could be obtained only by purchasing a much larger and more expensive assembly. These are the rubber mounts for the Voyager XII radio, and the two small trim pieces (called "pad covers") that go around the openings of the JS750-A1 fire extinguisher compartments.

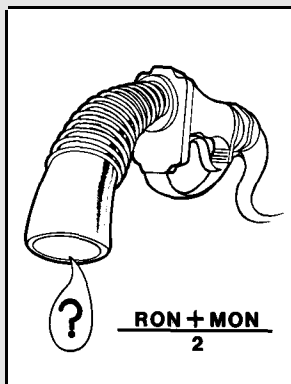
The part numbers are listed below and the parts are currently in stock. They will be included on the next update of the appropriate microfiche. - David Pyle



TIP

Oxygenated fuels

The jury is still out at this time regarding what effects the new oxygenated fuels will have on engines and fuel systems. But one thing is becoming clear: Even though these fuels have octane ratings similar to the fuels they are replacing, they are much more likely to detonate than those old fuels.



Our belief is that the oxygenated gasolines simply create more combustion chamber heat. At a given temperature and pressure, their detonation resistance may be equal to the non-oxygenated fuels, but they don't run at the same temperature, they run hotter! Result? More detonation.

In addition, additives used in "winter" fuels can make them even more likely to detonate.

The up-side of this is that our four-stroke engines don't seem to be suffering any significant harm from the increased detonation. Still, you might want to suggest to your customers that they make a habit of buying the best pump gas available in their area.

- Randy Davis

Hidden bent valves

by Dave Behlings

Product Support Specialist

It seems that with each new generation of Kawasaki sport-bikes, the horsepower figures go up. And when the horsepower numbers go up, so (usually) do the redline numbers: Making that extra horsepower usually requires more rpm.

To survive those higher revs, the valve train components (most notably the valves themselves) must continually be made lighter and lighter. The old two-valve heads had 7mm diameter valve stems; most of our newer sport bike engines have 4.5mm valve stems—and in the new ZX600-E1, they're only 4mm in diameter!

Another number that usually goes up along with the horsepower is the compression ratio. For these new generation engines to survive increasingly higher compression without suffering detonation damage, the designers have had to continually design more efficient combustion chambers. The result of this design evolution at Kawasaki has been some very flat combustion chambers, flat-top pistons and very vertical valve placement.

All the new technology has resulted in wonderfully smooth and powerful engines, but it has also made diagnosing a bent valve more difficult. The vertical valve placement means that if a valve strikes the piston, it usually doesn't bend very much. In fact, the valve

stem will sometimes get an "s" bend leaving the valve head at the correct angle but off center slightly.

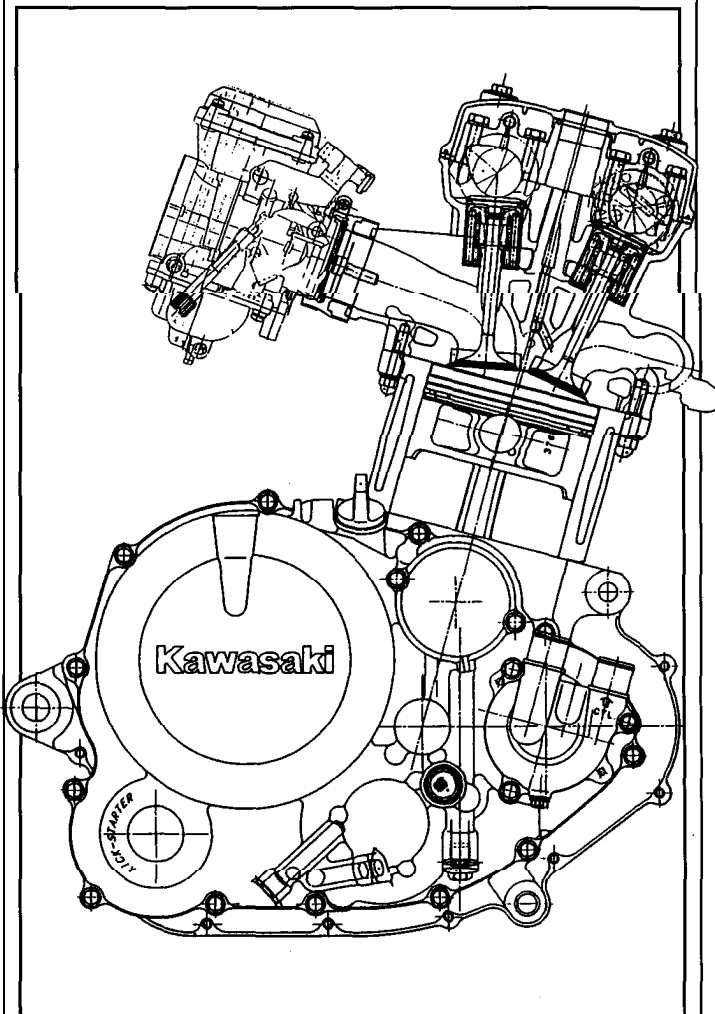
With only a slight bend in one of these small diameter stems to begin with, it is not uncommon for the valve to flex enough on closing to align itself with the seat and actually seal. When this happens, neither visual inspection of the assembled head nor pouring solvent into the ports will reveal the damage.

