

2000 NINJAS

ZX-12R



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2000 Ninjas®

by John Griffin
Instructional
Designer/Instructor

Kawasaki is entering the new millennium prepared by introducing more new products than ever in our history. The ZX-12R is primed to set new performance records to establish itself as the premier open class sport-bike. The ZX-9R and ZX-6R are dramatically revitalized. Cruiser and touring customers have some sweet rides to choose from with the addition of the new Vulcan™ 800 Drifter and Fuel Injected versions of the Vulcan 1500 Classic and Nomad.

Retro buffs will no doubt fall in love with the new W650. In this issue we welcome the impressive new Ninjas.

ZX-12R

The ZX-12R is prepared to set the motorcycle industry on its ear, just like the ZX-11 did 10 years ago. Kawasaki designed an all new 1199cc engine with an 83mm bore and 55.4mm stroke. The bore-to-stroke ratio is the same as the ZX-9R and ZX-6R. The valves are directly actuated by the cams, so the valve clearance intervals will most likely be every 7500 miles, with no inspection required at the first service. Lightweight magnesium is used for the valve cover, clutch cover, alternator cover, pulser cover and even the oil sump! This engine with intake and exhaust is 26.5 pounds lighter than the



A scissor type primary gear on the ZX-12R eliminates gear lash noise by spring loading the teeth.



All U.S. model ZX-12R, ZX-9R, and ZX-6R motorcycles come with a catalyzer. All ZX-12R models come with a completely Titanium muffler. CA model ZX-9R and ZX-6R models have dual catalyzers



The ZX-12R uses a new Denso fuel injection system.

ZX-11s.

The Denso fuel injection system uses 46mm throttle bodies with single injectors. Each injector has four orifices for good fuel atomization like the Mitsubishi system used on the fuel injected Vulcans. Unlike those models, the ZX-12R uses a cam sensor to determine when the pistons are on the compression stroke to fire the stick-type ignition coils just once per cycle. A gear

position sensor allows the ECU to calculate the effects of the ram air system and adjust the ignition and fuel injection accordingly. The ram air system adds 13 horsepower at top speed.

The narrow aluminum monocoque frame is probably the most unique feature on this model. It features a huge stamped aluminum section above the engine rigidly tying the steering stem to the

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swingarm pivot without the width of twin spars wrapping around the open-class engine. The frame is even home to the airbox and battery.

The ZX-12R is ready to carve canyons with a short wheelbase (56.7 in.), light weight (463 lb.) and top notch suspension. The inverted 43mm cartridge front forks and piggyback reservoir rear shock are fully adjustable. The rear ride height can be adjusted by adding shims between the shock clevis and the frame. The range of adjustment is 10mm at the shock, which means about 2 inches at the back of the bike. Specially constructed Dunlop 207 Sportmax radials wrap around new 3-spoke rims. A mammoth 200/50-ZR17



Note how the airbox and battery are housed inside the new frame. The majority of the 5.3 gallons of fuel is carried low, under the seat.

rear tire fits on a 6-inch wide rim.

ZX-9R

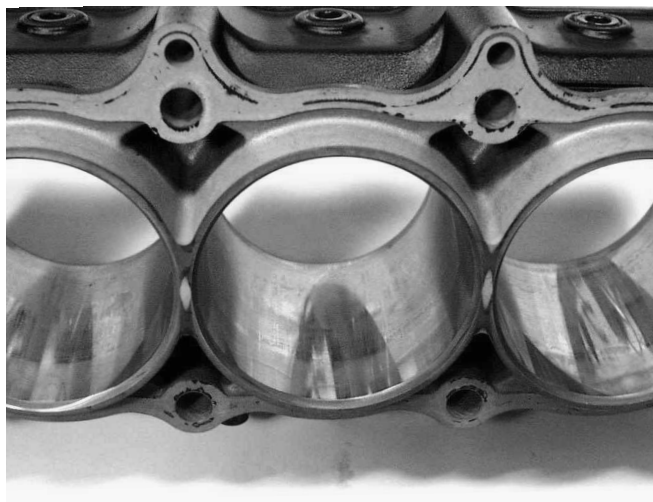
Dual headlights and an aggressive look make it plain to see that the new ZX-9R means business. The new ram air system scoops up the air. A new cylinder head raises the compression ratio from 11.5:1 to 12.2:1 for more

power and torque. A minimum of 90-octane fuel is required.

New Keihin CVRD 40 mm carburetors mix that fuel with air under new slides that are flat on the air box side for improved throttle response. Once this mixture is compressed, a new 16-bit processor in the igniter signals the stick-type coils to fire. The igniter no longer uses a cam sensor, because a new ignition rotor with 24 projections (from 4) offers such an accurately timed, quick, and intense spark that the coils can operate cooler even when fired every rotation.

The chassis got the Supersport treatment with a stiffer frame, removable aluminum subframe, and adjustable ride height. The frame spars are now 10mm taller and the steering head pipe is 12mm longer for a rigid frame that delivers a telepathic

Continued on pg. 12



The new ZX-12R, ZX-9R, and ZX-6R use sleeveless plated aluminum cylinders. This cuts weight and transfers heat much better, allowing minimal piston-to-cylinder clearance for maximum power. A rapid cooling open deck cylinder design is unique to the ZX-12R.



