

821B Loaders Service Manual

Table of Contents

Description	Section No.	Form No.
General		
	Tab 1	
Loctite Product Chart		8-98900
Standard Torque Specifications	1001	8-71600
Fluids and Lubricants	1002	7-59321
Engines		
	Tab 2	
Engine Removal and Installation and Radiator Removal and Installation	2001	7-60130
Stall Tests	2002	7-59330
Specification Details	2403	8-28423
Cylinder Head and Valve Train	2415	8-28432
Cylinder Block - Crankshaft, Pistons, Rods, Sleeves, Camshaft, Bearings, Seals, and Flywheel	2425	8-28442
Lubrication System	2445	8-28452
Cooling System	2455	8-28462
Turbocharger	2465	8-28470
Turbocharger Failure Analysis	2565	9-78235
Fuel System		
	Tab 3	
Fuel System and Filters	3410	8-28480
Fuel Injection Pump and Drive Gear	3412	8-28492
Fuel Injectors	3413	8-28501
Electrical System		
	Tab 4	
Removal and Installation of Starter and Alternator	4000	7-59010
Electrical Schematics and Troubleshooting	4001	8-99560
Electrical Schematics and Troubleshooting - Units with Auto Shift Transmission	4001	7-52840
Starter and Starter Solenoid - Nippondenso	4002	8-17920
Batteries	4004	8-71701
Instrument Cluster	4005	7-59800
65 Ampere Alternator	4006	8-73860
Steering		
	Tab 5	
Removal and Installation of Steering Components	5001	7-59730
Steering Troubleshooting and Pressure Checks	5002	8-99871
Steering Control Valve	5003	8-73901
Flow Control Valve	5004	8-13290
Steering Cylinder	5005	8-13302
Center Pivot	5006	7-60070
Auxiliary Steering Motor and Pump	5008	7-43960

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821B Loaders Service Manual

Table of Contents

Description	Section No.	Form No.
Power Train		
	Tab 6	
Removal and Installation of Power Train Components	6001	7-59910
Transmission Specifications, Schematic, and Troubleshooting - Units Without Auto Shift Transmission	6002	7-43944
Transmission Specifications, Schematic, and Troubleshooting - Units With Auto Shift Transmission	6002	7-52510
Transmission Repair - 821B	6003	8-13354
Front and Rear Axle Repair	6004	7-59000
Drive Shaft, Center Bearing and Universal Joints	6005	8-13370
Wheels and Tires	6006	8-13381
Transmission Control Valve - Units Without Auto Shift Transmission	6007	8-18163
Transmission Control Valve - Units With Auto Shift Transmission	6007	7-52520
Brakes		
	Tab 7	
Removal and Installation of Brake Components	7001	7-59710
Hydraulic Brake Troubleshooting	7002	8-99880
Brake Pump	7003	7-59590
Brake Accumulators	7004	8-18331
Brake Actuator Valve	7005	8-18351
Brake Accumulator Valve	7007	7-43620
Parking Brake - Disc	7008	7-44130
NOTE: For parking brake and brake pedal adjustments, see Section 9009.		
Hydraulics		
	Tab 8	
Removal and Installation of Hydraulic Components	8001	7-59630
Hydraulic Specifications, Schematics, Troubleshooting and Pressure Checks	8002	8-99891
Cleaning the Hydraulic System	8003	8-74160
Hydraulic Pump	8004	8-13470
Loader Control Valve	8005	8-13481
Cylinders	8006	8-13491
Remote Control Valves	8010	7-59610
Pressure Reducing/Sequence Valve	8011	7-59620
Unloading Valve	8012	7-59640

821B Loaders Service Manual

Table of Contents

Description	Section No.	Form No.
Chassis	Tab 9	
Air Conditioning Troubleshooting and System Checks	9001	8-18050
Air Conditioning Troubleshooting and System Checks - For Systems with HFC-134a Refrigerant	9001	7-64360
Air Conditioner System Service - Refrigerant Recovery, System Evacuation and Recharging	9002	8-16471
Air Conditioner System Service - Refrigerant Recovery, System Evacuation and Recharging for Systems with HFC-134a Refrigerant	9002	7-64370
Removal and Installation of Air Conditioning Components	9003	8-18400
Removal and Installation of Air Conditioning Components - For Systems with HFC-134a Refrigerant	9003	7-64380
Air Conditioning Compressor and Clutch	9004	8-18410
Air Conditioning Compressor and Clutch - For Systems with HFC-134a Refrigerant	9004	7-64390
Loader	9005	7-60200
ROPS Cab and ROPS Canopy	9006	7-60180
Seat and Seat Belts	9007	8-74271
Suspension Seat	9008	8-74280
Pedals and Levers	9009	7-59341
Cab Window Replacement	9010	7-60040

