

0CD50-M03140EN

# P R E F A C E

This parts catalog is the 1st edition of 4TNV88-SHTR for HWASUNG THERMO CO., LTD.

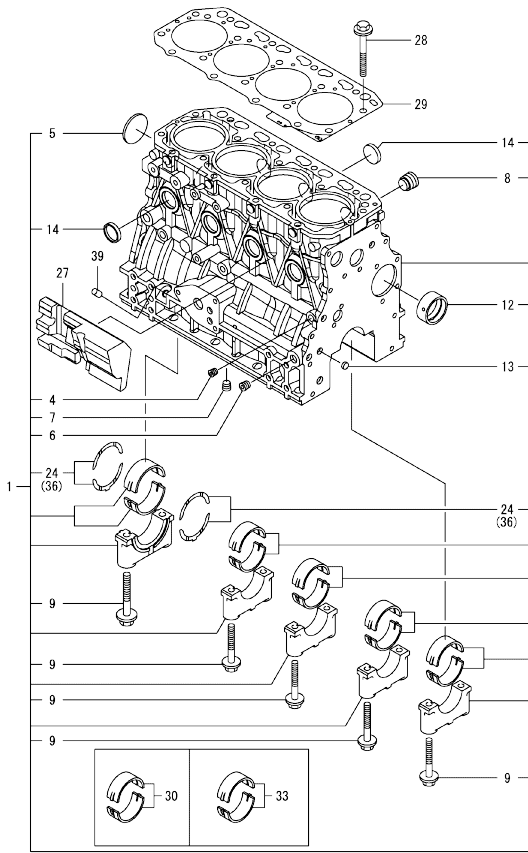
Published : April, 2017

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0CD50-M03140

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Fig.1. CYLINDER BLOCK



(A)=4TNV88-SHTR  
(B)=  
(C)=

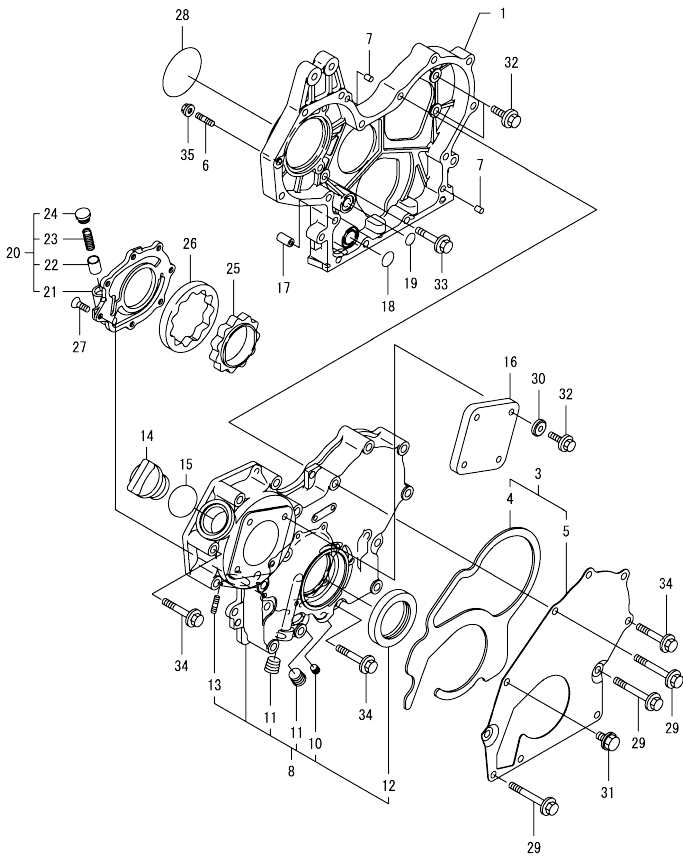
(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729602-01560	BLOCK ASSY, CYLINDER	1							
4	2	124060-01050	PLUG, PT1/8	1							
5	2	129001-01250	PLUG, DISH TYPE 50	1							
6	2	124160-01910	PLUG, PT1/4	2							
7	2	124160-01910	PLUG, PT1/4	1							
8	2	171051-01921	PLUG, NPTF1	1							
9	2	129150-02020	BOLT, METAL CAP	10							
12	2	129795-02412	BUSH, CAMSHAFT	1							
13	2	27241-120000	PLUG, 12	2							
14	2	27241-300000	PLUG 30	8							
24	2	129150-02931	BEARING ASSY, THRUST	2							
27	1	129004-01190	SPACER	1							
28	1	129150-01200	BOLT, CYLINDER HEAD	18							
29	1	129685-01330	GASKET, HEAD	1							
30	1	129001-02931	BEARING ASSY, MAIN	5							1
33	1	129150-02871	BEARING ASSY, MAIN	5							2
36	1	129150-02941	BEARING, THRUST 0.25	1							3
39	1	119309-01810	PLUG	1							

Remarks

- (1) Spare parts.
- (2) Under-sized (U.S.=0.25) parts.
- (3) Over-sized (O.S.=0.25) parts.

