



Flat Rate Repair Guide



**IMPORTANT
READ THIS BEFORE BEGINNING
ASSEMBLY, REPAIRS OR TESTING:**

Some models have computerized and sensitive electronics. The electronic components can be damaged if care is not taken when performing repairs, testing and/or during assembly.

DO NOT

1. DO NOT short any wires across or allow them to be shorted out.
2. DO NOT attempt to jump across any wires or supply them with alternate power source.
3. DO NOT install higher rated fuses than are recommended by manufacturer.
4. DO NOT do any welding on unit unless the computer modules are unplugged first, this is to prevent a power surge going into modules (*THIS IS VERY IMPORTANT*). This could also apply to the tractor components. Check Tractors repair guide for specific instruction about tractor model and type.
5. DO NOT attempt to repair or adjust a component that is not intended to be repaired, example sealed components as there are no serviceable components inside.
6. DO NOT let anyone attempt any testing or repairs unless they are an experienced and qualified technician. Technicians must have proper tools, gauges, meters etc. to perform proper diagnosis and/or repairs.
7. DO NOT perform any repairs with dirty tools or in dirty area. When working on hydraulic components keeping system clean and free of contamination is important.
8. DO NOT start or engage system if the oil level is not at the proper level or condition. Never start or run unit low or out of oil.
9. DO NOT install / add any oil unless you know it is the correct type and the container is clean. Make certain the oil is not contaminated with dirt or any liquid.

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AXTREME BOOM



Flat Rate Repair Time

Axtreme Boom

Hydraulic Components - Boom Controls

	Hrs	Repair	Job #
Control Valve			
Control Valve - Manual	1.80	Replace	AXCV10
	3.00	Reseal (<i>Includes Remove & Replace</i>)	AXCV11
	0.25	Remove & Replace Relief Cartridge (<i>Ea.</i>)	
AXCV12			
Control Valve (<i>Electro Hyd</i>)	1.80	Replace	AXCV4
	3.15	Reseal (<i>Includes Remove & Replace</i>)	AXCV5
	0.50	Replace Module (<i>Each</i>)	AXCV6

	Hrs	Repair	Job #	
Hoses				
Swing Cyl	-Valve to Cyl	1.15	Remove & Replace	AXHS1
	-Cyl to Cross Over	0.25	Remove & Replace	AXHS2
Lift Cyl	-Valve to Cyl	1.15	Remove & Replace	AXHS3
Dipper Cyl	-Valve to Lift	1.15	Remove & Replace	AXHS4
	-Boom to Cyl	0.50	Remove & Replace	AXHS5
Head Tilt Cyl	-Valve to Lift	1.15	Remove & Replace	AXHS6
	-Lift to Dipper	0.50	Remove & Replace	AXHS7
	-Dipper to Cyl	0.50	Remove & Replace	AXHS8
Swivel Cyl	-Valve to Lift	1.15	Remove & Replace	AXHS9
	-Lift to Dipper	0.50	Remove & Replace	AXHS10
	-Dipper to Bulkhead	0.50	Remove & Replace	AXHS11
	-Bulkhead to Cyl	0.15	Remove & Replace	AXHS12
Door Cyl	-Valve to Lift	1.15	Remove & Replace	AXHS13
	-Lift to Dipper	0.50	Remove & Replace	AXHS14
	-Dipper to Bulkhead	0.50	Remove & Replace	AXHS15
	-Bulkhead to Cyl	0.15	Remove & Replace	AXHS16
Dipper Cyl	-to Motor	0.25	Remove & Replace	AXHS17
Telescope Cyl	-to Cyl	5.70	Remove & Replace	AXHS18

	Hrs	Repair	Job #
Cylinders			
Lift Cyl	0.58	Remove & Replace	AXCYL1
	2.60	Reseal	AXCYL2
Dipper Cyl	0.62	Remove & Replace	AXCYL3
	2.80	Reseal	AXCYL4
Swing Cyl	1.00	Remove & Replace	AXCYL5
	2.50	Reseal	AXCYL6
Head Tilt Cyl	0.50	Remove & Replace	AXCYL7
	1.60	Reseal	AXCYL8
Door Cyl	0.35	Remove & Replace	AXCYL9
	0.95	Reseal	AXCYL10
Swivel Cyl	0.35	Remove & Replace	AXCYL11
	0.95	Reseal	AXCYL12
Stabilizer Cyl	0.35	Remove & Replace	AXCLY13
	0.95	Reseal	AXCLY14
Telescope	3.00	Remove & Replace	AXCLY15
	4.80	Reseal	AXCLY16

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Axtreme Boom

	Hrs	Repair	Job #
Controllers			
Cable Handle Controller	1.75	Remove & Replace <i>(All)</i>	AXCBL1
	0.30	Remove & Replace <i>(Each)</i>	AXCBL2
Cables	0.60	Remove & Replace <i>(Each)</i>	AXCBL3
	0.25	Adjust	AXCBL4
Diagnostics Manual Valve			
Pressure Test each spool	1.00	Attach Pressure Gauge and check	TKDIA6
Main Relief Pressure Test	1.00	Attach Pressure Gauge and check	AXDIA2
Cylinder Inspection	0.51	Cap and check for drift <i>(Each)</i>	AXDIA7
Hydraulic Components - Cutter Motor Controls			
	Hrs	Repair	Job #
Repair Pump			
Complete	1.00	Remove & Replace	AXP1
Complete	2.40	Rebuild <i>(Inc R&R)</i>	AXP2
Replace Pump Seal	2.00	Remove & Replace <i>(Inc. R&R Pump)</i>	AXP3
Replace Pump Shaft	2.20	Remove & Replace <i>(Inc. R&R Pump)</i>	AXP4
Motor Control Valve			
Complete Assembly	1.20	Remove & Replace	AXMCV1
	2.00	Reseal complete	AXMCV2
Logic Valve	0.25	Remove & Replace <i>(Must Add R&R Valve)</i>	AXMCV3
	0.50	Reseal	AXMCV4
Brake Valve	0.25	Remove & Replace	AXMCV5
	0.50	Reseal	AXMCV6
Pressure Relief	0.25	Remove & Replace	AXMCV7
	0.50	Reseal	AXMCV8
Solenoid Valve	0.25	Remove & Replace	AXMCV9
	0.50	Reseal	AXMCV10
Solenoid Coil	0.08	Remove & Replace	AXMCV11
Motor			
Complete	0.50	Remove & Replace	AXRMT3
Complete	2.00	Rebuild	AXRMT4
Replace Motor Seal	1.50	Remove & Replace <i>(Inc. R&R Motor)</i>	AXRMT5
Spindle - Add Motor R&R to Spindle labor times listed			
Preload - Bearings	0.35	Check and Adjust <i>(Must Add Motor R& R)</i>	AXRSP1
Complete	0.50	Remove & Replace	AXRSP2
Complete	1.60	Rebuild <i>(R&R Bearings)</i>	AXRSP3
Hoses			
Valve to motor control	0.35	Remove & Replace <i>(Each)</i>	AXHS1
Motor Control To Boom	0.85	Remove & Replace <i>(Each)</i>	AXHS2
Lift To Dipper	0.65	Remove & Replace <i>(Each)</i>	AXHS3
Dipper To Motor	0.55	Remove & Replace <i>(Each)</i>	AXHS4
Suction <i>(Tank To Pump)</i>	0.35	Remove & Replace <i>(Each)</i>	AXHS5
Return <i>(Motor Cntrl To Tank)</i>	0.45	Remove & Replace <i>(Each)</i>	AXHS6
Dipper Section	0.78	Remove & Replace <i>(Each)</i>	AXHS7

Flat Rate Repair Time

Axtreme Boom

	Hrs	Repair	Job #
Pressure Tubes			
Lift Section	0.78	Remove & Replace <i>(Each)</i>	AXTB1
Diagnostics			
Pressure & Flow Test Pump	2.00	Attach P&F Meter to Pump and Check	AXDIA1
Check Main relief Pressure	1.00	Attach Pressure Gauge to Valve and Check	AXDIA2
Pressure & Flow Test From-Motor Control	2.00	Attach P&F Meter to Motor control Valve and Check	AXDIA3
Check Motor Return Flow	1.50	Attach Flow Meter to Motor	AXDIA4
Other	1.50	General Hydraulic Testing	AXDIA5
Hydraulic Tank & Accessories			
	Hrs	Repair	Job #
Hydraulic Tank			
Tank Replacement	5.40	Remove & Replace	AXTNK1
Tank Cleaning	2.00	Drain and Clean	AXTNK2
Tank Leak Repair	1.20	Reweld	AXTNK3
Filter Assembly	1.60	Remove & Replace	AXTNK4
Filter Element	0.56	Remove & Replace	AXTNK5
Suction Screen	2.00	Drain, Clean and Replace	AXTNK6
Cooler Fan (Only)	0.35	Remove & Replace	AXTNK7
Cooler Fan Assy (Complete)	1.00	Remove & Replace	AXTNK8
Electrical Components			
	Hrs	Repair	Job #
Joystick (Where Used)			
Complete	0.18	Remove & Replace	AXJS1
Switch	0.50	Remove & Replace <i>(Each)</i>	AXJS2
Wire Harness			
Complete <i>(Std Valve Only)</i>	2.00	Remove & Replace	AXELE1
Motor Power Switch	0.56	Remove & Replace	AXELE2
<i>(Standard Valve Only)</i>		Remove & Replace	AXWHR2
Motor Control Solenoid Coil	0.25	Remove & Replace	AXELE3
Electro Hyd Option <i>(Complete)</i>	3.00	Remove & Replace	AXWHR1
Temperature Probe	0.30	Remove & Replace	AXWHR2
Joystick Connection <i>(Where Used)</i>	0.14	Remove, Inspect, Replace	AXWHR5
Cooler Fan Control	0.40	Remove & Replace	AXM1
Diagnostics			
Voltage Check at Modules <i>(Joystick Only)</i>	0.36	Remove plug and check w/volt meter <i>(Each)</i>	AXWHT1
Power Supply Check <i>(All Models)</i>	0.14	Test with Volt meter or test light	AXWHT2
Ground Check <i>(All Models)</i>	0.34	Test with Volt meter or test light	AXWHT3
Manual Override Check <i>(Joystick Only)</i>	0.18	Activate Spool Manually <i>(Each)</i>	AXCVT1

Flat Rate Repair Time

Axtreme Boom

Frame Assembly/Structural Components

	Hrs	Repair	Job #
Boom Components			
Lift Section	4.20	Remove & Replace	AXBOM1
Dipper Section	3.85	Remove & Replace	AXBOM2
Mower Head (W/O Quick Hitch)	2.00	Remove & Replace	AXBOM3
Quick Hitch Bracket	1.50	Remove & Replace	AXBOM4
Frame Components			
Frame Center Section	12.00	Remove & Replace	AXFRM1
Rear Rail Mount	1.00	Remove & Replace (Each)	AXFRM3
Boom Rest	0.75	Remove & Replace	AXFRM4
Front Rail Mount Bracket	0.58	Remove & Replace (Each)	AXFRM7
Turret Mount	4.50	Remove & Replace	AXFRM8
Swing Bearing	5.50	Remove & Replace	AXFRM9
Bushings			
Main Pin Bushings	2.30	Remove & Replace	AXBUS2
Lift to Dipper Pin Bushings	2.95	Remove & Replace	AXBUS4
Dipper to Cutter Head Pin	1.60	Remove & Replace	AXBUS5
Swing Cyl Bushings	2.25	Remove & Replace	AXBUS6
Lift Cyl Bushings	1.00	Remove & Replace	AXBUS7
Dipper Cyl Bushings	1.00	Remove & Replace	AXBUS8
Head Tilt Cyl Bushings	1.00	Remove & Replace	AXBUS10
Swivel Cylinder Bushing	0.75	Remove & Replace	AXBUS11
Door Cyl Bushings	0.75	Remove & Replace	AXBUS12
Counter Weight			
Counter Weight	1.00	Remove & Re-Install	AXCWT1
Connection Pin	0.50	Remove & Re-Install	AXCWT2
Power Take Off Components			
Crankshaft Pulley Adapter	2.00	Remove & Replace	AXPTO1
Drive Shaft Asy	1.75	Remove & Replace	AXPTO3
Pump Mount Plate	2.00	Remove & Replace	AXPTO5

