TOYOTA

REPAIR MANUAL

2TG (D) 20 ~ 25
02-2TG (D) 20 ~ 25
42-2TD 20 ~ 25

Pub. No. CE638-1

FOREWORD

This manual covers the service procedures of the TOYOTA TOWING TRACTOR 2TD/2TG20, 25 Series. Please use this manual for providing quick, correct servicing of the corresponding towing tractor models.

This manual deals with the above models as of March 1998. Please understand that disagreement can take place between the descriptions in the manual and actual vehicles due to change in design and specifications. Any change or modifications thereafter will be informed by Toyota Industrial Vehicles' Parts & Service News.

For the service procedures of the mounted engine, read the repair manuals listed below as reference together with this manual.

(Reference)

Repair manuals related to this manual are as follows:

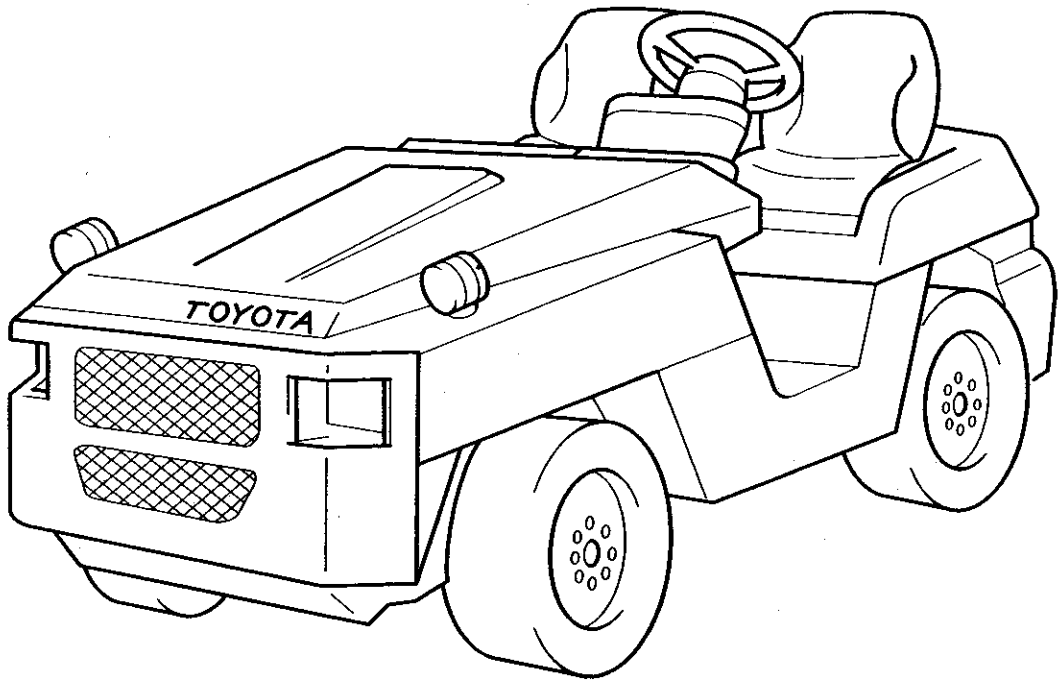
TOYOTA INDUSTRIAL VEHICLE 1DZ-II ENGINE REPAIR MANUAL	*(No. CE618-2)*
TOYOTA INDUSTRIAL VEHICLE 4Y ENGINE REPAIR MANUAL	*(No. CE602-2)*
TOYOTA INDUSTRIAL VEHICLE 2Z ENGINE REPAIR MANUAL	*(No. CE625-4)*

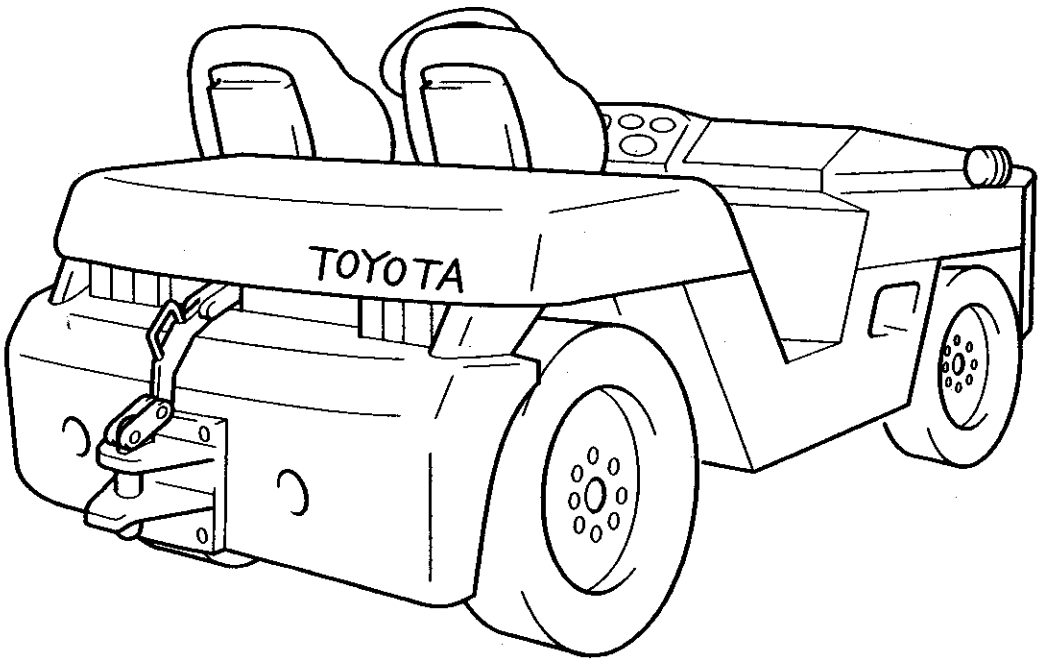
TOYOTA Material Handling Company
A Division of TOYOTA INDUSTRIES CORPORATION

