Facts

Specifications and Torque Charts

ASP EBERLE
Automotive Specialty Products

Axle

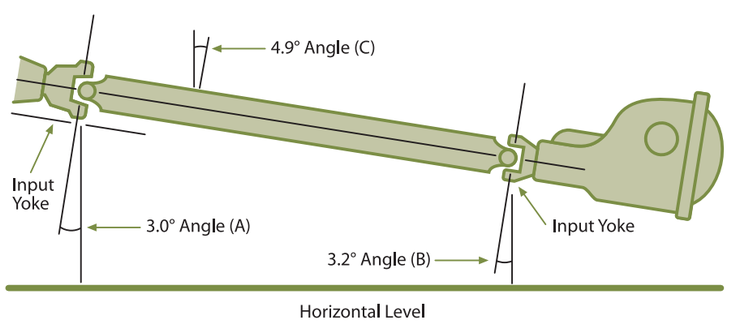
Axle Application from Factory

Dana 25, 27, 30 — 10 Bolt Cover
Dana 35, 35C — 10 Bolt Cover
Dana 44 — 10 Bolt Cover
AMC Model 20 — 8 Bolt Cover
Chrysler 8 1/4

MODEL		FRONT AXLE	REAR AXLE	RATIOS	OTHER
41-45	MB, GPW	Dana 25	Dana 23	4.88	The rear 23 is virtually the same and interchangeable with the 25, and is a full-float variety.
45-49	CJ-2A	Dana 25	Dana 41	5.38	
48-53 50-53 52-71	CJ-3 M38 M33A1	Dana 25	Dana 44	5.38	
55-66	CJ-5, CJ-6	Dana 25	Dana 44	5.38 4.88 4.27	
66-69	CJ-5, CJ-6	Dana 27	Dana 44	5.38 4.88 4.27 3.73	Rear axle spline increased from 10 to 19
66-71	CJ-5, CJ-6	Dana 27	Dana 44	5.30 4.88 4.27 3.73	Rear flanged axle design with 30-spline axles.
72-75	CJ-5, CJ-6	Dana 30	Dana 44	4.27 4.10 3.73	Open knuckle front end, flanged center set rear.
76-83 76-81	CJ-5 CJ-6, CJ-7	Dana 30	AMC Corporate 20	2.73 3.07 3.31 3.54 3.73 4.10	Lowest aftermarket available gear ratio for early Dana 30 is 5.38
82-86	CJ-7, CJ-8	Dana 30	AMC Corporate 20, in 1986 some with Dana 44	2.73 3.07 3.31 3.54 3.73 4.10	Front and rear axles were wider than earlier models. Last production CJ-7s and CJ-8s had Dana 44 flanged rear axles installed.
87-89 84-89	YJ XJ	Dana 30	Dana 35, some XJ with Chrysler 8 1/4	3.07 3.55 3.73 4.10	Front diff is on left side, some axles have front axle disconnect, no hubs available from factory. Lowest aftermarket available gear ratio for Dana 35 is 4.88
90-96 90-UP	YJ XJ	Dana 30	Dana 35C*	3.07 3.55 3.73 4.10	Front diff is on left side, some axles have front axle disconnect, no hubs available from factory. Lowest aftermarket available gear ratio for Dana 35 is 4.88
97-UP	TJ	Dana 30	Dana 35C* optional Dana 44	3.07 3.55 3.73 4.10	Changed to coil spring suspension. Lowest aftermarket available gear ratio for Dana 44 is 5.13

* The „C“ in Dana 35C does not stand for C-clip. The „C“ stands for custom. They are custom because they are shipped incomplete from the Dana factory to Chrysler. Final assembly was done by Chrysler. Dana 35, 35C come with 27 spline axle shafts that are 2.625“ in diameter, they are know to be a weak point for severe four wheeling and over sized tires.

