

DH5768

Equipment: 001013685352

Make-Model: HITACHI 350

Type: EXCAVATOR

Serial Number:

Unit Number

Customer No.

5352E

ENGINE (SOOT)

SAE Grade: 15W40

Fuel: Di

Sales Rep:

Sample Information					
Test Date	Sample Date	Sample Num	Total Hours / Miles	Hours / Miles This Sample	C / S
11/9/2018	11/7/2018	110918056	11458		0 Chng
4/9/2018	3/27/2018	040918056	11161		0 Chng
2/7/2018	2/6/2018	020718040	11045		0 Samp
2/3/2017	1/27/2017	020317074	10535		0 Chng
12/16/2016	11/8/2016	121616053	10398		0 Samp

Physical Data			
Viscosity	Glycol	Fuel	Water
14.1 NEG	NEG	NEG	
14.2 NEG	NEG	NEG	
13.8 NEG	NEG	NEG	
13.9 POS	NEG	NEG	
14.0 POS	NEG	NEG	

Wear Metal Concentrations in Parts Per Million (ppm) by Weight									
Lead	Iron	Silica	Chromium	Ti	Aluminum	Copper	Sodium	Potassium	
1A	10A	4A	0A	2A	3A	7A	4	1	
12A	17A	7A	0A	0A	4A	28C	12	0	
2A	21A	13A	0A	0A	8A	6A	10	2	
16A	64A	16A	0A	0A	6A	11A	455	66	
2A	25A	6A	0A	0A	3A	6A	203	27	

Sample Information			Chemical Data		
Test Date	Sample Date	Sample Num	TBN	Soot	Ox
11/9/2018	11/7/2018	110918056		0.90	
4/9/2018	3/27/2018	040918056		0.00	
2/7/2018	2/6/2018	020718040		0.10	
2/3/2017	1/27/2017	020317074			
12/16/2016	11/8/2016	121616053		0.00	

Additive Metals in ppm			
Ca	P	Zn	Mq

Particle Counts Per Particle Size								ISO Code
4Um	6Um	10Um	14Um	21Um	25Um	50Um	70Um	

Sample Num	RECOMMENDATIONS
110918056	ALL TESTS APPEAR NORMAL FOR THIS SAMPLE.
040918056	COPPER IS HIGH. MAY BE DUE TO CONDITIONING OF OIL COOLER. CONTINUE TO SAMPLE TO MONITOR COPPER LEVEL AND WEAR TREND.
020718040	ALL TESTS APPEAR NORMAL FOR THIS SAMPLE.
020317074	NOTIFIED OF ANTIFREEZE PRESENT. CHECK FOR A HEAD GASKET LEAK. RECOMMEND INVESTIGATING SOURCE OF COOLANT ENTRY.
121616053	NOTIFIED OF ANTIFREEZE PRESENT. CHECK FOR A HEAD GASKET LEAK. RECOMMEND INVESTIGATING SOURCE OF COOLANT ENTRY.

Rating
A No action Required
C Review complete analysis, monitor engine or component parameters
X Review complete analysis, examine engine or component parameters, Resample immediately

A-NORMAL

C-WARNING

X-CRITICAL

NEG-NEGATIVE

TR-TRACE

POS-POSITIVE

Equipment: 001013685352
Make-Model: HITACHI 350
Type: EXCAVATOR
Serial Number:

Unit Number: 5352HS
Customer No.:
HYD SYST (LPD)
SAE Grade: 10W
Fuel: Di
Sales Rep:

Sample Information					
Test Date	Sample Date	Sample Num	Total Hours / Miles	Hours / Miles This Sample	C / S
4/5/2019	3/29/2019	040519113	11589	0	Chng
9/17/2015	9/12/2015	091715213	9425	0	Chng
8/17/2012	8/11/2012	081712194	5724	1072	Chng
10/21/2011	10/12/2011	102011018	4652	1037	Chng
3/14/2011	3/3/2011	031111020	3615	0	Chng

Physical Data			
Viscosity	Glycol	Fuel	Water
NEG	NEG	NEG	NEG
NEG	NEG	NEG	NEG
NEG	NEG	NEG	NEG
NEG	NEG	NEG	NEG
NEG	NEG	NEG	NEG

Wear Metal Concentrations in Parts Per Million (ppm) by Weight									
Lead	Iron	Silica	Chromium	Tin	Aluminum	Copper	Sodium	Potassium	
1A	8A	9A	1A	1A	4A	3A	7	0	
0A	12A	13A	1A	0A	3A	2A	15	0	
3A	8A	10A	0A	0A	1A	6A	3	1	
1A	8A	8A	0A	0A	1A	3A	5	1	
1A	12A	6A	0A	0A	1A	5A	6	0	

