

0CW10-M80400EN

# P R E F A C E

1. This parts catalog is the 1st edition of 3TNV88-ZMHW for HAKO.

Pub. No. : 0CW10-G80400

Published : January, 2013

2. Model name

Engine model	Vehicle	Vehicle made by
3TNV88-ZMHW	SWEEPER	HAKO

## Directions for the Parts Catalog.

1. This Parts Catalog shows both standard and optional parts.
2. Parts may change without prior notice.
3. The following is an example of the Parts Catalog format.

REF.	LEV.	PARTS NO.	DESCRIPTION	Q'TY						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729595-51390	FUEL INJECTION PUMP	1	1	1	1	1			1
1-1	1	729595-51391	FUEL INJECTION PUMP	1	1	1	1	1		N	1
		(A=E00185) (B=E00200)									
3	2	26022-060162	SCREW M 6X 16	9	9	9	9	9			
3-1	2	26022-060162	SCREW M 6X 16	4	4	4	4	4		K	
		(A=E00156) (B=E00156) (C=E00156) (D=E00156) (E=E00156)									
4	2	129470-51040	CAMSHAFT	1	1	1	1	1			
5	2	122710-51050	BEARING, ROLLER	2	2	2	2	2			
6	2	129470-51060	RETAINER	1	1	1	1	1			

Remarks
(1) BOOST COMPEMSATOR TYPE. OPTIONAL PART, TO E00155,(4JH-DT, 4JH-DTZ

### ① Ref. No.

The Ref. No. listed may not be in accordance with the illustration Ref. No.

(Ex.) Illustration No.

List Ref No.

1

1

(Before change)

1-1

(After change)

For interchangeable symbols N, R and K, illustrations for new parts may be abbreviated.

### ② Lev. (Level)

Level indication

The numbers below indicate the level of relativity towards the main part.

1 ----- Main parts (Assembly parts)

2 ----- Sub component included in " 1 ".

3 ----- Sub component included in " 2 ".

Note) Parts that are not for sale are partially illustrated but not listed.

### ③ Interchangeability Symbol

When a part change takes place, one of the following interchangeability symbols is indicated beside the part.

Symbol	Interchangeability	Contents note
N	Old $\begin{matrix} \leftarrow \text{Yes} \\ \text{No} \rightarrow \end{matrix}$ New	New Part is interchangeable for Old Part but Old Part is not interchangeable for New Part.
Q	Old $\begin{matrix} \leftarrow \text{No} \\ \text{Yes} \rightarrow \end{matrix}$ New	New Part is not interchangeable for Old Part but Old Part is interchangeable for New Part.
R	Old $\begin{matrix} \leftarrow \text{Yes} \\ \text{Yes} \rightarrow \end{matrix}$ New	New/ Old Parts are both interchangeable.
S	Old $\begin{matrix} \leftarrow \text{No} \\ \text{No} \rightarrow \end{matrix}$ New	New/ Old Parts are both not interchangeable.
W		Part newly added.
Z		Part discontinued.
F		Not interchangeable by a single part but interchangeable together with related parts.
K		Changes only for used parts quantities.

### ④ Effective Machine No.

When a part changes, the effective Machine No. will be indicated in the (A)-(F) column.

Product Symbol	Product No.	Product Symbol	Product No.
C	Clutch No. Compressor No.	F	Machine No. (Agricultural Equip.)
D	Drive No.	M	Machine No.
E	Engine No.		

Note 1) A date may follow the symbol. (Ex.) 1996.01

Note 2) "XXXXX" and "ZZZZZ" are for parts that could not be predicted or for engine models that could not be identified.

Note 3) (A=E00185) is the E (Engine Serial Number) for the column (A) model (in this case 4JH-DT) after the parts design change.

### ⑤ Remarks

Figures or alphabets (symbols) are entered in the remarks column.

The comments (remarks) on parts that are indicated at the bottom of the illustration are the same symbols as those stated above.

# Contents

0CW10-M80400

Fig. No. Fig. Name

3TNV88-ZMHW

1. CYLINDER BLOCK
2. GEAR HOUSING
3. FLYWHEEL HOUSING & OIL SUMP
4. CYLINDER HEAD & BONNET
5. SUCTION MANIFOLD
6. EXHAUST MANIFOLD & SILENCER
7. CAMSHAFT & DRIVING GEAR
8. CRANKSHAFT & PISTON
9. LUB. OIL SYSTEM
10. COOLING WATER SYSTEM
11. FUEL INJECTION PUMP
12. GOVERNOR
13. FUEL INJECTION VALVE
14. FUEL LINE
15. STARTER MOTOR
16. ELECTRONIC CONTROL UNIT(ECU)
17. ELECTRIC PARTS
18. ACCESSORY

Fig. No. Fig. Name

Fig.1. CYLINDER BLOCK

(A)=3TNV88-ZMHW

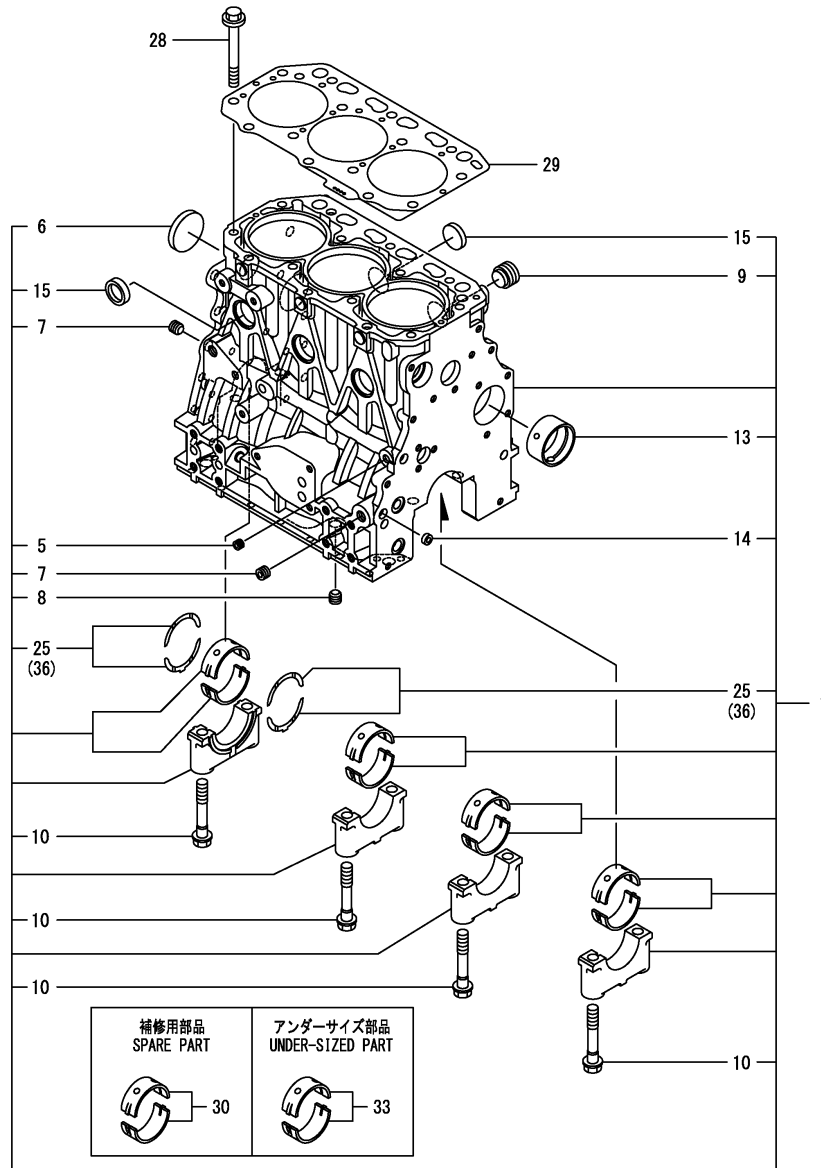
(B)=

(C)=

(D)=

(E)=

(F)=



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729005-01560	BLOCK ASSY, CYLINDER	1							
5	2	124060-01050	PLUG, PT1/8	1							
6	2	129001-01250	PLUG, 50	1							
7	2	124160-01910	PLUG, PT1/4	2							
8	2	124160-01910	PLUG, PT1/4	1							
9	2	171051-01921	PLUG, NPTF1	1							
10	2	129150-02020	BOLT, METAL CAP	8							
13	2	129795-02412	BUSH, CAMSHAFT	1							
14	2	27241-120000	PLUG, 12	2							
15	2	27241-300000	PLUG 30	6							
25	2	129150-02931	BEARING, THRUST	2							
28	1	129150-01200	BOLT, HEAD	14							
29	1	129001-01340	GASKET, HEAD	1							
30	1	129001-02931	BEARING, MAIN	4							1
33	1	129150-02871	BEARING, 0.25 US	4							2
36	1	129150-02941	BEARING, THRUST 0.25	1							3