SECTION INDEX

GENERAL

VEHICLE EXTERIOR VIEWS





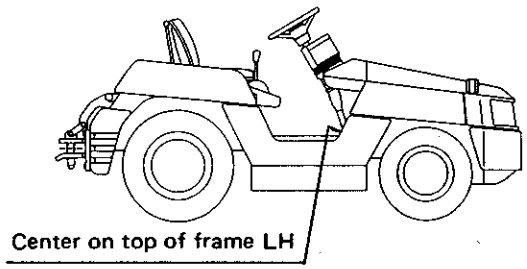
Vehicle Exterior Views

TAF26-32, 28

MODEL LINEUP

Maximum drawbar pull	Model	Installed engine	Transmission	Remarks
2000 kg (4400 lbs)	2TD20	1DZ	Clutch	↑
	02-2TD20	1DZ	Torque converter	↑
	2TG20	4Y	Clutch	↑
	02-2TG20	4Y	Torque converter	↑
2000 kg	42-2TD20	2Z	Torque converter	Power steering as standard equipment
2500 kg (5500 lbs)	2TD25	1DZ	Clutch	↑
	02-2TD25	1DZ	Torque converter	↑
	2TG25	4Y	Clutch	↑
	02-2TG25	4Y	Torque converter	↑
2500 kg	42-2TD25	2Z	↑	↑

FRAME SERIAL NUMBER

Engine	Model	Punching format	Punching position
1DZ engine	2TD20	2TD25-10011	
	02-2TD20		
	2TD25		
	02-2TD25		
4Y engine	2TG20	~ 1998.8 : 2TG25-10011 1998.8 ~ : 2TG25-11001	
	02-2TG20		
	2TG25		
	02-2TG25		
2Z engine	42-2TD20	~ 1998.8 : 2TD25-30011 1998.8 ~ : 2TD25-31001	
	42-2TD25		

ABBREVIATIONS

Abbreviations used in this manual are as follows:

Abbreviation (Code)	Meaning	Abbreviation (Code)	Meaning
ABDC	After button dead center	PS	Horsepower
ASSY	Assembly	P/S	Power steering
ATDC	After top dead center	RH	Right hand
ATM	Automatic transmission	SAE	Society of automotive engineers (USA)
BTDC	Before top dead center		
L/	Less	SST	Special service tool
LH	Left hand	STD	Standard
LLC	Long life coolant	SUB-ASSY	Sub-assembly
MTM	Manual transmission	T =	Tightening torque
OHV	Overhead valve	OOT	Number of teeth (OO)
OPT	Option	U/S	Undersize
O/S	Oversize	w/	With

OPERATIONAL TIPS

1. Safe operation
   (1) Make sure that correct size wire is used for hoisting a heavy material.
   (2) After jacking up, always support with rigid racks or stands.

2. Preparation of SSTs and measuring tools
   (1) Prepare SSTs and measuring tools before starting operation.

3. Clearing and arrangement
   (1) Always keep the workshop neat and orderly for easy operation.
   (2) Disassembly of hydraulic equipment shall always be done in a clean place using clean tools.

4. Genuine Toyota parts
   Genuine Toyota parts should be used even in the replacement of packings, gaskets and O-rings.

5. Repairs on electrical system
   Before doing any repairs on the electical system, disconnect the cables from the battery terminals. Be sure to disconnect the negative ⊖ cable first.

6. Tightening torque for installation
   Be sure to observe the tightening torque given in this manual. If not specified, tighten to the torque listed in standard bolt & nut tightening torque.

7. Defect status grasp
   Do not start disassembly and replacement as soon as a defect is found, but first grasp whether the defect requires disassembly and replacement. In the case of torque converter for example, do not attempt torque converter disassembly upon a failure in starting the vehicle, but first check such factors as the oil, pressure and rotation status causing the failure.

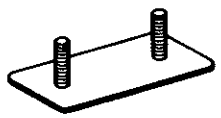
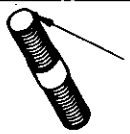
STANDARD BOLT & NUT TIGHTENING TORQUE

Standard bolt and tightening torques are not indicated.
Judge the standard tightening torque as shown below.

1. Find out the type of the bolt from the list below and then find the bolt tightening torque from the table.
2. The nut tightening torque can be judged from the mating bolt type.

BOLT STRENGTH TYPE IDENTIFICATION METHOD

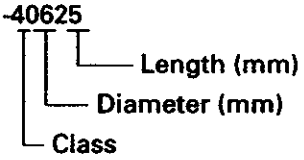
1. Identification by bolt shape

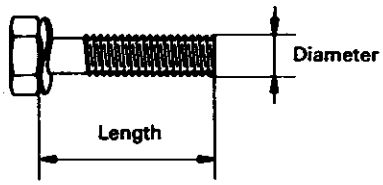
	Shape and class	Class
Hexagon head bolt	 Bolt head No.	4 = 4T 5 = 5T 6 = 6T 7 = 7T 8 = 8T
	 No mark	4T
Hexagon flange bolt	 No mark	4T
Hexagon head bolt	 Two protruding lines	5T
Hexagon flange bolt	 Two protruding lines	6T
Hexagon head bolt	 Three protruding lines	7T
Hexagon head bolt	 Four protruding lines	8T
Welded bolt		4T
Stud bolt	 No mark	4T
	 Grooved	6T

