

0CD10-M25601EN

PREFACE

1. This Parts Catalog is the 1st edition of 4TNA78L-RNK Diesel Engine for HANIX IND..

Pub. No. : 000Y00D2561

Published : August,1991

2. Model name

Engine model	Vehicle		Vehicle made by
	Products	Model name	
4TNA78L-RNK	—	—	HANIX IND.

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.

OCF10-G21601 29. FUEL INJECTION PUMP(W/BOOST)										
REF.	LEV.	PARTS NO.	DESCRIPTION	(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 $\xrightarrow{\text{Yes}}$ New No $\xrightarrow{\text{No}}$	New Part is interchangeable for Old Part but Old Part is not interchangeable for New Part.
Q	Old $\xrightarrow{\text{No}}$ New Yes $\xrightarrow{\text{Yes}}$	New Part is not interchangeable for Old Part but Old Part is interchangeable for New Part.
R	Old $\xrightarrow{\text{Yes}}$ New Yes $\xrightarrow{\text{Yes}}$	New/ Old Parts are both interchangeable.
S	Old $\xrightarrow{\text{No}}$ New No $\xrightarrow{\text{No}}$	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.

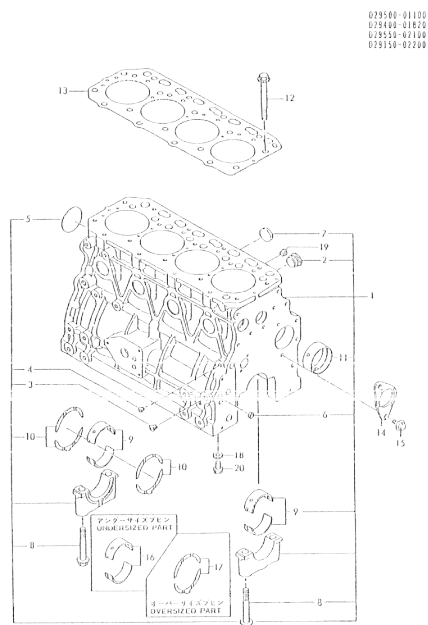
Contents

Fig. No.	Fig. Name
ENGINE 4TNA78L-RNK	
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3.	FLYWHEEL HOUSING
4.	LUB. OIL SUMP
5.	OIL SEAL HOUSING
6.	BLIND COVER
7.	BREATHER
8.	BREATHER PIPE
9.	ENGINE LIFTER
10.	CYLINDER HEAD
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14.	EXHAUST MANIFOLD
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16.	CAMSHAFT
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Fig. No.	Fig. Name
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30.	FAN PULLEY
31.	COOLING WATER FAN
32.	THERMOSTAT
33.	COOLING WATER LINE(BY-PASS)
34.	TEMPERATURE SENDER
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36.	FUEL INJECTION VALVE
37.	FUEL STRAINER
38.	FUEL INJECTION PIPE
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42.	ENGINE STOP
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44.	GENERATOR(COMPONENT PARTS)
45.	AIR HEATER
46.	GASKET SET
47.	SPECIAL TOOL(OPTIONAL)

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Fig.1. CYLINDER BLOCK



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729500-01560	BLOCK ASSY, CYLINDER	1							
2	2	171051-01921	PLUG, NPTF1	1							
3	2	124160-01910	PLUG, PT1/4	3							
3-1	2	124160-01910	PLUG, PT1/4	2							K
		(A=E000)									
4	2	23871-010000	PLUG, R01	1							
5	2	27231-500000	PLUG 50	1							
6	2	27241-120000	PLUG, 12	2							
7	2	27241-300000	PLUG 30	8							
8	2	129150-02020	BOLT, METAL CAP	10							
9	2	129150-02800	BEARING, MAIN	5							
10	2	129150-02930	BEARING, THRUST	2							
11	2	129795-02411	BUSH, CAMSHAFT	1							
12	1	129150-01200	BOLT, HEAD	18							
13	1	129555-01332	GASKET, HEAD	1							
14	1	129150-02450	BEARING, THRUST	1							
15	1	26106-080162	BOLT, M8X 16 PLATED	2							
16	1	129150-02870	BEARING, 0.25 US	5							1
17	1	129150-02940	BEARING, THRUST 0.25	1							2
18	1	23414-080000	GASKET, 8X1.0	4							
19	1	23871-030000	PLUG, R03	1							
20	1	26106-080122	BOLT, M8X 12 PLATED	4							

Remarks

- (1) UNDER-SIZE(U.S=0.25)PART.
(2) OVER-SIZE(O.S=0.25)PART.

N:Old $\frac{Y_{10}}{10}$ New, Q:Old $\frac{R_{10}}{10}$ New, R:Old $\frac{Y_{10}}{10}$ New, S:Old $\frac{R_{10}}{10}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.2. GEAR HOUSING

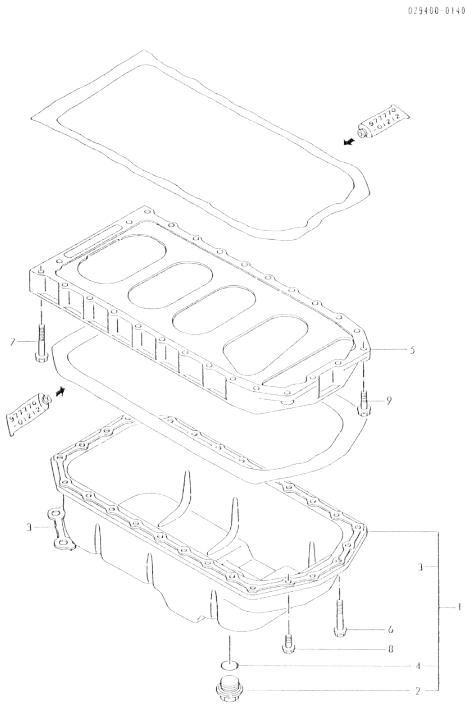
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N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable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

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Fig.4. LUB. OIL SUMP



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729488-01540	SUMP ASSY, OIL	1							
1-1	1	729402-01540	SUMP ASSY, OIL	1						N	
(A=*1990.)											
1-2	1	729577-01720	SUMP ASSY, OIL	1						R	
(A=*1991.)											
1-3	1	729402-01540	SUMP ASSY, OIL	1						R	
(A=*1991.)											
2	2	171301-01640	PLUG, 22	1							
3	2	129100-01790	RETAINER	2							
4	2	24341-000240	O-RING, 1AS24.0	1							
5	1	129400-01730	SPACER, OIL SUMP	1							
6	1	26106-080162	BOLT, M8X 16 PLATED	4							
7	1	26106-080252	BOLT, M8X 25 PLATED	2							
8	1	26106-080452	BOLT, M8X 45 PLATED	20							
9	1	26106-080502	BOLT, M8X 50 PLATED	4							

N:Old $\xrightarrow{\text{YES}} \text{New}$, Q:Old $\xrightarrow{\text{NO}} \text{New}$, R:Old $\xrightarrow{\text{YES}} \text{New}$, S:Old $\xrightarrow{\text{NO}} \text{New}$, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.6. BLIND COVER

029100-01810

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Fig.7. BREATHER

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

[illegible]

