

RIVAMOTORSPORTS.COM

3671 North Dixie Highway
Pompano Beach, FL 33064-
(954) 785-4820

Repair Order

R/O Number: 7106
In Date: 8/23/2007
Today Date: 10/11/2007
Date Promised: 9/1/2007

Repair Order For:

BOWMAN, ROBERT
3833 SW 67TH TERR
MIRAMAR, FL 33023
954-989-0260 305-490-8949

Unit Name

Location

Units For This Repair Order

Service Writer: ROBERT ABRAHAM

Year	Make	Model	VIN / Serial No.	Color	Plate	Key Board	Miles
2007	KAWASAKI	JT1500B7F	US-KAW34913D707	BLUE			22

Job: CHECK GAS IN OIL

Job For: 2007 KAWASAKI JT1500B7F ULTRA 250X US-KAW34913D707

Description

CUSTOMER STATES ENGINE OIL BECOMES CONTAMINATED WITH GASOLINE WHILE RIDING. HE HAS BEEN IN CONTACT WITH KAWASAKI BUT HAS HAD NO RESPONSE. HE WOULD LIKE RIVA TO DISASSEMBLE THE ENGINE AND FIND THE CAUSE FOR THE "BLOW-BY".

CUSTOMER ALSO STATES THE ENGINE ONLY REACHES A MAXIMUM OF 7100 TO 7480 RPM's, NOT THE MANUFACTURERS CLAIMED 8900 RPM.

Parts

Part Number	Quantity	Description	Each Price	Extension
11004-3722	1	GASKET-HEAD	\$65.17	\$65.17
92153-3730	10	BOLT,FLANGED,11X174	\$8.95	\$89.50
11061-3708	1	GASKET,CYLINDER BASE	\$29.17	\$29.17
92022-1720	10	WASHER	\$2.65	\$26.50
130Z0895	1	BOLT-FLANGED	\$2.34	\$2.34
130Z10150	1	BOLT-FLANGED,10X150	\$4.20	\$4.20
130Z08140	2	BOLT-FLANGED,8X140	\$2.85	\$5.70
130Z08120	8	BOLT-FLANGED,8X120	\$2.85	\$22.80
11061-3743	1	GASKET,PIPE EXHAUST	\$14.99	\$14.99
11061-3742	1	GASKET,MANIFOLD EXHAU	\$20.17	\$20.17
11061-3744	1	GASKET,MUFFLER	\$8.95	\$8.95
11061-3745	1	GASKET,SUPERCHARGER	\$6.31	\$6.31
11061-3716	1	GASKET,MANIFOLD	\$10.49	\$10.49
130Z0895	3	BOLT-FLANGED	\$2.34	\$7.02
ENGINE-OIL	4	HONDA GN4 20W50 OIL	\$3.15	\$12.60
13008-1196	4	RING-SET-PISTON	\$38.00	\$152.00
PMR9B	4	NGK PMR9B SPARK PLUG	\$18.99	\$75.96

Parts Subtotal **\$553.87**

Labor

Description	Job Code	Technician	Quantity	Line Total
COMPRESSION, LEAK DOWN TEST		BRIAN PEAK	0.6 Hours	\$60.00
TEAR DOWN AND REBUILD ENGINE		BILL BOYCE	10.6 Hours	\$1,060.00
WATER TEST		BILL BOYCE	1 Hours	\$100.00

Job: CHECK GAS IN OIL (Continued)

Job For: 2007 KAWASAKI JT1500B7F ULTRA 250X US-KAW34913D707

Labor (Continued)

Description	Job Code	Technician	Quantity	Line Total
			Labor Subtotal	\$1,220.00

Recommendations

Resolution

CHECKED COMPRESSION/LEAK DOWN
SPEC. 172-260 PSI

- #1 155 PSI / 2 PERCENT
- #2 153 PSI / 3 PERCENT
- #3 155 PSI / 2 PERCENT
- #4 150 PSI / 5 PERCENT

INSPECTED VALVE CLEARANCE.
SPEC.-
IN: .15 - .24 mm / EX: .32 - .41 mm

- #1 IN: .20, .20 / EX: .30, .30
- #2 IN: .20, .17 / EX: .30, .33
- #3 IN: .17, .20 / EX: .33, .33
- #4 IN: .20, .22 / EX: .35, .38

EXHAUST VALVES IN CYLINDER #1 AND #2 WERE
TIGHT.

