

**Case 580 Super K Loader Backhoe Service Manual**

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580 Super K Loader Backhoe  
P.I.N. JJG0160001 and After  
Service Manual

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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
#3	Dark Brown					24 hr	764	Form a Gasket (works with oil, fuel or grease) Pliable
80	Yellow					Fast	764	Weatherstrip Adhesive
123	Clear					N/A	N/A	Parts Cleaner Fluid
220	Blue	290	.003	57/143 in lbs	-65 to +250	6 min/24 hr	747	Wicking Threadlocker
221	Purple	222	.005	75/44 in lbs	-65 to +300	2 min/24 hr	747	Low Strength Threadlocker
222	Purple		.005	45/25 in lbs	-65 to +300	10 min/24 hr	747	Low Strength Threadlocker (Small Screws)
225	Brown	222	.010	45/25 in lbs	-65 to +300	7 min/24 hr	747	Low Strength Threadlocker
242	Blue		.005	80/50 in lbs	-65 to +300	10 min/24 hr	747	Medium Strength Threadlocker
262	Red	271	.005	160/190 in lbs	-65 to +300	5 min/24 hr	747	High Strength Threadlocker
270	Green	271	.007	160/320 in lbs	-65 to +300	3 min/24 hr	747	High Strength Threadlocker
271	Red	262	.007	160/320 in lbs	-65 to +300	10 min/24 hr	747	High Strength Threadlocker
272	Red	620	.010	180/270 in lbs	-65 to +450	30 min/24 hr	747	High Temperature, High Strength
275	Green	277	.010	210/300 in lbs	-65 to +300	3 min/24 hr	747	High Strength Threadlocker
277	Red		.010	210/300 in lbs	-65 to +300	60 min/24 hr	747	High Strength Threadlocker
290	Green		.003	85/350 in lbs	-65 to +300	6 min/24 hr	747	Wicking Threadlocker
*404	Clear	495	.006	3200 psi	-65 to +180	30 sec/24 hr	N/A	Instant Adhesive
*406	Clear		.004	3200 psi	-65 to +180	15 sec/24 hr	N/A	Surface Insensitive Adhesive
*409	Clear	454	.008	2500 psi	-65 to +180	50 sec/24 hr	N/A	Gel Instant Adhesive
*414	Clear		.006	2500 psi	-65 to +180	30 sec/24 hr	N/A	Instant Adhesive
*415	Clear	454	.010	2500 psi	-65 to +180	50 sec/24 hr	N/A	Gap Filling Instant Adhesive (Metals)
*416	Clear	454	.010	2500 psi	-65 to +180	50 sec/24 hr	N/A	Gap Filling Instant Adhesive (Plastics)
*420	Clear		.002	2500 psi	-65 to +180	15 sec/24 hr	N/A	Wicking Instant Adhesive
*422	Clear	454	.020	2800 psi	-65 to +180	60 sec/24 hr	N/A	Gap Filling Instant Adhesive
*430	Clear		.005	2500 psi	-65 to +180	20 sec/24 hr	N/A	Metal Bonding Adhesive
*445	White/Black		.250	2000 psi	-65 to +180	5 min/24 hr	N/A	Fast Setting 2 Part Epoxy
*454	Clear		.010	3200 psi	-65 to +180	15 sec/24 hr	N/A	Surface Insensitive Gel Instant Adhesive
*495	Clear		.004	2500 psi	-65 to +180	20 sec/24 hr	N/A	General Purpose Instant Adhesive
*496	Clear		.005	2500 psi	-65 to +180	20 sec/24 hr	N/A	Metal Bonding Adhesive
504	Brt Orange	515	.030	750 psi	-65 to +300	90 min/24 hr	None	Rigid Gasket Eliminator
510	Red		.020	1000 psi	-65 to +400	30 min/24 hr	764	High Temperature, Gasket Eliminator
515	Purple		.010	750 psi	-65 to +300	1 hr/24 hr	764	Gasket Eliminator 515
518	Red	515	.030	500 psi	-65 to +300	1 hr/24 hr	764	Gasket Eliminator 578 for Aluminum

