

Invoice Account

Payment

Due Date

12/10/2021

Model

Serial Number

Equipment ID

Segment SMU

140M2

M9D00284

N4971

11,938

SC00097665-021 Miscellaneous

2 YEAR/2000 HOUR WARRANTY EFFECTIVE: 11/01/2021

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.

Quantity Type Part Number

Description

Unit Price

Amount

1.00 Misc RAG

SHOP SUPPLIES

Segment Subtotal:

*paid
11/16/21*

Date
Account

11/4/2021

Amount Due:

\$69,676.29

Amount Enclosed:

Date
11/4/2021

Model
140M2

Serial Number
M9D00284

Equipment ID
N4971

Segment SMU
11,938

SC00097665-001 Remove & Install - Transmission

Repair process comments: Removed all tin. Removed cooling package. Removed hydraulic tank and battery tray. Removed all hoses and harnesses connected to the transmission. Removed transmission with proper lifting device. Sent transmission up to ZRC and ordered all parts in order to install. Once transmission returned, began installing transmission in reverse order. Installed new seal for front face and joined engine with transmission. Torqued mating bolts to proper spec and installed all lines with new seals. Once all other work was completed, ran and checked for any leaks. No leaks were found.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	3038205	Bolt-Hex Hea		
1.00	Parts	3457603	Plate As		
1.00	Parts	3509266	Bracket		
1.00	Parts	9H0846	Seal O Ring		
1.00	Parts	9X7371	Seal O Ring		
1.00	Parts	1S9799	Seal-O-Ring		
2.00	Parts	1654854	Seal-O-Ring		
4.00	Parts	4J0520	Seal-O-Ring		
2.00	Parts	8T6703	Clamp		
1.00	Parts	5K9090	Seal O Ring		
1.00	Parts	1G8878	Filter		
10.00	Parts	6V8398	Seal O Ring		
10.00	Parts	7J9108	Seal		
10.00	Parts	6V9746	Seal-O-Ring-		
10.00	Parts	6V8400	Seal-O-Ring		
5.00	Parts	6V8397	Seal		
	Labor		Labor		

1.00 Misc SAM

SOS - Oil Sample

Parts:

Labor:

Misc:

Segment Subtotal:

Model
140M2

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SC00097665-005 Replace with Cat Reman - Tc/Trans Oil Cooler

Repair process comments: Transmission oil cooler was contaminated with clutch material and needed to be replaced with reman cooler. Coolant was drained from removing cooling package. Removed all lines and mounting bolts. Removed oil cooler. Removed all old gasket material from engine block and spacer plate. Installed oil cooler in reverse order with new gaskets and seals. Installed lines in reverse order with new seals. Once work was completed on machine, ran and operated machine up to temp to check for any leaks. No leaks were found. Changed engine oil filter.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	1803907	Seal-Integra		
1.00	Parts	10R5665	Core As Oil		
1.00	Parts	10R5665CC	Core As Oil - Core C		
1.00	Parts	6V9027	Seal-O-Ring		
3.00	Parts	3054484	Seal-O-Ring		
2.00	Parts	8T5917	Seal-O-Ring		
2.00	Parts	4J0520	Seal-O-Ring		
2.00	Parts	1292861	Gasket		
-1.00	Parts	10R5665WC	Core As Oil - Worn C		
	Labor		Labor		

Parts:

Labor:

Segment Subtotal:

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140M2

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SC00097665-006 Remove & Install - Drive Axle

Repair process comments: Transmission and drive axle getting pulled to be rebuilt. Removed all tin wear around engine and cooling package. Removed fenders. Once cooling package and battery/hydraulic tank tray were removed, transmission was removed. Unbolted drive axle from frame and disconnected all lines. Lifted machine up with hoist and rolled drive axle with tandems out from under machine. Removed wheels and both sets of drive chains. Removed tandems. Shipped drive axle off to ZRC to be rebuilt. Once drive axle returned from ZRC, installed to machine in reverse order. Tightened all mounting bolts to proper spec with proper thread locker.