Propeller Shaft Angle Measurement



(A) Output Yoke	=	3.0° or 4.9°
(C) Propeller Shaft	=	4.9° or -3.0°
Transmission Output Operating Angle		1.9°
(B) Axle Input Yoke	=	3.2° or 4.9°
(C) Propeller Shaft	=	4.9° or -3.2°
Axle Input Operating Angle		1.7°
Transmission Output Operating Angle		1.9°
Axle Input Operating Angle		-1.7°
Amount of U-Joint Cancellation		0.2°

Pinion Gear Depth Variance (Inch)

Original Pinion Gear Depth Variance	Replacement Pinion Gear Depth Variance								
	-4	-3	-2	-1	0	+1	+2	+3	+4
+4	+0.008	+0.007	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0
+3	+0.007	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001
+2	+0.006	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002
+1	+0.005	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003
0	+0.004	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003	-0.004
-1	+0.003	+0.002	+0.001	0	-0.001	-0.002	-0.003	-0.004	-0.005
-2	+0.002	+0.001	0	-0.001	- 0.002	-0.003	-0.004	-0.005	-0.006
-3	+0.001	0	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007
-4	0	-0.001	-0.002	-0.003	-0.004	-0.005	-0.006	-0.007	-0.008

Gear Tooth Contact Patterns

DRIVE SIDE OF RING GEAR TEETH		COAST SIDE OF RING GEAR TEETH		
HEEL	TOE	TOE	HEEL	
				DESIRABLE CONTACT PATTERN. PATTERN SHOULD BE CENTERED ON THE DRIVE SIDE OF TOOTH. PATTERN SHOULD BE CENTERED ON THE COAST SIDE OF TOOTH, BUT MAY BE SLIGHTLY TOWARD THE TOE. THERE SHOULD ALWAYS BE SOME CLEARANCE BETWEEN CONTACT PATTERN AND TOP OF THE TOOTH.
				RING GEAR BACKLASH CORRECT. **THINNER** PINION GEAR DEPTH SHIM REQUIRED.
				RING GEAR BACKLASH CORRECT. **THICKER** PINION GEAR DEPTH SHIM REQUIRED.
				PINION GEAR DEPTH SHIM CORRECT. **DECREASE** RING GEAR BACKLASH.
				PINION GEAR DEPTH SHIM CORRECT. **INCREASE** RING GEAR BACKLASH.

Source: 1999 Jeep® Service Manual (FSM)

Wrangler YJ / TJ / Cherokee XJ

Axle Specifications

Dana 30 - Specifications YJ / XJ

Axle Model	Dana 30-7 AF (Front Axle)
Axle Type	Hypoid
Application	XJ / YJ
Ring Gear Diameter	7.125 in. (18.09 cm)
Lubricants	MOPAR Gear Lubrication or Equivalent SAE 75W-90, API Grade GL-5, MIL-L-2105C
Axle Shaft Joint	Cardan, C.V.
Lubricant Capacity*	YJ Model: 56 oz. (1.65L) XJ Model: 50 oz. (1.48L)
Axle Ratio	3.07, 3.55, 3.73, 4.11
Differential Bearing	
Preload Shim	0.015 in. (0.38 mm)
Ring Gear Backlash	0.005 - 0.008 in. (0.13 - 0.20 mm)
Drive Pinion Bearing	
Preload Torque	Collapsible Spacer
Original Bearings	10-20 in. lbs. (1-2 N·m)
New Bearings	15.35 in. lbs. (1.5-4 N·m)
Drive Pinion Gear Depth	Seled Shims
Standard Setting	3.625 in. (92.1 mm)

*Command-Trac: add 5 ounces (148 ml) to front axle shift motor housing opening.

Dana 30 - Torque Chart YJ / XJ

Description	Torque
Bearing Cap Bolts	61 N·m (45 ft. lbs.)
Differential Cover Bolts	41 N·m (30 ft. lbs.)
Fill Hole Plug	34 N·m (25 ft. lbs.)
Hub Bearing to Knuckle Bolts	102 N·m (75 ft. lbs.)
Hub Bearing to Axle Shaft Nut	237 N·m (175 ft. lbs.)
Lower Ball Stud Nut	108 N·m (100 ft. lbs.)
Upper Ball Stud Nut	101 N·m (75 ft. lbs.)
Ring Gear Bolts	95 to 122 N·m (70 to 90 ft. lbs.)

Dana 30 - 181 FBI AXLE - Specifications TJ

Axle Type	Hypoid
Application	TJ
Lubricant	SAE Thermally Stable 80W - 90
Lube Capacity	1.2L (2.5 pts.)
Axle Ratio	3.07, 3.55, 3.73, 4.10
Differential Side Gear Clearance	0.13 - 0.20 mm (0.005 - 0.008 in.)
Ring Gear Diameter	18.09 cm (7.125 in.)
Backlash	0.13 - 0.20 mm (0.005 - 0.008 in.)
Pinion Std. Depth	92.1 mm (3.625 in.)
Pinion Bearing Rotating Torque	
Original Bearings	1 - 2 N·m (10 - 20 in. lbs.)
New Bearings	1.5 - 4 N·m (15 - 35 in. lbs.)