N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Qty Change

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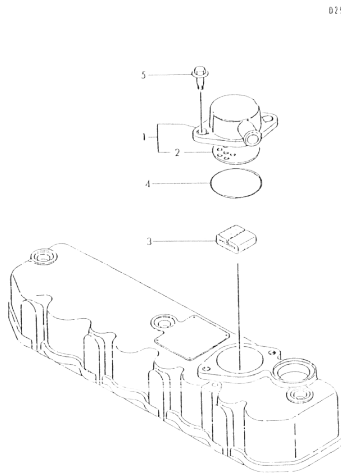


Fig.8. BREATHING PIPE

[illegible]

N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Qty Change

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Fig.9. ENGINE LIFTER

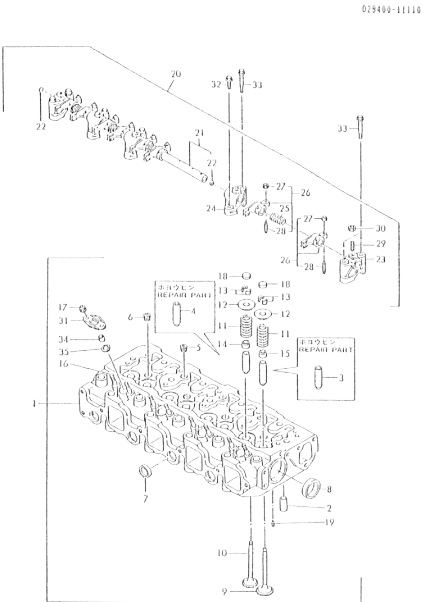


N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{Yes}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{No}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change

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Fig.10. CYLINDER HEAD



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729400-11700	HEAD ASSY, CYLINDER	1							
2	2	129150-11050	PIECE	4							
3	2	120130-11860	GUIDE, VALVE	4							1
4	2	129150-11810	GUIDE, VALVE	4							1
5	2	121850-11860	PLUG, PT1/4	3							
6	2	23871-030000	PLUG, R03	4							
7	2	27241-220000	PLUG, 22	4							
8	2	27241-400000	PLUG, 40	2							
9	2	129100-11100	VALVE, INTAKE	4							
10	2	129100-11110	VALVE, EXHAUST	4							
11	2	129795-11120	SPRING, VALVE	8							
12	2	129795-11180	RETAINER, SPRING	8							
13	2	103338-11190	COTTER	8							
13-1	2	27310-080001	COTTER, 8	8							R
(A=EXXXXX)											
14	2	121400-11340	SEAL, VALVE STEM	4							
15	2	124460-11340	SEAL, VALVE STEM	4							
16	3	26216-060202	STUD, M6X 20	8							
17	2	26366-060002	NUT, M6	8							
18	2	129150-11370	CAP, VALVE	8							
19	2	22351-060012	PIN, SPRING 6.0X12	2							
20	1	129555-11241	SHAFT ASSY, ROCKER	1							
21	2	129550-11290	SHAFT, ROCKER ARM	1							
22	3	27241-100000	PLUG, 10	2							
23	2	129155-11260	SUPPORT, ROCKER ARM	2							
24	2	129155-11270	SUPPORT, ROCKER ARM	3							
25	2	129150-11280	SPRING	4							
26	2	729150-11650	ARM ASSY, ROCKER	8							
26-1	2	729402-11650	ARM ASSY, ROCKER	8							N
(A=*1990.05)											
27	3	129150-11750	NUT, M8	8							
28	3	129150-11230	SCREW, VALVE ADJUST	8							
29	2	26226-080182	STUD, M8X 18	3							
30	2	26756-080002	NUT, LOCK M8	3							
31	1	119625-11900	RETAINER, NOZZLE	4							
32	1	26106-080252	BOLT, M8X 25 PLATED	3							
33	1	26106-080502	BOLT, M8X 50 PLATED	7							
34	1	119625-11870	PROTECTOR, NOZZLE	4							
35	1	119625-11880	SEAT, NOZZLE	4							

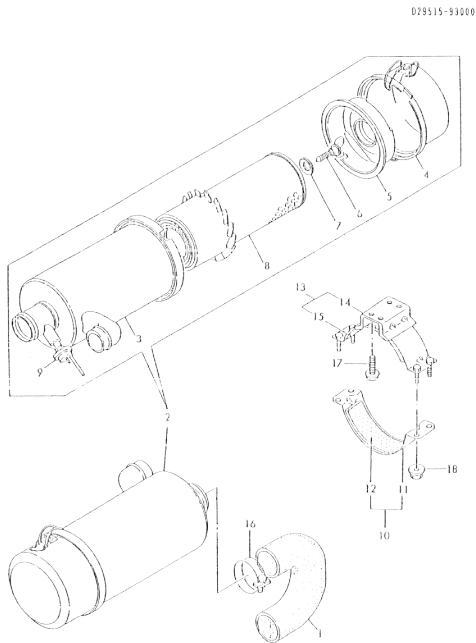
Remarks

(1)REPAIR 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
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Fig.13. AIR CLEANER



029515-93000

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	171351-12210	PIPE, AIR INTAKE	1							
2	1	129515-12500	CLEANER ASSY, AIR	1							
3	2	129415-12520	CASE ASSY, CLEANER	1							
4	2	121120-12531	PAN, DUST	1							
5	2	121120-12541	RETAINER, ELEMENT	1							
6	2	121120-12561	BOLT	1							
7	2	121120-12571	WASHER, SEAL	1							
8	2	121120-12901	ELEMENT	1							
9	2	121262-12800	INDICATOR	1							
10	1	121400-12540	BAND ASSY, CLEANER	1							
11	2	121400-12560	BAND, AIR CLEANER	1							
12	2	121400-12570	SEAT, RUBBER B	1							
13	1	171351-12580	SUPPORT ASSY,CLEANER	1							
14	2	171351-12560	SUPPORT, AIR CLEANER	1							
15	2	171351-12570	SEAT, RUBBER	1							
16	1	23000-060000	CLAMP, 60	2							
17	1	26106-080142	BOLT, M8X 14 PLATED	4							
18	1	26366-060002	NUT, M6	4							

Fig.14. EXHAUST MANIFOLD

[illegible]

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

Fig.17. CRANKSHAFT



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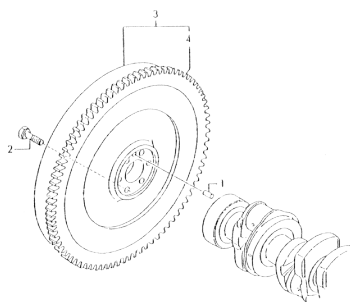
Fig.18. CRANK PULLEY

[illegible]

N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Qty Change

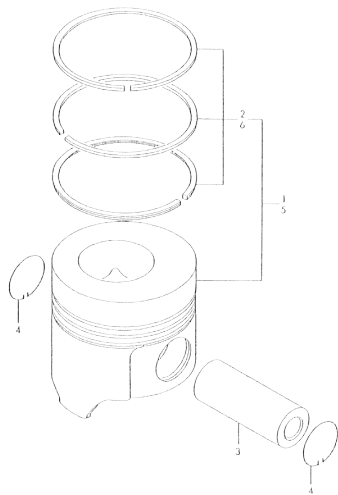
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Fig.19. FLYWHEEL

