

CORONADO



Maintenance Manual



122SD AND CORONADO 132 MAINTENANCE MANUAL

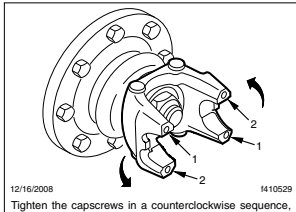
**Models: 122SD
Coronado 132**

Page Description

For an example of a 122SD and Coronado 132 Maintenance Manual page, see Fig. 1.

A
B
C

Driveline
41

41-01 Driveline Inspection


1. Park the vehicle on a flat, level surface, apply the parking brakes, and chock the tires.

WARNING

Self-locking bearing-cup or bearing-strap cap-screws must not be reused; replace the cap-screws with new ones. Also, do not undertighten or overtighten any bearing-cup or bearing-strap capscrows. A loose or broken fastener at any point in the driveline weakens the driveline connection, which could cause serious vehicle damage, or could result in a driveshaft separating from the vehicle, possibly causing loss of vehicle control that could result in serious personal injury or death.

2. Check the torque of the bearing-cup or bearing-strap capscrows; see Table 1 for installed torque values.
Remove and discard any loose capscrows. Do not reuse any loosened self-locking capscrows; they are designed for one-time installation only. Replace all loosened and removed capscrows with new ones. Tighten the new capscrows as specified in Table 1.
For half-round yokes with bearing straps, tighten the bearing-strap capscrows following the tightening sequence shown in Fig. 1, in increments of 20 lbf-ft (25 N-m) to the torque specifications listed in Table 1.

Bearing Cap or Bearing Strap Capscrow Torque Specifications	
U-Joint Type	Torque: lbf-ft (N-m)
Half-Round Yokes with Bearing Straps and 3/8-inch Capscrows (see Fig. 2, Ref. 8)	45-60 (60-80)
Half-Round Yokes with Bearing Straps and 1/2-inch Capscrows (Fig. 2, Ref. 8)	130-135 (175-185)
Full-Round Yokes with Bearing Cups (Fig. 3)	43 (58)
RPL Series U-Joints with Bearing Cups (Fig. 4)	125 (169)

Table 1, Bearing Cap or Bearing Strap Capscrow Torque Specifications

3. Check the driveline yokes for cracks, and check end-yokes for looseness; see Fig. 2.
Replace cracked yokes.
If any end-yoke can be moved in or out on its shaft, or can be rocked on its shaft, disconnect the driveshaft and U-joint from the yoke, then check the drive component's shaft seal for leakage or other visible damage that may have been caused by the loose yoke. Replace the seal if needed, then tighten the yoke nut. Refer to Section 41.00, Specifications 400 of the 122SD and Coronado Workshop Manual for torque specifications. If the yoke is still loose after tightening the yoke nut, replace the end-yoke and yoke nut.
Replace the prevailing torque locknut (end-yoke nut) if it was removed for yoke replacement, seal replacement, or any other reason.
4. Check U-joint assemblies for wear by moving the driveshaft up and down, and from side to side. If any movement of the U-joint cross in the bearings can be felt or seen, replace the U-joint assembly.
5. Check if the midship bearing and mounting are loose or have deteriorated, by attempting to move the driveshaft up and down, and from side to side. If the bearing is loose on its shaft, or rattles, replace it. If the bearing mount is loose on the frame, tighten the mounting fasteners to the proper torque value. See Section 41.00.

D
E
F

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41/1

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A. Maintenance Operation Number consists of the Group Number followed by the Sequence Number
 B. Group Title
 C. Group Number
 D. Vehicle Names
 E. Release Date
 F. Group Number/Page Number

Fig. 1, Example of a 122SD and Coronado 132 Maintenance Manual Page

Group No.	Group Title
00	General Information
01	Engine
09	Air Intake
13	Air Compressor
15	Alternators and Starters
20	Engine Cooling/Radiator
25	Clutch
26	Transmission
31	Frame and Frame Components
32	Suspension
33	Front Axle
35	Rear Axle
40	Wheels and Tires
41	Driveline
42	Brakes
46	Steering
47	Fuel
49	Exhaust
60	Cab
72	Doors
83	Heater and Air Conditioner
88	Hood, Grille, and Cab Fenders

