

“L” Series Loader Backhoe Family Service Manual

Product: Case L Series Backhoe Loader Family Service Repair Manual 7-48854
 Full Download: <https://www.arepairmanual.com/downloads/case-l-series-backhoe-loader-family-service-repair-manual-7-48854/>

Table of Contents

Description	Section No.	Form No.
General		Tab 1
Section Index - General		7-48860
Standard Torque Specifications	1001	8-71601
Fluids and Lubricants	1002	7-48632
Loctite Product Chart		8-98900
Engines		Tab 2
Section Index - Engines		7-48870
Engine and Radiator Removal and Installation	2000	7-49650
Stall Tests	2002	7-49320
Specification Details	2402	8-24164
Aftercooler	2411	7-43511
Cylinder Head and Valve Train	2415	8-24174
Cylinder Block	2425	8-24184
Lubrication System	2445	8-24194
Cooling System	2455	8-24204
Turbocharger	2465	8-25551
Turbocharger Failure Analysis	2565	9-78235
Fuel System		Tab 3
Section Index - Fuel System		7-48880
Fuel System and Filters	3410	8-24212
Fuel Injectors	3413	8-24234
CAV Fuel Injection Pump	3414	7-37132
Bosch Fuel Injection Pump	3415	8-37142
Electrical		Tab 4
Section Index - Electrical		7-48890
Removal and Installation of Electrical Components	4000	7-49430
Electrical Specifications and Troubleshooting	4001	7-48642
Batteries	4003	8-49440
Starter and Starter Solenoid	4004	7-48740
Instrument Cluster	4005	7-49560
Alternator	4007	7-49250

CASE CORPORATION
 700 STATE STREET
 RACINE, WI 53404 U.S.A.

Reprinted

Sample of manual. Download All 1468 pages at:

<https://www.arepairmanual.com/downloads/case-l-series-backhoe-loader-family-service-repair-manual-7-48854/>

CASE CANADA CORPORATION
 3350 SOUTH SERVICE ROAD
 BURLINGTON, ON L7N 3M6 CANADA

Buy 7-48854

Copyright © 1996 Case Corporation
 Printed in U.S.A.
 Issued October 1996

Table of Contents

Description	Section No.	Form No.
Steering		
	Tab 5	
Section Index - Steering		7-48902
Removal and Installation of Steering Components	5000	7-49450
580L - Steering Specifications, Pressure Checks and Troubleshooting	5001	7-48650
580 Super L and 590 Super L - Steering Specifications, Pressure Checks and Troubleshooting	5001	7-49000
Steering Control Valve	5002	7-49461
Steering Cylinders	5003	7-49470
Front Axle - Two Wheel Drive	5005	7-48770
Front Axle - Four Wheel Drive - 580L and 580 Super L	5006	7-49570
Front Axle - Four Wheel Drive - 590 Super L	5006	7-51060
Power Train		
	Tab 6	
Section Index - Power Train		7-48912
Removal and Installation of Power Train Components	6000	7-49580
Transmission Specifications, Pressure Checks and Troubleshooting	6002	7-48660
Wheels and Tires	6003	7-49590
Rear Axle and Planetaries - 580L and 580 Super L	6004	7-48780
Rear Axle and Planetaries - 590 Super L	6004	7-51130
Transmission	6007	7-48790
Brakes		
	Tab 7	
Section Index - Brakes		7-48921
Removal and Installation of Brake Components	7000	7-49600
Master Cylinder	7003	7-49490
Hydraulics		
	Tab 8	
Section Index - Hydraulics		7-48933
Removal and Installation of Hydraulic Components	8001	7-49630
580L - Hydraulic Specifications, Troubleshooting, and Pressure Checks	8002	7-49011
580 Super L and 590 Super L Hydraulic Specifications, Troubleshooting, and Pressure Checks	8002	7-48672
Cleaning the Hydraulic System	8003	7-49640
Hydraulic Pump - 580L	8004	7-49170
Hydraulic Pump - 580 Super L and 590 Super L	8004	7-49180
Loader Control Valve	8005	7-49191
Cylinders	8006	7-49200
Backhoe Control Valve - 580L	8007	7-50760
Backhoe Control Valve - 580 Super L and 590 Super L	8007	7-49210
Auxiliary Control Valve	8008	7-51670
Accumulator for Machines with Optional Ride Control	8009	7-52450
Solenoid Valve for Machines with Optional Ride Control	8010	7-52460

Sample of manual. Download All 1468 pages at:

<https://www.arepairmanual.com/downloads/case-l-series-backhoe-loader-family-service-repair-manual-7-48854/>

"L" Series Loader Backhoe Family Service Manual

Table of Contents

Description	Section No.	Form No.
Mounted Equipment	Tab 9	
Section Index - Mounted Equipment		7-48942
Pedals and Levers	9001	7-48680
Air Conditioning Troubleshooting For Systems With R-134a Refrigerant	9002	7-50091
Air Conditioning System Gauges and Testing For Systems With R-134a Refrigerant	9003	7-50901
Air Conditioning System Service For Systems With R-134a Refrigerant	9004	7-51030
Air Conditioning Components Service For Systems With R-134a Refrigerant	9005	7-51050
Loader	9006	7-49510
ROPS Cab and Canopy	9007	7-49520
Backhoe	9008	7-49530
Seat and Seat Belts	9009	7-49540
Hydraulic and Electrical Schematic Foldout (580L)	In Rear Pocket	7-48712
Hydraulic and Electrical Schematic Foldout (580 Super L and 590 Super L)	In Rear Pocket	7-48722

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

Printed in U.S.A.

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

SECTION INDEX - GENERAL

Section Title

Section Number

Standard Torque Specifications 1001

Fluids and Lubricants 1002

Loctite Product Chart

Section 1001

STANDARD TORQUE SPECIFICATIONS

CASE CORPORATION
700 State Street
Racine, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 South Service Road
Burlington, ON L7N 3M6 CANADA

Rac 8-71601

© 1994 Case Corporation
Printed in U.S.A.
Issued November, 1991

TABLE OF CONTENTS

TORQUE SPECIFICATIONS - DECIMAL HARDWARE 2

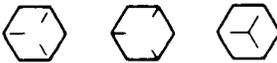
TORQUE SPECIFICATIONS - METRIC HARDWARE 3

TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS 4

TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS 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 graphities, Molydisulfide greases, or other extreme pressure lubricants are used.