LOCTITE PRODUCT CHART

Product	Color	Similar Products	Gap (In Inches)	Strength (Steel/Steel)	Working Temperature Range-Fahrenheit	Fixture/Full Cure (Steel/Steel) Time	Primer	Description
#3	Dark Brown					24 hr	N/A	Form a Gasket (works with oil, fuel or grease) Pliable
80	Yellow					Fast	N/A	Weatherstrip Adhesive
123	Clear					N/A	N/A	Parts Cleaner Fluid
220	Blue	290	0.003	57/143 in lbs	-65 to +250	6 min/24 hrs	747	Wicking Threadlocker
221	Purple	222	0.005	75/44 in lbs	-65 to +300	2 min/24 hrs	747	Low Strength Threadlocker
222	Purple		0.005	53/30 in lbs	-65 to +300	20 min/24 hrs	764	Low Strength Threadlocker (Small Screws)
225	Brown	222	0.010	45/25 in lbs	-65 to +300	7 min/24 hrs	747	Low Strength Threadlocker
242	Blue		0.005	80/50 in lbs	-65 to +300	10 min/24 hrs	764	Medium Strength Threadlocker
262	Red	271	0.005	160/190 in lbs	-65 to +300	5 min/24 hrs	747	High Strength Threadlocker
270	Green	271	0.007	160/320 in lbs	-65 to +300	3 min/24 hrs	747	High Strength Threadlocker
271	Red	262	0.007	160/320 in lbs	-65 to +300	10 min/24 hrs	764	High Strength Threadlocker
272	Red	620	0.007	180/220 in lbs	-65 to +450	30 min/24 hrs	764	High Temperature, High Strength
275	Green	277	0.010	210/300 in lbs	-65 to +300	3 min/24 hrs	747	High Strength Threadlocker
277	Red		0.010	225/300 in lbs	-65 to +300	60 min/24 hrs	764	High Strength Threadlocker
290	Green		0.003	85/350 in lbs	-65 to +300	6 min/24 hrs	764	Wicking Threadlocker
*404	Clear	495	0.006	3200 psi	-65 to +180	30 sec/24 hrs	NA	Instant Adhesive
*406	Clear		0.004	3200 psi	-65 to +180	15 sec/24 hrs	N/A	Surface Insensitive Adhesive
*409	Clear	454	0.008	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gel Instant Adhesive
*414	Clear		0.006	2500 psi	-65 to +180	30 sec/24 hr	N/A	Instant Adhesive
*415	Clear	454	0.010	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gap Filling Instant Adhesive (Metals)
*416	Clear	454	0.010	2500 psi	-65 to +180	50 sec/24 hrs	N/A	Gap Filling Instant Adhesive (Plastics)
*420	Clear		0.002	2500 psi	-65 to +180	15 sec/24 hrs	N/A	Wicking Instant Adhesive
*422	Clear	454	0.020	2800 psi	-65 to +180	60 sec/24 hrs	N/A	Gap Filling Instant Adhesive
*430	Clear		0.005	2500 psi	-65 to +180	20 sec/24 hrs	N/A	Metal Bonding Adhesive
*445	White/Black		0.250	2000 psi	-65 to +180	5 min/24 hrs	N/A	Fast Setting 2 Part Epoxy
*454	Clear		0.010	3200 psi	-65 to +180	15 sec/24 hrs	N/A	Surface Insensitive Gen Instant Adhesive
*495	Clear		0.004	2500 psi	-65 to +180	20 sec/24 hrs	N/A	General Purpose Instant Adhesive
*496	Clear		0.005	2500 psi	-65 to +180	20 sec/24 hrs	N/A	Metal Bonding Adhesive
504	Brt Orange	515	0.030	750 psi	-65 to +300	90 min/24 hrs	None	Rigid Gasket Eliminator
509	Light Blue		0.020	750 psi	-65 to +320	6 hr/72 hrs	764	Flange Sealant
510	Red		0.020	1000 psi	-65 to +400	30 min/24 hrs	764	High Temperature, Gasket Eliminator
515	Purple		0.010	750 psi	-65 to +300	1 hr/24 hrs	764	Gasket Eliminator 515

Rac 8-98902

* Products 404-496 (except for #445) are all instant adhesives (super glues) they differ mostly in viscosity