EAGLE SERIES



Flat Rate Repair Time

Eagle 10/15/20

	Hrs.	Repair	Job#
Axle			
Wing Axle Arm Asy, w/ Hub Installed	0.80	Replace (Each)	AX1-1
Wing Axle Arm Wldmnt, install Hubs	1.20	Replace (Each)	AX2-1
Axle Arm Pivot Pins	0.60	Replace	AX3-1
Wheel Hub	0.40	Replace (Each)	AX4
	0.60	Rebuild (Each)	AX4-A
Center Axle Asy, (Hubs installed)	1.50	Replace (Center Axle)	AX5
Center Axle Wldmnt, (install Hubs)	2.20	Replace (Center Axle)	AX6
Axle Beam Pivot Pin, Center Only	0.40	Replace (Each)	AX7
Spring Shock Asy, (Center Axle)	0.70	Replace	AX11
Axle Turnbuckles, (Wing to Center Axle)	0.40	Replace (Each)	AX12
<i>Note: There are 6 Wheel Hubs, 3 Axle Beams (1 Center & 2 Wings), it will be required to add the Job Time by Qty Repairs done, These are Marked (Each). Axles Beams and Axle Arms are available as an assembly w/ Hubs installed or as a Weldment w/o Hubs installed. This must be considered when repair is made.</i>			
Blades / Blade Carrier (Note)			
Blades, (R&R Bolts & Blades)	0.20	Replace, (Each)	BC1
Blade Bolt, (R&R Bolts & Blades)	0.20	Replace, (Each)	BC2
Blade Carrier, (Leave Bolts & Blades)	0.40	Replace, (Each)	BC3
Blade Carrier, (R&R Bolts & Blades)	0.70	Replace, (Each)	BC4
<i>Note: There are 3 Blade Carriers on 15 ft. Model and 2 Blade Carriers on 10 ft. model. There are 2 Blades and 2 Blade Bolts per Carrier. It will be required to add the Job Time by Qty Repairs done, These are Marked (Each). Blades Carriers are available as an assembly w/ Blades and Blade Bolts installed or as a Weldment w/o them installed. This must be considered when repair are made.</i>			
Chain Guards			
Center Section, Front	0.50	Replace	CG1
Center Section, Rear	0.50	Replace	CG2
Center Section, Front & Rear	0.90	Replace	CG3
Wing Section, Front (LH or RH)	0.40	Replace	CG4
Wing Section, Rear (LH or RH)	0.50	Replace	CG5
Wing Section, Front & Rear (LH or RH)	0.80	Replace	CG6
Center & Wing Sections, (Front & Rear)	1.50	Replace	CG7
Drivelines			
PTO D/L Asy, (Both Ends)	0.40	Replace	DL1
PTO D/L 1/2 Asy, (Tractor End)	0.20	Replace	DL1-A
PTO D/L 1/2 Asy, (Mower End)	0.40	Replace	DL1-B
Wing D/L Asy, (Both Ends)	0.60	Replace (Each)	DL2
Wing D/L 1/2 Asy, (Either End)	0.40	Replace (Each)	DL2-A
Wing D/L Shield Asy (Both Ends)	0.60	Replace (Each)	DL2-B
Wing D/L 1/2 Shield Asy (Either End)	0.50	Replace (Each)	DL2-C
Inter. D/L Asy (Both Ends)	0.70	Replace	DL3
Inter. D/L 1/2 Asy (Either End)	0.40	Replace	DL3-A
Inter. D/L Shield Asy (Both Ends)	0.60	Replace	DL3-B
Inter. D/L 1/2 Shield Asy (Both Ends)	0.70	Replace	DL3-C
U-Joint, (Non-T/L End & Non C/V)	0.70	Replace (Each)	DL4
U-Joint, (T/L End & Non-C/V)	0.70	Replace (Each)	DL4-A
U-Joint, (C/V End)(= 1 C/V U-Joint)	0.70	Replace	DL4-B
C/V Body U-Joint (= 2 C/V U-Joints)	1.60	Replace	DL4-C
Tube, PTO, Wing or Inter. D/L	0.70	Replace (Each End)	DL5

Flat Rate Repair Time

Eagle 10/15/20

	Hrs.	Repair	Job#
Driveline Clutch (Note*)			
Clutch, (Wing or Inter)	0.70	Replace	DC1
	0.80	Rebuild*	DC1-A
<i>Note: * It is not required to remove Clutch from D/L U-Joint to rebuild it. It will require D/L removal from Gearbox and D/L Shield will have to be dis-assembled, this is included in Hrs.</i>			
Gearbox (Note*)			
Gearbox, (Center G/B)	1.50	Replace (Each)	GB1
	2.60	Rebuild* (Each)	GB1-A
	1.00	Reverse Rotation (Each)	GB1-B
Gearbox, (Wing G/B) LH or RH	1.50	Replace (Each)	GB2
	2.60	Rebuild* (Each)	GB2-A
	1.00	Reverse Rotation (Each)	GB2-B
Seal, Input (Center or Wing G/B)	0.60	Replace (Each)	GB3
Seal, Output (Center or Wing G/B)	1.00	Replace (Each)	GB4
Shaft, Input (Center or Wing G/B)	0.80	Replace (Each)	GB5
Shaft Output (Center or Wing G/B)	1.80	Replace (Each)	GB6
Top Cover, G/B (Center or Wing)	0.30	Replace (Each)	GB7
Shield, G/B (Center or Wing)	0.30	Replace (Each)	GB8
Gearbox, (Divider G/B)	0.70	Replace	GB9
	1.80	Rebuild*	GB9-A
Seal, Input or Output (Divider G/B)	0.60	Replace (Each)	GB10
Shaft, Input /Output (Divider to Center)	0.80	Replace	GB11
Shaft, Output (Divider to Wing)	0.60	Replace (Each)	GB12
Gearbox Top Cover	0.30	Replace (Each)	GB13
Shield, G/B (Divider)	0.20	Replace (Each)	GB14
<i>Note: * Remove, Replace and Adjust is included in rebuild time. There are 4 Gearboxes on the AG20-IV, 1 Divider G/B, 1 Center Section Blade Gearbox and 2 Wing Blade Gearboxes. If repairing more than 1 Gearbox it may be required to times the Qty. Work done.</i>			
Hydraulic Cylinder			
Axle Lift, Center (1 Cylinder)	0.50	Replace	HC1
	1.00	Rebuild	HC1-A
Wing Lift, LH or RH (1 Cylinder)	0.50	Replace	HC4
	1.00	Rebuild	HC4-A
Wing Lift, LH & RH (2 Cylinder)	0.90	Replace	HC5
	1.40	Rebuild	HC5-A
Axle & Wing Cylinders, (3 Cylinders)	1.30	Replace	HC6
	2.80	Rebuild	HC6-A
Hydraulic Hose (Note*)			
Hose	0.30	Replace (Each)	HH1
<i>Note: * There are numerous Hoses used, some will be easier to replace and some more difficult, this is an average. It will be required to add the Job Time by Qty Repairs done, These are Marked (Each)</i>			
Mainframe (Deck)			
Deck, Center Section	4.80	Replace	FR1-1
Deck, Wing Section (1 Wing)	4.00	Replace	FR2
Deck, Wing Section (2 Wings)	6.80	Replace	FR3-1
Hinge Pin, Wing1 Side	0.70	Replace	FR5-1
Hinge Pin, Wing 2 Sides	1.00	Replace	FR6

Flat Rate Repair Time

Eagle 10/15/20

	Hrs.	Repair	Job#
Skid Shoes, Bolt On (Note*)			
Skid Shoe, Center (1, LH or RH)	0.30	Replace	SS1
Skid Shoe, Center(2, LH & RH)	0.50	Replace	SS2
Skid Shoe, Wing (1, LH or RH)	0.30	Replace	SS3
Skid Shoe, Wing (2, LH & RH)	0.50	Replace	SS4
Skid Shoe, Center & Wing (4 total)	1.00	Replace	SS5
<i>Note: * There are 4 Skid Shoes on 20 ft. and 14 ft. model. There are 2 Each Center Section and 1on Each Wing (1 on Wing and 1 on Counter Weight on 14 Ft Model).</i>			
Tongue (Note*)			
Tongue Weldment	0.80	Replace	TG1
Control Rod Asy, To Axle, (1 Side)	0.40	Replace	TG2
Control Rod Asy, To Axle), (2 Side)	0.70	Replace	TG2-A
Tongue Clevis	0.40	Replace	TG3-1
Tongue Clevis Control Rod Asy	0.50	Replace	TG4
Tongue Clevis Control Rod End	0.40	Replace	TG5
Tongue Hinge Pins	0.30	Replace (Each)	TG6
<i>Note: * Times listed for Tongue repairs will include time for Adjustments of Control Rods.</i>			
Winch and Stand			
Winch Assembly (w/Cable Installed)	0.40	Replace	WI1
Winch Only, (Install Original Cable)	0.60	Replace	WI2
Winch Stand (includes Winch R&R)	1.30	Replace	WI3

FALCON SERIES

Falcon 10 & Falcon 15



Flat Rate Repair Time

Falcon 10/15

	Hrs.	Repair	Job#
Axle (Note*)			
Axle Arm Asy, w/ Hub Installed	0.60	Remove & Replace (Each)	AX1
Axle Arm Wldmnt, w/o Hub Installed	0.60	Remove & Replace (Each)	AX2
Axle Arm Pivot Pin	0.40	Remove & Replace	AX3
Wheel Hub	0.40	Remove & Replace (Each)	AX4
	0.60	Remove & Replace (Each)	AX4-A
Axle Beam Asy, Arms & Hubs installed	1.50	Remove & Replace (Center Axle)	AX5
Axle Beam Wldmnt, install Arms & Hubs	2.20	Remove & Replace (Center Axle)	AX6
Axle Beam Pivot Pin, Center Only	0.40	Remove & Replace (Each)	AX7
Rubber Disk, (Center Axle Arms)	0.30	Remove & Replace (Each)	AX8
Spring Shock Asy, (Wing Axle Arms)	0.40	Remove & Replace (Each)	AX9
Axle Lift Screw, (Wing Only)	0.40	Remove & Replace (Each)	AX10

* There are 4 to 6 wheel hubs, 4 axle arms (2 center & 2 wings), 1 axle beam (center), it will be required to add the job time by qty repairs done, these are marked (each). Axles beams and axle arms are available as an assembly w/hubs installed or as a weldment w/o hubs installed. This must be considered when repair is made.

	Hrs.	Repair	Job#
Blades/Blade Carrier (Note*)			
Blades, (R&R Bolts & Blades)	0.20	Remove & Replace (Each)	BC1
Blade Bolt, (R&R Bolts & Blades)	0.20	Remove & Replace (Each)	BC2
Blade Carrier, (Leave Bolts & Blades)	0.40	Remove & Replace (Each)	BC3
Blade Carrier, (R&R Bolts & Blades)	0.70	Remove & Replace (Each)	BC4

* There are 3 blade carriers on 15 ft. Model and 2 blade carriers on 10 ft. Model. There are 2 blades and 2 blade bolts per carrier. It will be required to add the job time by qty repairs done, these are marked (each). Blades carriers are available as an assembly w/blades and blade bolts installed or as a weldment w/o them installed. This must be considered when repair are made.

	Hrs.	Repair	Job#
Diagnostic Testing			
Pressure & Flow Test	1.00	Diagnostic*	DT1
Electric System	0.50	Diagnostic*	DT2

* The diagnostic is time for connecting flow meter and pressure gauges, running and testing system. The time includes connecting and disconnecting all test equipment.