Remarks

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

Fig.2. GEAR HOUSING

(A)=3TNV88-ZMHW

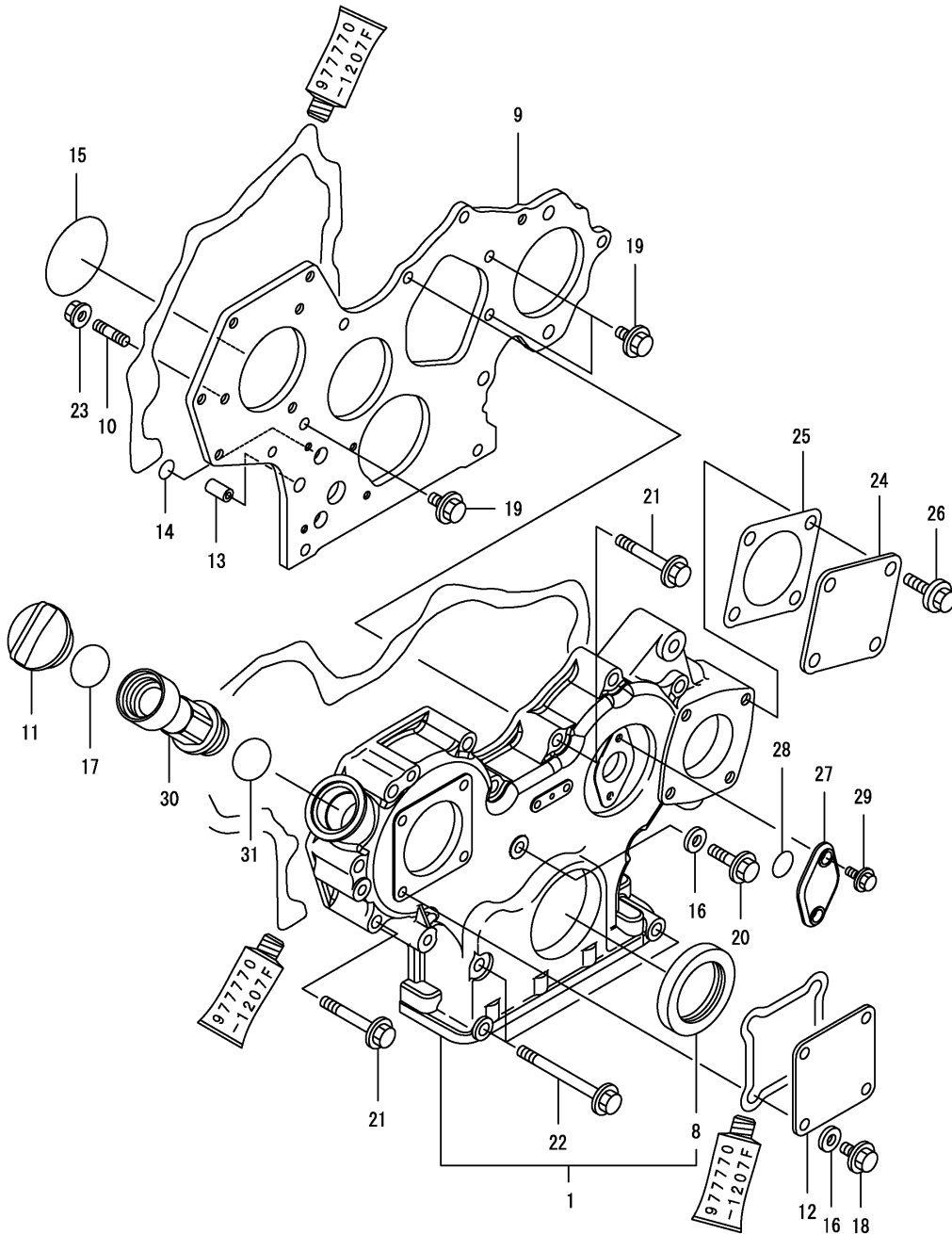
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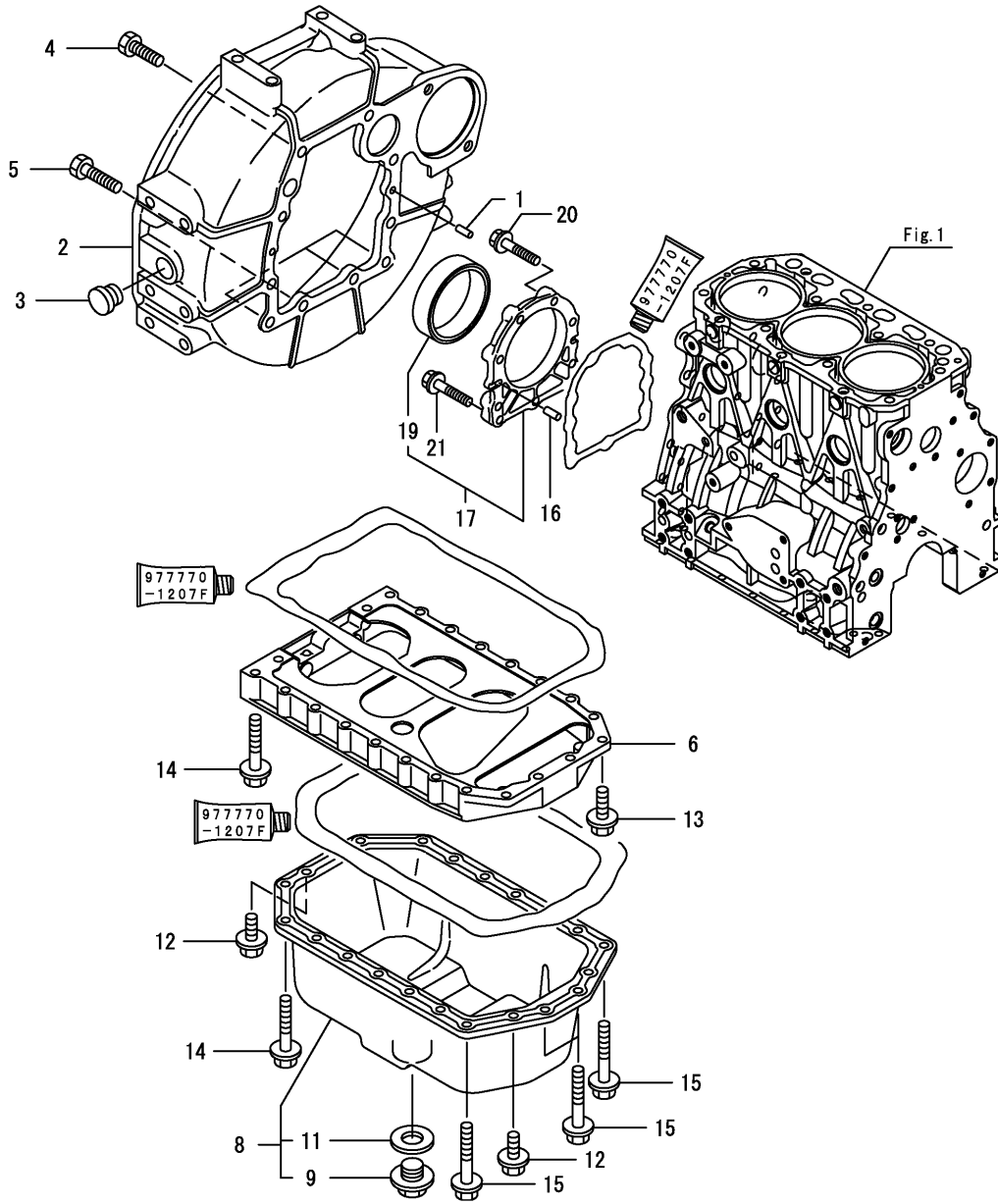


No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729652-01500	CASE ASSY, GEAR	1							
8	2	119934-01800	SEAL, OIL	1							
9	1	129604-01520	FLANGE, GEAR CASE	1							
10	1	119802-01561	STUD, M8X25	3							
11	1	124160-01751	COVER, FILLER	1							
12	1	124240-01871	COVER	1							
13	1	129795-01950	PIPE, KNOCK L=18	2							
14	1	119609-32040	O-RING, P16	2							
15	1	121850-51960	O-RING	1							
16	1	22190-080002	WASHER, SEAL 6	5							
17	1	24311-000320	O-RING, 1AP32.0	1							
18	1	26106-080162	BOLT, M8X 16 PLATED	4							
19	1	26106-080162	BOLT, M8X 16 PLATED	3							
20	1	26106-080302	BOLT, M8X 30 PLATED	1							
21	1	26106-080552	BOLT, M8X 55 PLATED	10							
22	1	26106-080852	BOLT, M8X 85 PLATED	3							
23	1	26306-080002	NUT, M8	3							
24	1	124240-01871	COVER	1							
25	1	129C26-01890	GASKET, HO-P	1							
26	1	26106-080162	BOLT, M8X 16 PLATED	4							
27	1	121023-01551	COVER	1							
28	1	24341-000240	O-RING, 1AS24.0	1							
29	1	26106-060162	BOLT, M6X 16 PLATED	2							
30	1	171031-11741	PIPE	1							
31	1	24311-000320	O-RING, 1AP32.0	1							

Fig.3. FLYWHEEL HOUSING & OIL SUMP

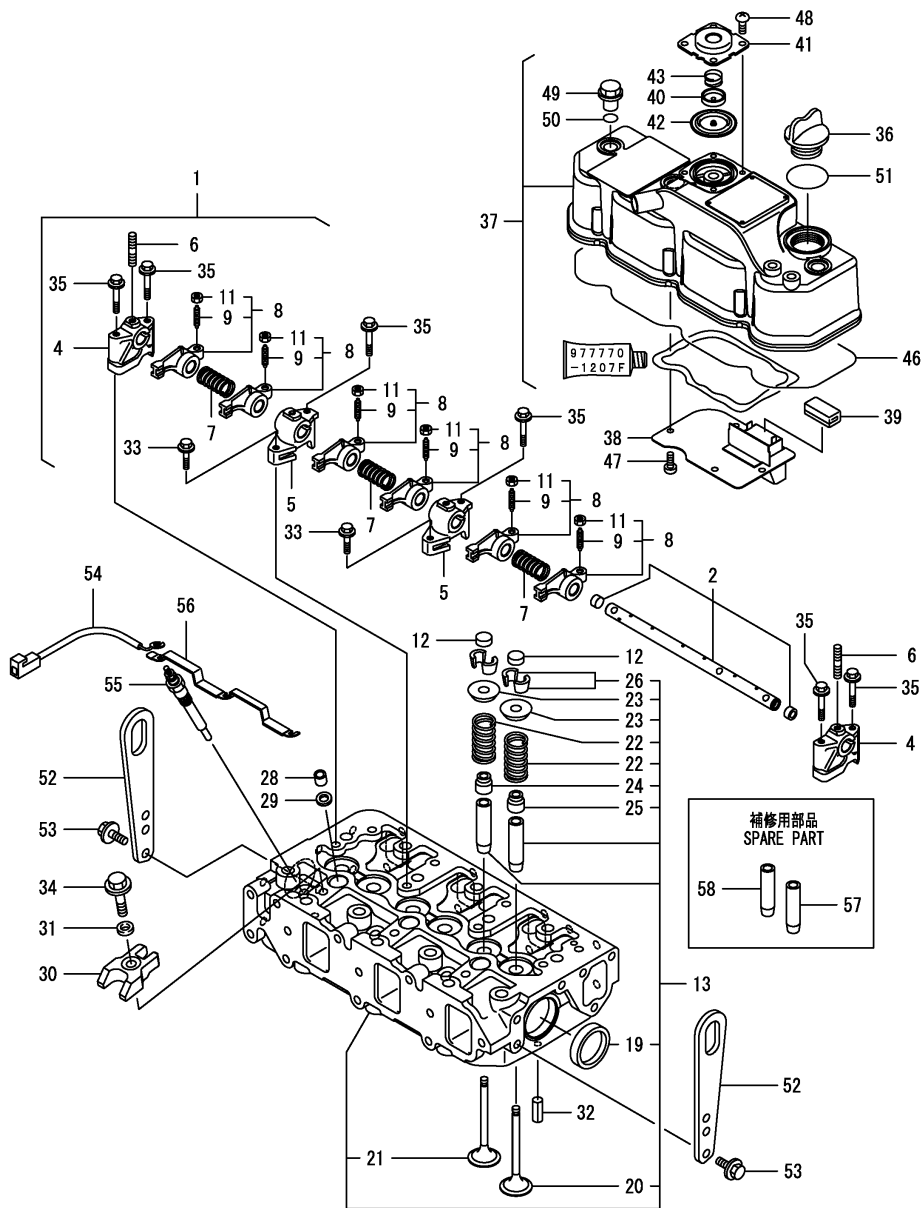
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(B)=  
(C)=

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(E)=  
(F)=



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129100-01580	PIN, M8X16	2							
2	1	129612-01600	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	129100-01730	SPACER, OIL SUMP	1							
8	1	129136-01780	SUMP ASSY, OIL	1							
9	2	119640-01640	PLUG, DRAIN M22	1							
11	2	22190-220002	WASHER, SEAL 22	1							
12	1	26106-080162	BOLT, M8X 16 PLATED	4							
13	1	26106-080252	BOLT, M8X 25 PLATED	2							
14	1	26106-080452	BOLT, M8X 45 PLATED	16							
15	1	26106-080502	BOLT, M8X 50 PLATED	4							
16	1	129100-01580	PIN, M8X16	2							
17	1	129100-01640	CASE ASSY, OIL SEAL	1							
19	2	129795-01780	SEAL, OIL	1							
20	1	129486-01670	BOLT, M8X30	6							
21	1	26106-080352	BOLT, M8X 35 PLATED	3							

Fig.4. CYLINDER HEAD & BONNET



(A)=3TNV88-ZMHW

(B)=

(C)=

(D)=

(E)=

(F)=

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129004-11241	SHAFT ASSY, ROCKER	1							
2	2	129004-11251	SHAFT, ROCKER ARM	1							
4	2	119802-11260	SUPPORT, ROCKER ARM	2							
5	2	119802-11270	SUPPORT, ROCKER ARM	2							
6	2	119802-11280	STUD	3							
7	2	129150-11280	SPRING	3							
8	2	129004-11650	ARM, ROCKER	6							
9	3	129150-11230	SCREW, VALVE ADJUST	6							
11	3	129150-11750	NUT, M8	6							
12	1	129150-11370	CAP, VALVE	6							
13	1	129008-11700	HEAD ASSY, CYLINDER	1							
19	2	27241-400000	PLUG, 40	2							
20	2	129005-11100	VALVE, INTAKE	3							
21	2	129100-11112	VALVE, EXHAUST	3							
22	2	129795-11120	SPRING, VALVE	6							
23	2	129795-11180	RETAINER, SPRING	6							
24	2	121400-11340	SEAL, VALVE STEM	3							
25	2	124460-11340	SEAL, VALVE STEM	3							
26	2	27310-080001	COTTER, 8	6							
28	1	119802-11870	PROTECTOR, NOZZLE	3							
29	1	119625-11880	SEAT, NOZZLE	3							
30	1	129004-11900	RETAINER, NOZZLE	3							
31	1	120270-54410	WASHER, INJECTOR	3							
32	1	22351-060012	PIN, SPRING 6.0X12	2							
33	1	26106-080252	BOLT, M8X 25 PLATED	2							
34	1	26106-080352	BOLT, M8X 35 PLATED	3							
35	1	26106-080502	BOLT, M8X 50 PLATED	6							
36	1	124160-01751	COVER, FILLER	1							
37	1	129004-11350	BONNET ASSY, HEAD	1							
38	2	129004-03010	PLATE	1							
39	2	129150-03070	BAFFLE, BREATHER	1							
40	2	119802-03110	PLATE	1							
41	2	119802-03121	COVER, DIAPHRAGM	1							
42	2	119802-03130	DIAPHRAGM	1							
43	2	119802-03141	SPRING, DIAPHRAGM	1							
46	2	129004-11310	GASKET, BONNET	1							
47	2	22857-500100	SCREW, 5X10	4							
48	2	22857-500100	SCREW, 5X10	4							
49	1	124160-11360	KNOB	3							
50	1	24311-000120	O-RING, 1AP12.0	3							
51	1	24311-000320	O-RING, 1AP32.0	1							
52	1	129900-07900	LIFTER	2							
53	1	26106-080162	BOLT, M8X 16 PLATED	4							
54	1	119803-77830	HARNES, WIRE	1							
55	1	129008-77800	PLUG, GLOW	3							
56	1	129008-77820	CONNECTOR, GLOW PLUG	1							
57	1	120130-11860	GUIDE, VALVE	3							1
58	1	129150-11810	GUIDE, VALVE	3							1

Remarks

(1) Spare part.