**PISCATAWAY/
GRAND RAPIDS**

2000 TRAINING

By the time you read this article, I will have finished my road school schedule with the last two seminars being offered in Grand Rapids December 6 and 7. For those attending the Watercraft Direct Injection seminar—don't worry; as soon as we receive the finalized diagnostic software for the FICHT system, we will mail it to you. The Regional Facilities training classes will begin in January 2000 and continue through April.

The training schedule for classes has been mailed to your dealership. If you can't locate a schedule, call K-FAX at (949) 460-5663. The document number for the training schedule is #1305. The system will automatically fax the schedule to you when you hang up.

Make sure you get together with your service manager to determine which classes or seminars you plan to attend. Be aware that some training classes are only available once this season. For instance, Team Green

Race Preparation and Maintenance will be offered one time in both the Piscataway, N.J. and Grand Rapids, Mich., training centers. Enroll early!

Keep in mind, that the interaction between the varied student backgrounds and the expertise of Kawasaki Training Instructors always affords you an increased opportunity to upgrade your technical skills that is not available in any other medium. We look forward to speaking with you at one of our classes soon!

Fred DeHart

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CUSTOMER SERVICE TIPS



ATLANTA/TULSA

Many dealer customer complaints are associated with the service department. There are many ways to handle customer complaints properly so that a satisfactory conclusion is attained for all concerned. I have a list of tips aimed at the service department, but will help anyone with customer complaints.

Cooling Off Hot Heads

1. Be polite , but only speak after a couple of minutes. Let them vent. Deal with emotions first. Logic can wait.
2. "Here's what we'll do..." Acknowledge their problem and that you can help them.
3. Reiterate what you will do. Explain what you're going to do and give a time frame.
4. End the conversation politely and positively. Document everything immediately.

Phrases That Destroy Customer Goodwill

1. "I don't know." Many make the mistake of uttering this phrase and then clam up in silent embarrassment. Use instead: "That's a good question. Let me check and find out."
2. "We can't do that." This phrase is the surest way to send a customer to someone else who CAN do what the customer wants. Use instead: "That's a tough one. Let's see what we can do."
3. "You'll have to..." Nothing turns a customer off more than being ordered around.

Give the customer the feeling you're in their corner, no matter what the problem.

4. "No" when used at the beginning of any sentence. Use instead: The customer asks, "Can I get a refund?" Instead of simply replying, "No, I'm afraid not," you say, "We aren't able to refund your money, but we can replace the item at no charge."

Good customer service is more than meets the eye. There are many skills you can learn. It keeps customers coming back. Always remember two things: Your job exists because of the customer and lastly, everyone is a customer.

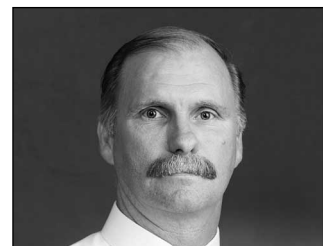
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STEERING OSCILLATION



IRVINE/TACOMA

We often get questions about steering oscillation or "head shake."

Here are some factors to remember when considering this situation.

First, it is not uncom-

Service Contest Grand Award Winners



Don Church congratulates Ray Sumner.

Ray Sumner has been a Kawasaki technician for 20 years. He has amassed a serious collection of Kawasaki memorabilia highlighted by 61 certificates and diplomas from the Kawasaki training courses he has attended. Now that's dedication, folks!

Gary is a two-time grand award winner of the Service Contest. Gary said the first quiz was the toughest, since Beaumont Kawasaki doesn't carry Mules. He had to visit other Kawasaki dealerships to do the research needed. Obviously, he did pretty well. Way to go, Gary! ♦—Don Church

We recently paid a visit to Ray Sumner at Millennium Cycleworks in Lilburn, Ga., and Gary Bustillos at Beaumont Kawasaki in Beaumont, Calif., to present them with their awards for having the highest cumulative scores in Kawasaki's Service Contest quizzes. As you read in the last issue of K-Tech News, Ray and Gary tied in this year's contest. Along with the "trophy," a mini Snap-On tool chest, Ray and Gary received a gift certificate for Kawasaki accessories.



Don Church congratulates Gary Bustillos.

Regional News - cont'd

mon for the front-end to wobble at low speeds when your hands are off the handlebars. This somewhat happens on almost any street motorcycle. Because of this, tell customers to never ride their motorcycle at any speed with their hands off the handlebars.

Make sure that any extra items stored on the machine are evenly distributed by weight in the bags, fairing, or other storage areas. The added weight plus the rider (and passenger), should not

exceed the maximum load amount listed in the owners manual. The Gross Vehicle Weight Rating (GVWR) is also listed on the white factory sticker on the frame.

Loose steering head bearings can also contribute to head shake, while over-tightened bearings can cause a high speed wobble. This is a delicate adjustment that should be done by an experienced technician.

Tires have a direct affect on steering oscillation. Worn or cupped tires and improper tire pres-

ures can cause handling problems. Different types of tires can affect all aspects of handling, especially if the tires are mismatched, wrong type, or incorrect size and/or load carrying capabilities. OEM replacement tires should always be recommended to maintain the original handling characteristics of the motorcycle. ♦

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Tool Corner

I have spoken with several dealers concerned about the new Kawasaki essential tool program. Many wondered if their dealership would receive all the special tools required for the new model year, and if there would be duplicate tools. Other concerns were the cost and return policies. Bulletin SP 99-01 explained the policy and procedures and was mailed to all dealers in September.

