

580LE-SLE-LSP-LPS 590SLE-LSP LOADER BACKHOES

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*Refer to the Engine Service Manual

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Section

1001

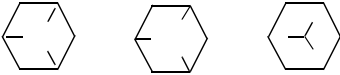
STANDARD TORQUE SPECIFICATIONS AND LOCTITE PRODUCT CHART

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TORQUES 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
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 inchs	800 to 880	1085 to 1193
1-1/4 inchs	1120 to 1240	1519 to 1681
1-3/8 inchs	1460 to 1680	190 to 2278
1-1/2 inchs	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
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 inchs	1280 to 1440	1736 to 1953
1-1/4 inchs	1820 to 2000	2468 to 2712
1-3/8 inchs	2380 to 2720	3227 to 3688
1-1/2 inchs	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
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
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 92	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	7/8-14	300 to 696	34 to 79
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
5/8 inch/ 15.9	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 screws		
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
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
-10	5/8 inch/ 15.9 mm	1-14	552 to 672	62 to 76	7/8-14	60 to 65	81 to 88
-12	3/4 inch/ 19.0 mm	1-3/16-12	65 to 80	90 to 110	1-1/16-12	85 to 90	115 to 122
-14	7/8 inch/ 22.2 mm	1-3/16-12	65 to 80	90 to 110	1-3/16-12	95 to 100	129 to 136
-16	1.0 inch/ 25.4 mm	1-7/16-12	92 to 105	125 to 140	1-5/16-12	115 to 125	156 to 169
-20	1-1/4 inch/ 31.8 mm	1-11/16-12	125 to 140	170 to 190	1-5/8-12	150 to 160	203 to 217
-24	1-1/2 inch/ 38.1 mm	2-12	150 to 180	200 to 254	1-7/8-12	190 to 200	258 to 271

LOCTITE PRODUCT CHART

Product	Color	Similar products	Gap (inches)	Strength (steel/steel)	Working temperature range-fahrenheit	Fixture/full cure (steel/steel) time	Primer	Description
#3	Dark brown					24 h	764	Form a Gasket (works with oil, fuel or greas) Pliable
80	Yellow					Fast	764	Weatherstrip adhesive
123	Clear					-	-	Parts cleaner fluid
220	Blue	290	0.076	65/164 in lbs	-54 to +122	6 min/24 h	747	Wicking threadlocker
221	Purple	222	0.127	86/50 in lbs	-54 to +150	2 min/24 h	747	Low strength threadlocker
222	Purple		0.127	51/28 in lbs	-54 to +150	10 min/24 h	747	Low strength threadlocker (small screws)
225	Brown	222	0.254	51/28 in lbs	-54 to +150	7 min/24 h	747	Low strength threadlocker
242	Blue		0.127	92/57 in lbs	-54 to +150	10 min/24 h	747	Medium strength threadlocker
262	Red	271	0.127	184/218 in lbs	-54 to +150	5 min/24 h	747	High strength threadlocker
270	Green	271	0.177	184/368 in lbs	-54 to +150	3 min/24 h	747	High strength threadlocker
271	Red	262	0.177	184/368 in lbs	-54 to +150	10 min/24 h	747	High strength threadlocker
272	Red	620	0.254	207/311 in lbs	-54 to +234	30 min/24 h	747	High temperature, high strength
275	Green	277	0.254	241/345 in lbs	-54 to +150	3 min/24 h	747	High strength threadlocker
277	Red		0.254	241/345 in lbs	-54 to +150	60 min/24 h	747	High strength threadlocker
290	Green		0.076	97/403 in lbs	-54 to +150	6 min/24 h	747	Wicking threadlocker
*404	Clear	495	0.156	224 psi	-54 to +82	30 sec/24 h	-	Instant adhesive
*406	Clear		0.101	224 psi	-54 to +82	15 sec/24 h	-	Surface insensitive adhesive
*409	Clear	454	0.203	175 psi	-54 to +82	50 sec/24 h	-	Gel instant adhesive
*414	Clear		0.156	175 psi	-54 to +82	30 sec/24 h	-	Instant adhesive
*415	Clear	454	0.254	175 psi	-54 to +82	50 sec/24 h	-	Gap filling instant adhesive (metals)
*416	Clear	454	0.254	175 psi	-54 to +82	50 sec/24 h	-	Gap filling instant adhesive (plastics)
*420	Clear		0.05	175 psi	-54 to +82	15 sec/24 h	-	Wicking instant adhesive
*422	Clear	454	0.05	196 psi	-54 to +82	60 sec/24 h	-	Gap filling instant adhesive
*430	Clear		0.127	175 psi	-54 to +82	20 sec/24 h	-	Metal bonding adhesive

