ZIEGLER CAT

901 West 94th Street
Minneapolis MN 55420-4236

ZIEGLER CAT THE Rental STORE

MINNESOTA	952-888-4121	800-352-2812
IOWA	515-957-3800	800-342-7002
MISSOURI	515-957-3800	800-342-7002
WISCONSIN	515-957-3800	800-342-7002

Invoice Number: SW240022853

Date: 12/30/15

Account No.: 5562900

Sold To: MATHIOWETZ CONSTRUCTION CO
30676 COUNTY ROAD 24
SLEEPY EYE MN 56085-9624

Ship To:

Invoice Information

WO Number:	WU15167
WO Date:	12/04/15
Store:	MANKATO
Payment Terms:	CHARGE
P/O Number:	UNIT 1224
Ship Via:	
Invoice Type:	101010

Make:	CATERPILLAR
Model:	D6RDSIIXW
Serial:	0AEP00171
PIN:	
Id No:	D1763
Cust Unit:	1224
Meter:	.0

[redacted]

DUE BY 10TH OF THE NEXT MONTH

Credit card payments are only accepted at Point of Sale.

A service charge of 1 1/2 % per month will be assessed on all past due accounts.

To ensure proper credit, please detach this portion, at the perforation, and return with remittance.

MATHIOWETZ CONSTRUCTION CO
30676 COUNTY ROAD 24
SLEEPY EYE MN 56085-9624

Account Number: 5562900
Invoice Number: SW240022853
Invoice Date: 12/30/15

INVOICE COPY

Please remit to:

ZIEGLER INC.
SDS 12-0436
PO BOX 86
MINNEAPOLIS,MN 55486-0436

Amount Due: [redacted]

Amount Enclosed:

ZIEGLER CAT
901 West 94th Street
Minneapolis MN 55420-4236

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Invoice Number: SW240022853 **Date:** 12/30/15 **Account No.:** 5562900 **Page:** 2

Quantity	Item	N/R	Description	Unit Price	Extended

MACHINE/GRIND/MILL 2 LIFT ARM
YOKE
REPAIR PROCESS COMMENTS:
-UNDER CUT 2 YOKES FOR WELD
WELDED 2 YOKES
MACHINED BACK TO CAT SPEC

TOTAL LABOR SEG. 70
1.00 WELDING SUPPLIES [redacted]

TOTAL MISC CHGS SEG. 70

SEGMENT 70 TOTAL

SERVICE SUPPLIES AND
ENVIRONMENTAL CHARGES

MN SALES TAX-6.875% [redacted]

N MANKATO MN CITY

* * * INVOICE COPY * * *
DUE BY 10TH OF THE NEXT MONTH

INVOICE TOTAL [redacted]

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WISCONSIN	515-957-3800	800-342-7002

Invoice Number: SW240023431

Date: 2/16/16

Account No.: 5562900

Sold To: MATHIOWETZ CONSTRUCTION CO
30676 COUNTY ROAD 24
SLEEPY EYE MN 56085-9624

Ship To:

Invoice Information

WO Number:	WU15295
WO Date:	12/17/15
Store:	MANKATO
Payment Terms:	CHARGE
P/O Number:	1224
Ship Via:	
Invoice Type:	101010

Make:	CATERPILLAR
Model:	D6RDSIIXW
Serial:	0AEP00171
PIN:	
Id No:	D1763
Cust Unit:	1224
Meter:	20365.0

[redacted]

DUE BY 10TH OF THE NEXT MONTH

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30676 COUNTY ROAD 24
SLEEPY EYE MN 56085-9624

Account Number: 5562900
Invoice Number: SW240023431
Invoice Date: 2/16/16

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Invoice Number: SW240023431 **Date:** 2/16/16 **Account No.:** 5562900