REMOVED AND DIS-ASSEMBLED ENGINE FOR
INSPECTION.

MEASURED CYLINDER TAPER:

- #1= .0001 in. OFF
- #2= .0002 in. OFF
- #3= .0001 in. OFF
- #4= LESS THAN .0001 in. OFF

TAPER WITHIN SPECIFICATIONS.

MEASURED CYLINDER ID.
SPEC: 3.2675 - 3.2679 in. (limit 3.2720 in.)

- #1 3.2680 in.
- #2 3.2681 in.
- #3 3.2679 in.
- #4 3.2680 in.

GREATER THAN SPECIFICATION BUT WITHIN
SERVICE LIMIT.

MEASURED PISTON OD.
SPEC. 3.2645-3.2651 in. (limit 3.2590 in.)

- #1 3.2650 in.
- #2 3.2650 in.
- #3 3.2645 in.
- #4 3.2650 in.

ALL WITHIN SPECIFICATION.

MEASURED PISTON TO CYLINDER CLEARANCE.
SPEC. .0024 - .0034 in.

- #1 .0030 in.
- #2 .0031 in.

Job: CHECK GAS IN OIL (Continued)

Job For: 2007 KAWASAKI JT1500B7F ULTRA 250X US-KAW34913D707

#3 .0034 in.
#4 .0030 in.

ALL WITHIN SPECIFICATION.

MEASURED PISTON RING/GROOVE.
SPEC. TOP .03 - .07 mm (limit .07mm)
SPEC. BOTTOM .02 - .06 mm (limit .16mm)

#1 .05mm / .03mm
#2 .05mm / .03mm
#3 .05mm / .03mm
#4 .05mm / .03mm

ALL WITHIN SPECIFICATION.

MEASURED PISTON RING THICKNESS.
SPEC. TOP .87 - .89mm (limit .80 mm)
SPEC. BOTTOM .97 - .99 mm (limit .90mm)

#1 .84mm / .95mm
#2 .85mm / .96mm
#3 .86mm / .94mm
#4 .84mm / .96mm

BELOW SPECIFICATION BUT WITHIN SERVICE LIMIT.

MEASURED PISTON RING END GAP.
SPEC. TOP .25 - .40mm (limit .7mm)
SPEC. BOTTOM .40 - .55mm (limit .8mm)

#1 .33mm / .40mm
#2 .33mm / .40mm
#3 .33mm / .40mm
#4 .33mm / .40mm

ALL WITHIN SPECIFICATION.

INSPECTION OF TOP COMPRESSION RING SHOWED NORMAL WEAR.

INSPECTION OF BOTTOM COMPRESSION RING SHOWED PARTIAL WEAR ONLY ON BOTTOM OF THE RING AND MORE WEAR AT RING END GAP THAN THE OPPOSITE SIDE. THIS SHOWS THE LOWER COMPRESSION RING IS ONLY SEALING ON THE UP STROKE ALLOWING "BLOW-BY".

CARBON BUILDUP WAS FOUND ON ALL PISTONS BETWEEN THE RING LANDS. CARBON BUILD UP IS EXCESSIVE ON PISTON #3. THIS IS EVIDENCE OF THE RINGS NOT SEALING WHICH COULD CAUSE "BLOW-BY".

EVIDENCE OF FUEL WASH (RAW FUEL) ON PISTONS #2 AND #3.