[illegible]

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Fig.20. PISTON



029500-22110

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129500-22080	PISTON ASSY	4							
2	2	729100-22500	RING SET, PISTON	4							
3	1	129150-22300	PIN, PISTON D26 L66	4							
4	1	121100-22400	CIRCLIP	8							
5	1	729500-22900	PISTON ASSY, 0.25 OS	4							1
6	2	729555-22950	RING SET, 0.25 OS	4							1

N:Old $\xrightarrow{\text{YES}} \text{New}$, Q:Old $\xrightarrow{\text{NO}} \text{New}$, R:Old $\xrightarrow{\text{YES}} \text{New}$, S:Old $\xrightarrow{\text{NO}} \text{New}$, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.21. CONNECTING ROD



				(A)=4TNA78L-RNK (B)= (C)=	(D)= (E)= (F)=					
No.	Lev.	Parts No.	Description	Q'ty						I R
				(A)	(B)	(C)	(D)	(E)	(F)	
1	1	729550-23700	ROD ASSY, CONNECTING	4						
2	2	121550-23200	BOLT, CONNECTING ROD	8						
3	2	729150-23600	BEARING, CRANK PIN	4						
3-1	2	129150-23600	BEARING, CRANK PIN	4						N
		(A=1990.05)								
4	1	129150-23610	BEARING, 0.25 US	4						1
5	1	129100-23910	BEARING, PISTON PIN	4						2

Remarks
(1)UNDER-SIZE PART.(U.S=0.25)
(2)REPAIR PART.

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

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Fig.22. IDLE GEAR

[illegible]

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

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Fig.25. LUB.OIL DIPSTICK



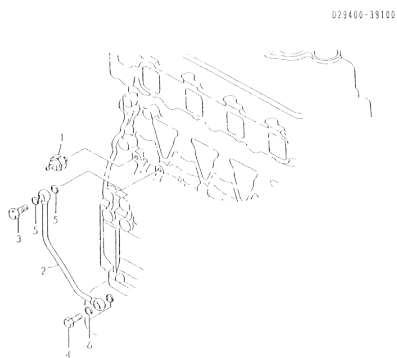
N:Old $\xleftrightarrow[\text{no}]{\text{yes}}$ New, Q:Old $\xleftrightarrow[\text{yes}]{\text{no}}$ New, R:Old $\xleftrightarrow[\text{yes}]{\text{no}}$ New, S:Old $\xleftrightarrow[\text{no}]{\text{yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Qty Change

Fig.26. LUB.OIL SUCTION PIPE

[illegible]

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

Fig.28. LUB.OIL LINE



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	124160-39450	SWITCH, 0.5KG	1							
2	1	129550-39450	PIPE ASSY, OIL	1							
3	1	124160-39140	BOLT, PIPE JOINT M10	1							
4	1	124550-59820	BOLT, PIPE JOINT M8	1							
5	1	23414-100000	GASKET, 10X1.0	2							
6	1	43400-500410	SEAL WASHER 8S	2							

N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.32. THERMOSTAT

[illegible]

N:Old $\frac{\text{Yes}}{\text{No}}$ New. Q:Old $\frac{\text{No}}{\text{Yes}}$ New. R:Old $\frac{\text{Yes}}{\text{Yes}}$ New. S:Old $\frac{\text{No}}{\text{No}}$ New. W:Add. Z:Discontinued. F:Interchangeable by set. K:Qty Change



(A)=4TNA78L-RNK
(B)=
(C)=

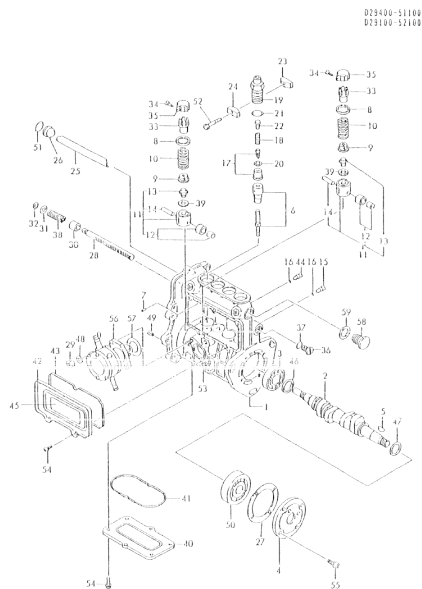
Fig.34. TEMPERATURE SENDER



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Fig.35. FUEL INJECTION PUMP

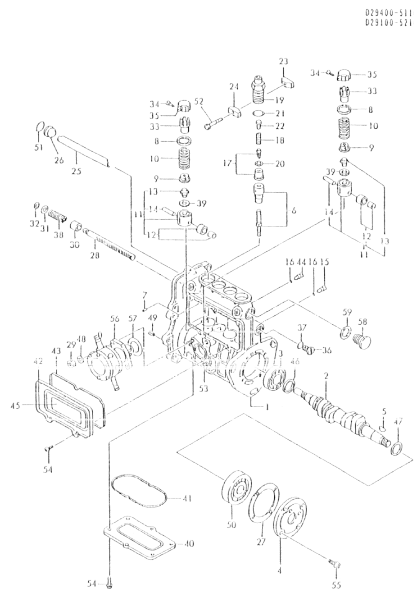


No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729515-51360	PUMP ASSY, INJECTION	1							1
2	2	129470-51040	CAMSHAFT	1							
3	2	129155-51050	BEARING, 17BM001D	1							
4	2	129155-51060	SUPPORT, CAMSHAFT	1							
5	2	122710-51090	KEY	1							
6	2	129400-51100	PLUNGER ASSY	4							
7	2	129155-51140	PIN	4							
8	2	174307-51170	RETAINER, SPRING A	4							
9	2	129155-51180	RETAINER, SPRING	4							
10	2	124950-51190	SPRING, PLUNGER	4							
11	2	129155-51200	TAPPET ASSY	4							
12	3	711100-51540	ROLLER ASSY	4							
13	3	129155-51250	BOLT, ADJUSTING	4							
14	3	174100-54120	PIN	4							
15	2	129155-51270	STOPPER, TAPPET	4							
16	2	129155-51280	O-RING, S6	5							
16-1	2	129155-51280	O-RING, S6	4							K
(A=E000)											
17	2	128170-51300	VALVE ASSY, DELIVERY	4							
18	2	129155-51320	SPRING, DELIVERY	4							
19	2	129155-51340	RETAINER	4							
20	2	124550-51350	GASKET, DELIVERY	4							
21	2	124550-51370	O-RING	4							
22	2	129155-51370	STOPPER, VALVE	4							
23	2	129155-51380	STOPPER	2							
24	2	129155-51390	STOPPER	2							
25	2	129555-51400	DEFLECTOR	1							
26	2	129155-51410	BOLT	2							
26-1	2	129155-51410	BOLT	1							K
(A=E000)											
27	2	129155-51450	SHIM SET, ADJUSTING	1							
28	2	129555-51500	RACK, CONTROL	1							
29	2	26716-060002	NUT, M6	2							
30	2	129155-51521	BUSH, RACK	1							
31	2	129155-51530	SPACER	1							
32	2	129155-51540	CIRCLIP	1							
33	2	129155-51550	PINION, CONTROL	4							
34	2	122117-51560	SCREW	4							
35	2	174307-51560	PINION	4							
36	2	129155-51570	PLUG, M12	1							
37	2	129155-51580	O-RING	1							
38	2	129155-51591	SPRING, RACK	1							
39	2	129155-51600	SHIM SET, ADJUSTING	4							
40	2	129555-51700	COVER	1							
41	2	129555-51710	GASKET	1							
42	2	129555-51750	COVER	1							
43	2	129555-51760	GASKET	1							
44	2	129155-51790	STOOPER, RACK	1							
45	2	129156-51910	LABEL, CAUTION	1							
46	2	129155-51930	SPACER, T=3.25	1							
47	2	129155-51940	SPACER, T=1.5	1							