Quantity	Item	N/R	Description	Unit Price	Extended

RECONDITION ENGINE
MAJOR
10 YEAR/10,000 HOUR WARRANTY EFFECTIVE: 01/11/2016
CUSTOMER MUST PERFORM SCHEDULED MAINTENANCE
(INCLUDING 500 HR VALVE ADJUSTMENT) AND SCHEDULED
OIL SAMPLING. SOS MUST BE TAKEN 1 HOUR AFTER
INSTALLATION AND EVERY 250 HOURS THEREAFTER IN
ORDER TO VALIDATE WARRANTY. FAILURE TO DO SO MAY
VOID WARRANTY.
****
REPAIR PROCESS COMMENTS:
DISASSEMBLED ENGINE, CLEANED AND INSPECTED ALL
PARTS. ASSEMBLED ENGINE AS TO CATERPILLAR
PROCEDURES WITH ALL NEW GASKETS AND SEALS.
INSTALLED CRANKSHAFT (STD./STD.) WITH MAIN
BEARINGS PN# 151-2939. INSTALLED NEW PISTON
CROWNS, SKIRTS, WRIST PINS AND LINERS. ALONG WITH
ROD BEARINGS PN# 213-3190. THE ROD AND MAIN
BEARINGS WERE THEN TORQUED. INSTALLED THE FRONT
GEAR TRAIN ALONG WITH THE CAMSHAFT AND LIFTERS.
THE FRONT AND REAR HOUSINGS WERE INSTALLED ALONG
WITH DAMPER AND FLYWHEEL. THE CYLINDER HEAD WAS
INSTALLED AS WERE THE PUSH TUBES AND ROCKER SHAFT
ASSEMBLIES. THE VALVES WERE ADJUSTED .015" IN.
.025" EX. INSTALLED OIL PUMP, OIL PAN, WATER
PUMP, EXHAUST MANIFOLD, INTAKE MANIFOLD AND
TURBO. INSTALLED THE ENGINE OIL COOLER ASSEMBLY.
INSTALLED HEUI PUMP ALONG WITH 6 REMAN UNIT
INJECTORS PN# 10R-7224. THE ENGINE WAS
DYNAMOMETER TESTED TO VERIFY PERFORMANCE AND
FACILITATE PROPER BREAK IN. THE ENGINE PRODUCED
211 HP @ 2000 RPM. HP SPEC IS 210 HP @ 2000 RPM.
THE ENGINE WAS ACCESSORIZED AND PAINTED.
TAK.

2	0L-1026	PLUG	S
1	0S-0519	PLUG	S
1	1L-4775	RING	S
2	1R-1808	FILTER AS-LU	S
1	1S-0724	CLIP	S
1	1S-0994	CLIP	S
1	1S-9799	SEAL-O-RING	S
1	1W-2431	CLAMP	S
2	1W-4738	BEARING	S
1	2S-3029	BEARING	S
12	2Y-5829	NUT	S
4	3B-0623	PLUG	S
1	3D-2824	SEAL O RING	S
1	3E-5239	RELAY A	S
12	3E-8017	LOCKNUT	S
1	3E-9867	CLIP	S
1	3E-9868	CLIP	S
1	3F-5792	SEAL	S
2	3F-6795	PIN	S
7	3K-0360	SEAL	S
24	3S-2093	TIE	S
19	3S-2093	TIE	S
1	3S-8665	CLIP	S
1	4K-9821	SLEEVE	S
1	4K-9822	NUT	S
1	4M-0189	SEAL O RING	S
1	4P-4178	THRUST	S
6	4P-4369	SPACER	S
5	4P-7581	CLIP	S
10	4P-7581	CLIP	S

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Invoice Number: SW240023431 **Date:** 2/16/16 **Account No.:** 5562900