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

# 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
542	Brown	569	N/A	132/92 in lbs	-65 to +300	2 hr/24 hr	747	Hydraulic Sealant
545	Purple		N/A	25/20 in lbs	-65 to +300	4 hr/24 hr	747	Low Strength Pneumatic/ Hydraulic Sealant
549	Orange	504	.020	2500 psi	-65 to +300	2 hr/24 hr	747	Instant Seal Plastic Gasket
554	Red	277	.015	240/240 in lbs	-65 to +300	2 to 4 hr/24 hr	764	Refrigerant Sealant
567	White	592	N/A	500 psi	-65 to +400	4 hr/24 hr	764	Pipe Sealant for Stainless Steel
568	Orange	277	.015	2500 psi	-65 to +300	12 hr/24 hr	764	Plastic Gasket
569	Brown	545	.010	40/25 in lbs	-65 to +300	1 hr/24 hr	764	Hydraulic Sealant
570	Brown	592	N/A	25/40 in lbs	-65 to +300	6 hr/72 hr	764	Steam Sealant
571	Brown	592	.015	40/20 in lbs	-65 to +300	2 to 4 hr/24 hr	764	Pipe Sealant
572	White	578.575	N/A	80/27 in lbs	-65 to +300	24 hr/72 hr	None	Gasketing
592	White		.020	500 psi	-65 to +400	4 hr/72 hr	736	Pipe Sealant with Teflon
593	Black		.250	400 psi	-95 to +400	30 min/24 hr	N/A	RTV Silicone
601	Green	609	.005	3000 psi	-65 to +300	10 min/24 hr	747	Current PIN #609
609	Green		.005	3000 psi	-65 to +300	10 min/24 hr	747	General Purpose Retaining Compound
620	Green	640	.015	3000 psi	-65 to +450	30 min/24 hr	747	High Temperature Retaining Compound
635	Green	680	.010	4000 psi	-65 to +300	1 hr/24 hr	747	High Strength Retaining Compound
638	Green	680	.015	4100 psi	-65 to +300	10 min/24 hr	747	High Strength Retaining Compound
640	Green	620	.007	3000 psi	-65 to +400	1 hr/24 hr	747	High Temperature Retaining Compound
660	Silver		.020	3000 psi	-65 to +300	20 min/24 hr	764	Quick Metal
675	Green	609	.005	3000 psi	-65 to +300	20 min/24 hr	747	General Purpose Retaining Compound
680	Green	635	.015	4000 psi	-65 to +300	10 min/24 hr	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

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# 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 graphites, molydisulfide greases, or other extreme pressure lubricants are used.

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


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

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

<b>Grade 10.9 Bolts, Nuts, and Studs</b>		
		
Size	Pound-Feet	Newton metres
<b>M4</b>	3-4	4-5
<b>M5</b>	7-8	9.5-11
<b>M6</b>	11-13	15-17.5
<b>M8</b>	27-32	37-43
<b>M10</b>	54-64	73-87
<b>M12</b>	93-112	125-15
<b>M14</b>	149-179	200-245
<b>M16</b>	230-280	310-380
<b>M20</b>	450-540	610-730
<b>M24</b>	780-940	1050-1275
<b>M30</b>	1470-1770	2000-2400
<b>M36</b>	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
<b>37 Degree Flare Fittings</b>			
<b>1/4 in</b> 6.4 mm	7/16-20	6-12	8-16
<b>5/16 in</b> 7.9 mm	1/2-20	8-16	11-21
<b>3/8 in</b> 9.5 mm	9/16-18	10-25	14-33
<b>1/2 in</b> 12.7 mm	3/4-16	15-42	20-56
<b>5/8 in</b> 15.9 mm	7/8-14	25-58	34-78
<b>3/4 in</b> 19.0 mm	1-1/16-12	40-80	54-108
<b>7/8 in</b> 22.2 mm	1-3/16-12	60-100	81-135
<b>1.0 in</b> 25.4 mm	1-5/16-12	75-117	102-158
<b>1-1/4 in</b> 31.8 mm	1-5/8-12	125-165	169-223
<b>1-1/2 in</b> 38.1 mm	1-7/8-12	210-250	285-338

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

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



# Section 1002

FLUIDS AND LUBRICANTS

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### 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 3

#### Engine Cooling System

Capacity without heater.....	17.2 U.S. quarts (16.3 litres)
Capacity with heater .....	17.9 U.S. quarts (16.9 litres)
Type of coolant.....	Ethylene glycol and water mixed for lowest ambient temperature At least 50/50 mix

#### Fuel Tank

Capacity.....	25 U.S. gallons (94.6 litres)
Capacity with auxiliary tank.....	33 U.S. gallons (124.9 litres)
Type of fuel.....	See Diesel fuel specifications on page 4

#### Hydraulic System

Hydraulic reservoir refill capacity .....	21.5 U.S. gallons (81.4 litres)
Type of oil.....	Case TCH Fluid

#### Transmission

Capacity.....	47.6 U.S. quarts (45 litres)
Total System Capacity .....	57.1 U.S. quarts (54 litres)
Type of oil.....	Case Hy-Trans Plus (MS 1207)

