



Parts List

Compo. P/N: 096000-8280

Assy P/N: 096000-8280

S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		0	PUMP ASSY, INJECTI	096000-8280	22100-17460	01				
		1	HOUSING SUB-ASSY,	096110-0472	22101-64270	01				
		2	HEAD SUB-ASSY, DIS	096400-1330	22140-17010	01				
		3	COVER SUB-ASSY, GO	096440-1340	22703-55051	01				
S		4	SHAFT, DRIVE	096121-0070	22170-54180	01				
S		5	RING SUB-ASSY, ROL	096180-0210	22108-17040	01			9709	
S		5	RING SUB-ASSY, ROL	096180-0310		01	B	9710		
		6	PUMP SUB-ASSY, FUE	096140-0030	22505-54010	01				
		7	GOVERNOR ASSY, TOR	096270-0900	22350-17010	01				
S		8	SHAFT SUB-ASSY, GO	096450-0020	22740-54010	1C				MARK 2
S		8	SHAFT SUB-ASSY, GO	096450-0100	22740-54310	1C				MARK 14
S		8	SHAFT SUB-ASSY, GO	096450-0440	22740-58480	1C				MARK 28
S		8	SHAFT SUB-ASSY, GO	096450-0470	22740-6A630	1C				MARK 24
		9	SOLENOID ASSY, FUE	096030-0160	22390-6A510	01			9702	FCV,12V
		9	SOLENOID ASSY, FUE	096030-0520	22390-6A511	01	B	9702		FCV,12V
		9-1	O-RING	096049-0350		01				ID14.4
		10	HOLDER SUB-ASSY, F	096260-0050	22741-54020	01				
S		11	FLYWEIGHT, DISTRIB	096263-0030	22745-54010	04				
		12	SLEEVE, GOVERNOR	096252-0260	22316-54310	1C				D0.9
		12	SLEEVE, GOVERNOR	096252-0280	22316-54351	1C				D0.9
		12	SLEEVE, GOVERNOR	096252-0490	22316-6A041	1C				D0.8
		12	SLEEVE, GOVERNOR	096252-0660	22316-5B320	1C				D0.85
		12	SLEEVE, GOVERNOR	096252-1240	22316-17440	1C				D0.85
S		13	WASHER, FLYWEIGHT	096265-0030	22753-54020	01				ROUND TYPE
S		15	WASHER, FLYWEIGHT	096265-0020	22753-54010	01				T1.30
		16	NUT, GOVERNOR SHAF	096254-0050	22722-54470	01				M10,L SCREW
		17	SHAFT SUB-ASSY, GO	096250-0030	22380-54020	01				
		18	O-RING	949140-2930	90099-14049	01				ID 8
		19	BOLT, SOCKET	096449-0110	22395-56351	09				M6,L16
		20	RING, GOVERNOR SLE	096255-0020	22147-54290	01				
		21	VALVE SUB-ASSY, SN	096430-0150	22190-6A290	06				
		22	VALVE SUB-ASSY, DI	096420-0550	22104-17010	06				
S		23	SPRING, DELIVERY V	096427-0010	22148-54010	06				
		24	GASKET, DELIVERY V	096426-0070	22149-56351	06				
S		26	CAMPLATE SUB-ASSY,	096230-0110	22130-17010	01				
S		28	PLATE, PLUNGER, LW	096245-0020	22163-54010	01				
S		29	PLATE, PLUNGER, UP	096244-0040	22162-54010	01				
		30	SPRING, COUPLING	096224-0040	22659-64150	01				
		31	COUPLING	096222-0020	22632-54010	01				
		32	GEAR, GOVERNOR DRI	096124-0030	22341-54010	01				
		33	JOINT, RUBBER	096126-0020	22169-54180	02				
		34	WASHER, DRIVE SHAF	096125-0010	22161-54010	01				
S		35	COVER, FEED PUMP	096147-0052	22511-58650	01				
		36	KEY, WOODRUFF	949130-0260	90099-13017	01				