2. Identification by part No.

Hexagon head bolt

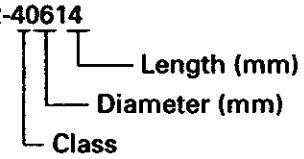
Part No.
91611-40625

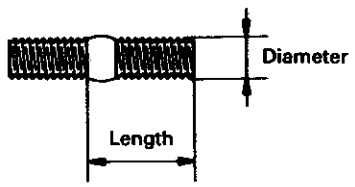




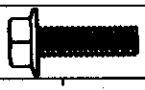
Stud bolt

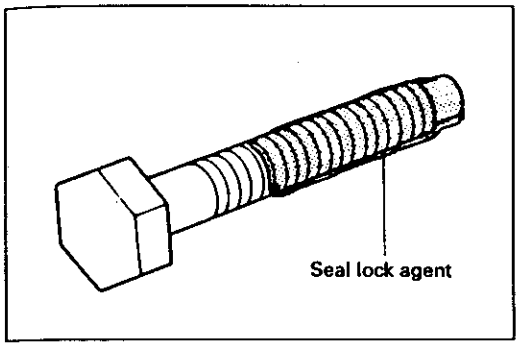
Part No.
92132-40614





TIGHTENING TORQUE TABLE

Class	Diameter mm	Pitch mm	Specified torque					
			Hexagon head bolt 			Hexagon flange bolt 		
			N·m	kgf-cm	ft-lbf	N·m	kgf-cm	ft-lbf
4T	6	1.0	5.4	55	48 in-lbf	5.9	60	52 in-lbf
	8	1.25	13	130	9	14	145	10
	10	1.25	25	260	19	28	290	21
	12	1.25	47	480	35	53	540	39
	14	1.5	75	760	55	83	850	61
	16	1.5	113	1150	83	–	–	–
5T	6	1.0	6.4	65	56 in-lbf	7.5	75	65 in-lbf
	8	1.25	16	160	12	18	175	13
	10	1.25	32	330	24	36	360	26
	12	1.25	59	600	43	65	670	48
	14	1.5	91	930	67	100	1050	76
	16	1.5	137	1400	101	157	1600	116
6T	6	1.0	7.8	80	69 in-lbf	8.8	90	78 in-lbf
	8	1.25	19	195	14	21	215	16
	10	1.25	38	400	29	43	440	32
	12	1.25	72	730	53	79	810	59
	14	1.5	110	1100	80	123	1250	90
	16	1.5	170	1750	127	191	1950	141
7T	6	1.0	11	110	8	12	120	9
	8	1.25	25	260	19	28	290	21
	10	1.25	52	530	38	58	590	43
	12	1.25	95	970	70	103	1050	76
	14	1.5	147	1500	108	167	1700	123
	16	1.5	226	2300	166	–	–	–
8T	6	1.0	12	125	9	14	145	9
	8	1.25	29	300	22	32	330	24
	10	1.25	61	620	45	68	690	50
	12	1.25	108	1100	80	123	1250	90
	14	1.5	172	1750	127	196	2000	145
	16	1.5	265	2700	195	299	3050	221



PRECOAT BOLTS

(Bolts with seal lock agent coating on threads)

1. Do not use the precoat bolt as it is in either of the following cases.
   (a) After it is removed.
   (b) When the precoat bolt is moved (loosened or tightened) by tightness check, etc.

Note:
For torque check, use the lower limit of the allowable tightening torque range. If the bolt moves, retighten it according to the steps below.

2. Method for reuse of precoat bolts
   (1) Wash the bolt and threaded hole. (The threaded hole must be washed even for replacement of the bolt.)
   (2) Perfectly dry the washed parts by air blowing.
   (3) Coat the specified seal lock agent to the threaded portion of the bolt.

HIGH PRESSURE HOSE FITTING TIGHTENING TORQUE

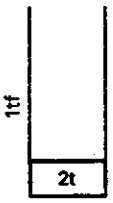
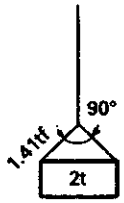
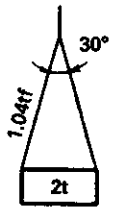
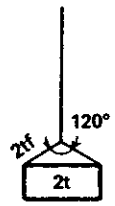
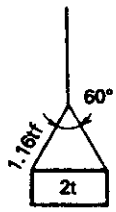
1. When connecting a high pressure hose, wipe the hose fitting and mating nipple contact surfaces with clean cloth to remove foreign matters and dirt. Also check no dent or other damage on the contact surfaces before installation.

2. When connecting a high pressure hose, hold the hose to align the fitting with the nipple and tighten the fitting.

3. The maximum tightening torque must not exceed twice the standard tightening torque.

Nominal diameter of screw	Standard tightening torque N·m (kgf-cm) [ft-lbf]		Hose inside diameter mm (in)
	Standard	Tightening range	
7/16 - 20UNF	25 (250) [18.1]	24~26 (240~270) [17.4~19.5]	6 (0.24)
9/16 - 18UNF	49 (500) [36.2]	47~52 (480~530) [34.7~38.3]	9 (0.35)
3/4 - 16UNF	59 (600) [43.4]	56~62 (570~630) [41.2~45.6]	12 (0.47)
7/8 - 14UNF	59 (600) [43.4]	56~62 (570~630) [41.2~45.6]	12 (0.47)
7/8 - 14UNF	78 (800) [57.9]	74~82 (760~840) [55.0~60.8]	15 (0.59)
1.1/16 - 12UNF	118 (1200) [86.8]	112~123 (1140~1250) [82.5~90.4]	19 (0.75)
1.5/16 - 12UNF	137 (1400) [101.3]	130~144 (1330~1470) [96.2~106.4]	25 (0.98)
PF1/4	25 (250) [18.1]	24~26 (240~270) [17.4~19.5]	6 (0.24)
PF3/8	49 (500) [36.2]	47~52 (480~530) [34.7~38.3]	9 (0.35)
PF1/2	59 (600) [43.4]	56~62 (570~630) [41.2~45.6]	12 (0.47)
PF3/4	118 (1200) [86.8]	112~123 (1140~1250) [82.5~90.4]	19 (0.75)
PF1	137 (1400) [101.3]	130~144 (1330~1470) [96.2~106.4]	25 (0.98)

WIRE ROPE SUSPENSION ANGLE LIST

Suspension angle	Tension	Compression	Suspension method	Suspension angle	Tension	Compression	Suspension method
0°	1.00 time	0 time		90°	1.41 time	1.00 time	
30°	1.04 time	0.27 time		120°	2.00 time	1.73 time	
60°	1.16 time	0.58 time					

SAFE LOAD FOR EACH WIRE ROPE SUSPENSION ANGLE

Unit: N (ton) [lb]