Quantity	Item	N/R	Description	Unit Price	Extended
5	4P-8134		CLIP	S	
10	4P-8134		CLIP	S	
1	5F-3106		SEAL	S	
1	5P-0597		CLAMP	S	
568	5P-0767		CM-HOSE STK	S	
32	5P-2094		CM-HOSE STK	S	
2	5P-5630		M-TUBE STK	S	
3	5P-5678		M SEAL STK	S	
1	5P-6188		SLEEVE	S	
1	5P-6315		ELBOW	S	
3	5P-7085		SEAL	S	
3	6D-4247		CLIP	S	
1	6D-4636		CLIP	S	
1	6N-1558		RING-SEAL	S	
1	6N-2985		CAP A OIL	S	
1	6V-0852		CAP	S	
2	6V-2686		CLIP	S	
18	6V-3918		BOLT	S	
6	6V-3940		BOLT	S	
4	6V-3965		NIPPLE A	S	
3	6V-4249		BOLT	S	
1	6V-4369		CLIP	S	
1	6V-4369		CLIP	S	
15	6V-5839		WASHER-HARD	S	
2	6V-7238		VALVE	S	
1	6V-8260		SEAL	S	
1	6V-8636		CONNECTOR	S	
2	7C-1493		VALVE	S	
1	7G-3832		GROMMET	S	
100	7K-1181		STRAP CABLE	S	
1	7M-8485		SEAL	S	
1	7N-0296		CYLINDER ETH	S	
1	7S-4244		CLIP	S	
12	7X-2908		RING	S	
1	8C-3445		CAP DUST	S	
1	8C-3446		VALVE	S	
2	8F-6575		PLUG	S	
1	8L-2786		O RING	S	
2	8M-4433		SEAL O RING	S	
4	8M-4986		SEAL O RING	S	
2	8M-9315		BEARING	S	
9	8T-0100		BOLT	S	
1	8T-0644		BOLT	S	
2	8T-4984		CLAMP	S	
1	9F-4446		RING	S	
9	9M-1974		WASHER	S	
4	9M-7958		CLAMP	S	
9	9N-0869		WASHER	S	
1	9N-4685		BLOCK	S	
1	9N-6377		BOOT	S	
1	9P-3709		GEAR-SUN	N	
1	9X-6340		FILM	S	
1	9Y-0810		SLEEVE	S	
1	10R-0371		TURBO GP	N	
1			CORE CHARGE	N	
1-			CORE CREDIT	N	
1	10R-1984		PUMP AS OIL	S	
1			CORE CHARGE	S	
1-			CORE CREDIT	S	
1	10R-2037		ROD AS CONN	N	
1			CORE CHARGE	N	
2	10R-2037		ROD AS CONN	N	
2			CORE CHARGE	N	
3	10R-2037		ROD AS CONN	N	
3			CORE CHARGE	N	

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Quantity	Item	N/R	Description	Unit Price	Extended
6-			CORE CREDIT	N	
6	10R-7224		INJ GP FUEL	S	
6			CORE CHARGE	S	
6-			CORE CREDIT	S	
4	10R-8155		CYLINDER PK	S	
4			CORE CHARGE	S	
2	10R-8155		CYLINDER PK	S	
2			CORE CHARGE	S	
6-	10R-8155		CYLINDER PK	S	
6-			CORE CREDIT	S	
1	10R-8897		PUMP GP HYD	S	
1			CORE CHARGE	S	
1-			CORE CREDIT	S	
1	115-4072		BEARING	S	
12	116-3715		STUD	S	
1	121-0178		PLATE INFO	S	
1	124-0174		CLIP-LOOP	S	
1	128-3813		SEAL	S	
1	130-3216		V-BELT SET	S	
1	136-9066		FILM-INFO	S	
2	137-6722		CLIP	S	
1	148-0757		SWITCH AS	S	
7	151-2939		BEARING-MAIN	S	
4	159-1503		CLAMP	S	
1	159-3537		HEATER AS.	S	
1	160-0526		O-RING	S	
2	160-8184		BEARING-SLEE	S	
1	161-1703		SENSOR GP	S	
1	161-1704		SENSOR GP-PR	S	
1	161-1705		SENSOR GP	S	
6	161-3425		RING-PSTN-IN	S	
1	161-9926		SENSOR GP-PR	S	
1-	161-9926		SENSOR GP-PR	S	
3	163-2442		VALVE-INTAKE	N	
24	163-2478		SEAL-VALVE	S	
6	166-3648		PIN-PISTON	N	
6	167-0024		SEAL-LINER	S	
1	167-0168		HOSE AS-O SU	S	
6	168-7209		RING-PISTON-	S	
1	169-3883		COUPLING-TUR	S	
1	176-7688		INSERT-V SEA	N	
12	176-7690		INSERT-V SEA	N	
1	179-9356		STRAP-GROUND	S	
3	183-7889		SEAT-V SPRIN	S	
1	185-3241		SEAL	S	
1	187-8194		GEAR AS-DRIV	N	
1	187-8195		GEAR AS-DRIV	N	
1	188-1017		PLATE LIFTIN	N	
1	190-6114		GASKET-OIL	S	
2	191-6587		SENSOR GP-TE	S	
1	196-9858		TEE-SWIVEL	N	
1	197-0754		CABLE AS	N	
1	197-0755		CABLE AS	N	
1	197-3271		GAGE-OIL LEV	N	
1	197-3272		TUBE AS-OIL	N	
1	197-6281		CORD AS.	S	
1	197-8419		GASKET	S	
6	197-9297		CROWN AS-PIS	N	
6	197-9299		RING-PISTON-	S	
2	197-9367		TUBE AS	S	
1	20R-0259		PUMP G WATER	S	
1			CORE CHARGE	S	
1-			CORE CREDIT	S	
1	20R-0823		CAMSHAFT AS	S	
1			CORE CHARGE	S	