Fig.2. GEAR HOUSING

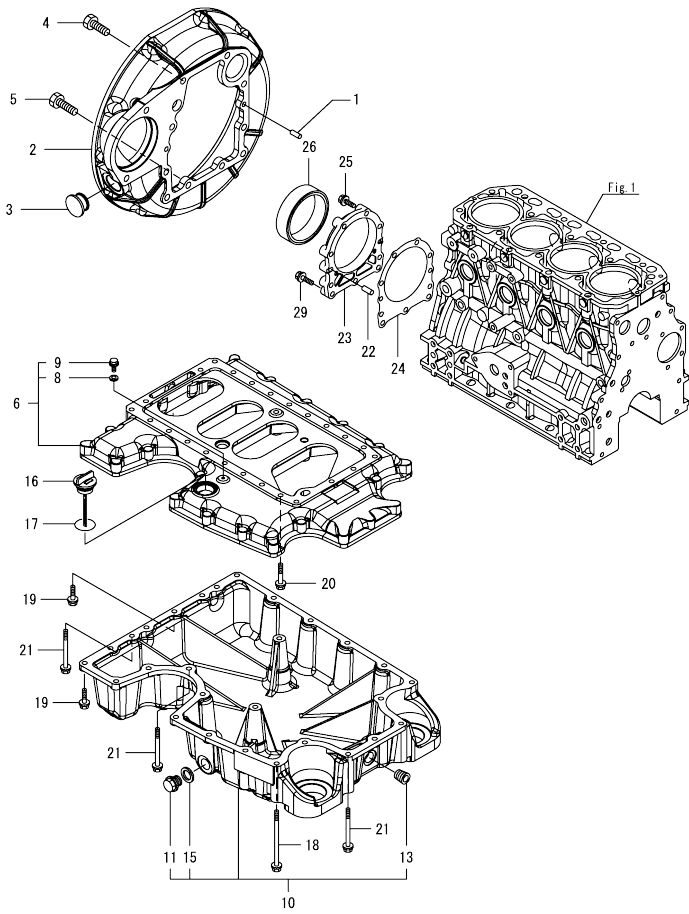


(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Qty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129685-01490	CASE ASSY, GEAR	1							
3	1	129685-01550	COVER ASSY	1							
4	2	129685-01560	SPONGE, GEAR CASE	1							
5	2	129685-01571	COVER, HUSH	1							
6	1	119802-01561	BOLT, STUD M8X25	3							
7	1	129100-01580	PIN, PARALLEL 8X16	2							
8	1	129685-01590	COVER ASSY, GEAR CASE	1							
10	2	23876-010000	PLUG, R01	1							
11	2	23876-030000	PLUG, R03	2							
12	2	119934-01800	SEAL, OIL	1							
13	2	129155-51020	BOLT, STUD	3							
14	1	124160-01751	CAP, FILLER	1							
15	1	24311-000320	O-RING, 1AP32.0	1							
16	1	124240-01871	COVER, PUMP	1							
17	1	129795-01950	PIPE, DOWEL L=18	1							
18	1	129900-32030	O-RING, P20	2							
19	1	119609-32040	O-RING, P16	2							
20	1	129685-32100	COVER ASSY	1							
21	2	129685-32070	COVER	1							
22	2	129900-32130	VALVE, RELIEF	1							
23	2	129418-32320	SPRING	1							
24	2	129001-32330	PLUG	1							
25	1	119802-32111	ROTOR, INNER	1							
26	1	119802-32120	ROTOR, OUTER	1							
27	1	119802-32130	SCREW, M6X16	7							
28	1	121850-51960	O-RING	1							
29	1	26106-080852	BOLT, M8X 85 PLATED	7							
30	1	22190-080002	WASHER, SEAL 8	4							
31	1	26106-080122	BOLT, M8X 12 PLATED	1							
32	1	26106-080162	BOLT, M8X 16 PLATED	7							
33	1	26106-080452	BOLT, M8X 45 PLATED	1							
34	1	26106-080552	BOLT, M8X 55 PLATED	8							
35	1	26306-080002	NUT, M8	3							

Fig.3. MOUNTING FLANGE & OIL SUMP

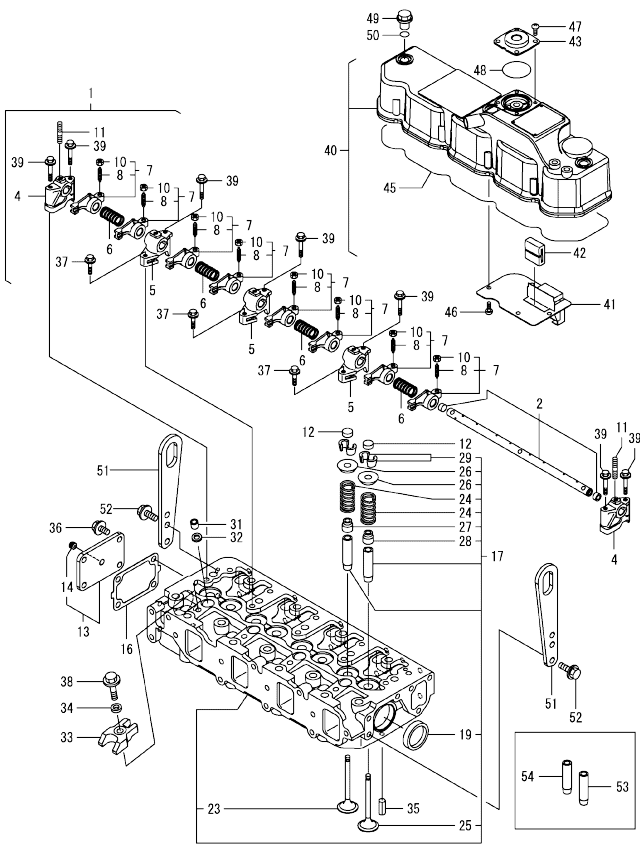


(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129100-01580	PIN, PARALLEL 8X16	2							
2	1	129636-01650	HOUSING, FLYWHEEL	1							
3	1	119620-01750	CAP	1							
4	1	26206-100252	BOLT, M10X 25 PLATED	6							
5	1	26206-100302	BOLT, M10X 30 PLATED	4							
6	1	129636-01770	OIL PAN ASSY	1							
8	2	23414-060000	GASKET, 6X1.0	1							
9	2	26106-060102	BOLT, M6X 10 PLATED	1							
10	1	129636-01780	OIL PAN ASSY, BOTTOM	1							
11	2	119640-01640	PLUG, DRAIN M22	1							
13	2	124085-01771	PLUG, NPT1/2	1							
15	2	22190-220002	WASHER, SEAL 22	1							
16	1	129636-01791	COVER	1							
17	1	129486-01830	O-RING, P32	1							
18	1	26106-081202	BOLT, M8X120 PLATED	1							
19	1	26106-080252	BOLT, M8X 25 PLATED	14							
20	1	26106-080452	BOLT, M8X 45 PLATED	19							
21	1	26106-080902	BOLT, M8X 90 PLATED	13							
22	1	129100-01580	PIN, PARALLEL 8X16	2							
23	1	129486-01650	CASE, OIL SEAL	1							
24	1	129486-01660	GASKET	1							
25	1	129486-01670	BOLT, M8X30	6							
26	1	129486-01780	SEAL, OIL	1							
29	1	26106-080352	BOLT, M8X 35 PLATED	3							

Fig.4. CYLINDER HEAD & BONNET



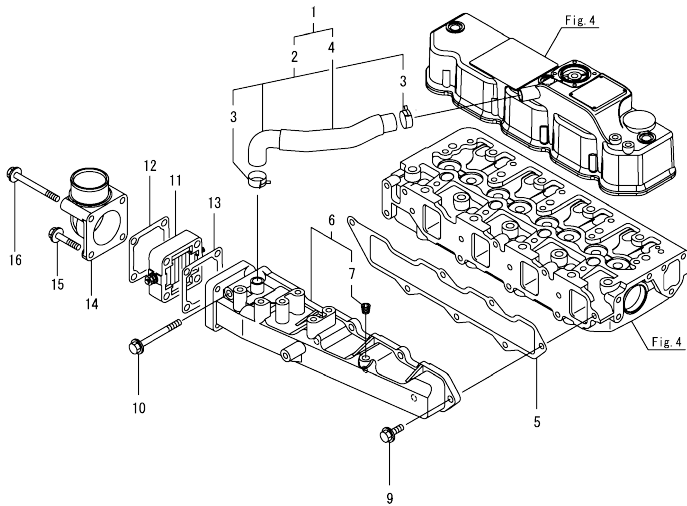
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(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129601-11241	SHAFT ASSY, ROCKER	1							
2	2	129601-11251	SHAFT, ROCKER ARM	1							
4	2	119802-11260	SUPPORT, ROCKER ARM	2							
5	2	119802-11270	SUPPORT, ROCKER ARM	3							
6	2	129150-11280	SPRING, ROCKER	4							
7	2	129004-11650	ARM ASSY, ROCKER	8							
8	3	129150-11230	SCREW, VALVE ADJUST	8							
10	3	129150-11750	NUT, M8	8							
11	2	26226-080182	STUD, M8X 18	3							
12	1	129150-11370	CAP, VALVE	8							
13	1	129486-11670	FLANGE ASSY	1							
14	2	119285-01731	PLUG, NPT1/8	1							
16	1	129486-11681	GASKET	1							
17	1	129685-11700	HEAD ASSY, CYLINDER	1							
19	2	119885-01990	PLUG, 40	2							
23	2	129100-11112	VALVE, EXHAUST	4							
24	2	129486-11120	SPRING, VALVE	8							
25	2	129004-11130	VALVE, SUCTION	4							
26	2	129795-11180	RETAINER, SPRING	8							
27	2	121400-11340	SEAL, VALVE STEM	4							
28	2	124460-11340	SEAL, VALVE STEM	4							
29	2	27310-080001	COTTER, 8	8							
31	1	119802-11870	PROTECTOR, NOZZLE	4							
32	1	119625-11880	SEAT, NOZZLE	4							
33	1	129004-11900	RETAINER, NOZZLE	4							
34	1	120270-54410	WASHER, INJECTOR	4							
35	1	22351-060012	PIN, SPRING 6.0X12	2							
36	1	26106-080162	BOLT, M8X 16 PLATED	4							
37	1	26106-080252	BOLT, M8X 25 PLATED	3							
38	1	26106-080352	BOLT, M8X 35 PLATED	4							
39	1	26106-080502	BOLT, M8X 50 PLATED	7							
40	1	129685-11351	BONNET ASSY, HEAD	1							
41	2	129685-03010	PLATE	1							
42	2	129150-03070	BAFFLE, BREATHER	1							
43	2	129006-03120	COVER, DIAPHRAGM	1							
45	2	129601-11310	GASKET, BONNET	1							
46	2	22857-500100	SCREW, 5X10	4							
47	2	22857-500100	SCREW, 5X10	4							
48	2	24341-000400	O-RING, 1AS40.0	1							
49	1	124160-11360	KNOB	3							
50	1	24311-000120	O-RING, 1AP12.0	3							
51	1	129900-07900	LIFTER, ENGINE	2							
52	1	26106-080162	BOLT, M8X 16 PLATED	4							
53	1	120130-11860	GUIDE, VALVE	4							1
54	1	129150-11810	GUIDE, VALVE	4							1

Remarks  
(1)Spare parts.