In many cases, the bent valve strikes the piston so straight and flat that it leaves no mark at all on the piston! The only way

you can make sure the valve is not bent is to take it out and inspect it.

If you have reason to fear the valves in your customer's bike may have struck the pistons, you should probably take them out. Even a small amount of bend can result in fatigue and eventually breakage of the valve stem. And *that ... well*, that would be very bad.

An easy way to check a valve for "bend" is to chuck it up in a drill press and spin it at a low speed. Obviously a lathe or valve grinding machine will work well for this too. □



ALERT

Air cleaner fires

▲WARNING

DO NOT USE LOW FLASH POINT CHEMICALS WHEN CLEANING YOUR REUSABLE FOAM AIR FILTER!

This is a warning you should give all your customers who do their own air cleaner maintenance at home. Quite frequently we hear from dealers who, while investigating some sort of running problem on a vehicle, discovered that the air cleaner, its holder and the air box are all in various stages of cremation. In every case, the fire that caused the damage was the result of residue left on a filter element which had been cleaned with gasoline or some other low flash point liquid.

Also, some aerosol air cleaner oils can have flammable carriers in them. We recommend that you don't use these aerosol oils on foam air cleaner elements.

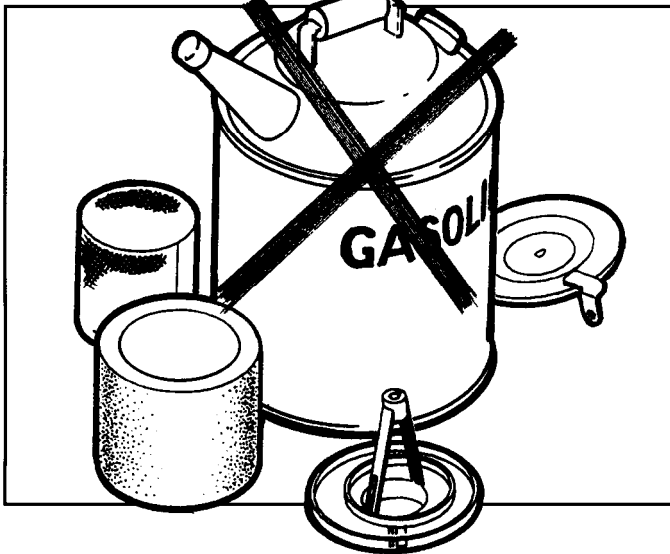
A highly flammable substance on the filter element can cause a fire in the air box of virtually any vehicle. Such a fire is po-

tentially dangerous. But usually the engine keeps running and the fire is contained in the air box until the most volatile material is consumed; then it goes out. In most cases, the customer wasn't even aware the fire had happened.

The major problem that usually results—most often in ATVs and Utility Vehicles—is accelerated engine wear. Since the customer is unaware of the damage, he continues to use the vehicle. With the air cleaner now resembling that stuff you had to scrape off the bottom of the turkey roaster last Thanksgiving, it's doing a very poor job of filtering the air. And the engine suffers wear from the dirt that enters unimpeded.

Street vehicles usually swallow less dirt when this happens and suffer less wear, but the problem is no less a concern: Please warn your customers—especially your parts customers who are obviously home mechanics.