Rope diameter	Cutting load	Single-rope suspension	Two-rope suspension				Four-rope suspension			
		0°	0°	30°	60°	90°	0°	30°	60°	90°
6 mm (0.24 in)	21380 (2.18) [4807]	3040 (0.31) [683.6]	6080 (0.62) [1367]	5880 (0.6) [1323]	5200 (0.53) [1169]	4310 (0.44) [970]	12160 (1.24) [2734]	11770 (1.2) [2646]	10400 (1.06) [2337]	8630 (0.88) [1940]
8 mm (0.32 in)	31480 (3.21) [7078]	4410 (0.45) [992.3]	8830 (0.9) [1985]	8530 (0.87) [1918]	7650 (0.78) [1720]	6280 (0.64) [1411]	17650 (1.8) [3969]	17060 (1.74) [3937]	15300 (1.56) [3440]	12550 (1.28) [2322]
10 mm (0.4 in)	49230 (5.02) [11069]	6960 (0.71) [1565.6]	14020 (1.43) [3153]	13440 (1.37) [3021]	11770 (1.2) [2646]	9810 (1.0) [2205]	27460 (2.8) [6174]	26480 (2.7) [5954]	23540 (2.4) [5292]	19610 (2.0) [4410]
12.5 mm (0.5 in)	76880 (7.84) [17387]	10980 (1.12) [2469.5]	21570 (2.2) [4851]	21280 (2.1) [4631]	18630 (1.9) [4190]	14710 (1.5) [3308]	43150 (4.4) [9702]	41190 (4.2) [9261]	37270 (3.8) [8379]	29420 (3.0) [6615]
14 mm (0.56 in)	96400 (9.83) [21675]	13730 (1.4) [3087]	27460 (2.8) [6174]	26480 (2.7) [5954]	23540 (2.4) [5292]	18630 (1.9) [4190]	54920 (5.6) [12348]	52960 (5.4) [11907]	47070 (4.8) [10584]	37270 (3.8) [8379]

MEMBER WEIGHTS

Engine ASSY	4Y	134 kg (294.8 lb) [1314 N]
	1DZ	176 kg (387.2 lb) [1726 N]
	2Z	240 kg (529.2 lb) [2354 N]
Automatic transmission ASSY		129 kg (283.8 lb) [1265 N]
Manual transmission ASSY		70 kg (154 lb) [686.5 N]
Differential carrier ASSY	2TD/2TG20, 25	60 kg (132 lb) [588.4 N]
Rear axle ASSY	2TD/2TG20, 25	326 kg (717 lb) [3197 N]
Front weight		36 kg (79.2 lb) [353 N]
Rear upper weight	2TD/2TG 20 series	990 kg (2178 lb) [9709 N]
	2TD/2TG 25 series	1445 kg (3180 lb) [14170 N]
Rear lower weight	2TD/2TG 20 series	460 kg (1012 lb) [4511 N]
	2TD/2TG 25 series	630 kg (1386 lb) [6178 N]

