



RDO Equipment Co.
2801 North Louise
Sioux Falls, SD 57107

Service Manager: SF.Service@rdoequipment.com
General Manager: SF.GenMgr@rdoequipment.com
www.rdoequipment.com

Phone: 605-336-2730 • Fax: 605-336-8241

1997

Ship to: N/A

Invoice to: RDO EQP CO - SIOUX FALLS
2801 N LOUISE AVE
SIOUX FALLS SD 57107

Branch SIOUX FALLS, SD *REPRINT*		
Date 04/22/16	Time 19:29:41 (B)	Page 01
Account No. 2730007	Phone No. 605 3362730	Invoice No. W24041
Ship Via		Purchase Order
		Salesperson J7J

SERVICE INVOICE

STK#/FLEET#	HRS	PIN/EIN	WARRANTY DATE	HRS
X630813	770BH GRADER	7578 DW770BH560030		
	770BH	E RG6076A588388		

REPAIR# 1 C ABI01 RDO-020-DIAG 03/18/16 03/18/16 8.50 HRS
ENGINE DIAGNOSTICS

CONDITION:

Air test intercooler
Assemble turbocharger and order gaskets required for
reinstallation.
Checked engine oil pressure with manual gauge- good.
(40 psi at slow idle)
Perform cooling system pressure test, engine oil pressure
test, and compression test.

CAUSE:

Customer reported blowby and excessive smoke from engine

CORRECTION:

EH401; Pressurized intercooler and inspected for leaks.
Found no issues. Inspected disassembled turbo and found
that the turbine is heavily damaged. Attempted to
reassemble and found that the compressor retaining nut is
missing. Could not find a retaining nut that would work and
also found that the turbo would not spin freely when it was
assembled.

*** Customer will install turbochaarger and machine will
come to shop for further diagnostics and repair.

ABI01:

Performed cooling system pressure test- okay
Removed injectors and ran a compression test. Found #5
cylinder was very low on compression.

AR100124	SCREW, WIT	8	1.13	9.04
	Screw With Washer			

CONTINUED ON PAGE 02

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CRSE502229	Turbocharger Re	1-	125.00	125.00CR	
RE62776	GASKET	2	2.12	4.24	
RE62777	GASKET	2	7.10	14.20	
R122595	RING	2 N	4.39	8.78	
R130573	GASKET	3	7.66	22.98	
R54500	SCREW	4	1.87	7.48	
R86743	O-RING	1 N	7.90	7.90	
R89879	GASKET	1	6.33	6.33	
SE502229	Turbocharger Re	1 N	1245.58	1245.58	
CRSE502229	Turbocharger Re		125.00	125.00	
SPEC HANDLING	R50406 R86743	1	8.21	8.21	
	FLASH				
SPEC HANDLING	SE502229 FLASH	1	72.93	72.93	
	FLASH				
24H1305	WASHER	4	.38	1.52	
			PARTS	1409.19	
			LABOR	935.00	
			REPAIR TOTAL==>	2344.19	
10101005	24901005				

REPAIR# 2 C ABI01 0400A001 03/18/16 03/18/16 24.40 HRS
ENGINE- REPLACE

CONDITION:

R/R Engine for repair

CORRECTION:

Brought machine into shop and prepared for service. Drained engine oil and coolant. Removed engine top hood and side doors. Removed exhaust stack and removed intake housing. Removed exhaust manifold and intercooler. Removed coolant hoses and evacuated the a/c system. Removed cooling package. Removed mounting hardware for hydraulic pump and

CONTINUED ON PAGE 03

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	770BH	E RG6076A588388		

pulled pump out of the way. Removed all necessary accessories and harnesses. Removed mounting hardware on rear of engine and removed engine mounts. pulled engine out of machine and placed on engine stand for recondition. Once engine was reconditioned, engine was reinstalled in reverse order.

10101005	24901005	LABOR	2684.00
		REPAIR TOTAL==>	2684.00

REPAIR# 3 C ABI01 NA 03/25/16 03/25/16 34.60 HRS
PISTON RINGS AND VALVES- (ALL) - R&R AND RECONDITION

CONDITION:
Engine overhaul- basic; (w/engine removed)
Note: Does not include crankshaft removal (in-frame)
Replace pistons, liners, rod and main bearings.
Have cylinder head reconditioned.
Replace turbocharger. Replace crankshaft damper.
Replace injection nozzles (3 nozzles tested bad).
Replace front and rear crankshaft seals.
Replace all filters.

CAUSE:
Engine had been overheated. All pistons and liners were scored. #5 piston was damaged.