- Gregg Thompson



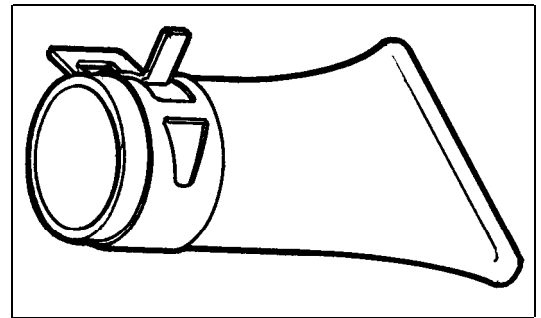
TIP

KLF400 air box drain bottle?

If you're familiar with our ATV's and utility vehicles, you've no doubt seen the black rubber drain tube that most of them have at the bottom of the air box. This is basically a rubber tube pinched flat at one end, designed to let liquids drain out while preventing unfiltered air from being drawn in.

The KLF-400 4x4 has a tube in the same place that's a little different from what you're used to. Instead of black rubber, it's made of a clear material. "No big deal," you say.

But it's clear for a reason: It's not actually a drain tube, but more like a catch bottle. The bottom end is not pinched flat, it's pinched *closed*. The tube is clear so you can look at it during a service and see



if it needs to be removed and cleaned out.

So don't forget to take a look under the air box when servicing a KLF400. - Randy Davis

TIP FOLLOW-UP

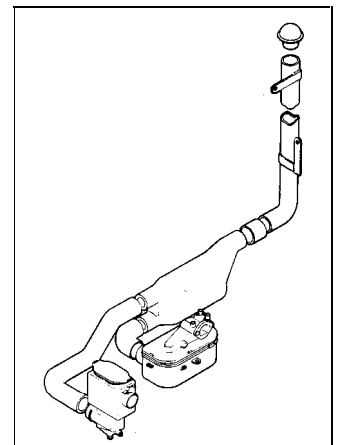
MULE™ 2010: A little matter of jetting ...

In the last issue of *K-Tech News* (Vol. 5 No. 4, Winter 1992) we printed a short article telling you about the relatively new snorkel-type air intake kit for the KAF540-C1.

Well, we recently became aware that the instructions for installing the kit suggest "recalibrating" the carburetor. However, the kit itself contains no further information—no jets nor even a part number list of suggested jets.

So here, for your "tips" notebook is the information to fill in that gap for you: In the chart at right is a list of recommended replacement jets and their part numbers. - Ed.

Recommended Jets	
Description	Part No.
Discharge nozzle	49121-1055
Pilot jet, #75	92064-2068
Main jet, #127.5	92063-2240



UPDATE

More on KLF400-B1 engine vibration

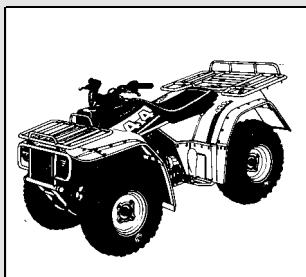
In September last year, Kawasaki initiated a Factory Directed Modification (FDM) for the KLF400-B1 Bayou (Bulletin MC 92-08). This modification was designed to reduce the vibration felt by the rider on units already in the field.

Since that time, the parts in the FDM have been included on all units in production as well.

If you have been concerned about the vibration level of the Bayou 400 4x4, you should be pleased to know that Kawasaki has instituted a mid-year production improvement on the Big Bayou that will further reduce the vibration: Kawasaki recently began building the engines with a new crankshaft which is balanced differently to reduce the vibration created by the engine. These newer units still have the modified floorboards and handlebar weights.

Dealers who have already serviced one of these newer units have raved about how great the improvement is. Vibration level is now very low.

- Gregg Thompson



Speedometer accuracy

by **Steve Rice**
Product Support Specialist

We get quite a few calls on the Technical Hot Line about inaccurate speedometers and whether or not they can be covered under warranty. The reason we get so many calls is that our speedometers are *not* real accurate. But they are consistent!

The tolerance we use for accuracy on all our speedometers (with the exception of police bikes) is 0 percent slow to 10 percent fast. In other words, if a speedometer reads no more than 10 percent over the actual speed and no less than the actual speed, then it's OK (i.e., it's not defective).