Quantity	Type	Part Number	Description	Unit Price	Amount
14.00	Parts	8T4137	Bolt		
8.00	Parts	2504091	Gasket		
4.00	Parts	3D2981	Gasket		
2.00	Parts	4D6695	Seal O Ring		
1.00	Parts	3N2945	Gasket		
4.00	Parts	3B4628	Cotter		
1.00	Parts	2916128	Hose As.		
4.00	Parts	6V8398	Seal O Ring		
1.00	Parts	8C3089	Seal-O-Ring		
1.00	Parts	5P8211	Seal		
24.00	Parts	1984768	Washer-Hard		
8.00	Parts	2907514	Bolt-Hex Hea		
	Labor		Labor		
Parts:			Labor:		
				Segment Subtotal:	

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SC00097665-009 Replace - Hoses & Lines - Rear

Repair process comments: Transmission and drive axle was pulled to be rebuilt. Ordered and replaced all lines in the rear that were rubbing or showing signs of dry cracking. Installed all lines with new seals and ran machine once all other work was complete to check for leaks. No leaks were found.

Quantity	Type	Part Number	Description	Unit Price	Amount
163.00	Parts	3718094	Cm Hose Bulk		
115.00	Parts	9X2133	Cm Hose Stk		
19.00	Parts	1226908	L/M Hose-In		
1.00	Parts	3484956	Hose As.		
	Labor		Labor		
Parts:			Labor:		
				Segment Subtotal:	

Model	Serial Number	Equipment ID	Segment SMU
140M2	M9D00284	N4971	11,938

SC00097665-010 Check - Articulation Pivot Pin - Rear

Repair process comments: Checked all articulation cylinder mounting bores, bearings, and pins for looseness.

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		
	Labor		Labor		
Segment Subtotal					

Model	Serial Number	Equipment ID	Segment SMU
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SC00097665-011 Replace - Flexible Coupling

Repair process comments: Installed new Flex plate before installing reman transmission. Torqued all bolts to proper spec with proper thread lock.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	4428771	Cplg As-Torn		
	Labor		Labor		
	Parts:		Labor:		
Segment Subtotal					

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SC00097665-002 Check - Front Fr Artic Pin Bore

Repair process comments: Checked all front end bores for any excess play or movement.

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		
	Labor:		Labor:		
Segment Subtotal					

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140M2	M9D00284	N4971	11,938

SC00097665-016 Replace Gasket/Reseal - Engine Oil Cooler

Repair process comments: Removed lines and turbo oil line in order to gain access to oil cooler. Removed all bolts holding cooler to block. Removed cooler and cleaned all gasket material off of block and cooler. Installed cooler in reverse order with new gaskets and seals. Installed all bolts with proper torque spec. Ran machine and checked for any leaks. No leaks were found. Changed engine oil/filter.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	2097293	Gasket		
1.00	Parts	2097290	Gasket		
1.00	Parts	1R1808	Filter As-Lu		
	Labor		Labor		
	Parts:		Labor:		
Segment Subtotal:					

Repair process comments: Filled all fluids to proper level and began warming up machine to temp. Checked for leaks and any issues as it's warming up. Once to temp, began transmission fill calibration. Transmission fill calibration saved successfully. Ran machine up to temp and ran through all forward and reverse gears. Topped fluids off and checked for any leaks. No leaks were found.

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		

18.00	Misc	CT2	CAT TDTO 30W GAL		
30.00	Misc	CT3	CAT TDTO 50W GAL		
5.00	Misc	CD6	CAT DE OIL 15W40		
2.00	Misc	ELC	CAT ELC GAL		

Labor	Misc
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Segment Subtotal:

Model	Serial Number	Equipment ID	Segment SMU
140M2	M9D00284	N4971	11,938

SC00097665-018 Travel To/From - Machine

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		
80.00	Misc	MIL	TRAVEL MILEAGE		

Labor	Misc
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Segment Subtotal:

Model	Serial Number	Equipment ID	Segment SMU
140M2	M9D00284	N4971	11,938

SC00097665-019 Replace - Lift Arm - Cylinder

Repair process comments: Customer has one for this machine. Returned ordered parts.

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		

Segment Subtotal:

SC00097665-020 Install - Guard

Repair process comments: Customer will take care of nose guards on their own. Returned all ordered parts.