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

Product	Color	Similar products	Gap (inches)	Strength (steel/steel)	Working temperature range-fahrenheit	Fixturefull cure (steel/steel) time	Primer	Description
*445	White/Black		6.35	140 psi	-54 to +82	5 min/24 h	-	Fast setting 2 part epoxy
*454	Clear		0.254	224 psi	-54 to +82	15 sec/24 h	-	Surface insensitive gel instant adhesive
*495	Clear		0.101	175 psi	-54 to +82	20 sec/24 h	-	General purpose instant adhesive
*496	Clear		0.127	175 psi	-54 to +82	20 sec/24 h	-	Metal bonding adhesive
504	Brt orange	515	0.076	52 psi	-54 to +150	90 sec/24 h	None	Rigid gasket eliminator
510	Red		0.05	70 psi	-54 to +206	30 min/24 h	764	High temperature, gasket eliminator
515	Purple		0.254	52 psi	-54 to +150	1 hr/24 h	764	Gasket eliminator 515
518	Red	515	0.076	35 psi	-54 to +150	1 hr/24 h	764	Gasket eliminator 578 for aluminum
542	Brown	569	-	152/106 in lbs	-54 to +150	2 hr/24 h	747	Hydraulic sealant
545	Purple		-	28/23 in lbs	-54 to +150	4 hr/24 h	747	Low strength pneumatic/hydraulic sealant
549	Red	504	0.05	175 psi	-54 to +150	2 hr/24 h	747	Instant seal plastic gasket
554	White	277	0.381	276/240 in lbs	-54 to +150	2 to 4 hr/24 h	764	Refrigerant sealant
567	Orange	592	-	35 psi	-54 to +206	4 hr/24 h	764	Pipe sealant for stainless steel
568	Brown	277	0.381	175 psi	-54 to +150	12 hr/24 h	764	Plastic gasket
569	Brown	545	0.254	28/46 in lbs	-54 to +150	1 hr/24 h	764	Hydraulic sealant
570	Brown	592	-	28/46 in lbs	-54 to +150	6 hr/24 h	764	Steam sealant
571	White	592	0.381	46/23 in lbs	-54 to +150	2 to 4 hr/24 h	764	Pipe sealant
572	White	578, 575	-	92/31 in lbs	-54 to +150	24 hr/24 h	None	Gasketing
592	Black	-	0.05	35 psi	-54 to +206	4 hr/24 h	736	Pipe sealant with teflon
593	Green	-	6.35	28 psi	-54 to +206	30 min/24 h	-	RTV silicone
601	Green	609	0.127	210 psi	-54 to +150	10 min/24 h	747	Current PIN #609
609	Green	-	0.127	210 psi	-54 to +150	10 min/24 h	747	General purpose retaining compound
620	Green	640	0.381	210 psi	-54 to +234	30 min/24 h	747	High temperature. Retaining compound
635	Green	680	0.254	280 psi	-54 to +150	1 hr/24 h	747	High strength retaining compound
638	Green	680	0.381	287 psi	-54 to +150	10 min/24 h	747	High strength retaining compound
640	Green	620	0.177	210 psi	-54 to +206	1 hr/24 h	747	High temperature retaining compound
660	Silver	-	0.05	210 psi	-54 to +150	20 min/24 h	764	Quick metal
675	Green	609	0.127	210 psi	-54 to +150	20 min/24 h	747	General purpose retaining compound
680	Green	635	0.381	280 psi	-54 to +150	10 min/24 h	747	High strength retaining compound
706	Clear	755	-	-	-	-	-	Cleaning solvent
707	Amber	-	-	-	-	-	-	Activator for structural adhesives
736	Amber	-	-	-	-	-	-	Primer NF
738	Amber	-	-	-	-	-	-	Depend activator