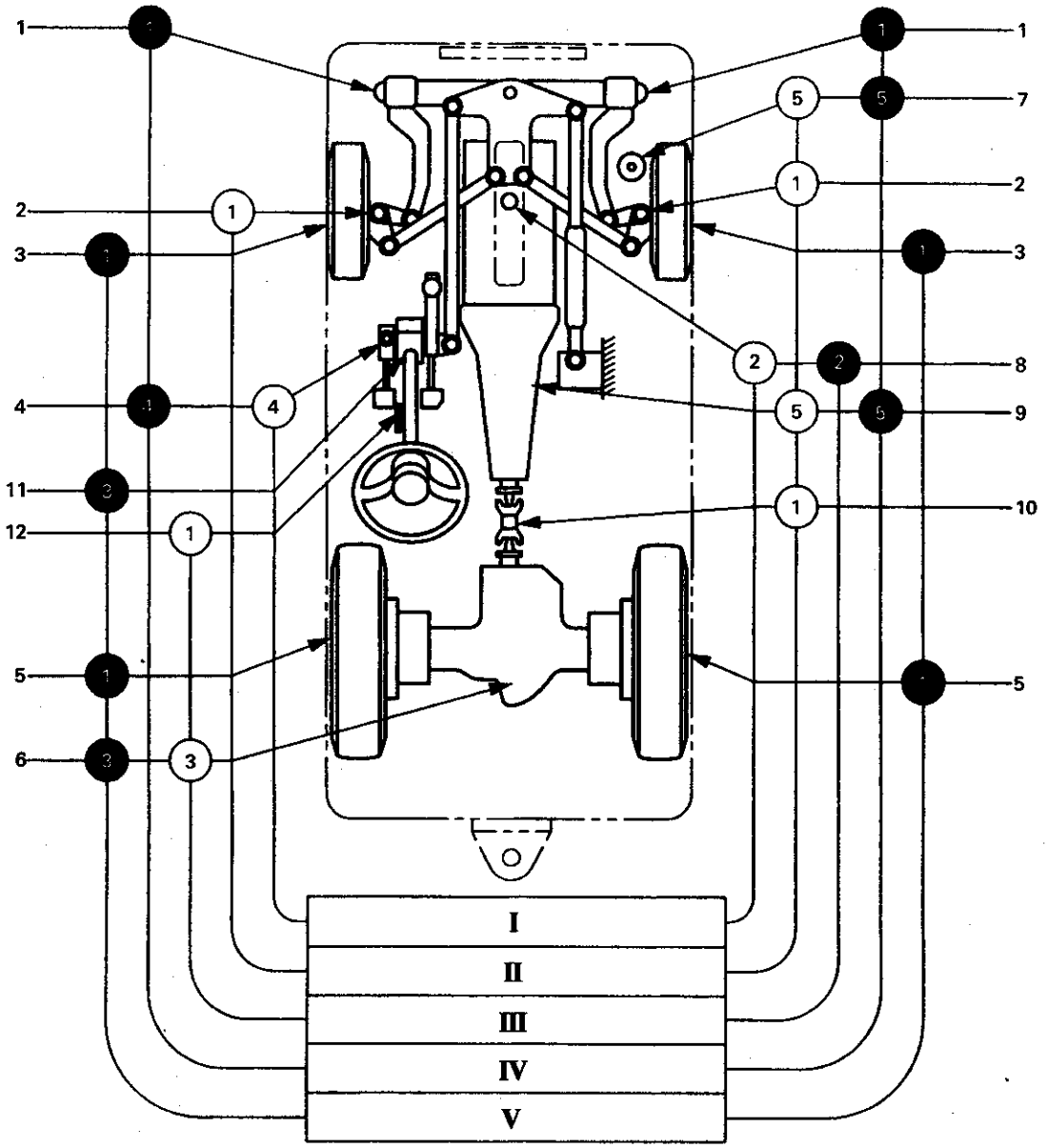
PERIODIC REPLACEMENT PARTS & LUBRICANTS

Item \ Replacement timing	6 weeks 250 hours	3 months 500 hours	6 months 1000 hours	12 months 2000 hours
Engine oil	●	●	●	●
Engine oil filter	● (First time)	●	●	●
Coolant (Replace LLC every 2 years)		●	●	●
Fuel filter			●	●
Automatic transmission oil			●	●
Manual transmission oil				●
Differential oil				●
Power steering oil			●	●
Steering gear box oil				●
Brake Fluid			●	●
Clutch fluid			●	●
Spark plug			●	●
Trailing arm shaft grease			●	●
Wheel bearing grease				●
Cyclone air cleaner element				●
PCV valve				●
Brake booster rubber parts				●
Wheel cylinder cup and seals				●
Brake and clutch hoses				●
Clutch and brake fluid reservoir hose				● (Every 2 years)
Stop switch				● (Every 2 years)
Power steering hose				● (Every 2 years)
Power steering rubber parts				● (Every 2 years)
Fuel hose				● (Every 2 years)
Automatic transmission rubber hose				● (Every 2 years)

RECOMMENDED LUBRICANT TYPES & CAPACITIES

Description		Classification	Type	Application	Quantity
Engine	Gasoline	API SD, SE, SF	Motor oil SAE 30 (SAE 20 in cold area) SAE20W-40 (SAE10W-30 in cold area)	4Y	4.0 ℓ (1.06 US gal)
	Diesel	API CC, CD	Diesel engine oil SAE 30 (SAE 20 in cold area) SAE10W-30	1DZ	6.9 ℓ (1.82 US gal) (~1991. 2) 7.9 ℓ (2.09 US gal) (1991. 3~)
				2Z	8.0 ℓ (2.11 US gal)
Automatic transmission		ATF	GM Dexron® II	ATM vehicle (Up to '95. 5)	about 10 ℓ (2.64 US gal) Every 6 months (1,000 hours) Replacement amount: 2.0 to 2.5 ℓ (0.53 to 0.66 US gal)
				ATM vehicle (From '95. 6)	about 11 ℓ (2.9 US gal)
Transmission		API GL-4, GL-5	Hypoid Gear Oil SAE85W-90	MTM vehicle	3.1 ℓ (0.82 US gal)
Differential		API GL-4, GL-5	Hypoid Gear Oil SAE85W-90	All models excluding 3200 and 4000 lb models	11.5 ℓ (3.04 US gal)
				3200 and 4000 lb models	7.5 ℓ (1.98 US gal)
Power steering oil		ATF	GM Dexron® II	(02) 2TD/2TG 20, 25	1.8 ℓ (0.475 US gal)
Steering gear box oil			Gear Oil SAE90	3200, 4000, and 5000 lb models	0.6 ℓ (0.16 US gal)
Clutch reservoir tank			SAE J-1703, DOT-3	Clutch models	Proper amount
Brake reservoir tank			SAE J-1703, DOT-3	All models	0.6 ℓ (0.16 US gal)
Fuel tank			Gasoline	Gasoline models	70 ℓ (18.48 US gal)
			Light oil	Diesel models	70 ℓ (18.48 US gal)
Chassis parts			MP Grease	All models	Proper amount
Cooling water		LLC	• LLC 30 – 50% mixture (for winter or all-season) • Coolant with rust-inhibitor (for spring, summer and autumn)	4Y	9.7 ℓ (2.56 US gal)
				1DZ	8.4 ℓ (2.2 US gal)
				2Z	9.1 ℓ (2.40 US gal)
Cooling water (reservoir trank)			↑	All models	0.6 ℓ (0.16 US gal)

LUBRICATION CHART



1. Trailing arm bearing
2. Steering knuckle king pin
3. Front wheel bearing
4. Brake & clutch oil
5. Rear wheel bearing
6. Differential and sub-transmission
7. Power steering reservoir tank
8. Engine crankshaft
9. Torque converter case
10. Universal joint
11. Steering gear box
12. Tilt steering locking mechanism

I. 8-hour (daily) inspection
II. 40-hour (weekly) inspection
III. 250-hour (6 weeks) inspection
IV. 1000-hour (6-month) inspection
V. 2000-hour (annually) inspection

○ Inspection and oil addition
● Replacement

① MP grease
② Engine oil
③ Hipoyd gear oil
④ Brake fluid
⑤ GM Dexron®II (Automatic vehicle)
Gear oil (Clutch vehicle)

Lubrication Chart

PERIODIC MAINTENANCE

INSPECTION METHOD

I : Inspection. Repair or replacement if required.
M: Measurement. Repair or adjustment if requried.
T : Retightening C: Cleaning L: Lubrication

	Inspection items	Inspection method	Inspection period			
			Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Steering system	Steering wheel					
	1. Play and looseness	I	○	○	○	○
	2. Function	I	○	○	○	○
	Gear box					
	1. Oil leak	I	○	○	○	○
	2. Looseness of mounting	T	○	○	○	○
	3. Relief valve filter clogging	I			○	○
	4. Steering gear box oil change	L				○
	Rod, links and arm					
	1. Ball joint dust boot cracks and damage	I			○	○
	2. Looseness and damage	I	○	○	○	○
	3. Linkage wear and mounting condition	I				○
	Knuckle					
	1. King pin looseness	I	○	○	○	○
	2. Cracks and deformation	I				○
	Steering shaft					
	1. Wheel alignment	M				○
	2. Left and right turning angle	M				○
	Power steering					
	1. Belt looseness and damage	M	○	○	○	○
	2. Fluid leak and capacity	I	○	○	○	○
	3. Looseness of mounting	I	○	○	○	○
	4. Power steering hose replacement	I				○(4000)
	5. Power steering fluid change	I			○	○
	6. Replacement of internal rubber parts	I				○(4000)