CARBON BUILD UP WAS FOUND ON THE CYLINDER WALLS BELOW THE LOWER COMPRESSION RING. THIS IS EVIDENCE OF "BLOW-BY" CAUSED BY THE LOWER COMPRESSION RING NOT SEALING.

NO GLAZING FOUND ON CYLINDER WALLS.

NO EVIDENCE OF IMPROPER BREAK IN FOUND.

Job: CHECK GAS IN OIL (Continued)

Job For: 2007 KAWASAKI JT1500B7F ULTRA 250X US-KAW34913D707

NO MANUFACTURING DEFECT FOUND.

DESPITE NOT HAVING THE ENGINE OIL ANALYZED, RIVA IS CONVINCED THE OIL IS CONTAMINATED WITH GASOLINE FOR 3 REASONS. THE OIL LEVEL IN THE ENGINE CRANKCASE IS ABOVE THE FULL MARK ON THE DIPSTICK (RIVA CHANGED THE ENGINE OIL 5 RUNNING HOURS AGO AND SET THE OIL LEVEL AT THE RECOMMENDED MARK ON THE OIL DIPSTICK), THE ENGINE OIL SMELLS OF GASOLINE AND THE CONSISTENCY IS VERY THIN.

WE HAVE FOUND EVIDENCE OF THE PISTON RINGS NOT SEALING PROPERLY WHICH ALLOWED THE UN-IGNITED FUEL INJECTED INTO THE COMBUSTION CHAMBER TO PASS AROUND THE PISTON RINGS ("BLOW-BY") AND INTO THE CRANKCASE WHERE IT MIXED WITH THE ENGINE OIL. HOWEVER, WE CAN'T SAY THE RINGS ARE DEFECTIVE BECAUSE ALL RING MEASUREMENTS ARE WITHIN THE MANUFACTURERS SPECIFICATIONS.

THE PISTON RINGS USED IN THIS ENGINE ARE STANDARD IN MANY OTHER NATURALLY ASPIRATED APPLICATIONS INCLUDING MOTORCYCLES AND PERSONAL WATERCRAFT. THE INCREASED CYLINDER PRESSURE PRODUCED BY THE SUPERCHARGER AT SUSTAINED FULL ENGINE SPEED MAY NOT ALLOW THE PISTON RINGS TO PROPERLY SEAL.

NOTE: THE ORIGINAL ESTIMATE GIVEN TO ROBERT WAS FOR \$1900.00 WHICH DID NOT INCLUDE PISTON RING REPLACEMENT. RIVA LEARNED FROM KAWASAKI'S TECHNICAL DEPARTMENT THE CYLINDERS CAN BE HONED. RIVA ALSO WANTED TO ELIMINATE THE POSSIBILITY OF THE ENGINE USING OIL FROM RE-INSTALLING USED PISTON RINGS. THEREFORE, RIVA HAS DECIDED TO HONE THE CYLINDERS AND REPLACE THE PISTON RINGS AT NO EXTRA CHARGE TO MR. BOWMAN.

Other Charges

Shop Supplies \$18.58

Job Subtotal \$1,792.45

Customer Job Totals

Parts \$553.87

Labor \$1,220.00

Other \$18.58

Total of Customer Jobs \$1,792.45

Repair Order Subtotal \$1,792.45

Discounts Given

Parts Discount: \$124.79

Sales Tax	\$107.55
Repair Order Total	\$1,900.00
Total Amount Due	\$1,900.00

30 DAY WARRANTY ONLY ON WORK PERFORMED. WARRANTY DOES NOT APPLY TO REPAIRS ON VEHICLES USED FOR RENTING OR RACING. STORAGE FEES START 5 DAYS AFTER COMPLETION OF WORK AT A RATE OF \$25.00 PER DAY. LABOR RATE FOR MOTORCYCLES & PWC = \$100/hour.

Received by: _____ Vin# _____

Date / Time: _____