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		37	KEY, WOODRUFF	949130-0300	90099-13018	01				
		38	E-RING	90577-02000	90096-90024	01				D2
S		39	BEARING, BALL	949100-2860	90099-10148	01				OD8
S		40	SEAL, OIL	096039-0040	22544-64740	01				
		41	PISTON ASSY, TIMER	096190-0900	22550-17020	01			9710	
		41	PISTON ASSY, TIMER	096190-1310	22582-5C400	01	B	9711	9803	
		41	PISTON ASSY, TIMER	096190-1520	22582-17750	01	B	9804		
		42	SUB-PISTON, TIMER	096213-0020	22657-54010	01				
		43	PIN, TIMER SLIDE	096205-0020	22655-54010	01				
		44	STOPPER, TIMER SLI	096216-0020	22658-54010	01			9510	
		44	STOPPER, TIMER SLI	096216-0120	22658-17840	01	A	9510		
		45	CLIP, TIMER	096211-0050	22656-54010	01			9510	
		45	CLIP, TIMER	096211-0080	22656-17840	01	A	9510		
		46	COVER SUB-ASSY, TI	096210-0870	22790-17020	01				TIMER COVER
		46-1	COVER, TIMER	096218-0870	22612-17020	01				
		46-2	STOPPER, TIMER SLI	096216-0110	22658-17020	01				
		46-3	O-RING	096049-0290	22193-17020	01				ID 8.8
		46-4	NUT, HEXAGON	949050-5010	90099-05225	01				
		47	COVER, TIMER	096218-0270	22612-56350	01				
		48	SPRING, TIMER, OUT	096208-1320	22615-17020	1C				K0.16
		48	SPRING, TIMER, OUT	096208-1340	22615-17021	1C				K0.18
		48	SPRING, TIMER, OUT	096208-1360	22615-17022	1C				K0.2
		49	CLIP, CONNECTOR SU	096029-0950	22172-6A330	01				
		50	O-RING	949140-2960	90099-14051	03			9310	ID26.3
		50	O-RING	949140-5820	90099-14105	03	B	9311	9508	ID26.3
		50	O-RING	096049-0400	22193-17840	03	A	9509		ID27.5
S		51	PLUG, DISTRIBUTIVE	096417-0040	22176-54020	01				
		52	BOLT, DISTRIBUTIVE	096418-0020	22128-54010	01				
		53	GASKET, DELIVERY V	096426-0030	22149-56200	03			9703	ID8.2,T1
		53	GASKET, DELIVERY V	096426-0030	22149-56200	01		9704		ID8.2,T1
		54	O-RING	949140-2970	90099-14052	01			9607	ID30
		54	O-RING	096049-0510	22193-54772	01	A	9607		ID30
S		55	SHEET, PLUNGER SPR	096247-0010	22145-54010	01				
		56	GUIDE SUB-ASSY, PL	096237-0010	22192-54010	02				
		57	SPRING, PLUNGER	096236-0040	22144-54190	02				K10
		58	SHEET, PLUNGER SPR	096246-0010	22143-54010	02				
		60	O-RING	949140-2980	90099-14053	01				ID60
		61	WIRE SUB-ASSY	096045-0680	22751-17440	01				
		62	SPRING, LEVER SUPP	096279-0010	22314-54010	02				K1.03
		63	SMOKE SET SUB-ASSY	096480-0010		01				
		63-1	O-RING	949140-2900	90099-14047	01			9607	ID5
		63-1	O-RING	096049-0470	22193-54771	01	A	9607		ID5
		64	NUT, HEXAGON	90166-06051	90092-10608	01				M6,L5
		67	BOLT, SOCKET	096449-0020	22395-54010	04				M6,L35