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LOCTITE PRODUCT CHART

Product	Color	Similar Products	Gap (In Inches)	Strength (Steel/Steel)	Working Temperature Range-Fahrenheit	Fixture/Full Cure (Steel/Steel) Time	Primer	Description
518	Red	515	0.030	500psi	-65 to +300	1 hr/24 hrs	764	Gasket Eliminator 518 for Aluminum
542	Brown	569	N/A	132/92 in lbs	-65 to +300	2 hr/24 hrs	747	Hydraulic Sealant
545	Purple		N/A	25/20 in lbs	-65 to +300	4 hr/24 hrs	747	Low Strength Pneumatic/Hydraulic Sealant
549	Orange	504	0.020	2500 psi	-65 to +300	2 hr/24 hrs	747	Instant Seal Plastic Gasket
554	Red	277	0.015	240/240 in lbs	-65 to +300	2 to 4 hrs/24 hrs	764	Refrigerant Sealant
567	White	592	N/A	500 psi	-65 to +400	4 hrs/24 hrs	764	Pipe Sealant for Stainless Steel
568	Orange	277	0.015	2500 psi	-65 to +300	12 hrs/24 hrs	764	Plastic Gasket
569	Brown	545	0.010	40/25 in lbs	-65 to +300	1 hr/24 hrs	764	Hydraulic Sealant
570	Brown	592	N/A	25/40 in lbs	-65 to +300	6 hrs/72 hrs	764	Steam Sealant
571	Brown	592	0.015	40/20 in lbs	-65 to +300	2 to 4 hrs/24 hrs	764	Pipe Sealant
572	White	578.575	N/A	80/27 in lbs	-65 to +300	24 hrs/72 hrs	None	Gasketing
592	White		0.020	500 psi	-65 to +400	4 hrs/72 hrs	736	Pipe Sealant with Teflon
593	Black		0.250	400 psi	-95 to +400	30 min/24 hrs	N/A	RTV Silicone
601	Green	609	0.005	3000 psi	-65 to +300	10 min/24 hrs	764	Current PIN #609
609	Green		0.005	3000 psi	-65 to +300	10 min/24 hrs	764	General Purpose Retaining Compound
620	Green	640	0.015	3000 psi	-65 to +450	30 min/24 hrs	747	High Temperature Retaining Compound
635	Green	680	0.010	4000 psi	-65 to +300	1 hr/24 hrs	747	High Strength Retaining Compound
638	Green	680	0.015	4100 psi	-65 to +300	10 min/24 hrs	747	High Strength Retaining Compound
640	Green	620	0.007	3000 psi	-65 to +400	1 hr/24 hrs	747	High Temperature Retaining Compound
660	Silver		0.020	3000 psi	-65 to +300	20 min/24 hrs	764	Quick Metal
675	Green	609	0.005	3000 psi	-65 to +300	20 min/24 hrs	747	General Purpose Retaining Compound
680	Green	635	0.015	4000 psi	-65 to +300	10 min/24 hrs	747	High Strength Retaining Compound
706	Clear	755	N/A	N/A	N/A	N/A	N/A	Cleaning Solvent
707	Amber		N/A	N/A	N/A	N/A	N/A	Activator for Structural Adhesives
736	Amber		N/A	N/A	N/A	N/A	N/A	Primer NF
738	Amber		N/A	N/A	N/A	N/A	N/A	Depend Activator
747	Yellow	N/A	N/A	N/A	N/A	N/A	N/A	Primer T
751	Clear		N/A	N/A	N/A	N/A	N/A	Activator for Structural Adhesives
755	Clear		N/A	N/A	N/A	N/A	N/A	Cleaning Solvent
764	Green		N/A	N/A	N/A	N/A	N/A	Primer N
767	Silver		N/A	N/A	-65 to +1600	N/A	N/A	Anti-Seize Lubricant

1001


STANDARD TORQUE SPECIFICATIONS


TABLE OF CONTENTS

Torque Specifications - Decimal Hardware	1001-2	Torque Specifications - Steel Hydraulic Fittings	1001-4
Torque Specifications - Metric Hardware ...	1001-3	Torque Specifications - O-ring Face Seal Fittings	1001-5

TORQUE SPECIFICATIONS - DECIMAL HARDWARE

Use the torques in this chart when special torques are not given. These torques apply to fasteners with both UNC and UNF threads as received from suppliers, dry, or when lubricated with engine oil. Not applicable if special graphites, molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs		
		
Size	Pound-Feet	Newton metres
1/4 in	9-11	12-15
5/16 in	17-21	23-28
3/8 in	35-42	48-57
7/16 in	54-64	73-87
1/2 in	80-96	109-130
9/16 in	110-132	149-179
5/8 in	150-180	203-244
3/4 in	270-324	366-439
7/8 in	400-480	542-651
1.0 in	580-696	787-944
1-1/8 in	800-880	1085-1193
1-1/4 in	1120-1240	1519-1681
1-3/8 in	1460-1680	1980-2278
1-1/2 in	1940-2200	2631-2983


