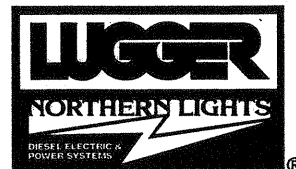
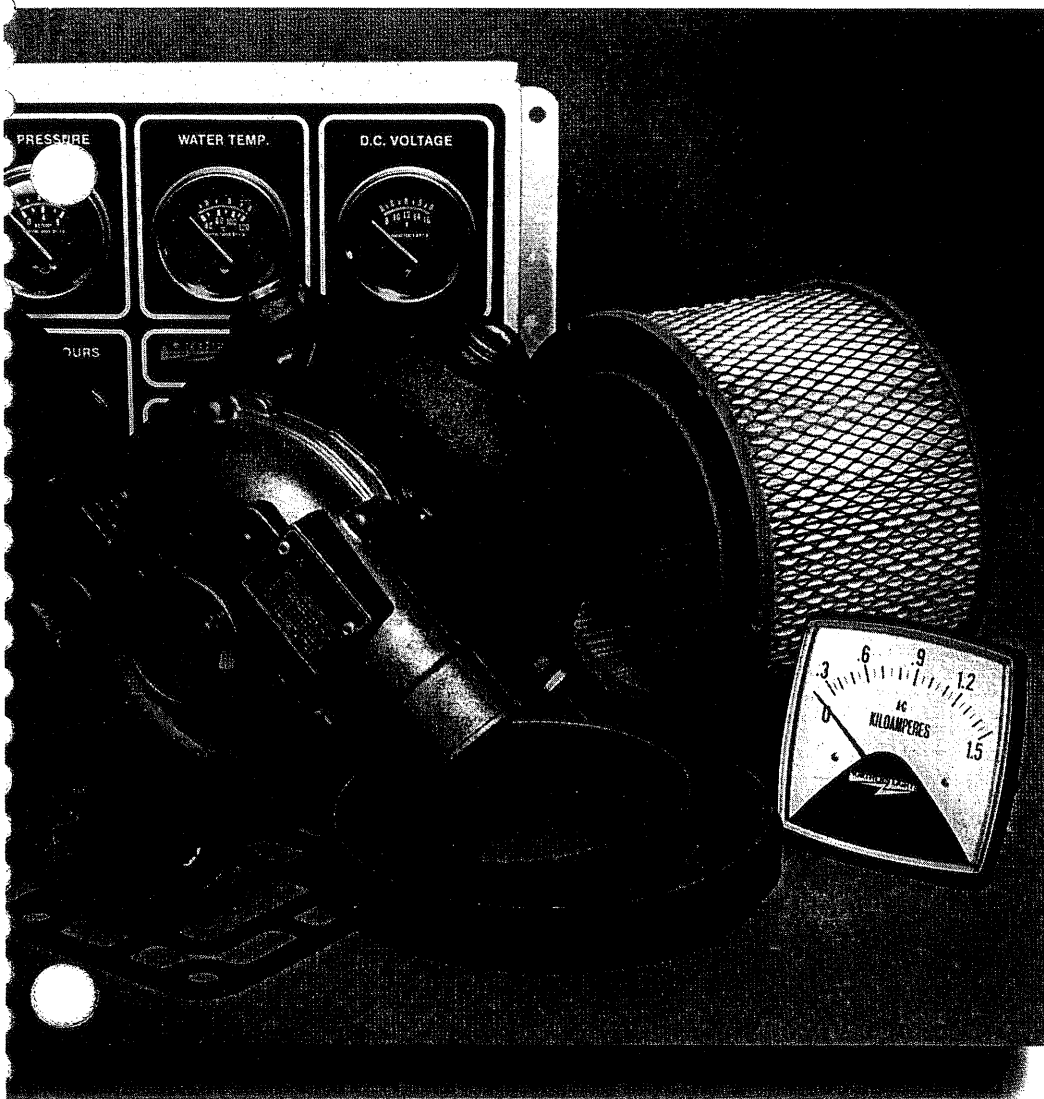


PARTS CATALOG

P488

for Model NL488



PARTS CATALOG

for Model
NL488

Please read thoroughly before attempting to use this manual:

Table of Contents	I
Model Designation & Serial Numbers	II
Reading a Parts Page	III

Table of Contents

GROUP 1 - ENGINE

Cylinder Block	0 - 1
Flywheel Housing and Oil Sump	2 - 3
Crankshaft and Piston	4 - 5
Camshaft and Driving Gear	6 - 7
Timing Gear Housing	8 - 9
Lubricating System	10 - 11
Cylinder Head and Rocker Arm Cover ...	12 - 13

GROUP 2 - INTAKE & EXHAUST

Intake Manifold and Air Cleaner	0 - 1
Exhaust Manifold and Muffler	2 - 3

GROUP 3 - COOLING SYSTEM

General Arrangement	0 - 1
Radiator and Modular Guard	2 - 3

GROUP 4 - FUEL SYSTEM

General Arrangement	0 - 1
Fuel Lines and Filter Mounting	2 - 3

GROUP 5 - ELECTRICAL SYSTEM

Engine Electrical, 12 Volt	0 - 1
Starting Motor	2 - 3
Alternator and Mounting	4 - 5
Control Panel / Relay Board	6 - 9

GROUP 6 - GASKETS

Gasket Set	0 - 1
------------------	-------

GROUP 8 - FRAME & MOUNTING

Modular Base Frames	
282 Frame Generators	0 - 1
184 Frame Generators	2 - 3

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INTRODUCTION

MODEL DESIGNATION

MODELS INCLUDED

This manual covers the operating instructions for:

NL488, which uses the Yanmar model 4TNE88-ADCL engine.

MODEL NUMBERS

Model numbers give the unit's application, block model, aspiration, and RPM:

M - NL

M - Northern Lights marine generator set

NL - Northern Lights industrial generator set

378

Model number of engine block
Cylinders Bore
4 88 mm

N

Additional letters
designate a series
within model number.

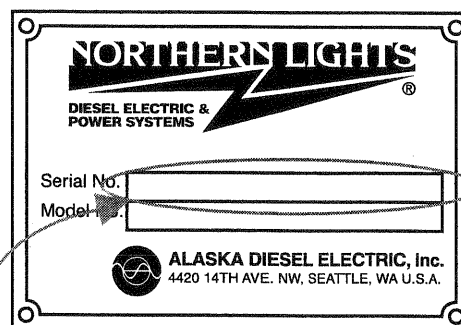
NL488

Northern Lights industrial diesel generator set
with a 488 engine.

SERIAL NUMBERS

NORTHERN LIGHTS

Your set has three serial numbers: ① an engine number stamped on the block, ② a generator plate, and ③ a generator set plate. Use the serial number on the **generator set plate** when ordering parts or in correspondence. The generator set plate is found on the service side of the generator and resembles the drawing below.



*Generator Set Serial Number
for units with PXG, PXX, BCI,
and PSL generators*

READING A PARTS PAGE

IMPORTANT:

Before selecting parts, be sure that you are choosing parts from the correct page.
 Check the model designation at the page top.
 Do not use this illustration for parts purchasing.

KEY	PART NUMBER	QTY.	DESCRIPTION	SERIALNUMBER
0	185046210	1	Alternator Assembly	-
1	185446219	1	Flywheel, complete	-
2	185446217	1	Plate, complete	-
3	185716200	1	Plate	-
4	185446218	1	Stator, complete	-
5	040126210	2	Bearing	-
6	020210010	1	Nut	-
7	027100010	1	Spring washer	-
8	026100010	1	Washer	-
9	185446220	1	Clamp	-
10	015140408	1	Screw	-
11	015140425	2	Screw	-
12	199236510	1	Collar	-

13 — P844 06/96 — 14
 11 — 5-2 — 12

REFERENCES:

- | | |
|--|--|
| 1. Grouping section title. | 7. Quantity of parts used. |
| 2. Model designation of equipment that uses parts listed on this page. | 8. Description of each component part. |
| 3. Title and description of assembly. | 9. Serial number of unit the part fits. |
| 4. Drawing numbers that correspond to key column numbers for parts identification. | 10. Assembly or kit designated by Key 0 or ••/•. |
| 5. Key column for locating parts shown on drawing. | 11. Grouping index number. |
| 6. Part number. | 12. Page number within the grouping index. |
| | 13. Manual title. |
| | 14. Page publication date. |

NOTE: ➡ Arrows always point toward the front of the engine.