Grade 5 Bolts, Nuts, and Studs		
		
Size	Pound-Inches	Newton metres
1/4 inch	108 to 132	12 to 15
5/16 inch	204 to 252	23 to 28
3/8 inch	420 to 504	48 to 57
Size	Pound-Feet	Newton metres
7/16 inch	54 to 64	73 to 87
1/2 inch	80 to 96	109 to 130
9/16 inch	110 to 132	149 to 179
5/8 inch	150 to 180	203 to 244
3/4 inch	270 to 324	366 to 439
7/8 inch	400 to 480	542 to 651
1.0 inch	580 to 696	787 to 944
1-1/8 inch	800 to 880	1085 to 1193
1-1/4 inch	1120 to 1240	1519 to 1681
1-3/8 inch	1460 to 1680	1980 to 2278
1-1/2 inch	1940 to 2200	2631 to 2983

Grade 8 Bolts, Nuts, and Studs		
		
Size	Pound-Inches	Newton metres
1/4 inch	144 to 180	16 to 20
5/16 inch	288 to 348	33 to 39
3/8 inch	540 to 648	61 to 73
Size	Pound-Feet	Newton metres
7/16 inch	70 to 84	95 to 114
1/2 inch	110 to 132	149 to 179
9/16 inch	160 to 192	217 to 260
5/8 inch	220 to 264	298 to 358
3/4 inch	380 to 456	515 to 618
7/8 inch	600 to 720	814 to 976
1.0 inch	900 to 1080	1220 to 1465
1-1/8 inch	1280 to 1440	1736 to 1953
1-1/4 inch	1820 to 2000	2468 to 2712
1-3/8 inch	2380 to 2720	3227 to 3688
1-1/2 inch	3160 to 3560	4285 to 4827

NOTE: Use thick nuts with Grade 8 bolts.

TORQUE SPECIFICATIONS - METRIC HARDWARE

Use the following torques when specifications 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-Inches	Newton metres
M4	24 to 36	3 to 4
M5	60 to 72	7 to 8
M6	96 to 108	11 to 12
M8	228 to 276	26 to 31
M10	456 to 540	52 to 61
Size	Pound-Feet	Newton metres
M12	66 to 79	90 to 107
M14	106 to 127	144 to 172
M16	160 to 200	217 to 271
M20	320 to 380	434 to 515
M24	500 to 600	675 to 815
M30	920 to 1100	1250 to 1500
M36	1600 to 1950	2175 to 2600

Grade 10.9 Bolts, Nuts, and Studs		
		
Size	Pound-Inches	Newton metres
M4	36 to 48	4 to 5
M5	84 to 96	9 to 11
M6	132 to 156	15 to 18
M8	324 to 384	37 to 43
Size	Pound-Feet	Newton metres
M10	54 to 64	73 to 87
M12	93 to 112	125 to 150
M14	149 to 179	200 to 245
M16	230 to 280	310 to 380
M20	450 to 540	610 to 730
M24	780 to 940	1050 to 1275
M30	1470 to 1770	2000 to 2400
M36	2580 to 3090	3500 to 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- Inches	Newton metres
37 Degree Flare Fitting			
1/4 inch 6.4 mm	7/16-20	72 to 144	8 to 16
5/16 inch 7.9 mm	1/2-20	96 to 192	11 to 22
3/8 inch 9.5 mm	9/16-18	120 to 300	14 to 34
1/2 inch 12.7 mm	3/4-16	180 to 504	20 to 57
5/8 inch 15.9 mm	7/8-14	300 to 696	34 to 79
Tube OD Hose ID	Thread Size	Pound- Inches	Newton metres
3/4 inch 19.0 mm	1-1/16-12	40 to 80	54 to 108
7/8 inch 22.2 mm	1-3/16-12	60 to 100	81 to 135
1.0 inch 25.4 mm	1-5/16-12	75 to 117	102 to 158
1-1/4 inch 31.8 mm	1-5/8-12	125 to 165	169 to 223
1-1/2 inch 38.1 mm	1-7/8-12	210 to 250	285 to 338

Tube OD Hose ID	Thread Size	Pound- Inches	Newton metres
Straight Threads with O-ring			
1/4 inch 6.4 mm	7/16-20	144 to 228	16 to 26
5/16 inch 7.9 mm	1/2-20	192 to 300	22 to 34
3/8 inch 9.5 mm	9/16-18	300 to 480	34 to 54
1/2 inch 12.7 mm	3/4-16	540 to 804	57 to 91
Tube OD Hose ID	Thread Size	Pound- Inches	Newton metres
5/8 inch 15.9 mm	7/8-14	58 to 92	79 to 124
3/4 inch 19.0 mm	1-1/16-12	80 to 128	108 to 174
7/8 inch 22.2 mm	1-3/16-12	100 to 160	136 to 216
1.0 inch 25.4 mm	1-5/16-12	117 to 187	159 to 253
1-1/4 inch 31.8 mm	1-5/8-12	165 to 264	224 to 357
1-1/2 inch 38.1 mm	1-7/8-12	250 to 400	339 to 542

Split Flange Mounting Bolts		
Size	Pound- Inches	Newton metres
5/16-18	180 to 240	20 to 27
3/8-16	240 to 300	27 to 34
7/16-14	420 to 540	47 to 61
Size	Pound- Feet	Newton metres
1/2-13	55 to 65	74 to 88
5/8-11	140 to 150	190 to 203