Grade 8 Bolts, Nuts, and Studs		
		
Size	Pound-Feet	Newton metres
1/4 in	12-15	16-20
5/16 in	24-29	33-39
3/8 in	45-54	61-73
7/16 in	70-84	95-114
1/2 in	110-132	149-179
9/16 in	160-192	217-260
5/8 in	220-264	298-358
3/4 in	380-456	515-618
7/8 in	600-720	814-976
1.0 in	900-1080	1220-1465
1-1/8 in	1280-1440	1736-1953
1-1/4 in	1820-2000	2468-2712
1-3/8 in	2380-2720	3227-3688
1-1/2 in	3160-3560	4285-4827


NOTE: Use thick nuts with Grade 8 bolts.

TORQUE SPECIFICATIONS - METRIC HARDWARE

Use the following torques when special torques are not given.

These values apply to fasteners with coarse threads as received from supplier, plated or unplated, or when lubricated with engine oil. These values do not apply if graphite or molydisulfide grease or oil is used.

Grade 8.8 Bolts, Nuts, and Studs		
		
Size	Pound-Feet	Newton metres
M4	2-3	3-4
M5	5-6	6.5-8
M6	8-9	10.5-12
M8	19-23	26-31
M10	38-45	52-61
M12	66-79	90-107
M14	106-127	144-172
M16	160-200	217-271
M20	320-380	434-515
M24	500-600	675-815
M30	920-1100	1250-1500
M36	1600-1950	2175-2600

Grade 10.9 Bolts, Nuts, and Studs		
		
Size	Pound-Feet	Newton metres
M4	3-4	4-5
M5	7-8	9.5-11
M6	11-13	15-17.5
M8	27-32	37-43
M10	54-64	73-87
M12	93-112	125-15
M14	149-179	200-245
M16	230-280	310-380
M20	450-540	610-730
M24	780-940	1050-1275
M30	1470-1770	2000-2400
M36	2580-3090	3500-4200

Grade 12.9 Bolts, Nuts, and Studs



Usually the torque values specified for grade 10.9 fasteners can be used satisfactorily on grade 12.9 fasteners.

TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS

Tube OD Hose ID	Thread Size	Pound- Feet	Newton metres
37 Degree Flare Fittings			
1/4 in 6.4 mm	7/16-20	6-12	8-16
5/16 in 7.9 mm	1/2-20	8-16	11-21
3/8 in 9.5 mm	9/16-18	10-25	14-33
1/2 in 12.7 mm	3/4-16	15-42	20-56
5/8 in 15.9 mm	7/8-14	25-58	34-78
3/4 in 19.0 mm	1-1/16-12	40-80	54-108
7/8 in 22.2 mm	1-3/16-12	60-100	81-135
1.0 in 25.4 mm	1-5/16-12	75-117	102-158
1-1/4 in 31.8 mm	1-5/8-12	125-165	169-223
1-1/2 in 38.1 mm	1-7/8-12	210-250	285-338

Tube OD Hose ID	Thread Size	Pound- Feet	Newton metres
Straight Threads with O-ring			
1/4 in 6.4 mm	7/16-20	12-19	16-25
5/16 in 7.9 mm	1/2-20	16-25	22-23
3/8 in 9.5 mm	9/16-18	25-40	34-54
1/2 in 12.7 mm	3/4-16	42-67	57-90
5/8 in 15.9 mm	7/8-14	58-92	79-124
3/4 in 19.0 mm	1-1/16-12	80-128	108-174
7/8 in 22.2 mm	1-3/16-12	100-160	136-216
1.0 in 25.4 mm	1-5/16-12	117-187	159-253
1-1/4 in 31.8 mm	1-5/8-12	165-264	224-357
1-1/2 in 38.1 mm	1-7/8-12	250-400	339-542

Split Flange Mounting Bolts		
Size	Pound- Feet	Newton metres
5/16-18	15-20	20-27
3/8-16	20-25	26-33
7/16-14	35-45	47-61
1/2-13	55-65	74-88
5/8-11	140-150	190-203

TORQUE SPECIFICATIONS - O-RING FACE SEAL FITTING

Nom. SAE Dash Size	Tube OD	Thread Size	Pound-Feet	Newton Metres	Thread Size	Pound-Feet	Newton Metres
O-ring Face Seal End					O-ring Boss End Fitting or Locknut		
-4	1/4 in 6.4 mm	9/16-18	10-12	14-16	7/16-20	17-20	23-27
-6	3/8 in 9.5 mm	11/16-16	18-20	24-27	9/16-18	25-30	33-40
-8	1/2 in 12.7 mm	13/16-16	32-40	43-54	3/4-16	45-50	61-68
-10	5/8 in 15.9 mm	1-14	46-56	60-75	7/8-14	60-65	81-88
-12	3/4 in 19.0 mm	1-3/16-12	65-80	90-110	1-1/16-12	85-90	115-122
-14	7/8 in 22.2 mm	1-3/16-12	65-80	90-110	1-3/16-12	95-100	129-136
-16	1.0 in 25.4 mm	1-7/16-12	92-105	125-140	1-5/16-12	115-125	156-169
-20	1-1/4 in 31.8 mm	1-11/16-12	125-140	170-190	1-5/8-12	150-160	203-217
-24	1-1/2 in 38.1 mm	2-12	150-180	200-254	1-7/8-12	190-200	258-271

