

1838 Uni-Loader
Service Manual

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Section 1001

STANDARD TORQUE SPECIFICATIONS

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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

FLUIDS AND LUBRICANTS

1838 Uni Loader

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CAPACITIES AND LUBRICANTS

Engine Oil
Capacity with filter change8 U.S. quarts (7.5 litres)

Type of oil.....See Engine Oil Recommendations on Page 3

Engine Cooling System
Capacity.....12 U.S. quarts (11.35 litres)

Type of coolant..... Ethylene glycol and water mixed for lowest ambient temperature at least 50/50 mix

Fuel Tank
Capacity..... 19.5 U.S. gallons (73.8 litres)

Hydraulic System
Reservoir capacity with filter change 6.25 U.S. gallons (23.6 litres)

Reservoir capacity without filter change 6 U.S. gallons (22.7 litres)

System capacity 10.5 U.S. gallons (39.8 litres)

Type of oil..... Case No. 1 engine oil - SAE 10W-30 mixed with Case HTO additive

When you change the hydraulic oil in the reservoir, you must add 1.5 U.S. quarts (1.4 litres) of Case HTO additive. Case part number B17508.

When you add oil to the hydraulic system, use a mixture of Case HTO additive and SAE 10W-30 engine oil (20 to 1 ratio).

Drive Chain Compartments
Capacity (each)6 U.S. quarts (5.7 litres)

Type of oil..... Case No. 1 engine oil - SAE 10W-30

ENGINE LUBRICATION

Engine Oil Selection

Case No. 1 Engine Oil is recommended for use in your Uni Loader 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.



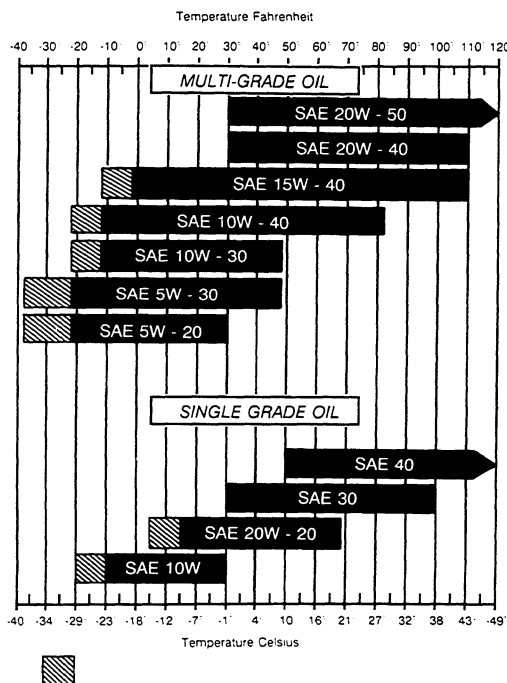
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See the chart below for recommended viscosity at ambient air temperature ranges.

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



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 **NOTE:** Use of an engine oil pan heater or an engine coolant heater is required when operating temperatures are in the cross-hatched area.

MAINTENANCE SCHEDULE

AS REQUIRED

- 15. CLEAN DIRT AND DEBRIS FROM THE ENGINE AREA.....
- 4. SERVICE THE AIR CLEANER IF THE AIR CLEANER WARNING LAMP IS ON SEE OPERATORS MANUAL
- 7. CHECK THE WHEEL NUT TORQUE, 115 TO 125 LB FT (156 TO 170 Nm).....SEE SECTION 6008
- 28. REPLACE THE HYDRAULIC FILTER IF THE HYDRAULIC FILTER WARNING LAMP IS ON..... USE CASE FILTERS
- 31. CHECK THE FAN BELT FOR WEAR REPLACE IF DAMAGED

