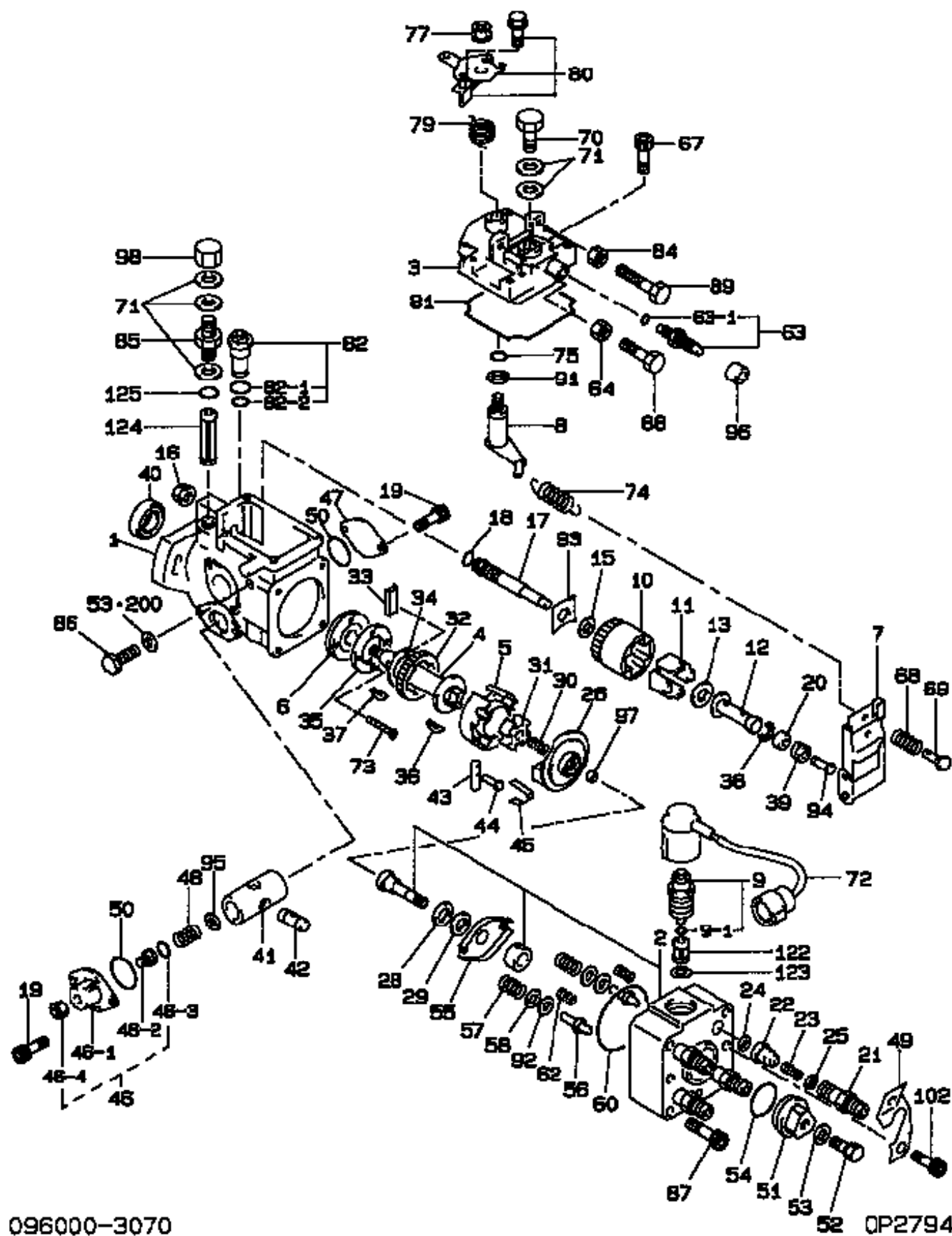




Parts List

Compo. P/N: 096000-3070

Assy P/N: 096000-3070

S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		0	PUMP ASSY, INJECTI	096000-3070	22100-54311	01				
		1	HOUSING SUB-ASSY,	096110-0402		01				
		2	HEAD SUB-ASSY, DIS	096400-0242	22140-64400	01			8908	
		2	HEAD SUB-ASSY, DIS	096400-1090	22140-55130	01	D	8908		
		3	COVER SUB-ASSY, GO	096440-0590	22703-54132	01				
S		4	SHAFT, DRIVE	096121-0070	22170-54180	01				
S		5	RING SUB-ASSY, ROL	096180-0020	22108-54010	01				
		6	PUMP SUB-ASSY, FUE	096140-0030	22505-54010	01				
		7	GOVERNOR ASSY, TOR	096270-0060	22350-54060	01				
S		8	SHAFT SUB-ASSY, GO	096450-0180	22740-54320	01				
		9	SOLENOID ASSY, FUE	096030-0070	22390-54110	01			8908	
		9	SOLENOID ASSY, FUE	096030-0160	22390-6A510	01	D	8908	9702	FCV,12V
		9	SOLENOID ASSY, FUE	096030-0520	22390-6A511	01	B	9702		FCV,12V
		9-1	O-RING	096049-0030	22193-64010	01			8908	ID 8.5
		9-1	O-RING	096049-0350		01	D	8908		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			8805	D0.9
		12	SLEEVE, GOVERNOR	096252-0290	22316-54261	1C	B	8805		D1.0
		12	SLEEVE, GOVERNOR	096252-0630	22316-54730	1C		8803		D0.95
S		13	WASHER, FLYWEIGHT	096265-0040	22753-54290	01			9106	
S		13	WASHER, FLYWEIGHT	096265-0030	22753-54020	01	B	9106		
S		15	WASHER, FLYWEIGHT	096265-0020	22753-54010	01				
		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				
		19	BOLT, W/WASHER	91518-06161	90091-20611	04			8807	M6,L16
		19	BOLT, SOCKET	096449-0110	22395-56351	04		8807		
		20	RING, GOVERNOR SLE	096255-0020	22147-54290	01				
		21	HOLDER, DELIVERY V	096425-0030	22131-54110	04			9004	
		21	HOLDER, DELIVERY V	096425-0130	22131-54730	04	D	9005		
		22	VALVE SUB-ASSY, DI	096420-0090	22104-56350	04			9004	