Section 1002

1002

FLUIDS AND LUBRICANTS

821B Loaders

TABLE OF CONTENTS

Capacities and Lubricants	2
Engine Oil Recommendations	3
Maintenance Schedule.....	4

CAPACITIES AND LUBRICANTS

Engine Oil	
Capacity with Filter Change	22 U.S. Quarts (20.8 Litres)
Type of Oil	See Engine Oil Recommendations on Page 3
Engine Cooling System	
Capacity.....	34 U.S. Quarts (32.1 Litres)
Type of Coolant.....	Ethylene Glycol and Water Mixed for Lowest Ambient Temperature at Least 50/50 Mix
Fuel Tank	
Capacity.....	72 U.S. Gallons (272.7 Litres)
Hydraulic System	
Hydraulic Reservoir Refill Capacity	23.8 U.S. Gallons (90.1 Litres)
Total System Capacity	46 U.S. Gallons (174.2 Litres)
Type of Oil	Case TCH Fluid
Transmission	
Total System Capacity	7 U.S. Gallons (26.5 Litres)
Oil Change with Filter	3.25 U.S. Gallons (12.3 Litres)
Type of Oil	Case Number 1 Engine Oil SAE (10W30)
Axles	
Capacity of Center Bowl	
821B Front	20.0 Quarts (18.9 Litres) 135H EP Plus 4 Pints (1.9 Litres) B91426
821B Rear	14.5 Quarts (13.7 Litres) 135H EP Plus 3 Pints (1.4 Litres) B91426
Capacity of Planetary (each)	
821B Front	6.5 Quarts (6.0 Litres) 135H EP
821B Rear	6.0 Quarts (5.5 Litres) 135H EP
Gear Lubricant.....	Case (MS1316) 135H EP (SAE 85W-140)
Limited Slip Additive	Case B91246
Brake System	
Type of Fluid (Same as Hydraulic System)	CASE TCH Fluid

ENGINE LUBRICATION

Engine Oil Selection

Case No. 1 Engine Oil is recommended for use in your Case Engine. Case Engine Oil will lubricate your engine correctly under all operating conditions.

If Case No. 1 Multi-Viscosity or Single Viscosity Engine Oil is not available, use only oil meeting API engine oil service category CE.



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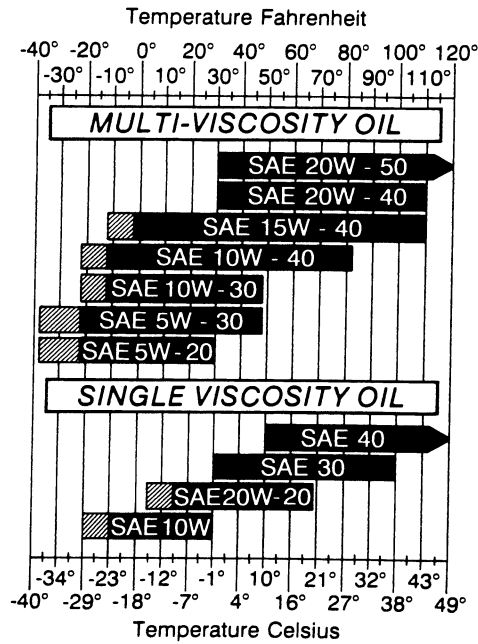


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See the chart below for recommended viscosity at ambient air temperature ranges.

NOTE: Do not put Performance Additives or other oil additive products in the engine crankcase. The oil change intervals given in this manual are according to tests with Case lubricants.