The policy was created to help dealers perform professional repairs, dramatically cut the cost of essential tools and to address state warranty laws. KMC receives a list of special tools from KHI at the beginning of each new model year. At that time, we evaluate the tools and determine which tools will be carried by KMC, and which of those will be considered essential for the dealers. The number of essential tools varies on the number of new models and the tools associated with them.

Some criteria we use when selecting essential tools are: the cost, the level of importance in a service repair, how often the tool will be used, if it is a Kawasaki-specific tool, and how many models the tool will work on. For example, if a new motorcycle has 4 special tools associated with it, and 3 are used on the final drive and one for clutch removal, we would list the clutch removal tool as an essential tool and automatically ship it to the dealers. The other 3 tools will be stocked by KMC as an available tool.

Essential tools will be charged to the dealer's parts account and cannot be returned. There will be a letter sent with them stating that the tool you have received is an essential tool.

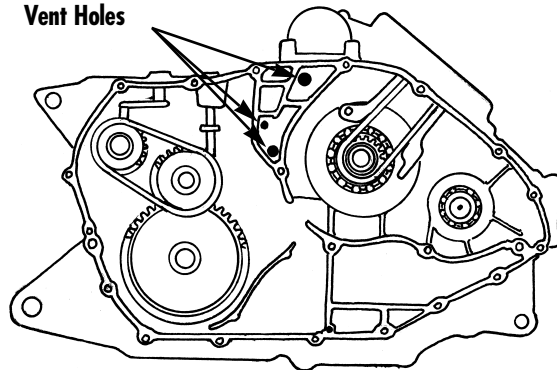
All special tools have a 90-day warranty covering them against defective materials and workmanship. Consult the Kawasaki special tool catalog (P/N 99960-0065-04) for complete warranty information. ♦—Rob Taylor

KVF400 Crankcase Vent Problems

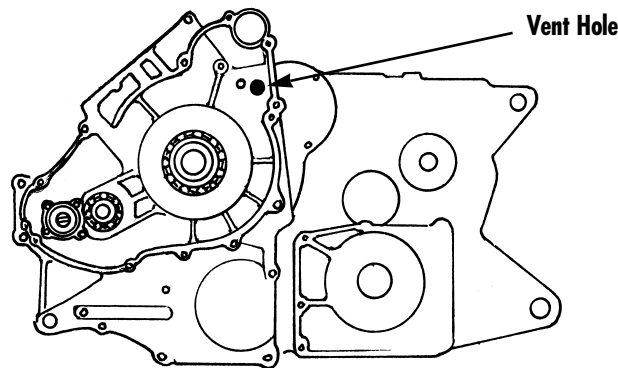
by Gregg Thompson
Product Support Supervisor

Two years ago, in *K-Tech News*, Vol. 10 No. 3, we ran an article about KVF400 Prairie® ATV crankcases not breathing properly because of casting flash in the vent holes in the case halves. The problem that resulted was large amounts of crankcase oil pumping into the air box. The solution described in the article was to split the crankcases and clean out the casting flash in the vent holes.

This problem appeared briefly in the KVF400-A1, and B1 and then went away. Recently it reappeared in a few KVF400-C2s. The problem is the same but this time we've discovered that all these cast-in vent holes can be



R.H. CRANKCASE



L.H. CRANKCASE

accessed without splitting the cases. Three are visible with the right-hand (transmission) cover removed and another one is visible with the left-hand engine cover removed. The hole most likely to cause this problem is visible from the right side.

Note that oil in the air-box can also be caused by excessive piston ring blow-by or simply an overfilled crankcase. If you encounter this problem, the first thing you should do is check the oil level and then confirm the condition of the rings by doing a leakdown test (a compression test is not conclusive on this model because of the automatic compression release). Don't forget that when checking oil level on a Prairie, the filler cap must be threaded all the way into the filler hole to get a correct reading on the dipstick. Once the oil level and engine condition are confirmed, remove the right-hand engine cover and inspect the three holes shown in the drawing.

If no problem is found there, then remove the left-hand engine cover and inspect the one hole shown in the drawing.◆

Optional Prairie® Springs, Part 2

by John Griffin
Instructional Designer/Instructor

In the last issue of *K-Tech News*, we listed the part numbers for the optional stiffer springs available for the Prairie models. We failed to mention that the 1999 and 2000 Prairie models use a different rear spring than the '97-98 models. The newer Prairie rear springs have a larger inner diameter.◆

Optional Spring Details

Year	Springs	Color	Part #	Sugg. Retail
'97-98	Rear Spring	Red	92145-1199	\$96.95
'99-2000	Rear Spring	Black	92145-1271	\$116.98
'97-2000	Front Springs (2)	Red	92145-1225	\$81.95 ea.

Vulcan™ and Voyager Final Drive Leaks

by Gregg Thompson & Randy Davis

Over the years we've had reports of oil leaks in the pinion shaft area of the final drive on 1200 Voyagers® and 1500 Vulcans™. The leaks are discovered as oil comes out from the area between the swingarm and the final gear case. Dealers often have trouble diagnosing the leak because they don't understand how the pinion shaft is sealed.