Cylinder Block

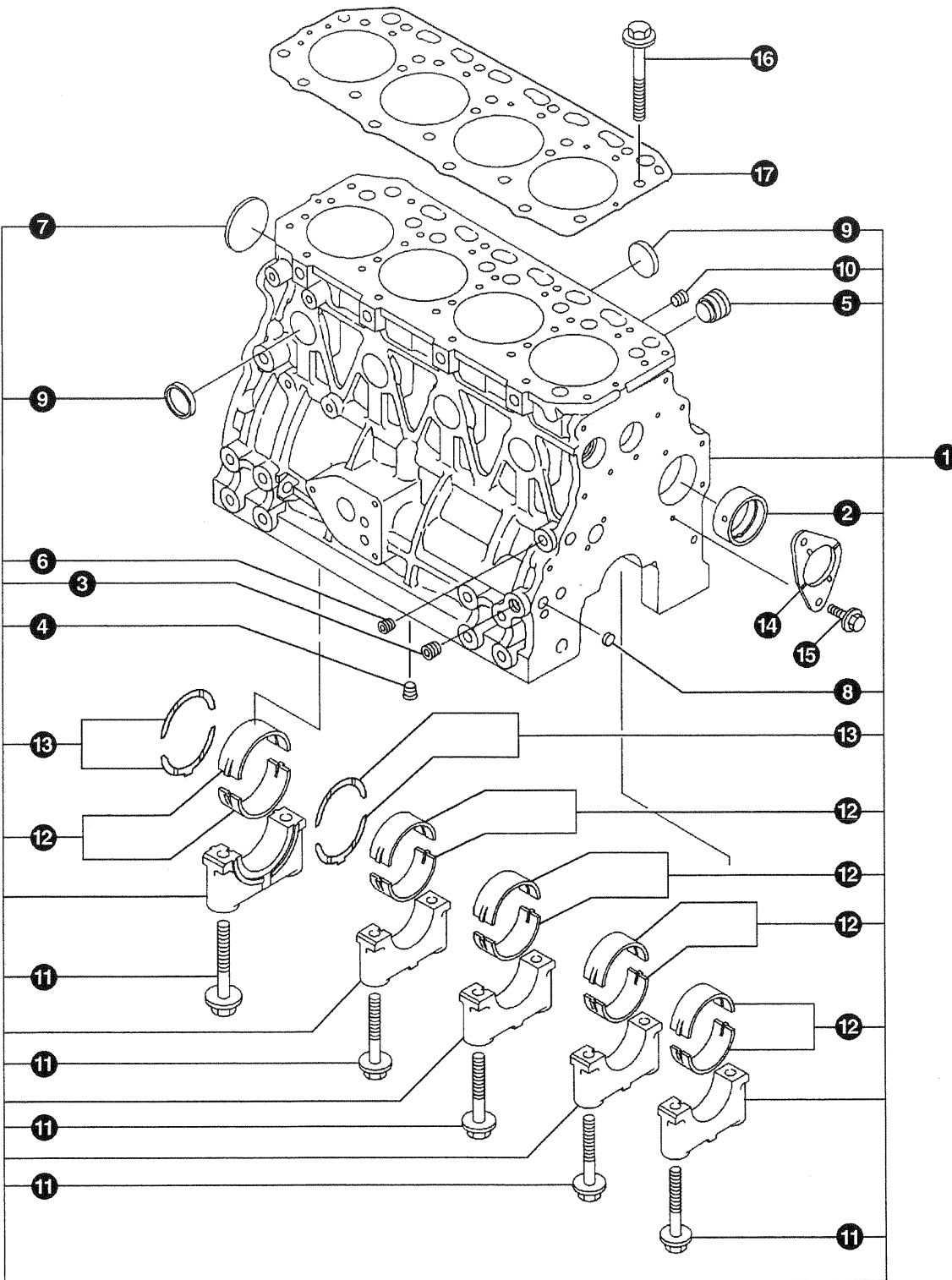


Figure 1

Cylinder Block

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	729407-01561	1	Cylinder Block Assembly	-
2	129795-02411	1	Camshaft Bush	-
3	124160-01910	2	Plug, 1/4 BSPT	-
4	124160-01910	1	Plug, 1/4 BSPT	-
5	171051-01921	1	Plug	-
6	23871-010000	1	Screw Plug, 1/8 BSPT	-
7	27231-500000	1	Plug 50 mm	-
8	27241-120000	2	Plug 12 mm	-
9	27241-300000	8	Plug 30 mm	-
10	23871-030000	1	Screw Plug, 3/8 BSPT	-
11	129150-02020	10	Bearing Cap Bolt	-
12	129001-02800	5	Main Bearing, Standard	-
	129150-02870	5	Main Bearing, Under-sized 0.25 mm	-
13	129150-02930	2	Thrust Bearing, Standard	-
	129150-02940	2	Thrust Bearing, Over-sized 0.25 mm	-
14	129150-02450	1	Thrust Plate	-
15	26106-080162	2	Bolt, M8 x 16 Plated	-
16	129150-01200	18	Cylinder Head Bolt	-
17	129407-01340	1	Cylinder Head Gasket	-