Title of Maintenance Operation (MOP)	MOP Number
Determining Scheduled Maintenance Intervals.	00-01
Initial Maintenance (IM) Operations.	00-03
M1 Maintenance Interval Operations.	00-04
M2 Maintenance Interval Operations.	00-05
M3 Maintenance Interval Operations.	00-06
Metric/U.S. Customary Conversion Tables.	00-09
Noise Emission Controls Maintenance.	00-07
Torque Specifications Tables.	00-10
Vehicle Maintenance Schedule Tables.	00-02
Verification of Inspections Log.	00-08

Determining Scheduled Maintenance Intervals: 00–01

Determining Scheduled Maintenance Intervals

Performing regular maintenance on your Freightliner vehicle will help ensure that your vehicle delivers safe reliable service and optimum performance for years to come. Failure to follow a regular maintenance program can result in inefficient operation and unscheduled down time.

Determine the correct maintenance intervals and operations for your vehicle as follows.

1. Using **Table 1**, determine the type of service or conditions the vehicle will be operating in. Generally, most vehicles operate under conditions that fall within one of the four types of service listed.
2. Using **Table 2**, determine how often maintenance should be performed, based on the vehicle's service schedule.
3. When the vehicle reaches the distance (or hours of operation) given for a maintenance interval, as shown in the appropriate table in **Vehicle Maintenance Schedule Tables: 00-02**, see the ap-

propriate Maintenance Interval Operation Table (listed below) for a list of the maintenance operations to be performed.

- **Initial Maintenance (IM) Operations: 00-03**
- **M1 Maintenance Interval Operations: 00-04**
- **M2 Maintenance Interval Operations: 00-05**
- **M3 Maintenance Interval Operations: 00-06**

Use the maintenance operation reference numbers in the Maintenance Interval Operation Tables to find detailed instructions in the manual on each operation.

NOTE: Maintenance instructions in this manual are based on average vehicle use and normal operating conditions. Unusual vehicle operating conditions may require service at more frequent intervals.

Types of Service	
Service Schedule	Service Conditions
Schedule I * (Severe Service)	Vehicles that annually travel <i>less than</i> 6000 miles (10 000 kilometers) <i>or</i> that operate under severe conditions. Examples of severe service, Schedule I usage include: <ul style="list-style-type: none"> • Operation on extremely poor roads or where there is heavy dust accumulation; • Constant exposure to extreme hot, cold, salt-air, or other extreme climates; • Frequent short-distance travel; • Construction-site operation; • City operation (fire truck); • Farm operation.
Schedule II † (Short-Haul Transport)	Vehicles that annually travel <i>less than</i> 60,000 miles (100 000 kilometers) and operate under normal conditions. Examples of Schedule II usage are: <ul style="list-style-type: none"> • Operation primarily in cities and densely populated areas; • Local transport with infrequent freeway travel; • High percentage of stop-and-go travel.
Schedule III † (Long-Haul Transport)	Vehicles that annually travel <i>more than</i> 60,000 miles (100 000 kilometers) with minimal city or stop-and-go operation. Examples of Schedule III usage are: <ul style="list-style-type: none"> • Regional delivery that is mostly freeway miles; • Interstate transport; • Any road operation with high annual mileage.

Determining Scheduled Maintenance Intervals: 00–01

Types of Service	
Service Schedule	Service Conditions
<p>Schedule IV† (Long-Haul Transport for Optimized Vehicle Configuration)</p>	<p>Vehicles that annually travel over 60,000 miles (100 000 km) and meet the following qualifications:</p> <ul style="list-style-type: none"> • Meritor 15-1/2 inch dampened/ceramic Lite Pedal LTD clutch with sealed release bearing. • Synthetic transmission fluid used in transmission. • Meritor FF–961 or FF–981 front axle (12,000 lb. capacity) with synthetic lubricant. • Front suspension with maintenance-free rubber bushings for 12,000 lb. capacity suspension. • Meritor RPL series, or Dana Spicer SPL series driveline U-joints. • Synthetic lubricant used in rear axle. • Equipped with any Freightliner AirLiner suspension. • Equipped with Meritor Q-Plus extended-lube cam brakes and automatic slack adjusters, front and rear. • Standard brake system package including Bendix AD-9 air dryer with heater, and a Bendix air compressor. • TRW TAS65 power steering.

* For Schedule I (severe service) vehicles equipped with an hourmeter, use maintenance intervals based on hours of operation rather than distance traveled.