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Invoice Number: SW240023431 **Date:** 2/16/16 **Account No.:** 5562900

Quantity	Item	N/R	Description	Unit Price	Extended
1-			CORE CREDIT	S	
2	203-5805		BEARING-SLEE	S	
1	203-6090		BEARING-SLEE	S	
1	204-4444		BREATHER AS	S	
1	208-7616		FILM CAT C-9	S	
1	209-3673		PULLEY	S	
1	212-9356		TUBE AS.	S	
1	213-1724		HOSE	S	
6	213-3190		BEARING	S	
1	214-1645		ELBOW-EXHAUS	N	
8	214-7568		SEAL-O RING	S	
1	214-9389		FILM	N	
1	215-3363		PULLEY-CSHFT	S	
1-	215-3363		PULLEY-CSHFT	S	
1	215-3629		PULLEY	N	
1	216-5586		BEARING-SLEE	S	
23	217-5701		DM BULK SEAL	S	
1	221-0144		GEAR AS	S	
1	224-2228		HOSE AS	N	
1	224-4536		SENSOR GP	S	
1	224-9459		HARNESS AS.	N	
1	227-5904		SEAL-O RING	S	
1	228-2540		VALVE AS-ETH	N	
1	228-3996		NOZZLE AS-ET	N	
4	228-4947		SEAL-O-RING	S	
1	228-7089		SEAL-O-RING	S	
2	228-7096		SEAL-O-RING	S	
6	229-1490		SLEEVE-INJ	S	
1	230-6279		HARNESS AS	S	
1	235-1835		TUBE AS.	N	
12	235-9651		BOLT-SOCKET	S	
1	240-0041		BREATHER AS	S	
2	242-3864		SPRING	S	
9	244-4500		SPRING	S	
1	245-4630		SENSOR GP-SP	S	
2	246-3150		PLATE-THRUST	S	
1	246-6036		HOSE	S	
1	248-5513		REGULATOR-TE	S	
1	257-5858		TUBE AS	N	
12	260-4856		GUIDE - VALV	S	
1	263-3464		TUBE AS	S	
1	264-4297		SENSOR TEMP	S	
2	264-4297		SENSOR TEMP	S	
1-	264-4297		SENSOR TEMP	S	
1	264-6156		ROD-VALVE PU	S	
2	264-6156		ROD-VALVE PU	S	
1	280-6794		HOSE	S	
2	284-3502		CLAMP-BAND	S	
1	285-4074		SEAL GP-CSHA	S	
2	293-9659		FILM-WARN UN	S	
1	305-0791		KIT-GASKET-R	S	
6	310-7255		SEAL-O-RING	S	
6	310-7257		SEAL-O-RING	S	
1	311-8096		TRUNNION AS	S	
1	318-1181		SENSOR GP	S	
6	324-7380		SKIRT-PISTON	S	
1	341-0979		SEAL O-RING	S	
2	347-3148		CLAMP BAND	S	
1	369-6662		REGULATOR AS	S	
6	385-7276		LINER-CYLIND	S	
4	418-6781		STUD TAPERLO	S	
1	419-0841		HARNESS AS	S	
1	424-5181		KIT GASKET	S	
1	425-3656		KIT GASKET	N	
1	430-3494		KIT GASKET	N	

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Quantity	Item	N/R	Description	Unit Price	Extended
1	430-3948		KIT GASKET	N	
2	430-3956		KIT GASKET	S	
5	439-4571		CLIP-LOOP	S	
1	440-0881		BOLT-HEX SKT	S	
5	440-0881		BOLT-HEX SKT	S	
12	453-5998		LIFTER AS-VA	S	
12	467-4243		SPRING-GUIDE	S	
1	SOS001		SOS 1 PACK	S	

F/R ALL [redacted]

SEGMENT 20 TOTAL

EXTRA PARTS/LABOR/MIS FOR ENGINE
THIS SEGMENT IS FOR PARTS NOT INCLUDED IN THE GUARANTEED PRICE REPAIR OPTION
****
REPAIR PROCESS COMMENTS:
- INSPECTED STARTER, RESULTS LISTED ABOVE
- RECOMMENDED REPLACING WITH CAT STARTER
- CUSTOMER CHOSE TO REUSE STARTER, THEY WILL REPLACE IT WHEN IT FAILS
- CLEANED UP STARTER TAK.
THE REAR HOUSING WAS FOUND TO BE SEVERELY WORN FROM THE HYDRAULIC PUMP. THE REAR HOUSING WAS MACHINED TO ACCEPT A BRASS REPAIR THRUST WASHER.
TAK.