TORQUE SPECIFICATIONS - STEEL HYDRAULIC FITTINGS

Nom. SAE Dash Size	Tube OD	Thread Size	Pound-Inches	Newton metres	Thread Size	Pound-Inches	Newton metres
O-ring Face Seal End					O-ring Boss End Fitting or Lock Nut		
-4	1/4 inch 6.4 mm	9/16-18	120 to 144	14 to 16	7/16-20	204 to 240	23 to 27
-6	3/8 inch 9.5 mm	11/16-16	216 to 240	24 to 27	9/16-18	300 to 360	34 to 41
-8	1/2 inch 12.7 mm	13/16-16	384 to 480	43 to 54	3/4-16	540 to 600	61 to 68
					Thread Size	Pound-Inches	Newton metres
-10	5/8 inch 15.9 mm	1-14	552 to 672	62 to 76	7/8-14	60 to 65	81 to 88
Nom. SAE Dash Size	Tube OD	Thread Size	Pound-Inches	Newton metres	1-1/16-12	85 to 90	115 to 122
					1-3/16-12	95 to 100	129 to 136
-12	3/4 inch 19.0 mm	1-3/16-12	65 to 80	90 to 110	1-5/16-12	115 to 125	156 to 169
-14	7/8 inch 22.2 mm	1-3/16-12	65 to 80	90 to 110	1-5/8-12	150 to 160	203 to 217
-16	1.0 inch 25.4 mm	1-7/16-12	92 to 105	125 to 140	1-7/8-12	190 to 200	258 to 271
-20	1-1/4 inch 31.8 mm	1-11/16-12	125 to 140	170 to 190			
-24	1-1/2 inch 38.1 mm	2-12	150 to 180	200 to 254			

NOTE: Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

Section 1002

1002

FLUIDS AND LUBRICANTS

CASE CORPORATION
700 STATE STREET
RACINE, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Bur 7-48632

Copyright © 1996 Case Corporation
Printed in U.S.A.
Issued October, 1996

TABLE OF CONTENTS

CAPACITIES AND LUBRICANTS	3
Conversion Formulas	3
ENGINE OIL RECOMMENDATIONS	4
AMBIENT AIR TEMPERATURE RANGES	4
DIESEL FUEL	5
Fuel Storage	5

CAPACITIES AND LUBRICANTS

Engine Oil

Capacity with Filter Change	11.6 U.S. quarts (11 litres)
Type of oil	See Engine Oil Recommendations on page 4

Engine Cooling System

Capacity without heater	16.7 U.S. quarts (15.8 litres)
Capacity with heater	17.4 U.S. quarts (16.5 litres)
Type of coolant	Ethylene glycol and water mixed for the lowest ambient temperature At least 50/50 mix

Fuel Tank

Capacity	31.4 U.S. gallons (123 litres)
Type of fuel	See diesel fuel specifications on page 5

Hydraulic System

Hydraulic reservoir refill capacity with filter change	14.4 U.S. gallons (54.5 litres)
Hydraulic reservoir refill capacity without filter change	13.9 U.S. gallons (52.6 litres)
Type of oil	Case TCH Fluid

Transmission

2 Wheel Drive

Total System	19.5 U.S. quarts (18.5 litres)
Refill with or without filter	16.9 U.S. quarts (16 litres)
Type of oil	Case Hy Tran Plus® (MS1207)

4 Wheel Drive

Total System	22 U.S. quarts (21 litres)
Refill with or without filter	19.5 U.S. quarts (18.5 litres)
Type of oil	Case Hy Tran Plus® (MS1207)

Front Axle - Four Wheel Drive - 580L and 580 Super L

Capacity of center bowl	5.8 U.S. quarts (5.5 litres)
Capacity of planetary (each)	0.75 U.S. quart (0.7 litres)
Type of oil	Case Wet Brake Lubricant® (MS 1317)

Front Axle - Four Wheel Drive - 590 Super L

Capacity of center bowl	6.9 U.S. quarts (6.5 litres)
Capacity of planetary (each)	1.05 U.S. quarts (1.0 litres)
Type of oil	Case Wet Brake Lubricant® (MS 1317)

Rear Axle - 580L and 580 Super L

Capacity of center bowl	15 U.S. quarts (14.2 litres)
Capacity of planetary (each)	1.6 U.S. quarts (1.5 litres)
Type of oil - Axle No. 114367A2 and 114367A3	Case Wet Brake Lubricant® (MS 1317)
Type of oil - Axle No. 114367A4 and After	Case Hy-Tran Plus® (MS 1207)

Rear Axle - 590 Super L

Capacity of center bowl	15 U.S. quarts (14.2 litres)
Capacity of planetary (each)	2.1 U.S. quarts (2.00 litres)
Type of oil - Axle No. 127599A2	Case Wet Brake Lubricant® (MS 1317)
Type of oil - Axle No. 127599A3 and After	Case Hy-Tran Plus® (MS 1207)

Brake Reservoir (Gets fluid automatically from the hydraulic system)

Conversion Formulas

Imperial quart = litres x 0.879877

Imperial gallon = litres x 0.219969

ENGINE OIL RECOMMENDATIONS

Case IH No.1 Engine Oil is recommended for use in your Case IH Engine. Case IH No.1 Engine Oil will lubricate your engine correctly under all operating conditions. If Case IH No. 1 Multi-Viscosity Engine Oil is not available, Case IH No. 1 Single Grade Engine Oil can be used.

