ISUZU

INDUSTRIAL DIESEL ENGINE

4LB1, 4LC1, 4LE1 MODELS

WORKSHOP MANUAL

ISUZU MOTORS LIMITED

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SECTION 1

GENERAL INFORMATION

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SECTION 8

CONVERSION TABLE

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LENGTH

MILLIMETERS TO INCHES

mm	in.	mm	in.	mm	in.	mm	in.
1	0.0394	26	1.0236	51	2.0079	76	2.9921
2	0.0787	27	1.0630	52	2.0472	77	3.0315
3	0.1181	28	1.1024	53	2.0866	78	3.0709
4	0.1575	29	1.1417	54	2.1260	79	3.1102
5	0.1969	30	1.1811	55	2.1654	80	3.1496
6	0.2362	31	1.2205	56	2.2047	81	3.1890
7	0.2756	32	1.2598	57	2.2441	82	3.2283
8	0.3150	33	1.2992	58	2.2835	83	3.2677
9	0.3543	34	1.3386	59	2.3228	84	3.3071
10	0.3937	35	1.3780	60	2.3622	85	3.3465
11	0.4331	36	1.4173	61	2.4016	86	3.3858
12	0.4724	37	1.4567	62	2.4409	87	3.4252
13	0.5118	38	1.4961	63	2.4803	88	3.4646
14	0.5512	39	1.5354	64	2.5197	89	3.5039
15	0.5906	40	1.5748	65	2.5591	90	3.5433
16	0.6299	41	1.6142	66	2.5984	91	3.5827
17	0.6693	42	1.6535	67	2.6378	92	3.6220
18	0.7087	43	1.6929	68	2.6772	93	3.6614
19	0.7480	44	1.7323	69	2.7165	94	3.7008
20	0.7874	45	1.7717	70	2.7559	95	3.7402
21	0.8268	46	1.8110	71	2.7953	96	3.7795
22	0.8661	47	1.8504	72	2.8346	97	3.8189
23	0.9055	48	1.8898	73	2.8740	98	3.8583
24	0.9449	49	1.9291	74	2.9134	99	3.8976
25	0.9843	50	1.9685	75	2.9528	100	3.9370

101	3.9764	111	4.3701	121	4.7638	131	5.1575
102	4.0157	112	4.4094	122	4.8031	132	5.1969
103	4.0551	113	4.4488	123	4.8425	133	5.2362
104	4.0945	114	4.4882	124	4.8819	134	5.2756
105	4.1339	115	4.5276	125	4.9213	135	5.3150
106	4.1732	116	4.5669	126	4.9606	136	5.3543
107	4.2126	117	4.6063	127	5.0000	137	5.3937
108	4.2520	118	4.6457	128	5.0394	138	5.4331
109	4.2913	119	4.6850	129	5.0787	139	5.4724

INCHES TO MILLIMETERS

in.	mm	in.	mm
1/64	0.3969	33/64	13.0969
1/32	0.7938	17/32	13.4938
3/64	1.1906	35/64	13.8906
1/16	1.5875	9/16	14.2875
5/64	1.9844	37/64	14.6844
3/32	2.3813	19/32	15.0813
7/64	2.7781	39/64	15.4781
1/8	3.1750	5/8	15.8750
9/64	3.5719	41/64	16.2719
5/32	3.9688	21/32	16.6688
11/64	4.3656	43/64	17.0656
3/16	4.7625	11/16	17.4625
13/64	5.1594	45/64	17.8594
7/32	5.5563	23/32	18.2563
15/64	5.9531	47/64	18.6531
1/4	6.3500	3/4	19.0500
17/64	6.7469	49/64	19.4469
9/32	7.1438	25/32	19.8438
19/64	7.5406	51/64	20.2406
5/16	7.9375	13/16	20.6375
21/64	8.3344	53/64	21.0344
11/32	8.7313	27/32	21.4313
23/64	9.1281	55/64	21.8281
3/8	9.5250	7/8	22.2250
25/64	9.9219	57/64	22.6219
13/32	10.3188	29/32	23.0188
27/64	10.7156	59/64	23.4156
7/16	11.1125	15/16	23.8125
29/64	11.5094	61/64	24.2094
15/32	11.9063	31/32	24.6063
31/64	12.3031	63/64	25.0031
1/2	12.7000	1	25.4000

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MAIN DATA AND SPECIFICATIONS