N:Old $\xrightarrow{\text{YES}}$ New, Q:Old $\xrightarrow{\text{YES}}$ New, R:Old $\xrightarrow{\text{YES}}$ New, S:Old $\xrightarrow{\text{YES}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
++ CONTINUE ++
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OCD10-M25601

Fig.35. FUEL INJECTION PUMP



029400-51100
029100-51100

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
48	2	22217-060000	WASHER, SPRING 6	2							
49	2	22351-050010	PIN, SPRING 5.0X10	2							
50	2	24101-063034	BEARING, BALL 6303	1							
51	2	24341-000160	O-RING, 1AS16.0	1							
52	2	26116-050302	BOLT, M5X 30 PLATED	2							
53	2	26216-060142	STUD, M6X 14	2							
53-1	2	129155-51020	STUD	2							N
(A=E13194)											
54	2	26022-050102	SCREW, M5X10	11							
55	2	26022-060162	SCREW, M6X16	4							
56	2	129100-52100	PUMP ASSY, FUEL FEED	1							
57	2	129155-52050	GASKET	1							
58	2	129155-51420	PLUG, M16	1							
59	2	43400-500490	SEAL WASHER 16S	1							

Remarks

(1)GOVERNOR ASSY(FIG.41)IS INCORPORATED IN THIS FUEL INJECTION PUMP ASSY(REF.NO.1)

N:Old $\frac{YRS}{100}$ New, Q:Old $\frac{RHS}{100}$ New, R:Old $\frac{YRS}{100}$ New, S:Old $\frac{RHS}{100}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.36. FUEL INJECTION VALVE

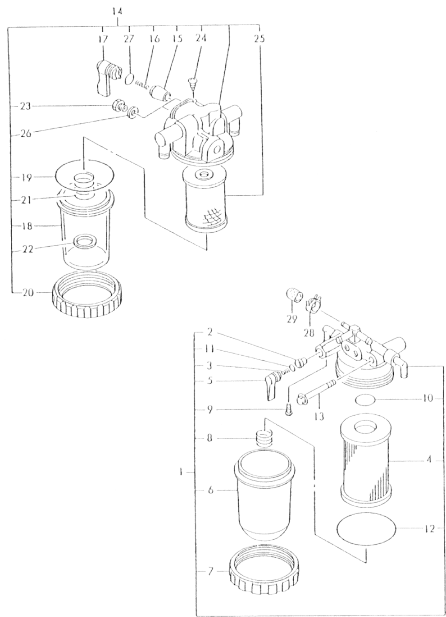


(A)=4TNA78L-RNK
(B)=
(C)=

N:Old $\xleftrightarrow[\text{NO}]{\text{YES}}$ New, Q:Old $\xleftrightarrow[\text{YES}]{\text{NO}}$ New, R:Old $\xleftrightarrow[\text{YES}]{\text{NO}}$ New, S:Old $\xleftrightarrow[\text{NO}]{\text{YES}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change

OCD10-M25601

Fig.37. FUEL STRAINER



029100-55113
029515-93000

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	129100-55621	FILTER ASSY, FUEL	1							
2	2	104200-55321	VALVE, TAPER	1							
3	2	104200-55330	SPRING, VALVE	1							
4	2	129100-55650	ELEMENT	1							
5	2	129100-55670	LEVER	1							
6	2	129100-55680	CUP, STRAINER	1							
7	2	129100-55690	RING, RETAINING	1							
8	2	129100-55700	SPRING	1							
9	2	104200-55750	SCREW, M4	1							
10	2	24311-000160	O-RING, 1AP16.0	1							
11	2	24311-240100	O-RING, 1AP10A	1							
12	2	24321-000650	O-RING, 1AG65.0	1							
13	1	26106-080652	BOLT, M8X 65 PLATED	1							
13-1	1	26014-080702	BOLT, M8X 70	1							N
(A=E15120)											
14	1	129335-55700	SEPARATOR ASSY, WATER	1							
15	2	104200-55321	VALVE, TAPER	1							
16	2	104200-55330	SPRING, VALVE	1							
17	2	104200-55341	HANDLE	1							
18	2	124064-55510	COVER	1							
19	2	102103-55520	O-RING	1							
20	2	110250-55610	RING, RETAINING	1							
21	2	121257-55720	SPRING	1							
22	2	121257-55731	FLOAT	1							
23	2	101720-55750	PLUG, 6	2							
24	2	104200-55750	SCREW, M4	1							
25	2	171081-55910	SCREEN	1							
26	2	23418-060000	GASKET, 6X1.0	2							
27	2	24311-240100	O-RING, 1AP10A	1							
28	1	124066-59100	CLIP, HOSE 8	1							
29	1	129150-59580	CAP	1							

Fig.38. FUEL INJECTION PIPE

This image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

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

Fig.39. FUEL LINE



				(A)=4TNA78L-RNK (B)= (C)=			(D)= (E)= (F)=	Q'ty				I	R
No.	Lev.	Parts No.	Description	(A)	(B)	(C)	(D)	(E)	(F)				
1	1	103854-39140	BOLT, PIPE JOINT	1									
2	1	129150-59020	JOINT, PIPE	1									
2-1	1	101304-59020	JOINT, PIPE 12	1								N	
(A=E12030)													
3	1	124766-59050	CLIP, HOSE 12	2									
4	1	104200-59170	GASKET, 12	2									
5	1	129555-59510	PIPE, D13/7.5X180	1									
6	1	105025-59530	PIPE, FUEL D13X400	1									
7	1	23000-013000	CLAMP, 13	2									

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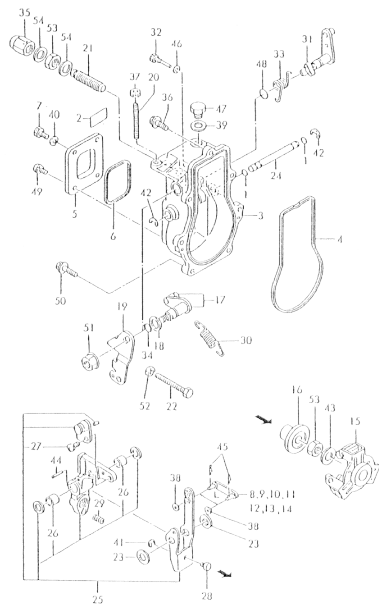