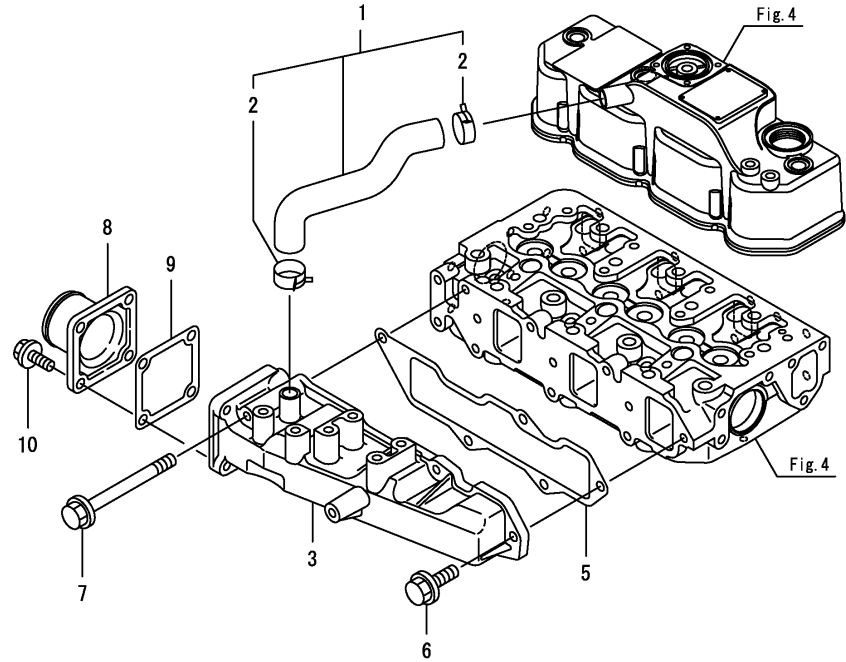
N:Old  $\xrightarrow{\text{Yes}}$  New, Q:Old  $\xrightarrow{\text{No}}$  New, R:Old  $\xrightarrow{\text{Yes}}$  New, S:Old  $\xrightarrow{\text{No}}$  New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change



Fig.5. SUCTION MANIFOLD

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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

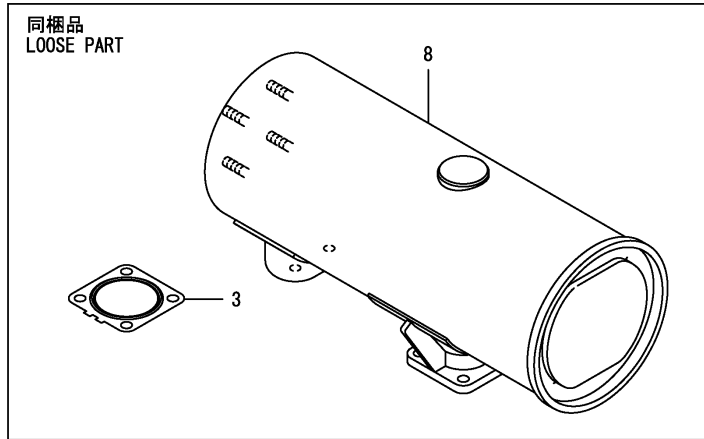


No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129004-03080	PIPE , BREATHER	1							
2	2	129410-03990	CLIP	2							
3	1	129004-12101	MANIFOLD, AIR INTAKE	1							
5	1	129001-12110	GASKET, MANIFOLD	1							
6	1	26106-080202	BOLT, M8X 20 PLATED	4							
7	1	26106-080802	BOLT, M8X 80 PLATED	1							
8	1	129486-12581	JOINT, MANIFOLD	1							
9	1	129150-77511	GASKET	1							
10	1	26106-080202	BOLT, M8X 20 PLATED	4							

Fig.6. EXHAUST MANIFOLD & SILENCER

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129004-13129	MANIFOLD, EXHAUST	1							
2	1	119131-18320	STUD, M8X22	4							
3	1	129004-13200	GASKET, SILENCER	3							
4	1	129150-13110	GASKET	1							
5	1	123900-13610	STUD, M8X80	2							
6	1	123900-13630	BOLT, M8X80	4							
7	1	26306-080002	NUT, M8	2							
8	1	129004-13550	SILENCER	1							