1	0R-8402		OIL COOLER	S	
1			CORE CHARGE	S	
1-			CORE CREDIT	S	

TOTAL PARTS SEG. 21 [redacted]

TOTAL LABOR SEG. 21

SEGMENT 21 TOTAL

REMOVE & INSTALL TORQUE CONVERTER

TOTAL LABOR SEG. 22 [redacted]

SEGMENT 22 TOTAL

RCONDITION BEFORE FAILURE TRANS & DIFFERENTIAL UNIT
****
10 YEAR/10,000 HOUR WARRANTY EFFECTIVE: 01/11/2016
CUSTOMER MUST PERFORM SCHEDULED MAINTENANCE AND SOS 1 HOUR AFTER INSTALLATION AND EVERY 500 HOURS THEREAFTER IN ORDER TO VALIDATE WARRANTY. FAILURE TO DO SO MAY VOID WARRANTY.
****

1	0S-1569	CAP SCREW	S	
1	1M-9011	SEAL	S	
1	2D-6506	SEAL O RING	S	
8	3J-1907	SEAL	S	
2	3K-0360	SEAL	S	
1	3S-7781	GASKET	S	
27	5D-0353	BOLT	S	
1	5G-8836	RING	S	
3	6I-8500	PLATE	S	
2	6T-3853	SLEEVE	N	
7	6V-0852	CAP	S	

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Quantity	Item	N/R	Description	Unit Price	Extended
1	6V-2404		WASHER	S	
7	6V-3965		NIPPLE A	S	
3	7G-2343		SPRING	S	
1	8M-4390		SEAL O RING	S	
6	8P-2051		PLATE	S	
3	9M-7002		SEAL O RING	S	
1	9M-9647		SEAL O RING	S	
8	9P-7390		DISC A	S	
3	031-0218		BOLT	S	
1	104-6730		GASKET	S	
1	106-9212		SPRING	S	
1	191-9322		BEARING KIT	S	
5	328-4374		DISC-FRICTIO	S	
4	328-4375		DISC-FRICTIO	S	
1	345-7551		KIT DT GASKE	N	
1	SOS001		SOS 1 PACK	S	

F/R ALL [redacted]

SEGMENT 30 TOTAL

EXTRA PARTS/LABOR/MIS FOR TRANS & DIFFERENTIAL UNIT
EMAILED PAUL A ON 12/29/15 AND GAVE EXTRAS
OF $5164.00. JDM
CUSTOMER COMPLAINT:
EXTRA PARTS/LABOR/MIS FOR TRANS & DIFFERENTIAL
UNIT.
CAUSE OF FAILURE:
HIGH HOURS
RESULTANT DAMAGE:
THE INPUT SHAFT (108-8853) HAD TWISTED SPLINES AND
THE BUSHING SURFACES WERE GROOVED, THE RING GEAR
(9P-8614) HAD CHIPPED TEETH, QTY 6 PLANETARY
GEARS (7G-2516) WERE PITTING AND QTY 3 PLANETARY
GEARS (6T-7882) WERE PITTING.
REPAIR PROCESS COMMENTS:
DISASSEMBLED TRANSMISSION AND DIFFERENTIAL UNIT
AND FOUND THE INPUT SHAFT (108-8853) HAD TWISTED
SPLINES AND THE BUSHING SURFACES WERE GROOVED,
THE RING GEAR (9P-8614) HAD CHIPPED TEETH, QTY 6
PLANETARY GEARS (7G-2516) WERE PITTING AND QTY 3
PLANETARY GEARS (6T-7882) WERE PITTING. ALL OTHER
INTERNAL COMPONENTS WERE IN GOOD CONDITION.
REPLACED ALL OF THE ABOVE WITH NEW ALONG WITH
BEARINGS, SEALS, BUSHINGS, PLATES, DISCS,
O-RINGS, SOLENOIDS, SENSORS AND WIRING HARNESSES.
RAN ON TEST BENCH AND ALL WAS GOOD.(SEE ATTACHED
TEST SHEET FOR SPECIFICATIONS) SENT OLD PARTS
WITH TRANSMISSION ALONG WITH MOUNTING O-RINGS.
JDM