The truth is that most of our speedos run very

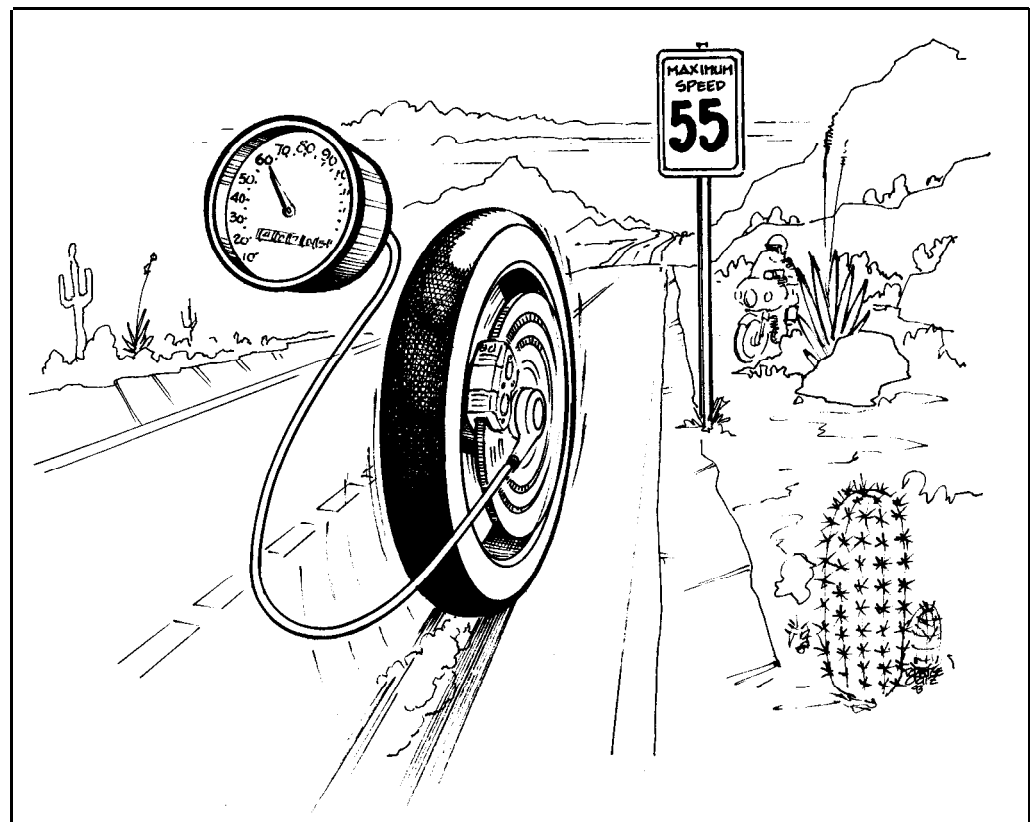
close to the 10 percent fast end of that spec.

To check one for accuracy, a radar gun is a pretty handy tool, but a late model car with fairly new OEM size tires will do just fine. (Automotive speedometers are usually right on the money at highway speeds; using another motorcycle-of any brand-for this test is not a good idea.) Simply ride next to the car while its driver maintains exactly 50mph. If the motorcycle reads somewhere between 49 and 56 mph, you can figure it's OK.

If you are considering replacing a speedo under warranty because it reads fast, keep in mind that a brand new replacement speedo will probably read almost 10 percent fast at

55mph. That's if the bike has fairly new tires. As the front tire wears, the speedometer reads even faster. Explain to the customer what kind of improvement he can expect from his new speedometer before replacing it. If he was upset that his old speedo read 64mph at 55 with a worn tire, he might not be too happy when he discovers his new one reads, say, 61 mph with the same old tire at 55.

Take into consideration not only the wear on the front tire, but also the size and model. It's the rolling diameter of the tire that counts, and between various makes and models, even tires of the same advertised size can differ in rolling diameter. □



ALERT

KX125-J2 detonation

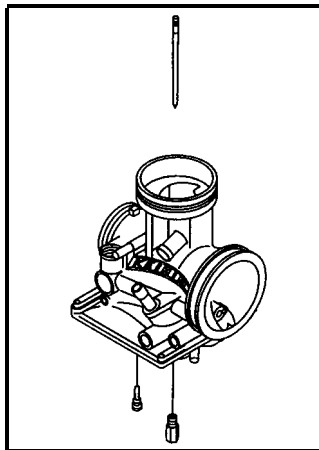
We've had a lot of reports this year of '93 KX125s suffering serious engine damage from detonation. For the most part, this has been when the customer was using gasoline from his local service station. Even the best gasoline available at the pumps today is not adequate for use in the new KX125.