Flywheel Housing and Oil Sump

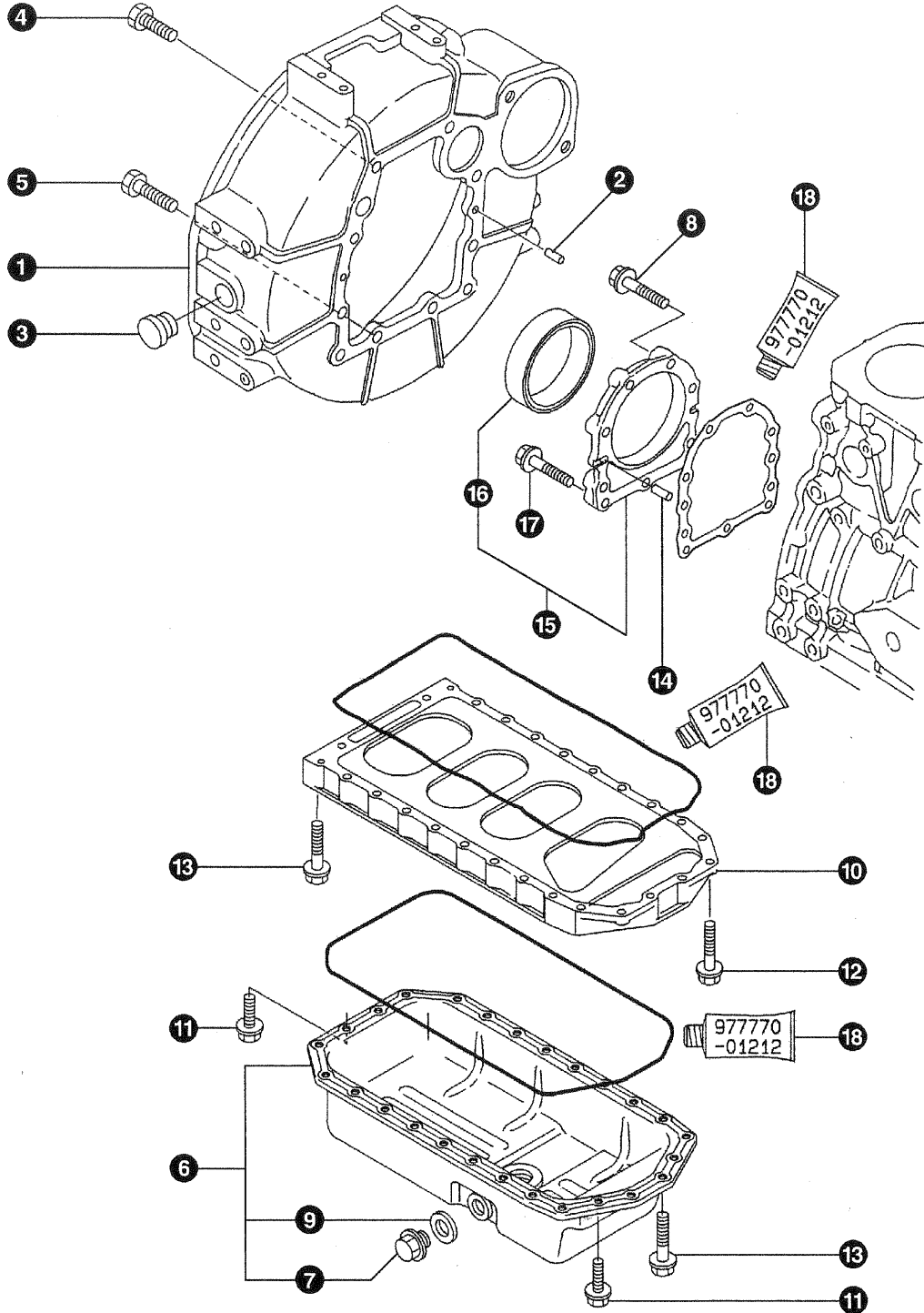


Figure 2

Flywheel Housing and Oil Sump

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	171420-01600	1	Flywheel Housing	-
2	129100-01580	2	Parallel Pin	-
3	119620-01750	1	Plug	-
4	26206-100252	6	Bolt, M10 x 25	-
5	26206-100302	4	Bolt, M10 x 30	-
6	129400-01770	1	Oil Sump Assembly (Includes Keys #7 - #8)	-
7	119640-01640	1	Drain Plug M22 x 1.5	-
	36-77300	1	Oil Drain Valve with 5/8" Hose Barb (Optional - not shown)	-
8	22190-220002	1	Seal Washer	-
9	26106-080302	6	Bolt, M8 x 30 Plated	-
10	129400-01730	1	Oil Sump Spacer	-
11	26106-080162	4	Bolt, M8 x 16 Plated	-
12	26106-080252	2	Bolt, M8 x 25 Plated	-
13	26106-080452	24	Bolt, M8 x 45 Plated	-
14	129100-01580	2	Parallel Pin 8 x 16	-
15	129100-01640	1	Rear Main Seal Retainer (Includes Key #16)	-
16	129795-01780	1	Rear Main Seal	-
17	26106-080352	3	Bolt, M8 x 35 Plated	-
18	927770-01212	**	Liquid Gasket	-

**As Required.

Crankshaft and Piston

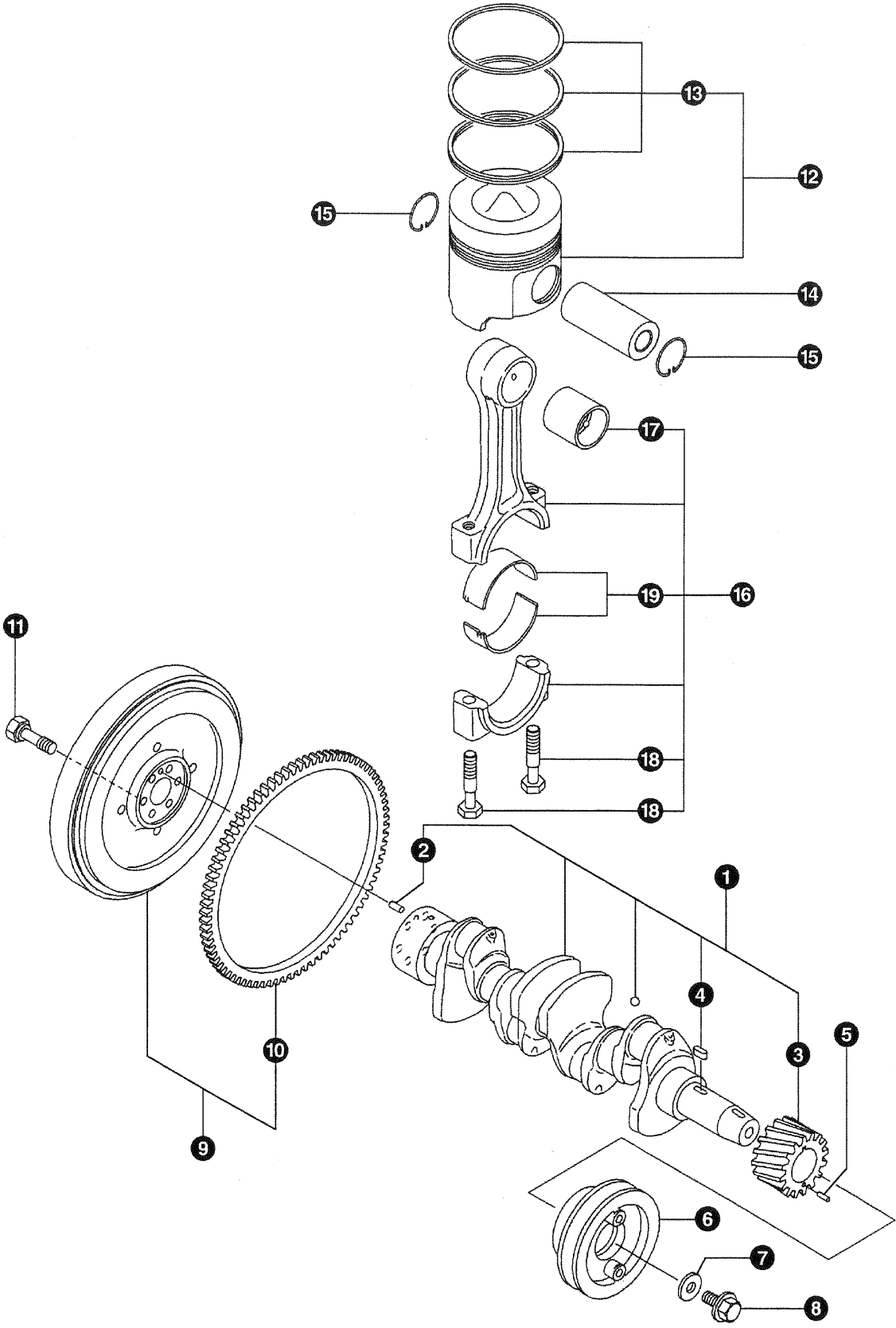


Figure 3

Crankshaft and Piston

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-21000	1	Crankshaft Assembly (Includes Keys #2 - #4)	-
2	129100-01580	1	Pin	-
3	129150-21200	1	Crankshaft Gear	-
4	22512-070140	1	Key	-
5	22351-040010	1	Spring Pin	-
6	129550-21650	1	Crankshaft Pulley	-
7	129795-21661	1	Washer	-
8	121850-21680	1	Bolt	-
9	171420-21590	1	Flywheel Assembly (Includes Key #10)	-
10	124550-21600	1	Ring Gear (127 Teeth)	-
11	121111-21501	6	Bolt	-
12	129001-22081	4	Piston with Rings, Standard	-
	129001-22901	4	Piston with Rings, Over-sized 0.25 mm	-
13	129001-22500	4	Piston Ring Set, Standard	-
	129001-22950	4	Piston Ring Set, Over-sized 0.25 mm	-
14	129202-22300	4	Piston Pin	-
15	22252-000260	8	Snap Ring	-
16	729402-23100	4	Connecting Rod Assembly (Includes Keys #17 - #18)	-
17	129100-23910	4	Piston Pin Bush	-
18	121550-23200	8	Connecting Rod Bolt	-
19	129150-23600	4	Bearing, Standard	-
	129150-23610	4	Bearing, Under-sized 0.25 mm	-