6	7G-2516		GEAR PLANET	S	
1	7T-9370		GEAR-SUN	S	
3	8P-1916		GEAR	S	
1	9P-7757		GEAR	S	
1	9P-8614		GEAR	N	
1	9P-8626		GEAR	S	
1	144-7871		HARNESS AS.	S	
1	203-3347		TUBE AS	N	
1	203-3348		TUBE AS	N	
1	205-4626		HARNESS AS.	S	
1	231-8855		SHAFT AS-INP	N	
5	244-3114		VALVE GP-MDL	S	
4	318-1178		SENSOR GP-SP	S	

TOTAL PARTS SEG. 31 [redacted]

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Quantity	Item	N/R	Description	Unit Price	Extended

SEGMENT 31 TOTAL [redacted]

REBEARING & RESEAL TORQUE CONVERTER

8	1A-2209	BOLT	S
8	1T-0414	BOLT	S
6	1T-0446	BOLT	S
3	2A-3746	PLUG	S
7	3J-1907	SEAL	S
1	3T-7310	HOSE A	N
36	4B-3388	CAP SCREW	S
2	6V-0852	CAP	S
1	6V-3965	NIPPLE A	S
1	7X-3188	BOLT	S
7	8M-4986	SEAL O RING	S
1	142-8540	RING-SEAL	S
1	177-4134	GASKET KIT -	S
1	313-2064	KIT-DT BEARI	S

F/R ALL [redacted]

SEGMENT 33 TOTAL

EXTRA PARTS/LABOR/MIS FOR TORQUE CONVERTER
CUSTOMER COMPLAINT:
REBEARING & RESEAL TORQUE CONVERTER
CAUSE OF FAILURE:
THE OUTER STATOR BEARING RETAINER WAS CUT INTO THE SEAL AREA
RESULTANT DAMAGE:
THERE WAS NO RESULTANT DAMAGE
REPAIR PROCESS COMMENTS:
THE TORQUE CONVERTER WAS DISASSEMBLED, WASHED & INSPECTED. THE PARTS LISTED ABOVE WERE FOUND DAMAGED. ALL NECESSARY SURFACES WERE BUFFED, AND ALL PARTS WERE WASHED AGAIN. NECESSARY PARTS WERE WASHED BY HAND. THE TORQUE CONVERTER WASH REASSEMBLED USING ALL NEW BEARINGS, SEALS, PARTS LISTED ABOVE, INTERNAL BOLTS, HOSES, AND SENSORS. ALL BOLTS WERE TORQUED TO SPEC. TORQUE CONVERTER WAS TESTED, THE OUTLET RELIEF PRESSURE WAS SET TO (59 PSI) WITH THE SPEC BEING (60 + OR - 10). THE LEAKAGE WAS (2.2 GALLONS PER MINUTE). CONVERTER WAS PLUGGED & WRAPPED FOR SHIPPING. JDM

1	1T-2077	RETAINER-BEA	S
2	4W-9972	SENDER	S
1	6V-1230	ELBOW	S
1	7M-1297	SPRING	S
1	9W-5595	SPRING	S
1	110-9709	HOSE AS	N
2	164-3744	WIRE AS	S
1	318-1178	SENSOR GP-SP	S

TOTAL PARTS SEG. 34 [redacted]

SEGMENT 34 TOTAL

REPAIR TRANSMISSION OIL PUMP
CUSTOMER COMPLAINT:
REPAIR TRANSMISSION OIL PUMP
CAUSE OF FAILURE:
THERE WAS NO FAILURE DETECTED

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RESULTANT DAMAGE:
THERE WAS NO RESULTANT DAMAGE
REPAIR PROCESS COMMENTS:
PUMP WAS DISASSEMBLED & INSPECTED. ALL PARTS WERE IN GOOD REUSABLE CONDITION. ALL NECESSARY SURFACES WERE BUFFED AND ALL PARTS WERE WASHED. THE PUMP WAS REASSEMBLED USING ALL NEW SEALS, BALL BEARING & TEMP SENSOR. THE PUMP TURNED FREELY BY HAND AFTER ASSEMBLY.