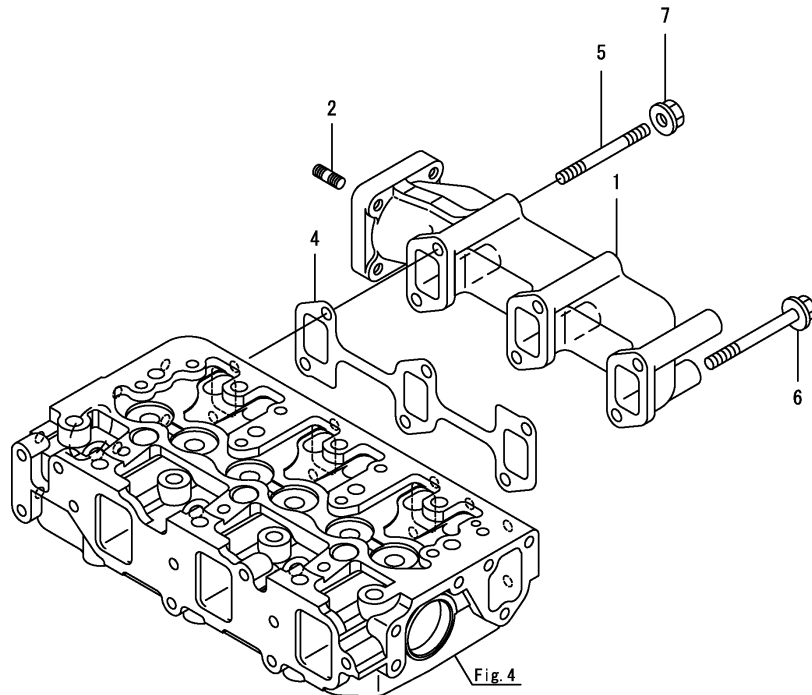


Fig.7. CAMSHAFT & DRIVING GEAR

(A)=3TNV88-ZMHW

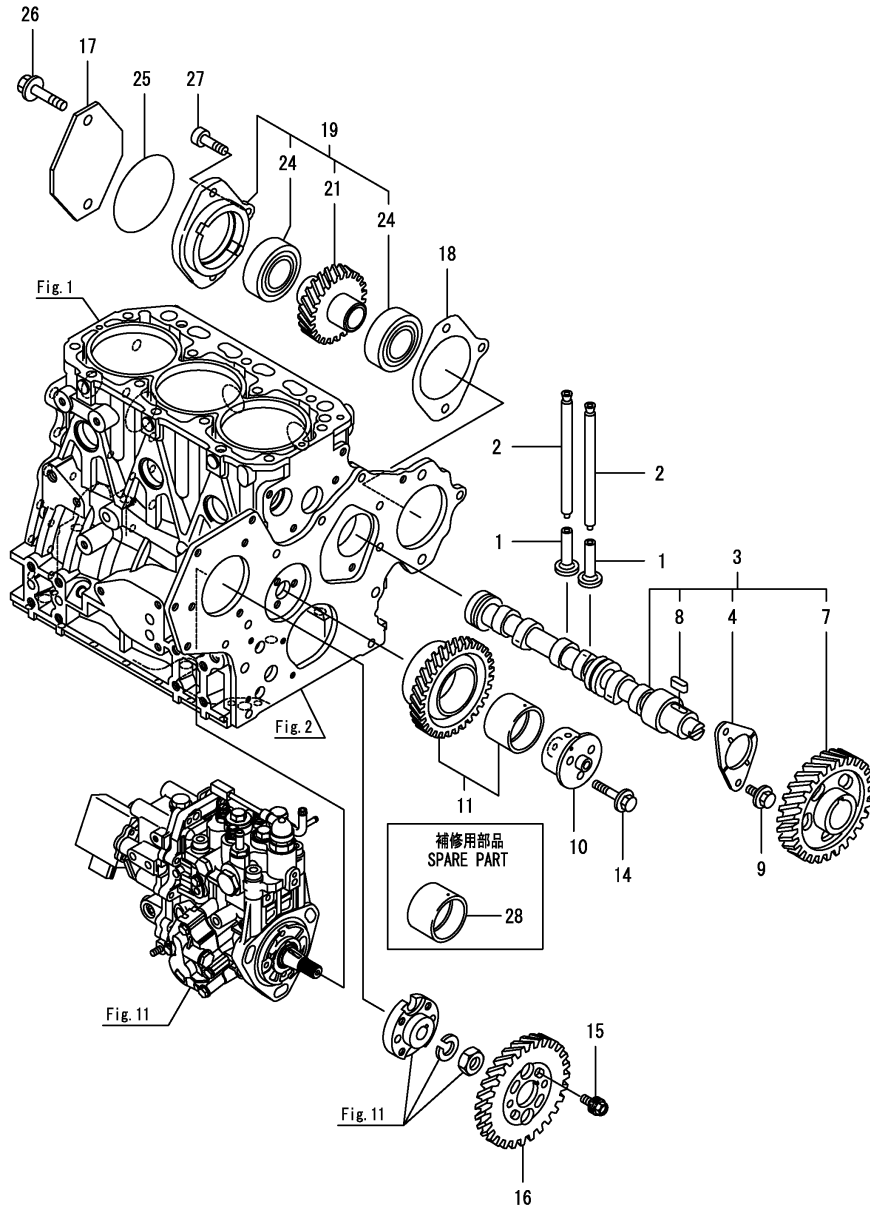
(B)=

(C)=

(D)=

(E)=

(F)=



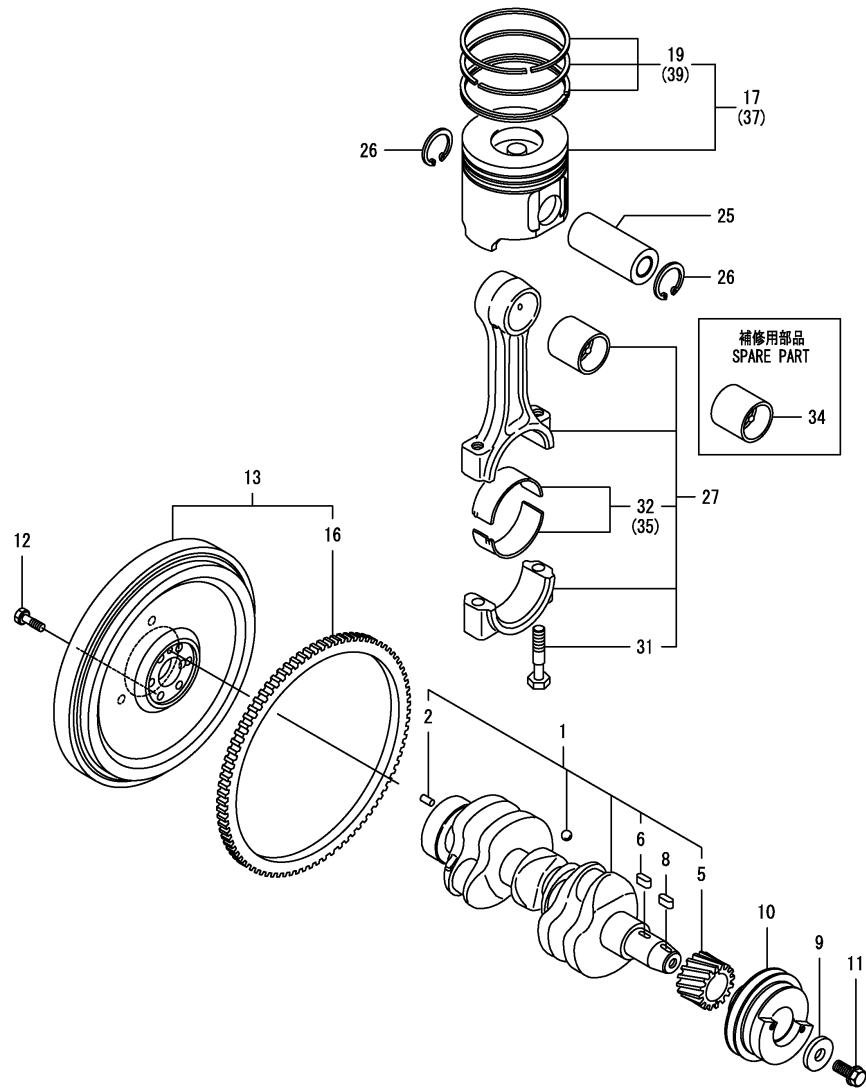
No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129150-14200	TAPPET	6							
2	1	129150-14400	ROD, PUSH L=178	6							
3	1	129129-14580	CAMSHAFT ASSY	1							
4	2	129150-02450	BEARING, THRUST	1							
7	2	129150-14101	GEAR, CAMSHAFT	1							
8	2	22512-070140	KEY, 7X 14	1							
9	1	26106-080142	BOLT, M8X 14 PLATED	2							
10	1	119803-25050	SHAFT, IDLE	1							
11	1	119802-25101	GEAR ASSY, IDLE	1							
14	1	26106-080402	BOLT, M8X 40 PLATED	3							
15	1	129150-25301	BOLT	4							
16	1	119802-25901	GEAR, PUMP	1							
17	1	121023-26071	COVER	1							
18	1	171353-26081	GASKET	1							
19	1	129484-26200	DRIVE ASSY, PUMP	1							
21	2	129484-26210	GEAR ASSY	1							
24	2	24105-060064	BEARING, BALL 6006Z	2							
25	1	24321-000850	O-RING, 1AG85.0	1							
26	1	26106-100452	BOLT, M10X 45 PLATED	2							
27	1	26450-080282	BOLT, M8X 28	1							
28	1	119802-25071	BUSH, IDLE GEAR	1							1

Remarks  
(1) Spare part.

Fig.8. CRANKSHAFT & PISTON

(A)=3TNV88-ZMHW  
(B)=  
(C)=

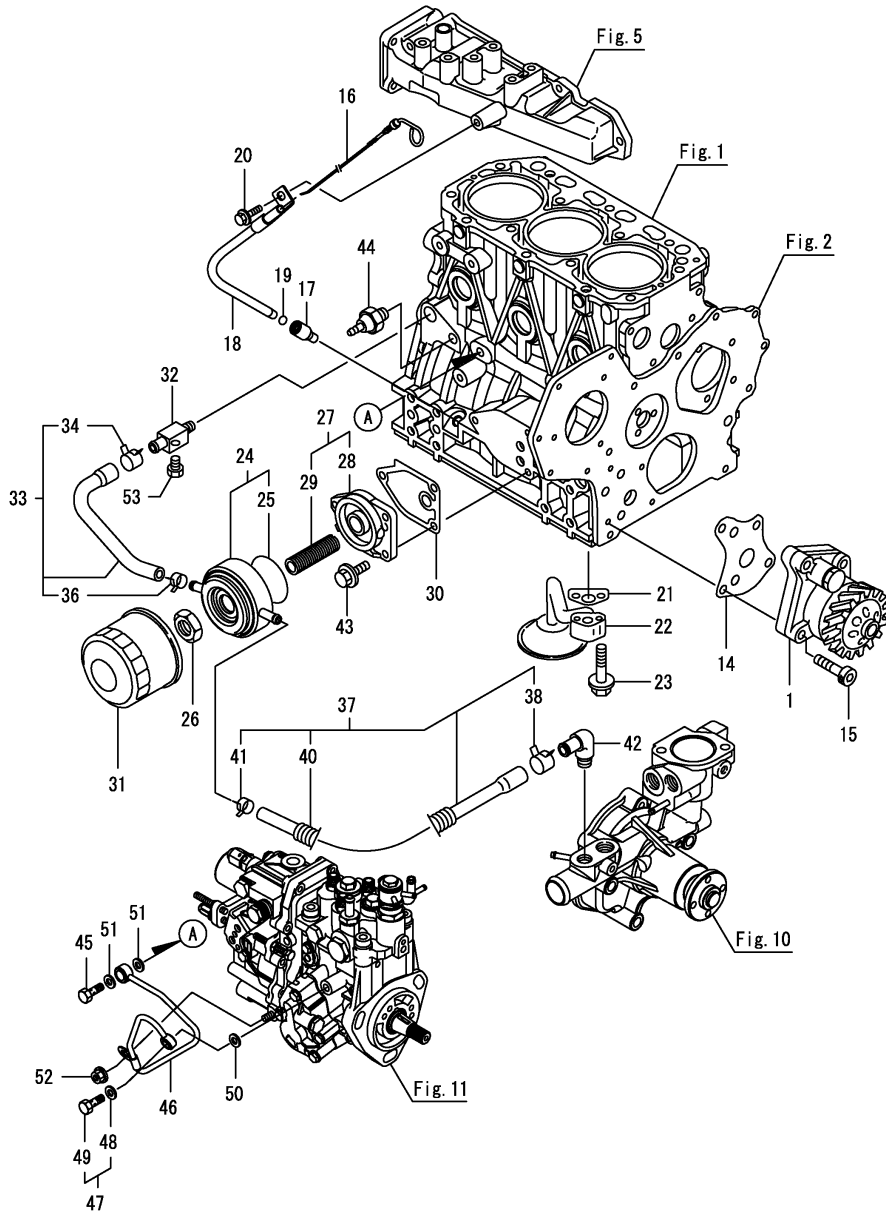
(D)=  
(E)=  
(F)=



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129008-21000	CRANKSHAFT ASSY	1							
2	2	129100-01580	PIN, M8X16	1							
5	2	119803-21200	GEAR, CRANKSHAFT	1							
6	2	22512-070140	KEY, 7X 14	1							
8	1	22512-070140	KEY, 7X 14	1							
9	1	129795-21661	WASHER	1							
10	1	129054-21671	V-PULLEY	1							
11	1	121850-21680	BOLT	1							
12	1	121111-21501	BOLT, FLYWHEEL	6							
13	1	129128-21590	FLYWHEEL ASSY	1							
16	2	119865-21600	GEAR, RING	1							
17	1	129005-22080	PISTON ASSY	3							
19	2	129005-22500	RING SET, PISTON	3							
25	1	129202-22300	PIN, PISTON D26 L70	3							
26	1	22252-000260	RING, 26	6							
27	1	729402-23100	ROD ASSY, CONNECTING	3							
31	2	121550-23200	BOLT, CONNECTING ROD	6							
32	2	129150-23601	BEARING, CRANK PIN	3							
34	1	129100-23910	BEARING, PISTON PIN	3							1
35	1	129150-23611	BEARING, 0.25 US	3							2
37	1	129005-22900	PISTON ASSY, 0.25 OS	3							3
39	2	129005-22950	RING SET, 0.25 OS	3							3

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

Fig.9. LUB. OIL SYSTEM



(A)=3TNV88-ZMHW

(B)=

(C)=

(D)=

(E)=

(F)=

No.	Lev.	Parts No.	Description	Qty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129001-32001	PUMP ASSY, OIL	1							
14	1	129150-32020	GASKET, PUMP	1							
15	1	26450-060252	BOLT, M6X 25	4							
16	1	129601-34801	DIPSTICK, OIL	1							
17	1	119260-34810	GUIDE, DIPSTICK	1							
18	1	119802-34850	GUIDE, DIPSTICK	1							
19	1	24316-240100	O-RING, 4DP10A	1							
20	1	26106-080162	BOLT, M8X 16 PLATED	1							
21	1	129150-35042	GASKET	1							
22	1	129100-35301	PIPE ASSY, OIL INLET	1							
23	1	26106-080352	BOLT, M8X 35 PLATED	2							
24	1	129508-33010	COOLER ASSY, OIL	1							
25	2	129508-33050	O-RING	1							
26	1	129417-33111	NUT, OIL COOLER	1							
27	1	129006-35100	BRACKET ASSY, FILTER	1							
28	2	119802-35110	BRACKET, FILTER	1							
29	2	129417-35150	STUD, L=67	1							
30	1	129150-35111	GASKET	1							
31	1	129150-35160	FILTER, D80XL80	1							1
32	1	129006-44480	JOINT	1							
33	1	129508-49030	PIPE ASSY, WATER	1							
34	2	171008-03990	CLIP, HOSE 18.5	1							
36	2	23080-015000	CLAMP, 15	1							
37	1	129006-49040	PIPE ASSY, WATER	1							
38	2	171008-03990	CLIP, HOSE 18.5	1							
40	2	129642-49180	TUBE, CORRUGATED	1							
41	2	23080-015000	CLAMP, 15	1							
42	1	129103-49301	ELBOW, PT1/4	1							
43	1	26106-080202	BOLT, M8X 20 PLATED	3							
44	1	114250-39450	SWITCH, 0.5KG	1							
45	1	124160-39140	BOLT, PIPE JOINT M10	1							
46	1	119802-39450	PIPE ASSY, OIL	1							
47	1	129005-59830	BOLT ASSY, JOINT M8	1							
48	2	22190-080002	WASHER, SEAL 6	1							
49	2	23857-030000	BOLT, JOINT 3	1							
50	1	22190-080002	WASHER, SEAL 6	1							
51	1	22190-100002	WASHER, SEAL 10	2							
52	1	26366-060002	NUT, M6	1							
53	1	171056-49120	PLUG, DRAIN	1							

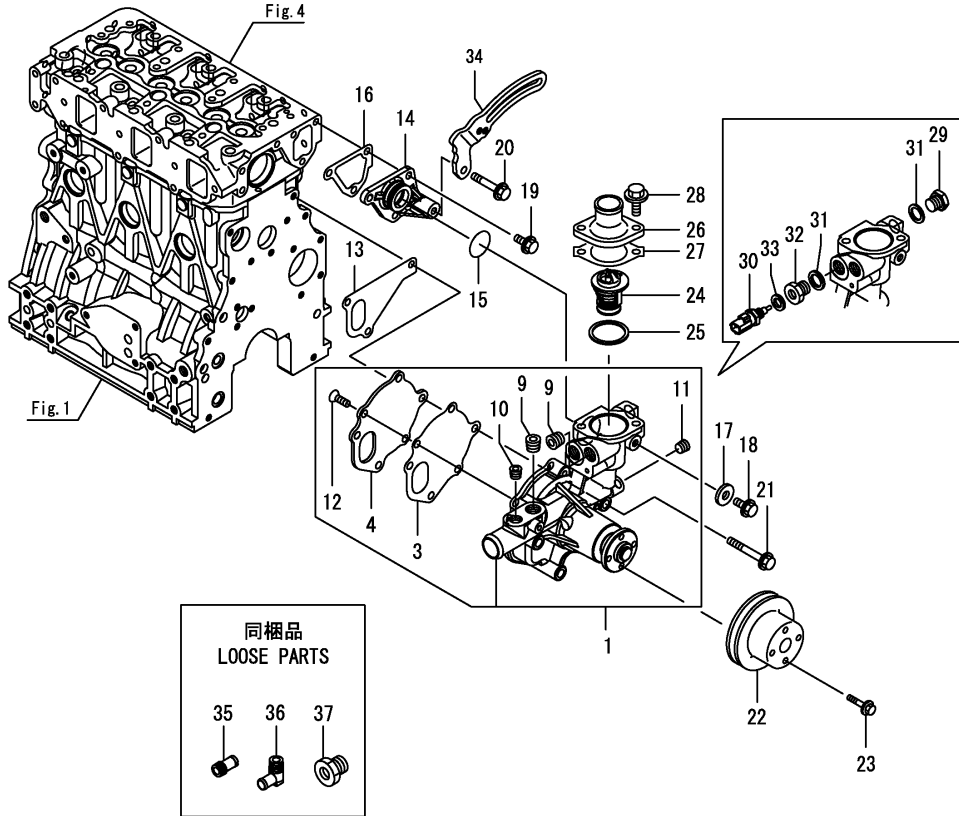
Remarks

(1) Spare part.