Fig.5. SUCTION MANIFOLD



(A)=4TNV88-SHTR  
(B)=  
(C)=

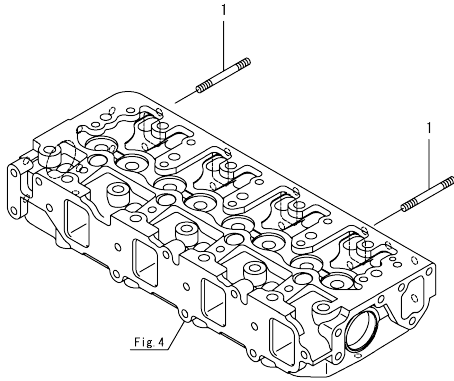
(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129685-03100	PIPE ASSY, BREATHER	1							
2	2	129601-03080	HOSE ASSY, BREATHER	1							
3	3	129410-03990	CLAMP, HOSE 21.5	2							
4	2	129685-03110	MATERIAL, KEEP-WARM	1							
5	1	129407-12110	GASKET, MANIFOLD	1							
6	1	129685-12110	MANIFOLD ASSY,INTAKE	1							
7	2	119285-01731	PLUG, NPT 1/8	1							
9	1	26106-080202	BOLT, M8X 20 PLATED	6							
10	1	26106-080802	BOLT, M8X 80 PLATED	1							
11	1	129579-77500	HEATER	1							
12	1	129100-77510	GASKET, AIR HEATER	1							
13	1	129150-77511	GASKET, AIR HEATER	1							
14	1	171340-77520	BEND, AIR HEATER	1							
15	1	26106-080402	BOLT, M8X 40 PLATED	2							
16	1	26106-080802	BOLT, M8X 80 PLATED	2							



OCD50-M03140 ENGINE

Fig.6. EXHAUST MANIFOLD



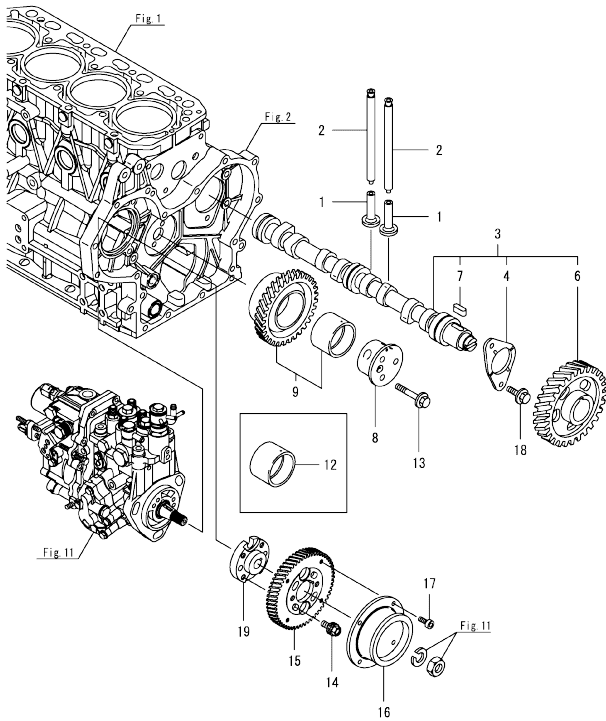
OCD50-M03140 Fig.6

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	123900-13610	BOLT, STUD M8X80	2							

(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

Fig.7. CAMSHAFT & DRIVING GEAR



(A)=4TNV88-SHTR  
(B)=  
(C)=

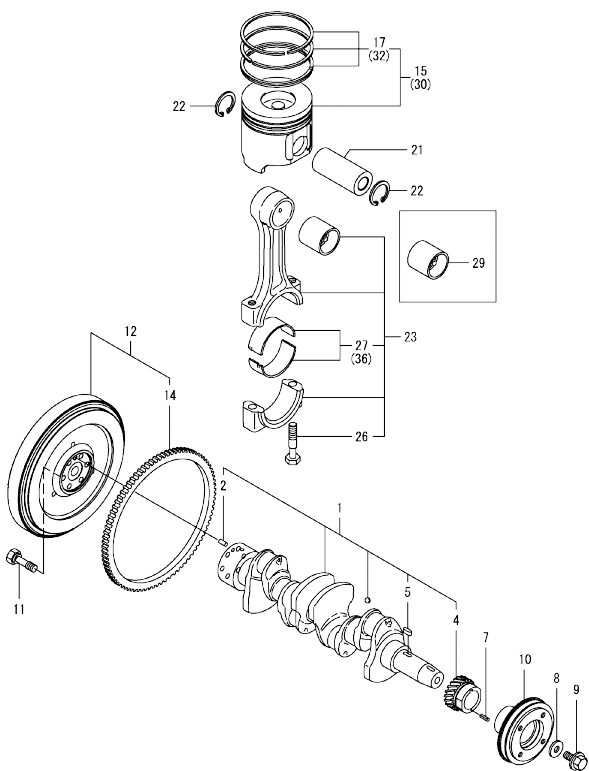
(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129150-14200	TAPPET	8							
2	1	129150-14400	PUSH-ROD, L=178	8							
3	1	129486-14580	CAMSHAFT ASSY	1							
4	2	129150-02450	BEARING, THRUST	1							
6	2	129150-14101	GEAR, CAMSHAFT	1							
7	2	22512-070140	KEY, 7X 14	1							
8	1	129685-25060	SHAFT, IDLE	1							
9	1	119802-25101	GEAR ASSY, IDLE	1							
12	1	119802-25071	BUSH, IDLE GEAR	1							1
13	1	26106-080402	BOLT, M8X 40 PLATED	3							
14	1	129150-25301	BOLT	4							
15	1	129685-25900	GEAR, PUMP	1							
16	1	129685-25930	CAM, FEED PUMP	1							
17	1	26450-060162	BOLT, M6X 16	4							
18	1	26106-080142	BOLT, M8X 14 PLATED	2							
19	1	158552-51151	FLANGE	1							

Remarks

(1)Spare parts.