		22	VALVE SUB-ASSY, DI	096420-0550	22104-17010	04	D	9005		
S		23	SPRING, DELIVERY V	096427-0010	22148-54010	04				
		24	GASKET, DELIVERY V	096426-0020	22149-54010	04			9004	
		24	GASKET, DELIVERY V	096426-0070	22149-56351	04	D	9005		
		25	SEAT, DELIVERY VAL	096428-0010	22141-54010	04				
S		26	CAMPLATE SUB-ASSY,	096230-0130	22130-58200	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				

Parts List

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Assy P/N: 096000-3070

S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		34	WASHER, DRIVE SHAF	096125-0010	22161-54010	01				
S		35	COVER, FEED PUMP	096147-0040	22511-54020	01				
		36	KEY, WOODRUFF	949130-0260	90099-13017	01				
		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, TIMER	096201-0040	22654-54010	01				
		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, TIMER	096218-0230	22612-54450	01			8608	
		46	COVER SUB-ASSY, TI	096210-0450	22790-6A220	01	D	8608		TIMER COVER
		46-1	STOPPER, TIMER SLI	096216-0040	22658-54450	01				
		46-2	COVER, TIMER	096218-0230	22612-54450	01				
		46-3	O-RING	096049-0190	22193-64750	01				ID14.8
		46-4	NUT, HEXAGON	949050-5010	90099-05225	01				
		47	COVER, TIMER	096218-0020	22612-54010	01			9112	
		47	COVER, TIMER	096218-0270	22612-56350	01	B	9112		
		48	SPRING, TIMER, OUT	096208-0161	22615-54180	1C				K3.0
		48	SPRING, TIMER, OUT	096208-0110	22615-54030	1C				K2.7
		48	SPRING, TIMER, OUT	096208-0120	22615-64010	1C				K3.3
		49	CLIP, CONNECTOR SU	096029-0930	22172-54263	01				
		50	O-RING	949140-2960	90099-14051	02			9310	ID26.3
		50	O-RING	949140-5820	90099-14105	02	B	9311	9508	ID26.3
		50	O-RING	096049-0400	22193-17840	02	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
		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