Fig.10. COOLING WATER SYSTEM

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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

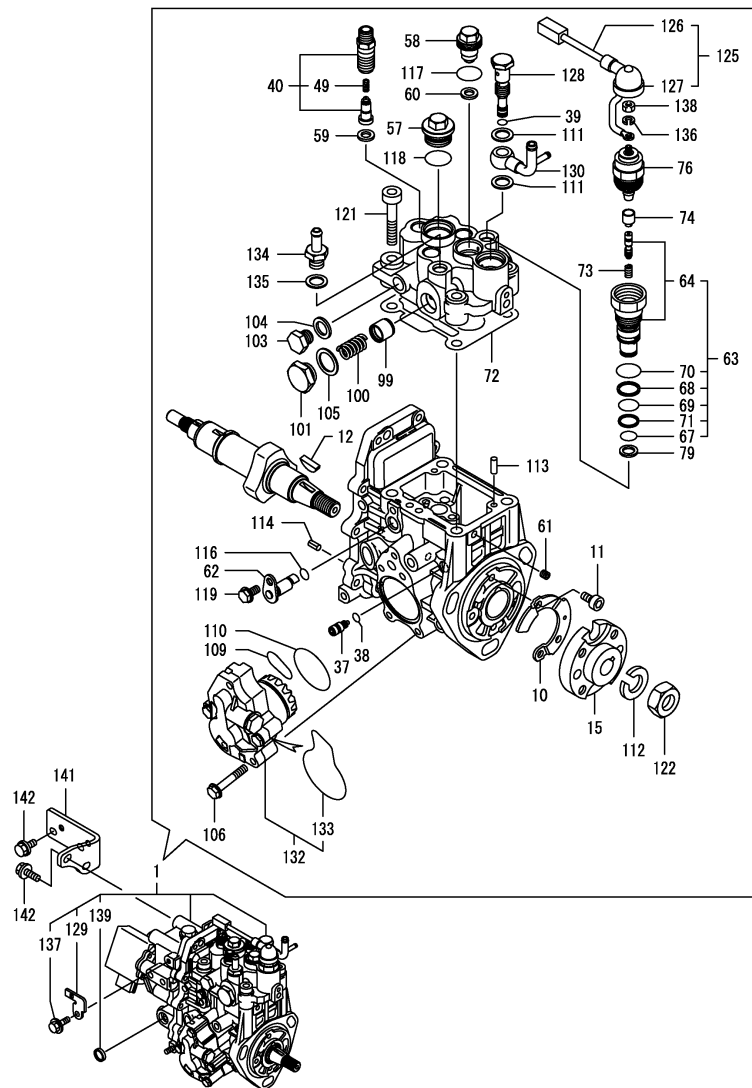


No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129001-42004	PUMP ASSY, WATER	1							
3	2	129100-42051	GASKET, WATER PUMP	1							
4	2	129100-42121	PLATE	1							
9	2	129916-49740	PLUG, R03	2							
10	2	23875-020000	PLUG, R02	1							
11	2	23876-010000	PLUG, R01	1							
12	2	26577-060142	SCREW M 6X 14	3							
13	1	129486-42021	GASKET, WATER PUMP	1							
14	1	129004-42040	JOINT	1							
15	1	129486-42140	O-RING, G30	1							
16	1	124395-49840	GASKET	1							
17	1	23414-080000	GASKET, 8X1.0	1							
18	1	26106-080122	BOLT, M8X 12 PLATED	1							
19	1	26106-080162	BOLT, M8X 16 PLATED	3							
20	1	26106-080452	BOLT, M8X 45 PLATED	1							
21	1	26106-080602	BOLT, M8X 60 PLATED	3							
22	1	129550-42350	V-PULLEY, D=120	1							
23	1	26106-060122	BOLT, M6X 12 PLATED	4							
24	1	129457-49801	THERMOSTAT, 82	1							
25	1	129150-49811	GASKET, THERMOSTAT	1							
26	1	129350-49530	COVER, THERMOSTAT	1							
27	1	129795-49551	GASKET	1							
28	1	26106-080222	BOLT, M8X 22 PLATED	2							
29	1	121450-42450	PLUG, M16	1							
30	1	129927-44900	SENSOR	1							
31	1	124465-44950	GASKET, 16	2							
32	1	129974-49350	JOINT	1							
33	1	22190-120002	WASHER, SEAL 12	1							
34	1	129064-77330	ADJUSTER	1							
35	1	121851-11970	JOINT, PIPE	1							
36	1	119852-49300	ELBOW, R3/8	1							
37	1	129974-49350	JOINT	1							

Fig.11. FUEL INJECTION PUMP

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729237-51400	FIE ASSY	1							1
10	2	129008-51900	COVER, GEAR CASE	1							
11	2	129008-51920	BOLT, M6X10	2							
12	2	119802-51090	KEY, 4X16	1							
15	2	158552-51151	FLANGE	1							
37	2	158600-51270	STOPPER, TAPPET	1							
38	2	158563-51281	O-RING, 4D S6	1							
39	2	158563-51281	O-RING, 4D S6	1							
40	2	129008-51390	VALVE ASSY, DELIVERY	3							
49	3	158563-51330	SPRING, DELIVERY	3							
57	2	158601-51550	PLUG	1							
58	2	119802-51560	PLUG, BARREL	1							
59	2	158552-51571	GASKET	3							
60	2	158552-51571	GASKET	1							
61	2	158557-51570	PLUG	1							
62	2	158552-51580	LIFTER	1							
63	2	129657-51590	TIMER SET	1							
64	3	129657-51600	TIMER ASSY	1							
67	3	158553-51670	O-RING, 1011	1							
68	3	119802-51680	RING, BACK UP	1							
69	3	119802-51690	O-RING	1							
70	3	24356-190200	O-RING, 4D19020	1							
71	3	24372-000150	RING, BACK UP T2P15	1							
72	2	158552-51600	GASKET	1							
73	2	119852-51630	SPRING, TIMER	1							
74	2	119852-51640	CAP	1							
76	2	119852-51650	VALVE ASSY	1							
79	2	158553-51680	GASKET	1							
99	2	158601-51770	PISTON	1							
100	2	158552-51781	SPRING	1							
101	2	158601-51790	PLUG	1							
103	2	158553-51930	PLUG, M12	1							
104	2	22190-120002	WASHER, SEAL 12	1							
105	2	22190-180002	WASHER, SEAL 18	1							
106	2	158553-51770	BOLT	4							
109	2	158552-52311	O-RING	1							
110	2	158552-52400	O-RING, 4E S42	1							
111	2	22190-120002	WASHER, SEAL 12	2							
112	2	22217-140000	WASHER, SPRING 14	1							
113	2	22312-050140	PIN, PARALLEL M5X14	2							
114	2	22351-050010	PIN, SPRING 5.0X10	2							
116	2	24311-000070	O-RING, 1AP7.0	1							
117	2	24356-190180	O-RING, 4D19018	1							
118	2	24356-190200	O-RING, 4D19020	1							
119	2	26106-060102	BOLT, M6X 10 PLATED	1							
121	2	26450-080452	BOLT, M8X 45	4							
122	2	26776-140002	NUT, LOCK M14	1							
125	2	129927-51650	HARNESS ASSY, WIRE	1							
126	3	129927-51660	HARNESS	1							
127	3	129263-77941	CAP, RUBBER	1							
128	2	158601-51650	JOINT, OVER FLOW	1							

Remarks

(1)Governor(Fig.12)is incorporated in this Fuel Injection Pump (Ref.1).

(1)Eco Pump

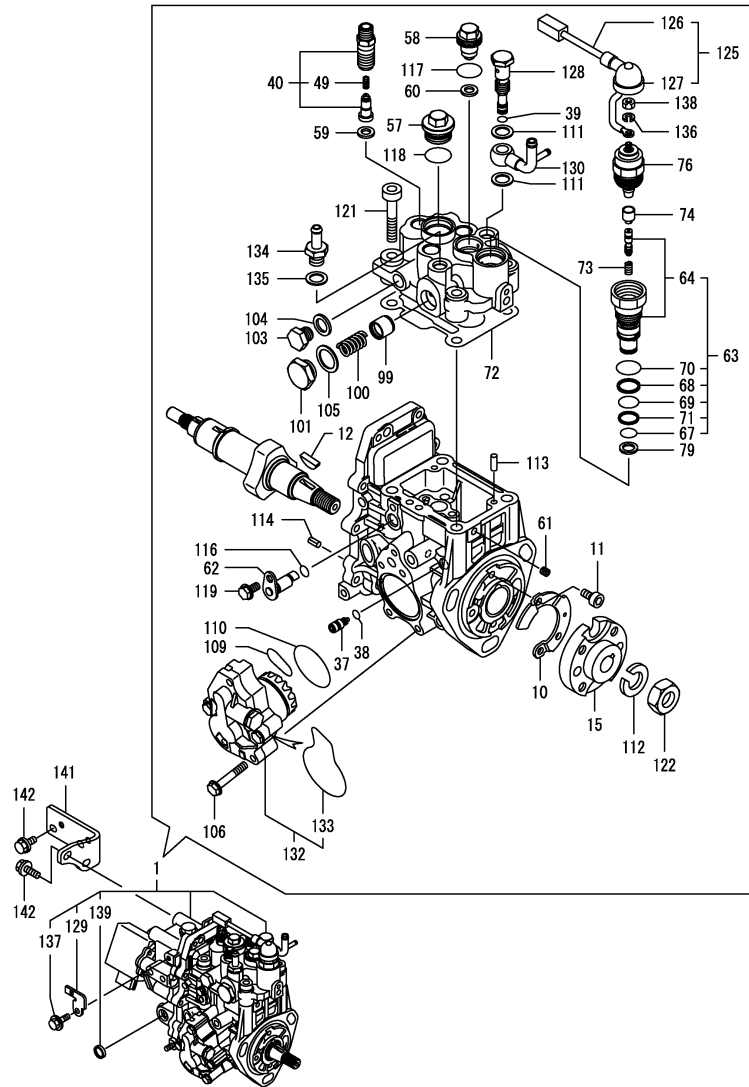
Make sure to update the engines ECU information when replacing the Eco Pump.

Failing to do so will result in engine malfunction.