Fig.8. CRANKSHAFT & PISTON



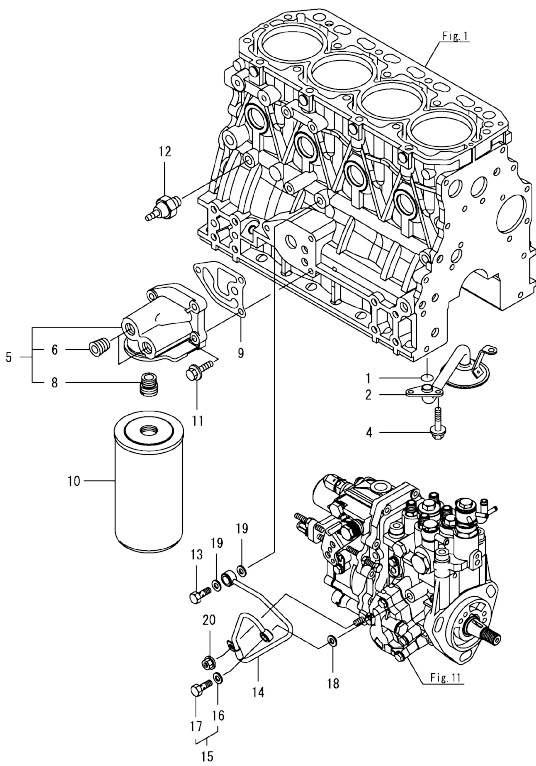
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(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129601-21002	CRANKSHAFT ASSY	1							
2	2	129100-01580	PIN, PARALLEL 8X16	1							
4	2	119802-21202	GEAR, CRANKSHAFT	1							
5	2	22512-070140	KEY, 7X 14	1							
7	1	22351-030010	PIN, SPRING 3.0X10	1							
8	1	129795-21661	WASHER, 14	1							
9	1	121850-21680	BOLT, V-PULLEY	1							
10	1	129685-21720	PULLEY, DAMPER	1							
11	1	121111-21501	BOLT, FLYWHEEL	6							
12	1	129636-21570	FLYWHEEL ASSY	1							
14	2	129486-21601	GEAR, RING Z=98	1							
14-1	2	129686-21600	GEAR, RING Z=98	1							N
(A=E173087)											
15	1	129636-22080	PISTON ASSY	4							
17	2	129636-22500	RING SET, PISTON	4							
21	1	129202-22300	PIN, PISTON D26 L70	4							
22	1	22252-000260	RING, 26	8							
23	1	729402-23100	ROD ASSY, CONNECTING	4							
26	2	121550-23200	BOLT, CONNECTING ROD	8							
27	2	129150-23601	METAL ASSY, CRANK PIN	4							
29	1	129100-23910	METAL, PISTON PIN	4							1
30	1	129636-22900	PISTON ASSY, 0.25 OS	4							2
32	2	129636-22950	RING SET, PISTON .25	4							2
36	1	129150-23611	METAL, CRANK PIN .25	4							3

Remarks  
(1) Spare parts.  
(2) Over-sized (O.S.=0.25) parts.  
(3) Under-sized (U.S.=0.25) parts.

Fig.9. LUB. OIL SYSTEM



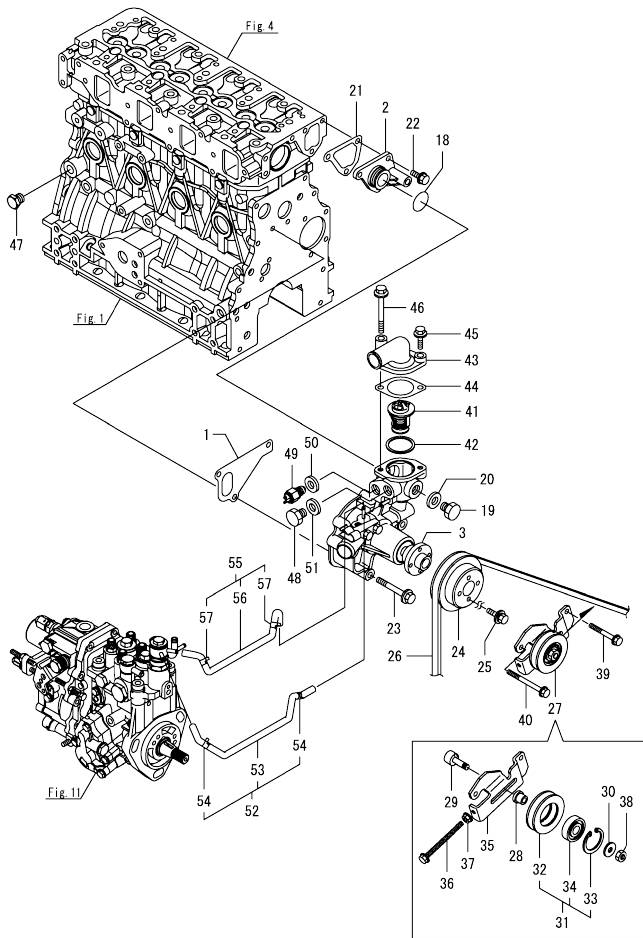
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(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129900-32030	O-RING, P20	1							
2	1	129636-35090	PIPE ASSY, OIL INLET	1							
4	1	26106-080162	BOLT, M8X 16 PLATED	1							
5	1	129636-35100	BRACKET ASSY, FILTER	1							
6	2	129033-01770	PLUG, NPT1/2	2							
8	2	129636-35200	BOLT, FILTER	1							
9	1	129103-35122	GASKET	1							
10	1	127695-35150	FILTER, OIL	1							1
11	1	26106-080252	BOLT, M8X 25 PLATED	3							
12	1	114250-39450	SWITCH, HYDRAULIC	1							
13	1	124160-39140	BOLT, PIPE JOINT M10	1							
14	1	119802-39450	PIPE ASSY, OIL	1							
15	1	129005-59830	BOLT ASSY, JOINT M8	1							
16	2	22190-080002	WASHER, SEAL 8	1							
17	2	23857-030000	BOLT, JOINT 3	1							
18	1	22190-080002	WASHER, SEAL 8	1							
19	1	22190-100002	WASHER, SEAL 10	2							
20	1	26366-060002	NUT, M6	1							

Remarks  
(1)Spare parts.

Fig.10. COOLING WATER SYSTEM



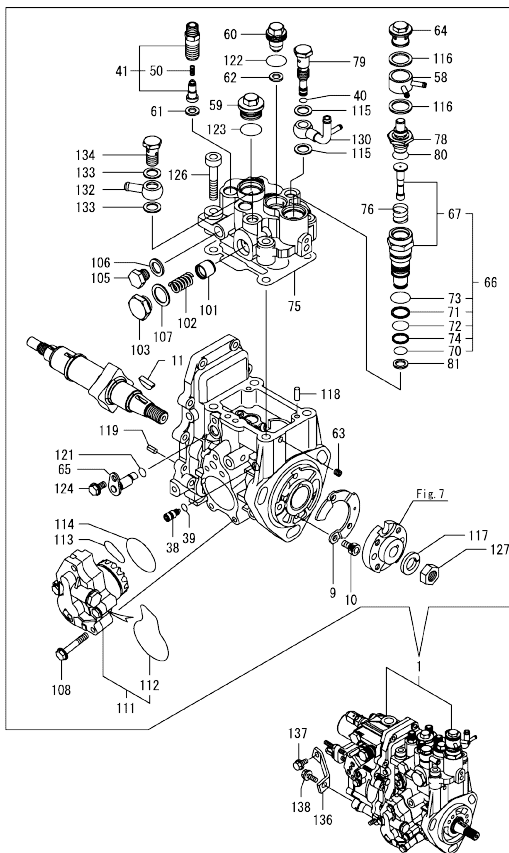
(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129486-42021	GASKET, WATER PUMP	1							
2	1	129486-42040	JOINT	1							
3	1	129636-42100	PUMP ASSY, WATER	1							
18	1	129486-42140	O-RING, G30	1							
19	1	121450-42450	PLUG, M16	1							
20	1	124465-44950	GASKET, 16	1							
21	1	129486-49840	GASKET	1							
22	1	26106-080162	BOLT, M8X 16 PLATED	3							
23	1	26106-080602	BOLT, M8X 60 PLATED	3							
24	1	119515-42350	V-PULLEY, D=110	1							
25	1	26014-060162	BOLT, M6X 16	4							
26	1	129636-42290	V-BELT, A31	1							
27	1	129636-42501	TENSION ASSY, DRIVE	1							
28	2	129636-42540	SPACER	1							
29	2	129636-42550	BOLT	1							
30	2	129636-42570	WASHER, 10	1							
31	2	129636-42590	PULLEY ASSY, TENSION	1							
32	3	129636-42530	PULLEY, TENSION	1							
33	3	22252-000470	RING, 47	1							
34	3	24104-063034	BEARING, BALL 6303UU	1							
35	2	129636-42611	SUPPORT, PULLEY	1							
36	2	26106-081004	BOLT, M8X100 PLATED	1							
37	2	26366-080002	NUT, M8	1							
38	2	26756-100002	NUT, LOCK M10	1							
39	1	26106-080652	BOLT, M8X 65 PLATED	1							
40	1	26106-080902	BOLT, M8X 90 PLATED	1							
41	1	129155-49801	THERMOSTAT, 71C	1							
42	1	129150-49811	GASKET, THERMOSTAT	1							
43	1	124101-49531	COVER, THERMOSTAT	1							
44	1	129795-49551	GASKET	1							
45	1	26106-080282	BOLT, M8X 28 PLATED	1							
46	1	26106-080652	BOLT, M8X 65 PLATED	1							
47	1	171056-49120	PLUG, DRAIN R1/4	1							
48	1	121450-42450	PLUG, M16	1							
49	1	121250-44901	SWITCH, THERMO 110	1							
50	1	124465-44950	GASKET, 16	1							
51	1	124465-44950	GASKET, 16	1							
52	1	129636-49780	PIPE ASSY, WATER	1							
53	2	129004-49711	HOSE, WATER	1							
54	2	124722-59050	CLAMP, HOSE 9	2							
55	1	129636-49790	PIPE ASSY, WATER	1							
56	2	129636-49720	PIPE ASSY, WATER	1							
57	2	124722-59050	CLAMP, HOSE 9	2							