				(A)=4TNA78L-RNK (B)= (C)=	(D)= (E)= (F)=				Q'ty				I	R
No.	Lev.	Parts No.	Description	(A)	(B)	(C)	(D)	(E)	(F)					
1	1	124766-59050	CLIP, HOSE 12	2										
2	1	124066-59100	CLIP, HOSE 8	9										
3	1	105025-59530	PIPE, FUEL D13X400	1										
4	1	121250-59550	PIPE, FUEL D8X120	3										
5	1	119840-59560	PIPE, FUEL RETURN	1										
6	1	119840-59570	JOINT	1										
7	1	129150-59580	CAP	1										
8	1	129100-59951	VALVE ASSY, CHECK	1										
9	1	23414-120000	GASKET, 12X1.0	2										

N:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xleftrightarrow[\text{Yes}]{\text{No}}$ New, S:Old $\xleftrightarrow[\text{No}]{\text{Yes}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change
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Fig.41. GOVERNOR



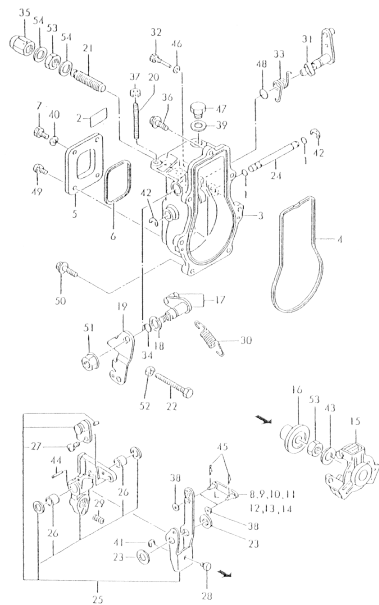
029515-61211

No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	2	129155-51280	O-RING, S6	2							
2	2	129515-51960	LABEL (729515-51360)	1							
2-1	2	129515-51961	LABEL (729515-51361)	1							N
(A=*1989.05)											
3	2	129155-61010	CASE, GOVERNOR	1							
3-1	2	129155-61011	CASE, GOVERNOR	1							N
(A=*1988.)											
4	2	129155-61050	GASKET	1							
5	2	129155-61060	COVER, GOVERNOR CASE	1							
6	2	129155-61070	GASKET	1							
7	2	129155-61090	BOLT	1							Z
(A=*1989.)											
8	2	129155-61120	LINK, L=30 MARK 0	1							
9	2	129155-61130	LINK, L=31 MARK 1	1							
10	2	129155-61140	LINK, L=30.5 MARK 05	1							
11	2	129155-61150	LINK, L=33	1							Z
(A=*1989.)											
12	2	129155-61160	LINK, L=34 MARK4	1							Z
(A=*1989.)											
13	2	129155-61170	LINK, L=28 MARK 8	1							Z
(A=*1989.)											
14	2	129155-61180	LINK, L=29 MARK 9	1							Z
(A=*1989.)											
15	2	129155-61201	WEIGHT ASSY,GOVERNOR	1							
16	2	129155-61341	SLEEVE	1							
17	2	129100-61400	SHAFT ASSY	1							
18	2	129155-61430	SPACER	1							
19	2	129100-61440	LEVER, CONTROL	1							
20	2	129155-61450	BOLT, LIMITER	1							
21	2	171350-61450	LIMITER ASSY, FUEL	1							
21-1	2	129100-61450	LIMITER ASSY, FUEL	1							N
(A=E13302)											
22	2	129155-61460	BOLT, IDLE	1							
23	2	129155-61480	SPACER ASSY	2							
24	2	129155-61490	SHAFT	1							
25	2	129500-61500	LEVER ASSY, GOVERNOR	1							
26	3	129155-61530	BUSH	2							
27	3	26022-060122	SCREW, M6X12	1							
28	2	129155-61540	SHIFTER	1							
29	2	129100-61650	SPRING, CONTROLLER	1							
30	2	171353-61710	SPRING, GOVERNOR	1							
31	2	129155-61801	LEVER, STOP	1							
31-1	2	129255-61802	LEVER, STOP	1							N
(A=*1989.05)											
32	2	129155-61810	PIN	1							
33	2	129155-61820	SPRING, RETURN	1							
33-1	2	129100-61821	SPRING, RETURN	1							N
(A=*1989.01)											
34	2	129155-61830	O-RING, S10	1							
35	2	129100-61930	NUT, CAP	1							
35-1	2	26687-120002	NUT, CAP M12	1							N

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.41. GOVERNOR



029515-61211

				(A)=4TNA78L-RNK							(D)=	
				(B)=							(E)=	
				(C)=							(F)=	
No.	Lev.	Parts No.	Description	Q'ty							I	R
				(A)	(B)	(C)	(D)	(E)	(F)			
(A=*1989.05)												
36	2	129155-61950	BOLT	1								
37	2	124550-66370	NUT, M6	1								
38	2	22117-040000	WASHER, 4	1								
39	2	22190-100000	WASHER, SEAL 10	1								
39-1	2	43400-500430	SEAL WASHER 10S	1								R
(A=*1989.)												
40	2	22217-050000	WASHER, SPRING 5	1								Z
(A=*1989.)												
41	2	22272-000040	RING, E- 4	1								
42	2	22272-000060	RING, E- 6	2								
43	2	22287-120000	WASHER, 12	1								
44	2	22351-030016	PIN, SPRING 3.0X16	1								
45	2	22360-040000	PIN, SNAP 4	2								
46	2	23414-050000	GASKET, 5X1.0	1								
46-1	2	43400-500390	SEAL WASHER 6S	1								N
(A=*1989.)												
47	2	23887-100002	PLUG, 10	1								
48	2	24311-000080	O-RING, 1AP8.0	1								
48-1	2	24311-240100	O-RING, 1AP10A	1								N
(A=*1989.05)												
49	2	26022-050102	SCREW, M5X10	3								
49-1	2	26022-050102	SCREW, M5X10	4								K
(A=*1989.)												
50	2	26106-060202	BOLT, M6X 20 PLATED	6								
51	2	26366-080002	NUT, M8	1								
52	2	26756-060002	NUT, LOCK M6	1								
53	2	26776-120002	NUT, LOCK M12	2								
54	2	43400-500450	SEAL WASHER 12S	2								

Fig.42. ENGINE STOP

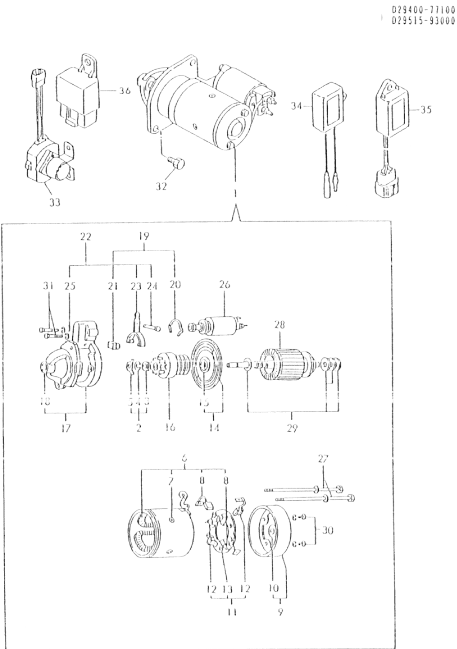


N:Old $\xrightarrow[\text{No}]{\text{Yes}}$ New, Q:Old $\xrightarrow[\text{Yes}]{\text{No}}$ New, R:Old $\xrightarrow[\text{Yes}]{\text{Yes}}$ New, S:Old $\xrightarrow[\text{No}]{\text{No}}$ New, W:Add, Z:Discontinued, F:Interchangeable by set, K:Q'ty Change