Fig.11. FUEL INJECTION PUMP

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
129	2	129927-51670	BRACKET	1							
130	2	158552-51670	JOINT, OVER FLOW	1							
132	2	158552-52100	PUMP ASSY, FUEL FEED	1							
133	3	158552-52500	O-RING	1							
134	2	119934-59910	JOINT, PIPE	1							
135	2	22190-120002	WASHER, SEAL 12	1							
136	2	22217-050000	WASHER, SPRING 5	1							
137	2	26106-060142	BOLT, M6X 14 PLATED	1							
138	2	26716-050002	NUT, M5	1							
139	2	27241-160000	PLUG, 16	1							
141	1	129263-51251	RETAINER, PUMP	1							
142	1	26106-080162	BOLT, M8X 16 PLATED	4							

Remarks

(1)Governor(Fig.12)is incorporated in this Fuel Injection Pump (Ref.1).

(1)Eco Pump

Make sure to update the engines ECU information when replacing the Eco Pump.

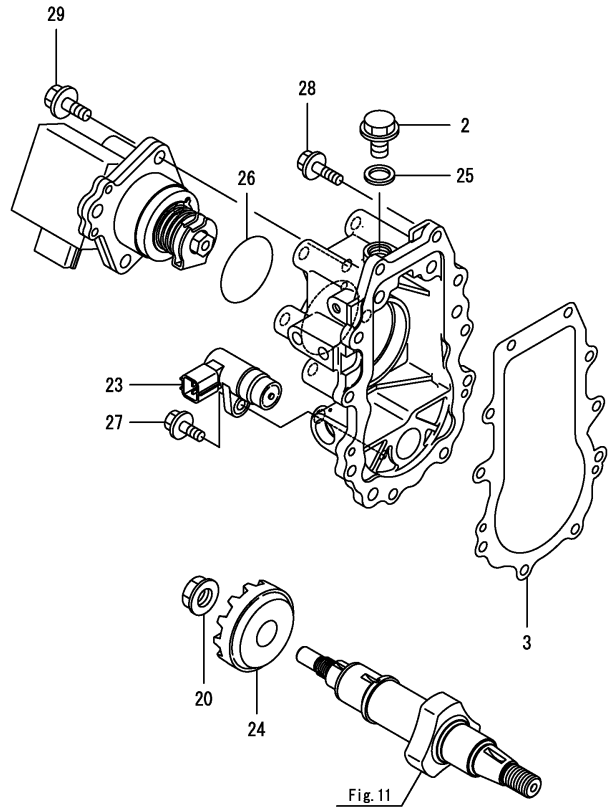
Failing to do so will result in engine malfunction.



Fig.12. GOVERNOR

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
2	2	158553-51930	PLUG, M12	1							
3	2	158553-61050	GASKET	1							
20	2	129008-61301	NUT	1							
23	2	158557-61720	SENSOR	1							
24	2	158553-61780	GEAR, SENSOR	1							
25	2	22190-120002	WASHER, SEAL 12	1							
26	2	24341-000480	O-RING, 1AS48.0	1							
27	2	26106-060162	BOLT, M6X 16 PLATED	1							
28	2	26106-060202	BOLT, M6X 20 PLATED	10							
29	2	26106-080252	BOLT, M8X 25 PLATED	3							

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

Fig.13. FUEL INJECTION VALVE

(A)=3TNV88-ZMHW

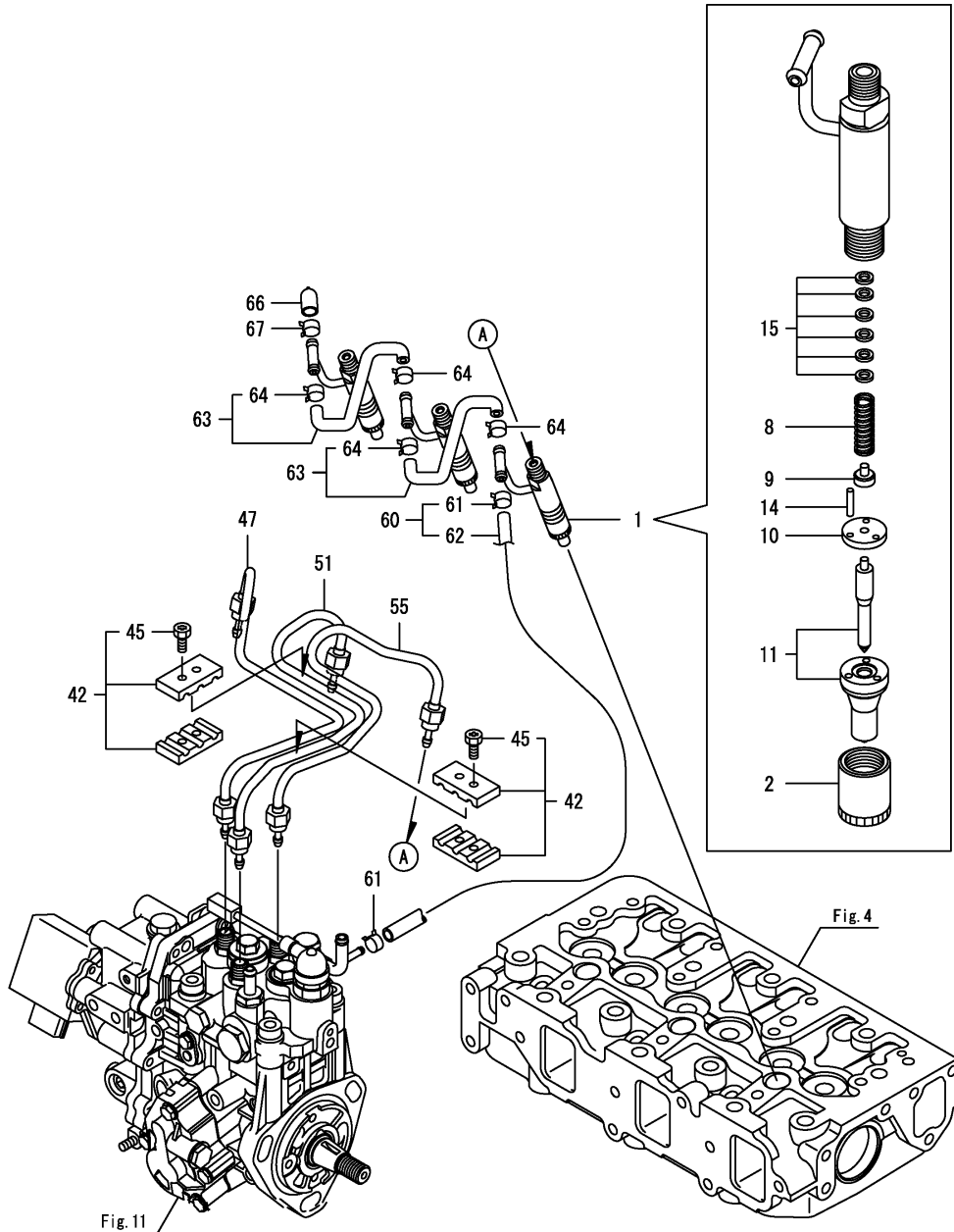
(B)=

(C)=

(D)=

(E)=

(F)=

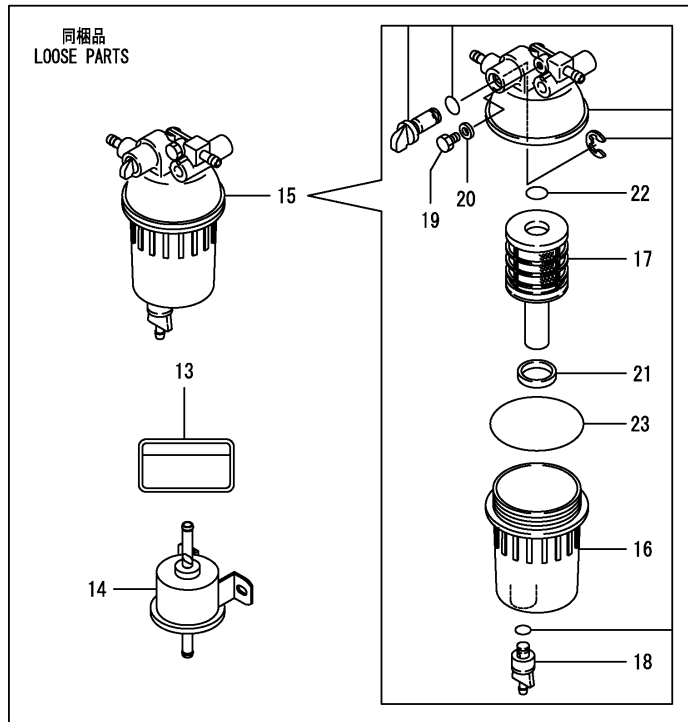
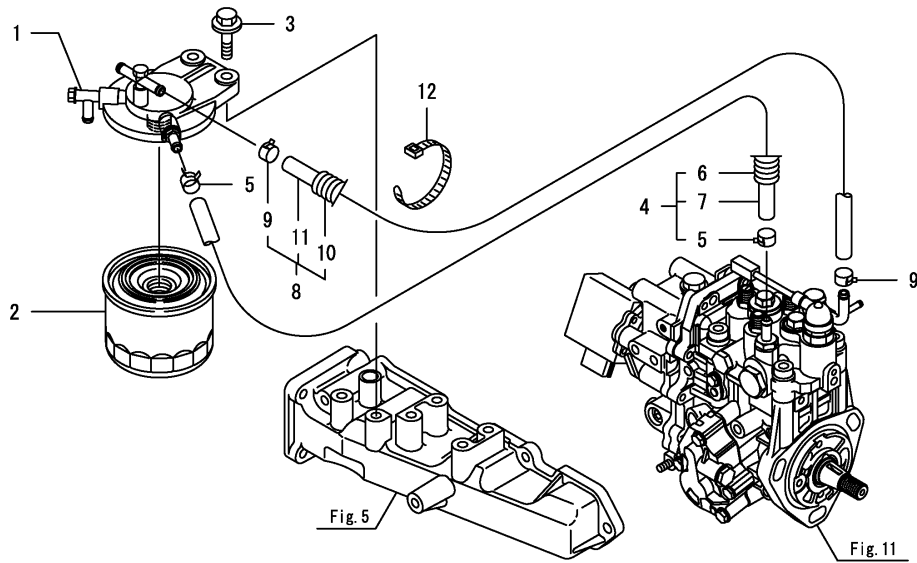


No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729008-53200	VALVE ASSY,INJECTION	3							
2	2	114250-53080	NUT, NOZZLE D16.95	3							
8	2	114250-53120	SPRING, NOZZLE	3							
9	2	114250-53130	SEAT, SPRING	3							
10	2	114250-53140	PLATE	3							
11	2	129008-53200	VALVE ASSY,INJECTION	3							
14	2	114250-53210	PIN	6							
15	2	119803-53400	SHIM SET	3							
42	1	129150-59120	RETAINER, PIPE	2							
45	2	129150-59131	BOLT, M4X14	4							
47	1	129004-59811	PIPE ASSY, INJECTION	1							
51	1	129004-59821	PIPE ASSY, INJECTION	1							
55	1	129004-59831	PIPE ASSY, INJECTION	1							
60	1	119802-59550	PIPE ASSY, RETURN	1							
61	2	124722-59050	CLIP, HOSE 9	2							
62	2	119802-59560	PIPE, FUEL RETURN	1							
63	1	129486-59551	PIPE ASSY, RETURN	2							
64	2	124722-59050	CLIP, HOSE 9	4							
66	1	119593-59581	CAP	1							
67	1	124060-77680	CLIP, HOSE 10	1							