Unfortunately, most guys who are just trail riding their bikes don't want to pay the price for race fuel, so they're the ones most likely to run into this problem.

In view of this, Kawasaki has developed some recommended jetting and a thicker head gasket for

the KX125-J2. Owners who don't have race gas readily available, or just don't want to pay the high price for it, should purchase these parts and install them right away.

- Gregg Thompson



	Original Setting	Optional Setting	Part Number
Main Jet	160	168	92063-1371
Jet Needle	N1AL-2	N1BL-2	16009-1753
Pilot Jet	52	50	92064-1144
Head Gasket	0.26mm	0.46mm	11004-1252

customer SERVICE

by Donna Hood, Customer Service Representative

Here's another tip aimed at helping you provide your customers with excellent service: Did you realize that the Kawasaki warranty is a valuable tool for keeping customers satisfied? Of course you did, but did you know that if your customer loses the use of his or her vehicle due to back-ordered parts, the warranty on the motorcycle can be extended for the length of time the bike was down?

Here's how to make this policy work for you: After you notify the customer of the problem and apologize for the inconvenience, offer to have the warranty extended to compensate for his or her loss of riding time. Then simply attach a note to the warranty claim form asking your warranty analyst to extend the warranty on the customer's motorcycle. Or call anyone in the Consumer Services Department (or Technical Hot Line) with your request.

We will be happy to assist you and even (upon your request) to take an extra step on your behalf to make sure we are providing the best possible customer service: If you ask us to, a letter can be sent to the customer from KMC notifying him or her of the new expiration date of the warranty.

If ever a repair cannot be completed due to unforeseen or unusual circumstances, contact Consumer Services. We will review your situation and make an adjustment to the customer's warranty if it's justified.

In the meanwhile, be on the lookout for more suggestions that require very little time or effort but provide "extra-mile service" to your customers. □

REGIONAL NEWS

WEST

CONTINUED FROM PAGE 12
there less chance of a class being canceled, but students also learn more when there are more people involved in a training class. More students means more questions asked and more questions answered. Plus, students learn from each other's experiences as well.

When you decide to attend a training class, sign up as early as possible. When you sign up at the

last minute, you might find the class has already been canceled because not enough students signed up. Your reserved spot may have prevented that class from being canceled.

Oh, and last but not least: When you make plans to attend but later find you cannot, please take a moment and give us a call; we really appreciate it! "No shows" can really cause problems for us and for the students who do attend. □

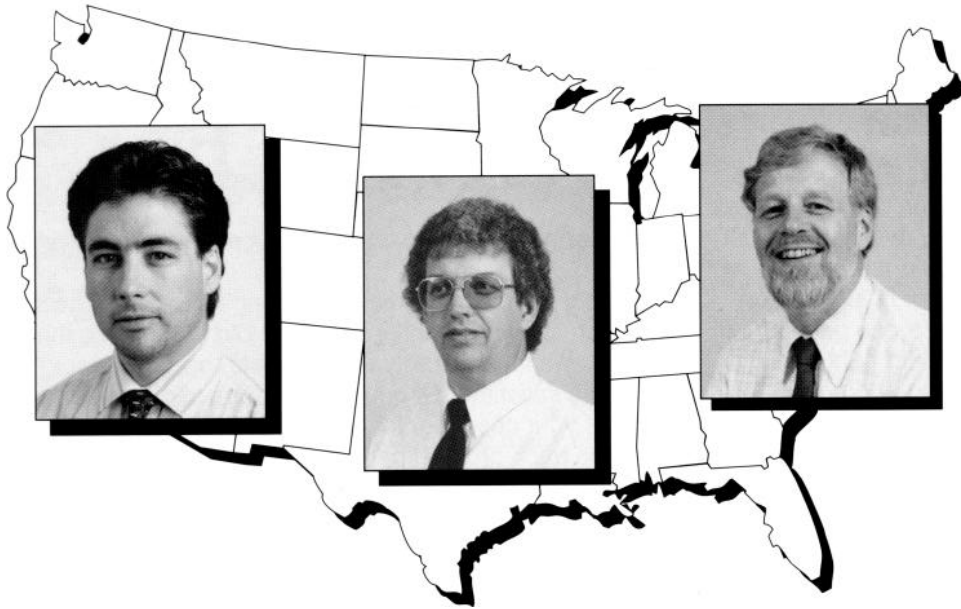
SOUTH & CENTRAL

CONTINUED FROM PAGE 12
campaign one of his next goals. He achieved this by "always having some spots on the air," whether it is on cable television, regular television or radio. Other forms of advertising that Larry has used successfully are "Demo Days" for ATVs, MULEs and JET SKI® watercraft, and "Open Houses" for KX and KDX machines.