#### Front Axle - Four Wheel Drive

Capacity of center bowl .....	7.4 quarts (7 litres)
Capacity of planetary (each).....	1.1 U.S. quarts (1 litre)
Type of oil.....	CaseIH 135-H EP gear lube

#### Brake Reservoir

Type of fluid.....	Case TCH Fluid
--------------------	----------------

### 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 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.



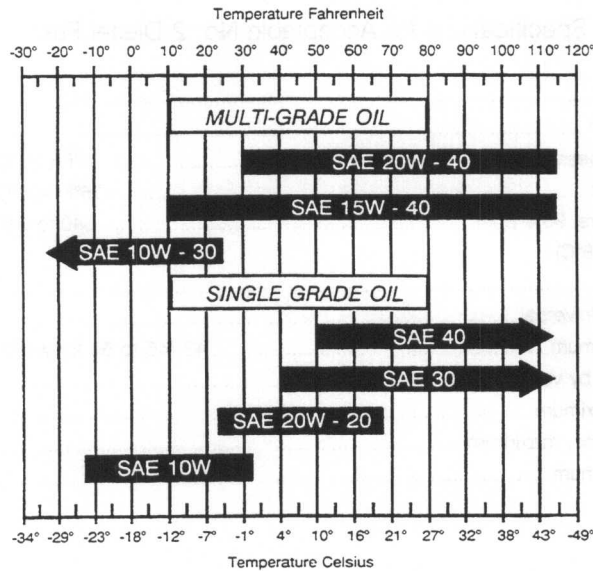
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See the chart below for recommended viscosity at ambient air temperature ranges.

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

### AMBIENT AIR TEMPERATURE RANGES



737L9



## 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.

### 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.

### 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
Distillation temperature, 90% point .....	540 to 640°F (282 to 338°C)
Viscosity, at 100°F (88°C)	
Centistokes .....	2.0 to 4.3
Saybolt Seconds Universal .....	32 to 40
Cetane number, minimum .....	43 (45 to 55 for winter or high altitudes)
Water and sediment, by volume, maximum .....	0.05 of 1%
Sulfur, by weight, maximum .....	0.5 of 1%
Copper strips corrosion, maximum .....	No. 2
Ash, by weight, maximum .....	0.01 of 1%

# Section 1024

## SPECIFICATION DETAILS

1024

**IMPORTANT:** *This engine was made using the metric measurement system. All measurements and checks must be made with metric tools to make sure of an accurate reading when inspecting parts.*

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## RUN-IN INSTRUCTIONS

### Engine Lubrication

Fill the engine crankcase with CD or CE service classification oil that has the correct viscosity rating for the ambient air temperature. Install new oil filters, after the engine has been rebuilt.

### Run-In Procedure for Rebuilt Engine

- Step 1 Disconnect the wire to the electric shut-off on the injection pump so that the engine will not start. Crank the engine for 30 seconds until there is oil pressure, then reconnect the wire.
- Step 2 Remove the air from the cooling system at the temperature sending unit.
- Step 3 Run the engine at 1000 RPM minimum load for 5 minutes and check for oil leaks.
- Step 4 During the Run-In, continue to check the oil pressure, coolant level, and coolant temperature.

### Run-In Procedure for Rebuilt Engines (With a Dynamometer)

The following procedure must be followed when using a PTO dynamometer to Run-In the engine. The dynamometer will control the engine load at each speed and will remove stress on new parts during Run-In.

During the Run-In, continue to check the oil pressure, coolant level and coolant temperature.

STEP	TIME	ENGINE SPEED	DYNAMOMETER SCALE LOAD
1	5 Minutes	1000 RPM	50
2	5 Minutes	1100 RPM	1/2
3	5 Minutes	2200 RPM	Full

### Run-In Procedure for Rebuilt Engines (Without a Dynamometer)

STEP	TIME	ENGINE SPEED	LOAD
1	5 Minutes	1000 RPM	No Load
2	5 Minutes	1100 RPM	Light Load
3	5 Minutes	2200 RPM	Light Load

### Run-In Procedure (Agriculture Tractors)

For the first 8 hours of field operation stay one gear lower than normal. For the next 12 hours DO NOT "lug" the engine. Prevent "lugging" by moving the lever to a lower gear. The engine must not be "lugged" below the rated engine RPM during early hours of life.

### Run-In Procedure (Construction Equipment)

For the first 8 hours, operate the engine at full throttle maintaining a normal load. Avoid converter or hydraulic stall. The engine must not be "lugged" below the Rated Engine RPM (Do not stall the engine more than 10 seconds).