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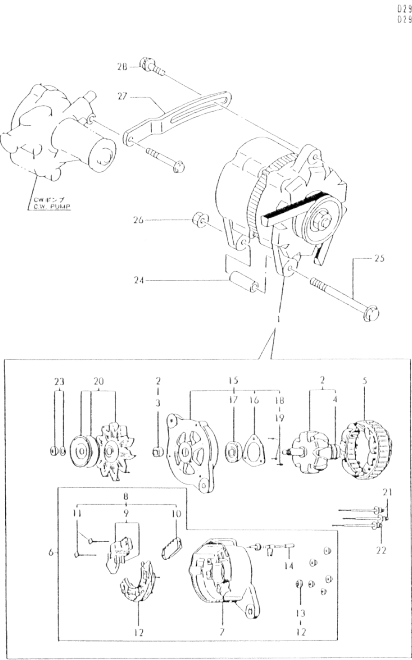
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Fig.43. STARTING MOTOR(COMPONENT PARTS



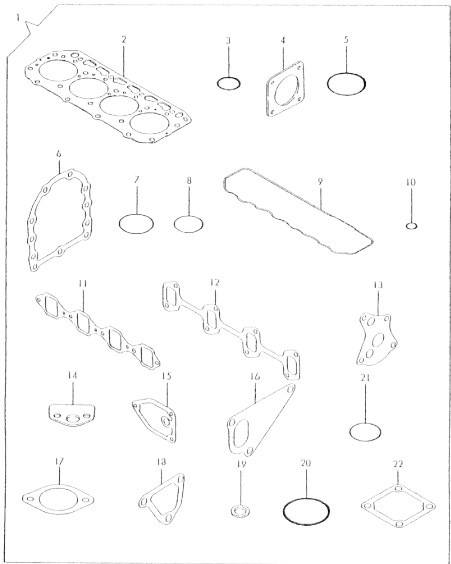
No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	124250-77012	STARTER, S12-77A	1							
2	2	124250-77070	STOPPER SET, PINION	1							
3	3	124250-77080	STOPPER, PINION	1							
4	3	124250-77090	WASHER, STOPPER	1							
5	3	124250-77100	CLIP, PINION STOPPER	1							
6	2	124250-77110	COIL ASSY, FIELD	1							
7	3	124250-77120	SCREW SET, PORE CORE	4							
8	3	124250-77130	BRUSH (+)	2							
9	2	124250-77140	COVER ASSY, REAR	1							
10	3	124250-77150	METAL, REAR COVER	1							
11	2	124250-77160	HOLDER ASSY, BRUSH	1							
12	3	124250-77170	BRUSH (-)	2							
13	3	124250-77180	SPRING, BRUSH	4							
14	2	124250-77190	BEARING ASSY, CENTER	1							
15	3	124250-77520	BEARING	1							
16	2	124250-77210	PINION ASSY	1							
17	2	124250-77220	CASE ASSY, GEAR	1							
18	3	124250-77230	METAL, GEAR CASE	1							
19	2	124250-77240	COVER SET, DUST	1							
20	3	124250-77250	COVER DUST(1	1							
21	3	124250-77530	COVER DUST(2	1							
22	2	124250-77270	LEVER SET, SHIFT	1							
23	3	124250-77280	LEVER SHIFT	1							
24	3	124250-77290	PIN SHIFT LEVER	1							
25	3	124250-77550	PIN	1							
26	2	124250-77310	SWITCH, MAGNETIC	1							
27	2	124250-77320	BOLT, THROUGH	2							
28	2	124250-77500	ARMATURE ASSY	1							
29	2	124250-77510	WASHER KIT	1							
30	2	124250-77540	SCREW, M4X12	2							
30-1	2	26557-040122	SCREW, M4X12	2							N
(A=E15120)											
31	2	26106-060322	BOLT, M6X 32 PLATED	2							Z
(A=E000X)											
32	1	26116-120252	BOLT, M12X 25 PLATED	2							
33	1	171051-77100	RELAY, SAFETY	1							
34	1	160970-77350	RECTIFIER, ZR2117	1							
35	1	128300-77920	TIMER	1							
36	1	119247-77100	RELAY, SAFETY	1							W
(A=*1989.05)											

Fig.44. GENERATOR(COMPONENT PARTS)



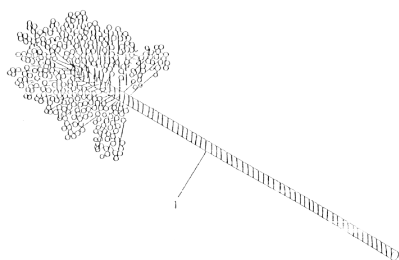
No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	124080-77201	GENERATOR, LR135-91	1							
2	2	124080-77300	ROTOR ASSY	1							
3	3	124080-77310	SPACER	1							
4	3	124080-77490	BALL BEARING	1							
5	2	124080-77320	STATOR ASSY	1							
6	2	124080-77330	COVER ASSY	1							
7	3	124080-77340	COVER, REAR	1							
8	3	124080-77350	BRUSH REGULATOR(N/CO	1							
9	4	124080-77360	BRUSH ASSY	2							
10	4	124080-77390	REGULATOR ASSY	1							
11	4	124080-77520	BOLT M5	2							
12	3	124080-77400	DIODE ASSY	1							
13	4	124080-77410	BUSH	1							
14	3	124080-77530	WIRE ASSY, LEAD	1							
15	2	124080-77420	COVER ASSY	1							
16	3	124080-77430	RETAINER, BEARING	1							
17	3	124080-77480	BEARING, 6202DDU	1							
18	3	124080-77500	SCREW KIT	1							
19	4	124080-77510	SCREW 4X12	3							
20	2	124080-77440	PULLEY ASSY	1							
21	2	124080-77450	BOLT, THROUGH	2							
22	2	124080-77460	BOLT, THROUGH	1							
23	2	124080-77470	NUT ASSY, PULLEY	1							
24	1	129150-77340	SPACER	1							
25	1	26106-081202	BOLT, M8X120 PLATED	1							
26	1	26366-080002	NUT, M8	1							
27	1	129410-77330	ADJUSTER	1							
27-1	1	129100-77330	ADJUSTER	1							N
(A)=EXXX											
28	1	26014-080252	BOLT, M8X 25	1							