Setting goals and working toward them has

helped Larry double the size of his business and staff in just one year. Without question, setting reasonable goals and working towards them can be just as rewarding for you. □





WEST

Attendance up in '92/'93

by Patrick Kelly
9950 Jeronimo Road
Irvine, CA 92718
(714) 770-0400

I have had a busy training schedule this winter-so busy that I've barely had time to sit down and write this column or anything else for this spring issue of *K-Tech News*. But I'm definitely not complaining: Our training classes have had a small but steady stream of students this year.

The number of classes canceled due to lack of interest was less than in previous years. I interpret this to mean that the industry as a whole is starting to recover from its long downward trend. As unit sales go up, so does service department business. A healthy service department needs more mechanics, so there are more attending Kawasaki training classes. This makes Kawasaki training even better because, not only is

CONTINUED ON PAGE 11

SOUTH & CENTRAL

Goal-setting advantages

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

Larry Villers owns Larry's Kawasaki in Parkersburg, West Virginia. Although Larry was in the automotive sales business for many years, he has always been a motorcycle enthusiast. Larry completed the purchase of his dealership in January, 1992, and proceeded to set goals to help him overcome the many challenges of running a successful, full-line Kawasaki dealership.

Renovation of the facilities was Larry's first goal. After remodeling the existing building, Larry added a second showroom of almost 1000 square feet. This new set up allows the dealership to display about 65 vehicles at a time.

Being a firm believer in advertising, Larry made a successful advertising

CONTINUED ON PAGE 11

NORTH & EAST

Time to go to class!

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

The watercraft, motorcycle and ATV sales season is rapidly approaching. Now is the time for your dealership to take advantage of those training classes still available through May, 1993. Check your training schedule!

The second of three service contest quizzes is inserted in this issue of *K-Tech News*. Remember, a score of 85 percent or better will net you an award for your effort. Please try your hand at quiz number two.

During the summer months, I will be busy assisting the Kawasaki Technical Hot Line staff and helping out with some selected regional consumer events. But if you have any technical training questions, I can always be reached by calling either Kawasaki's East or North Region office. □

Training Schedule

East Region

April
13-15 JET SKI® Watercraft
27 ModernEngineTheory
28 Precision Measurement and Diagnostic Tool Usage
29 Generator

May
4-6 Engines
11-13 JET SKI® Watercraft
25-27 JET SKI® Watercraft

North Region

April
19 Generator
20-22 Engines

Central Region

May
3 MULE™ Service
4 Precision Measurement and Diagnostic Tool Usage
5-7 JET SKI® Watercraft
10 Engine Theory
11-13 Engines
14 Service Department Operations

South Region

April
1 Product Update '93
5 Precision Measurement and Diagnostic Tool Usage
6-8 Engines
12-13 MULE™ Service
14-15 ATV Service
19 Generator
20 Fuel Systems
21 Tune and Service
22 Precision Measurement and Diagnostic Tool Usage
26-27 ATV Service
28-29 TroubleshootingElec.Systems

May
17 Precision Measurement and Diagnostic Tool Usage
18-20 Engines
24-27 JET SKI® Watercraft

West Region

April
1 Generator
5-6 Engines
7 Tune and Service
8 Precision Measurement and Diagnostic Tool Usage
12 ATV Service
13-14 MULE™ 1000/2500 Service
15 MULE™ 500 Service
26-28 JET SKI® Watercraft
29 Service Department Operations

May
3 Precision Measurement and Diagnostic Tool Usage
4 Team Green Race Preparation
5-6 Engines
7 ModernEngineTheory
18-20 Troubleshooting Elec. Systems
24-26 JET SKI® Watercraft
27 Service Department Operations