Dana 30 - 181 FBI AXLE - Torque Chart TJ

Description	Torque
Fill Hole Plug	34 N·m (25 ft. lbs.)
Diff. Cover Bolt	41 N·m (30 ft. lbs.)
Bearing Cap Bolt	61 N·m (45 ft. lbs.)
Ring Gear Bolt	95 - 122 N·m (70 - 90 ft. lbs.)
Axle Nut	237 N·m (175 ft. lbs.)
Hub Brg. Bolt	102 N·m (75 ft. lbs.)
Lower Ball Stud	108 N·m (80 ft. lbs.)
Upper Ball Stud	101 N·m (75 ft. lbs.)

Dana 35 - 194 RBI AXLE - Specifications TJ

Axle Type	Semi-Floating Hypoid
Application	TJ
Lubricant	SAE Thermally Stable 80W - 90
Lubricant Trailer Tow	Synthetic 75W - 140
Lube Capacity	1.66L (3.50 pts.)
Axle Ratios	3.07, 3.55, 3.73, 4.10
Differential Bearing Preload	0.1 mm (0.004 in.)
Differential Side Gear Clearance	0 - 0.15 mm (0 - 0.006 in.)
Ring Gear Diameter	19.2 cm (7.562 in.)
Ring Gear Backlash	0,12 - 0.20 mm (0.005 - 0.008 in.)
Pinion Std. Depth	92.08 mm (3.625 in.)
Pinion Bearing Preload - Original Bearings	1 - 2 N·m (10 - 20 in. lbs.)
Pinion Bearing Preload - New Bearings	1.5 - 4 N·m (15 - 35 in. lbs.)
Maximum Carrier Spread	0.51 mm (0.020 in.)

Dana 35 - 194 RBI AXLE - Torque Chart TJ

Description	Torque	
Bolt, Diff. Cover	41 N·m	(30 ft. lbs.)
Bolt, Bearing Cap	77 N·m	(57 ft. lbs.)
Nut, Pinion	271-474 N·m	(200-350 ft. lbs.)
Screw, Pinion Mate Shaft Lock	16.25 N·m	(12 ft. lbs.)
Bolt, Ring Gear	95-122 N·m	(70-90 ft. lbs.)
Bolt, ABS Sensor	8 N·m	(70 in. lbs.)

Dana 44 - 216 RBI AXLE - Specifications TJ

Axle Type	Semi-floating Hypoid
Application	TJ
Lubricant	SAE Thermally Stable 80W - 90
Lubricant-Trailer Tow	Synthetic 75W - 140
Lubricant Capacity	1.89L (4.0 pts.)
Axle Ratios	3.07, 3.55, 4.10
Differential Bearing Preload	0.1 mm (0.004 in.)
Differential Side Gear Clearance	0.13 - 0.20 mm (0.005 - 0.008 in.)
Ring Gear Diameter	216 mm (8.5 in.)
Ring Gear Backlash	0.13 - 0.20 mm (0.005 - 0.008 in.)
Pinion Depth	109.52 mm (4.312 in.)
Brg. Preload, Pinion (New)	2.26 - 4.52 N·m (20 - 40 in. lbs.)
Brg. Preload, Pinion (Original)	1 - 3 N·m (10 - 20 in. lbs.)

Dana 44 - 216 RBI AXLE - Torque Chart TJ

Description	Torque
Plug, Fill	34 N·m (25 ft. lbs.)
Bolts, Diff. Cover	41 N·m (30 ft. lbs.)
Bolts, Diff. Bearing Cap	108 N·m (80 ft. lbs.)
Bolts, Ring Gear	108 N·m (80 ft. lbs.)
Nuts, Brake Backing Plate	61 N·m (45 ft. lbs.)
Nut, Pinion Gear - Minimum	217 N·m (160 ft. lbs.)