Fig.46. GASKET SET



No.	Lev.	Parts No.	Description	Q'ty						I	R
				(A)	(B)	(C)	(D)	(E)	(F)		
1	1	729515-92600	GASKET SET	1							
1-1	1	729515-92601	GASKET SET	1							N
(A=E14065)											
2	2	129555-01332	GASKET, HEAD	1							
3	2	24311-000320	O-RING, 1AP32.0	1							
4	2	124240-01882	GASKET	1							
4-1	2	124240-01883	GASKET	1							N
(A=*1990.01)											
5	2	121850-51960	O-RING	1							
6	2	129150-01660	GASKET	1							Z
(A=*1988.)											
7	2	24341-000500	O-RING, 1AS50.0	1							
8	2	121420-01760	O-RING	1							
8-1	2	24311-000320	O-RING, 1AP32.0	1							N
(A=E14065)											
9	2	129550-11310	GASKET, BONNET	1							
10	2	24311-000120	O-RING, 1AP12.0	3							
11	2	129550-12110	GASKET, MANIFOLD	1							
11-1	2	129550-12111	GASKET, MANIFOLD	1							N
(A=*1990.06)											
12	2	129550-13110	GASKET	1							
13	2	129150-32020	GASKET, PUMP	1							
14	2	129150-35040	GASKET	1							
14-1	2	129150-35041	GASKET	1							N
(A=*1990.06)											
15	2	129150-35110	GASKET	1							
15-1	2	129150-35111	GASKET	1							N
(A=*1990.06)											
16	2	129100-42020	GASKET, WATER PUMP	1							
17	2	129795-49550	GASKET	1							
17-1	2	129795-49551	GASKET	1							N
(A=*1990.06)											
18	2	129100-49840	GASKET	1							
19	2	124465-44950	GASKET, 16	2							
20	2	24321-000650	O-RING, 1AG65.0	1							
21	2	102103-55520	O-RING	1							
22	2	129150-77510	GASKET	1							
22-1	2	129150-77511	GASKET	1							N
(A=*1990.06)											

Fig.47. SPECIAL TOOL(OPTIONAL)



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102103-55520	37	19
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103338-11190	10	13
103854-39140	39	1
104200-55321	37	2
		15
104200-55330	37	3
		16
104200-55341	37	17
104200-55750	37	9
		24
104200-59170	39	4
105025-59530	39	6
	40	3
110250-55610	37	20
114250-53080	36	3
114250-53120	36	5
114250-53130	36	6
114250-53140	36	7
114250-53210	36	8
114250-53400	36	9
119247-77100	43	36
119620-01750	3	3
119625-11870	10	34
119625-11880	10	35
119625-11900	10	31
119840-59560	40	5
119840-59570	40	6
119865-35300	27	4
120130-11860	10	3
121023-01550	6	1
121100-22400	20	4
121111-21501	19	2
121120-12531	13	4
121120-12541	13	5
121120-12561	13	6
121120-12571	13	7
121120-12901	13	8
121250-44901	34	1
121250-49121	33	8
121250-59550	40	4
121256-44600	31	12
121257-55720	37	21
121257-55731	37	22
121262-12800	13	9
121262-44500	31	4
121400-11340	10	14
121400-12540	13	10

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121400-12570	13	12
121420-01760	11	2
	46	8
121450-01560	2	3
121450-44531	31	7 -1
121470-44581	31	10
121520-34810	25	2
121521-49100	33	6
121550-23200	21	2
121550-49111	33	1
121850-11860	10	5
	29	1
121850-21680	18	3
121850-51960	2	17
	46	5
122117-51560	35	34
122710-51090	35	5
123682-44210	31	5
124064-55510	37	18
124066-59100	37	28
	40	2
124080-77201	44	1
124080-77300	44	2
124080-77310	44	3
124080-77320	44	5
124080-77330	44	6
124080-77340	44	7
124080-77350	44	8
124080-77360	44	9
124080-77390	44	10
124080-77400	44	12
124080-77410	44	13
124080-77420	44	15
124080-77430	44	16
124080-77440	44	20
124080-77450	44	21
124080-77460	44	22
124080-77470	44	23
124080-77480	44	17
124080-77490	44	4
124080-77500	44	18
124080-77510	44	19
124080-77520	44	11
124080-77530	44	14
124160-01751	2	4
	11	1
124160-01910	1	3
		3 -1
124160-11360	11	5

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124160-39450	28	1
124240-01871	2	7
124240-01882	2	8
	46	4
124240-01883	2	8 -1
	46	4 -1
124250-49351	34	3
124250-77012	43	1
124250-77070	43	2
124250-77080	43	3
124250-77090	43	4
124250-77100	43	5
124250-77110	43	6
124250-77120	43	7
124250-77130	43	8
124250-77140	43	9
124250-77150	43	10
124250-77160	43	11
124250-77170	43	12
124250-77180	43	13
124250-77190	43	14
124250-77210	43	16
124250-77220	43	17
124250-77230	43	18
124250-77240	43	19
124250-77250	43	20
124250-77270	43	22
124250-77280	43	23
124250-77290	43	24
124250-77310	43	26
124250-77320	43	27
124250-77500	43	28
124250-77510	43	29
124250-77520	43	15
124250-77530	43	21
124250-77540	43	30
124250-77550	43	25
124450-44550	31	11
124450-44560	31	9
124460-11340	10	15
124465-44950	34	2
	46	19
124550-21600	19	4
124550-51350	35	20
124550-51370	35	21
124550-59820	28	4
124550-66370	41	37
124574-44761	31	2
124732-42290	30	1