Camshaft and Driving Gear

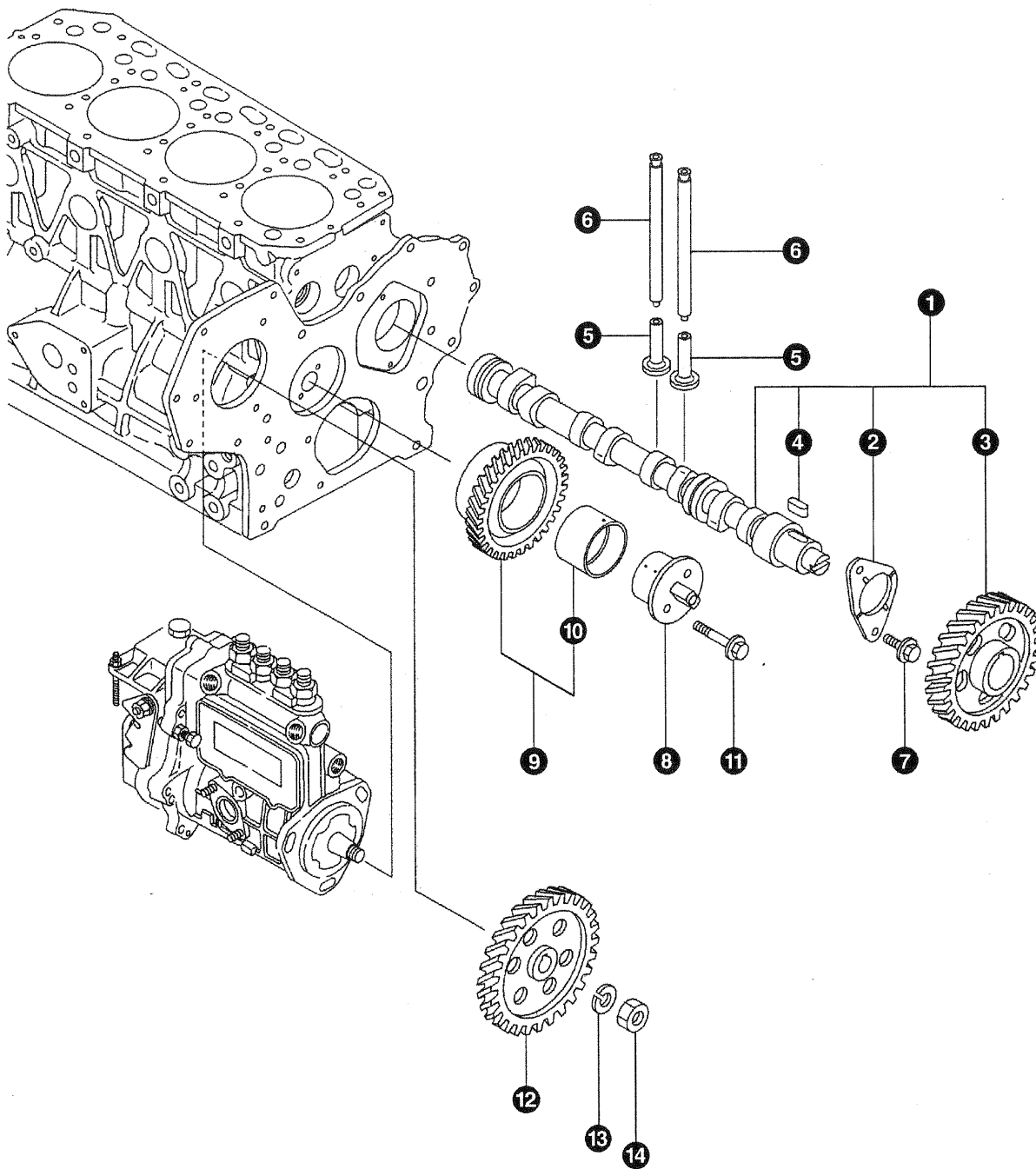


Figure 4

Camshaft and Driving Gear

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	729402-14580	1	Camshaft Assembly (Includes Keys #4 - #6)	-
2	129150-02450	1	Thrust Bearing	-
3	129150-14101	1	Camshaft Gear	-
4	22512-070140	1	Key, 7 x 14	-
5	129150-14200	8	Tappet	-
6	129150-14400	8	Push Rod	-
7	26106-080162	2	Bolt, M8 x 16	-
8	129100-25061	1	Idle Gear Shaft	-
9	129150-25101	1	Idle Gear (Includes Key #10)	-
10	129150-25920	1	Bushing	-
11	26106-080452	2	Bolt, M8 x 45 Plated	-
12	129150-25900	1	Gear, Injection Pump Drive	-
13	22217-120000	1	Spring Washer, M12	-
14	26716-120002	1	Nut, M12	-

Timing Gear Housing

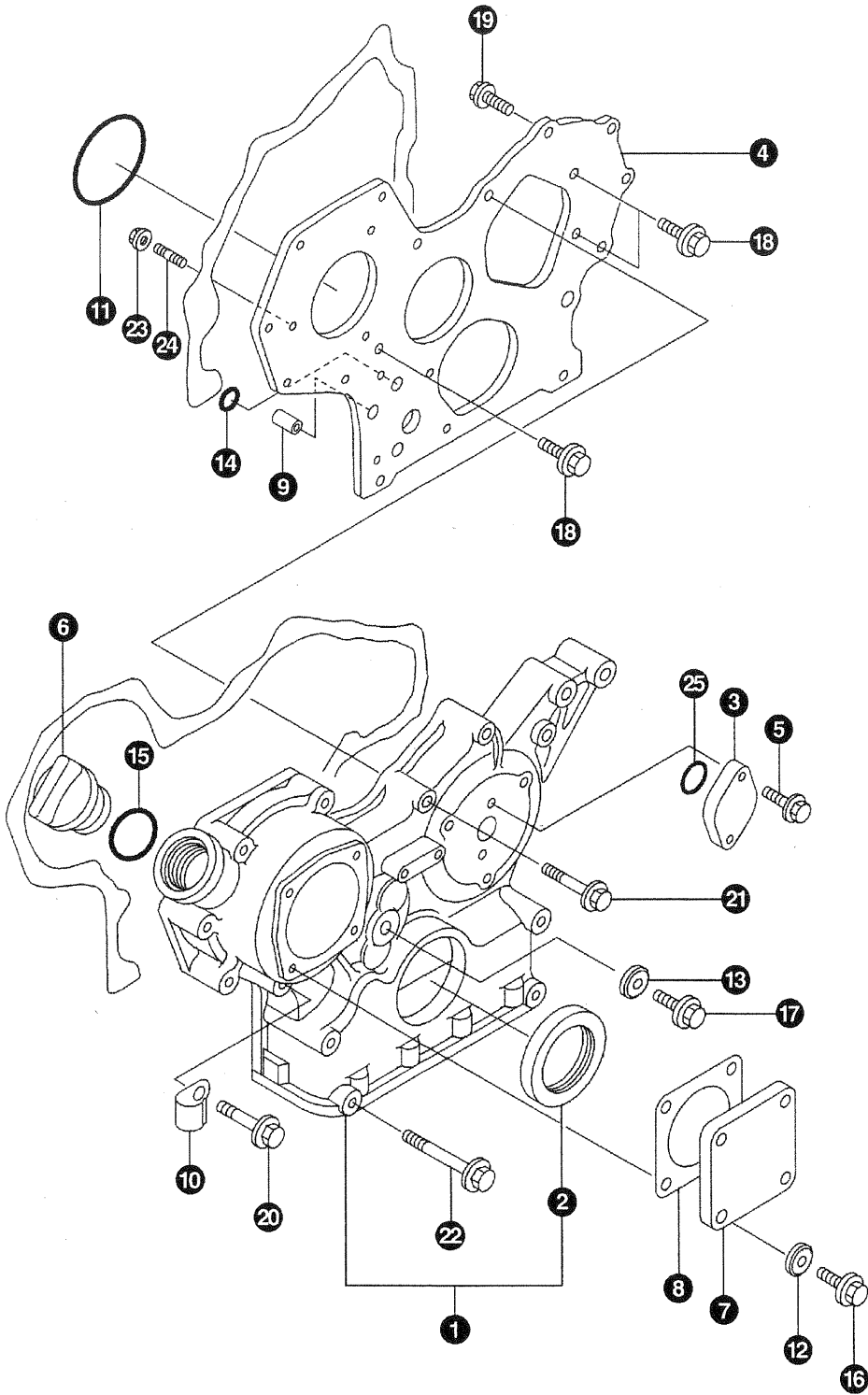


Figure 5

Timing Gear Housing

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	719810-01500	1	Timing Cover Assembly (Includes Key #2)	-
2	129795-01800	1	Oil Seal	-
3	121023-01550	1	Cover	-
4	129400-01520	1	Housing Flange	-
5	26106-060122	2	Bolt, M6 x 12 Plated	-
6	124160-01751	1	Oil Cap	-
7	124240-01871	1	Cover	-
8	124240-01883	1	Gasket	-
9	129795-01950	2	Knock Pipe	-
10	129150-03100	1	Retainer	-
11	121850-51960	1	O-Ring	-
12	22190-080002	4	Seal Washer	-
13	22190-080002	1	Seal Washer 8S	-
14	24311-000160	2	O-Ring	-
15	24311-000320	1	O-Ring	-
16	26106-080122	4	Bolt, M8 x 12 Plated	-
17	26106-080162	1	Bolt, M8 x 16 Plated	-
18	26106-080162	3	Bolt, M8 x 16 Plated	-
19	26106-080202	2	Bolt, M8 x 20 Plated	-
20	26106-080452	6	Bolt, M8 x 45 Plated	-
21	26106-080552	3	Bolt, M8 x 55 Plated	-
22	26106-080852	4	Bolt, M8 x 85 Plated	-
23	26366-080002	3	Nut, M8	-
24	121450-01560	3	Stud, M8 x 22	-
25	24341-000240	1	O-Ring	-
26	977770-01212	**	Liquid Gasket	-