	JDM		
3	1H-5728	SEAL-O-RING	S
1	2K-8257	SEAL	S
1	3E-4880	COUPLING A	S
1	5P-9439	BEARING	S
3	5S-7383	BOLT	S
1	6H-3977	RING	S
3	8T-4896	WASHER	S
1	111-4919	SEAL LIP TYP	S
1	118-7226	SENSOR GP	S
4	161-8068	SEAL	S

TOTAL PARTS SEG. 36

TOTAL LABOR SEG. 36

SEGMENT 36 TOTAL

[redacted]

REPAIR IMPLEMENT PUMP
CUSTOMER COMPLAINT:
REPAIR IMPLEMENT PUMP.
CAUSE OF FAILURE:
HIGH HOURS ON MACHINE.
RESULTANT DAMAGE:
THE TOP OF THE BARREL HAD PIT MARKS. BOTH OF THE PISTON BORES HAD DEEP SCORE MARKS.
REPAIR PROCESS COMMENTS:
DISASSEMBLED IMPLEMENT PUMP.(NO SERIAL NUMBER TAG ON ORIGINAL PUMP). THE BARREL HAD PIT MARKS. BOTH OF THE PISTON BORES HAD DEEP SCORE MARKS. ONE OF THE PIPES WAS BUSTED. PICTURES WERE TAKEN. IT WAS DETERMINED TO BE MORE COST EFFECTIVE TO PURCHASE A CATERPILLAR REMAN PUMP RATHER THAN TO REBUILD IT. FITTINGS FROM THE ORIGINAL PUMP WERE DISASSEMBLED, CLEANED, RESEALED AND INSTALLED ON THE REMAN PUMP. THE ORIGINAL PUMP WILL BE TURNED IN FOR FULL CORE CREDIT. REMAN PUMP WAS WRAPPED IN PLASTIC AND SET IN A PALLET BOX FOR SHIPPING. REMAN PUMP WAS TAGGED NO OIL. REMAN PUMP S/N 2540215009.

	JDM		
20	3J-1907	SEAL	S
20	3J-7354	SEAL O RING	S
2	6V-3965	NIPPLE A	S
20	6V-9746	SEAL O RING	S
1	10R-0862	PUMP GP-HYD	N
1		CORE CHARGE	N
1-		CORE CREDIT	N

TOTAL PARTS

SEGMENT 38 TOTAL

[redacted]

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REPAIR DIFF STEERING MOTOR
CUSTOMER COMPLAINT:
REPAIR DIFFERENTIAL STEERING MOTOR.
CAUSE OF FAILURE:
BARREL WAS SCARRED.
REPAIR PROCESS COMMENTS:
DISASSEMBLED AND INSPECTED DIFFERENTIAL STEERING MOTOR. FOUND THAT THE BARREL WAS SCORED. ORDERED (0R-4611) DUE TO BEING MORE COST EFFECTIVE THAN REPAIRING THE OLD MOTOR. OLD MOTOR WILL MAKE FULL CORE (CORE RETURN TAG CR102101). INSTALLED FITTINGS ON THE NEW MOTORP. SENT ALONG NEW O-RING AND PUT A NO OIL TAG ON.

	JDM			
1	0R-4611	MOTOR GP HYD	S	
1		CORE CHARGE	S	
1-		CORE CREDIT	S	
1	8T-7568	SEAL	S	

[redacted]

TOTAL PARTS SEG. 40
TOTAL LABOR SEG. 40
SEGMENT 40 TOTAL

REPAIR ST COUNTERBALANCE VLV
CUSTOMER COMPLAINT:
REPAIR STEERING COUNTERBALANCE VALVE
CAUSE OF FAILURE:
THE RELIEF VALVES COULD NOT BE ADJUSTED TO REACH PRESSURE SPEC.
RESULTANT DAMAGE:
THERE WAS NO RESULTANT DAMAGE.
REPAIR PROCESS COMMENTS:
THE COUNTER BALANCE VALVE WAS DISASSEMBLED, ALL NECESSARY SURFACES WERE BUFFED AND ALL PARTS WERE WASHED. THE VALVE WAS REASSEMBLED USING ALL NEW SEALS. THE RELIEF VALVES COULD NOT BE ADJUSTED TO REACH PRESSURE SPEC. NEW VALVES WERE ORDERED. VALVES WERE TESTED AND PRESSURE WAS SET TO (6100 PSI) WITH THE SPEC BEING (6100 ± 115 PSI).