N:Old  $\frac{100}{100}$  New, Q:Old  $\frac{100}{100}$  New, R:Old  $\frac{100}{100}$  New, S:Old  $\frac{100}{100}$  New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change  
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Fig.11. FUEL INJECTION PUMP



(A)=4TNV88-SHTR  
(B)=  
(C)=

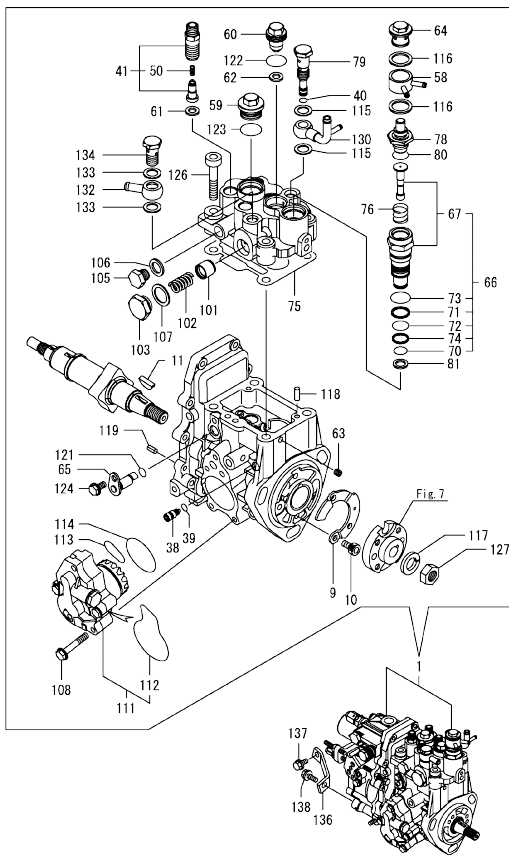
(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729636-51310	FIE ASSY	1							1
9	2	129008-51900	COVER, PUMP	1							
10	2	129008-51920	BOLT, SOCKET M6X10	2							
11	2	119802-51090	FEATHER KEY, 4X16	1							
38	2	158600-51270	STOPPER, TAPPET	1							
39	2	158563-51281	O-RING, 4D S6	1							
40	2	158563-51281	O-RING, 4D S6	1							
41	2	129509-51390	VALVE ASSY, DELIVERY	4							
50	3	158563-51330	SPRING, DELIVERY	4							
58	2	158553-51551	JOINT, COOLING WATER	1							
59	2	158601-51550	PLUG, M22	1							
60	2	119802-51560	PLUG, M14	1							
61	2	158552-51571	GASKET, PLUG	4							
62	2	158552-51571	GASKET, PLUG	1							
63	2	158557-51570	PLUG, RACK	1							
64	2	158601-51570	PLUG	1							
65	2	158552-51580	LIFTER, LINK	1							
66	2	119802-51590	TIMER ASSY	1							
67	3	119802-51600	TIMER ASSY	1							
70	3	158553-51670	O-RING	1							
71	3	119802-51680	RING, BACKUP	1							
72	3	119802-51690	O-RING	1							
73	3	24356-190200	O-RING, 4D19020	1							
74	3	24372-000150	RING, BACK UP T2P15	1							
75	2	158552-51600	GASKET	1							
76	2	158553-51630	SPRING, TIMER	1							
78	2	158553-51640	THERMOELEMENT	1							
79	2	158601-51650	JOINT, OVER FLOW	1							
80	2	158553-51660	O-RING, P14	1							
81	2	158553-51680	GASKET, TIMER	1							
101	2	158601-51770	PISTON, ACCUMULATOR	1							
102	2	158552-51781	SPRING, ACCUMULATOR	1							
103	2	158601-51790	PLUG	1							
105	2	158553-51930	PLUG, M12	1							
106	2	22190-120002	WASHER, SEAL 12	1							
107	2	22190-180002	WASHER, SEAL 18	1							
108	2	158553-51770	BOLT	4							
111	2	158552-52200	PUMP ASSY, FUEL FEED	1							
112	3	158552-52500	O-RING	1							
113	2	158552-52311	O-RING	1							
114	2	158552-52400	O-RING, 4E S42	1							
115	2	22190-120002	WASHER, SEAL 12	2							
116	2	22190-180002	WASHER, SEAL 18	2							
117	2	22217-140000	WASHER, SPRING 14	1							
118	2	22312-050140	PIN, PARALLEL 5X14	2							
119	2	22351-050010	PIN, SPRING 5.0X10	2							
121	2	24311-000070	O-RING, 1AP7.0	1							
122	2	24356-190180	O-RING, 4D19018	1							
123	2	24356-190200	O-RING, 4D19020	1							
124	2	26106-060102	BOLT, M6X 10 PLATED	1							
126	2	26450-080452	BOLT, M8X 45	4							

Remarks

(1)Governor(Fig.12) is incorporated in this Fuel Injection Pump(No.1).

Fig.11. FUEL INJECTION PUMP



(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
127	2	26776-140002	NUT, LOCK M14	1							
130	2	158552-51670	JOINT, OVER FLOW	1							
132	2	129916-59020	JOINT, PIPE 12	1							
133	2	22190-120002	WASHER, SEAL 12	2							
134	2	23857-060000	BOLT, JOINT 6	1							
136	1	129601-51250	RETAINER, PUMP	1							
137	1	26106-080162	BOLT, M8X 16 PLATED	1							
138	1	26106-080202	BOLT, M8X 20 PLATED	1							

Remarks

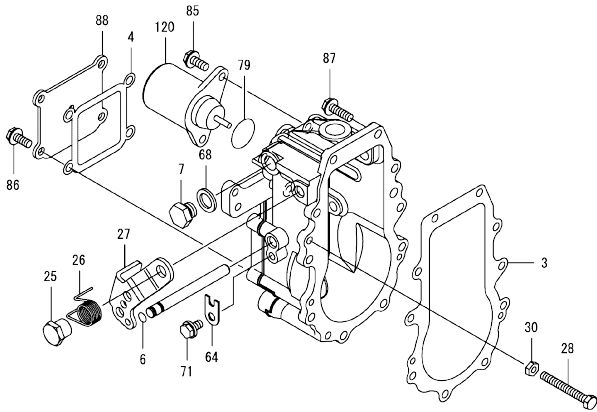
(1)Governor(Fig.12) is incorporated in this Fuel Injection Pump(No.1).