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		68	SPRING, GOVERNOR I	096289-0420	22317-17040	01				
		69	SHEET, GOVERNOR SP	096267-0030	22369-54010	01				
		70	SCREW SUB-ASSY, OV	096020-0030	22160-64010	01				
		71	WASHER, AIR BLEEDE	090241-0010	22119-77020	05				T1.6
		73	SCREW, COUNTERSUNK	949002-0420	90099-00723	02				M4,L28
		74	SPRING, SPEED CONT	096261-0970	22726-17010	01				K0.25
		75	O-RING	096049-0300	22193-54770	01				
		78	GUIDE, RETURN SPRI	096445-0011	22728-54010	01				
		79	SPRING, RETURN	096444-0021	22322-54020	01				
		80	LEVER SUB-ASSY, AD	096435-2470	22701-56350	1C				MARK 247
		80	LEVER SUB-ASSY, AD	096435-3830	22701-17010	1C				MARK 383
		80	LEVER SUB-ASSY, AD	096435-3840	22701-17011	1C				MARK 384
		82	GASKET, GOVERNOR C	096446-0100	22774-54270	01				
S		83	VALVE SUB-ASSY, RE	096160-0050	22180-58200	01				K2.5
		83-1	O-RING	096049-0180	22193-54561	01				
		83-2	O-RING	949140-2920	90099-14080	01			9607	ID 7.5
		83-2	O-RING	096049-0500		01	A	9607		ID7.5
		84	NUT, LOCK	096342-0010	22775-77121	01				
		85	SCREW, OVERFLOW	096021-0190	22569-17140	01				
		86	BOLT, GOVERNOR LIN	096269-0020	22739-54020	02				
		87	BOLT, SOCKET	096449-0070	22395-58200	05				M6,L45
		88	BOLT, HEXAGON, W/	949045-0180	90099-04576	01				M6,L32
		89	BOLT, HEXAGON, W/	949045-0190	90099-04946	01				M6,L40
		91	WASHER, GOVERNOR T	096273-0140	22378-64010	01				T0.5
		92	SHIM, PLUNGER SPRI	096248-0010	22182-54010	2C				T0.5
		92	SHIM, PLUNGER SPRI	096248-0020	22183-54010	2C				T0.8
		92	SHIM, PLUNGER SPRI	096248-0030	22184-54010	2C				T1.0
		92	SHIM, PLUNGER SPRI	096248-0040	22185-54010	2C				T1.2
		92	SHIM, PLUNGER SPRI	096248-0050	22186-54010	2C				T1.5
		92	SHIM, PLUNGER SPRI	096248-0060	22187-54010	2C				T1.8
		92	SHIM, PLUNGER SPRI	096248-0070	22188-54010	2C				T2.0
		92	SHIM, PLUNGER SPRI	096248-0080	22182-17010	2C				T0.9
		92	SHIM, PLUNGER SPRI	096248-0090	22182-17011	2C				T1.1
		92	SHIM, PLUNGER SPRI	096248-0100	22182-17012	2C				T1.3
		92	SHIM, PLUNGER SPRI	096248-0110	22182-17013	2C				T1.4
		92	SHIM, PLUNGER SPRI	096248-0130		2C				T1.7
		92	SHIM, PLUNGER SPRI	096248-0140		2C				T1.9
		92	SHIM, PLUNGER SPRI	096248-0150		2C				T2.1
		92	SHIM, PLUNGER SPRI	096248-0220		2C				T1.6
		92	SHIM, PLUNGER SPRI	096248-0230		2C				T0.2
		92	SHIM, PLUNGER SPRI	096248-0240		2C				T0.3
		92	SHIM, PLUNGER SPRI	096248-0250		2C				T0.4
		92	SHIM, PLUNGER SPRI	096248-0260		2C				T0.6
		92	SHIM, PLUNGER SPRI	096248-0270		2C				T0.7