Fig.14. FUEL LINE

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129004-55612	BRACKET, FILTER	1							
2	1	119802-55801	FILTER, FUEL	1							
3	1	26106-080302	BOLT, M8X 30 PLATED	2							
4	1	129044-59010	PIPE, D13/7.5X220	1							
5	2	124766-59050	CLIP, HOSE 12	2							
6	2	129044-59100	TUBE, CORRUGATED	1							
7	2	129044-59510	PIPE, FUEL 220	1							
8	1	129950-59311	PIPE, FUEL	1							
9	2	124766-59050	CLIP, HOSE 12	2							
10	2	129961-59110	TUBE, CORRUGATED	1							
11	2	105025-59580	PIPE, FUEL	1							
12	1	121750-59890	BAND, 140	1							
13	1	114110-07761	LABEL, FUEL OIL CAUT	1							
14	1	129612-52100	PUMP ASSY, FUEL FEED	1							
15	1	129242-55701	SEPARATOR ASSY	1							
16	2	129242-55720	CUP	1							
17	2	129242-55730	ELEMENT	1							
18	2	129242-55740	PLUG, DRAIN	1							
19	2	129242-55750	VALVE, AIR VENT	1							
20	2	129242-55760	GASKET	1							
21	2	129242-55770	FLOAT	1							
22	2	24311-000160	O-RING, 1AP16.0	1							
23	2	24321-000750	O-RING, 1AG75.0	1							

Fig.15. STARTER MOTOR

(A)=3TNV88-ZMHW

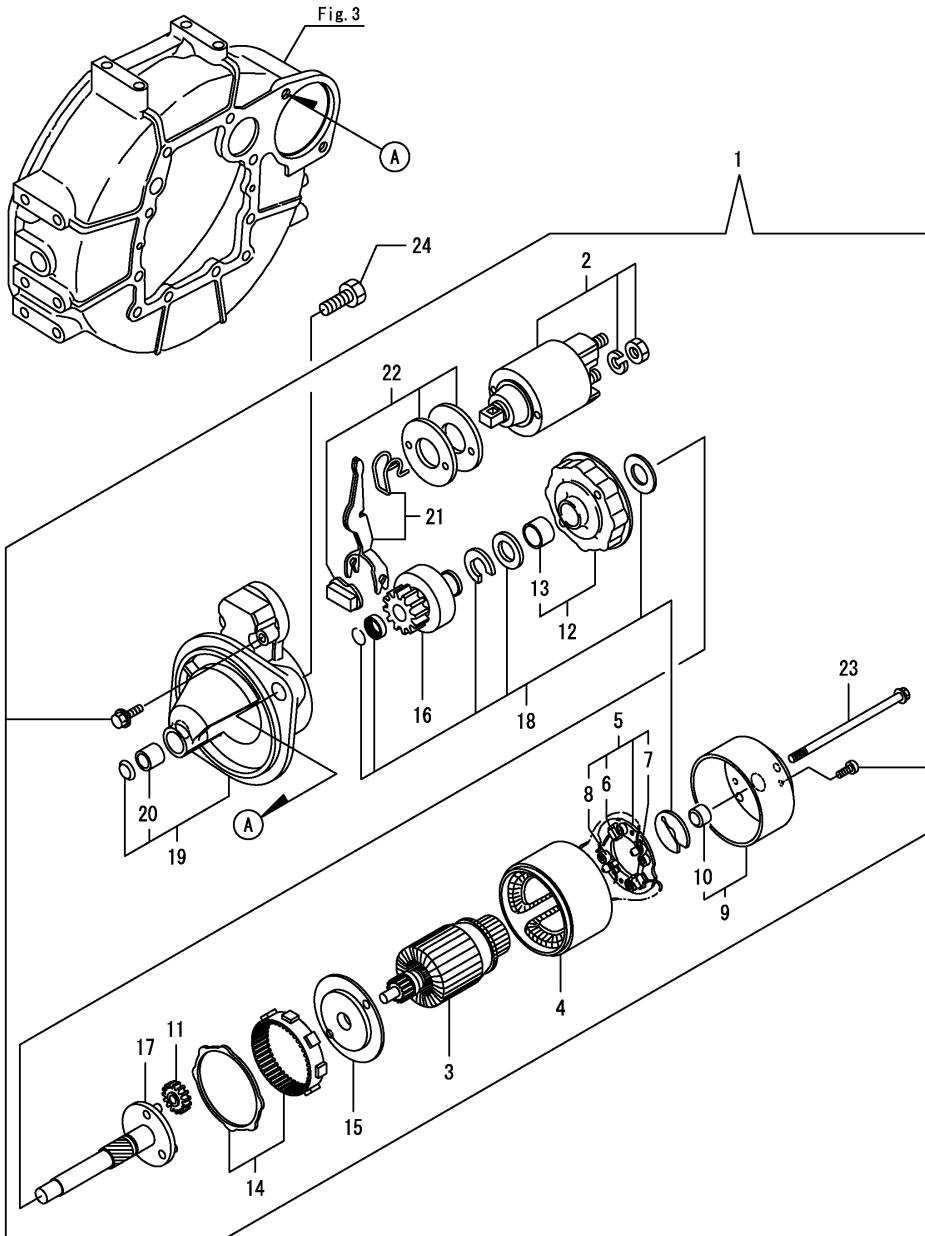
(B)=

(C)=

(D)=

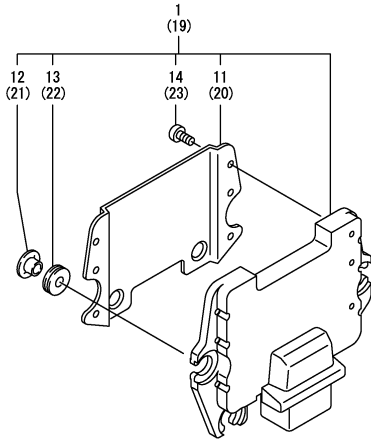
(E)=

(F)=



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129242-77010	STARTER	1							
2	2	129698-77020	SWITCH ASSY	1							
3	2	129242-77100	ARMATURE ASSY	1							
4	2	129242-77110	YOKE ASSY	1							
5	2	129242-77120	HOLDER ASSY, BRUSH	1							
6	3	129242-77130	BRUSH	2							
7	3	129242-77140	BRUSH SET	1							
8	3	129242-77150	SPRING	4							
9	2	129242-77160	COVER ASSY	1							
10	3	129242-77170	METAL	1							
11	2	118400-77170	GEAR	3							
12	2	129242-77180	BRACKET	1							
13	3	129698-77190	BRACKET	1							
14	2	129698-77200	GEAR, INTERNAL	1							
15	2	129242-77210	BRACKET	1							
16	2	129698-77220	PINION ASSY	1							
17	2	129698-77230	SHAFT	1							
18	2	129698-77250	WASHER SET	1							
19	2	129242-77260	CASE ASSY	1							
20	3	X2114535200	METAL, STARTER	1							
21	2	129242-77270	LEVER SET	1							
22	2	129242-77280	COVER ASSY, DUST	1							
23	2	124195-77770	BOLT, THROUGH	2							
24	1	26116-120202	BOLT, M12X 20 PLATED	2							

Fig.16. ELECTRONIC CONTROL UNIT(ECU)



(A)=3TNV88-ZMHW  
(B)=  
(C)=

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

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129237-75020	ECU ASSY,3TNV88-ZMHW	1							1
11	2	129927-77600	SHIELD	1							
12	2	129927-77680	COLLAR	3							
13	2	119578-91351	ABSORBER	3							
14	2	22877-500080	SCREW, 5X 8	6							
19	1	129927-75900	CONTROLLER ASSY, EUC	1							2
20	2	129927-77600	SHIELD	1							
21	2	129927-77680	COLLAR	3							
22	2	119578-91351	ABSORBER	3							
23	2	22877-500080	SCREW, 5X 8	6							

Remarks  
 (1)Eco ECU  
 This part cannot be ordered.  
 Replace the part using a Service ECU with the proper engine information installed.  
 (2)Service ECU  
 If the proper information is not installed, the engine will not operate.  
 To install proper information, go to an authorized Distributor.

Fig.17. ELECTRIC PARTS

(A)=3TNV88-ZMHW  
 (B)=  
 (C)=

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

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	198461-52950	RELAY, CA TYPE C	1							
2	1	198461-52950	RELAY, CA TYPE C	1							
3	1	129927-77690	WASHER	3							
4	1	129927-77920	RELAY	1							
5	1	129927-77920	RELAY	1							

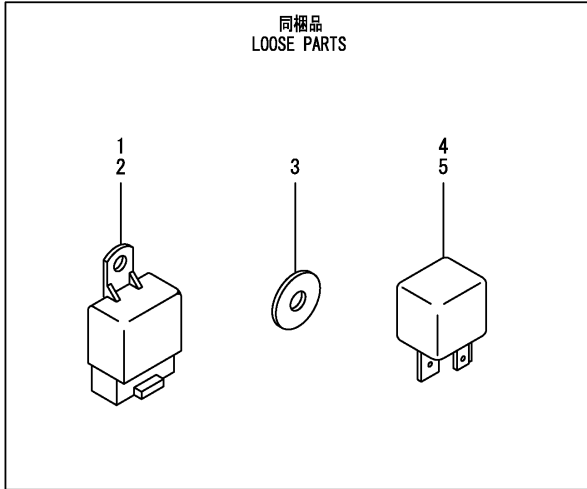
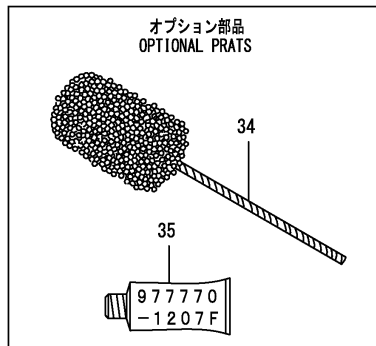
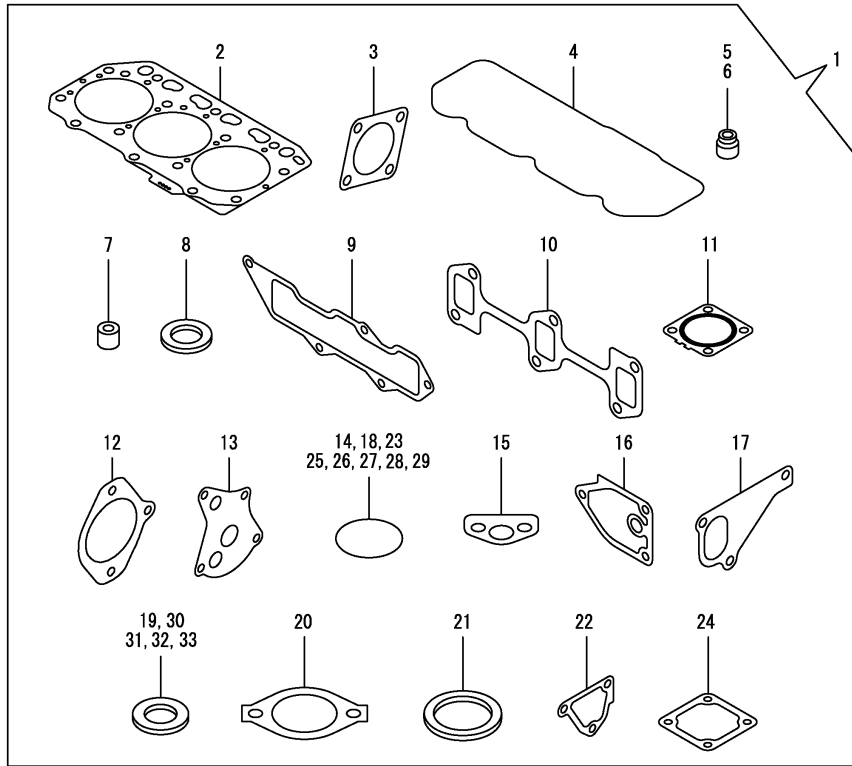


Fig.18. ACCESSORY

(A)=3TNV88-ZMHW  
(B)=  
(C)=

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



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129237-92610	GASKET KIT	1							1
2	2	129001-01340	GASKET, HEAD	1							
3	2	129C26-01890	GASKET, HO-P	1							
4	2	129004-11310	GASKET, BONNET	1							
5	2	121400-11340	SEAL, VALVE STEM	3							
6	2	124460-11340	SEAL, VALVE STEM	3							
7	2	119802-11870	PROTECTOR, NOZZLE	3							
8	2	119625-11880	SEAT, NOZZLE	3							
9	2	129001-12110	GASKET, MANIFOLD	1							
10	2	129150-13110	GASKET, EXH.MANIFOLD	1							
11	2	129004-13200	GASKET, SILENCER	1							
12	2	171353-26081	GASKET	1							
13	2	129150-32020	GASKET, PUMP	1							
14	2	119609-32040	O-RING, P16	2							
15	2	129150-35042	GASKET	1							
16	2	129150-35111	GASKET	1							
17	2	129486-42021	GASKET, WATER PUMP	1							
18	2	129486-42140	O-RING, G30	1							
19	2	124465-44950	GASKET, 16	2							
20	2	129795-49551	GASKET	1							
21	2	129150-49811	GASKET, THERMOSTAT	1							
22	2	124395-49840	GASKET, THERMOSTAT	1							
23	2	121850-51960	O-RING	1							
24	2	129150-77511	GASKET, AIR HEATER	1							
25	2	24311-000120	O-RING, 1AP12.0	3							
26	2	24311-000320	O-RING, 1AP32.0	3							
27	2	24316-240100	O-RING, 4DP10A	1							
28	2	24321-000850	O-RING, 1AG85.0	1							
29	2	24341-000240	O-RING, 1AS24.0	1							
30	2	22190-080002	WASHER, SEAL 6	7							
31	2	22190-100002	WASHER, SEAL 10	2							
32	2	22190-220002	WASHER, SEAL 22	1							
33	2	23414-080000	GASKET, 8X1.0	1							
34	1	129400-92430	HONE, FLEX	1							
35	1	977770-1207F	GASKET.LIQUID	1							

Remarks

(1)Optional parts.