Source: 1999 Jeep® Service Manual (FSM)

Wrangler TJ

Brake TJ

Brake Components Specifications	
Disc Brake Caliper	
Type	Sliding
Disc Brake Rotor	
Type	Ventilated
Size	279.4 x 23.876 mm (11 x 0.94 in.)
Max. Runout	0.12 mm (0.005 in.)
Max. Thickness Variation	0.013 mm (0.0005 in.)
Min. Thickness	22.7 mm (0.8937 in.)
Brake Drum	
Size	228.6 x 63.5 mm (9 x 2.5 in.)
Brake Booster	
Type	Tandem Diaphragm

Brake Torque Chart	
Description	**Torque**
Brake Pedal	
Support Bolt	28 N·m (21 ft. lbs.)
Brake Booster	
Mounting Nuts	39 N·m (29 ft. lbs.)
Master Cylinder	
Mounting Nuts	24 N·m (18 ft. lbs.)
Brake Lines	15 N·m (11 ft. lbs.)
Combination Valve	
Mounting Nuts	24 N·m (18 ft. lbs.)
Brake Lines	21 N·m (15 ft. lbs.)
Caliper	
Mounting Bolts	15 N·m (11 ft. lbs.)
Brake Hose Bolt	31 N·m (23 ft. lbs.)
Wheel Cylinder	
Mounting Bolts	10 N·m (7 ft. lbs.)
Brake Line	16 N·m (12 ft. lbs.)
Parking Brake	
Lever Bolts	12 N·m (9 ft. lbs.)
Lever Bracket Bolts	12 N·m (9 ft. lbs.)
Cable Retainer Nut	1.5 N·m (14 in. lbs.)

Brake TJ

Antilock Brake Torque Chart	
Description	**Torque**
Acceleration Sensor	
Sensor Bolt	4-5 N·m (35 - 45 in. lbs.)
Bracket Bolt	8-13 N·m (75 - 115 in. lbs.)
Hydraulic Control Unit	
Bracket to HCU Bolts	6.5 N·m (57 in. lbs.)
Body Bracket Bolts	16-24 N·m (142 - 212 in. lbs.)
HCU to Body Bracket Bolts	9-13 N·m (80 - 115 in. lbs.)
Brake Lines	15-18 N·m (130 - 160 in. lbs.)
Controller Anitlock Brakes	
Mounting Bolt	7-9 N·m (60 - 80 in. lbs.)
Wheel Speed Sensors	
Front Mounting Bolt	4-6 (34 - 50 in. lbs.)
Rear Mounting Bolt	12-14 N·m (106 - 124 in. lbs.)

Exhaust TJ

Description	Torque
Crossmember to Sill	
Bolts	41 N·m (30 ft. lbs.)
Exhaust Pipe to Manifold	
Nuts	31 N·m (23 ft. lbs.)
Intake/Exhaust Manifold - 2.5L Engine	
Exhaust Manifold Bolt #1	41 N·m (30 ft. lbs.)
Intake/Exhaust Manifold Bolts #2-5	31 N·m (23 ft. lbs.)
Exhaust Manifold Nuts #6&7	31 N·m (23 ft. lbs.)
Intake/Exhaust Manifold - 4.0L Engine	
Intake/Exhaust Manifold Nuts/Bolts #1,2,4,5,8-11	33 N·m (24 ft. lbs.)
Exhaust Manifold Bolt #3	33 N·m (24 ft. lbs.)
Exhaust Manifold Nuts #6&7	31 N·m (23 ft. lbs.)
Muffler to Catalytic Converter	
Clamp Nut	48 N·m (35 ft. lbs.)
Oxygen Sensors	
Nut	30 N·m (22 ft. lbs.)
Power Steering Pump/Tensioner Bracket	
Bolts (to intake)	28 N·m (21 ft. lbs.)
Bolts (to water pump)	48 N·m (35 ft. lbs.)

Steering TJ

Description	Torque
Power Steering Pump	
Bracket to Pump	28 N·m (21 ft. lbs.)
Bracket to Engine	47 N·m (35 ft. lbs.)
Flow Control Valve	75 N·m (55 ft. lbs.)
Pressure Line	28 N·m (21 ft. lbs.)

Power Steering Gear Specifications	
Type	Recirculating Ball
Gear Ratio	15 to 13:1
Worm Shaft Bearing	
Preload	0.45-1.13 N·m (4 - 10 in. lbs.)
Pitman Shaft Over-Center Drag	
New Gear (under 400 miles)	0.45-0.90 N·m (4-8 in. lbs.) + Worm Shaft Preload
Used Gear (over 400 miles)	0.5-0.6 N·m (4-5 in. lbs.) + Worm Shaft Preload