Quantity	Type	Part Number	Description	Unit Price	Amount
	Labor		Labor		

Segment Subtotal:

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SC00097665-003 Inspect - Blade, Circle & Drawbar

Repair process comments: Inspected blade, circle and drawbar. Blade needed new brass shims for the top of the moldboard. Ordered and replaced shims when installing blade. Checked front drawbar socket. Pulled shims out of lift cylinders and shift cylinder in order to tighten up the slack on the sockets. Circle has a lot of excess play. Tightened up the shoes on the bottom side of the circle and replaced wear strips that were broken. While shimming the top of the circle, it was found that there was a bend in the circle at the 5 o'clock shim plate with the blade at 90 degrees from the frame. This bend made it impossible to shim the blade tight and would cause the circle to bind and not move. Customer was informed of the issue. Was instructed to make the circle loose enough that the customer could use the machine until they found a circle.

Quantity	Type	Part Number	Description	Unit Price	Amount
4.00	Parts	3754335	Insert-Gd		
2.00	Parts	3330960	Strip-Wear		
1.00	Parts	3026337	Shim		
42.00	Parts	3026336	Shim		
12.00	Parts	3026335	Shim		
5.00	Parts	3026338	Strip-Wear		
2.00	Parts	2761318	Strip-Wear		
2.00	Parts	2761319	Strip-Wear		
	Labor		Labor		

Parts:

Labor:

Segment Subtotal:

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SC00097665-012 Recondition Before Failure - Transmission M9D00001 M9D99999 396-3357

Repair process comments: Disassembled the transmission and inspected all of the parts per Caterpillar reusability guidelines. The parts that did not meet the guidelines were replaced with new ones. Reassembled the transmission with new bearings, seals, friction discs, clutch plates as needed, solenoid valves, and sensors. The transmission was sent to the Test Cell. The transmission was tested on the test bench. See the attached test sheet for detailed specs. After testing the transmission was prepped and painted.

Recondition before failure Power Shift Transmission. Standard parts include bearings, seals, clutch discs and plates. All clutch discs that were reused were inspected by a trained and certified Cat reuse parts technician. All technicians involved in reuse processes credentials are up to date in accordance with Cat reuse guidelines. Guidelines followed and referenced are media number SEBF8031-21, SEBF8098-21, SEBF8115-24, SEBF8013-17. Clutch discs that were reused qualified per referenced media numbers to be within the parameters of reusability. These reused clutch discs will carry the Cat parts

Quantity	Type	Part Number	Description	Unit Price	Amount
2.00	Parts	1121574	Seal-O-Ring		
8.00	Parts	8E5742	Ring		
4.00	Parts	6V1819	Bolt		
3.00	Parts	1618068	Seal		
32.00	Parts	6I8912	Disc Fric		
5.00	Parts	2284947	Seal-O-Ring		
1.00	Parts	3K0715	Seal		
10.00	Parts	7M8485	Seal		
2.00	Parts	6V5759	Seal-O-Ring		
5.00	Parts	3438739	Disc-Frictio		
2.00	Parts	1085751	Disc Fric		
14.00	Parts	2147568	Seal-O Ring		
1.00	Parts	4J0520	Seal-O-Ring		
1.00	Parts	2069295	Seal O Ring		
1.00	Parts	5P8211	Seal		
1.00	Parts	CH1U-8846 - 200	GASKET		
5.00	Parts	6I8911	Disc Fric		
4.00	Parts	8E5734	Ring Seal		
14.00	Parts	8F3469	Ring		
1.00	Parts	2S4663	Seal O Ring		
1.00	Parts	3283655	Element As		
3.00	Parts	9W9371	Ring-Seal		
2.00	Parts	4J8996	Seal O Ring		
1.00	Parts	2P1692	Seal-O-Ring		
1.00	Parts	5F3092	Ring		
9.00	Parts	3J1907	Seal		
5.00	Parts	2M9780	Seal O Ring		
2.00	Parts	8E5736	Ring Seal		
1.00	Parts	4F7952	Seal		
4.00	Parts	5P3863	Seal O Ring		
3.00	Parts	5K9090	Seal O Ring		
1.00	Parts	6V7359	Grommet		