OCD50-M03140 ENGINE  
 Fig.12. GOVERNOR

OCD50-M03140 Fig.12

(A)=4TNV88-SHTR  
 (B)=  
 (C)=

(D)=  
 (E)=  
 (F)=



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
3	2	158553-61050	GASKET	1							
4	2	158553-61070	GASKET	1							
6	2	129155-51280	O-RING, S6	1							
7	2	158553-51930	PLUG, M12	1							
25	2	129255-61410	NUT, M8	1							
26	2	119807-61420	SPRING, RETURN	1							
27	2	158552-61441	LEVER, REGULATOR	1							
28	2	129155-61461	BOLT, IDLE LIMIT	1							
30	2	119740-61470	NUT	1							
64	2	119660-61901	STOPPER, SHAFT	1							
68	2	22190-120002	WASHER, SEAL 12	1							
71	2	26106-060102	BOLT, M6X 10 PLATED	1							
79	2	158552-61900	O-RING	1							
85	2	26106-060142	BOLT, M6X 14 PLATED	2							
86	2	26106-060142	BOLT, M6X 14 PLATED	4							
87	2	26106-060202	BOLT, M6X 20 PLATED	10							
88	2	129642-61060	COVER, GOVERNOR CASE	1							
120	2	129630-77900	SOLENOID, STOP	1							

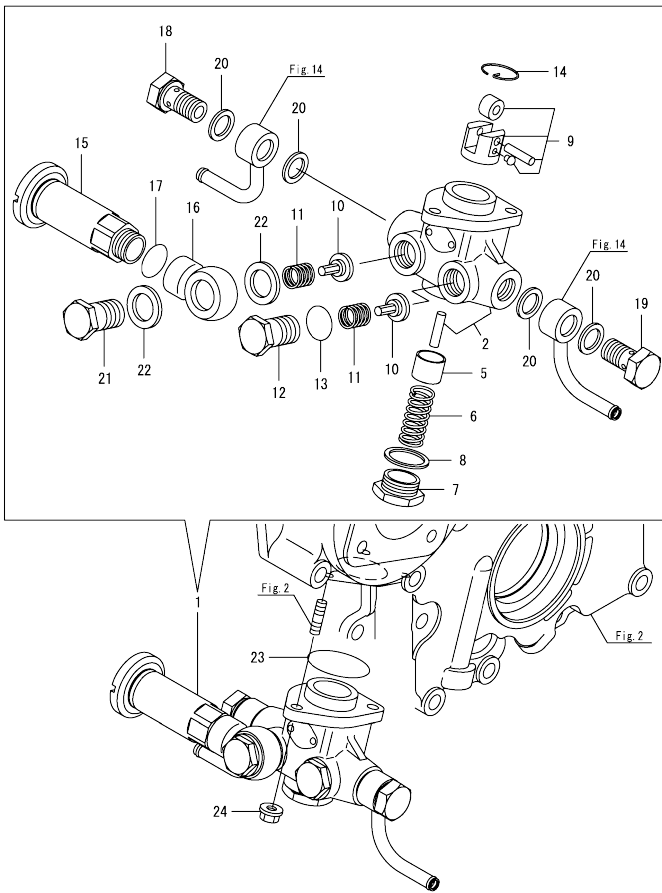
Remarks

\* This figure(Governor) is incorporated in the Fuel Injection Pump(Fig.11).

N:Old  $\frac{100}{100}$  New, Q:Old  $\frac{100}{100}$  New, R:Old  $\frac{100}{100}$  New, S:Old  $\frac{100}{100}$  New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change  
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Fig.13. FUEL FEED PUMP

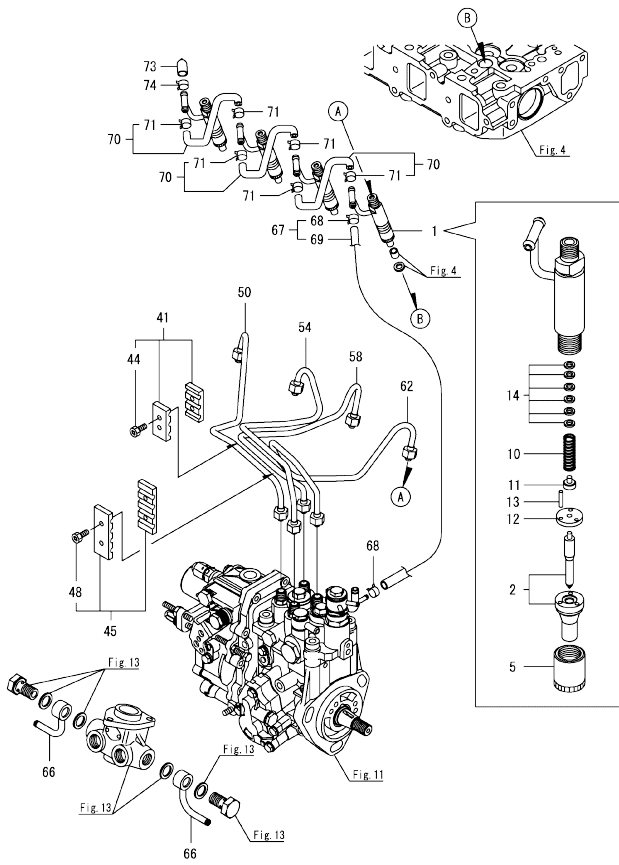


(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty					
				(A)	(B)	(C)	(D)	(E)	(F)
1	1	129486-52011	PUMP ASSY, FUEL FEED	1					
2	2	129486-52100	BODY ASSY, PUMP	1					
5	2	129486-52130	PISTON	1					
6	2	129486-52140	SPRING, PISTON	1					
7	2	129486-52150	RETAINER	1					
8	2	129486-52160	GASKET	1					
9	2	129486-52170	TAPPET ASSY	1					
10	2	129486-52180	VALVE	2					
11	2	129486-52190	SPRING, VALVE	2					
12	2	129486-52200	RETAINER, VALVE	1					
13	2	129486-52210	O-RING	1					
14	2	129486-52220	PIN, SNAP	1					
15	2	129486-52230	PUMP, PRIMING	1					
16	2	129486-52240	ADAPTER	1					
17	2	129486-52250	O-RING	1					
18	2	129486-52260	BOLT, PIPE JOINT	1					
19	2	129486-52270	BOLT, PIPE JOINT	1					
20	2	129486-52290	GASKET	4					
21	2	129486-52300	BOLT, PIPE JOINT	1					
22	2	129486-52310	GASKET	2					
23	1	24341-000315	O-RING, 1AS31.5	1					
24	1	26366-060002	NUT, M6	3					