CORRECTION:
Removed cylinder head and found #5 piston and rings were bad. Installed engine on engine stand and rotated over to removed oil pan. Removed oil pan and removed connecting rods. Pulled pistons and rods out of block. Removed cylinder liners from block. removed flywheel and rear drive. Removed rear oil housing and removed rear seal.

CONTINUED ON PAGE 04

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Removed front crankshaft pulley and dampener. Removed all main caps and cleaned block thoroughly. ABI - removed and cleaned head from engine and stripped to have it sent to machine shop and inspected. when it returned, installed everything that was removed and installed on engine. Disassembled intercooler to check for contamination and assembled using new gaskets. Turned in new main bearings and installed new front and rear oil seals. Installed new front balancer and installed flywheel using new bolts. Installed used connecting rods in new pistons using new bushings and new wrist pins. Installed cylinder liners and piston/rod assemblies in block bores and when head was back from machine shop, installed head on machine using new head gasket. Installed new injectors that were previously removed and after cleaning lines, installed injector lines/return lines. Installed rocker arm shaft and rocker arms. Set valves on machine and installed rocker arm cover.
Recharged a/c and test ran machine.

AR49025	SEAL	1	23.54	23.54
AR86745	FILTER ELE	1	22.07	22.07
AT75035	FILTER ELE	1	74.53	74.53
AT75036	FILTER ELE	1	48.75	48.75
COOLANT	ANTIFREEZE	12	1.19	14.28
CRSE501119	Injection Nozzl	6-	10.00	60.00CR
DZ101880	oil filter	1	16.97	16.97
REF134	FREON	2	12.50	25.00
RE16127	PULLEY, WI	1 N	442.23	442.23
	Pulley With Dampener			

CONTINUED ON PAGE 05

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RE508633	FILTER ELE	1		29.64	29.64
RE524642	ENGINE OVE	1 N	2596.00	2596.00	2596.00
	Engine Overhaul Kit				
RG24026	KIT	1 N	195.70	195.70	195.70
R102882	SHIELD	6 N	4.77	28.62	28.62
R105346	GASKET	1	3.51	3.51	3.51
R112884	CAP SCREW	8 N	2.40	19.20	19.20
R130573	GASKET	3	7.66	22.98	22.98
R49424	O-RING	1 S	8.56	8.56	8.56
R504060	INTAKE VALVE	6 N	56.15	336.90	336.90
R504061	EXHAUST VALVE	6 N	61.94	371.64	371.64
R51936	WASHER	11 S	1.30	14.30	14.30
R522768	GASKET	1	6.25	6.25	6.25
R54500	SCREW	8 S	1.87	14.96	14.96
R57517	O-RING	1 N	9.19	9.19	9.19
R72739	COUPLING	1 N	25.09	25.09	25.09
R77551	O-RING	6	5.60	3.36	3.36
R78202	CUSHION	1	15.99	15.99	15.99
R79605	WASHER	6	2.41	14.46	14.46
R79846	CAP SCREW	1 N	3.01	3.01	3.01
R86743	O-RING	1	7.90	7.90	7.90
R89879	GASKET	1	6.33	6.33	6.33
R91822	SPRING	12 N	8.87	106.44	106.44
SALLOWANCE	SERVICE ALLOW	2-	1500.00	3000.00CR	3000.00CR
SE501119	INJECTION NOZZL	6 N	101.85	611.10	611.10
CRSE501119	Injection Nozzl		10.00	60.00	60.00
SPEC HANDLING	RE560468/LNT	1	8.73	8.73	8.73
	FLASH				
SPEC HANDLING	R72739	1	7.85	7.85	7.85
	FLASH				

CONTINUED ON PAGE 06

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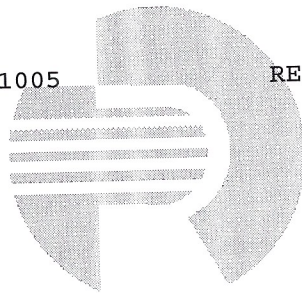
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	SUBLETLABOR machine head	1	638.87	638.87	
TY26576	COOL-GARDII TM	3	33.71	101.13	
TY26661	ENGINE BREAK-IN	7	17.11	119.77	
	Break-In Plus Oil 10W30				
T23891	WASHER	6	.31	1.86	
24H1305	WASHER	4	.38	1.52	
			PARTS	2359.36	
			LABOR	3806.00	
			SUBLET	638.87	
10101005	24901005		REPAIR TOTAL==>	6804.23	



***** WORK ORDER TOTALS *****

	INTERNAL	CUSTOMER
PARTS	3768.55	
LABOR	7425.00	
SUBLET	638.87	
SRV ACCESSORIES	75.00	
INTERNAL TOTAL	11907.42	

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