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124766-59050	39	3
	40	1
124770-11770	32	6
124950-51190	35	10
128170-51300	35	17
128300-77920	43	35
129100-01580	3	1
	5	1
	17	5
	19	1
129100-01640	5	2
129100-01790	4	3
129100-11100	10	9
129100-11110	10	10
129100-23910	21	5
129100-25061	22	1
129100-42001	29	2
129100-42002	29	2 -1
129100-42020	29	4
	46	16
129100-49050	33	2
129100-49800	32	3
129100-49820	32	4
129100-49830	32	5
129100-49840	32	11
	46	18
129100-52100	35	56
129100-55621	37	1
129100-55650	37	4
129100-55670	37	5
129100-55680	37	6
129100-55690	37	7
129100-55700	37	8
129100-59951	40	8
129100-61400	41	17
129100-61440	41	19
129100-61450	41	21 -1
129100-61650	41	29
129100-61821	41	33 -1
129100-61930	41	35
129100-66800	42	1
129100-77330	44	27 -1
129107-66810	42	2 -1
129107-66820	42	8
129120-77501	45	1
129150-01200	1	12
129150-01660	5	4
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129150-02800	1	9
129150-02870	1	16
129150-02930	1	10
129150-02940	1	17
129150-03010	7	1
129150-03070	7	3
129150-03080	7	2
129150-03090	8	1
129150-03100	8	2
129150-11050	10	2
129150-11230	10	28
129150-11280	10	25
129150-11370	10	18
129150-11750	10	27
129150-11810	10	4
129150-14101	16	2
129150-14200	16	3
129150-21200	17	2
129150-22300	20	3
129150-23600	21	3 -1
129150-23610	21	4
129150-25101	22	2
129150-25900	23	1
129150-32000	24	1
129150-32020	24	2
	46	13
129150-35040	26	1
	46	14
129150-35041	26	1 -1
	46	14 -1
129150-35091	26	2
129150-35101	27	1
129150-35110	27	2
	46	15
129150-35111	27	2 -1
	46	15 -1
129150-35150	27	3
129150-35350	27	5
129150-49360	34	4
129150-49810	32	10
129150-49811	32	10 -1
129150-59020	39	2
129150-59130	38	2
129150-59580	37	29
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129150-77340	44	24
129150-77510	45	2
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129155-49800	32	9
129155-51020	35	53 -1
129155-51050	35	3
129155-51060	35	4
129155-51140	35	7
129155-51180	35	9
129155-51200	35	11
129155-51250	35	13
129155-51270	35	15
129155-51280	35	16
		16 -1
	41	1
129155-51320	35	18
129155-51340	35	19
129155-51370	35	22
129155-51380	35	23
129155-51390	35	24
129155-51410	35	26
		26 -1
129155-51420	35	58
129155-51450	35	27
129155-51521	35	30
129155-51530	35	31
129155-51540	35	32
129155-51550	35	33
129155-51570	35	36
129155-51580	35	37
129155-51591	35	38
129155-51600	35	39
129155-51790	35	44
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129155-61050	41	4
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129155-61070	41	6
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129155-61150	41	11
129155-61160	41	12
129155-61170	41	13
129155-61180	41	14
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129155-61450	41	20
129155-61460	41	22
129155-61480	41	23
129155-61490	41	24
129155-61530	41	26
129155-61540	41	28
129155-61801	41	31
129155-61810	41	32
129155-61820	41	33
129155-61830	41	34
129155-61950	41	36
129155-66810	42	2
129156-51910	35	45
129255-61802	41	31 -1
129335-55700	37	14
129350-49530	32	1
129354-44740	31	1
129400-01500	2	1
129400-01520	2	2
129400-01730	4	5
129400-11300	11	3
129400-13200	15	1
129400-13201	15	1 -1
129400-51100	35	6
129400-92420	47	1
129403-42380	30	2
129410-77330	44	27
129411-13100	14	1
129415-12520	13	3
129415-13500	15	2
129415-13501	15	2 -1
129470-51040	35	2
129488-12100	12	1
129500-22080	20	1
129500-53050	36	2
129500-59910	38	3
129500-59920	38	4
129500-59930	38	5
129500-59940	38	6
129500-61500	41	25
129505-66791	42	1 -1
129505-66830	42	1 A
129515-12500	13	2
129515-51960	41	2
129515-51961	41	2 -1
129550-11290	10	21
129550-11310	11	4
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129550-12111	12	2 -1
	46	11 -1
129550-13110	14	2
	46	12
129550-14011	16	1
129550-14400	16	4
129550-39450	28	2
129550-59120	38	1
129555-01332	1	13
	46	2
129555-11241	10	20
129555-51400	35	25
129555-51500	35	28
129555-51700	35	40
129555-51710	35	41
129555-51750	35	42
129555-51760	35	43
129555-59510	39	5
129555-66820	42	3
129566-66880	42	1 C
129566-66890	42	1 D
129795-01780	5	3
129795-01800	2	6
129795-01950	2	9
129795-02411	1	11
129795-11120	10	11
129795-11180	10	12
129795-21661	18	2
129795-49550	32	2
	46	17
129795-49551	32	2 -1
	46	17 -1
160970-77350	43	34
171051-01921	1	2
171051-77100	43	33
171056-49351	34	3 -1
171064-44510	31	6
171064-44530	31	7
171064-49020	33	5
171081-55910	37	25
171301-01640	4	2
171301-21650	18	1
171350-13650	15	3
171350-49010	33	4
171350-61450	41	21
171351-12210	13	1
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171420-34800	25	1
174100-54120	35	14
174307-51170	35	8
174307-51560	35	35
194990-22050	14	3
	15	5
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22117-080000	42	4
		4 -1
22190-100000	41	39
22217-050000	41	40
22217-060000	35	48
22217-120000	23	2
22272-000040	41	41
22272-000060	41	42
22287-120000	41	43
22351-030016	41	44
22351-040010	17	3
22351-050010	35	49
22351-060012	10	19
22360-040000	41	45
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22512-070140	16	5
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23000-013000	39	7
23000-016000	33	3
23000-060000	13	16
23010-038000	33	9
23061-070230	31	8
23065-070225	31	8 -1
23414-050000	41	46
23414-080000	1	18
23414-100000	28	5
23414-120000	40	9
23418-060000	37	26
23871-010000	1	4
23871-030000	1	19
	10	6
	29	3
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23887-100002	41	47
24101-063034	35	50
24311-000080	41	48
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	37	10
24311-000260	6	2
24311-000320	2	5
	11	2 -1
	46	3
		8 -1
24311-240100	37	11
		27
	41	48 -1
24321-000650	37	12
	46	20
24341-000160	35	51
24341-000240	4	4
	6	2 -1
24341-000500	7	4
	46	7
26014-060252	31	3
26014-080202	15	4
26014-080252	44	28
26014-080702	37	13 -1
26022-050102	35	54
	41	49
		49 -1
26022-060122	41	27
26022-060162	35	55
26106-060122	6	3
26106-060202	41	50
26106-060322	43	31
26106-080122	1	20
	2	11
	42	6
		10
26106-080142	9	2
	13	17
26106-080162	1	15
	2	18
	4	6
	7	5
26106-080202	2	20
	27	7
	32	12
26106-080252	4	7
	10	32
	32	13
26106-080302	5	5
26106-080352	5	6
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26106-080402	42	7
26106-080452	2	12
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	22	4
26106-080502	4	9
	10	33
	32	14
26106-080552	2	13
26106-080602	29	5
	32	15
26106-080652	37	13
26106-080802	14	4
26106-080852	2	14
26106-081202	44	25
26116-050102	42	9
26116-050302	35	52
26116-060162	32	8
26116-080352	26	3
26116-120252	43	32
26206-100252	3	4
26206-100302	3	5
26216-060142	35	53
26216-060202	10	16
26216-080222	14	5
26216-080802	14	6
26226-080182	10	29
26366-060002	10	17
	13	18
26366-080002	2	15
	41	51
	44	26
26450-060252	24	3
26557-040122	43	30 -1
26687-120002	41	35 -1
26716-060002	35	29
26716-120002	23	3
26756-060002	41	52
26756-080002	10	30
26776-120002	41	53
27231-500000	1	5
27241-100000	10	22
27241-120000	1	6
27241-220000	10	7
27241-300000	1	7
27241-400000	10	8
27310-080001	10	13 -1
43400-500390	41	46 -1
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43400-500430	41	39 -1
43400-500450	41	54
43400-500490	35	59
711100-51540	35	12
729100-22500	20	2
729150-11650	10	26
729150-23600	21	3
729400-11700	10	1
729402-01540	4	1 -1
		1 -3
729402-11650	10	26 -1
729488-01540	4	1
729500-01560	1	1
729500-21700	17	1 -1
729500-22900	20	5
729500-53200	36	1
729515-51360	35	1
729515-92600	46	1
729515-92601	46	1 -1
729550-21701	17	1
729550-23700	21	1
729555-22950	20	6
729577-01720	4	1 -2