Sample Information			Chemical Data		
Test Date	Sample Date	Sample Num	TBN	Soot	Ox
4/5/2019	3/29/2019	040519113			
9/17/2015	9/12/2015	091715213			
8/17/2012	8/11/2012	081712194			
10/21/2011	10/12/2011	102011018			
3/14/2011	3/3/2011	031111020			

Additive Metals in ppm			
Ca	P	Zn	Mq

Particle Counts Per Particle Size								ISO Code
4Um	6Um	10Um	14Um	21Um	25Um	50Um	70Um	
42644	5887	289	78	8	2	0	0	23/20/1A
41481	1174	1209	386	62	6	1	0	23/21/1B
36795	1237	21	3	2	1	0	0	22/17/1B

Sample Num	RECOMMENDATIONS
040519113	ALL TESTS APPEAR NORMAL FOR THIS SAMPLE.
091715213	ALL TESTS APPEAR NORMAL FOR THIS SAMPLE.
081712194	ALL TESTS APPEAR NORMAL FOR THIS SAMPLE.
102011018	ALL TESTS APPEAR NORMAL FOR THIS DRAIN INTERVAL. 16.3 0 ISO 18/15
031111020	ALL TESTS APPEAR NORMAL FOR THIS DRAIN INTERVAL. 2.1 0 ISO 18/12

Rating
A No action Required
C Review complete analysis, monitor engine or component parameters
X Review complete analysis, examine engine or component parameters, Resample immediately

A-NORMAL

C-WARNING

X-CRITICAL

NEG-NEGATIVE

TR-TRACE

POS-POSITIVE

Invoice To Account No:

Deliver To:

SERVICE INVOICE

Invoice Number:

Invoice Date:

5/10/2017

Location:

12

Work Order Number:

154481

Payment Type:

Account

Page:

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Make/Model:

Meter:

Serial Number:

Eq ID:

Fleet No:

HITACHI ZX350

10673

FF01V7Q051697

34598W

/Diagn - 1 Retail

COMPLAINT:

DIAGNOSE MACHINE FOR LOSING A GALLON OF COOLANT AFTER TWO OR THREE DAYS.

CAUSE:

OIL SAMPLES HAVE COOLANT IN ENGINE OIL
27 PSI IN COOLING SYSTEM

CORRECTION:

TESTED WITH PRESSURE TESTER
FOUND EXTERNAL LEAKS
REPAIRED LEAKS
TESTED EGR COOLER: TESTED OKAY
CLEARED CODES

CALLED CUSTOMER TO EXPLAIN THAT HEAD GASKET IN LINER WAS DAMMAGED

Part Number	Description	Quantity	List Price	Net Price	Extended Price	Tax and Ins
4152658	Cap	1.00				
8980642820	Bearing	1.00				
AT346594	OIL SMPLE	1.00				
TY22472	CLAMP	3.00				
TY22474	CLAMP	1.00				
TY26873	SCAN TEST KI	1.00				

Sub-Total: \$4,646.85

/Travel - 1 Retail

COMPLAINT:

Travel, to and from field service jobsite

CORRECTION:

CONTINUED ON NEXT PAGE->

Invoice To Account No:

Deliver To:

SERVICE INVOICE

Invoice Number:

Invoice Date: 5/10/2017

Location: 12

Work Order Number: 154481

Payment Type: Account

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Make/Model:

Meter:

Serial Number:

Eq ID:

Fleet No:

HITACHI ZX350

10673

FF01V7Q051697

34598VV

/Travel - 1 Retail

Miscellaneous
SVCTRUCKDescription
MILEAGE CHARGEQuantity
53.00

List Price

Net Price

Extended Price

Taxes Incl

Gen- Retail

COMPLAINT:

Rebuild Engine on ZX350lc3

CORRECTION:

General Repairs

Part Number
0286808250Description
BoltQuantity
2.00List Price
\$ 2.00Net Price
\$ 2.00Extended Price
\$ 4.00Taxes Incl
Y

0911115100

Nut

12.00

0911802100

Nut

11.00

1096040940

Plug

1.00

1122350350

Bolt

12.00

1217230660

Core

1.00

1217291170

Gasket

2.00

1878135031

Gasket Kit

1.00 1,

1878137661

Piston-Liner Kit

6.00

19M8574

SCREW

1.00

4632729

V-BELT

1.00

4646893

COUPLING

1.00

8110908

Line

1.00

8943904142

Oil Pump

1.00

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Invoice To Account No:

Deliver To:

SERVICE INVOICE

	Invoice Number:	
	Invoice Date:	5/10/2017
	Location:	12
	Work Order Number:	154481
	Payment Type:	Account
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Make/Model:

Meter:

Serial Number:

Eq ID:

Fleet No:

HITACHI ZX350

10673

FF01V7Q051697

34598W

Gen- Retail

8943930702	Bolt	8.00
8943950240	Screw	12.00
8943962073	Bolt	40.00
8943967110	Bolt	1.00
8943968100	Gasket	2.00
8943972860	Stud	2.00
8943995532	BOLT	20.00
8970776380	Bolt	2.00
8973007930	Gasket	2.00
8973064212	Rocker Arm	6.00
8973064242	Rocker Arm	6.00
8973679180	GASKET	2.00
8973720771	BEARING	7.00
8973831140	GASKET	2.00
8973861890	Bearing	4.00
8973865480	Thrust Washer	1.00
8976014380	Camshaft	1.00
8976018360	GASKET	1.00
8976020353	THERMOSTAT	1.00
8976026990	Bearing	4.00
8980069954	Oil Cooler	1.00
8980642820	Bearing	5.00
8981527371R	Filter Element	2.00
8981587781	Thermostat	1.00

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Invoice To Account No:

Deliver To:

SERVICE INVOICE

Invoice Number:

Invoice Date:

5/10/2017

Location:

12

Work Order Number:

154481

Payment Type:

Account

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Make/Model:

Meter:

Serial Number:

Eq ID:

Fleet No:

HITACHI ZX350

10673

FF01V7Q051697

34598W

Gen- Retail

8983020750	Oil Filter Element	2.00
9095714100	GASKET	1.00
PM37512	SEALANT	1.00
TY26101	BRAKE/CLUT	6.00
8943949300	GASKET	2.00
8943995532	Bottom Main Bolt	5.00
Miscellaneous	Description	Quantity
FREIGHT	FREIGHT & SHIPPING	3.00
TARGETCUST	TARGET CUSTOMER DISCOUNT	2.00

OL&M Charges:

Description
check head

350DLCP870940 Retail

COMPLAINT:

EGR COOLER, REPLACE

CORRECTION

001. INCLUDES CALIBRATION

Part Number
8980069954Description
Oil CoolerQuantity
1.00

List Price

Net Price

Extended Price

Taxes Ind

CONTINUED ON NEXT PAGE->

Invoice To Account No: 1

Deliver To:

SERVICE INVOICE

Invoice Number:

Invoice Date: 5/10/2017

Location: 12

Work Order Number: 154481

Payment Type: Account

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Make/Model:

Meter:

Serial Number:

Eq ID:

Fleet No:

HITACHI ZX350

10673

FF01V7Q051697

34598W

350DLCF881095 Retail

COMPLAINT:

HOSE-AIR CLEANER INTERMEDIATE TUBE TO-TURBOCHARGER, REPLACE

CORRECTION:

Labor:

Gen1- Retail

COMPLAINT:

DRAIN AND REFILL COOLANT SYSTEM

CORRECTION:

Labor:

INVOICE CONTAINS \$2.54 DISCOUNT

Miscellaneous Charges:

Service Accessories

Labor: \$12,333.50

Parts:

OL&M:

Misc:

Sales Tax:

Grand Total: \$26,039.16

Received by: Date:

Invoice To Account No.: 1

Deliver To Account No.: 1

PARTS INVOICE

Invoice No: 725713
 Date: 4/26/2017
 Page: 1 of 1
 Payment Type: Account

Supplied Quantity	Back Order Quantity	Part Number	Part Description	Bin Loc	List Price	Net Price	Extended Price	Tax Ind
54.00	0.00	V5P8249	WASHER	MM8C3				
8.00	0.00	V8V4429	BOLT	PP6B4				
54.00	0.00	V19M8806	BOLT	LL7A1				
384.00	0.00	V3081343	TRACK BOLT	110107				
384.00	0.00	V79035320	NUT	110107				
4.00	0.00	V9245117V	TOP ROLLER	110304				
15.00	0.00	V9247454V	ROLLER, LOWER	110204				
2.00	0.00	VAT250450V	IDLER ASSY	110206				
15.00	0.00	V01011-61800	BOLT					
2.00	0.00	VKM2233/48H0V	TRACK CHAIN					
1.00	0.00	DISCOUNT	PARTS DISCOUNT ALLOWED					
1.00	0.00	OL-M-NOTAX	O/S LABOR AND MATERIALS - NOTAX					

Invoice Notes:
 Equipment 5352, Job 800

Parts:
 Misc:
 Sales Tax:
 Deposit:
 Total: \$10,835.26