	Inspection items	Inspection method	Inspection period: Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Braking system	Brake pedal					
	1. Play and floor clearance	M	○	○	○	○
	2. Braking effectiveness	I	○	○	○	○
	Parking brake					
	1. Margin in pulling distance	M	○	○	○	○
	2. Braking effectiveness	I	○	○	○	○
	Rod and cable					
	1. Looseness and damage	I	○	○	○	○
	Hose and piping					
	1. Leakage, damage and installation condition	I	○	○	○	○
	2. Brake hose replacement	I			○	○
	3. Brake fluid reservoir replacement	I				○
	4. Vacuum pump oil hose replacement	I			○	○
	Reservoir tank					
	1. Amount of fluid	I	○	○	○	○
	Master cylinder, wheel cylinder and disk brake caliper					
	1. Operation, wear and damage	I				○
	2. Master cylinder and wheel cylinder rubber parts replacement (cups, dust seals, etc. including disc brake caliper parts)	I			○	
	3. Brake fluid change	I				○
	4. Stop switch (hydraulic) replacement	I			○	○
	Power-assist					
	1. Air cleaner clogging	I	○	○	○	○
	2. Operation	I	○	○	○	○
	3. Vacuum hose replacement	I			○	○
	4. Rubber parts replacement	I			○	○
	5. Compressor hose replacement	I			○	○
	6. Air pressure gauge hose replacement	I			○	○
	Brake drum and brake shoe					
	1. Clearance between drum and lining	M	○	○	○	○
	2. Wear of shoe sliding portion and lining	M				○
	3. Drum wear and damage	I				○
	4. Loose drum mounting	I				○
	Backing plate					
	1. Deformation, cracks and damage	I				○
	2. Loose mounting	I				○

	Inspection items	Inspection method	Inspection period			
			Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Driving unit	Front axle 1. Cracks, damage and deformation	I				○
	Rear axle 1. Cracks, damage and deformation	I				○
	Wheels 1. Tire inflation pressure	M	○	○	○	○
	2. Tire cuts, damage and uneven wearing	I	○	○	○	○
	3. Loose rim and hub nuts	I	○	○	○	○
	4. Tire groove depth	M	○	○	○	○
	5. Metal chips, pebbles and other foreign matter trapped in tire grooves	I	○	○	○	○
	6. Loose wheel nuts and wheel bolts	T	○	○	○	○
	7. Rim, side bearing and disc wheel damage	I	○	○	○	○
	8. Abnormal sound and looseness of front wheel bearing	I	○	○	○	○
	9. Abnormal sound and looseness of rear wheel bearing	I	○	○	○	○
	10. Front wheel bearing grease replacement	L			○	○
	11. Rear wheel bearing grease replacement	L			○	○
Suspension system	Chassis springs 1. Damage	I				○
	2. Uneven deflection between left and right	I				○
	Installation and joints 1. Loosening and damage of installation	I				○
	2. Looseness of joints	I				○
	3. Leaf displacement	I				○
	Suspension arms 1. Looseness of joints and arm damage	I				○
	Shock absorber 1. Oil leak and damage	I				○
	2. Looseness of installation	I				○

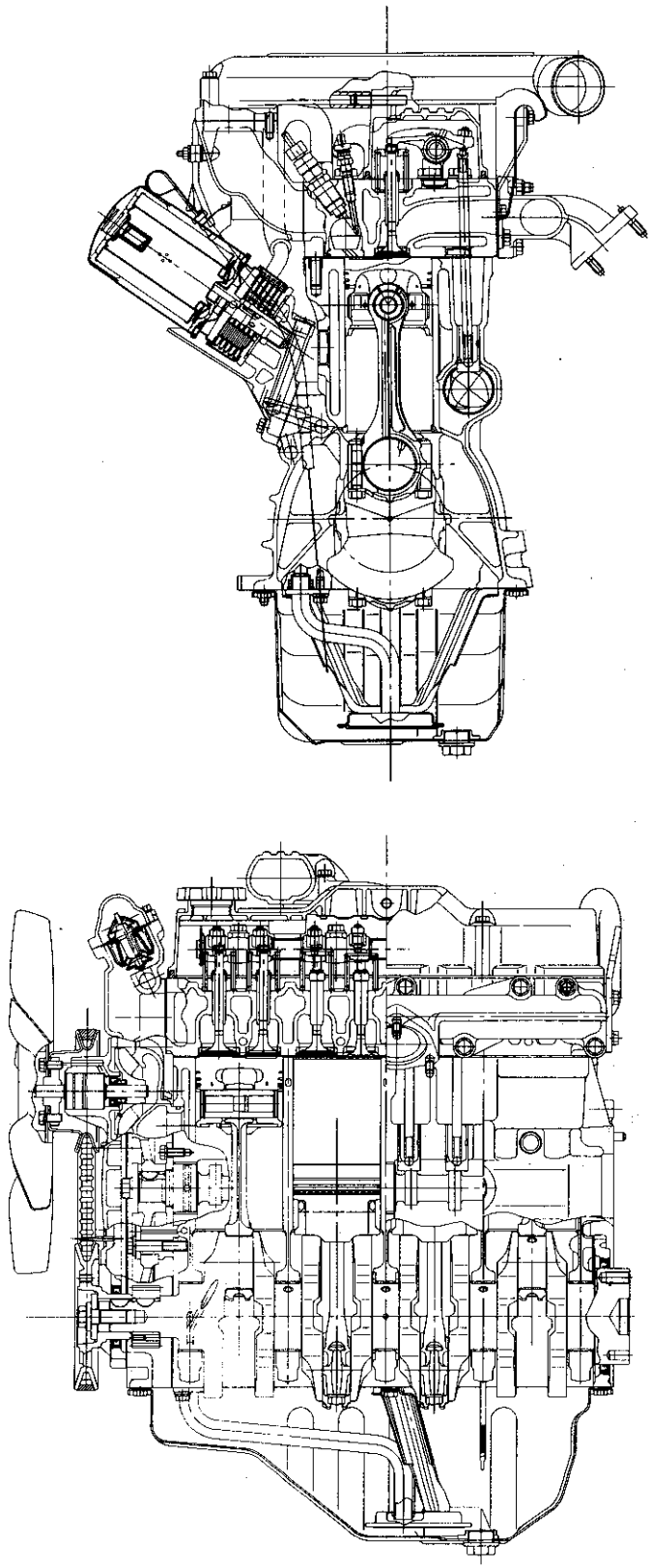
	Inspection items	Inspection method	Inspection period			
			Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Power transmission system	Clutch					
	1. Pedal play and floor clearance at disengagement	M	○	○	○	○
	2. Operation	I	○	○	○	○
	3. Fluid level	I	○	○	○	○
	4. Clutch fluid change	L				○
	Transmission and automatic transmission					
	1. Oil leakage and level (transmission)	I	○	○	○	○
	2. Fluid leakage and level (automatic transmission)	I	○	○	○	○
	3. Loose operating mechanism	I	○	○	○	○
	4. Automatic transmission – Stall test and oil pressure measurement	M			○	○
	5. Transmission – Oil change	L			○	○
	6. Automatic transmission – Oil change	L			○	○
	7. Automatic transmission – Rubber hose replacement	I				○
	Propeller shaft and drive shaft					
	1. Loose joint	I		○	○	○
	2. Looseness at spline connections	I				○
	3. Looseness of universal joint	I				○
	4. Looseness of center bearing	I				○
	5. Shake of propeller shaft	I		○	○	○
	6. Twisting and cracks of axle shaft	I				○
	Differential					
	1. Oil leakage and level	I	○	○	○	○
	2. Differential oil change	L				○
	3. Loose bolts	I				○
Electrical system	Ignition system					
	1. Spark plug condition	I	○	○	○	○
	2. Ignition timing	M			○	○
	3. Breaker point condition	I			○	○
	4. Operation of advance mechanism	I				○
	5. Plug cord internal discontinuity	I				○
	6. Spark plug discontinuity	I				○
	Battery					
	1. Battery fluid level	I	○	○	○	○
	2. Battery fluid specific gravity	M			○	○
	3. Continuation condition of terminal	I				○
	Electrical wiring					
	1. Damage of wiring harness	I				○
	2. Fuses	I	○	○	○	○