EVERY 10 HOURS OF OPERATION OR EACH DAY

- LUBRICATE THE BACKHOE PIVOT POINTS (8 FITTINGS D100 BACKHOE,
12 FITTINGS D100XR BACKHOE) CASE MOLYDISULFIDE GREASE
- LUBRICATE THE MANURE FORK GRAPPLE (2 GREASE FITTINGS) IF EQUIPPED.
NOT SHOWN CASE MOLYDISULFIDE GREASE
- 17. CHECK AND CLEAN THE HYDRAULIC OIL COOLER.....SEE OPERATORS MANUAL
- 2. LUBRICATE THE LOADER PIVOT POINTS (12 GREASE FITTINGS) CASE MOLYDISULFIDE GREASE
- 5. CHECK THE ENGINE OIL LEVEL.....CASE NO. 1 ENGINE OIL
- 29. CHECK THE HYDRAULIC RESERVOIR OIL LEVEL (SEE NOTE 1).....CASE NO. 1 ENGINE OIL
- 18. CHECK THE ENGINE COOLANT RESERVOIR FLUID LEVEL (SEE NOTE 3).....ETHYLENE GLYCOL AND WATER
- 25. LUBRICATE THE COUPLER WEDGES (2 GREASE FITTINGS) IF EQUIPPED CASE MOLYDISULFIDE GREASE
- 22. CHECK THE CONTROL LINKAGES AND TEST SEAT BAR.....SEE SECTION 9001

EVERY 50 HOURS OF OPERATION

- 23. CHECK THE TIRE AIR PRESSURE AND TIRE CONDITIONSEE SECTION 6008
- 12. DRAIN WATER FROM THE FUEL FILTER.....SEE OPERATORS MANUAL
- 3. CLEAN AND CHECK THE AIR CLEANER DUST VALVE.....SEE OPERATORS MANUAL

EVERY 100 HOURS OF OPERATION

- 20. CLEAN THE SPARK ARRESTER MUFFLERSEE OPERATORS MANUAL
- 13. CHANGE ENGINE OIL AND REPLACE THE ENGINE OIL FILTER..... CASE NO. 1 ENGINE OIL, USE CASE FILTERS

EVERY 250 HOURS OF OPERATION

- 8. CLEAN THE BATTERY AND CHECK THE BATTERY FLUID LEVEL ADD DRINKING OR DISTILLED WATER
- 1. CHECK THE RADIATOR COOLANT LEVEL (SEE NOTE 3)ETHYLENE GLYCOL AND WATER
- 9. CHECK THE DRIVE CHAIN TENSION (EACH SIDE)SEE SECTION 9001
- 24. LUBRICATE THE CASE COUPLER LATCH PIVOTS (2 GREASE FITTINGS)
IF EQUIPPED CASE MOLYDISULFIDE GREASE
- 27. LUBRICATE THE LOADER CROSS SHAFT PIVOT (1 GREASE FITTING)..... CASE MOLYDISULFIDE GREASE

EVERY 500 HOURS OF OPERATION

- 6. INSPECT THE ROPS.....SEE OPERATORS MANUAL
- 28. REPLACE THE HYDRAULIC OIL FILTER..... USE CASE FILTERS
- 10. CHANGE THE CHAIN COMPARTMENT OIL (EACH SIDE) CASE NO. 1 ENGINE OIL (SAE 10W-30)

EVERY 1000 HOURS OF OPERATION

- 19. DRAIN WATER FROM THE FUEL TANKSEE OPERATORS MANUAL
- 30. CHANGE THE HYDRAULIC OIL (SEE NOTE 2) CASE NO. 1 ENGINE OIL
- 14. CHECK THE ENGINE VALVE CLEARANCE SEE SERVICE MANUAL