Power Steering Gear Torque Charts	
Description	**Torque**
Adjustment Cap Locknut	108 N·m (80 ft. lbs.)
Adjustment Screw Locknut	49 N·m (36 ft. lbs.)
Gear to Frame Bolts	95 N·m (70 ft. lbs.)
Pitman Shaft Nut	251 N·m (185 ft. lbs.)
Rack Piston Plug	102 N·m (75 ft. lbs.)
Side Cover Bolts	60 N·m (44 ft. lbs.)
Pressure Line	28 N·m (21 ft. lbs.)
Return Line	28 N·m (21 ft. lbs.)
Pitman Arm	
Shaft	251 N·m (185 ft. lbs.)
Drag Link	
Ball Studs	74 N·m (55 ft. lbs.)
Clamp	49 N·m (36 ft. lbs.)
Tie Rod Ends	
Ball Studs	74 N·m (55 ft. lbs.)
Clamp	27 N·m (20 ft. lbs.)
Tie Rod	
Ball Stud	88 N·m (65 ft. lbs.)
Steering Damper	
Frame	74 N·m (55 ft. lbs.)
Drag Link	74 N·m (55 ft. lbs.)

Steering TJ

Description	Torque
Tilt Steering Column	
Steering Wheel Nut	54 N·m (40 ft. lbs.)
Mounting Nuts	23 N·m (17 ft. lbs.)
Coupler Bolt	49 N·m (36 ft. lbs.)
Non-Tilt Steering Column	
Steering Wheel Nut	54 N·m (40 ft. lbs.)
Mounting Nuts	23 N·m (17 ft. lbs.)
Coupler Bolt	49 N·m (36 ft. lbs.)
Upper Bracket Nut	17 N·m (150 in. lbs.)

Clutch TJ

Description	Torque
(2.5 L) Bolts, clutch cover	31 N·m (23 ft. lbs)
(4.0 L) Bolts, clutch cover	52 N·m (38 ft. lbs)
Nut, clutch master cyl.	38 N·m (28 ft. lbs)
Nut, clutch slave cyl.	23 N·m (17 ft. lbs)
Bolt, clutch housing M12	75 N·m (55 ft. lbs)
Bolt, clutch housing 3/8	37 N·m (27 ft. lbs)
Bolt, clutch housing 7/16	58 N·m (43 ft. lbs)
Bolt, clutch housing/trans.	38 N·m (28 ft. lbs)
Bolt, dust shield M8	8 N·m (72 in. lbs)
Bolt, dust shield lower	50 N·m (37 ft. lbs)
Bolt, X-member/frame	41 N·m (30 ft. lbs)
Bolt, X-member/rear support	45 N·m (33 ft. lbs.)
(2.5 L) Bolts, flywheel 2.5 L	68 N·m (50 ft. lbs) + 1/4 turn
(4.0 L) Bolts, flywheel 4.0 L	142 N·m (105 ft. lbs)

Differential and Driveline TJ

Description	Torque
Front Propeller Shaft	
Bolts, Rear Yoke	27 N·m (20 ft. lbs.)
Bolts, Front Yoke	41 N·m (30 ft. lbs.)
Rear Propeller Shaft	
Bolts, Rear Yoke	19 N·m (14 ft. lbs.)

Wheel Alignment Specifications

Wheel Alignment Specifications YJ

Adjustment	Set-To	OK Range
CASTER Manual Trans.	6.5°	5-1/4° to 7-1/4°
CASTER Autom. Trans.	8°	6-1/2° to 9°
CAMBER	0°	- 1/2° to + 1/2°
TOE Right Wheel	0°	1/16 inch IN to 1/16 inch OUT
TOE Left Wheel	0°	1/16 inch IN to 1/16 inch OUT
Outside Wheel Turn Angle*	33° max.	32° to 33°

*Steering Stops are NOT Adjustable.

Wheel Alignment Specifications TJ

Adjustment	Preferred	Range	Max RT/LT Difference
CASTER	7°	± 1.0°	0.65°
CAMBER (fixed angle)	- 0.25°	± 0.63°	1.0°
TOE-IN (each front wheel)	0.15°	± 0.07°	0.05°

Thrust Angle 0° ± 0.25°

Wheel Alignment Specifications XJ

Adjustment	Set-To	OK Range
CASTER	6°	5° to 9°
CAMBER	0°	+ 1/2° to - 3/4°
TOE Right Wheel	0°	1/32 inch IN to 1/32 inch OUT
TOE Left Wheel	0°	1/32 inch IN to 1/32 inch OUT
Outside Wheel Turn Angle*	33° max.	32° to 33°

*Steering Stops are NOT Adjustable.