Fig.14. FUEL INJECTION VALVE



(A)=4TNV88-SHTR  
(B)=  
(C)=

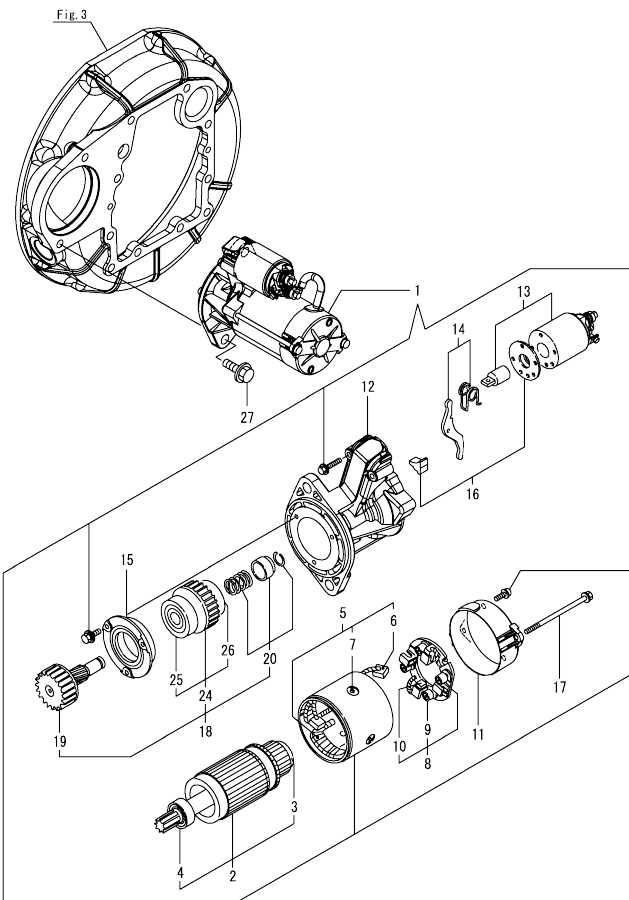
(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729642-53100	FUEL INJECTOR ASSY	4							
2	2	129640-53001	NOZZLE ASSY, F.I.	4							
5	2	114250-53080	NUT, NOZZLE	4							
10	2	114250-53120	SPRING, NOZZLE	4							
11	2	114250-53130	SEAT, SPRING	4							
12	2	114250-53140	SPACER	4							
13	2	114250-53210	PIN	8							
14	2	119803-53400	SHIM SET	4							1
41	1	129150-59120	RETAINER, PIPE	1							
44	2	129150-59131	BOLT, M4X14	2							
45	1	129550-59120	RETAINER, PIPE	1							
48	2	129150-59131	BOLT, M4X14	2							
50	1	129601-59810	PIPE ASSY, INJECTION	1							
54	1	129685-59820	PIPE ASSY, INJECTION	1							
58	1	129685-59830	PIPE ASSY, INJECTION	1							
62	1	129685-59840	PIPE ASSY, INJECTION	1							
66	1	129636-59200	JOINT, PIPE	2							
67	1	129636-59561	PIPE ASSY, RETURN	1							
68	2	124060-77680	CLAMP, HOSE 10	2							
69	2	129636-59661	PIPE, FUEL	1							
70	1	129486-59581	HOSE, FUEL RETURN	3							
71	2	124060-77680	CLAMP, HOSE 10	6							
73	1	119593-59581	CAP	1							
74	1	124060-77680	CLAMP, HOSE 10	1							

Remarks

(1)Spare parts.

Fig.15. STARTER MOTOR

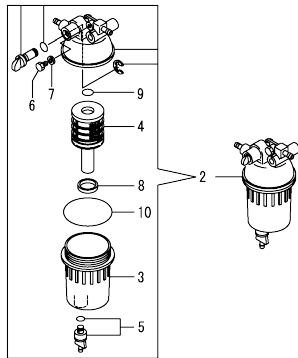


(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty					
				(A)	(B)	(C)	(D)	(E)	(F)
1	1	129685-77011	MOTOR, STARTER(2.3KW)	1					
2	2	129685-77400	ARMATURE ASSY	1					
3	3	171008-77410	BEARING, BALL	1					
4	3	171008-77420	BEARING, BALL	1					
5	2	129685-77440	COIL ASSY, FIELD	1					
6	3	129900-77450	BRUSH	2					
7	3	171008-77450	SCREW, CORE SET	4					
8	2	129900-77480	HOLDER ASSY, BRUSH	1					
9	3	X2130631300	SPRING, BRUSH	4					
10	3	129900-77450	BRUSH	2					
11	2	129685-77510	COVER, REAR	1					
12	2	129685-77520	CASE, GEAR	1					
13	2	129685-77530	SWITCH ASSY, MAGNET	1					
14	2	129685-77540	LEVER SET, SHIFT	1					
15	2	129685-77550	RETAINER, BEARING	1					
16	2	129685-77570	COVER KIT, DUST	1					
17	2	129685-77640	BOLT, THROUGH	2					
18	2	129685-77650	CLUTCH ASSY, PINION	1					
19	3	129685-77660	SHAFT, PINION	1					
20	3	171008-77670	STOPPER SET, PINION	1					
24	3	129685-77720	CLUTCH ASSY	1					
25	4	X2114555020	BEARING, BALL	1					
26	4	X2114955020	BEARING, BALL	1					
27	1	26106-120252	BOLT, M12X 25 PLATED	2					

Fig.16. ACCESSORY



(A)=4TNV88-SHTR  
(B)=  
(C)=

(D)=  
(E)=  
(F)=

No.	Lev.	Parts No.	Description	Q'ty					
				(A)	(B)	(C)	(D)	(E)	(F)
1	1	114110-07761	LABEL, FUEL OIL CAUT	1					
2	1	129242-55701	SEPARATOR ASSY,WATER	1					
3	2	129242-55720	CUP, SEPARATOR	1					
4	2	129242-55730	ELEMENT, FUEL	1					
5	2	129242-55740	PLUG, DRAIN	1					
6	2	129242-55750	VALVE, AIR VENT	1					
7	2	129242-55760	GASKET, PLUG	1					
8	2	129242-55770	FLOAT	1					
9	2	24311-000160	O-RING, 1AP16.0	1					
10	2	24321-000750	O-RING, 1AG75.0	1					
11	1	119802-77200	RELAY, SAFETY	1					
12	1	119650-77911	RELAY ASSY, GLOW	1					
15	1	128300-77920	TIMER	1					