If you are trying to diagnose a leak in this area, first make sure the oil that's leaking out is indeed final (hypoid) gear oil. Do this simply by smelling it. Gear oil has a very distinctive smell. It is possible for engine oil to leak from the output shaft of the bevel gear case, run all the way down the swingarm, and leak out in the same place.

Once you've verified the leak is gear oil, check the two O-rings (*) in the driveshaft coupler. Most people don't even know there are two O-rings in

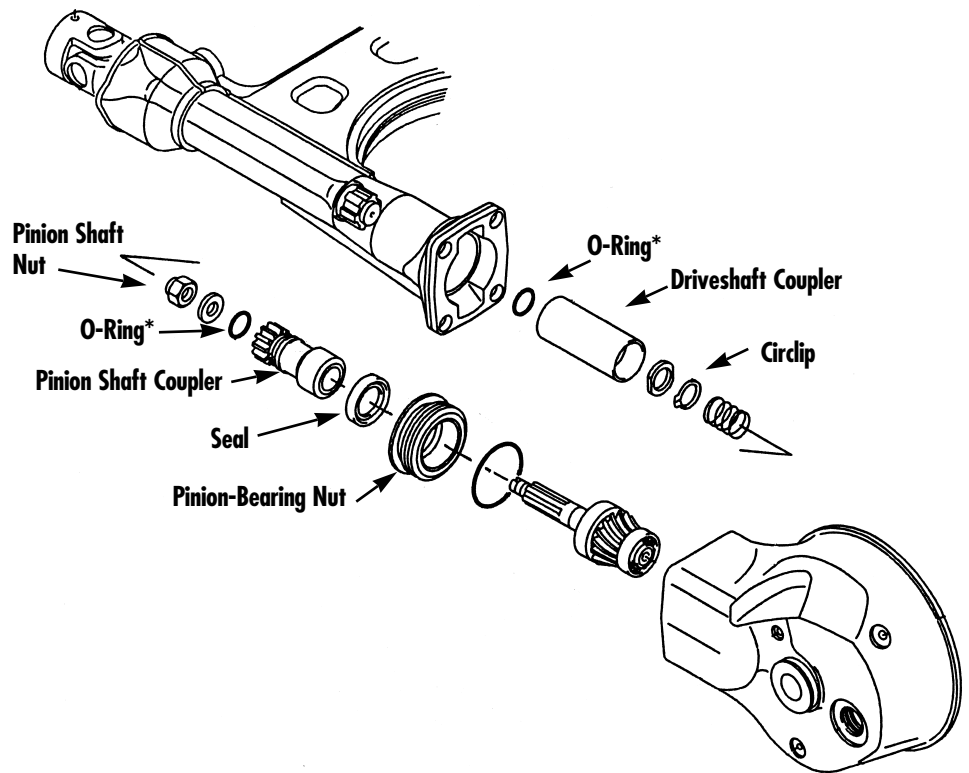
there. A small hole in the pinion shaft coupler allows oil from the final gear case to lubricate the coupler splines. An O-ring(*) at each end of the driveshaft coupler (one on the driveshaft splines and one on the pinion shaft coupler splines) prevent that oil from leaking out.

reveal the other O-ring on the end of the driveshaft. These two O-rings(*) are probably the most common cause of leaks in this area.

Next, check the pinion shaft seal for leaks. With a flashlight, look inside the large pinion-bearing nut for evidence of a leaking seal. If the seal is

ion-bearing nut. By removing the small pinion shaft nut, the pinion coupler can be removed, allowing easy access to the seal.

There is also a large O-ring behind the pinion-bearing nut. This is the least likely item to leak, which is good since that nut is very difficult



The O-ring on the pinion shaft splines is easy to see and replace but the one on the driveshaft splines is a little more challenging. Getting to it requires removing the circlip and washer from inside the driveshaft coupler. Once the circlip and washer are removed, the coupler pulls off to

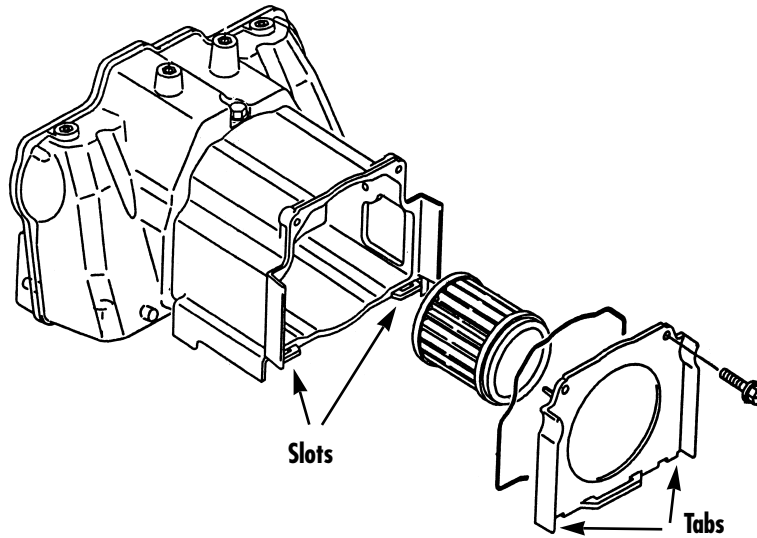
leaking, there should be a collection of dirt with a trail along the inside bottom of the nut where oil has washed it clean. A small amount of oil in this area is more likely to be from the above mentioned O-rings.