**As Required.

Lubricating System

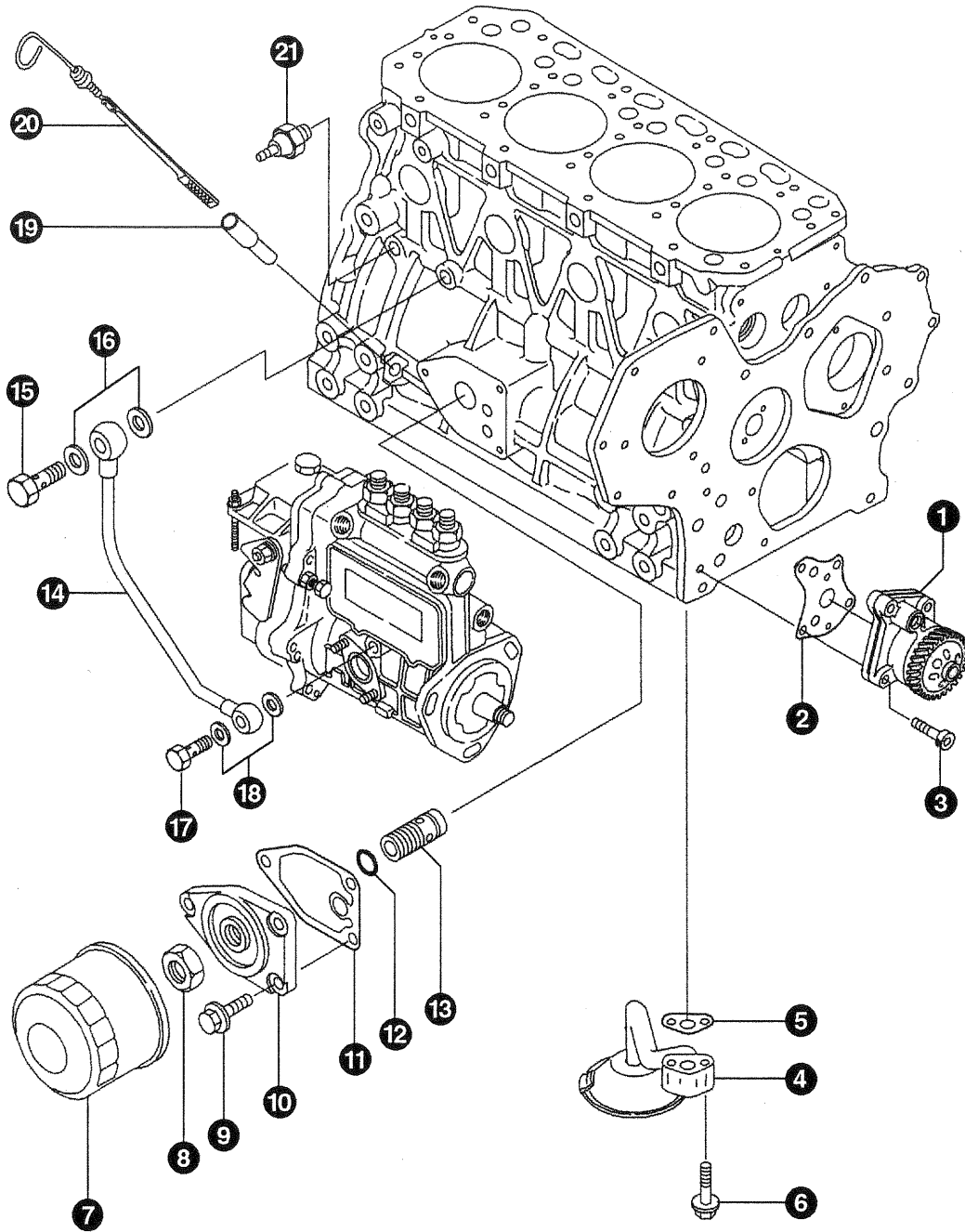


Figure 6

Lubricating System

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-32000	1	Oil Pump Assembly (Parts not available separately)	-
2	129150-32020	1	Gasket	-
3	26450-060252	4	Bolt, M6 x 25	-
4	129436-35090	1	Oil Pipe	-
5	129150-35041	1	Gasket	-
6	26106-080352	2	Bolt, M8 x 35 Plated	-
7	24-07301	1	Filter	-
8	129150-35350	1	Nut	-
9	26106-080202	3	Bolt, M8 x 20 Plated	-
10	129150-35101	1	Filter Adapter Plate	-
11	129150-35111	1	Gasket	-
12	24311-000160	1	O-Ring	-
13	119865-35300	1	Oil Filter Adapter/Pressure Relief Valve	-
14	129550-39450	1	Lubricating Oil Pipe Assembly	-
15	124160-39140	1	Banjo Bolt	-
16	23414-100000	2	Gasket	-
17	124550-59820	1	Banjo Bolt	-
18	22190-080002	2	Seal Washer	-
19	121520-34810	1	Dipstick Tube	-
20	171420-34820	1	Dipstick	-
21	124160-39450	1	Oil Pressure Switch (See Electrical System)	-