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



654L9

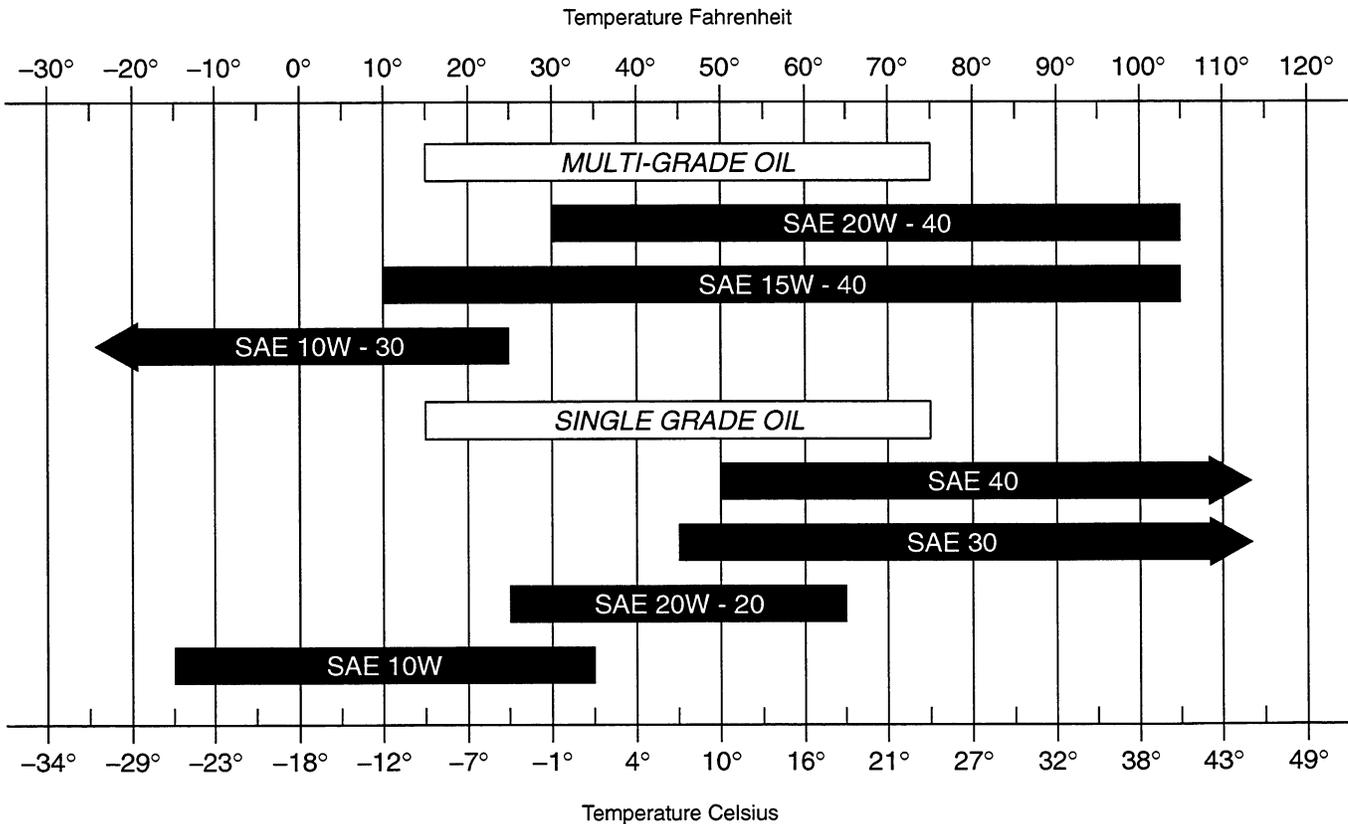
See the chart below for recommended viscosity at ambient air temperature ranges.

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



A27273

AMBIENT AIR TEMPERATURE RANGES



DIESEL FUEL

Use No. 2 diesel fuel in the engine of this machine. The use of other fuels can cause the loss of engine power and high fuel consumption.

In very cold temperatures, a mixture of No. 1 and No. 2 diesel fuels is temporarily permitted. See the following Note.

NOTE: See your fuel dealer for winter fuel requirements in your area. If the temperature of the fuel is below the cloud point (wax appearance point), wax crystals in the fuel will cause the engine to lose power or not start.

The diesel fuel used in this machine must meet the specifications in the chart below or Specification D975-81 of the American Society for Testing and Materials.

Specifications for Acceptable No. 2 Diesel Fuel

API gravity, minimum	34
Flash Point, Minimum	140°F (60°C)
Cloud point (wax appearance point), maximum	-5° F (-20° C) See Note above
Pour point, maximum	-15° F (-26° C) See Note above
Viscosity, at 100° F (88° C)	
Centistokes	2.0 to 4.3
Saybolt Seconds Universal	32 to 40

Fuel Storage

If you keep fuel in storage for a period of time, you can get foreign material or water in the fuel storage tank. Many engine problems are caused by water in the fuel.

Keep the fuel storage tank outside and keep the fuel as cool as possible. Remove water from the storage container at regular periods of time.

SECTION INDEX - ENGINES

Section Title	Section Number
Engine and Radiator Removal and Installation	2000
Stall Tests	2002
Specification Details.....	2402
Aftercooler	2411
Cylinder Head and Valve Train.....	2415
Cylinder Block.....	2425
Lubrication System	2445
Cooling System	2455
Turbocharger	2465
Turbocharger Failure Analysis	2565

CASE CORPORATION
700 STATE STREET
RACINE, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Bur 7-48870

Copyright © 1995 Case Corporation
Printed in U.S.A.
Issued May 1995

Section 2000

ENGINE AND RADIATOR REMOVAL AND INSTALLATION

CASE CORPORATION
700 STATE STREET
RACINE, WI 53404 U.S.A.

CASE CANADA CORPORATION
3350 SOUTH SERVICE ROAD
BURLINGTON, ON L7N 3M6 CANADA

Bur 7-49650

Copyright © 1995 Case Corporation
Printed in U.S.A.
Issued May 1995

2000

TABLE OF CONTENTS

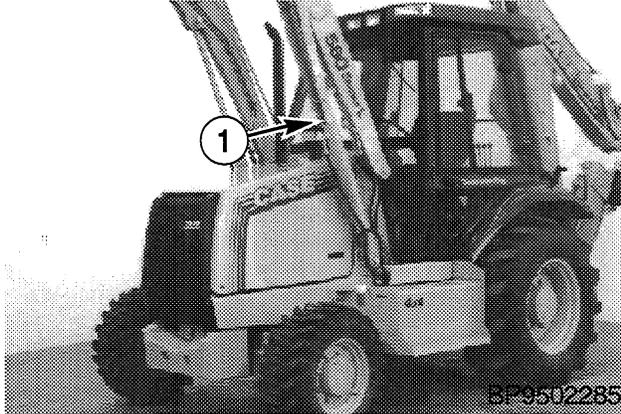
RADIATOR REMOVAL	3
ENGINE REMOVAL	6
INSTALLING THE FRONT ENGINE SUPPORT	19

NOTE: The Case Corporation reserves the right to make improvements in design or changes in specifications at any time without incurring any obligation to install them on units previously sold.