Product	Color	Similar products	Gap (inches)	Strength (steel/steel)	Working temperature range-fahrenheit	Fixture/full cure (steel/steel) time	Primer	Description
747	Yellow	-	-	-	-	-	-	Primer T
751	Clear	-	-	-	-	-	-	Activator for structural adhesives
755	Clear	-	-	-	-	-	-	Cleaning solvent
764	Green	-	-	-	-	-	-	Primer N
767	Silver	-	-	-	-54 to +878	-	-	Anti-seize lubricant

Section 1002

1002

FLUIDS AND LUBRICANTS

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ENGINE OIL RECOMMENDATIONS..... 4

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FLUIDS AND LUBRICANTS 5

NOTE : Case France 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.

CAPACITIES AND LUBRICANTS

Engine Oil	
Capacity with filter replacement	11 litres
Type of oil	refer to "Engine oil recommendations"
Engine cooling system	
Capacity without heating system	15.8 litres
Capacity with heating system	16.5 litres
Type of collant solution	refer to "Fluids and lubricants"
Fuel tank	
Capacity	128 litres
Type of fuel	refer to "Fluids and lubricants"
Hydraulic system	
Total hydraulic system capacity Model 580SLE	125 litres
Total hydraulic system capacity Model 580LE	106 litres
Total hydraulic system capacity Model 590SLE	136 litres
Hydraulic reservoir filling capacity with filter replacement	54.5 litres
Hydraulic reservoir filling capacity without filter replacement	52.6 litres
Type of fluid	CASE MS1210 or CASE Hydraulic Fluid
Transmission	
580LE, 580SLE and 580LSP gearbox	
2 Wheel Drive	
Total system	18.5 litres
Filling with or without filter replacement	16 litres
Type of oil	CASE Hy-Tran Plus MS1207
4 Wheel Drive	
Total system	21 litres
Filling with or without filter replacement	18.5 litres
Type of oil	CASE Hy-Tran Plus MS1207
580LPS and 590SLE Powershift gearbox	
Total system	21 litres
Filling with filter	18.5 litres
Type of oil	Elfmatic G3
4 wheel drive front axle - 580LE, 580SLE and 580LSP	
Differential capacity	6.5 litres
Planetary capacity (each)	1 litre
Type of oil	CASE Wet Brake Lubricant MS1317 or SAE 85W140
Rear axle - 580LE, 580SLE and 580LSP	
Differential capacity	14.2 litres
Planetary capacity (each)	2 litres
Type of oil - Axle serial numbers before 586	CASE Wet Brake Lubricant MS1317 or SAE 85W140
Type of oil - Axle serial number 586 and on	CASE Hy-Tran Plus MS1207
Brake fluid reservoir	
(automatically supplied with fluid from the hydraulic system)	

ENGINE OIL RECOMMENDATIONS

CASE No. 1 engine oil is recommended for your engine. This oil gives correct lubrication for your engine under all operating conditions.

If CASE No. 1 Multiperformance or Performance engine oil cannot be obtained, use only oil corresponding to API/CE category.

NOTE : *Never add any performance or other additive product to the engine oil sump. Engine oil change intervals are shown in this manual in accordance with tests performed on CASE lubricants.*