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		93	WASHER, GOVERNOR G	096266-0100	22713-54010	1C				T1.05
		93	WASHER, GOVERNOR G	096266-0110	22714-54010	1C				T1.25
		93	WASHER, GOVERNOR G	096266-0120	22715-54010	1C				T1.45
		93	WASHER, GOVERNOR G	096266-0130	22716-54010	1C				T1.65
		93	WASHER, GOVERNOR G	096266-0140	22717-54010	1C				T1.85
		93	WASHER, GOVERNOR G	096266-0150		1C				T1.55
		93	WASHER, GOVERNOR G	096266-0160		1C				T1.75
		93	WASHER, GOVERNOR G	096266-0170		1C				T2.05
		93	WASHER, GOVERNOR G	096266-0270		1C				T1.3
		93	WASHER, GOVERNOR G	096266-0280		1C				T1.4
		93	WASHER, GOVERNOR G	096266-0290		1C				T1.5
		93	WASHER, GOVERNOR G	096266-0300		1C				T1.6
		93	WASHER, GOVERNOR G	096266-0310		1C	9807			T1.15
		93	WASHER, GOVERNOR G	096266-0320		1C	9807			T1.2
		93	WASHER, GOVERNOR G	096266-0330		1C	9807			T1.7
		93	WASHER, GOVERNOR G	096266-0340		1C	9807			T1.8
		94	PLUG, GOVERNOR SLE	096256-0400	22787-64641	1C				L3.0
		94	PLUG, GOVERNOR SLE	096256-0410	22787-64642	1C				L3.1
		94	PLUG, GOVERNOR SLE	096256-0420	22787-64643	1C				L3.2
		94	PLUG, GOVERNOR SLE	096256-0430	22787-54026	1C				L3.3
		94	PLUG, GOVERNOR SLE	096256-0440	22787-54027	1C				L3.4
		94	PLUG, GOVERNOR SLE	096256-0450	22787-54028	1C				L3.5
		94	PLUG, GOVERNOR SLE	096256-0460	22787-54029	1C				L3.6
		94	PLUG, GOVERNOR SLE	096256-0470	22787-54030	1C				L3.7
		94	PLUG, GOVERNOR SLE	096256-0480	22787-54031	1C				L3.8
		94	PLUG, GOVERNOR SLE	096256-0490	22787-54032	1C				L3.9
		94	PLUG, GOVERNOR SLE	096256-0500	22787-54033	1C				L4.0
		94	PLUG, GOVERNOR SLE	096256-0510	22787-64640	1C				L4.1
		94	PLUG, GOVERNOR SLE	096256-0520	22787-64680	1C				L4.2
		95	WASHER, TIMER SENS	096214-0180	22625-17020	01				
		96	COLLAR, SMOKE SET	096448-0111		01				
		97	SHIM, PLUNGER ADJU	096406-0020	22179-54010	1C				T1.9 *1
		97	SHIM, PLUNGER ADJU	096406-0510	22179-17049	1C				T2.88
		97	SHIM, PLUNGER ADJU	096406-0580	22179-17055	1C				T3.2
		97	SHIM, PLUNGER ADJU	096406-0750	22179-17069	1C				T2.23
		97	SHIM, PLUNGER ADJU	096406-0910	22179-17146	1C				T2.55
		98	NUT, CAP	949055-0300	90099-05161	01				M12
		103	COVER SUB-ASSY, TI	096210-0641	22790-17040	01				
		105	BOLT, SOCKET	096449-0100	22395-56352	02				
		106	BRACKET SUB-ASSY,	096471-0401	22601-17140	01				
S		108	FILTER, SUB-ASSY	096530-0071	22602-56350	01				
		109	WASHER	096064-0110	22689-56350	01				
		112	NUT	949056-1680	90179-06009	01				M6
		113	SPRING, TIMER, OUT	096208-1370	22615-17030	01				