	Inspection items	Inspection method	Inspection period			
			Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Engine	Main body					
	1. Proper starting and abnormal noise	I	○	○	○	○
	2. Rotating condition at idling and during acceleration	I	○	○	○	○
	3. Exhaust condition	I	○	○	○	○
	4. Air cleaner element	I	○	○	○	○
	5. Compression pressure	I			○	○
	6. Valve clearance	M	*○		○	○
	7. Cyclone air cleaner element replacement	I				
	8. Tightening condition of cylinder head and manifolds	T				○
	Governor					
	1. Maximum static speed without load	M	○	○	○	○
	Lubrication system					
	1. Oil leakage	I	○	○	○	○
	2. Oil contamination and level	I	○	○	○	○
	3. Oil filter clogging	I				○
	4. Oil change	L	○	○	○	○
	5. Oil filter change	I		○	○	○
	Fuel system					
	1. Fuel leakage	I	○	○	○	○
	2. Carburetor linkage operation	I				○
	3. Throttle valve and choke valve operation	I				○
	4. Fuel filter element clogging	I	○	○	○	○
	5. Injection pressure and spray pattern	M				○
	6. Injection timing and volume	M			○	○
	7. Fuel feed pump operation	I				○
	8. Fuel filter replacement	I			○	
	9. Fuel hose replacement	I				○
	10. Sedimenter water drain	I			○	○
	Cooling system					
	1. Water temperature	I	○	○	○	○
	2. Fan belt looseness and damage	M	○	○	○	○
	3. Water leakage	I	○	○	○	○
	4. Radiator cap operation	M				○
	5. Rubber hose deterioration	I	○	○	○	○
	6. Looseness at fan mounting	I	○	○	○	○
	7. Coolant change	L		○	○	○
	8. Coolant change (vehicles with LLC)	L				○(4000)

	Inspection items	Inspection method	Inspection period			
			Every 6 weeks (250)	Every 3 months (500)	Every 6 months (1000)	Every 12 months (2000)
Emission control system for smoke, foul odor, harmful gas, etc.	Blow-by gas recovery system					
	1. Metering valve condition	I	○	○	○	○
	2. Piping damage	I	○	○	○	○
	Fuel evaporative emission control system					
	1. Piping damage	I				○
	2. Charcoal canister clogging and damage	I				○
	3. Check valve operation	I				○
	Emission control system for carbon monoxide, etc.					
	1. Loose mounting and damage of emission control system (catalytic converter, etc.)	I				○
	2. Secondary air supply unit	I				○
	3. Piping damage and installation condition	I				○
	Heat damage prevention system					
	1. Loose mounting and installation condition of insulating plate	I				○
Safety device, etc.	Lighting system and turn signal lamps					
	1. Operaiton	I	○	○	○	○
	Horns					
	1. Operation	I	○	○	○	○
	Back buzzer					
	1. Operation	I	○	○	○	○
	Wiper, washer, defroster and locks					
	1. Operation	I				○
	Rear-view mirrors and reflectors					
	1. Reflecting condition	I	○	○	○	○
	2. Contamination and damage	I	○	○	○	○
	Instruments					
	1. Operation	I	○	○	○	○
	Exhaust pipe and muffler					
	1. Looseness and damage at mounting	I				○
	2. Muffler operation	I				○
	Fuel system for high-pressure gas					
	1. Gas leakage at piping and joint	I	○	○	○	○
	2. Piping and joint damage	I	○	○	○	○
	3. Tar in vaporizer	I	○	○	○	○
	4. Looseness and damage at gas container	I	○	○	○	○
	5. Air tightness to the cabin with seats	I				○
	Frame and body					
	1. Door lock operation	I				○
	2. Looseness and damage	I				○
	Seat					
	1. Seat belt condition	I				○
	Towing device					
	1. Looseness at draw bar mounting	I	○	○	○	○
	2. Wear of drawbar pin and bracket	I	○	○	○	○
	3. Damage and wear at drawbar pin link portion	I	○	○	○	○
	Others					
	1. Lubricating condition of chassis components	I			○	○
	2. Steering linkage and universal joint lubrication	I	○	○	○	○