1. MODELS 4LB1 AND 4LB1T

Item \ Engine model(s)				4LB1	4LB1T
Type				In-line water cooled 4-cycle type, OHV: diesel engine	
Timing drive system				Gear drive	
Number of piston rings				Compression rings 2, and oil ring 1	
No. of cylinders - bore × stroke			mm	4 – 77.4 × 79.7	
Displacement			cc (cid)	1499 (92)	
Compression ratio				22 : 1	
Type of combustion chamber				Swirl chamber	
Overall length × width × height			mm	* 554 × 436 × 579	554 × 466 × 611
Dry weight			kg (lb)	* 130 (287)	137 (302)
Fuel injection timing (BTDC)			(when at stop)	* 16°	
Firing order				1 – 3 – 4 – 2	
Fuel				Highspeed diesel fuel (SAE No.2)	
Idling speed			r.p.m	* 850	
Compression pressure			kg/cm² (psi/MPa)	31 (441/3) or more/250 r.p.m.	
Valve clearance (cold) mm (in)		Intake		0.4 (0.0157)	
		Exhaust		0.4 (0.0157)	
Valve operating timing	Intake valve	Open (BTDC)		15°	
		Close (ABDC)		29°	
	Exhaust valve	Open (BBDC)		40°	
		Close (ATDC)		16°	
Injection pump				Bosch type	
Governor				Mechanical type	
Nozzle				Throttle type	
Injection pressure			kg/cm² (psi/MPa)	* 135 (1920/13.2)	
Oil pump				Trochoid type	
Oil filter				Cartridge type	
Lubricant capacity: In total			lit (qts)	* About 7.3 (7.7)	
Generator output			(V – A)	* 12 – 20	
Starter output			(V – KW)	* 12 – 1.0	

(Note) These specifications may be subject to change without notice.
Figures in the column with an asterisk (*) are different for each machine. Refer to the specifications provided by machine manufacturers.