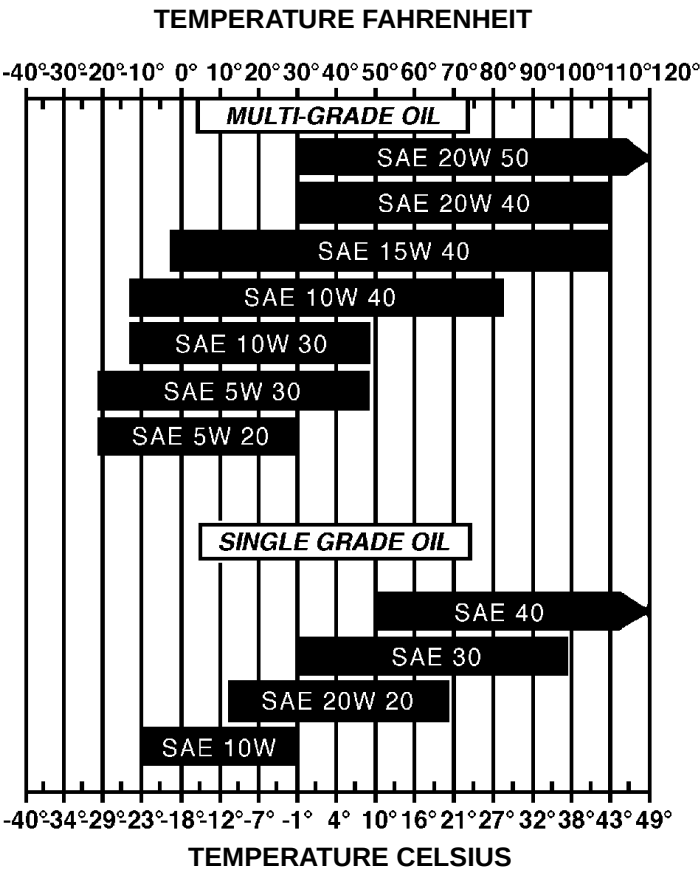


EO1730



654L9

Oil viscosity/Oil operating range



IO36LO

FLUIDS AND LUBRICANTS

Fluids and lubricants must have the correct properties for each application.



The conditions of use for individual fluids and lubricants must be respected.

Hydraulic fluid

Type of oil to be used :
CASE MS1210 or CASE hydraulic fluid

CASE hydraulic fluid is specially designed for the high pressure and the hydraulic system used on CASE machines. The type of fluid to be used depends on the ambient temperature.

Temperate climates

-20°C to +40°C
Fluid type : ISO VG 46
CASE reference : POHYDR

Hot climates

0°C to +60°C
Fluid type : ISO VG 100
CASE reference : POHYPC

Cold climates

-40°C to +20°C
Fluid type : ISO VG 22
CASE reference : POHYPF

IMPORTANT : *These various grades of fluid must be in conformity with CASE FRANCE specification P9903201Z.*

Biodegradable fluid

This yellow-coloured fluid can be mixed with standard fluid. When using this fluid, it is recommended to drain the hydraulic system completely.

Fluid type : ISO VG 46
CASE reference : CASYNTH 46

IMPORTANT : *This grade of fluid must be in conformity with CASE FRANCE specification P9903203B*

Anti-freeze/anti-corrosion

Use anti-freeze in all seasons to protect the cooling system from corrosion and all risk of freezing.

For environments with a temperature higher than -36°C, use a mixture of 50% ethylene-glycol based anti-freeze.

For environments with a temperature lower than -36°C, a mixture of 40% water with 60% anti-freeze is recommended.

Fuel

The fuel to be used must be in conformity with the D975 standard of the American Society for Testing and Materials (ASTM).

Use No. 2 type fuel. The use of other fuels may cause a loss of engine power and excessive fuel consumption.

In cold weather, a mixture of No. 1 fuel and No. 2 fuel is temporarily permitted. Consult your fuel supplier.

If the temperature falls below the fuel cloud point (point at which wax appears), wax crystals in the fuel will cause a loss of engine power or make it impossible to start the engine.

IMPORTANT : *In cold weather, fill the fuel tank after each day's work, to prevent the formation of condensation.*

Fuel storage

Prolonged fuel storage causes foreign bodies or condensation water to accumulate in the storage tank. Many engine failures are caused by the presence of water in fuel.

The storage tank should be placed outdoors and the fuel should be kept at as low a temperature as possible. Condensation water should be drained off at regular intervals.

Section

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REMOVING AND INSTALLING THE ENGINE AND THE RADIATOR

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WARNING: *This symbol is used in this manual to show important safety messages. Whenever you see this symbol, carefully read the message which follows, since it shows there is a risk of serious injury.*

SPECIFICATIONS

Cooling system capacity :

 With heater..... 16.5 litres

 Without heater 15.8 litres

Thermostat opening

 Begins to open 83°C

 Fully open at..... 95°C

Radiator cap opening pressure1 bar

Coolant solution..... See Section 1002

SPECIAL TORQUE SETTINGS

Front engine bracket self-locking nuts..... 41 to 47 Nm

Torque converter retaining screws 52 to 57 Nm

Engine front bracket retaining screws 89 to 107 Nm



WARNING: *Boiling coolant solution may escape if the radiator cap is removed while the system is still hot. To remove the cap. First allow the system to cool, then turn the cap to the first notch and wait until there is no more pressure. Then remove the cap.*