Cylinder Head and Rocker Arm Cover

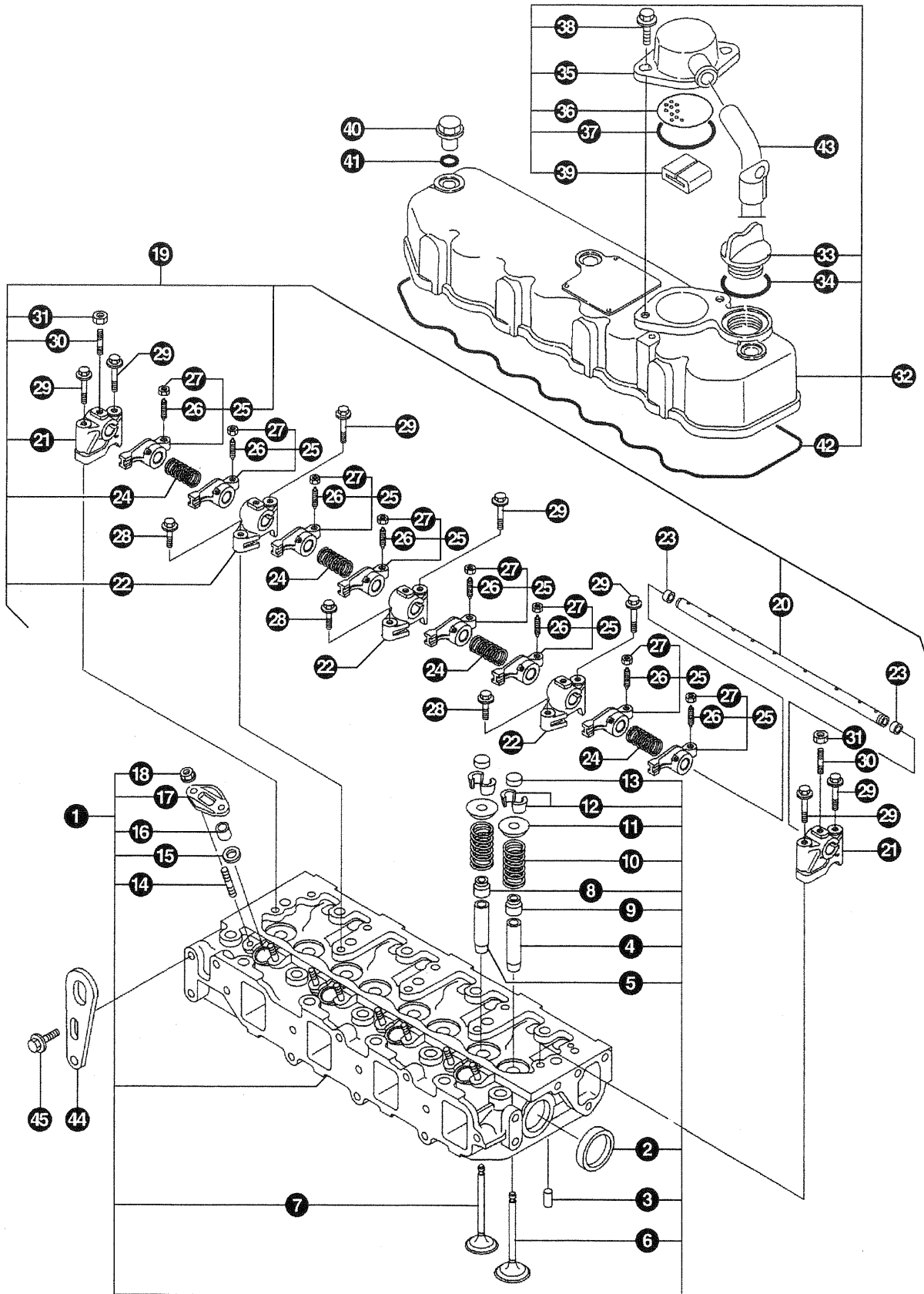


Figure 7

Cylinder Head and Rocker Arm Cover

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-11700	1	Cylinder Head Assembly (Includes Keys #2 - #18)	-
2	27241-400000	2	Plug 40 mm	-
3	22351-060012	2	Spring Pin, 6 x 12	-
4	120130-11860	4	Valve Guide, Intake	-
5	129150-11810	4	Valve Guide, Exhaust	-
6	129100-11100	4	Intake Valve	-
7	129100-11110	4	Exhaust Valve	-
8	121400-11340	4	Valve Stem Seal	-
9	124460-11340	4	Valve Stem Seal	-
10	129795-11120	8	Valve Spring	-
11	129795-11180	8	Spring Retainer	-
12	27310-080000	8	Keeper	-
13	129150-11370	8	Valve Cap	-
14	26216-060202	8	Stud, M6 x 20 Plated	-
15	119625-11880	4	Nozzle Seat	-
16	119625-11871	4	Nozzle Protector	-
17	119625-11900	4	Retainer	-
18	26366-060002	8	Nut, M6	-
19	129500-11240	1	Rocker Arm Shaft Assembly (Includes Keys #20 - #27)	-
20	129550-11290	1	Rocker Arm Shaft (Includes Key #23)	-
21	129155-11260	2	Rocker Arm Support	-
22	129155-11270	3	Rocker Arm Support	-
23	27241-100000	2	Plug	-
24	129150-11280	4	Spring	-
25	129100-11650	8	Rocker Arm Assembly (Includes Keys #26 - #27)	-
26	129150-11230	8	Valve Screw	-
27	129150-11750	8	Nut, M8 x 1.0	-
28	26106-080252	3	Bolt, M8 x 25 Plated	-
29	26106-080502	7	Bolt, M8 x 50 Plated	-
30	26226-080182	3	Stud, M8 x 18 Plated	-
31	26756-080002	3	Lock Nut, M8 Plated	-
32	129400-11350	1	Rocker Arm Cover Assembly (Includes Keys #33 - #39 & #42 - #43)	-
33	124160-01751	1	Lubricating Oil Supply Cap	-
34	24311-000320	1	O-Ring	-
35	129150-03020	1	Breather Cover	-
36	129150-03080	1	Shelter Plate	-
37	24341-000500	1	O-Ring, 1A S-50.0	-
38	26106-080162	2	Bolt, M8 x 16 Plated	-
39	129150-03070	1	Breather Baffle	-
40	124160-11360	3	Knob	-
41	24311-000120	3	O-Ring	-
42	129550-11310	1	Gasket	-
43	129150-03090	1	Breather Hose	-
44	124736-07900	2	Lifting Eye	-
45	26106-080142	4	Bolt, M8 x 14 Plated	-