Oil Viscosity / Temperature Ranges



1036L0

MAINTENANCE SCHEDULE

MODEL 821B LOADER

INSTRUCTIONS

AS REQUIRED

- 22 SERVICE THE AIR CLEANER IF THE AIR CLEANER WARNING LAMP ILLUMINATES SEE OPERATORS MANUAL
 7 REPLACE THE HYDRAULIC FILTERS IF THE HYDRAULIC FILTER WARNING LAMP ILLUMINATES USE CASE FILTERS
 21 CHECK THE FAN BELT CONDITION REPLACE AS REQUIRED
 CHECK THE AIR CONDITIONING DRIVE TENSION (IF EQUIPPED) NOT SHOWN ADJUST AS REQUIRED
 8 SERVICE AIR CLEANER PRECLEANER SEE OPERATORS MANUAL

EVERY 10 HOURS OF OPERATION OR EACH DAY - WHICHEVER OCCURS FIRST

- 17 CHECK THE ENGINE OIL LEVEL SEE OPERATORS MANUAL

EVERY 50 HOURS OF OPERATION

- 1 CHECK THE COOLANT RESERVOIR FLUID LEVEL ETHYLENE GLYCOL AND WATER
 29 CHECK THE TRANSMISSION OIL LEVEL (ENGINE RUNNING AND OIL WARM) CASE IH NO. 1 ENGINE OIL (SAE 10W-30)
 15 CHECK THE FUEL SEDIMENT BOWL CLEAN AS REQUIRED
 6 CHECK THE HYDRAULIC RESERVOIR FLUID LEVEL CASE TCH FLUID
 16 LUBRICATE THE REAR AXLE TRUNNION PIVOTS (2 FITTINGS) CASE MOLYDISULFIDE GREASE
 10 LUBRICATE THE BUCKET PIVOT POINTS (3 FITTINGS) CASE MOLYDISULFIDE GREASE
 27 LUBRICATE THE CENTER DRIVE SHAFT SLIP JOINT (1 FITTING) CASE MOLYDISULFIDE GREASE
 26 LUBRICATE THE FRONT DRIVE SHAFT SUPPORT BEARING (1 FITTING) CASE MOLYDISULFIDE GREASE
 35 LUBRICATE THE REAR DRIVE SHAFT SLIP JOINT (1 FITTING) CASE MOLYDISULFIDE GREASE

EVERY 100 HOURS OF OPERATION

- 11 LUBRICATE THE STEERING CYLINDER PIVOTS - CLOSED END
 (2 FITTINGS) - ROD END (2 FITTINGS) CASE MOLYDISULFIDE GREASE
 9 LUBRICATE THE LOADER PIVOT POINTS (10 FITTINGS) CASE MOLYDISULFIDE GREASE

EVERY 250 HOURS OF OPERATION

- 20 CHECK THE RADIATOR COOLANT LEVEL ETHYLENE GLYCOL AND WATER
 3 CHANGE THE ENGINE OIL AND REPLACE THE ENGINE OIL FILTER SEE OPERATORS MANUAL
 34 CHECK THE BATTERY FLUID LEVEL SEE OPERATORS MANUAL
 36 CHECK THE TIRE CONDITION AND AIR PRESSURE SEE OPERATORS MANUAL
 12 LUBRICATE THE FOOT THROTTLE PIVOT (1 FITTING) CASE MOLYDISULFIDE GREASE
 13 CLEAN THE CAB AIR FILTERS (IF EQUIPPED) SEE OPERATORS MANUAL
 2 REPLACE THE ENGINE COOLING SYSTEM FILTER USE CASE FILTER A77544

EVERY 500 HOURS OF OPERATION

- 4 REPLACE THE FUEL FILTERS USE CASE FILTERS
 33 DRAIN WATER AND SEDIMENT FROM THE FUEL TANK SEE OPERATORS MANUAL
 CHECK ROPS AND SEAT BELT MOUNTING BOLTS (TIGHTEN AS NECESSARY) SEE OPERATORS MANUAL