N:Old  $\begin{matrix} \leftarrow \text{Yes} \\ \text{No} \end{matrix}$  New, Q:Old  $\begin{matrix} \leftarrow \text{No} \\ \text{Yes} \end{matrix}$  New, R:Old  $\begin{matrix} \leftarrow \text{Yes} \\ \text{Yes} \end{matrix}$  New, S:Old  $\begin{matrix} \leftarrow \text{No} \\ \text{No} \end{matrix}$  New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change

## Parts No. Index

Parts No.	Fig. No.	Ref. No.
105025-59580	14	11
114110-07761	14	13
114250-39450	9	44
114250-53080	13	2
114250-53120	13	8
114250-53130	13	9
114250-53140	13	10
114250-53210	13	14
118400-77170	15	11
119131-18320	6	2
119260-34810	9	17
119578-91351	16	13
		22
119593-59581	13	66
119609-32040	2	14
	18	14
119620-01750	3	3
119625-11880	4	29
	18	8
119640-01640	3	9
119802-01561	2	10
119802-03110	4	40
119802-03121	4	41
119802-03130	4	42
119802-03141	4	43
119802-11260	4	4
119802-11270	4	5
119802-11280	4	6
119802-11870	4	28
	18	7
119802-25071	7	28
119802-25101	7	11
119802-25901	7	16
119802-34850	9	18
119802-35110	9	28
119802-39450	9	46
119802-51090	11	12
119802-51560	11	58
119802-51680	11	68
119802-51690	11	69
119802-55801	14	2
119802-59550	13	60
119802-59560	13	62
119803-21200	8	5
119803-25050	7	10
119803-53400	13	15
119803-77830	4	54
119852-49300	10	36
119852-51630	11	73
119852-51640	11	74

Parts No.	Fig. No.	Ref. No.
119852-51650	11	76
119865-21600	8	16
119934-01800	2	8
119934-59910	11	134
120130-11860	4	57
120270-54410	4	31
121023-01551	2	27
121023-26071	7	17
121111-21501	8	12
121400-11340	4	24
	18	5
121450-42450	10	29
121550-23200	8	31
121750-59890	14	12
121850-21680	8	11
121850-51960	2	15
	18	23
121851-11970	10	35
123900-13610	6	5
123900-13630	6	6
124060-01050	1	5
124060-77680	13	67
124160-01751	2	11
	4	36
124160-01910	1	7
		8
124160-11360	4	49
124160-39140	9	45
124195-77770	15	23
124240-01871	2	12
		24
124395-49840	10	16
	18	22
124460-11340	4	25
	18	6
124465-44950	10	31
	18	19
124722-59050	13	61
		64
124766-59050	14	5
		9
129001-01250	1	6
129001-01340	1	29
	18	2
129001-02931	1	30
129001-12110	5	5
	18	9
129001-32001	9	1
129001-42004	10	1
129004-03010	4	38

Parts No.	Fig. No.	Ref. No.
129004-03080	5	1
129004-11241	4	1
129004-11251	4	2
129004-11310	4	46
	18	4
129004-11350	4	37
129004-11650	4	8
129004-11900	4	30
129004-12101	5	3
129004-13129	6	1
129004-13200	6	3
	18	11
129004-13550	6	8
129004-42040	10	14
129004-55612	14	1
129004-59811	13	47
129004-59821	13	51
129004-59831	13	55
129005-11100	4	20
129005-22080	8	17
129005-22500	8	19
129005-22900	8	37
129005-22950	8	39
129005-59830	9	47
129006-35100	9	27
129006-44480	9	32
129006-49040	9	37
129008-11700	4	13
129008-21000	8	1
129008-51390	11	40
129008-51900	11	10
129008-51920	11	11
129008-53200	13	11
129008-61301	12	20
129008-77800	4	55
129008-77820	4	56
129044-59010	14	4
129044-59100	14	6
129044-59510	14	7
129054-21671	8	10
129064-77330	10	34
129100-01580	3	1
		16
	8	2
129100-01640	3	17
129100-01730	3	6
129100-11112	4	21
129100-23910	8	34
129100-35301	9	22
129100-42051	10	3

Parts No.	Fig. No.	Ref. No.
129100-42121	10	4
129103-49301	9	42
129128-21590	8	13
129129-14580	7	3
129136-01780	3	8
129150-01200	1	28
129150-02020	1	10
129150-02450	7	4
129150-02871	1	33
129150-02931	1	25
129150-02941	1	36
129150-03070	4	39
129150-11230	4	9
129150-11280	4	7
129150-11370	4	12
129150-11750	4	11
129150-11810	4	58
129150-13110	6	4
	18	10
129150-14101	7	7
129150-14200	7	1
129150-14400	7	2
129150-23601	8	32
129150-23611	8	35
129150-25301	7	15
129150-32020	9	14
	18	13
129150-35042	9	21
	18	15
129150-35111	9	30
	18	16
129150-35160	9	31
129150-49811	10	25
	18	21
129150-59120	13	42
129150-59131	13	45
129150-77511	5	9
	18	24
129202-22300	8	25
129237-75020	16	1
129237-92610	18	1
129242-55701	14	15
129242-55720	14	16
129242-55730	14	17
129242-55740	14	18
129242-55750	14	19
129242-55760	14	20
129242-55770	14	21
129242-77010	15	1
129242-77100	15	3



## Parts No. Index

Parts No.	Fig. No.	Ref. No.
129242-77110	15	4
129242-77120	15	5
129242-77130	15	6
129242-77140	15	7
129242-77150	15	8
129242-77160	15	9
129242-77170	15	10
129242-77180	15	12
129242-77210	15	15
129242-77260	15	19
129242-77270	15	21
129242-77280	15	22
129263-51251	11	141
129263-77941	11	127
129350-49530	10	26
129400-92430	18	34
129410-03990	5	2
129417-33111	9	26
129417-35150	9	29
129457-49801	10	24
129484-26200	7	19
129484-26210	7	21
129486-01670	3	20
129486-12581	5	8
129486-42021	10	13
	18	17
129486-42140	10	15
	18	18
129486-59551	13	63
129508-33010	9	24
129508-33050	9	25
129508-49030	9	33
129550-42350	10	22
129601-34801	9	16
129604-01520	2	9
129612-01600	3	2
129612-52100	14	14
129642-49180	9	40
129657-51590	11	63
129657-51600	11	64
129698-77020	15	2
129698-77190	15	13
129698-77200	15	14
129698-77220	15	16
129698-77230	15	17
129698-77250	15	18
129795-01780	3	19
129795-01950	2	13
129795-02412	1	13
129795-11120	4	22

Parts No.	Fig. No.	Ref. No.
129795-11180	4	23
129795-21661	8	9
129795-49551	10	27
	18	20
129900-07900	4	52
129916-49740	10	9
129927-44900	10	30
129927-51650	11	125
129927-51660	11	126
129927-51670	11	129
129927-75900	16	19
129927-77600	16	11
		20
129927-77680	16	12
		21
129927-77690	17	3
129927-77920	17	4
		5
129950-59311	14	8
129961-59110	14	10
129974-49350	10	32
		37
129C26-01890	2	25
	18	3
158552-51151	11	15
158552-51571	11	59
		60
158552-51580	11	62
158552-51600	11	72
158552-51670	11	130
158552-51781	11	100
158552-52100	11	132
158552-52311	11	109
158552-52400	11	110
158552-52500	11	133
158553-51670	11	67
158553-51680	11	79
158553-51770	11	106
158553-51930	11	103
	12	2
158553-61050	12	3
158553-61780	12	24
158557-51570	11	61
158557-61720	12	23
158563-51281	11	38
		39
158563-51330	11	49
158600-51270	11	37
158601-51550	11	57
158601-51650	11	128

Parts No.	Fig. No.	Ref. No.
158601-51770	11	99
158601-51790	11	101
171008-03990	9	34
		38
171031-11741	2	30
171051-01921	1	9
171056-49120	9	53
171353-26081	7	18
	18	12
198461-52950	17	1
		2
22190-080002	2	16
	9	48
		50
	18	30
22190-100002	9	51
	18	31
22190-120002	10	33
	11	104
		111
		135
	12	25
22190-180002	11	105
22190-220002	3	11
	18	32
22217-050000	11	136
22217-140000	11	112
22252-000260	8	26
22312-050140	11	113
22351-050010	11	114
22351-060012	4	32
22512-070140	7	8
	8	6
		8
22857-500100	4	47
		48
22877-500080	16	14
		23
23080-015000	9	36
		41
23414-080000	10	17
	18	33
23857-030000	9	49
23875-020000	10	10
23876-010000	10	11
24105-060064	7	24
24311-000070	11	116
24311-000120	4	50
	18	25
24311-000160	14	22

Parts No.	Fig. No.	Ref. No.
24311-000320	2	17
		31
	4	51
	18	26
24316-240100	9	19
	18	27
24321-000750	14	23
24321-000850	7	25
	18	28
24341-000240	2	28
	18	29
24341-000480	12	26
24356-190180	11	117
24356-190200	11	70
		118
24372-000150	11	71
26106-060102	11	119
26106-060122	10	23
26106-060142	11	137
26106-060162	2	29
	12	27
26106-060202	12	28
26106-080122	10	18
26106-080142	7	9
26106-080162	2	18
		19
		26
	3	12
	4	53
	9	20
	10	19
	11	142
26106-080202	5	6
		10
	9	43
26106-080222	10	28
26106-080252	3	13
	4	33
	12	29
26106-080302	2	20
	14	3
26106-080352	3	21
	4	34
	9	23
26106-080402	7	14
26106-080452	3	14
	10	20
26106-080502	3	15
	4	35
26106-080552	2	21

# Parts No. Index

Parts No.	Fig. No.	Ref. No.
26106-080602	10	21
26106-080802	5	7
26106-080852	2	22
26106-100452	7	26
26116-120202	15	24
26206-100252	3	4
26206-100302	3	5
26306-080002	2	23
	6	7
26366-060002	9	52
26450-060252	9	15
26450-080282	7	27
26450-080452	11	121
26577-060142	10	12
26716-050002	11	138
26776-140002	11	122
27241-120000	1	14
27241-160000	11	139
27241-300000	1	15
27241-400000	4	19
27310-080001	4	26
729005-01560	1	1
729008-53200	13	1
729237-51400	11	1
729402-23100	8	27
729652-01500	2	1
977770-1207F	18	35
X2114535200	15	20

Parts No.	Fig. No.	Ref. No.
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Parts No.	Fig. No.	Ref. No.
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Parts No.	Fig. No.	Ref. No.
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