Intake Manifold and Air Cleaner

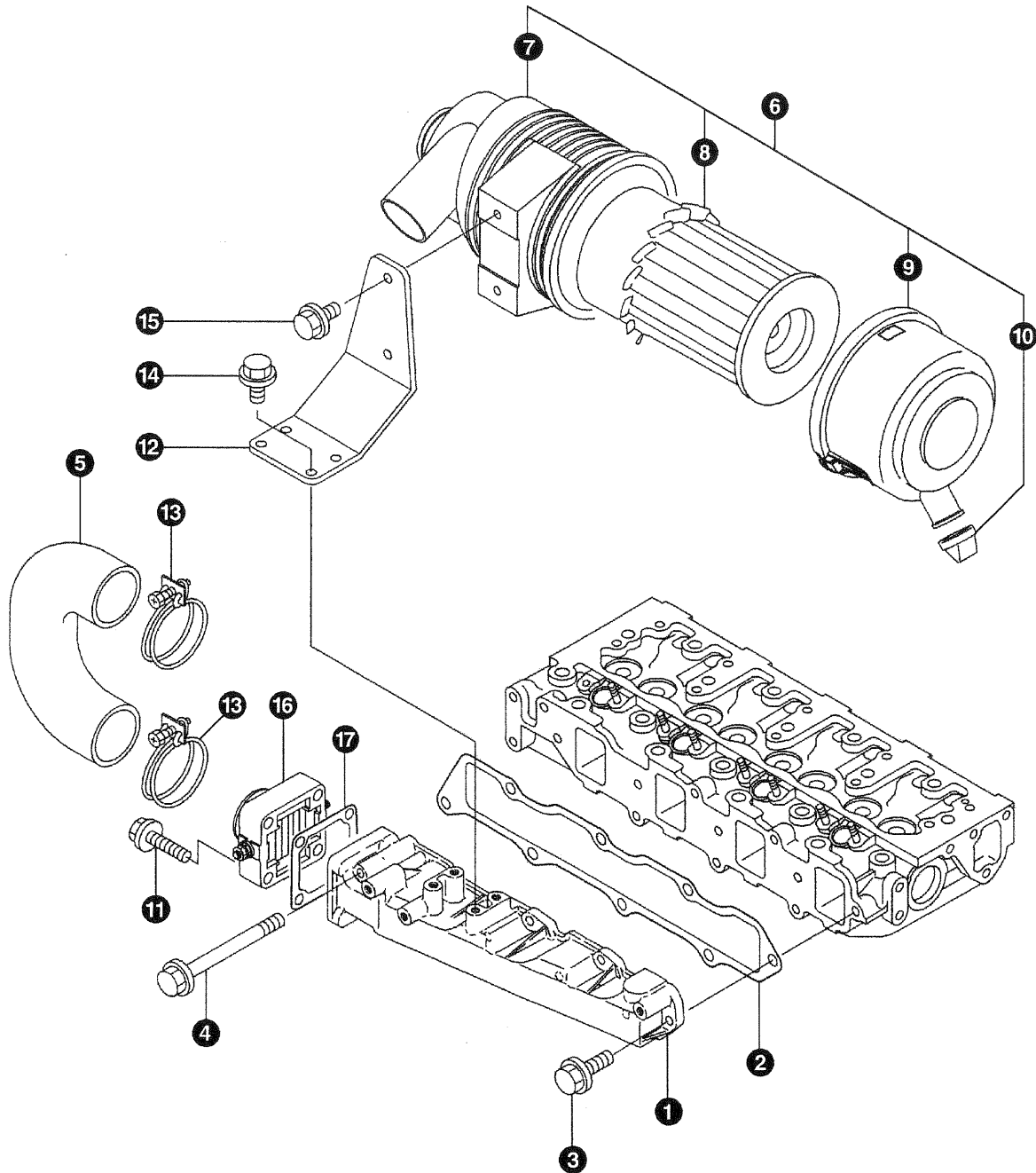


Figure 8

Intake Manifold and Air Filter

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-12100	1	Intake Manifold	-
2	129407-12110	1	Gasket	-
3	26106-080202	6	Bolt, M8 x 20 Plated	-
4	26106-080802	1	Bolt, M8 x 80 Plated	-
5	129619-12210	1	Hose	-
6	129619-12500	1	Air Filter Assembly (Includes Keys #7 - #10)	-
7	129619-12520	1	Housing	-
8	24-27302	1	Element	-
9	129619-12530	1	Cover Assembly	-
10	129619-12540	1	Valve	-
11	26106-080352	4	Bolt, M8 x 35 Plated	-
12	129619-12560	1	Bracket	-
13	23000-060000	2	Hose Clamp	-
14	26106-080182	4	Bolt, M8 x 18 Plated	-
15	26106-080182	2	Bolt, M8 x 18 Plated	-
16	129120-77501	1	Air Heater	-
17	129150-77511	1	Gasket	-

Exhaust Manifold and Muffler

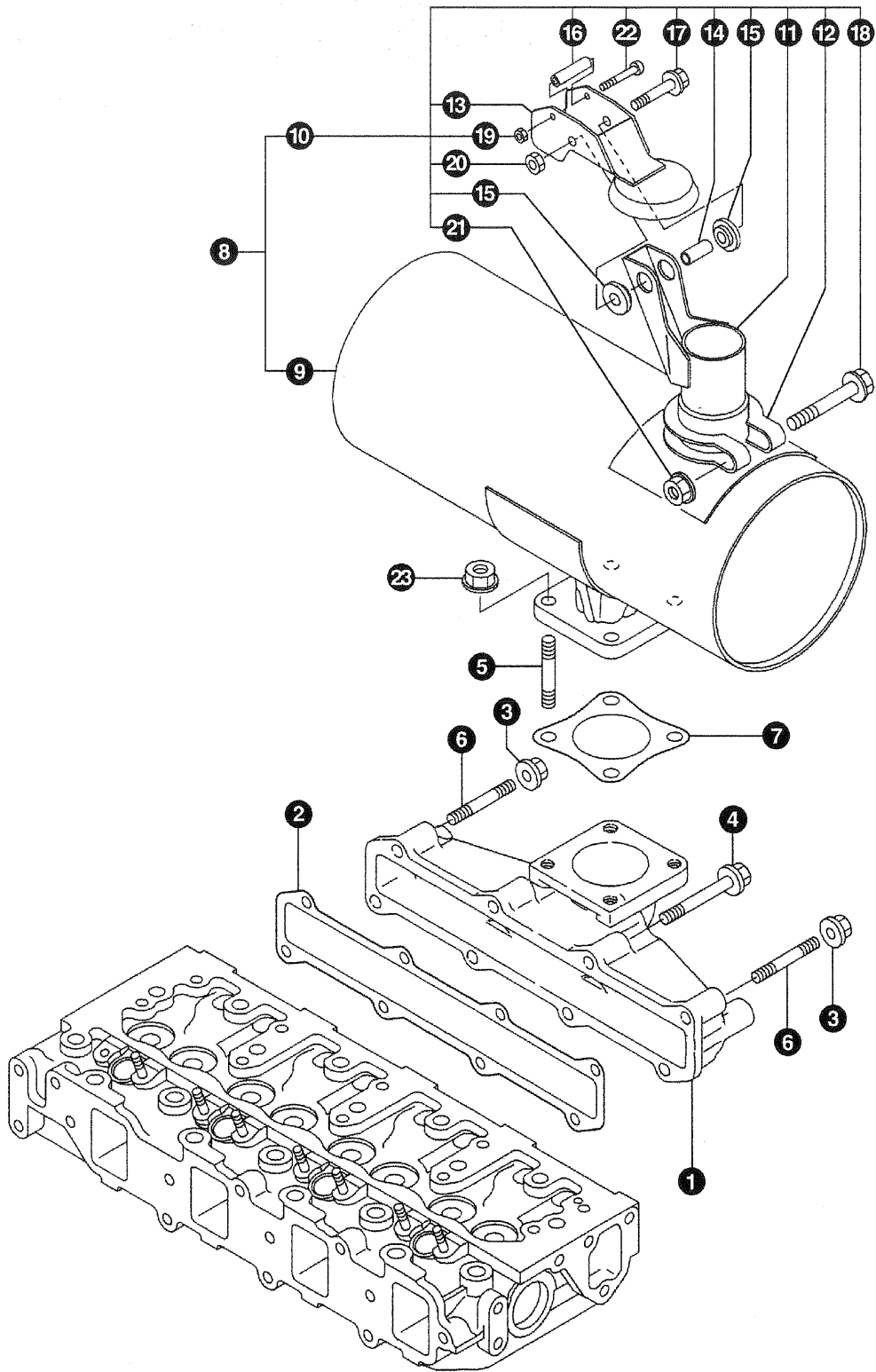


Figure 9

Exhaust Manifold and Muffler

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-13100	1	Exhaust Manifold	-
2	129407-13110	1	Gasket	-
3	194990-22050	2	Nut with Washer 8	-
4	26106-080402	6	Bolt, M8 x 40 Plated	-
5	26216-080222	4	Stud, M8 x 22 Plated	-
6	26216-080402	2	Stud, M8 x 40 Plated	-
7	129400-13201	1	Gasket	-
8	129420-13501	1	Silencer	-
9	129420-13530	1	Muffler Body Assembly	-
10	129420-13540	1	Tail Pipe Assembly	-
11	129420-13550	1	Tail Pipe	-
12	121850-13580	1	Clamp	-
13	128300-13640	1	Rain Cap	-
14	121855-13821	1	Spacer (A)	-
15	121855-13830	2	Spacer (B)	-
16	123500-13840	1	Spacer (C)	-
17	26106-060402	1	Bolt, M6 x 40 Plated	-
18	26106-100602	1	Bolt, M10 x 60 Plated	-
19	26347-040002	1	U-Nut, M4	-
20	26347-060002	1	U-Nut, 6	-
21	26366-100002	1	Nut, M10	-
22	26557-040352	1	Screw, M4 x 35	-
23	194990-22050	4	Nut with Washer 8	-