Flat Rate Repair Time

Falcon 10/15

	Hrs.	Repair	Job#
Hydraulic Cylinder			
Axle Lift, 1 Cylinder	0.50	Remove & Replace	HC1
	1.00	Rebuild (<i>Inc. R&R</i>)	HC1-A
Axle Lift, 2 Cylinder	0.90	Remove & Replace	HC2
	1.40	Rebuild (<i>Inc. R&R</i>)	HC2-A
Axle Lift, 3 Cylinder	1.60	Remove & Replace	HC3
	2.10	Rebuild (<i>Inc. R&R</i>)	HC3-A
Wing Lift, 1 Cylinder	0.50	Remove & Replace	HC4
	1.00	Rebuild (<i>Inc. R&R</i>)	HC4-A
Wing Lift, 2 Cylinder	0.90	Remove & Replace	HC5
	1.40	Rebuild (<i>Inc. R&R</i>)	HC5-A
Hydraulic Filter			
Filter (<i>1 Filter</i>)	0.20	Remove & Replace	HF1
Filter (<i>2 Filters Changed</i>)	0.30	Remove & Replace	HF2
Hydraulic Hose (Note*)			
Hose	0.30	Remove & Replace (<i>Each</i>)	HH1
<i>* There are numerous Hoses used, some will be easier to replace and some more difficult, this is an average. It will be required to add the Job Time by Qty Repairs done, These are Marked (Each)</i>			
Hydraulic Oil (Note*)			
Oil	0.80	Remove & Replace	HO1
<i>* This will include remove & replace Oil, Filters, Hoses, Brackets and cleaning.</i>			
Hydraulic Tank (Note*)			
Tank	7.75	Remove & Replace	HT1
<i>* This will include remove & replace Oil, Filters, Hoses, Brackets and cleaning.</i>			
Oil Cooler Assy	0.70	Remove & Replace	HT2
Gauges	0.25	Remove & Replace	HT3
Mainframe (Deck)			
Deck, Center Section	4.50	Remove & Replace	FR1
Deck, Wing Section (<i>1 Wing</i>)	4.00	Remove & Replace	FR2
Deck, Wing Section (<i>2 Wings</i>)	6.50	Remove & Replace	FR3
Counter Weight, Wing (<i>10 Ft</i>)	2.60	Remove & Replace	FR4
Hinge Pin, Wing1 Side	0.60	Remove & Replace	FR5
Hinge Pin, Wing 2 Sides	1.00	Remove & Replace	FR6
Side Skirt, Wing 1 Side (<i>Bolt On</i>)	0.80	Remove & Replace	FR7
Side Skirt, Wing 2 Sides (<i>Bolt On</i>)	1.50	Remove & Replace	FR8

Flat Rate Repair Time

Falcon 10/15

	Hrs.	Repair	Job#
Motor (Note*)			
Motor, (Center Or Wing) (1 Motor Total)	1.00	Remove & Replace	MT1
	2.00	Rebuild*	MT1-A
Motor, (Center & 1 Wing) (2 Motors Total)	1.80	Remove & Replace	MT2
	3.70	Rebuild*	MT2-A
Motor, (Center & 2 Wings) (3 Motors Total)	3.20	Remove & Replace	MT3
	5.30	Rebuild*	MT3-A

* There are 3 Motors on 15 ft. Model and 2 Motors on 10 ft. model. Rebuild Motor includes Seals and Motor Components. Remove and replace Motors, Lines and all other components. If Motor Seal Only being replaced, it will be considered Motor rebuild rate because to install Seals Motor must still be completely removed and cleaned before disassembly.

Pump

Pump	0.80	Remove & Replace	PU1
	1.50	Rebuild	PU1-A

* The diagnostic is time for connecting flow meter and pressure gauges, running and testing system. The time includes connecting and disconnecting all test equipment.

Speed Increaser

Speed Increaser	1.00	Remove & Replace	SP1
	3.00	Rebuild	SP1-A
Pump Drive Coupler	0.80	Remove & Replace	SP2
Seals, Input Shaft Side	1.40	Remove & Replace	SP3
Seals, Pump Drive Shaft Side	1.50	Remove & Replace	SP4
Pump Mounting Plate	1.80	Remove & Replace	SP5

Spindle (Note*)

Center Spindle Asy, (1 Total)	2.00	Remove & Replace	BS1
	3.00	Rebuild*	BS1-A
Wing Spindle Asy, (1 Total)	2.00	Remove & Replace	BS2
	3.00	Rebuild*	BS2-A
Center & 1 Wing Spindle, (2 Total)	3.80	Remove & Replace	BS3
	5.60	Rebuild*	BS3-A
Center & 2 Wing Spindles, (3 Total)	5.80	Remove & Replace	BS4
	8.00	Rebuild*	BS4-A

* Hours to rebuild spindle is to dis-assemble, clean, replace components, reassemble, adjust and reinstall to deck including all motors, blade carriers and other components.

Flat Rate Repair Time

Falcon 10/15

	Hrs.	Repair	Job#
Tongue			
Tongue Weldment	0.80	Remove & Replace	TG1
Control Rod, 1 Side	0.40	Remove & Replace	TG2
Control Rod, 2 Side	0.60	Remove & Replace	TG2-A
Tongue Clevis	0.30	Remove & Replace	TG3
Manifold Block			
Complete Assembly	0.80	Remove & Replace	HMB1
Logic Valve	0.17	Remove & Replace	HMB2
	0.25	Reseal	HMB3
Brake Valve	0.17	Remove & Replace	HMB2
	0.25	Reseal	HMB3
Pressure Relief	0.17	Remove & Replace	HMB2
	0.25	Reseal	HMB3
Solenoid Valve	0.17	Remove & Replace	HMB2
	0.25	Reseal	HMB3
Solenoid Coil	0.08	Remove & Replace	HMB4
Wire Harness			
Complete Assembly	0.85	Remove & Replace	WH1
Fan Control Box	0.40	Remove & Replace	WH2

FLAIL MOWERS



Flat Rate Repair Time

Flail Mowers

	Hrs	Repair	Job #
Motor			
Complete (<i>Piston Or Gear</i>)	1.30	Remove & Replace	FMTR1
Complete (<i>Piston Or Gear</i>)	2.00	Rebuild	FMTR2
Replace Motor Seal	1.50	Remove & Replace Seal (<i>Inc. R&R Motor</i>)	FMTR3
Drive System			
Belts	0.50	Remove & Replace	FDR1
Pulley (<i>Top</i>)	0.65	Remove & Replace	FDR2
Pulley (<i>Bottom</i>)	0.70	Remove & Replace	FDR3
Idler Pulley and Bracket	0.25	Remove & Replace	FDR4
Idler Spring	0.09	Remove & Replace	FDR5
Hoses			
Boom To Motor	0.15	Remove & Replace (<i>Each</i>)	FHS1
Case Drain (<i>Piston Motor Only</i>)	0.15	Remove & Replace	FHS2
Cutter Shaft			
Complete	2.80	Remove & Replace	FCS1
Blades	0.06	Remove & Replace (<i>Each</i>) (<i>Includes Shackles & Pins</i>)	FCS2
Bearings Complete	1.58	Remove & Replace (<i>Add R&R Cutter Shaft</i>)	FCS3
Bearing Housing	0.75	Remove & Replace (<i>Non-Drive End</i>)	FCS4
Bearing Housing	1.20	Remove & Replace (<i>Drive End</i>)	FCS5
Roller			
Complete	1.80	Remove & Replace (<i>Inc R&R Brgs</i>)	FRLR1
Bearings	0.86	Remove & Replace (<i>Each</i>)	FRLR2
Bearing Housing	1.25	Remove & Replace	FRLR3
Mower Housing			
Complete	6.80	Remove & Replace (<i>Wing Mowers Only</i>)	FDK1
Repair	0.00	Must have written authorization	FDK2
Front Mounted Pumps			
Double Wing	1.40	Remove & Replace (<i>Inc. Cover & Hose</i>)	INPMP1
Double Wing	2.70	Reseal (<i>Only</i>)	INPMP2
Double Wing	2.05	R&R Front Shaft Seal (<i>Each Pump</i>)	INPMP3
Double Wing	2.15	R&R Front Shaft	
Single Wing	1.20	Remove & Replace	INPMP4
Single Wing	2.50	Rebuild	INPMP5
Single Wing	1.85	R&R Front Shaft Seal	INPMP6
Single Wing	1.95	R&R Front Shaft	
Auxillary Pump	1.10	Remove & Replace	INPMP7
Gear Pump	0.86	Remove & Replace (<i>Side Mounted Tank</i>)	VPMP1
Gear Pump	2.40	Rebuild (<i>Inc. R&R</i>)	VPMP2
Gear Pump	2.00	Replace Output shaft Seal (<i>Inc. R&R</i>)	VPMP3
Gear Pump	2.00	Replace Output shaft	

Flat Rate Repair Time

Flail Mowers

Drive Shaft

Complete	3.15	Remove & Replace (<i>Piston Pump Only</i>)	INDS1
Pulley Adapter	3.40	Remove & Replace (<i>Piston Pump Only</i>)	INDS2
Complete	1.75	Remove & Replace (<i>Gear Pump Only</i>)	VDS1
Pulley Adapter	2.00	Remove & Replace (<i>Gear Pump Only</i>)	VDS2

Cylinders

Lift	0.25	Remove & Replace	INCYL1
Lift	0.85	Reseal & Rebuild	INCYL2
Tilt	0.25	Remove & Replace	INCYL3
Tilt	0.85	Reseal & Rebuild	INCYL4

Hydraulic Valve

Complete	1.20	Remove & Replace	INHYP1
Complete	1.50	Reseal	INHYP2

Control Cables

Hrs	Repair	Job #
Each	Remove & Replace	INCBL1
Each	Adjust	INCBL2

Control Levers

Hrs	Repair	Job #
Each	Remove & Replace	INCBL3

Control Hoses

Hrs	Repair	Job #
Each	Remove & Replace	INHS1

Front Tank (*Where Used*)

Hrs	Repair	Job #
Complete	Remove & Replace (<i>Inc. All Components</i>)	INTNK1
Return Filter	Remove & Replace	INTNK2
Suction Screen	Remove & Replace	INTNK3
Gauges	Remove & Replace (<i>Each</i>)	INTNK4

Side Tank (*Where Used*)

Hrs	Repair	Job #
Complete	Remove & Replace (<i>Inc. All Components</i>)	INTNK5
Return Filter	Remove & Replace	INTNK6
Suction Screen	Remove & Replace	INTNK7
Gauges	Remove & Replace (<i>Each</i>)	INTNK8

Mwr Mntd Tank (*Where Used*)

Hrs	Repair	Job #
Complete	Remove & Replace (<i>Inc. All Components</i>)	MTK1
Return Filter	Remove & Replace	MTK2
Suction Screen	Remove & Replace	MTK3
Gauges	Remove & Replace (<i>Each</i>)	MTK4

Flat Rate Repair Time

Flail Mowers

	Hrs	Repair	Job #
Mower Hoses			
Tank to motor	0.25	Remove & Replace	INHYS1
Motor To tubes	0.25	Remove & Replace	INHYS2
Tube to Tube	0.25	Remove & Replace	INHYS3
Suction From Tank	0.25	Remove & Replace	INHYS4
Return to Tank	0.25	Remove & Replace	INHYS5
Motor Control Valve <i>(Gear Systems Only)</i>			
Complete Assembly	1.20	Remove & Replace	MCV1
	2.20	Reseal Complete	MCV2
Logic Valve	0.53	Remove & Replace <i>(Add R&R Valve)</i>	MCV3
	0.25	Reseal	INCTL1
Brake Valve	0.53	Remove & Replace	INCTL2
	0.25	Reseal	MCV4
Pressure Relief	0.25	Remove & Replace	INFRM1
	0.25	Reseal	INFRM2
Solenoid Valve	0.25	Remove & Replace	INFRM3
	0.25	Reseal	INFRM4
Solenoid Coil	0.08	Remove & Replace	MCV5
Motor Control Block <i>(Piston Systems Only)</i>			
Complete	1.20	Remove & Replace	MCV7
Complete	1.10	Reseal <i>(Must Add R&R Valve)</i>	MCV8
Lift Frame			
Complete	1.30	Remove & Replace	INDIA1
Pivot Pins	1.60	Remove & Replace	INDIA2
Motor safety Switch	0.30	Remove & Replace	INDIA3
Main frame pins	0.69	Remove & Replace	FFRM1
Main Frame			
Complete	6.50	Remove & Replace <i>(Inc. All Assemblies)</i>	FFRM2
Speed Ineraser <i>(Where Used)</i>			
Complete	1.50	Remove & Replace	SI1
Complete	2.60	Rebuild <i>(Gears And Seals) (Must Add R&R)</i>	SI2
Wire Harness			
Connector	0.06	Remove & Replace <i>(Each)</i>	FMWH1
Switch	0.13	Remove & Replace <i>(Each)</i>	FMWH2
Wire Harness Complete	0.72	Remove & Replace	FMWH3
Diagnostics			
Hydraulic	1.80	Pressure Flow Tests <i>(Each)</i>	FDIA1
Hydraulic	1.80	Return Flow Tests <i>(Each)</i>	FDIA2
Electrical	1.00	System Check with Test Light <i>(Each)</i>	FDIA3