If the seal is leaking, it can be replaced without removing the large pin-

to remove. On the 1200 Voyager, the torque on that nut is 400 ft/lb. On the 1500 Vulcan, it's a little more manageable at 180 ft/lb., but beware that the nut has *left-hand* (LH) threads. It will take a lot more than 180 ft/lb. to remove the nut if you're turning it the wrong way!◆

ZRX1100 Hesitation

by Dave Langford
Product Support Specialist



If you have a customer complaining of a throttle hesitation or flat spot in the mid- to-upper RPM range, check the air box cap (or lid, or cover). Especially check this if the air cleaner has been inspected or replaced recently. It is possible that the cover was improperly

reinstalled. This cover is a little tricky to install correctly. There are tabs at the bottom of the cover that fit into slots in the bottom of

the air cleaner case. To install the cover correctly, these tabs must first be pushed down into the slots in the case and then the bolts at the top can be

installed and tightened. It is easy to install the cover without getting one or both the tabs into the grooves. Doing this will cause a lean hesitation. ♦

Y2KX Jetting Specs

Now that the year 2000 KXs have been out for a while, Team Green has had a chance to test them extensively and offers some recommended jetting specifications. These carburetor settings were developed using Trick Racing Gas and Bel Ray H1R oil premixed at a 40:1 ratio. They are recommended for sea level to 3000 ft. Your results will vary with the use of different gasolines, oils, and mixing ratios. Jetting needs will also vary with changes in temperature, humidity and altitude. Team Green does not recommend the use of pump gas, aviation fuels or octane boosters. ♦—Ed.

	KX60-B16		KX65-A1		KX80-W3		KX125-L2		KX250-L2		KX500-E12	
	Stock	T.G.	Stock	T.G.	Stock	T.G.	Stock	T.G.	Stock	T.G.	Stock	T.G.
Main Jet	200	←	230	220	125	←	160	←	160	←	168	170 O/R Only
KMC P/N	92063-022		92063-025	92063-024	92063-1334		92063-1369		92063-1368		92063-1371	92063-1372
Needle & Clip	5114-3	←	5HS59-3	5HS59-4	N5HF-3	←	N7NW-3	N7NW-2	N3WE	←	N82M-3	N82M-2
KMC P/N	16009-1220		16187-1129	16187-1129	16009-1960		16187-1084	16187-1084	16009-1915		16009-1580	16009-1580
Needle Jet	N-8	N-6	0-0	0-0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
KMC P/N	16017-1215	16017-1259	16017-1413	16017-1413								
Power Jet	N/A	N/A	N/A	N/A	N/A	N/A	52	42	48	←	N/A	N/A
KMC P/N							16159-1055	16159-1059	16159-1058			
Pilot Jet	30	35	40	40	58	55	45	40	52	←	58	55
KMC P/N	92064-1030	92064-1023	92064-024	92064-024	92064-1146	92064-1145	92064-1142	92064-1140	92064-1130		92064-1146	92064-1145
Slide	2.0	←	2.0	2.0	3.0	←	6.0	←	8.0	←	7.0	←
KMC P/N	16025-1107		16025-1125	16025-1125	16025-1162		16025-1215		16025-1217		16025-1163	
Air Screw	N/A	N/A	1-1/2	1-1/2	1-1/2	←	1-1/2	1-1/2	1-1/2	1-1 3/4	1-1/2	2
Turns Out												
Spark Plug	B9EG	B9EVX	B10EV	B10EVX	R6252K-105	B10EVX	BR9EVX	←	BR8EVX	←	B8EG	B9EVX
NGK/KMC#												
C/S Sprocket	13		13	14	14	14	12	←	13	←	14	
Gearing		Same										Same
RR Sprocket	44		46	47	50	52	49	49	48		47	

Digital Cameras (Part II)

by John Griffin
Instructional
Designer/Instructor

In the last *K-Tech News*, Kenny Osberg explained how useful a digital camera can be for communicating with Kawasaki. There is no need to process film, you can eas-

ily edit pictures to improve the quality, remove objects, or re-center the picture. It can save time for everyone involved, but have you thought about how many other uses there are at your dealership?

In the Service Department

Take pictures of important steps in a complicated repair as you take it apart so parts get reinstalled correctly. You could even keep these on file for other technicians

to use later for training or another repair. Document scratches, dings, and dents on customers' products as they come into the shop to avoid being blamed for the damage later.

Take pictures of the condition of internal parts of a customer's machine to improve their confidence in your repair, and help them understand the cost. Send customers a quick E-mail with a picture of their completed Kawasaki just waiting for them to pick it up. Put pictures of your expensive machinery (boring bars, dynos, test tank, wheel balancers, etc.) on your Web site.

In the Sales Department

Use a digital camera to take pictures of your used

or new vehicles and post them on your Web page or a newsletter, or E-mail them to interested customers. Use these pictures on a Web page and pick a few to be your "specials of the week."