RADIATOR REMOVAL

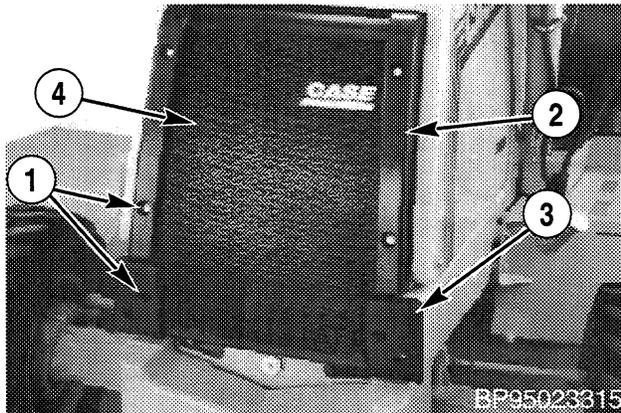
Put identification tags on all disconnected hoses and wires. Close disconnected hoses and fittings with caps and plugs.

STEP 1



Park the machine on a level surface. Raise the loader and lock the support strut (1) to hold the loader.

STEP 2

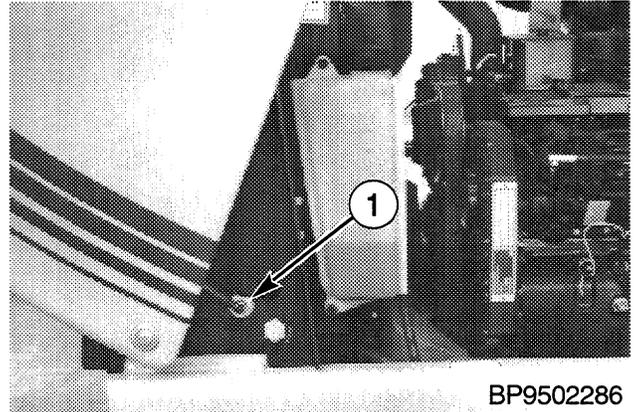


Remove the caps screws (1), upper (2) and lower bumpers (3), and the grille (4) from the front of the machine.

STEP 3

Remove the bolts, washers, and nuts from the pivot point on the hood.

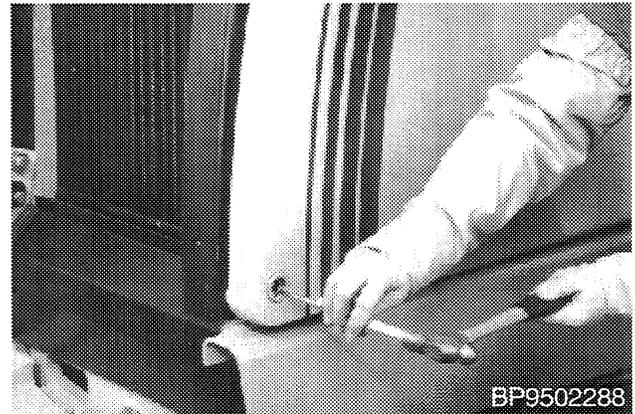
STEP 4



Have another person help with the following procedure.

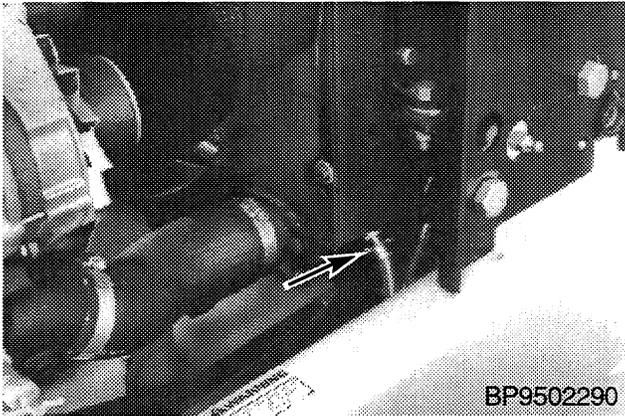
- A. Open the hood.
- B. Remove the retainers from the hood struts (1) and disconnect the hood struts from the stud.
- C. Hold the hood in place and disconnect the hood cable from the radiator shroud on the other side of the machine.
- D. Carefully lower the hood back to the closed position.

STEP 5



Drive the pivot tubes out of the hood pivot point. Remove the hood from the machine.

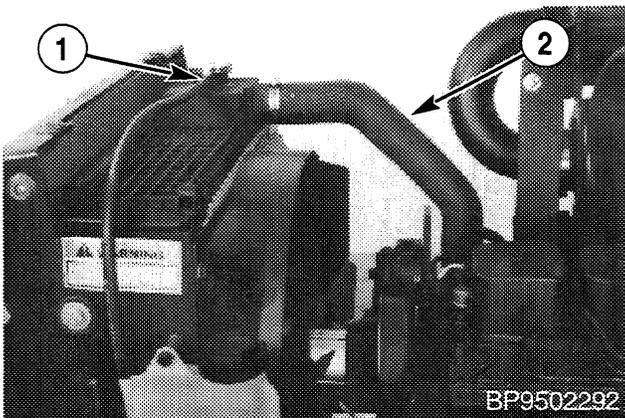
STEP 6



Slowly remove the radiator cap. Install a hose on the drain valve and drain the radiator into a clean container that holds approximately 18 U.S. quarts (17 litres).