Wheel Alignment Specifications ZJ / ZG

Front Wheels

Adjustment	Preferred	Range
CASTER	7°	6.5° to 7.5°
CAMBER	NA	- 1.13° to + 0.13°
TOE-IN	0.12°	0° to + 0.22°

Toe Differential Left to Right .0.5°

Rear Wheels

Adjustment	Specification
Thrust Angle	± .25°
Total TOE-IN	0.00 to + 0.5°

MAINTENANCE SCHEDULES

There are two maintenance schedules that show proper service for the vehicle.

First is **Schedule "A"**. It lists all the scheduled maintenance to be performed under "normal" operating conditions.

Second is **Schedule "B"**. It is a schedule for vehicles that are operated under these conditions:
• Frequent short trips driving less than 5 miles (8 km)
• Frequent driving in dusty conditions
• Frequent trailer towing
• Extensive idling
• More than 50% of driving is at sustained high speeds during hot weather, above 90°F (32°C)
• Off-road driving
• Desert operation
Use the schedule that best describes the driving conditions.
Where time and mileage are listed, follow the interval that occurs first.

At Each Stop For Fuel
• Check engine oil level, add as required.
• Check windshield washer solvent and add if required.

Once A Month
• Check tire pressure and look for unusual wear or damage.
• Inspect battery and clean and tighten terminals as required. Check electrolyte level and add water as needed.
• Check fluid levels of coolant reservoir, power steering, brake master cylinder, and transmission and add as needed.
• Check all lights and all other electrical items for correct operation.

At Each Oil Change
• Inspect exhaust system.
• Inspect brake hoses.
• Rotate the tires at each oil change interval shown on Schedule "A" (7,500 miles) or every other interval shown on Schedule "B" (6,000 miles).
• Check coolant level, hoses, and clamps.
• After completion of off-road operation, the underside of the vehicle should be thoroughly inspected. Examine threaded fasteners for looseness.

EMISSION CONTROL SYSTEM MAINTENANCE

The scheduled emission maintenance listed in **bold type** on the Maintenance Schedules, must be done at the mileage specified to assure the continued proper functioning of the emission control system. These, and all other maintenance services included in this manual, should be done to provide the best vehicle performance and reliability. More frequent maintenance may be needed for vehicles in severe operating conditions such as dusty areas and very short trip driving.

Important: Inspection and service should also be performed any time a malfunction is observed or suspected.

SCHEDULE "A"

7,500 Miles (12 000 km) or at 6 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

15,000 Miles (24 000 km) or at 12 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.

22,500 Miles (36 000 km) or at 18 months
• Change engine oil.
• Replace engine oil filter.
• Inspect brake linings.
• Lubricate steering linkage.

30,000 Miles (48 000 km) or at 24 months
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill transfer case fluid.
• Lubricate steering and suspension ball joints.

37,500 Miles (60 000 km) or at 30 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill manual transmission fluid.

45,000 Miles (72 000 km) or at 36 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Inspect brake linings.
• Flush and replace engine coolant at 36 months, regardless of mileage.
• Lubricate steering and suspension ball joints.

52,500 Miles (84 000 km) or at 42 months
• Change engine oil.
• Replace engine oil filter.
• Flush and replace engine coolant if not done at 36 months.
• Lubricate steering linkage.

60,000 Miles (96 000 km) or at 48 months
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace ignition cables.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill transfer case fluid.
• Lubricate steering and suspension ball joints.

67,500 Miles (108 000 km) or at 54 months
• Change engine oil.
• Replace engine oil filter.
• Inspect brake linings.
• Lubricate steering linkage.

75,000 Miles (120 000 km) or at 60 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Flush and replace engine coolant if it has been 30,000 miles (48 000 km) or 24 months since last change.
• Lubricate steering and suspension ball joints.
• Drain and refill manual transmission fluid.

82,500 Miles (133 000 km) or at 66 months
• Change engine oil.
• Replace engine oil filter.
• Flush and replace engine coolant if it has been 30,000 miles (48 000 km) or 24 months since last change.
• Lubricate steering linkage.

90,000 Miles (144 000 km) or at 72 months
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill transfer case fluid.
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

97,500 Miles (156 000 km) or at 78 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

105,000 Miles (168 000 km) or at 84 months
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Flush and replace engine coolant if it has been 30,000 miles (48 000 km) or 24 months since last change.
• Lubricate steering and suspension ball joints.

112,500 Miles (180 000 km) or at 90 months
• Change engine oil.
• Replace engine oil filter.
• Inspect brake linings.
• Flush and replace engine coolant if it has been 30,000 miles (48 000 km) or 24 months since last change.
• Lubricate steering linkage.
• Drain and refill manual transmission fluid.