EVERY 2000 HOURS OF OPERATION

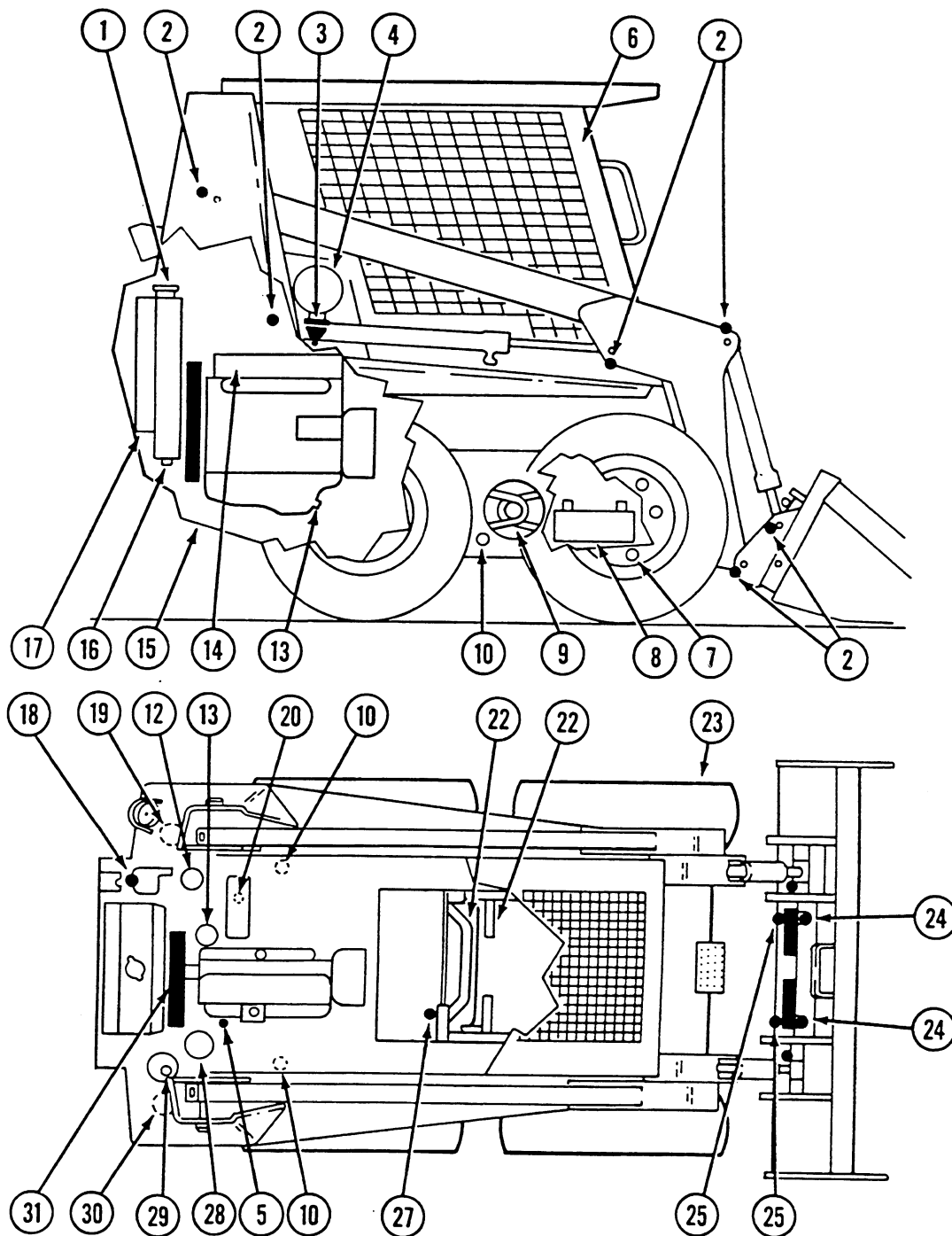
- 16. DRAIN, FLUSH AND REFILL THE ENGINE COOLING SYSTEM (SEE NOTE 3)ETHYLENE GLYCOL AND WATER
- 4. REPLACE THE AIR CLEANER ELEMENTS USE CASE FILTERS

NOTE 1: *When adding oil to the hydraulic reservoir between oil changes, use a mixture of Case HTO additive and SAE 10 W-30 engine oil. Completely mix one U.S. quart of Case HTO additive to 5 U.S. gallons (19 litres) of SAE 10W-30 oil (20 to 1 ratio).*

NOTE 2: *When changing the hydraulic oil in the reservoir, add 1.5 U.S. quarts (1.4 litres) of Case HTO additive (Case Part No. B17508).*

NOTE 3: *Use Ethylene Glycol and water that is mixed 50/50. When adding coolant to the engine, use this mixture.*

MAINTENANCE LOCATIONS



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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 CASE DEALER.

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.

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