Flat Rate Repair Time

Flail Mowers

Mower 3 point Mounted, Mechanically Powered

	Hrs	Repair	Job #
Rear Mount Frame - (Where Used)			
Complete	1.50	Remove & Replace (<i>On Tractor 3 Point</i>)	RMFRM1
Gearbox			
Complete	1.50	Remove & Replace	FMECH1
Complete	2.20	Rebuild (<i>Bearings And Seals</i>)	FMECH2
Extension Shaft			
Complete	0.85	Remove & Replace	FMECH3
Main Driveline			
Complete	0.84	Remove & Replace	FMECH4
U Joints	0.56	Remove & Replace (<i>Each</i>)	FMECH5
Main Clutch			
Complete	1.20	Remove & Replace	FMECH6
Complete	0.85	Replace Friction Disks	FMECH7
Complete	1.00	Rebuild	FMECH8

HYDRAULIC CUTTING HEADS

ROTARY, FLAIL, TIMBERCAT, BUZZBAR, DITCHER



Flat Rate Repair Time

Rotary Hydraulic Mowers

	Hrs	Repair	Job #
Motor			
Complete (<i>Piston</i>)	1.30	Remove & Replace	RMT1
	3.85	Rebuild, Seal Kit (<i>Inc. R&R</i>)	RMT2
Shaft Seal Only	1.80	Remove & Replace (<i>Inc. R&R</i>)	RMT3
Complete (<i>Gear</i>)	0.50	Remove & Replace	RMT4
	2.00	Rebuild (<i>Inc. R&R</i>)	RMT5
Shaft Seal Only	1.50	Remove & Replace (<i>Inc. R&R</i>)	RMT6
Blade Carrier			
Blade Bar Complete	0.50	Remove & Replace	RBLD1
	1.50	Rebuild (<i>Disassemble And Reassemble</i>)	RBLD2
Stump Jumper Pan (<i>Heavy</i>)	0.80	Remove & Replace	RBLD3
	1.20	Replace Bushings and Bolts	RBLD4
Stump Jumper Pan (<i>Light</i>)	0.60	Remove & Replace	RBLD5
	1.20	Replace Bushings and Bolts	RBLD6
Blades	0.26	Remove & Replace (<i>Each</i>)	RBLD7
Spindle - Add Motor R&R to Spindle labor times listed			
Preload - Bearings	0.35	Check & Adjust (<i>Add Motor R&R</i>)	RSPDL
Complete	0.50	Remove & Replace	RSPDL2
Complete	1.60	Rebuild (<i>R&R Bearings</i>)	RSPDL3
Hitch Post			
Complete (<i>Standard</i>)	1.20	Remove & Replace	RHP1
Bushings	0.25	Remove & Replace (<i>Boom Pivot Brgs</i>)	RHP2
Complete (<i>Swivel</i>)	1.85	Remove & Replace	RHP3
Mower Deck			
Complete	4.60	Remove & Replace (<i>Includes Motor And Hitch Post R&R</i>)	RDK1
Repair	2.50	Clean and Reweld (<i>Must Have Written Authorization</i>)	RDK2

Flat Rate Repair Time

Flail Hydraulic Heads

	Hrs	Repair	Job #
Motor			
Complete (<i>Piston Or Gear</i>)	0.65	Remove & Replace	FMTR1
Complete (<i>Piston Or Gear</i>)	2.00	Rebuild	FMTR2
Replace Output Seal	1.50	Replace (<i>Inc. R&R Motor</i>)	FMTR3
Drive System			
Belts	0.63	Remove & Replace	FDR1
Pulley (<i>Top</i>)	0.80	Remove & Replace	FDR2
Pulley (<i>Bottom</i>)	0.84	Remove & Replace	FDR3
Idler Pulley and Bracket	0.50	Remove & Replace	FDR4
Idler Spring	0.18	Remove & Replace	FDR5

Flat Rate Repair Time

Flail Hydraulic Heads

	Hrs	Repair	Job #
Hoses			
Boom To Motor	0.15	Remove & Replace <i>(Each)</i>	FHS1
Case Drain <i>(Piston Motor Only)</i>	0.15	Remove & Replace	FHS2
Cutter Shaft			
Complete	3.60	Remove & Replace	FCS1
Blades	0.10	Remove & Replace <i>(Each)</i> <i>(Includes Shackles And Pins)</i>	FCS2
Bearings Complete	1.58	Remove & Replace <i>(Add Cutter Shaft R&R)</i>	FCS3
Bearings Housing	0.25	Remove & Replace	FCS4
Roller			
Complete	1.80	Remove & Replace <i>(Inc R&R Bearings)</i>	FRLR1
Bearings	0.86	Remove & Replace <i>(Each)</i>	FRLR2
Bearing Housing	0.52	Remove & Replace	FRLR3
Hitch Post			
Complete <i>(Standard)</i>	1.20	Remove & Replace	FHP1
Bushings	0.25	Remove & Replace	FHP2
Complete <i>(Swivel)</i>	1.85	Remove & Replace	FHP3
Mower Housing			
Complete	6.80	Remove & Replace	FDK1
Mower Housing Repair	0.00	<i>(Must Have Written Authorization)</i>	FDK2

Flat Rate Repair Time

Timbercat Sickle head

	Hrs	Repair	Job #
Cutter blades			
Each <i>(5' Or 7')</i>			
Top	1.80	Remove & Replace	TCBLD1
Bottom	2.60	Remove & Replace	TCBLD2
Blade bearing	0.85	Remove & Replace	TCBLD3
Shielding			
Front Cover	0.15	Remove & Replace	TCCVR1
Main Cover	0.23	Remove & Replace	TCCVR2
Cylinder			
Cylinder Complete	0.84	Remove & Replace	TCCYL1
Cylinder Complete	1.30	Reseal <i>(Inc R&R)</i>	TCCYL2

Flat Rate Repair Time

Buzzbar Heads

	Hrs	Repair	Job #
Motor			
Complete	0.56	Remove and Replace	BBMTR1
Complete	2.89	Reseal	BBMTR2
Coupler			
Complete	2.60	Remove and Replace	BBCPL1
Insert and Cover	0.56	Remove and Replace	BBCPL2
Pressure Relief Assembly			
Complete	0.15	Remove and Replace	BBVLV1
Manifold	0.23	Remove and Replace	BBVLV2
Manifold	0.85	Reseal	BBVLV3
Belts			
Each	0.84	Remove and Replace	BBBLT1
All	0.50	Adjust tension	BBBLT2
Drive Spindle			
Complete	1.23	Remove And Replace (inc. R&R blades, and coupler)	BBSP1
Complete	1.60	Rebuild (bearings and Seals)	BBSP2
Driven Spindles			
Complete (Each)	1.18	Remove And Replace	BBSP3
Complete (Each)	1.60	Rebuild (bearings and Seals)	BBSP4
Blades			
Each	0.15	Remove and Replace	BBBLD1
Hitch Post			
Complete	0.86	Remove and Replace	BBHP1
Mower Housing			
Complete	6.40	Remove and Replace (inc. R&R all components)	BBHS1

Flat Rate Repair Time

Ditcher Heads

	Hrs	Repair	Job #
Blades			
Each	0.14	Remove and Replace	DTBLD1
Blade Head Assembly			
Complete	1.64	Remove and Replace (Reverse or Forward)	DTHD1
Spindle Assy			
Complete	4.30	Remove and Replace	DTSP1
Complete	2.60	Rebuild (Bearings and Seals)	DTSP2
Ditcher Housing			
Complete	4.30	Remove and Replace	DTHS1
Deflector Door	0.13	Remove and Replace	DTHS2
Deflector	0.08	Remove and Replace	DTHS3
Motor Mount			
Complete	1.60	Remove and Replace	DTMTR1
Boom Attachment	1.05	Remove and Replace Pins and Bushings	DTMTR2
Motor			
Complete	0.68	Remove and Replace	DTMTR3
Complete	1.85	Rebuild	DTMTR4
Hoses			
Each	0.16	Remove and Replace	DTHS1

MACHETE BOOM



Flat Rate Repair Time

Machete Boom

Hydraulic Components - Boom Controls

	Hrs	Repair	Job #
Control Valve			
Cyl Control Valve	2.00	Remove & Replace	CV1
	4.00	Rebuild <i>(Includes Remove & Replace)</i>	CV2
	0.50	Replace Module <i>(Each)</i>	CV3
Valve Section	3.00	Remove & Replace	CV4
Work Port Relief	0.25	Inspect and Replace	CV5
Pressure Filter	1.00	Remove & Replace complete	CV7
	0.25	Remove & Replace <i>(Canister Filter Only)</i>	CV8
Relief valve	0.32	Remove & Replace	CV10
Valve Section	3.50	Remove & Replace <i>(Inc. RandR Valve)</i>	CV11
Spool Seal	0.65	Remove & Replace	CV12
Module Seal	0.50	Remove & Replace	CV13
Lock Valve	0.50	Remove & Replace	CV14
Hoses			
Lift Cyl	0.23	Remove & Replace	HS1
Dipper Cyl	0.85	Remove & Replace	HS2
Swing Cyl	0.18	Remove & Replace	HS3
Head Tilt Cyl	1.53	Remove & Replace	HS4
Door Cyl	1.58	Remove & Replace	HS5
		<i>(F/Valve To End Of Boom)</i>	
Door Cyl	0.15	Remove & Replace <i>(F/ Boom To Head)</i>	HS6
Hyd Tractor Connection			
John Deere	2.60	Remove & Replace	TC1
		<i>(Stack Valve End Cap W/ Disk Valve)</i>	
All Others	0.50	Remove & Replace	TC2
		<i>(Load Sense Check Valve and Hose)</i>	
Cylinders			
Lift Cyl	0.58	Remove & Replace	CYL1
	2.60	Rebuild	CYL2
Dipper Cyl	0.62	Remove & Replace	CYL3
	2.80	Rebuild	CYL4
Head Tilt Cyl	0.48	Remove & Replace	CYL5
	1.80	Rebuild	CYL6
Swing Cyl	0.50	Remove & Replace	CYL7
	1.60	Rebuild	CYL8
Door Cyl	0.35	Remove & Replace	CYL9
	0.95	Rebuild	CYL10
Stabilizer Cyl	0.35	Remove & Replace	CYL11
	0.95	Rebuild	CYL12
Swivel Cyl	0.35	Remove & Replace	CYL13
	0.95	Rebuild	CYL14

Flat Rate Repair Time

Machete Boom

Electrical Components - Boom Controls

	Hrs	Repair	Job #
Diagnostics			
Manual Override Check	0.18	Activate Spool Manually (<i>Each</i>)	CVT1
Cylinder Check	1.20	Cap and Check for drift (<i>Each</i>)	CVT2
Load Sense PandF Check	1.18	Install pressure and Flow Meter in Load Sense Line	CVT3
Tractor P&F Check	2.60	Install pressure and flow meter	CVT4
Other	1.50	General hydraulic checks	CVT5
Joystick			
Complete Assembly	0.18	Remove & Replace	JS1
Switch	0.50	Remove & Replace (<i>Each</i>)	JS2
Wire Harness			
Complete harness	1.90	Remove & Replace (<i>Total</i>)	WHR1
Valve Module Cont'n	0.18	Remove F/Valve & Reinstall Power Connection	WHR2
On tractor engine	0.16	Remove & Replace	WHR3
On tractor ignition	1.60	Remove & Replace	SHR4
Joystick Connection	0.14	Remove & Replace	WHR5
Diagnostics			
Module Voltage check	0.36	Remove Plug & Check (<i>W/Volt Meter, Each</i>)	WHT1
Power supply check	0.14	Test with Volt meter or Test light	WHT2
Ground check	0.34	Test with Volt meter or Test light	WHT3
Manual Override Check	0.25	Activate Spool Manually (<i>Each</i>)	CVT1
Other	1.50	Various Electrical	WHT4