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Assy P/N: 096000-3070

S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		64	NUT, HEXAGON	90160-06051	90092-10101	01			8911	M6
		64	NUT, HEXAGON	90166-06051	90092-10608	01	A	8911		M6,L5
		67	BOLT, SOCKET	096449-0020	22395-54010	04				
		68	SPRING, GOVERNOR I	096289-0160	22317-54470	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	04				
		72	WIRE SUB-ASSY	096045-0401	22751-54311	01				
		73	SCREW, COUNTERSUNK	949002-0420	90099-00723	02				M4,L28
		74	SPRING, SPEED CONT	096261-0170	22726-64010	01				K=0.4
		75	O-RING	949140-2910	90099-14048	01			9111	ID 6.5
		75	O-RING	096049-0300	22193-54770	01	B	9111		ID 6.5
		77	NUT	949056-1680	90179-06009	01				
		78	BOLT, GOVERNOR LIN	096269-0060		01			8807	
		78	BOLT, GOVERNOR LIN	096269-0070		01		8807		
		79	SPRING, RETURN	096444-0440	22322-54470	01			8807	
		79	SPRING, RETURN	096444-0800	22322-54730	01		8807		
		80	LEVER SUB-ASSY, AD	096435-1300	22701-54451	1C				ANGLE 30
		80	LEVER SUB-ASSY, AD	096435-1310	22701-54452	1C				ANGLE 22.5
		81	GASKET, GOVERNOR C	096446-0093	22774-54010	01			9112	
		81	GASKET, GOVERNOR C	096446-0100	22774-54270	01	B	9112		
S		82	VALVE SUB-ASSY, RE	096160-0030	22180-54010	01				
		82-1	O-RING	096049-0180	22193-54561	01				ID10
		82-2	O-RING	949140-2920	90099-14080	01			9607	ID7.5
		82-2	O-RING	096049-0500		01	A	9607		ID7.5
		84	NUT, LOCK	096342-0010	22775-77121	01				
		85	SCREW, HOLLOW	949180-0770	90099-18022	01				
		86	BOLT, GOVERNOR LIN	096269-0020	22739-54020	02				
		87	BOLT, SOCKET	096449-0070	22395-58200	04				M6,L45
		88	BOLT, HEXAGON, W/	949045-0180	90099-04576	01				
		89	BOLT, HEXAGON, W/	949045-0190	90099-04946	01				
		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
		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

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Compo. P/N: 096000-3070

Assy P/N: 096000-3070

S	M	Illust.No.	Part Name	DENSO P/N	Manu. P/N	QTY	I/C	Start	End	Remarks
		93	WASHER, GOVERNOR G	096266-0170		1C				T2.05
		93	WASHER, GOVERNOR G	096266-0150		1C				T1.55
		93	WASHER, GOVERNOR G	096266-0160		1C				T1.75
		93	WASHER, GOVERNOR G	096266-0270		1C				T1.3
		93	WASHER, GOVERNOR G	096266-0290		1C				T1.5
		93	WASHER, GOVERNOR G	096266-0280		1C				T1.4
		93	WASHER, GOVERNOR G	096266-0300		1C				T1.6
		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	096214-0100	22625-54277	01				T1.0
		96	COLLAR, SMOKE SET	096448-0111		01				COLLAR TYPE
		97	SHIM, PLUNGER ADJU	096406-0020	22179-54010	1C				T1.9
		97	SHIM, PLUNGER ADJU	096406-0170	22179-54013	1C				T2.2
		97	SHIM, PLUNGER ADJU	096406-0270	22179-54015	1C				T2.4
		97	SHIM, PLUNGER ADJU	096406-0420	22179-54018	1C				T2.7
		97	SHIM, PLUNGER ADJU	096406-0520	22179-54020	1C				T2.9
		98	NUT, CAP	949055-0300	90099-05161	01				
		102	BOLT, W/WASHER	91410-08141	91611-40814	01			8807	M8,L14
		102	BOLT, SOCKET	096449-0140	22395-56350	01	A	8807		M8,L16
S		122	FILTER, SUB-ASSY	096530-0071	22602-56350	01		8908		
		123	WASHER	096064-0110	22689-56350	01		8908		
S		124	FILTER, SUB-ASSY	096530-0111	22602-5B320	01		9609		
		125	O-RING	096049-0460	22193-5B320	01		9609		ID6.5
		200	GASKET, DELIVERY V	096426-0130	22149-54771	02	B	9704		