In the Parts Department

Use the digital camera to communicate parts problems with Kawasaki. Send E-mails to your customers with a picture of their parts, inviting them to come and pick them up. Take pictures of your interesting displays and save them in your computer as a reference in the future. Post pictures of special sales parts, used parts, or take-off components on your Web site or even a computer that is accessible to your in-store customers. ♦



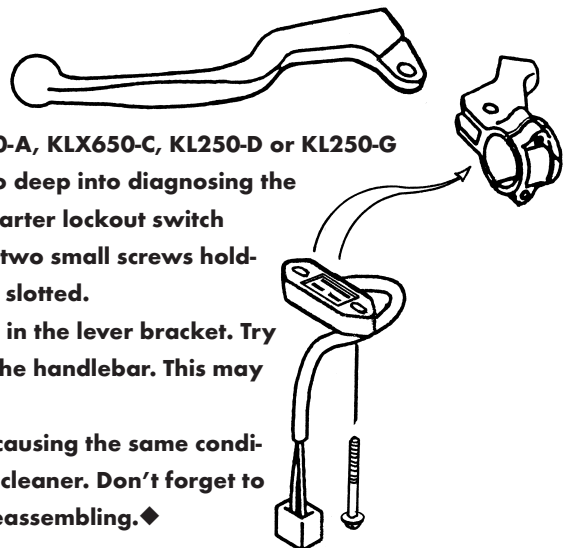
Starter Lockout Problems on Dual Purpose Machines?

by Alex Dell
Product Support Specialist

The Symptom: The starter motor will not function when the clutch lever is pulled in. If this problem is encountered on a KL650-A, KLX650-C, KL250-D or KL250-G (Super Sherpa), try adjusting the clutch switch before you get too deep into diagnosing the starter system. These models are equipped with an adjustable starter lockout switch mounted on the under side of the clutch lever bracket. There are two small screws holding the switch to the bracket and the holes in the switch case are slotted.

These slots allow the switch body to slide a couple millimeters in the lever bracket. Try loosening these screws and sliding the switch assembly toward the handlebar. This may be all that is needed to fix the problem.

Sometimes on older machines the contacts can become dirty, causing the same condition. The switch can be easily removed and cleaned with contact cleaner. Don't forget to apply lots of dielectric grease to all the switch internals before reassembling. ♦



Y2KX Suspension Specs

Here are Team Green's recommendations for suspension settings on all year 2000 off-road bikes. Note that all rebound and compression adjustments are the number of clicks out from all the way in. We recommend 5W oil in all front forks except the KX60 and KX65, which use 10W oil. All optional springs are available from Kawasaki. ♦—Ed.

Rider Weight (lbs.)	Fork Height*	Spring Rate	Oil Level	Reb Out	Comp Out	Spring Rate	Reb Out	Comp Out (Low)	Comp Out (High)***	
KX60-B16										
50-70	Std	0.23	Light	130mm	N/A	N/A	3.0	Light	N/A	N/A
70-90	Std	0.25	Stock	130mm	N/A	N/A	3.3	Stock	N/A	N/A
90+	Std	0.27	Heavy	130mm	N/A	N/A	3.7	Heavy	N/A	N/A
KX65-A1										
Pull Rods										
55-65	8mm	0.24	Stock	125mm	N/A	N/A	3.3	Stock	86.3**	N/A
65-75	8mm	0.25	Heavy	125mm	N/A	N/A	3.5	Heavy	86.3**	N/A
75-85	8mm	0.25	Heavy	125mm	N/A	N/A	3.5	Heavy	86.3**	N/A
KX80-W3										
75-110	Std	0.27	Light	100mm	N/A	8	4.6	Light	9	1
110-125	Std	0.28	Stock	100mm	N/A	8	4.8	Stock	8	1
125+	Std	0.29	Heavy	85mm	N/A	8	5.0	Heavy	8	2
KX100-C3										
75-110	Std	0.28	Light	100mm	N/A	8	4.6	Light	9	2
110-125	Std	0.29	Stock	100mm	N/A	8	4.8	Stock	8	2
125+	Std	0.30	Heavy	85mm	N/A	8	5.0	Heavy	8	2—3
KX125-L2										
120-140	10mm	0.40	Light	110mm	15	10	4.4/4.7/4.9	Light	12	12
140-165	10mm	0.41	Stock	110mm	14	8	4.6/4.9/5.1	Stock	13	10
165+	10mm	0.41	Stock	100mm	14	8	4.8/5.1/5.3	Heavy	12	10
KX250-L2										
130-145	10mm	0.42	Light	85mm	14	8	4.6/4.9/5.1	Light	13	8
145-165	10mm	0.43	Stock	85mm	14	8	4.8/5.1/5.3	Stock	13	10
165-180	10mm	0.43	Stock	75mm	14	6	5.0/5.3/5.5	Heavy	12	8
KX500-E12										
135-150	Std	0.39	Light	100mm	10	6—8	5.3	Light	8	12
150-165	Std	0.40	Stock	100mm	10	6—8	5.5	Stock	8	12
165+	Std	0.41	Heavy	100mm	10	6—8	5.7	Heavy	8	12
KDX200-H6 & KDX220-A7										
135-150	Std	0.34	Light	95mm	N/A	8—10	4.8	Light	9	10
150-170	Std	0.35	Stock	95mm	N/A	8—10	5.0	Stock	9	10
170-200	Std	0.36	Heavy	95mm	N/A	8—10	5.2	Heavy	9	10
200+	Std	0.37	X. Heavy	95mm	N/A	8—10	5.4	X. Heavy	9	10
KLX300-A5										
All Weights	Std	0.38	N/A	95mm	N/A	14	5.8	Stock	9	12

*Fork height is measured from top of fork tube to top of fork clamp.
 **Optional 85.3mm Pull Rods raise seat height 4.5mm over the 86.3mm Pull Rods and 9mm over stock height with the standard 87.3mm Pull Rods.
 ***High speed compression adjuster is the outside 17mm adjuster nut on the shock. It has no detents.
 All spring rates are in Kg/mm.