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S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		114	IDLE UP SUB-ASSY	096470-0352	22305-17140	01				
		120	WASHER, AIR BLEEDE	090241-0010	22119-77020	1C				T1.6
		120	WASHER, AIR BLEEDE	090241-0080	22119-6A210	1C				T3.1
		120	WASHER, AIR BLEEDE	090241-0100	22119-58770	1C				T3.7
		120	WASHER, AIR BLEEDE	090241-0110	22119-17010	1C				T4.0
S		121	VALVE SUB-ASSY, RE	096160-0110	22180-64851	01				
		122	COLLAR, SMOKE SET	096448-0290	22749-55050	01				
S		123	FILTER, SUB-ASSY	096530-0111	22602-5B320	01		9701		
		124	O-RING	096049-0460	22193-5B320	01		9701		ID6.5
		200	GASKET, DELIVERY V	096426-0130	22149-54771	02	B	9704		

INJECTION PUMP TEST SPECIFICATIONS

096000-8280

INJECTION PUMP	096000-828# (VE6/10F2000RND828)		MANU-FACTURER	TOYOTA						
Governor Type	All speed		ENGINE TYPE	1HZ						
Rated Voltage	12V		VEHICLE MODEL	LAND CRUISER						
Rotation	Clockwise viewed from drive side		Dimension (mm) MS : 0.19 – 0.39							
Injection Order	A – B – C – D – E – F		Dimension (mm) K : 3.20 – 3.40							
Injection Interval	60° ±30'		Dimension (mm) KF : 5.80 – 6.00							
1. TEST CONDITIONS										
<table border="0" style="width: 100%;"> <tr> <td style="width: 33%;">1) Nozzle : 093400-0540 (DN12SD12A)</td> <td style="width: 33%;">4) Feed Pressure : 0.2 kgf/cm²</td> </tr> <tr> <td>2) Nozzle Opening Pressure : 145 – 155 kgf/cm²</td> <td>5) High Pressure Pipe : ø2 x ø6 x 840 mm</td> </tr> <tr> <td>3) Test Oil : SAE J967 (ISO4113)</td> <td>6) Fuel Temperature : 40 – 45°C (104 – 113°F)</td> </tr> </table>					1) Nozzle : 093400-0540 (DN12SD12A)	4) Feed Pressure : 0.2 kgf/cm ²	2) Nozzle Opening Pressure : 145 – 155 kgf/cm ²	5) High Pressure Pipe : ø2 x ø6 x 840 mm	3) Test Oil : SAE J967 (ISO4113)	6) Fuel Temperature : 40 – 45°C (104 – 113°F)
1) Nozzle : 093400-0540 (DN12SD12A)	4) Feed Pressure : 0.2 kgf/cm ²									
2) Nozzle Opening Pressure : 145 – 155 kgf/cm ²	5) High Pressure Pipe : ø2 x ø6 x 840 mm									
3) Test Oil : SAE J967 (ISO4113)	6) Fuel Temperature : 40 – 45°C (104 – 113°F)									
NOTE: Apply 6 volts DC across the fuel cut solenoid during adjustment.										
2. PRE-ADJUSTMENT (at full lever position)										
	Pump Speed (rpm)	Fuel Delivery (cc/200st· 1cyl.)	Remarks							
Full Load	1200	11.48 – 12.08	By full load setting screw							
High Speed	2300	3.40 – 5.00	By max. speed setting screw							
Load Sensing Timer: Adjust the governor shaft so that the dimension "L" between the housing flange and the end of the governor shaft is about 2.5 mm.										
3. ADJUSTMENT OF PUMP INTERNAL PRESSURE (at full lever position)										
	Pump Speed (rpm)	Internal Pressure (kgf/cm²)	Remarks							
	500	3.0 – 3.6	By the regulating valve							
	2000	7.6 – 8.2								
4. OVERFLOW QUANTITY CHECK (at full lever position)										
	Pump Speed (rpm)	Overflow Quantity (cc/1000st)	Remarks							
	2000	183.0 – 400.0	The overflow valve belonging to the pump should be used for checking.							
5. ADJUSTMENT OF TIMER (at full lever position)										
Pump Speed (rpm)	800	1200	1600	2000						
Piston Travel (mm)	1.1 – 1.9	2.93 – 3.73	4.79 – 5.59	6.6 – 7.4						
NOTE: Hysteresis at each pump speed is less than 0.3 mm.										