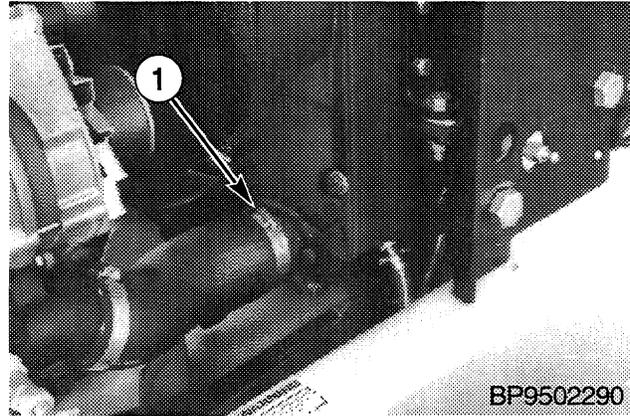
NOTE: During installation, fill the radiator and coolant reservoir completely. See Section 1002 for coolant specifications. Start and run the engine until the coolant is at operating temperature. Stop the engine and check for leakage. When the coolant is cold, check the coolant reservoir level. Add coolant as required.

STEP 7



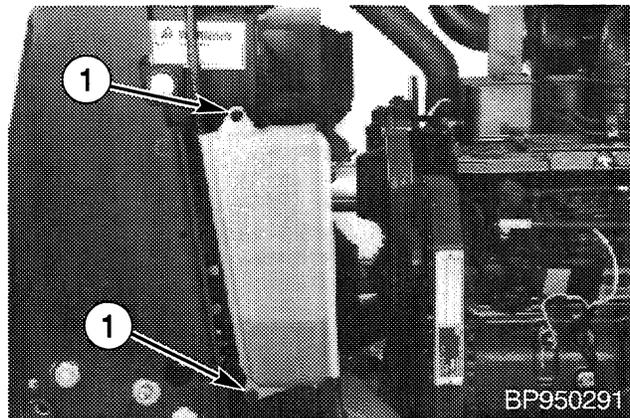
Disconnect the overflow hose (1) from the radiator neck. Loosen the clamp and disconnect the upper radiator hose (2).

STEP 8



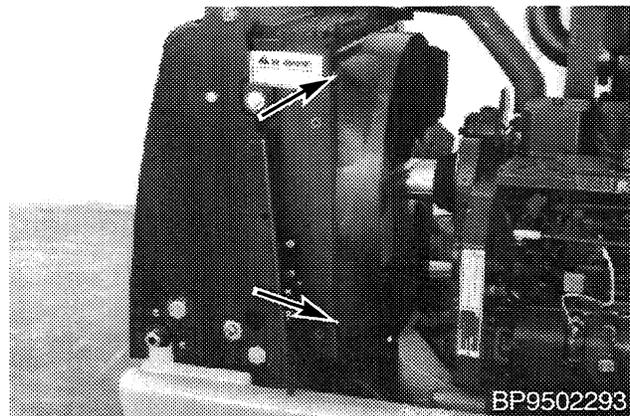
Loosen the clamp (1) and disconnect the lower radiator hose.

STEP 9

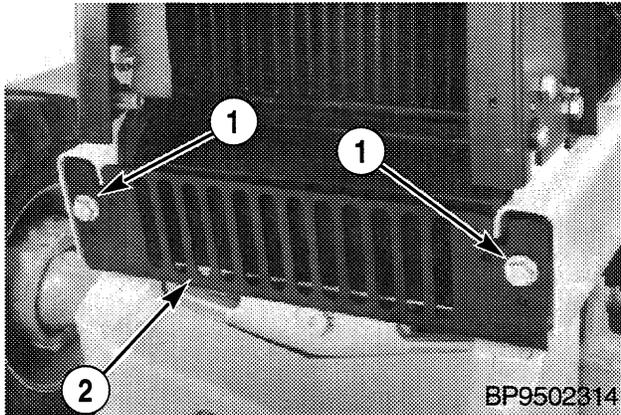


Remove the bolts (1), spacers, washers, and coolant reservoir from the machine.

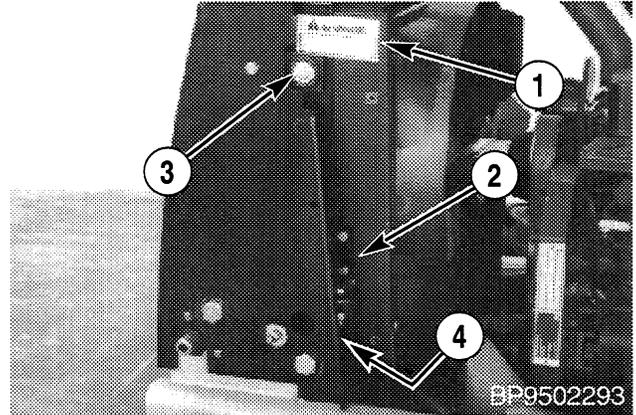
STEP 10



Remove the hardware from the fan shroud. Move the fan shroud away from the radiator.

STEP 11

Remove the cap screws (1) and pump guard (2) from the machine.

STEP 12

Use a sharp knife and cut the warning decal (1). Remove the cap screws that fasten the lower brackets (2) to the radiator. Remove the hardware and the lower brackets (2) from the radiator shroud. Remove the cap screws and flat washers that fasten the upper brackets (3) to the radiator. Remove the cap screws and flat washers (4) that fastens the condenser if equipped and oil cooler to the radiator. Lift the radiator straight up and remove the radiator from the machine

NOTE: *Installation of the radiator is the reverse of removal.*

ENGINE REMOVAL

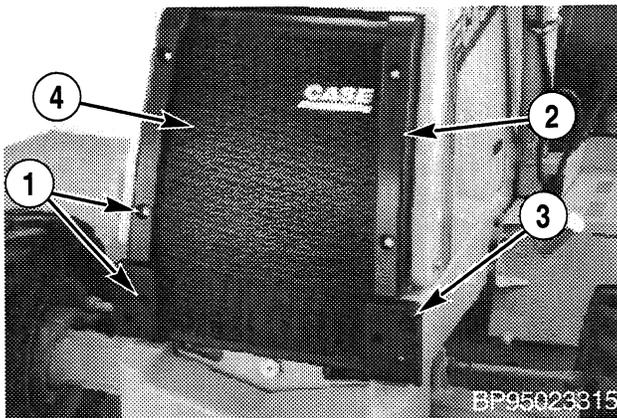
Put identification tags on all disconnected hoses and wires. Close disconnected hoses and fittings with caps and plugs.