PP 4000 & 6000 Generator Rotor Removal

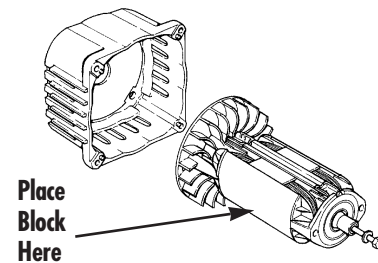
by Fred DeHart
Technical Support

The Power Partner Generator service manual says to loosen the rotor bolt two or three turns, then strike the head of the bolt with a brass mallet in order to loosen the

rotor from the crankshaft taper. This procedure often fails because the rotor has a very tight fit on the taper. Using a puller or slide hammer will destroy the rotor.

If the service manual method doesn't work for you, try this. The rotor has two large curved iron-laminated cores, 180 degrees apart. Position the rotor so the iron surfaces are on your right

and left as you face the rotor and make sure the rotor bolt has been loosened two or three turns. Take a 2x4 block of wood and set it against the iron surface and strike the block with a dead blow hammer. Now do the same thing on the opposite side of the rotor. These alternate blows help release the



rotor from the crankshaft taper. Lastly, hit the head of the rotor bolt with a heavy brass mallet and the rotor should come off the crankshaft. You may have to repeat this procedure. ♦

Ultra 150 High-Speed Power Loss

by Gregg Thompson
Product Support Supervisor

As you may already know, the JH1200-A Ultra 150 uses a jet pump that differs in design from all other Kawasaki sit-down type watercraft. Other Kawasaki sit-down watercraft use an Axial Flow jet pump. This means the walls of the pump body (including the impeller chamber and the guide vane chamber) are relatively parallel or straight—sort of like a section of straight tube half occupied by the impeller and half by the guide vanes. With this type of pump the water flows (spirals) straight back in an axial direction.

The Ultra 150 uses a Mixed Flow pump. This means the walls in the pump body are not parallel but expand through the impeller chamber and constrict through the guide vane chamber. The water has some radial flow as it passes through the pump body, moving outward in the impeller chamber and inward in the guide vane chamber. This radial movement combined with the axial flow of the water through the pump is where the term “Mixed Flow” comes from.

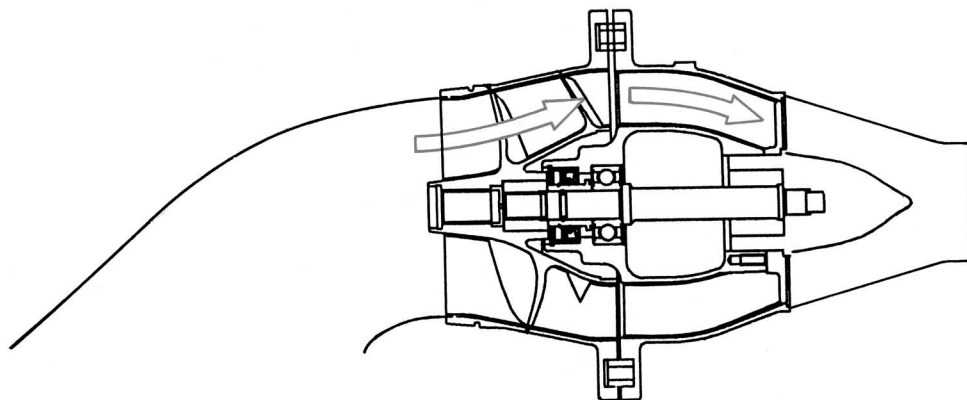
Of course these tapered pump body inner walls result in a cone-shaped impeller chamber with the smaller diameter at the front end. When the pump is turning and producing

thrust, the impeller is always trying to move forward inside this chamber. Remember that every action produces an equal and opposite reaction. Nine hundred pounds of thrust coming out the back of the pump means the same pressure pushing forward on the impeller. It's this force pushing on the impeller (transferred to the hull through the pump housing) that you feel as you accelerate.

shaft. If there is enough movement in the shaft, the impeller may contact the tapered walls of the impeller chamber. That contact produces friction...lots of friction. If

may sense nothing but a loss of power at high speeds.