† Use Schedule I (severe service) maintenance intervals for vehicles that operate under severe conditions, such as extremely poor roads, heavy dust accumulation, extreme climate, frequent short distance travel, construction-site operation, city operation (garbage truck), or farm operation.

Table 1, Types of Service

Service Schedule					
Service Schedule	Maintenance Interval Operation	Maintenance Interval			
		Frequency	Miles	km	Hours
<p>Schedule I (Severe Service)</p>	Initial Maintenance (IM)	first	1000	1600	50
	Maintenance 1 (M1)	every	1000	1600	50
	Maintenance 2 (M2)	every	5000	8000	500
	Maintenance 3 (M3)	every	15,000	24 000	1500
<p>Schedule II (Short-Haul Transport)</p>	Initial Maintenance (IM)	first	10,000	16 000	—
	Maintenance 1 (M1)	every	10,000	16 000	
	Maintenance 2 (M2)	every	50,000	80 000	
	Maintenance 3 (M3)	every	150,000	240 000	
<p>Schedule III (Long-Haul Transport) and Schedule IV (Long-Haul Transport for Optimized Vehicle Configuration)</p>	Initial Maintenance (IM)	first	25,000	40 000	—
	Maintenance 1 (M1)	every	25,000	40 000	
	Maintenance 2 (M2)	every	100,000	161 000	
	Maintenance 3 (M3)	every	300,000	483 000	

Table 2, Service Schedule

Vehicle Maintenance Schedule Tables: 00–02

Maintenance for Service Schedules I and II							
Maint. No.	Maintenance Interval	Service Date	Service Schedule I			Service Schedule II	
			Miles	km	Hours	Miles	km
1	IM and M1		1000	1600	100	10,000	16 000
2	M1		2000	3200	200	20,000	32 000
3	M1		3000	4800	300	30,000	48 000
4	M1		4000	6400	400	40,000	64 000
5	M1 and M2		5000	8000	500	50,000	80 000
6	M1		6000	9600	600	60,000	96 000
7	M1		7000	11 200	700	70,000	112 000
8	M1		8000	12 800	800	80,000	128 000
9	M1		9000	14 400	900	90,000	144 000
10	M1 and M2		10,000	16 000	1000	100,000	160 000
11	M1		11,000	17 600	1100	110,000	176 000
12	M1		12,000	19 200	1200	120,000	192 000
13	M1		13,000	20 800	1300	130,000	208 000
14	M1		14,000	22 400	1400	140,000	224 000
15	M1, M2, and M3		15,000	24 000	1500	150,000	240 000
16	M1		16,000	25 600	1600	160,000	256 000
17	M1		17,000	27 200	1700	170,000	272 000
18	M1		18,000	28 800	1800	180,000	288 000
19	M1		19,000	30 400	1900	190,000	304 000
20	M1 and M2		20,000	32 000	2000	200,000	320 000
21	M1		21,000	33 600	2100	210,000	336 000
22	M1		22,000	35 200	2200	220,000	352 000
23	M1		23,000	36 800	2300	230,000	368 000
24	M1		24,000	38 400	2400	240,000	384 000
25	M1 and M2		25,000	40 000	2500	250,000	400 000
26	M1		26,000	41 600	2600	260,000	416 000
27	M1		27,000	43 200	2700	270,000	432 000
28	M1		28,000	44 800	2800	280,000	448 000
29	M1		29,000	46 400	2900	290,000	464 000
30	M1, M2, and M3		30,000	48 000	3000	300,000	480 000
31	M1		31,000	49 600	3100	310,000	496 000
32	M1		32,000	51 200	3200	320,000	512 000
33	M1		33,000	52 800	3300	330,000	528 000
34	M1		34,000	54 400	3400	340,000	544 000
35	M1 and M2		35,000	56 000	3500	350,000	560 000