STEP 1



Park the machine on a level surface. Raise the loader and lock the support strut to hold the loader.

STEP 2

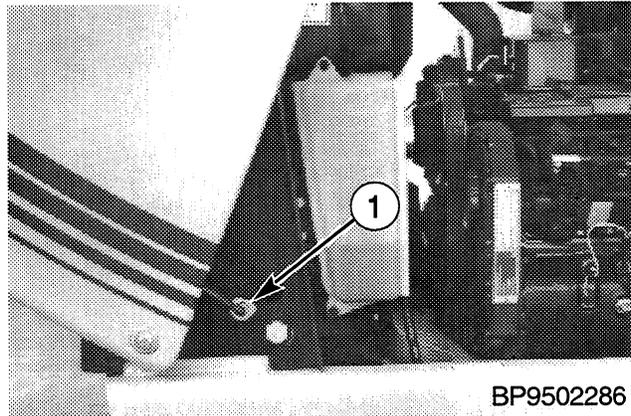


Remove the caps screws (1), upper (2) and lower bumpers (3), and the grille (4) from the front of the machine.

STEP 3

Remove the bolts, washers, and nuts from the pivot point on the hood.

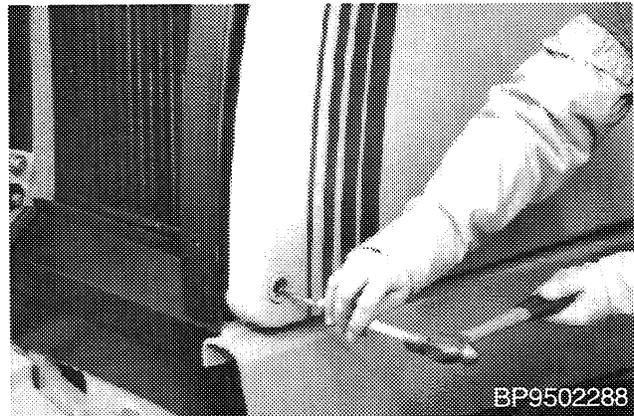
STEP 4



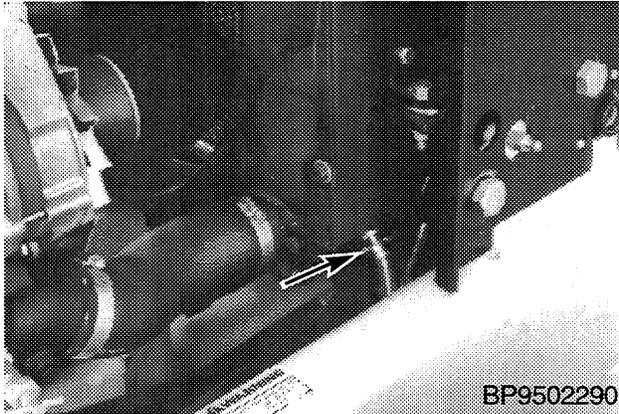
Have another person help with the following procedure.

- E. Open the hood.
- F. Remove the retainers from the hood struts (1) and disconnect the hood struts from the stud.
- G. Hold the hood in place and disconnect the hood cable from the radiator shroud on the other side of the machine.
- H. Carefully lower the hood back to the closed position.

STEP 5

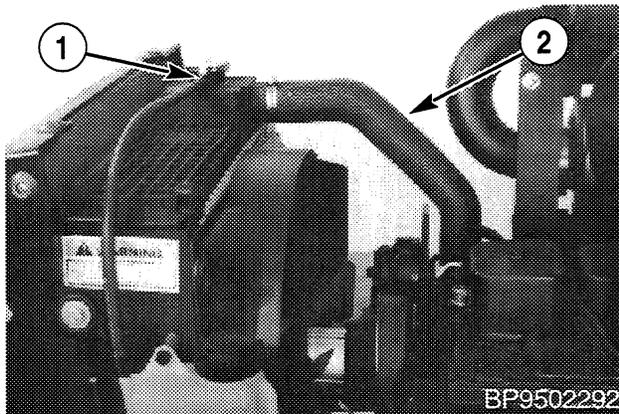


Drive the pivot tubes out of the hood pivot point. Remove the hood from the machine.

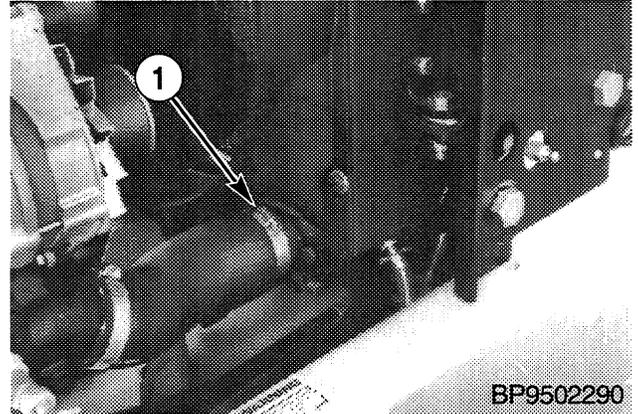
STEP 6

Slowly remove the radiator cap. Install a hose on the drain valve and drain the radiator into a clean container that holds approximately 18 U.S. quarts (17 litres).

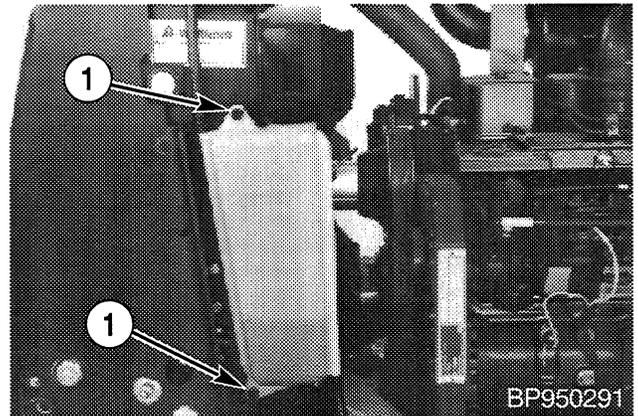
NOTE: During installation, fill the radiator and coolant reservoir completely with coolant. See Section 1002 for coolant specifications. Start and run the engine until the coolant is at operating temperature. Stop the engine and check for leakage. When the coolant is cold, check the coolant reservoir level. Add coolant as required.