If you have an Ultra 150 customer who complains of a loss of top speed, but the engine seems to be fine



the bearing is worn enough, the friction created by the impeller contact can actually limit the speed of the boat to 20 or 30 mph. Yet the customer

(good compression and no signs of overheating), don't forget to check the axial play in the impeller shaft. If it's excessive, check the impeller shaft

Simple Way to Hold Up Forks

by Scott Buckley
Product Services Technician

How do you secure fork tubes when you are checking the oil level? This can be tricky. Mounting the bottom of the fork in the vise means you may have to stand on something to check the oil level. Setting the fork on the ground invites the opportunity for the fork to fall over, especially on the current KX forks, which are not flat on the bottom.

Try this: Insert the axle into the axle clamps and “bolt the two forks together, like those in the accompanying picture.” ♦



2000 Ninjas -Cont'd

ride. The fork offset is changed from 35mm to 30mm to increase trail to complement the wider 6-inch rim with 190/55-ZR17 rear tire and new frame.

Comfort and control are improved with revised suspension settings front and rear. A new rear link offers a more linear rate that is stiffer initially, then softer at the end of the stroke. New 310mm front brake rotors are 10mm larger than last year for "stop on a dime" braking power. New instrument gauges are a classy black on white and the coolant temperature is now displayed numerically.

ZX-6R

The ZX-6R is ready for more racing glory with more power and 11 less pounds to carry around. A new semi-hemispheri-



The ZX-9R is still comfortable to ride, but underneath the skin everything got more serious with a stiffer chassis, new fork offset, 6-inch rear rim and more power.

cal cylinder head is a copy of our World Superbike engine and it allows a lofty 12.8:1 compression ratio. The top of the piston actually protrudes out of the cylinder into the head.

New valves, valve springs, and crowned valve tappets add durability.

The dramatic weight loss was accomplished even with an additional headlight, wider rear tire (180/55-ZR17), and taller front tire (120/65-ZR17). A new magnesium clutch cover, valve cover, oil pump cover, and sump pan cut weight. New plated aluminum cylinders, stick type ignition coils, and an internally braced swingarm cut about five pounds.

The chassis is more focused for increased rider feedback with 2mm less fork offset (28mm) and a 5mm wider fork

pitch (210mm). Damping rates have been revised front and rear. A new rear link offers a more linear progressive rate that is stiffer throughout the range than last year. New front brake calipers have different size pistons and new pads for improved feel and bite.

These new Ninjas are leading the brigade of new products from Kawasaki. They reach new performance levels, while still setting the standard for riding comfort. They have been engineered to the highest standards to satisfy the most demanding customers. ♦



The new ZX-6R is 11 pounds lighter and has even more power with a sky-high 12.8:1 compression ratio requiring a minimum of 90 octane fuel like the ZX-9R.



The winners of Contest #3 will receive a Snap-On foldable palm ratchet. Congratulations to the winners and thanks to all participants.

Danny Aldridge	Smith Bro Motorsports	Birmingham, AL
Craig Faith	River Valley Cycles.....	Russellville, AR
Dan Bebieff	Northcounty Jet Ski	Encinitas, CA
Gary Bustillos	Beaumont Kawasaki.....	Beaumont, CA
Rusty Hadley.....	Beaumont Kawasaki.....	Beaumont, CA
David Situka.....	Sun Enterprises	Thornton, CO
Mike White	Sport Center Of Grand Junction.....	Grand Junction, CO
Terry Brown	Sport Center Of Grand Junction.....	Grand Junction, CO
Wade Hafenstine.....	Sun Enterprises	Thornton, CO
Danny Barclay.....	Cycle Works	Carrollton, GA
Ray Sumner	Millennium Kawasaki	Lilburn, GA
Clyde Denslow	Motorsports Kawasaki	Wichita, KS
Dixon Beeson	Dixon's Cycle Center	Scott City, KS
Shirley Beeson	Dixon's Cycle Center	Scott City, KS
David Lemmo	Brockton Cycle	Brockton, MA
Alan Bush	Classic Motor Sports.....	Traverse City, MI
Mark Garrison.....	Paw Paw Cycle.....	Paw Paw, MI
Doug Engie	Northern Kawasaki	Cloquet, MN
Jason Clymer	Jackson Cycle	Jackson, MN
Larry Clymer	Jackson Cycle	Jackson, MN
Ted Danga.....	Cycle City.....	Rochester, MN
David Myers	Springfield Kawasaki	Springfield, MO
Jeff Reddick.....	St. Louis Power Sports	Valley Park, MO
Scott Dailey	Sports City Cyclery.....	Great Falls, MT
Tom Vandergrinten	Sports City Cyclery.....	Great Falls, MT
Dean Bueckel	Action Cycle	Minot, ND
Robert Richter	Action Cycle	Minot, ND
Val Horner.....	Action Cycle	Minot, ND
David Thayer	Southern Ocean Cycle Center	Manahawkin, NJ
Chris Adams	Big 4 Kawasaki	Marietta, OH
Greg Becker	Big 4 Kawasaki	Marietta, OH
Jamie White	Rehmert Cycle Sales	Versailles, OH
Carlos Rodriguez.....	Caribbean Kawasaki.....	Arecibo, PR
Cory Devries	Vescos Kawasaki	Brigham, UT
Clarence Hepburn	Mark IV Kawasaki	Wytheville, VA
Jim Tribou	Wayne Cycle Shop	Waynesboro, VA
Todd Stagege.....	Wausau Motorsports.....	Wausau, WI
Clay Alexander	Lakeway Power Sports.....	Gillette, WY