INJECTION PUMP TEST SPECIFICATIONS

096000-3070

INJECTION PUMP	096000-307# (VE4/9F2200RND307)	MANU-FACTURER	TOYOTA	
Governor Type	All speed	ENGINE TYPE	2L	
Rated Voltage	12V	VEHICLE MODEL	HILUX / 4RUNNER	
Rotation	Clockwise viewed from drive side	Dimension (mm) MS	: 0.35 – 0.55	
Injection Order	A – B – C – D	Dimension (mm) K	: 3.2 – 3.4	
Injection Interval	90° ± 30'	Dimension (mm) KF	: 5.7 – 5.9	
1. TEST CONDITIONS				
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.cyl.)	Remarks	
Full Load	1200	9.2 – 9.8	By full load setting screw	
High Speed	2450	3.9 – 5.3	By max. speed setting screw	
Adjust the governor shaft so that the dimension "L" between the housing flange and the end of the governor shaft is about 1.0 – 2.0 mm.				
3. ADJUSTMENT OF PUMP INTERNAL PRESSURE (at full lever position)				
Pump Speed (rpm)	Internal Pressure (kgf/cm ²)		Remarks	
500	2.45 – 3.05		By the regulating valve	
2100	6.45 – 7.05			
4. OVERFLOW QUANTITY CHECK (at full lever position)				
Pump Speed (rpm)	Overflow Quantity (cc/1000st)		Remarks	
2200	167 – 364		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	2000	2300
Piston Travel (mm)	0.8 – 1.6	2.4 – 3.2	5.6 – 6.4	6.35 – 7.15
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,cyl)	Max. Spread In Delivery (cc)	Boost Pressure (mmHg)	Remarks
FULL	1200	9.4 – 9.6	0.4	—	By full load setting screw
	2450	4.1 – 5.1	—	—	By max. speed setting screw
	2250	7.0 – 7.8	—	—	
	2700	Less than 1.0	—	—	
	100	9.0 – 13.0	1.2	—	By governor sleeve plug
	350	8.7 – 10.3	—	—	
	500	7.3 – 8.1	0.5	—	
	2100	7.8 – 8.5	0.5	—	
7. SETTING OF LOAD SENSING TIMER (at full lever position) N.A. : Not Applicable					
	Pump Speed (rpm)	Fuel Delivery (cc/200st,cyl)	Remarks		
Start of Load Sensing	2100	Full-load delivery – (1.0 – 1.8)	By governor shaft		
End of Pressure Drop	1200	6.2 – 6.6	Check		
CHECK POINTS 1. Change of Piston Travel :1.2 – 1.6 mm (pump speed 1200 rpm) 2. Dimension of Governor Shaft : L =1.0 – 2.0 mm					
8. SETTING OF ADJUSTING LEVER AT LOW SPEED (at idle lever position)					
Lever Position	Pump Speed (rpm)	Fuel Delivery (cc/500st,cyl)	Max. Spread In Delivery (cc)	Remarks	
IDLE	350	3.75 – 5.25	0.85	By idle setting screw	
	525	Less than 2.25	—		
9. ADJUSTMENT OF BOOST COMPENSATOR N.A. : Not Applicable					
Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/200st,cyl)	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

096000-3070

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.				N.A. : Not Applicable	
Lever Position	Pump Speed (rpm)	Fuel Temperature (°C)	Measuring Value		Remarks
IDLE	N.A.	N.A.	N.A.		
	N.A.	N.A.	N.A.		
13. ADJUSTMENT OF POWER CONTROL				N.A. : Not	
Applicable					
Lever Position	Pump Speed (rpm)	Boost Pressure (mmHg)	Fuel Delivery (cc/200st,cyl)	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.cyl.)	Boost Pressure To Diaphragm (mmHg)	Remarks	
IDLE	N.A.	N.A.	N.A.		
15. FINAL CHECK AFTER ADJUSTMENT					
(1) Range of lever angle is to between idle and full lever position is $46.5^{\circ} \pm 3.5^{\circ}$					