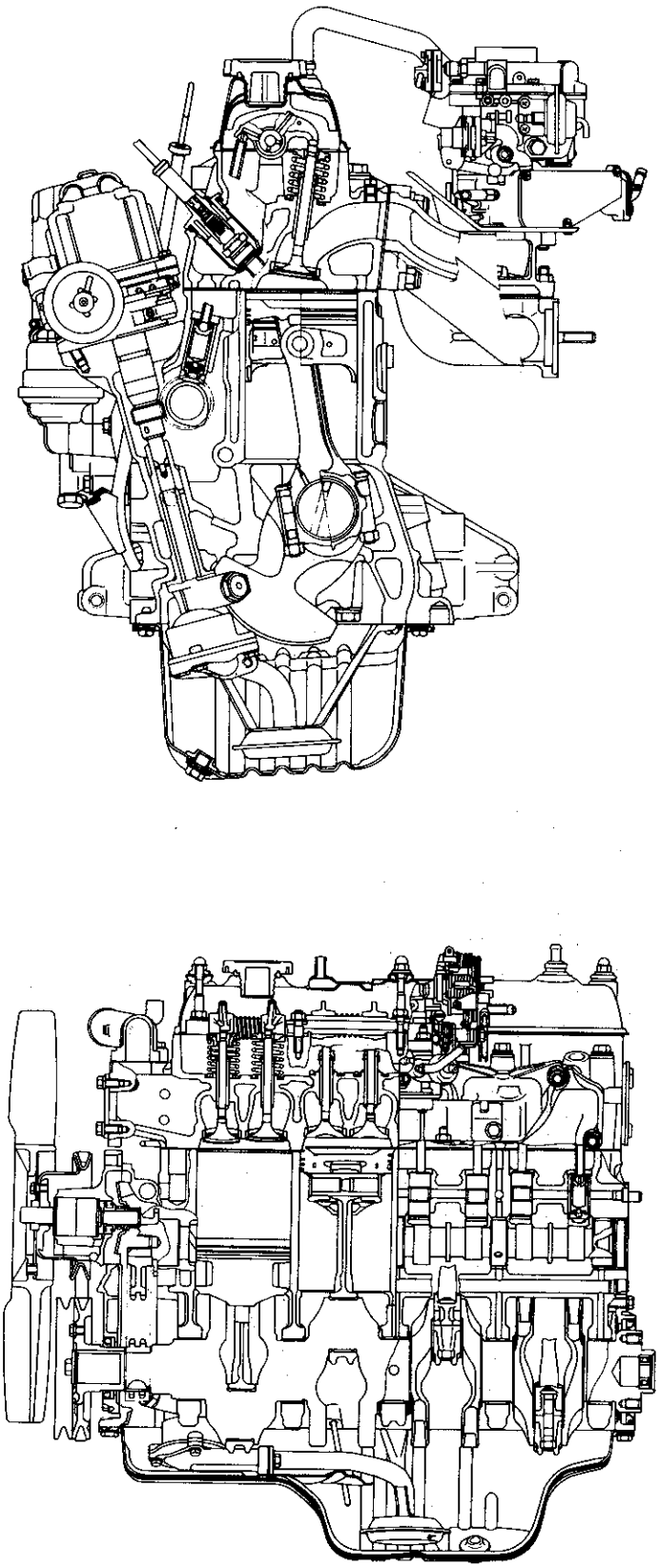
ENGINE

ENGINE SECTIONAL VIEWS

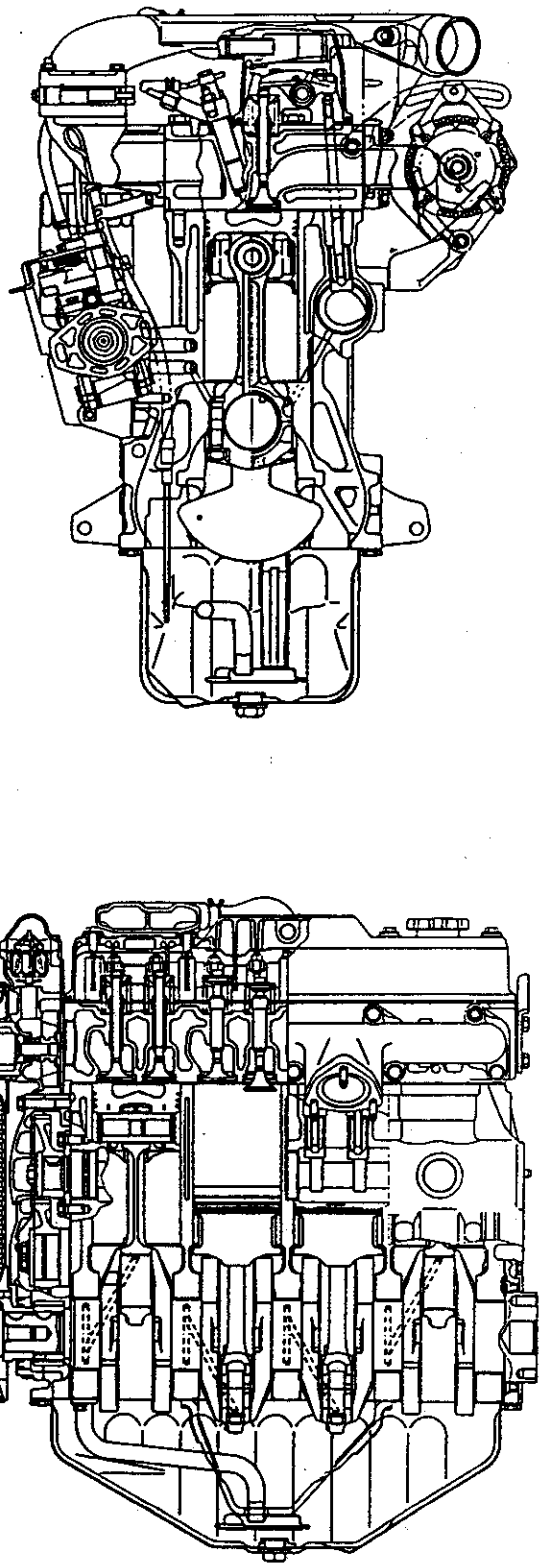


1DZ Engine Sectional View

TAFL7, 8



4Y Engine Sectional Veiw



2Z Engine Sectional View