EVERY 1000 HOURS OF OPERATION

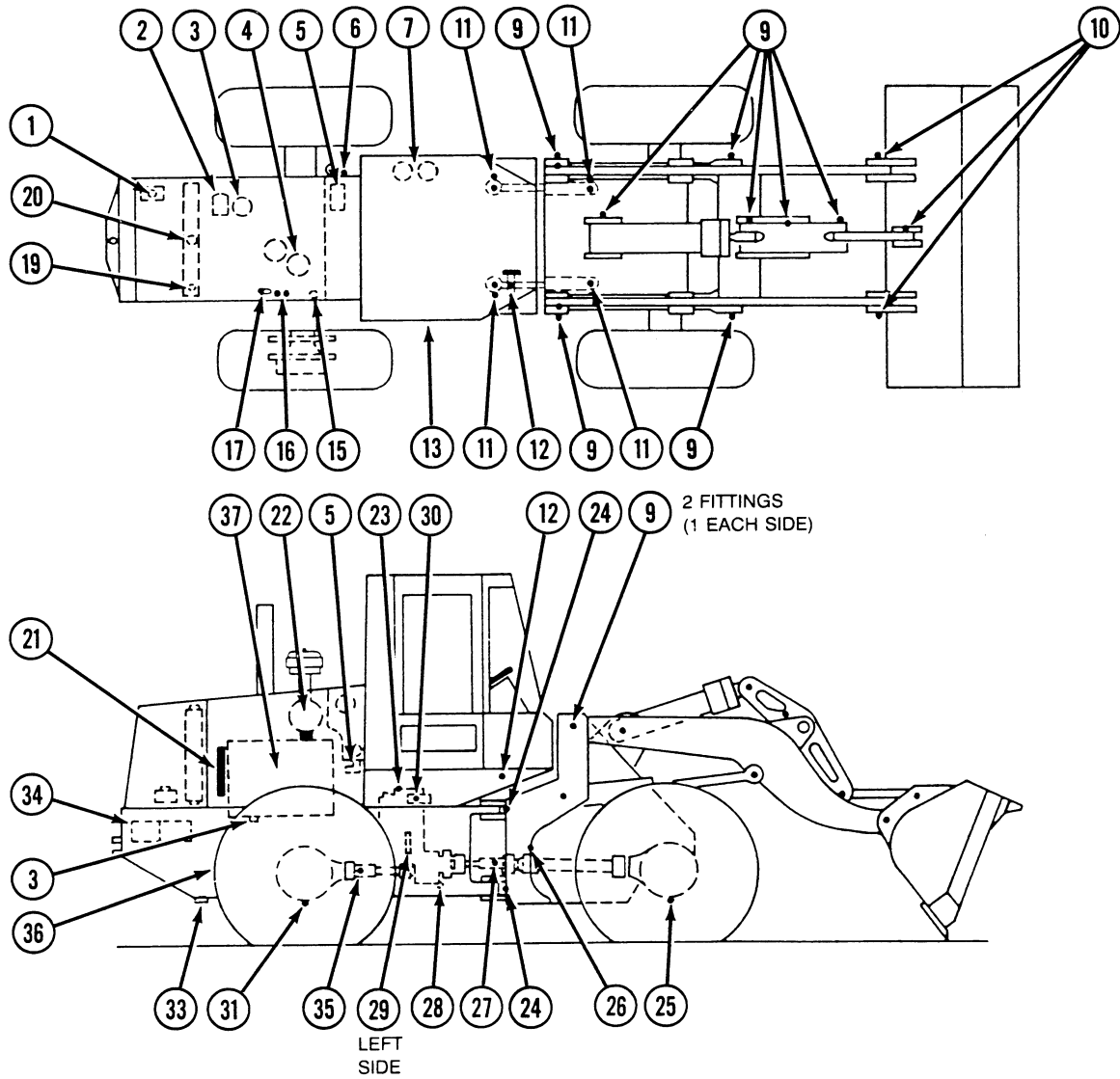
- 37 CHECK THE ENGINE VALVE CLEARANCES SEE SERVICE MANUAL
 7 REPLACE THE HYDRAULIC FILTERS USE CASE FILTERS
 30 REPLACE THE TRANSMISSION OIL FILTER USE CASE FILTERS
 28 CHANGE THE TRANSMISSION OIL CASE IH NO. 1 ENGINE OIL (SAE 10W-30)
 23 CLEAN THE TRANSMISSION BREATHER CLEAN WITH SOLVENT
 24 LUBRICATE THE UPPER AND LOWER CHASSIS PIVOTS (2 FITTINGS) CASE MOLYDISULFIDE GREASE
 25 CHANGE THE FRONT AXLE DIFFERENTIAL AND PLENEATRY OIL CASE IH 135-H EP GEAR LUBRICANT (SAE 85W-140)
 31 CHANGE THE REAR AXLE DIFFERENTIAL AND PLANETARY OIL CASE IH 135-H EP GEAR LUBRICANT (SAE 85W-140)

EVERY 2000 HOURS OF OPERATION OR EACH YEAR - WHICHEVER OCCURS FIRST

- 5 CHANGE THE HYDRAULIC OIL AND CLEAN THE SCREEN CASE TCH FLUID
 19 DRAIN, FLUSH AND REFILL THE ENGINE COOLING SYSTEM ETHYLENE GLYCOL AND WATER
 22 REPLACE THE AIR CLEANER ELEMENTS USE CASE FILTERS

NOTE: WHEN YOU DRAIN, FLUSH AND REFILL THE ENGINE COOLING SYSTEM, REPLACE THE A77544 COOLANT FILTER AND ADD ONE CONTAINER (1 PINT) 331-509 COOLING SYSTEM TREATMENT.