STEP 7

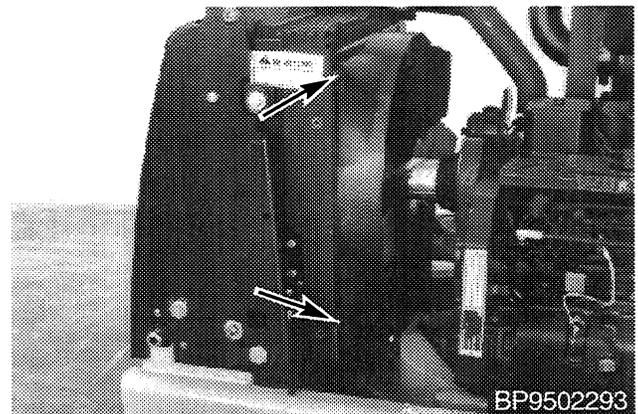
Disconnect the overflow hose (1) from the radiator neck. Loosen the clamp and disconnect the upper radiator hose (2).

STEP 8

Loosen the clamp (1) and disconnect the lower radiator hose.

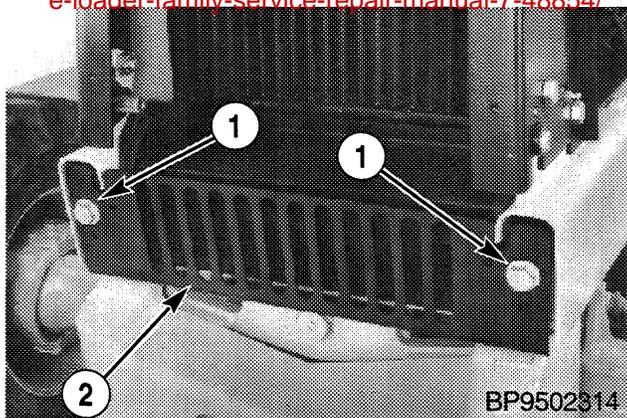
STEP 9

Remove the bolts (1), spacers, washers, and coolant reservoir from the machine.

STEP 10

Remove the hardware from the fan shroud. Move the fan shroud away from the radiator.

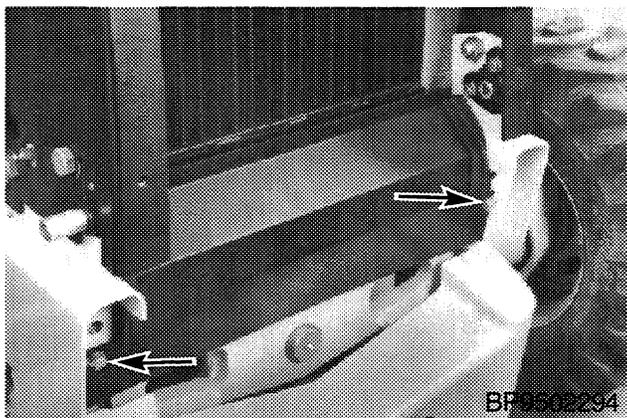
STEP 11



Remove the cap screws (1) and pump guard (2) from the machine.

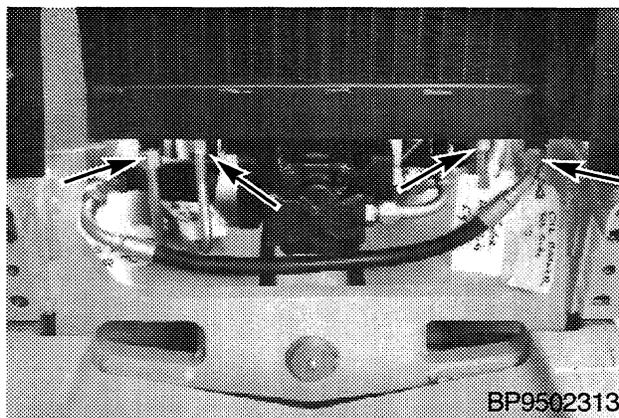
NOTE: If the machine is equipped with air conditioning and a baffle plate with a slot for the drier hose, go to step 21. If the machine is equipped with air conditioning and a baffle plate with out a slot for the drier hose, do steps 17 through 19 to keep from discharging the air conditioning system. For machines without air conditioning, do steps 12 through 16.

STEP 12



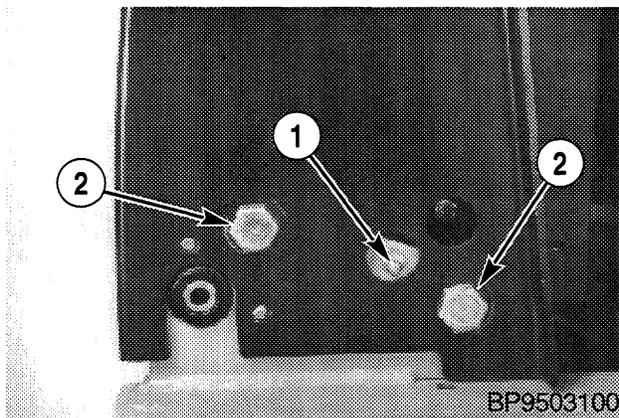
Loosen and remove the cap screws, flat washers, and if equipped, lock washers that fasten the baffle plate to the front of the machine.

STEP 13



Disconnect the hoses from the oil cooler.

STEP 14



Remove the studs (1). Remove the bolts (2) and nuts that fasten the radiator shroud to the frame.

STEP 15

Remove the radiator shroud, radiator, and oil cooler as an assembly.

STEP 16

Go to step 31.

NOTE: Do steps 17 through 19 for machine with air conditioning and a baffle plate without a slot.

STEP 17

Remove all straps that hold the hose for the air conditioning system drier from the front of the machine back to the cab. It is important to have as much hose as possible at the front of the machine to do the next step.