120,000 Miles (192 000 km) or at 96 months
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace ignition cables.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill transfer case fluid.
• Lubricate steering and suspension ball joints.

SCHEDULE "B"

3,000 Miles (5 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

6,000 Miles (10 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.

9,000 Miles (14 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

12,000 Miles (19 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

15,000 Miles (24 000 km)
• Change engine oil.
• Replace engine oil filter.
• **Inspect engine air cleaner element, replace as necessary.**
• Lubricate steering linkage.

18,000 Miles (29 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.
• Drain and refill manual transmission fluid.

21,000 Miles (34 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
24,000 Miles (38 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

27,000 Miles (43 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

30,000 Miles (48 000 km)
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill transfer case fluid.
• Lubricate steering and suspension ball joints.

33,000 Miles (53 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

36,000 Miles (58 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.
• Drain and refill manual transmission fluid.

39,000 Miles (62 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

42,000 Miles (67 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.

45,000 Miles (72 000 km)
• Change engine oil.
• Replace engine oil filter.
• **Inspect engine air cleaner element, replace as necessary.**
• Lubricate steering linkage.

48,000 Miles (77 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

51,000 Miles (82 000 km)
• Change engine oil.
• Replace engine oil filter.
• Flush and replace engine coolant.
• Lubricate steering linkage.

54,000 Miles (86 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.
• Drain and refill manual transmission fluid.

57,000 Miles (91 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

60,000 Miles (96 000 km)
• Change engine oil.
• Replace engine oil filter.
• **Replace engine air cleaner element.**
• **Replace ignition cables.**
• **Replace spark plugs.**
• Inspect drive belt, adjust tension as necessary.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill transfer case fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

63,000 Miles (101 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

66,000 Miles (106 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.

69,000 Miles (110 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

72,000 Miles (115 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.
• Drain and refill manual transmission fluid.

75,000 Miles (120 000 km)
• Change engine oil.
• Replace engine oil filter.
• **Inspect engine air cleaner element, replace as necessary.**
• Lubricate steering linkage.

78,000 Miles (125 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Lubricate steering and suspension ball joints.

81,000 Miles (134 000 km)
• Change engine oil.
• Replace engine oil filter.
• Flush and replace engine coolant if it has been 30,000 miles (48 000 km) since last change.
• Lubricate steering linkage.

84,000 Miles (134 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.
• Drain and refill automatic transmission fluid.
• Drain and refill front and rear axles.‡
• Inspect brake linings.
• Lubricate steering and suspension ball joints.

87,000 Miles (139 000 km)
• Change engine oil.
• Replace engine oil filter.
• Lubricate steering linkage.

Source: 1998 TJ Service Manual

Wrangler TJ Lubrication and Maintenance

90,000 Miles (144 000 km)
- Change engine oil.
- Replace engine oil filter.
- **Replace engine air cleaner element.**
- **Replace spark plugs.**
- Inspect drive belt, adjust tension as necessary.
- Lubricate steering linkage.
- Drain and refill transfer case fluid.
- Lubricate steering and suspension ball joints.
- Drain and refill manual transmission fluid.

93,000 Miles (149 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.

96,000 Miles (154 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.
- Drain and refill automatic transmission fluid.
- Drain and refill front and rear axles.‡
- Inspect brake linings.
- Lubricate steering and suspension ball joints.

99,000 Miles (158 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.

102,000 Miles (163 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.
- Lubricate steering and suspension ball joints.

105,000 Miles (168 000 km)
- Change engine oil.
- Replace engine oil filter.
- **Inspect engine air cleaner element, replace as necessary.**
- Lubricate steering linkage.

108,000 Miles (173 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.
- Drain and refill automatic transmission fluid.
- Drain and refill front and rear axles.‡
- Inspect brake linings.
- Lubricate steering and suspension ball joints.
- Drain and refill manual transmission fluid.

111,000 Miles (178 000 km)
- Change engine oil.
- Replace engine oil filter.
- Flush and replace engine coolant if it has been 30,000 miles (48 000 km) since last change.
- Lubricate steering linkage.

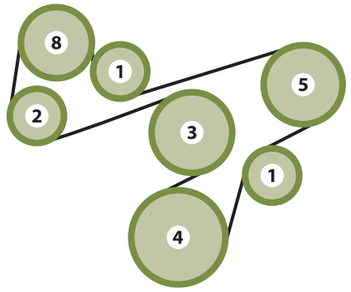
114,000 Miles (182 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.
- Lubricate steering and suspension ball joints.