Flat Rate Repair Time

Machete Boom

Hydraulic Components - Cutter Motor Controls

	Hrs	Repair	Job #
Pump			
Single	1.60	Remove & Replace	PMP1
	2.00	Remove & Replace Output Shaft only	PMP3
Tandem	1.95	Remove & Replace	PMP4
	0.85	Cylinder Circuit Only	PMP5
	2.20	Remove & Replace Cutter Circuit Only	PMP6
	2.40	Remove & Replace Output Shaft Only	
Pump Control Solenoid			
Coil Only	0.14	Remove & Replace	PMP7
Coil and Valve Stem	0.20	Remove & Replace	PMP8
Motor			
Complete	1.33	Remove & Replace	MTR1
Complete	2.60	Remove & Replace Shaft Seal	MTR2
Relief Manifold	0.76	Remove & Replace	MTR3
Pressure Tubes			
Lift arm Tubes	0.56	Remove & Replace <i>(Each)</i>	PTB1
Dipper section Tubes	1.80	Remove & Replace <i>(Each)</i>	PTB2
Hoses			
Pump to Frame	0.75	Remove & Replace <i>(Each)</i>	PHS1
Frame To Lift Section	0.45	Remove & Replace <i>(Each)</i>	PHS2
Lift to dipper section	0.65	Remove & Replace <i>(Each)</i>	PHS3
Dipper section to Motor	0.55	Remove & Replace <i>(Each)</i>	PHS4
Front Tank			
Valve Under Cover	5.40	Remove & Replace	TNK1
Complete	2.00	Clean <i>(Inc. R&R)</i>	TNK3
Suction Filter Screen	1.90	Remove & Replace <i>(Inc R&R Pump & Loosen Valve Mnt)</i>	TNK4
Charge Filter	0.50	Remove & Replace Complete Assy.	TNK5
	0.10	Remove & Replace <i>(Spin On Element Only)</i>	TNK6
Diagnostics			
Pump P&F Test	2.80	Install pressure flow meter to pump & test	PMT1
Charge Pressure Test	1.20	Install Pressure gauge for charge pump	PMT2
Other	0.50	Various Hydraulic	PMT3

Flat Rate Repair Time

Machete Boom

Boom Arm and Turning arm - High Frame

	Hrs	Repair	Job #
Bushings			
King Pin Bushings	2.60	Remove & Replace	BUS1
Main Pin Bushings	2.30	Remove & Replace	BUS2
King Post	3.10	Remove & Replace	BUS3
Lift and Dipper	2.95	Remove & Replace	BUS4
Dipper and Head	1.60	Remove & Replace	BUS5
Lift cyl	0.94	Remove & Replace	BUS6
Dipper Cyl	0.98	Remove & Replace	BUS7
Swing Cyl	0.75	Remove & Replace	BUS8
Head Tilt Cyl	0.79	Remove & Replace	BUS9
Boom Components			
Lift Section	4.20	Remove & Replace	BOM1
Dipper Section	3.85	Remove & Replace	BOM2
Mower Head	2.00	Remove & Replace <i>(W/Out Quick Hitch)</i>	BOM3
Quick Hitch Bracket	1.50	Remove & Replace	BOM4
King Post & King pin	3.10	Remove & Replace	BOM5
King Post Mount	4.00	Remove & Replace	BOM6
King Post Assembly	3.50	Remove & Replace	BOM7
Frame Components			
Frame Assy	5.20	Remove & Replace	FRM1
Rail	9.40	Remove & Replace <i>(Each, Inc. All R&R)</i>	FRM2
Rail	14.0	Remove & Replace <i>(Both, Inc. All R&R)</i>	FRM3
Boom Rest	0.75	Remove & Replace	FRM4
Rail Support	1.00	Remove & Replace <i>(Under Tractor)</i>	FRM5
Rail support Bracket	5.2	Welded - R & R of Rail Included	FRM6
Front Rail Mnt Brkt	0.58	Remove & Replace <i>(Each)</i>	FRM7
Counter Weight	1.00	Remove & Replace	
Fracture Repair	1.20	Clean & Re-Weld <i>(Each)</i>	FRM10
Power Take Off Components			
Front Pump Drive			
Engine Crankshaft Adapter	2.00	Remove & Replace	PTO1
Driveshaft Asy	1.75	Remove & Replace	PTO3
Drive shaft pump Coupler	1.75	Remove & Replace	PTO4
Pump Mount plate	2.00	Remove & Replace	PTO5

ROTARY HYDRAULIC MOWERS



Flat Rate Repair Time

Rotary Hydraulic Mowers

Note: Mechanical Repairs to pull behind mowers not included. Refer to the applicable mechanical rotary flat Rate Manual.

	Hrs	Repair	Job #
Motor			
Motor Complete	0.50	Remove & Replace <i>(All Other Models)</i>	RMT3
	2.50	Rebuild	RMT4
	1.50	Replace Shaft Seal	RMT5
Motor Control Valve - (Gear Systems Only)			
Complete Assembly	1.20	Remove & Replace	MCV1
	2.20	Re-seal complete	MCV2
Logic Valve	0.53	Remove & Replace	MVC3
	0.25	Re-seal	INCTL1
Brake Valve	0.53	Remove & Replace	INCTL2
	0.25	Re-seal	MCV4
Pressure Relief	0.25	Remove & Replace	INFRM1
	0.25	Re-seal	INFRM2
Solenoid Valve	0.25	Remove & Replace	INFRM3
	0.25	Re-seal	INFRM4
Solenoid Coil	0.08	Remove & Replace	MCV5
Motor Control Block - (Piston Systems Only)			
Complete	1.20	Remove & Replace	MCV7
Complete	1.10	Re-seal	MCV8
Spindle - Note: Add Motor R&R to Spindle labor times listed.			
Preload - Bearings	0.35	Check & Adjust <i>(Must Add Motor R&R)</i>	RSPDL1
Complete	0.50	Remove & Replace	RSPDL2
Complete	1.60	Rebuild <i>(R&R Bearings)</i>	RSPDL3
Center Deck Carrier	1.50	Add to any above rate <i>(10/15 Models)</i>	RRTY1
Hitch Post			
Complete	1.20	Remove & Replace	RHP1
Bushings	0.25	Remove & Replace	RHP2
Mower Deck			
Complete	4.60	Remove & Replace <i>(Inc. Motor & Hitch Post R&R)</i>	RDK1
Repair	2.50	Clean & Reweld <i>(Must Have Written Authorization)</i>	RDK2

Flat Rate Repair Time

Rotary Hydraulic Mowers

	Hrs	Repair	Job #
Lift Frame			
Complete	1.30	Remove & Replace	INDIA1
Pivot Pins	1.60	Remove & Replace	INDIA2
Motor Switch	0.85	Remove & Replace	INDIA3
Main frame pins	0.69	Remove & Replace	FFRM1
Main Frame			
Complete	6.50	Remove & Replace <i>(Inc. All Assemblies)</i>	FFRM2
Speed Increaser - (Where Used)			
Complete	1.50	Remove & Replace	SI1
Complete	2.60	Rebuild <i>(Gears And Seals)</i>	SI2
Rear Mount Frame - (Where Used)			
Complete	1.50	Remove & Replace <i>(On Tractor 3 Point)</i>	RMFRM1
Drive Shaft			
Complete	4.50	Remove & Replace <i>(Piston Pump Only)</i>	INDS1
Pulley Adapter	0.65	Remove & Replace <i>(Piston Pump Only)</i>	INDS2
Complete	1.65	Remove & Replace <i>(Gear Pump Only)</i>	VDS1
Pulley Adapter	0.65	Remove & Replace <i>(Gear Pump Only)</i>	VDS2
Cylinders			
Lift	0.25	Remove & Replace	INCYL1
Lift	0.85	Re-seal	INCYL2
Tilt	0.25	Remove & Replace	INCYL3
Tilt	0.85	Re-seal	INCYL4
Hydraulic Valve			
Complete	1.20	Remove & Replace	INHYD1
Complete	1.30	Re-seal	INHYD2
Control Cables			
Each	0.43	Remove & Replace	INCBL1
Each	0.25	Adjust	INCBL2
Controllers			
Each	0.25	Remove & Replace	INCBL3
Control Hoses			
Each	0.25	Remove & Replace	INHS1

Flat Rate Repair Time

Rotary Hydraulic Mowers

	Hrs	Repair	Job #
Front Tank (Where Used)			
Complete	2.30	Remove & Replace <i>(Inc. All Components)</i>	INTNK1
Return Filter	0.56	Remove & Replace	INTNK2
Suction Screen	1.30	Remove & Replace	INTNK3
Gauges	0.25	Remove & Replace <i>(Each)</i>	INTNK4
Lift Frame			
Complete	0.42	Remove & Replace	INDIA4
Pivot Pins	0.38	Remove & Replace	INDIA5
Motor Switch	0.34	Remove & Replace	INDIA6
Main frame pins	0.29	Remove & Replace	FFRM3
Mower Mounted Tank (Where Used)			
Complete	2.60	Remove & Replace <i>(Inc. All Components)</i>	MTK1
Return Filter	0.56	Remove & Replace	MTK2
Suction Screen	1.30	Remove & Replace	MTK3
Gauges	0.25	Remove & Replace <i>(Each)</i>	MTK4
Mower Hoses			
Tank to motor	0.25	Remove & Replace	INHYS1
Motor To tubes	0.25	Remove & Replace	INHYS2
Tube to Tube	0.25	Remove & Replace	INHYS3
Suction From Tank	0.25	Remove & Replace	INHYS4
Return to Tank	0.25	Remove & Replace	INHYS5
Diagnostics			
Hydraulic	1.80	Pressure Flow Tests <i>(Each)</i>	RDIA1
Hydraulic	1.80	Return Flow Tests <i>(Each)</i>	RDIA2
Electrical	1.00	System Check with Test Light <i>(Each)</i>	RDIA3
Other	1.00	General Diagnostics	RDIA4

RX SERIES

RX60, 72, 84, & 96



Flat Rate Repair Time

RX Series

	Hrs	Repair	Job #
A-Frame (3 Point Lift Model)			
A-Frame Support Leg, (Standard)	0.40	Replace (Each)	AF1
A-Frame Lift Straps, (Standard)	0.30	Replace (Each)	AF2

Blades / Blade Carrier (Note*)

Blades, (R&R Bolts & Blades)	0.20	Replace, (Each)	BC1
Blade Bolt, (R&R Bolts & Blades)	0.20	Replace, (Each)	BC2
Blade Carrier, (Leave Bolts & Blades)	0.40	Replace	BC3
Blade Carrier, (R&R Bolts & Blades)	0.70	Replace	BC4

* There are 2 blades and 2 blade bolts per carrier. It will be required to add the job time by qty repairs done, these are marked (Each). Blades carriers are available as an assembly w/blades and blade bolts installed or as a weldment w/o them installed. This must be considered when repair are made.

Chain Guards

Front Chain Guard	0.50	Replace	CG1-A
Rear Chain Guard	0.50	Replace	CG2-A
Front & Rear Chain Guard	0.90	Replace	CG3-A

Drivelines

PTO D/L Asy, (Both Ends)	0.40	Replace	DL1
PTO D/L 1/2 Asy, (Tractor End)	0.20	Replace	DL1-A
PTO D/L 1/2 Asy, (Mower End)	0.40	Replace	DL1-B
PTO D/L Shield Asy, (Bothe Ends)	0.60	Replace	DL1-C
U-Joint, (Pto End)	0.70	Replace	DL4
U-Joint, (T/L End)	0.70	Replace	DL4-A
Tube, PTO D/L (1 Tube)	0.70	Replace	DL5-C
Tube, PTO D/L (2 Tubes)	1.10	Replace	DL5-D
PTO QD Yoke	0.50	Replace	DL9-B
Tube Yoke (1 Yoke)	1.30	Replace	DL9-C
Tube Yoke (2 Yokes)	1.60	Replace	DL9-D

Driveline Clutch (Note*)

Clutch, (Lift Type Or Pull Type)	0.70	Replace	DC1
	0.90	Rebuild*	DC1-A

* It is not required to remove clutch from d/l u-joint to rebuild it. It will require d/l removal from gearbox and d/l shield will have to be dis-assembled, this is included in hours.