MAINTENANCE SCHEDULE MODEL 821B LOADER



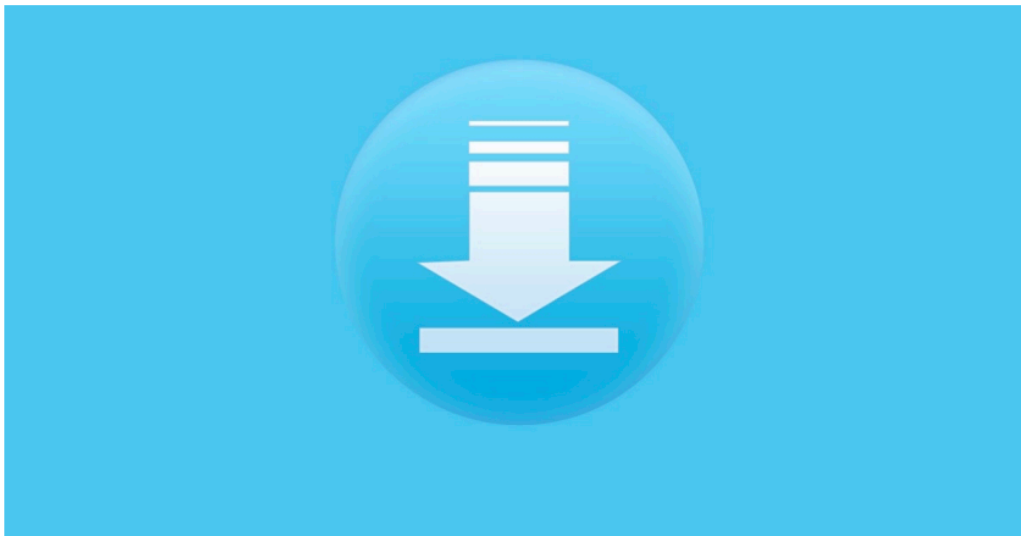
589L92

IF YOU OPERATE THE MACHINE IN SEVERE CONDITIONS, LUBRICATE AND SERVICE THE MACHINE MORE FREQUENTLY. IT IS RECOMMENDED THAT YOU SEE YOUR CASE DEALER FOR INFORMATION ON THE SYSTEMGARD LUBRICATION ANALYSIS SYSTEM.

SEE YOUR OPERATORS MANUAL FOR MAINTENANCE OF SAFETY RELATED ITEMS AND FOR DETAILED INFORMATION OF THE SERVICE ITEMS ON THIS CHART. OPERATORS AND SERVICE MANUALS ARE AVAILABLE FOR THIS MACHINE FROM YOUR JI CASE DEALER.

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Section 2001

ENGINE REMOVAL AND INSTALLATION
AND
RADIATOR REMOVAL AND INSTALLATION

821B

TABLE OF CONTENTS

SPECIFICATIONS.....2

SPECIAL TOOLS.....2

RADIATOR REMOVAL.....3

RADIATOR INSTALLATION.....7

ENGINE REMOVAL.....11

ENGINE INSTALLATION.....27

SPECIFICATIONS

Special Torque

- Bolt that fastens the engine support bracket to the rear frame..... 270 to 324 pound-feet (366 to 439 Nm)
- Allen head screws that fasten the flex plates to the flywheel..... 360 to 408 pound-inches (41 to 46 Nm)
- Cap screws that fasten the transmission to the flywheel housing..... 480 to 528 pound-inches (54 to 60 Nm)
- Cap screws that fasten the fan to the engine..... 480 to 528 pound-inches (54 to 60 Nm)
- Inside nuts on the studs for more than one counterweight..... 175 to 225 pound-feet (237 to 305 Nm)
- Outside nuts on the studs for more than one counterweight..... 550 to 650 pound-feet (745 to 881 Nm)
- Nuts on the bolts that fasten a single counterweight..... 600 pound-feet (813 Nm)

Belt Tension for the Air Conditioner Compressor

- New belt tension..... 100 pounds (45 kg)
- Used belt tension..... 90 pounds (41 kg)

Cooling System Capacity..... 34 U.S. quarts (32.2 litres) of coolant

SPECIAL TOOLS

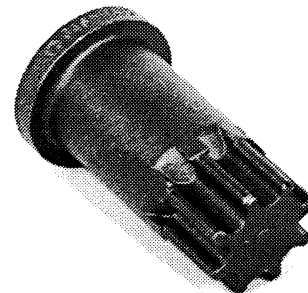
Order special tools from one of the following addresses:

In the U.S.A. and Canada

OTC Division SRX Corp
655 Eisenhaer Dr.
Owatonna, Minnesota 55060

In Europe

VL Churchill Ltd.
P.O. Box 3, Daventry
Northants, NN11 4NF
England



B430842M

CAS-1690 Tool Used To Rotate the Flywheel

This tool is first used on Page 25.