TOOLS REQUIRED



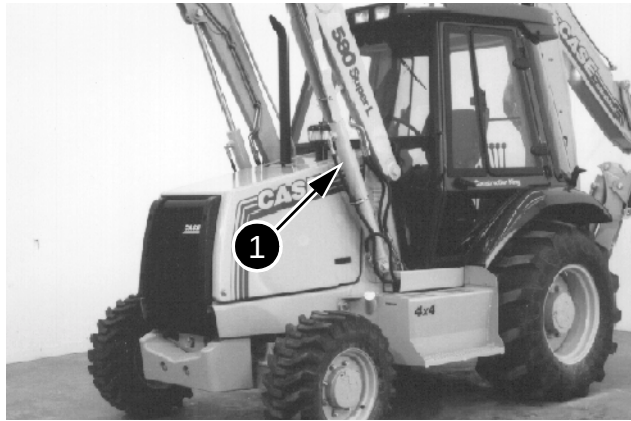
T91222

CAS 1690 Engine turn-over tool

REMOVING THE RADIATOR

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

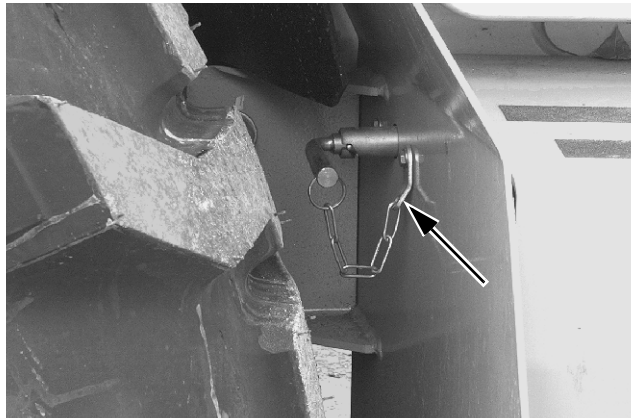
STEP 1



BP9502285

Park the machine on a level surface. Raise the loader attachment, shut down the engine, then install the locking bar (1) to maintain the loader attachment in position.

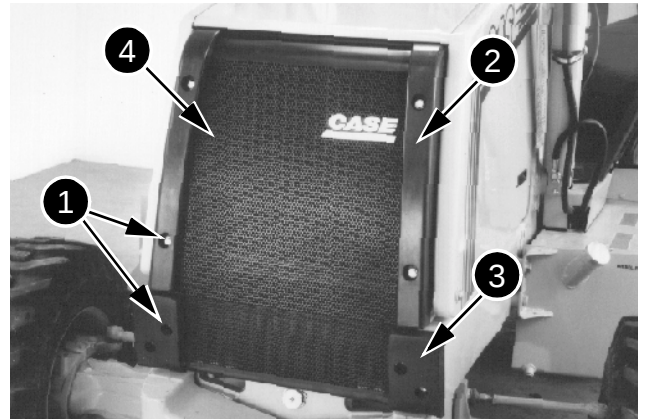
STEP 2



CD95K021

Place the battery master switch in the "Off" position (circuit isolated from battery).

STEP 3



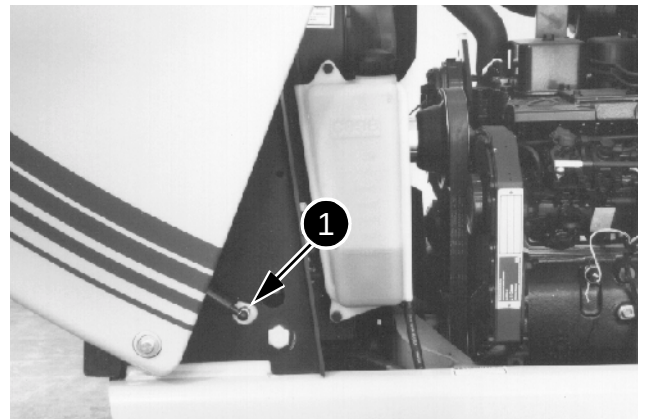
BP9502315

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

STEP 4

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

STEP 5



BP9502286

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.