Flat Rate Repair Time

RX Series

	Hrs	Repair	Job #
Gearbox (Note*)			
Gearbox	1.50	Replace	GB1
	2.60	Rebuild*	GB1-A
Seal, Input	0.60	Replace	GB3-2
Seal, Output	1.00	Replace	GB4
Shaft, Input	1.10	Replace	GB5-1
Shaft, Output	1.80	Replace	GB6
Top Cove, G/B	0.30	Replace	GB7
Shield, G/B	0.30	Replace	GB8-1
<i>* Remove, Replace and Adjust is included in rebuild time.</i>			
Mainframe (Deck)			
Deck, Mainframe	3.00	Replace	FR1-2
Offset Hitch (Lift Type Option)			
Hitch Frame Installation	1.00	Replace	OH1
Skid Shoes, Bolt On			
Skid Shoe, (1 LH or RH)	0.30	Replace	SS1
Skid Shoe, (2 LH or RH)	0.50	Replace	SS2
Tail Wheel (3 Point Lift Model)			
Tail Wheel Axle Arm	0.80	Replace	TW1
Tail Wheel Caster Fork (1 Fork)	0.80	Replace	TW2
Tail Wheel Asy, w/Hub & Bearings	0.40	Replace	TW3
Tail wheel Hub Asy (Complete Asy)	0.50	Replace	TW4
Tail Wheel Hub Bearings	0.60	Rebuild	TW4-A

MAVERICK BOOM



Flat Rate Repair Time

Maverick Boom

Hydraulic Components - Boom Controls

	Hrs	Repair	Job #
Control Valve			
Cyl Control Valve	2.00	Remove & Replace	MCV1
	4.00	Rebuild <i>(Includes Remove & Replace)</i>	MCV2
Valve Section Change	3.00	Remove & Replace <i>(Re-Seal & Replace)</i>	MCV3
Pressure Filter	0.25	Remove & Replace	MCV4
Work Port Relief	0.32	Inspect & Replace	MCV5
Module	0.50	Remove & Replace Module <i>(Each)</i>	MCV6
Spool	0.50	Remove & Replace	MCV7
Lock Valve	0.50	Remove & Replace	MCV8
Cylinder Circuit Pump			
Pump	0.85	Remove & Replace	CCP1
	1.50	Rebuild	CCP2
Valve Return Filter			
Filter Asy	1.00	Remove & Replace w/ Element	RF1
Element Only	0.25	Remove & Replace	RF2
Valve Pressure Filter			
Filter Asy	1.00	Remove & Replace w/ Element	PF1
Element Only	0.25	Remove & Replace	PF2
Cylinders			
Swing Cyl	1.00	Remove & Replace	MCYL1
	2.50	Rebuild	MCYL2
Lift Cyl	0.58	Remove & Replace	MCYL3
	2.60	Rebuild	MCYL4
Dipper Cyl	0.62	Remove & Replace	MCYL5
	2.80	Rebuild	MCYL6
Head Tilt Cyl	0.48	Remove & Replace	MCYL7
	1.80	Rebuild	MCYL8
Telescope Cyl	3.00	Remove & Replace	MCYL9
	4.80	Rebuild	MCYL10
Swivel Cyl	0.35	Remove & Replace	MCYL11
	0.95	Rebuild	MCYL12
Door Cyl	0.35	Remove & Replace	MCYL13
	0.95	Rebuild	MCYL14
Stabilizer Cyl	0.35	Remove & Replace	MCYL15
	0.95	Rebuild	MCYL16

Flat Rate Repair Time

Maverick Boom

Hydraulic Components - Boom Controls

		Hrs	Repair	Job #
Hoses				
Swing Cyl	-Valve to Cyl	0.50	Remove & Replace	MHS1
	-Cyl to Cross Over	0.25	Remove & Replace	MHS2
Lift Cyl	-Valve to Cyl	0.50	Remove & Replace	MHS3
Dipper Cyl	-Valve to Lift	0.50	Remove & Replace	MHS4
	-Boom to Cyl	0.50	Remove & Replace	MHS5
Telescope Cyl	-Valve to Lift	0.50	Remove & Replace	MHS6
	-Boom to Cyl	0.50	Remove & Replace	MHS7
Head Tilt Cyl	-Valve to Lift	0.50	Remove & Replace	MHS8
	-Lift to Dipper	0.50	Remove & Replace	MHS9
	-Dipper to Cyl	0.50	Remove & Replace	MHS10
Swivel Cyl	-Valve to Lift	0.50	Remove & Replace	MHS11
	-Lift to Dipper	0.50	Remove & Replace	MHS12
	-Dipper to Bulkhead	0.50	Remove & Replace	MHS13
	-Bulkhead to Cyl	0.15	Remove & Replace	MHS14
Door Cyl	-Valve to Lift	0.50	Remove & Replace	MHS15
	-Lift to Dipper	0.50	Remove & Replace	MHS16
	-Dipper to Bulkhead	0.50	Remove & Replace	MHS17
	-Bulkhead to Cyl	0.15	Remove & Replace	MHS18
Stabilizer Cyl	-to Cyl	0.15	Remove & Replace	MHS19
Diagnostics				
Manual Override Check	0.18	Activate Spool Manually	CVT1	
Cylinder Check	1.20	Cap & Check for drift	CVT2	
Other	1.50	General Hydraulic Checks	CVT3	
Pump Diagnostics				
Pump Pressure & Flow Test	2.80	Install Meters & Test Circuit	PMT1	
Other	0.50	Various Hydraulic	PMT2	

Flat Rate Repair Time

Maverick Boom

Cutter Circuit - Head Motor Pump

	Hrs	Repair	Job #
Pump, Cutter Circuit			
Pump	2.20	Remove & Replace	MPMP1
	3.50	Rebuild <i>(Inc. R&R Pump)</i>	MPMP2
Pump Input Seal	2.40	Remove & Replace	MPMP3
Coil Only	0.14	Remove & Replace	MPMP4
Coil & Valve Stem	0.20	Remove & Replace	MPMP5
Servo Control Valve Gasket	0.20	Remove & Replace	MPMP6
Charge Loop Filter			
Filter Asy	0.50	Remove & Replace	LF1
Filter Element	0.10	Remove & Replace	LF2
Motor, Cutter Circuit			
Motor	1.33	Remove & Replace	MMTR1
Motor	2.60	Rebuild <i>(Inc. R&R Motor)</i>	MMTR2
Relief Manifold	0.76	Remove & Replace	MMTR3
Port Relief	0.30	Remove & Replace	MMTR4
Port Relief	0.30	Remove & Re-Seal	MMTR5
Relief Block	0.20	Remove & Re-Seal	MMTR6
Hard Tubing F/ Motor Operation			
Pressure Tube	3.00	Remove & Replace	PTB1
Return Tube	3.00	Remove & Replace	PTB2
Case Drain Tube	3.00	Remove & Replace	PTB3
Replace All 3 Tubes	7.00	Remove & Replace	PTB4
Pump & Motor Diagnostics			
Pump Pressure & Flow Test	2.80	Install Meters & Test	PMT1
Charge Loop Pressure & Flow Test	1.60	Install Meters & Test	PMT2
Other	0.50	Various Hydraulic	PMT3

Flat Rate Repair Time

Maverick Boom

Hydraulic Tank & Accessories

	Hrs	Repair	Job #
Hydraulic Tank			
Tank Replacement	5.40	Remove & Replace	MTNK1
Tank Cleaning	2.00	Drain & Clean	MTNK2
Suction Screen	2.00	Drain & Clean or Replace	MTNK3
O-ring & Fitting	0.50	Remove & Replace	MTNK4

Hydraulic Hosing at Front Tank

Valve Supply	0.30	Remove & Replace	MHS20
Valve Return	0.30	Remove & Replace	MHS21
Pump Suction Hose	0.30	Remove & Replace	MHS22
Pump Case Drain	0.30	Remove & Replace	MHS23
Charge Loop	0.30	Remove & Replace	MHS24

Electronic Components

	Hrs	Repair	Job #
Joystick			
Joystick	0.18	Remove & Replace	MJS1
Switch	0.50	Remove & Replace (<i>Each</i>)	MJS2

Wire Harness

Complete Harness	3.00	Remove & Replace	MWHR1
Exterior Harness	1.50	Remove & Replace	MWHR2
Interior Harness	1.50	Remove & Replace	MWHR3
Resistor Harness	0.25	Remove & Replace	MWHR4
Module Connection	0.18	Remove & Reinstall to Valve	MWHR5
Power Connection to Tractor	1.60	Disconnect & Reconnect	MWHR6

Hydraulic Cooler

Cooler Fan (Only)	0.35	Remove & Replace	HC1
Cooler Fan Asy (Complete)	1.00	Remove & Replace	HC2
Cooler Fan Control	0.40	Remove & Replace	HC3

Pump Control Solenoid

Coil Only	0.14	Remove & Replace	PMP7
Coil & Valve Stem	0.20	Remove & Replace	PMP8

Diagnostic

Module Voltage Check	0.36	Check Plug w/Volt Meter	WHT1
Power Supply Check	0.14	Test w/Volt Meter	WHT2
Ground Check	0.34	Test w/Volt Meter	WHT3
Manual Over Ride Check	0.25	Activate Spool Manually (<i>Each</i>)	CVT1
Other	1.50	Various Electrical testing	WHT4

Flat Rate Repair Time

Maverick Boom

Frame Assembly / Structural Components

	Hrs	Repair	Job #
Counter Weight			
Counter Weight	1.00	Remove & Re-Install	CWT1
Connection Pin	0.50	Remove & Re-Install	CWT2
Boom Components			
Lift Section	4.20	Remove & Replace	MBOM1
Dipper Section	3.85	Remove & Replace	MBOM2
Telescope Section	3.00	Remove & Replace	MBOM3
Mower Head (W/O Quick Hitch)	2.00	Remove & Replace	MBOM4
Quick Hitch Bracket	1.50	Remove & Replace	MBOM5
Wear Puck Insert	0.75	Remove & Replace	MBOM6
Wear Puck Holder w/ Insert	1.00	Remove & Replace	MBOM7
Bushings			
Main Pin Bushings	2.30	Remove & Replace	MBUS2
Lift to Dipper Pin Bushings	2.95	Remove & Replace	MBUS4
Dipper to Cutter Head Pin	1.60	Remove & Replace	MBUS5
Swing Cyl Bushings	2.25	Remove & Replace	MBUS6
Lift Cyl Bushings	1.00	Remove & Replace	MBUS7
Dipper Cyl Bushings	1.00	Remove & Replace	MBUS8
Telescope Cyl Bushings	3.50	Remove & Replace	MBUS9
Head Tilt Cyl Bushings	1.00	Remove & Replace	MBUS10
Swivel Cylinder Bushing	0.75	Remove & Replace	MBUS11
Door Cyl Bushings	0.75	Remove & Replace	MBUS12
Stabilizer Cyl Bushings	0.75	Remove & Replace	MBUS13
Frame Components			
Frame Center Section	12.00	Remove & Replace	MFRM1
Rear Rail Mount	1.00	Remove & Replace (Each)	MFRM3
Boom Rest	0.75	Remove & Replace	MFRM4
Front Rail Mount Bracket	0.58	Remove & Replace (Each)	MFRM7
Turret Mount	4.50	Remove & Replace	MFRM8
Swing Bearing	5.50	Remove & Replace	MFRM9
Power Take Off Components			
	Hrs	Repair	Job #
Front Pump Drive			
Crankshaft Pulley Adapter	2.00	Remove & Replace	MPTO1
Drive Shaft Asy	1.75	Remove & Replace	MPTO3
Pump Mount Plate	2.00	Remove & Replace	MPTO5