## Parts No. Index

Parts No.	Fig. No.	Ref. No.	Parts No.	Fig. No.	Ref. No.	Parts No.	Fig. No.	Ref. No.	Parts No.	Fig. No.	Ref. No.	
114110-07761	16	1	121850-51960	2	28	129150-11230	4	8	129486-52150	13	7	
114250-39450	9	12	123900-13610	6	1	129150-11280	4	6	129486-52160	13	8	
114250-53080	14	5	124060-01050	1	4	129150-11370	4	12	129486-52170	13	9	
114250-53120	14	10	124060-77680	14	68	129150-11750	4	10	129486-52180	13	10	
114250-53130	14	11			71	129150-11810	4	54	129486-52190	13	11	
114250-53140	14	12			74	129150-14101	7	6	129486-52200	13	12	
114250-53210	14	13	124085-01771	3	13	129150-14200	7	1	129486-52210	13	13	
119285-01731	4	14	124101-49531	10	43	129150-14400	7	2	129486-52220	13	14	
	5	7	124160-01751	2	14	129150-23601	8	27	129486-52230	13	15	
119309-01810	1	39	124160-01910	1	6	129150-23611	8	36	129486-52240	13	16	
119515-42350	10	24			7	129150-25301	7	14	129486-52250	13	17	
119593-59581	14	73	124160-11360	4	49	129150-49811	10	42	129486-52260	13	18	
119609-32040	2	19	124160-39140	9	13	129150-59120	14	41	129486-52270	13	19	
119620-01750	3	3	124240-01871	2	16	129150-59131	14	44	129486-52290	13	20	
119625-11880	4	32	124460-11340	4	28			48	129486-52300	13	21	
119640-01640	3	11	124465-44950	10	20	129150-77511	5	13	129486-52310	13	22	
119650-77911	16	12			50	129155-49801	10	41	129486-59581	14	70	
119660-61901	12	64			51	129155-51020	2	13	129509-51390	11	41	
119740-61470	12	30	124722-59050	10	54	129155-51280	12	6	129550-59120	14	45	
119802-01561	2	6			57	129155-61461	12	28	129579-77500	5	11	
119802-11260	4	4	127695-35150	9	10	129202-22300	8	21	129601-03080	5	2	
119802-11270	4	5	128300-77920	16	15	129242-55701	16	2	129601-11241	4	1	
119802-11870	4	31	129001-01250	1	5	129242-55720	16	3	129601-11251	4	2	
119802-21202	8	4	129001-02931	1	30	129242-55730	16	4	129601-11310	4	45	
119802-25071	7	12	129001-32330	2	24	129242-55740	16	5	129601-21002	8	1	
119802-25101	7	9	129004-01190	1	27	129242-55750	16	6	129601-51250	11	136	
119802-32111	2	25	129004-11130	4	25	129242-55760	16	7	129601-59810	14	50	
119802-32120	2	26	129004-11650	4	7	129242-55770	16	8	129630-77900	12	120	
119802-32130	2	27	129004-11900	4	33	129255-61410	12	25	129636-01650	3	2	
119802-39450	9	14	129004-49711	10	53	129407-12110	5	5	129636-01770	3	6	
119802-51090	11	11	129005-59830	9	15	129410-03990	5	3	129636-01780	3	10	
119802-51560	11	60	129006-03120	4	43	129418-32320	2	23	129636-01791	3	16	
119802-51590	11	66	129008-51900	11	9	129486-01650	3	23	129636-21570	8	12	
119802-51600	11	67	129008-51920	11	10	129486-01660	3	24	129636-22080	8	15	
119802-51680	11	71	129033-01770	9	6	129486-01670	3	25	129636-22500	8	17	
119802-51690	11	72	129100-01580	2	7	129486-01780	3	26	129636-22900	8	30	
119802-77200	16	11			3	1	129486-01830	3	17	129636-22950	8	32
119803-53400	14	14			22	129486-11120	4	24	129636-35090	9	2	
119807-61420	12	26			8	2	129486-11670	4	13	129636-35100	9	5
119885-01990	4	19	129100-11112	4	23	129486-11681	4	16	129636-35200	9	8	
119934-01800	2	12	129100-23910	8	29	129486-14580	7	3	129636-42100	10	3	
120130-11860	4	53	129100-77510	5	12	129486-21601	8	14	129636-42290	10	26	
120270-54410	4	34	129103-35122	9	9	129486-42021	10	1	129636-42501	10	27	
121111-21501	8	11	129150-01200	1	28	129486-42040	10	2	129636-42530	10	32	
121250-44901	10	49	129150-02020	1	9	129486-42140	10	18	129636-42540	10	28	
121400-11340	4	27	129150-02450	7	4	129486-49840	10	21	129636-42550	10	29	
121450-42450	10	19	129150-02871	1	33	129486-52011	13	1	129636-42570	10	30	
		48	129150-02931	1	24	129486-52100	13	2	129636-42590	10	31	
121550-23200	8	26	129150-02941	1	36	129486-52130	13	5	129636-42611	10	35	
121850-21680	8	9	129150-03070	4	42	129486-52140	13	6	129636-49720	10	56	

## Parts No. Index

Parts No.	Fig. No.	Ref. No.
129636-49780	10	52
129636-49790	10	55
129636-59200	14	66
129636-59561	14	67
129636-59661	14	69
129640-53001	14	2
129642-61060	12	88
129685-01330	1	29
129685-01490	2	1
129685-01550	2	3
129685-01560	2	4
129685-01571	2	5
129685-01590	2	8
129685-03010	4	41
129685-03100	5	1
129685-03110	5	4
129685-11351	4	40
129685-11700	4	17
129685-12110	5	6
129685-21720	8	10
129685-25060	7	8
129685-25900	7	15
129685-25930	7	16
129685-32070	2	21
129685-32100	2	20
129685-59820	14	54
129685-59830	14	58
129685-59840	14	62
129685-77011	15	1
129685-77400	15	2
129685-77440	15	5
129685-77510	15	11
129685-77520	15	12
129685-77530	15	13
129685-77540	15	14
129685-77550	15	15
129685-77570	15	16
129685-77640	15	17
129685-77650	15	18
129685-77660	15	19
129685-77720	15	24
129686-21600	8	14
129795-01950	2	17
129795-02412	1	12
129795-11180	4	26
129795-21661	8	8
129795-49551	10	44
129900-07900	4	51
129900-32030	2	18
	9	1

Parts No.	Fig. No.	Ref. No.
129900-32130	2	22
129900-77450	15	6
		10
129900-77480	15	8
129916-59020	11	132
158552-51151	7	19
158552-51571	11	61
		62
158552-51580	11	65
158552-51600	11	75
158552-51670	11	130
158552-51781	11	102
158552-52200	11	111
158552-52311	11	113
158552-52400	11	114
158552-52500	11	112
158552-61441	12	27
158552-61900	12	79
158553-51551	11	58
158553-51630	11	76
158553-51640	11	78
158553-51660	11	80
158553-51670	11	70
158553-51680	11	81
158553-51770	11	108
158553-51930	11	105
	12	7
	12	3
158553-61050	12	4
158553-61070	12	4
158557-51570	11	63
158563-51281	11	39
		40
158563-51330	11	50
158600-51270	11	38
158601-51550	11	59
158601-51570	11	64
158601-51650	11	79
158601-51770	11	101
158601-51790	11	103
171008-77410	15	3
171008-77420	15	4
171008-77450	15	7
171008-77670	15	20
171051-01921	1	8
171056-49120	10	47
171340-77520	5	14
22190-080002	2	30
	9	16
		18
22190-100002	9	19

Parts No.	Fig. No.	Ref. No.
22190-120002	11	106
		115
		133
	12	68
22190-180002	11	107
		116
22190-220002	3	15
22217-140000	11	117
22252-000260	8	22
22252-000470	10	33
22312-050140	11	118
22351-030010	8	7
22351-050010	11	119
22351-060012	4	35
22512-070140	7	7
	8	5
22857-500100	4	46
		47
23414-060000	3	8
23857-030000	9	17
23857-060000	11	134
23876-010000	2	10
23876-030000	2	11
24104-063034	10	34
24311-000070	11	121
24311-000120	4	50
24311-000160	16	9
24311-000320	2	15
24321-000750	16	10
24341-000315	13	23
24341-000400	4	48
24356-190180	11	122
24356-190200	11	73
		123
24372-000150	11	74
26014-060162	10	25
26106-060102	3	9
	11	124
	12	71
26106-060142	12	85
		86
26106-060202	12	87
26106-080122	2	31
26106-080142	7	18
26106-080162	2	32
	4	36
		52
	9	4
	10	22
	11	137

Parts No.	Fig. No.	Ref. No.
26106-080202	5	9
	11	138
26106-080252	3	19
	4	37
	9	11
26106-080282	10	45
26106-080352	3	29
	4	38
26106-080402	5	15
	7	13
26106-080452	2	33
	3	20
26106-080502	4	39
26106-080552	2	34
26106-080602	10	23
26106-080652	10	39
		46
26106-080802	5	10
		16
26106-080852	2	29
26106-080902	3	21
	10	40
26106-081004	10	36
26106-081202	3	18
26106-120252	15	27
26206-100252	3	4
26206-100302	3	5
26226-080182	4	11
26306-080002	2	35
26366-060002	9	20
	13	24
26366-080002	10	37
26450-060162	7	17
26450-080452	11	126
26756-100002	10	38
26776-140002	11	127
27241-120000	1	13
27241-300000	1	14
27310-080001	4	29
729402-23100	8	23
729602-01560	1	1
729636-51310	11	1
729642-53100	14	1
X2114555020	15	25
X2114955020	15	26
X2130631300	15	9