117,000 Miles (187 000 km)
- Change engine oil.
- Replace engine oil filter.
- Lubricate steering linkage.

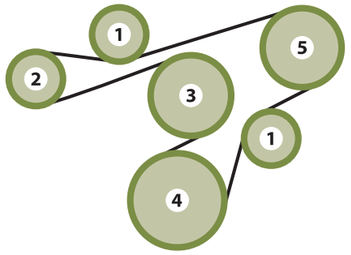
120,000 Miles (192 000 km)
- Change engine oil.
- Replace engine oil filter.
- **Replace engine air cleaner element.**
- **Replace ignition cables.**
- **Replace spark plugs.**
- Inspect drive belt, adjust tension as necessary.
- Lubricate steering linkage.
- Drain and refill automatic transmission fluid.
- Drain and refill transfer case fluid.
- Drain and refill front and rear axles.‡
- Inspect brake linings.
- Lubricate steering and suspension ball joints.

‡ Off-highway operation, trailer towing, taxi, limousine, bus, snow plowing, or other types of commercial service or prolonged operation with heavy loading, especially in hot weather, require front and rear axle service indicated with a ‡ in Schedule "B". Perform these services if the vehicle is usually operated under these conditions.

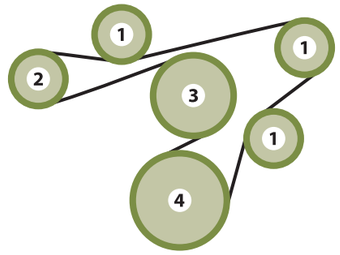
YJ / TJ / XJ Drive Belt Schematics



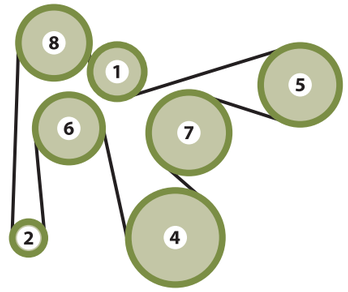
TJ 2.5L / 4.0L Engines - With A/C



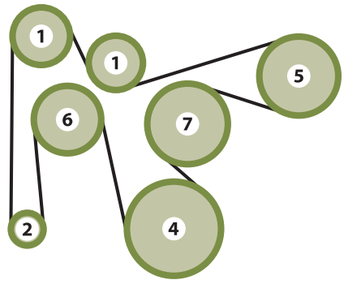
TJ 2.5L / 4.0L Engines - Without A/C



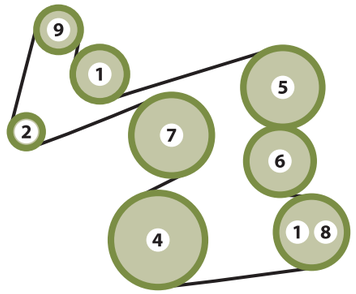
TJ 2.5L / 4.0L Engines - Without A/C or P/S



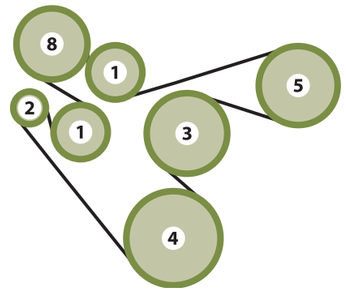
XJ 4.0L Engine - With A/C



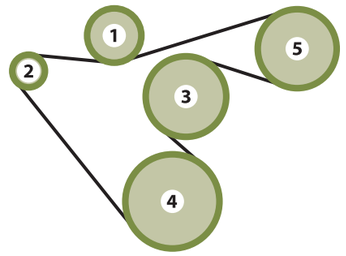
XJ 4.0L Engine - Without A/C



XJ 4.0L Engine - With or Without A/C RHD



YJ 4.0L Engine - With A/C
XJ 2.5L Engine - With A/C



YJ 2.5L / 4.0L Engines - Without A/C
XJ 2.5L Engine - Without A/C

1) IDLER PULLEY (IDL)
2) GENERATOR
3) FAN & WATER PUMP
4) CRANK
5) POWER STEERING PUMP (P/S)
6) FAN
7) WATER PUMP
8) AIR CONDITIONING A/C
9) AUTOMATIC BELT IDLER
1) 8) IDLER PULLEY (IDL) **OR** A/C

Source: 1998 TJ Service Manual

Source: 1998 TJ Service Manual, 1995 YJ / XJ Service Manual