SAMURAI BOOM



Flat Rate Repair Time

Samurai Boom

Hydraulic Components - Boom Controls

	Hrs	Repair	Job #
Control Valve			
Control Valve - Manual	1.80	Replace	CV10
	3.00	Reseal <i>(Includes Remove & Replace)</i>	CV11
	0.25	Remove & Replace Relief Cartridge <i>(Ea.)</i>	CV12
Control Valve <i>(Electro Hyd)</i>	1.80	Replace	CV4
	3.15	Reseal <i>(Includes Remove & Replace)</i>	CV5
	0.50	Replace Module <i>(Each)</i>	CV6
Hoses			
Lift Cyl	0.23	Remove & Replace	HS1
Dipper Cyl	0.85	Remove & Replace	HS2
Swing Cyl	0.18	Remove & Replace	HS3
Head Tilt Cyl	1.53	Remove & Replace	HS4
Door Cyl	1.58	Remove & Replace <i>(Valve To Boom)</i>	HS5
Door Cyl	0.15	Remove & Replace <i>(Boom To Head)</i>	HS7
Cylinders			
Lift Cyl	0.58	Remove & Replace	CYL1
	2.60	Reseal	CYL2
Dipper Cyl	0.62	Remove & Replace	CYL3
	2.80	Reseal	CYL4
Swing Cyl	0.48	Remove & Replace	CYL5
	1.80	Reseal	CYL6
Head Tilt Cyl	0.50	Remove & Replace	CYL7
	1.60	Reseal	CYL8
Door Cyl	0.35	Remove & Replace	CYL9
	0.95	Reseal	CYL10
Stabilizer Cyl	0.35	Remove & Replace	CYL11
	0.95	Rebuild	CYL12
Swivel Cyl	0.35	Remove & Replace	CYL13
	0.95	Reseal	CYL14
Controllers			
Cable Handle Controller	1.75	Remove & Replace <i>(All)</i>	CBL1
	0.30	Remove & Replace <i>(Each)</i>	CBL2
Cables	0.60	Remove & Replace <i>(Each)</i>	INCBL1
	0.25	Adjust	INCBL2
Diagnostics Manual Valve			
Pressure Flow Test Pump	3.20	Attach Pressure Flow Meter and test	ABDIA1
Pressure Test each spool	1.00	Attach Pressure Gauge and check	ABDIA2
Main Relief Pressure Test	1.00	Attach Pressure Gauge and check	ABDIA3
Cylinder Inspection	0.51	Cap and check for drift <i>(Each)</i>	ABDIA4

Flat Rate Repair Time

Samurai Boom

Hydraulic Components - Cutter Motor Controls

	Hrs	Repair	Job #
Repair Pump			
Complete	1.00	Remove & Replace	SAP1
Complete	2.40	Rebuild <i>(Inc R&R)</i>	SAP2
Replace Pump Seal	2.00	Remove & Replace <i>(Inc. R&R Pump)</i>	SAP3
Replace Pump Shaft	2.20	Remove & Replace <i>(Inc. R&R Pump)</i>	SAP4
Motor Control Valve			
Complete Assembly	1.20	Remove & Replace	SAMCV1
	2.00	Reseal complete	SAMCV2
Logic Valve	0.25	Remove & Replace <i>(Must Add R&R Valve)</i>	SAMCV3
	0.50	Reseal	SAMCV4
Brake Valve	0.25	Remove & Replace	SAMCV5
	0.50	Reseal	SAMCV6
Pressure Relief	0.25	Remove & Replace	SAMCV7
	0.50	Reseal	SAMCV8
Solenoid Valve	0.25	Remove & Replace	SAMCV9
	0.50	Reseal	SAMCV10
Solenoid Coil	0.08	Remove & Replace	SAMCV11
Motor			
Complete	0.50	Remove & Replace	SARMT3
Complete	2.00	Rebuild	SARMT4
Replace Motor Seal	1.50	Remove & Replace <i>(Inc. R&R Motor)</i>	SARMT5
Spindle - Add Motor R&R to Spindle labor times listed			
Preload - Bearings	0.35	Check and Adjust <i>(Must Add Motor R& R)</i>	SARSP1
Complete	0.50	Remove & Replace	SARSP2
Complete	1.60	Rebuild <i>(R&R Bearings)</i>	SARSP3
Hoses			
Valve To Motor Control	0.35	Remove & Replace <i>(Each)</i>	SAHS1
Motor Control to Frame	0.75	Remove & Replace <i>(Each)</i>	SAHS2
Frame to Lift	0.45	Remove & Replace <i>(Each)</i>	
Lift To dipper	0.65	Remove & Replace <i>(Each)</i>	SAHS3
Dipper To Motor	0.55	Remove & Replace <i>(Each)</i>	SAHS4
Suction <i>(Tank To Pump)</i>	0.35	Remove & Replace <i>(Each)</i>	SAHS5
Return <i>(Motor Cntrl To Tank)</i>	0.45	Remove & Replace <i>(Each)</i>	SAHS6
Dipper Section	0.78	Remove & Replace <i>(Each)</i>	

Flat Rate Repair Time

Samurai Boom

	Hrs	Repair	Job #
Pressure Tubes			
Lift Section	0.56	Remove & Replace <i>(Each)</i>	PTB1
Hydraulic Tank			
Tank Replacement	5.40	Remove & Replace	SATNK1
Tank Cleaning	2.00	Drain and Clean	SATNK2
Tank Leak Repair	1.20	Reweld	SATNK3
Filter Assembly	1.60	Remove & Replace	SATNK4
Filter Element	0.56	Remove & Replace	SATNK5
Suction Screen	2.00	Drain, Clean and Replace	SATNK6
Diagnostics			
Pressure & Flow Test Pump	2.00	Attach P&F Meter to Pump and Check	SADIA1
Check Main relief Pressure	1.00	Attach Pressure Gauge to Valve and Check	SADIA2
Pressure & Flow Test From-Motor Control	2.00	Attach P&F Meter to Motor control Valve and Check	SADIA3
Check Motor Return Flow	1.50	Attach Flow Meter to Motor	SADIA4
Other	1.50	General Hydraulic Testing	SADIA5
Electrical Components			
	Hrs	Repair	Job #
Joystick <i>(Where Used)</i>			
Complete	0.18	Remove & Replace	JS1
Switch	0.50	Remove & Replace <i>(Each)</i>	JS2
Wire Harness			
Complete <i>(Standard Valve Only)</i>	2.00	Remove & Replace	ABELE1
Motor Power Switch <i>(Standard Valve Only)</i>	0.56	Remove & Replace	ABELE2
Motor Control Solenoid Coil	0.25	Remove & Replace	ABELE3
Electro Hyd Option <i>(Complete)</i>	3.00	Remove & Replace	WHR1
Valve Module Connection <i>(Where Used)</i>	0.18	remove from valve and reinstall <i>(Each)</i>	WHR2
Joystick Connection <i>(Where Used)</i>	0.14	Remove, Inspect, Replace	WHR5
Diagnostics			
Voltage Check at Modules <i>(Joystick Only)</i>	0.36	Remove plug and check wi/ volt meter <i>(Each)</i>	WHT1
Power Supply Check <i>(All Models)</i>	0.14	Test with Volt meter or test light	WHT2
Ground Check <i>(All Models)</i>	0.34	Test with Volt meter or test light	WHT3
Manual Override Check <i>(Joystick Only)</i>	0.18	Activate Spool Manually <i>(Each)</i>	CVT1

Flat Rate Repair Time

Samurai Boom

Boom Arm and Turning arm - Mechanical

	Hrs	Repair	Job #
Bushings			
King Pin Bushings	2.60	Remove & Replace	BUS1
Main Pin Bushings	2.30	Remove & Replace	BUS2
Turning arm	3.10	Remove & Replace	BUS3
Lift and Dipper	2.95	Remove & Replace	BUS4
Dipper and Head	1.60	Remove & Replace	BUS5
Lift cyl	0.94	Remove & Replace	BUS6
Dipper Cyl	0.98	Remove & Replace	BUS7
Swing Cyl	0.75	Remove & Replace	BUS8
Head Tilt Cyl	0.79	Remove & Replace	BUS9
Boom Components			
Lift Section	4.20	Remove & Replace	BOM1
Dipper Section	3.85	Remove & Replace	BOM2
Mower Head	2.00	Remove & Replace <i>(W/Out Quick Hitch)</i>	BOM3
Quick Hitch Bracket	1.50	Remove & Replace	BOM4
Turning arm and King pin	3.10	Remove & Replace`	BOM5
Frame Components			
Frame Assy	5.20	Remove & Replace	SAFRM1
Rail	9.40	Remove & Replace <i>(Each, Inc. All RandR)</i>	SAFRM3
Rail	14.0	Remove & Replace <i>(Both, Inc. All RandR)</i>	SAFRM3
Boom Rest	0.75	Remove & Replace	SAFRM4
Rail Support	1.00	Remove & Replace <i>(Under Tractor)</i>	SAFRM5
Rail support Bracket	5.2	R and R of Rail Included	SAFRM6
Front Rail Mnt Brkt	0.58	Remove & Replace <i>(Each)</i>	SAFRM7
Counter Weight	1.00	Remove & Replace	SAFRM8
Fracture Repair	1.20	Clean and Re-Weld <i>(Each)</i>	SAFRM9
Power Take Off Components			
	Hrs	Repair	Job #
Front Pump Drive			
Engine Crankshaft Adapter	2.00	Remove & Replace	PTO1
Driveshaft Assy	1.75	Remove & Replace	PTO3
Drive shaft pump Coupler	1.75	Remove & Replace	PTO4
Pump Mount plate	2.00	Remove & Replace	PTO5

SWITCHBLADE



Flat Rate Repair Time

Switchblade

	Hrs	Repair	Job #
Driveshaft			
Pulley Adapter	1.50	Remove & Replace	SWBDS1
Driveshaft	1.00	Remove & Replace	SWBDS2
Pump Adapter	0.70	Remove & Replace	SWBDS3
Cylinder Lift & Tilt			
Cylinder (<i>Lift or Tilt</i>)	0.25	Remove & Replace	CYL1
Cylinder (<i>Lift or Tilt</i>)	0.85	Rebuild or Re-Seal	CYL2
Hydraulic Valve			
Cylinder Control Valve			
Cyl. Control Valve	0.73	Remove & Replace	SWBCVL1
Cyl. Control Valve	1.40	Rebuild	SWBCVL2
Motor Control Valve			
Motor Control Valve	1.20	Remove & Replace	SWBMVL1
Motor Control Valve	1.40	Rebuild	SWBMVL2
Motor Solenoid valve	1.00	Remove & Replace	SWBMVL3
Solenoid Coil	0.10	Remove & Replace	SWBMVL4
Solenoid Stem	0.25	Remove & Replace	SWBMVL5
Pressure Relief	0.10	Remove & Replace	SWBMVL6
Valve Control Cable			
Cable	0.45	Remove & Replace	SWBCC1
Cable	0.25	Adjust	SWBCC2
Oil Tank / Reservoir			
Hyd Tank	2.30	Remove & Replace	SWBTNK1
Return Filter	0.30	Remove & Replace	SWBTNK2
Suction Screen	1.30	Remove & Replace	SWBTNK3
Fluid Level Gauge	1.00	Remove & Replace	SWBTNK4
Filter Pressure Gauge	0.25	Remove & Replace	SWBTNK5
Breather (<i>Filter</i>)	0.10	Remove & Replace	SWBTNK6
Hoses			
Pump to Motor Valve & Motor			
Suction (<i>Tank to Pumps</i>)	0.25	Remove & Replace (<i>To Tandem Pump</i>)	SWBH1
Pump to Solenoid Valve	0.25	Remove & Replace (<i>Pump to Motor Solenoid Valve</i>)	SWBH2
Solenoid Valve to Motor	0.25	Remove & Replace (<i>Solenoid Valve to Motor</i>)	SWBH3
Motor to Return Filter	0.25	Remove & Replace	SWBH4
Pump to Cyl Valve & Cylinders			
Pump to Cyl Valve	0.25	Remove & Replace	SWBH5
Valve to Cyl (<i>Lift or Tilt</i>)	0.25	Remove & Replace	SWBH6
Cyl. to Cyl.	0.20	Remove & Replace	SWBH7
Valve to Tank (<i>Return</i>)	0.25	Remove & Replace (<i>Cyl Valve to Return Filter</i>)	SWBH8