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COOLING WATER CIRCULATION SYSTEM DIAGRAM

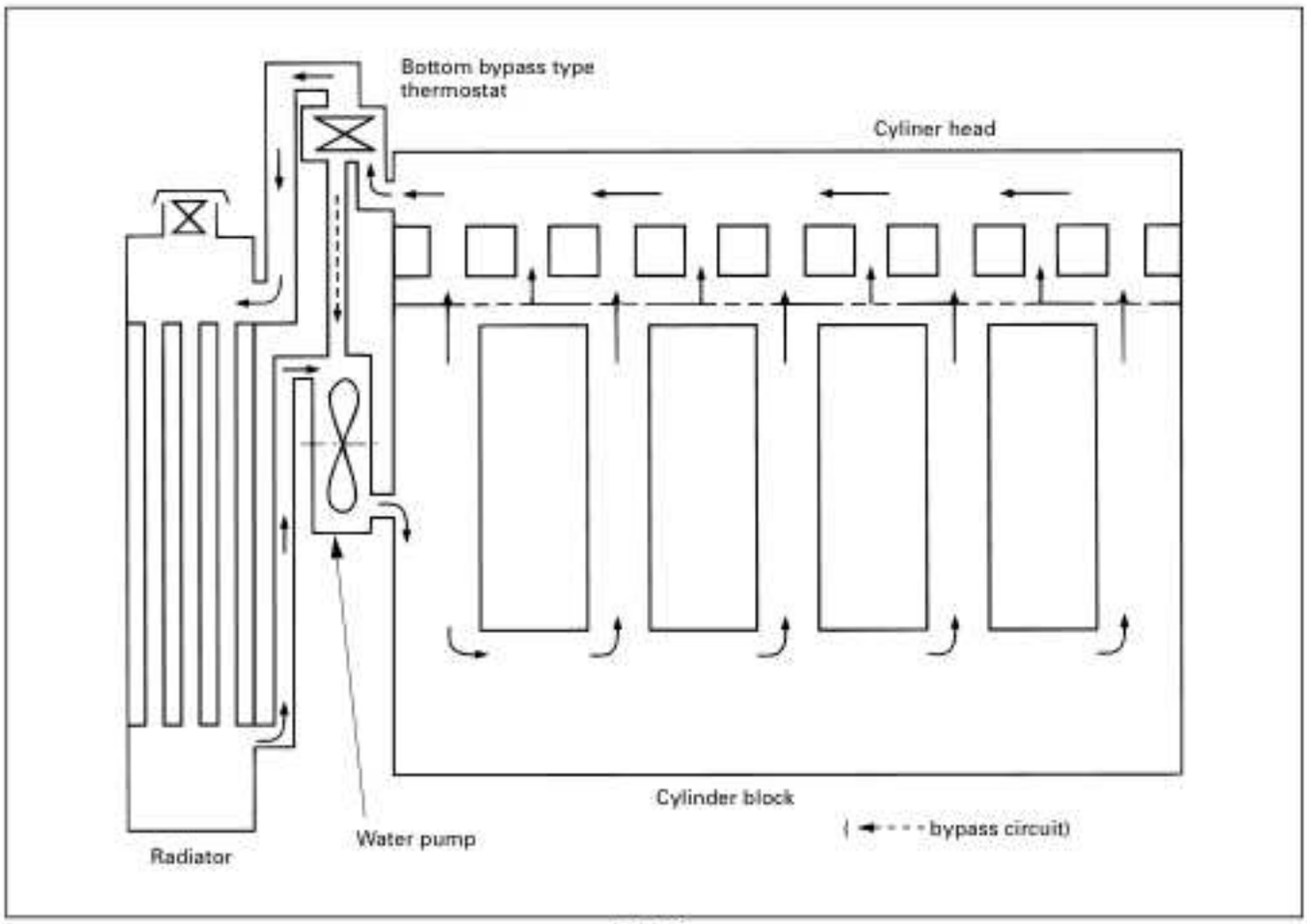
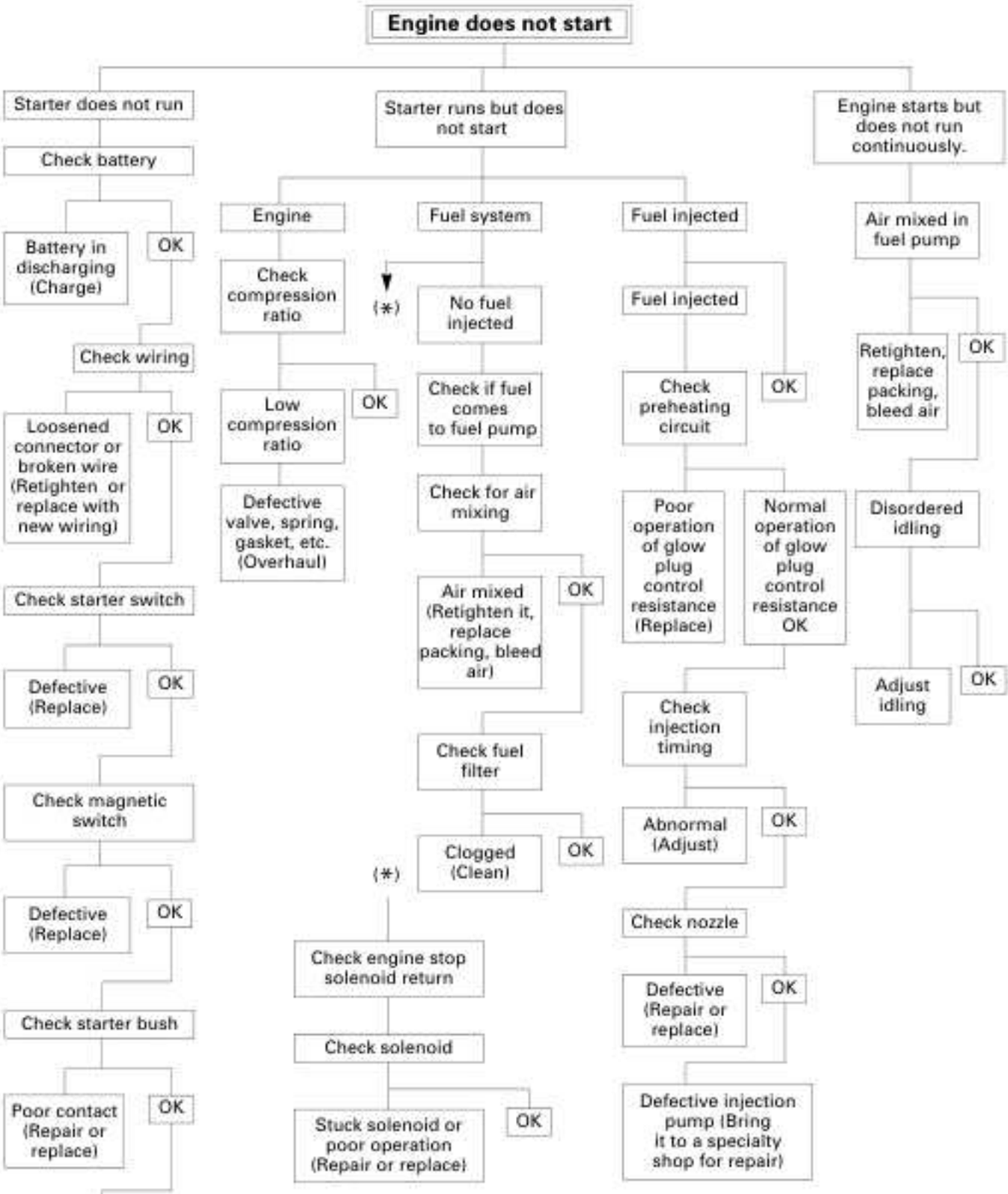


Fig. 181

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SECTION 6

TROUBLESHOOTING



★ Note: "Bring it to a specialty shop" means that defective parts of the injection pump and electricals must be brought to a specialty shop for repair. (This note is applicable to all the following procedures.)

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