7.00 Parts 3D2824	Seal O Ring
1.00 Parts 8L2786	O Ring
10.00 Parts 6V0852	Cap
1.00 Parts 6V5050	Seal-O Ring
3.00 Parts 1590927	Disc-Frictio
12.00 Parts 7G4822	Ring
1.00 Parts 8S9129	Filter
1.00 Parts 1719375	Seal-O Ring
8.00 Parts 6D7889	Seal
1.00 Parts 1932200	Seal-Lip Typ
1.00 Parts 0336033	O-Ring
1.00 Parts 8C3447	Cap
1.00 Parts 8M5253	Seal O Rin
1.00 Parts 6V9028	Seal
1.00 Parts SOS001 - 123	ZIEG000 SOS 1 PACK
1.00 Parts 2516673	Filter
1.00 Parts 3K0360	Seal
1.00 Parts 1300229	Seal-O-Ring
1.00 Parts 1964000	Bearing Kit
1.00 Parts 2385080	Seal-O-Ring
7.00 Parts 6Y7981	Disc
2.00 Parts 2S4078	Seal
1.00 Parts 1880633	Seal-Brake
1.00 Parts 8C3089	Seal-O-Ring
1.00 Parts 2468777	Seal-Brake
2.00 Parts 6V5048	Seal-O-Ring
1.00 Parts 2451912	Seal Kit
2.00 Parts 9X4609	Seal O Ring
1.00 Parts 5P7815	Seal-O-Ring
1.00 Parts 6F6672	Seal
22.00 Parts 6I9502	Plate-Clutch
6.00 Parts 9U9995	Plate
20.00 Parts 6Y5010	Washer
2.00 Parts 6Y9960	Mount As
4.00 Parts 3E4888	Washer
Labor	Labor

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SC00097665-013 Extra Parts/Labor/Misc for - Transmission

Repair process comments: The transmission arrived due to a recondition before failure. The transmission was disassembled, cleaned and inspected. All of the necessary surfaces were buffed and all of the necessary parts were ordered. Assembled the transmission with all new bearing cup, cones, seals, and friction discs, and plates as needed. Installed all new updated pistons for the clutches. Assembled the two cases with gasket sealant. Assembled the parking brake with all new friction discs and original plates. Installed on the transmission with new seals and gasket sealant. Installed a new filter in the housing and mounted on the transmission. Installed a new steel line and a new hose for the filter housings. Installed a new cold weather valve with new solenoids and mounting bracket. Installed all new speed sensors. Installed all new modulation valves and a new wire harness. Assembled the pump with new seals and mounted on the transmission. All of the mounting hardware was properly lubricated and torqued per Caterpillar specs. Sent all new transmission mounting hardware. Installed a new ID tag. Prepped the transmission for paint and test. Sent a no oil, oil sample, calibration, and system flush after rebuild tag with the transmission.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	3521478	Harness As-X		
3.00	Parts	5094136	Piston		
1.00	Parts	5094137	Piston		
21.00	Parts	4231986	In Hose-Blk		
1.00	Parts	2911965	Hose As		
1.00	Parts	3236835	Plate As		
1.00	Parts	5094138	Piston		
3.00	Parts	1293181	Bolt - Hex		
1.00	Parts	4S1962	Clip		
8.00	Parts	2443114	Valve Gp-Mdl		
10.00	Parts	6V0852	Cap		
11.00	Parts	6V3965	Nipple A		
1.00	Parts	3501107	Valve Gp-Sol		
1.00	Parts	3560841	Switch As-Pr		
1.00	Parts	3917125	Switch Gp		
1.00	Parts	2516674	Screen		
1.00	Parts	3615941	Valve Gp & M		
2.00	Parts	1481925	Valve-Relief		
1.00	Parts	2380112	Sensor Gp		
1.00	Parts	4638243	Sensor Gp-Pr		
1.00	Parts	8C3446	Valve		
1.00	Parts	8C3447	Cap		
3.00	Parts	5094135	Piston		
1.00	Parts	5094139	Piston-Balan		
1.00	Parts	9W7038	Ring Snap		
1.00	Parts	1608492	Bolt-Hex Hea		
3.00	Parts	1458039	Lock		
8.00	Parts	8T9655	Mount		
1.00	Parts	9W1454	Cover		
1.00	Parts	2696974	Tube As		
22.00	Parts	4568513	Hose Bk		
3.00	Parts	1918304	Sensor G-Spd		

Date
11/4/2021

2.00 Parts 1918303
1.00 Parts 1757896
2.00 Parts 3E4887
1.00 Parts 7S4607

Parts:

Sensor G-Spd
Seal-O-Ring
Sleeve
Detent A

Segment Subtotal

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140M2

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M9D00284

Equipment ID
N4971

Segment SMU
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SC00097665-014 Rebearing & Reseal - Drive Axle M9D00001 M9D99999 DRIVE AXLE RB & RS

Repair process comments: Disassembled the drive axle and inspected all of the parts per Caterpillar reusability guidelines. The parts that did not meet the guidelines were replaced with new ones. Reassembled the drive axle with new bearings, seals, frictions discs, plates as needed and solenoid valve. Adjusted the pinion preload to spec. Adjusted the gear backlash to spec. The tooth pattern looked good. Adjusted the trunnion housing endplays to spec. Adjusted the final drive preloads to spec. The drive axle was prepped and painted.
Standard job includes parts, labor & misc to rebearing & reseal the complete rear axle group (axle housing, final drives and differential). Parts include bearings, seals, self-locking hardware, shim packs and thrust washers.

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	2017713	Bearing As		
3.00	Parts	5F9144	Seal		
1.00	Parts	2640575	Seal-Lip Typ		
1.00	Parts	7S4001	Seal-O-Ring		
1.00	Parts	8L5189	Seal-O-Ring		
1.00	Parts	4J5351	Seal		
12.00	Parts	1S9110	Bearing A		
1.00	Parts	4532979	Bearing		
1.00	Parts	1J2860	Cup		
1.00	Parts	2D9455	Cone		
1.00	Parts	4J5477	Seal O Ring		
12.00	Parts	8X8377	Washer		
2.00	Parts	3290411	Seal-Lip Typ		
1.00	Parts	2445682	Bearing-Spl		
2.00	Parts	5476515	Washer-Thrus		
1.00	Parts	2869155	Bolt M16X2		
1.00	Parts	6V8397	Seal		
1.00	Parts	3J7354	Seal O Ring		
2.00	Parts	3053353	Washer Thrus		
2.00	Parts	8D3902	Seal		
1.00	Parts	7M8485	Seal		
1.00	Parts	1J4757	Bearing-Cone		
4.00	Parts	3053352	Washer-Thrus		
1.00	Parts	2090230	Seal-Brake		
4.00	Parts	3143260	Bolt-Socket		
4.00	Parts	2660199	Ring-Wear		
2.00	Parts	3289669	Washer-Thrus		
1.00	Parts	2D9454	Cup		
4.00	Parts	2935368	Bearing-Slee		
2.00	Parts	6V2449	Cone		
2.00	Parts	4532978	Bearing-Thru		
1.00	Parts	7D1677	Race		
1.00	Parts	2090229	Seal-Brake		
2.00	Parts	4D6695	Seal O Ring		
2.00	Parts	2B9174	Cone		

1.00 Parts 4K1388
1.00 Parts 3S9233
4.00 Parts 4B8394
6.00 Parts 2725449
1.00 Parts 5L4759
1.00 Parts 6V3965
1.00 Parts 2147568
1.00 Parts 6V0852
1.00 Parts 2451181
1.00 Parts 8T1158
1.00 Parts 2869155
6.00 Parts 6V3303
1.00 Parts 2718528
12.00 Parts 8T4201
1.00 Parts 7D1677
10.00 Parts 6V8397
1.00 Parts 8T8441
1.00 Parts 8B1615
5.00 Parts 7D8441
Labor

Seal O Ring
Seal-O-Ring
Cup
Spacer
Seal O Rin
Nipple A
Seal-O Ring
Cap
Flange
Bolt
Bolt M16X2
Bolt
Shim
Bolt
Race
Seal
Bolt
Gasket
Shim
Labor

Parts

Labor:

Segment Subtotal:

[Redacted]

[Redacted]

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SC00097665-015 Extra Parts/Labor/Misc for - Drive Axle

Quantity	Type	Part Number	Description	Unit Price	Amount
1.00	Parts	2453555	Valve Gp-Sol		
9.00	Parts	2018477	Disc-Frictio		
1.00	Parts	2018481	Nut As.		
1.00	Parts	2725444	Carrier-Plan		
Parts:		[Redacted]			
Segment Subtotal:					[Redacted]

Subtotal	[Redacted]
Shop Supplies and Environmental Fees	
Sales Tax	
Total	\$ 69,676.29