	JDM			
2	3J-1907	SEAL	S	
2	4J-0520	SEAL-O-RING	S	
2	4J-0528	SEAL O RING	S	
2	4J-5351	SEAL	S	
2	6V-3922	SEAL O RING	S	
2	6V-5326	RING	S	
4	6V-5758	SEAL-O-RING	S	
2	9T-5364	VALVE G	S	
2	9T-6827	RING	S	
2	9T-6828	RING	S	
2	9T-8980	RING	S	

[redacted]

TOTAL PARTS SEG. 42
TOTAL LABOR SEG. 42
SEGMENT 42 TOTAL

REPAIR TRANS PRIORITY VALVE
CUSTOMER COMPLAINT:

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REPAIR TRANSMISSION PRIORITY VALVE
CAUSE OF FAILURE:
THERE WAS NO FAILURE DETECTED.
RESULTANT DAMAGE:
THERE WAS NO RESULTANT DAMAGE
REPAIR PROCESS COMMENTS:
VALVE WAS DISASSEMBLED, BUFFED, WASHED &
INSPECTED. ALL PARTS WERE IN GOOD REUSABLE
CONDITION. THE VALVE WAS REASSEMBLED USING ALL
NEW SEALS, PRESSURE TAPS, SOLENOID VALVE &
SPRINGS. PRESSURE NEEDS TO BE CHECKED & ADJUSTED
IF NECESSARY, ONCE INSTALLED IN MACHINE.
JDM

1	2S-4078	SEAL	S
2	3J-1907	SEAL	S
2	4K-2039	SEAL O RING	S
1	4M-5912	SPRING	S
2	5M-9548	SPRING	S
2	6V-0852	CAP	S
2	6V-3965	NIPPLE A	S
5	7J-0204	SEAL O RING	S
2	7M-8485	SEAL	S
1	8M-4447	SEAL	S
4	8M-5254	SEAL O RIN	S
1	8M-8627	SPRING	S
1	129-5222	SPRING	N
1	129-5223	SPRING	N
1	198-4607	VALVE GP	S

[redacted]

TOTAL PARTS SEG. 44

TOTAL LABOR SEG. 44

SEGMENT 44 TOTAL

REPAIR ENGINE PRIORITY VALVE
TRANSMISSION
TROUBLESHOOT AND REPAIR TRANSMISSION HYDRUALIC
NOISE. FOUND THE POPPET VALVE INSIDE THE SPOOL OF
THE TRANSMISISON PRIORITY VALVE TO BE IN BACKWARDS
OK TO CODE PER JEREMY MATTSON, 2/3/16. JDM
CUSTOMER COMPLAINT:
OUTSIDE SLEEPY EYE MN CITY LIMITS
TROUBLE SHOOT PRIORITY VALVE.
CAUSE OF FAILURE:
SLUG WAS INSTALLED BACKWARDS.
RESULTANT DAMAGE:
MACHINE VIBRATES AND IS NOISY.
REPAIR PROCESS COMMENTS:
HAD CUSTOMER START MACHINE AND RELEASE THE PARKING
BRAKE. HEARD A NOISE. HAD CUSTOMER TURN ON
PARKING BRAKE AND THE NOISE WAS STILL THERE.
REMOVED THE SPOOL FROM THE PRIORITY VALVE AND SAW
THE SMALL SLUG WAS INSTALLED BACKWARDS. INSTALLED
THE SLUG IN THE CORRECT POSITION AND ASSEMBLED
BACK INTO THE MACHINE. HAD THE CUSTOMER RUN THE
MACHINE AND EVERYTHING WORKED OK. THIS IS REWORK.

SEGMENT 50 TOTAL .00 T

MACHINE/GRIND/MILL PLANETARY FNL DR CARRIER
HUB
REPAIR PROCESS COMMENTS:

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Quantity	Item	N/R	Description	Unit Price	Extended

MACHINED HUB TO RECEIVE UPDATED PARTS.

TOTAL LABOR SEG. 70 [redacted]

SEGMENT 70 TOTAL

SERVICE SUPPLIES AND
ENVIRONMENTAL CHARGES

MN SALES TAX-6.875%

N MANKATO MN CITY

* * * INVOICE COPY * * *
DUE BY 10TH OF THE NEXT MONTH

INVOICE TOTAL [redacted]