

L13-9
AUG

Brandt

Brandt Tractor Ltd.
10121 Barlow Trail NE
Calgary, Alberta
T3J 3C6
(403)248-0018

Service Invoice



JOHN DEERE

SOLD TO:

LAKHVIAR
817847 AB LTD
84TH SE
CALGARY,

INVOICE DATE	BRANCH	INVOICE NO.
29 JUL 26	104	10450454

PAGE
1
SALE TYPE
CASH
CUSTOMER NO.
40000001

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** PRELIMINARY **

PURCHASE ORDER NO.	PHONE NUMBER	WORK ORDER NO.	SEG.	DATE OPENED	SALESPER	AUTHORIZED BY
	403-630-1904	104504549	01	22 JUL 26		
MAKE	MODEL	SERIAL NO.	EQUIP. NO.	METER		
JD	332E	1T0332EMVEE268135		8858		

DESCRIPTION	AMOUNT
DIAGNOSE LOW ENGINE OIL PRESSURE SHUTTING MACHGINE DOWN MACHINE WAS PARKED IN THE YARD WITH NO OIL VISIBLE ON THE HYDRAULIC SIGHT GLASS. TOPPED UP THE HYDRAULIC OIL LEVEL AND CHECKED THE ENGINE OIL LEVEL. STARTED THE MACHINE AND BROUGHT IT INSIDE THE SHOP. WHEN I WAS MOVING THE MACHINE INSIDE THE LOW OIL PRESSURE WARNING LIGHT CAME ON THEN THE ECU SHUT THE ENGINE DOWN. VERIFIED CUSTOMER COMPLAINT, ECU RECIEVES LOW OIL PRESSURE SIGNAL AND SHUTS DOWN. ONCE THE MACHINE WAS IN THE SHOP, THE OIL PRESSURE SWITCH WAS REMOVED AND A MECHANICAL OIL GAUGE WAS INSTALLED. STARTED THE ENGINE AND VERIFIED ACTUAL OIL PRESSURE FROM THE ENGINE. EACH TIME THIS MACHINE STARTS, THE ECU COMMANDS HIGH IDLE DUE TO EXHAUST FILTER RESTRICTIONS SO THE 65PSI OIL PRESSURE THAT WAS READ WAS AT HIGH IDLE. REINSTALLED THE NEW OIL PRESSURE SWITCH AND CHECKED THE RESISTANCE BETWEEN THE CONNECTOR PIN AND GROUND. THE SWITCH HAD LITTLE TO NO RESISTANCE. STARTED THE ENGINE AND RECHECKED THE SWITCH. THIS TIME THE RESISTANCE READ OUT OF LIMITS INDICATING IT WAS OPENING NORMALLY. CHECKED THE RESISTANCE BETWEEN THE OIL PRESSURE SIGNAL WIRE CONNECTOR AND PIN 29 INSIDE THE ECU CONNECTOR. THERE WAS LESS THAN 1 OHM OF RESISTANCE. THE OIL PRESSURE SIGNAL CIRCUIT AND SWITCH BOTH APPEAR TO BE WORKING CORRECTLY. THE ENGINE IS MAKING OIL PRESSURE AS WELL. RECONNECTED SERVICE ADVISOR TO THE MACHINE AND PERFORMED NEW ECU SWAP. THE MACHINE COULD NOW START AND RUN ON LOW IDLE BUT IT STILL SHUT DOWN DUE TO NO OIL PRESSURE SIGNAL. REMOVED THE PRESSURE SENSOR AND INSTALLED THE MECHANICAL OIL GAUGE AGAIN TO REVERIFY OIL PRESSURE AT LOW IDLE. OIL	

PAST DUE INTEREST 1 1/2% PER MONTH (18% ANNUAL); MINIMUM CHARGE OF \$1.50.

I hereby authorize the above repair work to be done along with the use of necessary materials. You and your employees may operate above machine for purposes of testing, inspection, or delivery at my risk. I agree to pay cash on delivery of machine or on terms satisfactory with you and until paid in full an express mechanics lien is acknowledged on above machine to secure the amount for repairs thereto. It is understood that this company assumes no responsibility for loss or damage by theft or fire to machine placed with them for storage, sales, repair or while field testing.