6. ADJUSTMENT OF FUEL DELIVERY					
Lever Position	Pump speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Max. Spread In Delivery (cc)	Boost Pressure Absolute Pressure (mmHg)	Remarks
FULL	1200	11.68 – 11.88	0.4	—	By full load setting screw
	2300	3.60 – 4.80	—	—	By max. speed setting screw
	2200	7.70 – 9.30	—	—	
	2400	Less than 2.00	—	—	
	100	10.00 – 14.00	1.4	—	By governor sleeve plug
	500 2000	9.74 – 10.54 10.76 – 11.56	0.6 0.6	— —	
—	—	—	—	—	
7. SETTING OF LOAD SENSING TIMER (at full lever position)					
	Pump Speed (rpm)	Fuel Delivery (cc/200st, 1cyl)	Remarks		
Start of Load Sensing	1600	Full-load delivery – (1.0 – 1.8)	By governor shaft		
End of Pressure Drop	1600	More than 8.2	Check		
CHECK POINTS 1. Piston Travel at End of Pressure Drop : 2.83 – 3.63 mm (pump speed 1600 rpm) 2. Dimension of Governor Shaft : L = 0.3 – 2.0 mm					
8. SETTING OF ADJUSTING LEVER AT LOW SPEED					
Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/500st, 1cyl)	Max. Spread In Delivery (cc)	Remarks	
IDLE	325	7.0 – 8.5	2.25	Lever setting	
	350	More than (C + 1.25)	—	—	
	375	C = 6.25 – 7.75	—	Dash pot not operated	
	450	C – (3.00 – 5.50)	—	—	
	700	A = 1.5 – 2.0	—	Presetting	
	700	A + (0.5 – 0.75)	—	Dash pot adjustment	
	1800	Less than 0.5	—	Lever position : Idle	
9. ADJUSTMENT OF BOOST COMPENSATOR N.A. : Not Applicable					
Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/1000st, 1cyl)	Remarks		
N.A.	N.A.	N.A.			
10. ADJUSTMENT OF T.C.V. N.A. : Not Applicable					
Pump Speed (rpm)	Boost Pressure (mmHg)	Piston Stroke (mm)			
N.A.	N.A.	N.A.			

INJECTION PUMP TEST SPECIFICATIONS

096000-8280

11. ADJUSTMENT OF THROTTLE POSITION SENSOR				N.A. : Not Applicable
	Pump Speed (rpm)	Condition		Sensor Output Voltage
Set point	N.A.	N.A.		N.A.
Check point	N.A.	N.A.		N.A.
12. CHARACTERISTIC OF A.C.S.D.				
Lever Position	Pump Speed (rpm)	Fuel Temperature (°C)	Measuring Value	Remarks
IDLE	325	24 – 26	Piston Travel (mm) : 0.17 – 0.37	
	325	24 – 26	Idle-up Quantity (cc/500st) : B + (0.7 – 1.2)	
13. ADJUSTMENT OF POWER CONTROL				N.A. : Not Applicable
Lever Position	Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/200st. 1cyl)	Remarks
FULL	N.A.	N.A.	N.A.	
14. SETTING OF DIAPHRAGM FOR HEATER				N.A. : Not Applicable
Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/200st. 1cyl)	Boost Pressure To Diaphragm (mmHg)	Remarks
IDLE	N.A.	N.A.	N.A.	
15. FINAL CHECK AFTER ADJUSTMENT				
<p>(1) Range of lever angle between idle and full lever position is 43° ±5°.</p> <p>(2) Resistance of pick-up tachometer must be 650 – 970 ohms.</p> <p>(3) B is measured fuel delivery quantity (cc/500st) at 325 rpm.</p>				