Flat Rate Repair Time

Switchblade

	Hrs	Repair	Job #
Motor			
Motor	0.65	Remove & Replace	SWBM1
Motor	2.50	Rebuild <i>(includes R & R)</i>	SWBM2
Motor Drive System			
Flywheel	0.35	Remove & Replace	SWBDR1
Adapter Hub	0.50	Remove & Replace	SWBDR2
Knife Drive Stud	0.50	Remove & Replace	SWBDR3
Cutter Bar Asy			
Cutter Bar Complete	1.00	Remove & Replace	SWBCB1
Knife Asy	0.30	Remove & Replace	SWBCB2
Rock Guard	0.20	Remove & Replace	SWBCB3
Skid Shoe	0.20	Remove & Replace <i>(Inner or Outer)</i>	SWBCB4
Knife Clip	0.10	Remove & Replace	SWBCB5
Shoe, Drive & Break-a-way Asy.			
Complete	3.00	Remove & Replace	SWBSB1
Pump, Front Mounted			
Complete	1.00	Remove & Replace	SWBP1
	1.60	Rebuild	SWBP2
Mainframe			
Mainframe	4.50	Remove & Replace	SWBMF1
Mainframe	1.40	Repair - Clean - Repaint	SWBMF2
Speed Increaser			
Complete	1.50	Remove & Replace	SWBSI1
	2.60	Rebuild	SWBSI2
Diagnostics			
Hydraulic Motor	1.80	Pressure & Flow Test <i>(Pump & Motor Circuit)</i>	SWBHT1
Hydraulic Cylinder	1.80	Pressure & Flow Test <i>(Cylinder & Valve Circuit)</i>	SWBHT2
	0.50	Leakage Test <i>(Cylinder Test Only)</i>	SWBHT3
Hydraulic Pumps	1.80	Pressure & Flow Test <i>(Pump Pressure & Flow)</i>	SWBHT4
Cylinder Valve	1.20	Pressure & Flow Test <i>(Cylinder Valve Only)</i>	SWBHT5
Motor Control Valve	1.20	Pressure & Flow Test <i>(Motor Control Valve Only)</i>	SWBHT6
Hydraulic Hose Leak	0.10	All Hoses Check for leaks	SWBHT7
Electrical Circuit	1.00	System check with Volt/Ohm Meter	SWBET1
Solenoid Coil	0.20	Test Electrical Solenoid Coil with Meter	SWBET2
Relief Valves	0.00	See Motor, Cyl & Pump above	

VERSA



Flat Rate Repair Time

Versa

Hydraulic Components - Boom Controls

	Hrs	Repair	Job #
Control Valve			
Control Valve - Manual	1.80	Replace	CV10
	3.00	Reseal (<i>Includes Remove & Replace</i>)	CV11
	0.25	Remove & Replace Relief Cartridge (<i>Ea.</i>)	CV12
Control Valve (<i>Electro Hyd</i>)	1.80	Replace	CV4
	3.15	Reseal (<i>Includes Remove & Replace</i>)	CV5
	0.50	Replace Module (<i>Each</i>)	CV6
Hoses			
Lift Cyl	0.23	Remove & Replace	HS1
Dipper Cyl	0.85	Remove & Replace	HS2
Swing Cyl	0.18	Remove & Replace	HS3
Head Tilt Cyl	1.53	Remove & Replace	HS4
Door Cyl	1.58	Remove & Replace	HS5
Extension Cyl	1.58	Remove & Replace	HS7
Cylinders			
Lift Cyl	0.58	Remove & Replace	CYL1
	2.60	Reseal	CYL2
Dipper Cyl	0.62	Remove & Replace	CYL3
	2.80	Reseal	CYL4
Swing Cyl	0.48	Remove & Replace	CYL5
	1.80	Reseal	CYL6
Head Tilt Cyl	0.50	Remove & Replace	CYL7
	1.60	Reseal	CYL8
Door Cyl	0.35	Remove & Replace	CYL9
	0.95	Reseal	CYL10
Extension Cyl	1.23	Remove & Replace	CYL11
	1.86	Reseal	CYL12
Controllers			
Cable Handle Controller	1.75	Remove & Replace (<i>All</i>)	CBL1
	0.30	Remove & Replace (<i>Each</i>)	CBL2
Cables	0.60	Remove & Replace (<i>Each</i>)	INCBL1
	0.25	Adjust	INCBL2
Diagnostics Manual Valve			
Pressure Flow Test Pump	3.20	Attach Pressure Flow Meter and test	ABDIA1
Pressure Test each spool	1.00	Attach Pressure Gauge and check	ABDIA2
Main Relief Pressure Test	1.00	Attach Pressure Gauge and check	ABDIA3
Cylinder Inspection	0.51	Cap and check for drift (<i>Each</i>)	ABDIA4

Flat Rate Repair Time

Versa

Hydraulic Components - Cutter Motor Controls

	Hrs	Repair	Job #
Repair Pump			
Complete	0.86	Remove & Replace	VPMP1
Complete	2.40	Rebuild <i>(Inc R&R)</i>	VPMP2
Replace Pump Seal	2.00	Remove & Replace <i>(Inc. R&R Pump)</i>	VPMP3
Replace Pump Shaft	2.20	Remove & Replace <i>(Inc. R&R Pump)</i>	VPMP4
Power Take Off Components			
Crankshaft Pulley adapter	2.00	Remove & Replace	ABPT01
Drive Shaft Asy	1.75	Remove & Replace	ABPT02
Pump Mount Plate	2.00	Remove & Replace	ABPT03
Motor Control Valve			
Complete Assembly	1.20	Remove & Replace	MCV1
	2.00	Reseal complete	MCV2
Logic Valve	0.53	Remove & Replace <i>(Must Add R&R Valve)</i>	MCV3
	0.25	Reseal	INCTL1
Brake Valve	0.53	Remove & Replace	INCTL2
	0.25	Reseal	MCV4
Pressure Relief	0.25	Remove & Replace	INFRM1
	0.25	Reseal	INFRM2
Solenoid Valve	0.25	Remove & Replace	INFRM3
	0.25	Reseal	INFRM4
Solenoid Coil	0.08	Remove & Replace	MCV5
Motor			
Complete	0.50	Remove & Replace	RMT3
Complete	2.00	Rebuild	RMT4
Replace Motor Seal	1.50	Remove & Replace <i>(Inc. R&R Motor)</i>	RMT5
Spindle - Add Motor R&R to Spindle labor times listed			
Preload - Bearings	0.35	Check and Adjust <i>(Must Add Motor R& R)</i>	RSPDL1
Complete	0.50	Remove & Replace	RSPDL2
Complete	1.60	Rebuild <i>(R&R Bearings)</i>	RSPDL3
Hoses			
Pump To Motor Control	0.38	Remove & Replace <i>(Each)</i>	ABHS1
Motor Control to Boom	0.32	Remove & Replace <i>(Each)</i>	ABHS2
Lift To dipper	0.51	Remove & Replace <i>(Each)</i>	ABHS3
Dipper To Motor	0.25	Remove & Replace <i>(Each)</i>	ABHS4
Suction <i>(Tank To Pump)</i>	0.25	Remove & Replace <i>(Each)</i>	ABHS5
Return <i>(Motor Cntrl To Tank)</i>	0.39	Remove & Replace <i>(Each)</i>	ABHS6

Flat Rate Repair Time

Versa

	Hrs	Repair	Job #
Pressure Tubes			
Lift Section	0.48	Remove & Replace <i>(Each)</i>	ABTB1
Dipper Section	0.78	Remove & Replace <i>(Each)</i>	ABTB2
Hydraulic Tank			
Side Mount Removable - from Frame	4.20	Remove & Replace	ABTNK1
Non Removable	9.50	Remove & Replace <i>(Entire Frame)</i>	ABTNK2
Tank Leak Repair	1.20	Reweld	ABTNK3
Under The Fender Tank	5.40	Remove & Replace	ABTNK4
Filter Assembly	1.60	Remove & Replace	ABFLT1
Filter Element	0.56	Remove & Replace	INTNK6
Suction Screen	1.30	Remove & Replace	INTNK3
Diagnostics			
Pressure & Flow Test Pump	2.00	Attach P&F Meter to Pump and Check	ABDIA1
Check Main relief Pressure	0.51	Attach Pressure Gauge to Valve and Check	ABDIA2
Pressure & Flow Test From- Motor Control	2.00	Attach P&F Meter to Motor control Valve and Check	ABDIA3
Check Motor Return Flow	1.50	Attach Flow Meter to Motor	ABDIA4
Other	1.50	General Hydraulic Testing	ABDIA5
Electrical Components			
	Hrs	Repair	Job #
Joystick <i>(Where Used)</i>			
Complete	0.18	Remove & Replace	JS1
Switch	0.50	Remove & Replace <i>(Each)</i>	JS2
Wire Harness			
Complete <i>(Std Valve Only)</i>	2.00	Remove & Replace	ABELE1
Motor Power Switch <i>(Standard Valve Only)</i>	0.56	Remove & Replace	ABELE2
Motor Control Solenoid Coil	0.25	Remove & Replace	ABELE3
Electro Hyd Option <i>(Complete)</i>	3.00	Remove & Replace	WHR1
Valve Module Connection <i>(Where Used)</i>	0.18	remove from valve and reinstall <i>(Each)</i>	WHR2
Joystick Connection <i>(Where Used)</i>	0.14	Remove, Inspect, Replace	WHR5
Diagnostics			
Voltage Check at Modules <i>(Joystick Only)</i>	0.36	Remove plug and check wi/ volt meter <i>(Each)</i>	WHT1
Power Supply Check <i>(All Models)</i>	0.14	Test with Volt meter or test light	WHT2
Ground Check <i>(All Models)</i>	0.34	Test with Volt meter or test light	WHT3
Manual Override Check <i>(Joystick Only)</i>	0.18	Activate Spool Manually <i>(Each)</i>	CVT1

Flat Rate Repair Time

Versa

Boom arm and Turning Arm - Mechanical

	Hrs	Repair	Job #
Turning arm			
Complete	4.00	Remove Turning arm <i>(Includes All Req Processes)</i>	BOM6
Complete	0.53	Replace Turning arm Bushing	BOM7
Swing Cyl Pin	0.25	Replace Rod end Bushing	BOM8
Swing Cyl Pin	0.25	Replace Base end Bushing	BOM9
King Pin			
Complete	5.00	Remove & Replace <i>(Inc. R&R Turn Arm And Lift Cyl Pin)</i>	KP1
Bearing and seals	5.50	Remove & Replace <i>(Inc. R&R King Pin)</i>	KP2
Boom Sections			
Lift Section	4.20	Remove & Replace	BOM1
Dipper Section	3.85	Remove & Replace	BOM2
Extension Tube <i>(28' Models)</i>	5.00	Remove & Replace	BOM6
Mower Head <i>(W/O Quick Hitch)</i>	2.00	Remove & Replace	BOM3
Quick Hitch Bracket	1.50	Remove & Replace	BOM4
Frame Components			
Frame Asy Complete	4.85	Remove & Replace Same Frame	FRM1
Frame Asy Complete	5.50	Remove & Replace with New <i>(Clamp Tubes Welded)</i>	FRM2
Rail <i>(Includes R&R Frame)</i>	6.00	Remove & Replace <i>(Each)</i>	FRM3
Boom Rest	0.85	Remove & Replace	FRM4
Rail Support Under Tractor	1.00	Remove & Replace <i>(Tube Only)</i>	FRM5
Rail Support Bracket	7.00	Welded - Requires R&R rail <i>(Included)</i>	FRM6
Front Rail Mount Bracket	1.00	Remove & Replace <i>(Each)</i>	FRM7
Boom Rest Support Rod Kit	2.50	Install	FRM8
	1.80	Remove & Replace	FRM9
Fracture Repair <i>(Requires Written Approval)</i>	2.00	Clean and reweld <i>(Each)</i>	FRM10
Bushings - Includes R&R the pin and other required components			
Lift and Dipper	2.95	Remove & Replace	BUS4
Dipper and Head	1.60	Remove & Replace	BUS5
Lift cyl	0.94	Remove & Replace <i>(Each)</i>	BUS6
Dipper Cyl	0.98	Remove & Replace <i>(Each)</i>	BUS7
Swing Cyl	0.75	Remove & Replace <i>(Each)</i>	BUS8
Head Tilt Cyl	0.79	Remove & Replace <i>(Each)</i>	BUS9
Main Pin	5.80	Remove & Replace	BUS10



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