X _____
SIGNATURE DATE

DESCRIPTION	AMOUNT
TOTAL PARTS	
TOTAL LABOR	
MISC. CHARGES	
SALES TAX	
PLEASE PAY THIS TOTAL	**CONTINUED**

CUSTOMER COPY



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DESCRIPTION

AMOUNT

PRESSURE STAYED CONSTANT AT 65PSI UNTIL THE ENGINE SHUT DOWN. REINSTALLED THE SWITCH AND HARNESS CONNECTOR. USED SERVICE ADVISOR TO DETERMINE IF ANY OTHER CONTROL UNITS READ THE OIL PRESSURE SIGNAL. THE EMU READS THE PRESSURE SIGNAL FROM THE ECU THROUGH THE CAN NETWORK. CONSIDERING THERE WAS NO OTHER ISSUES WITH THE CAN NETWORK BETWEEN THE 2 CONTROL UNITS, (TEMP SIGNAL, ENGINE RPM, ETC), THERE MUST HAVE BEEN AN INTERNAL DRIVE PROBLEM WITHIN THE EMU ITSELF. THIS PROBLEM MAY HAVE BEEN CAUSED BY THE FAULTY ECU AS WELL. WITH THE IGNITION ON AND ENGINE OFF, THE DONER EMU COULD READ THE OIL PRESSURE SIGNAL. CONNECTED THE REMOTE BOX TO THE MACHINE SO THE EMU LOCKS COULD BE BYPASSED AND STARTED THE MACHINE. THE ENGINE RAN SMOOTHLY AND DID NOT SHUT DOWN, VERIFYING THE PROBLEM HAD BEEN CORRECTED. QUOTED A NEW EMU. MOUNTED THE NEW ECU ON THE MACHINE FRAME AND DISSCONNECTED THE REMOTE BOX. INSTALLED THE NEW EMU AND SECURED IT USING THE FOUR MOUNTING SCREWS AND TWO BEZEL MOUNTING SCREWS. CONNECTED ALL THREE ELECTRICAL HARNESS CONNECTORS AND CONNECTED SERVICE ADVISOR USING AN EDL TO PROGRAM THE NEW EMU. THE REPLACEMENT EMU WAS FOUND TO BE BLANK AND COMPLETELY INOPERATIVE, WITH NO DISPLAY, INDICATOR LIGHTS, OR SYSTEM RESPONSE. VERIFIED POWER, GROUND, AND COMMUNICATION CIRCUITS AND REVIEWED AVAILABLE CASES AND SOLUTIONS DOCUMENTATION. CONTACTED JOHN DEERE DTAC, AND UPDATED SOFTWARE WAS SENT FOR THE EMU IN AN ATTEMPT TO RECOVER THE MODULE. MULTIPLE PROGRAMMING ATTEMPTS WERE PERFORMED; HOWEVER, THE UNIT REMAINED NON-FUNCTIONAL AND COULD NOT BE PROGRAMMED. DETERMINED THE REPLACEMENT EMU WAS DEFECTIVE OUT OF THE BOX AND ORDERED ANOTHER NEW EMU. UPON RECEIVING THE SECOND REPLACEMENT EMU, INSTALLED THE

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X

SIGNATURE

DATE

QTY # 138637340

DESCRIPTION

AMOUNT

TOTAL PARTS

TOTAL LABOR

MISC. CHARGES
SALES TAX

PLEASE PAY
THIS TOTAL

CONTINUED

CUSTOMER COPY

LA1132C



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DESCRIPTION	AMOUNT
MODULE AND SECURED IT WITH THE SIX MOUNTING SCREWS. CONNECTED ALL THREE HARNESS CONNECTORS AND SUCCESSFULLY PROGRAMMED THE NEW EMU USING SERVICE ADVISOR. SOFTWARE LOADED CORRECTLY, AND THE DISPLAY POWERED UP AND OPERATED AS DESIGNED. ENTERED THE MACHINE HOURS INTO THE NEW EMU AND VERIFIED PROPER MODULE OPERATION. CHECKED ALL FLUID LEVELS AND STARTED THE MACHINE. AN ACTIVE FUEL PUMP CALIBRATION CODE WAS PRESENT AFTER PROGRAMMING, SO A FUEL PUMP CALIBRATION TEST WAS PERFORMED AND COMPLETED SUCCESSFULLY. CLEARED DIAGNOSTIC INFORMATION AND VERIFIED NO ACTIVE OR STORED FAULT CODES REMAINED. REMOVED THE EDL, RAN THE MACHINE THROUGH ALL OPERATING FUNCTIONS.	
1 2666420L OW/40	281.51
20 WDF WAST	.10
1 MIA883600 Engine CCY	1,781.69
1 PH85248645 Display CY	1,477.37
CORE VALUE \$141	
1- CRPH85248645 LESS COR	141.00
* LABOR *	2,497.50
SERVICE ACCESSORIES	224.78
ENVIRONMENTAL FEE	24.98
>>--> SEG# 01 PRT 3,401.57 LAB 2,497.50 MSC	249.76
* GST/HST *	307.44
* TOTAL GST/HST * - GST No. 899544779	307.44

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X

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DATE

Q17 # 1224957340

DESCRIPTION	AMOUNT
TOTAL PARTS	3,401.57
TOTAL LABOR	2,497.50
MISC. CHARGES	249.76
SALES TAX	0.00
PLEASE PAY THIS TOTAL	6,456.27