Vehicle Maintenance Schedule Tables: 00–02

Maintenance for Service Schedules I and II							
Maint. No.	Maintenance Interval	Service Date	Service Schedule I			Service Schedule II	
			Miles	km	Hours	Miles	km
36	M1		36,000	57 600	3600	360,000	576 000
37	M1		37,000	59 200	3700	370,000	592 000
38	M1		38,000	60 800	3800	380,000	608 000
39	M1		39,000	62 400	3900	390,000	624 000
40	M1 and M2		40,000	64 000	4000	400,000	640 000
41	M1		41,000	65 600	4100	410,000	656 000
42	M1		42,000	67 200	4200	420,000	672 000
43	M1		43,000	68 800	4300	430,000	688 000
44	M1		44,000	70 400	4400	440,000	704 000
45	M1, M2, and M3		45,000	72 000	4500	450,000	720 000
46	M1		46,000	73 600	4600	460,000	736 000
47	M1		47,000	75 200	4700	470,000	752 000
48	M1		48,000	76 800	4800	480,000	768 000
49	M1		49,000	78 400	4900	490,000	784 000
50	M1 and M2		50,000	80 000	5000	500,000	800 000
51	M1		51,000	82 000	5100	510,000	820 000
52	M1		52,000	83 700	5200	520,000	837 000
53	M1		53,000	85 300	5300	530,000	853 000
54	M1		54,000	86 900	5400	540,000	869 000
55	M1 and M2		55,000	88 500	5500	550,000	885 000
56	M1		56,000	90 100	5600	560,000	901 000
57	M1		57,000	91 700	5700	570,000	917 000
58	M1		58,000	93 300	5800	580,000	933 000
59	M1		59,000	94 900	5900	590,000	949 000
60	M1, M2, and M3		60,000	96 500	6000	600,000	965 000
61	M1		61,000	98 200	6100	610,000	982 000
62	M1		62,000	99 800	6200	620,000	998 000
63	M1		63,000	101 400	6300	630,000	1 014 000
64	M1		64,000	103 000	6400	640,000	1 030 000
65	M1 and M2		65,000	104 600	6500	650,000	1 046 000
66	M1		66,000	106 200	6600	660,000	1 062 000
67	M1		67,000	107 800	6700	670,000	1 078 000
68	M1		68,000	109 400	6800	680,000	1 094 000
69	M1		69,000	111 000	6900	690,000	1 110 000
70	M1 and M2		70,000	112 700	7000	700,000	1 127 000

Vehicle Maintenance Schedule Tables: 00–02

Maintenance for Service Schedules I and II							
Maint. No.	Maintenance Interval	Service Date	Service Schedule I			Service Schedule II	
			Miles	km	Hours	Miles	km
71	M1		71,000	114 300	7100	710,000	1 143 000
72	M1		72,000	115 900	7200	720,000	1 159 000
73	M1		73,000	117 500	7300	730,000	1 175 000
74	M1		74,000	119 100	7400	740,000	1 191 000
75	M1, M2, and M3		75,000	120 700	7500	750,000	1 207 000
76	M1		76,000	122 300	7600	760,000	1 223 000
77	M1		77,000	123 900	7700	770,000	1 239 000
78	M1		78,000	125 500	7800	780,000	1 255 000
79	M1		79,000	127 100	7900	790,000	1 271 000
80	M1 and M2		80,000	128 700	8000	800,000	1 287 000
81	M1		81,000	130 400	8100	810,000	1 304 000
82	M1		82,000	132 000	8200	820,000	1 320 000
83	M1		83,000	134 000	8300	830,000	1 340 000
84	M1		84,000	135 200	8400	840,000	1 352 000
85	M1 and M2		85,000	137 000	8500	850,000	1 370 000
86	M1		86,000	138 400	8600	860,000	1 384 000
87	M1		87,000	140 000	8700	870,000	1 400 000
88	M1		88,000	141 600	8800	880,000	1 416 000
89	M1		89,000	143 200	8900	890,000	1 432 000
90	M1, M2, and M3		90,000	144 800	9000	900,000	1 448 000
91	M1		91,000	146 500	9100	910,000	1 465 000
92	M1		92,000	148 100	9200	920,000	1 481 000
93	M1		93,000	150 000	9300	930,000	1 500 000
94	M1		94,000	151 300	9400	940,000	1 513 000
95	M1 and M2		95,000	153 000	9500	950,000	1 530 000
96	M1		96,000	155 000	9600	960,000	1 550 000
97	M1		97,000	156 100	9700	970,000	1 561 000
98	M1		98,000	157 700	9800	980,000	1 577 000
99	M1		99,000	159 300	9900	990,000	1 593 000
100	M1 and M2		100,000	160 900	10,000	1,000,000	1 609 000

Table 3, Maintenance for Service Schedules I and II

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