Cooling System - General Arrangement

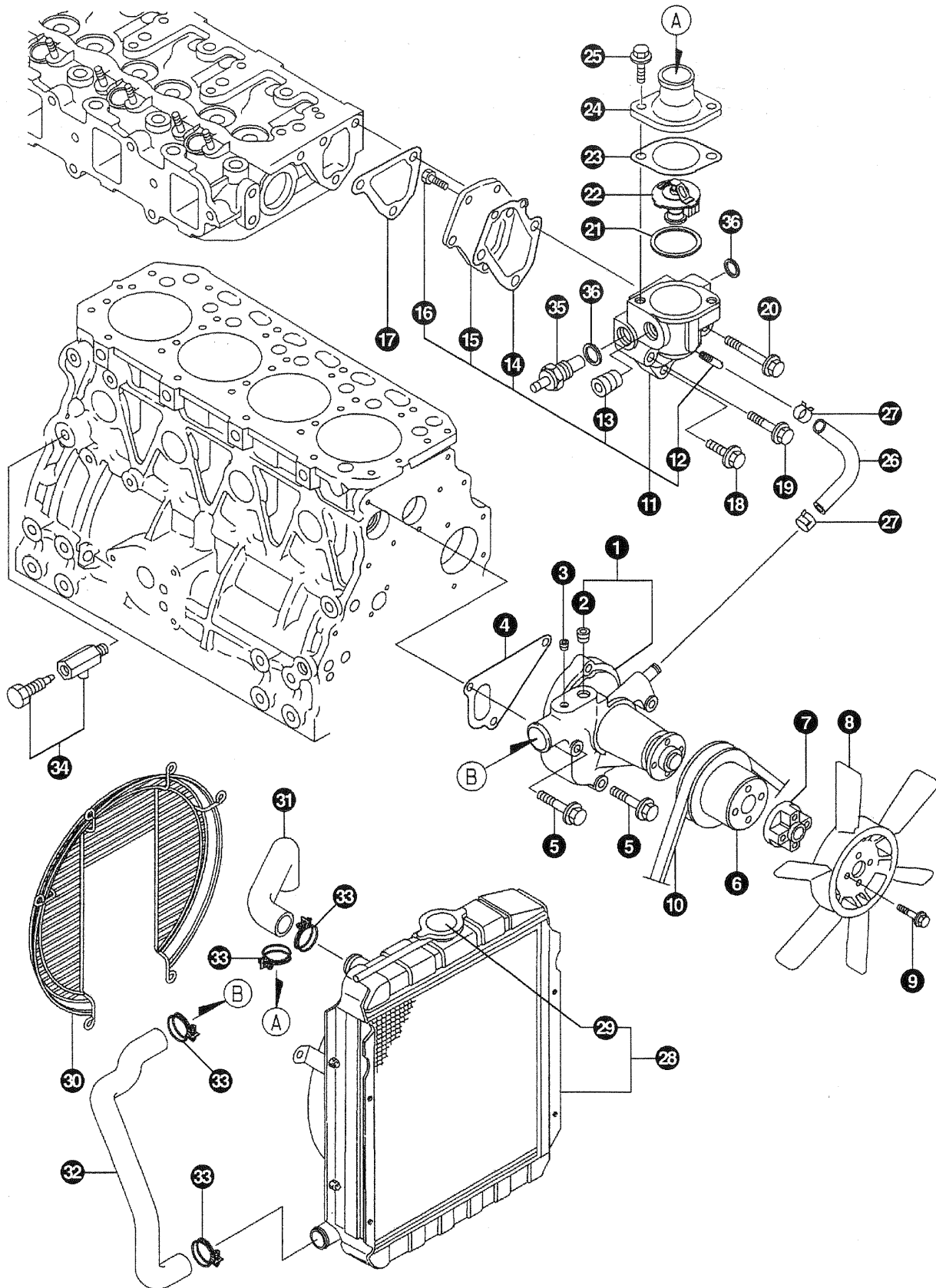


Figure 10

Cooling System - General Arrangement

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129100-42002	1	Coolant Pump (Parts not available separately)	-
2	23871-030000	1	Screw Plug, 3/8 BPST	-
3	121850-11860	1	Plug, 1/4 BPST	-
4	129100-42020	1	Gasket	-
5	26106-080602	3	Bolt, M8 x 60 Plated	-
6	129155-42350	1	Pulley	-
7	121267-44760	1	Spacer	-
8	129403-44740	1	Cooling Fan (D = 370)	-
9	26016-060302	4	Bolt, M6 x 30 Plated	-
10	124732-42290	1	Drive Belt	-
11	129100-49800	1	Thermostat Housing	-
12	124770-11770	1	Hose Nipple	-
13	23871-030000	1	Screw Plug, 3/8 BPST	-
14	129100-49820	1	Cover Gasket	-
15	129100-49830	1	Thermostat Housing Cover	-
16	26116-060162	2	Bolt, M6 x 16 Plated	-
17	129100-49840	1	Gasket	-
18	26106-080252	1	Bolt, M8 x 25 Plated	-
19	26106-080502	1	Bolt, M8 x 50 Plated	-
20	26106-080602	1	Bolt, M8 x 60 Plated	-
21	129150-49811	1	Gasket	-
22	129155-49800	1	Thermostat	-
23	129795-49551	1	Gasket	-
24	129350-49530	1	Thermostat Cover	-
25	26106-080202	2	Bolt, M8 x 20 Plated	-
26	129132-49050	1	Hose	-
27	23000-016000	2	Hose Clamp	-
28	129420-44500	1	Radiator	-
29	123682-44210	1	Cap	-
30	129420-44560	1	Fan Guard	-
31	171420-49010	1	Hose, Radiator Inlet	-
32	171420-49020	1	Hose, Radiator Outlet	-
33	19-00016	4	Hose Clamp #16	-
34	119620-49290	1	Drain Cock Assembly	-
35	121250-44901	1	Thermostat Switch (110° C) (See Electrical System)	-
36	124465-44950	2	Gasket 16	-

Radiator and Modular Guard

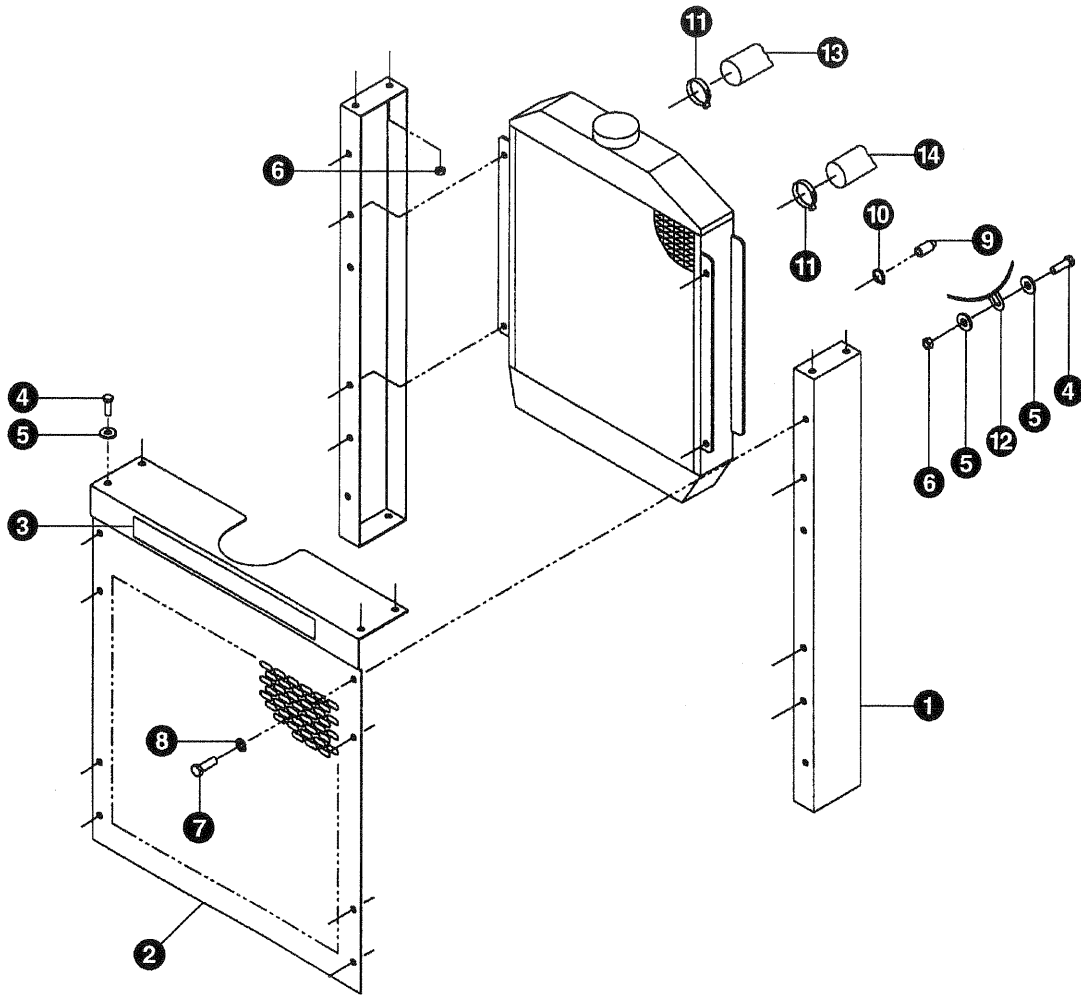


Figure 11: C-3086

Radiator and Modular Guard

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-17307	2	Side Panel	-
2	39-17311	1	Grill	-
3	00-70075	1	Label, "Northern Lights"	-
4	12-00711	16	Capscrew, Hex Head M8 x 1.25 x 20 mm	-
5	15-00701	32	Flat Washer M8	-
6	14-04802	16	Hex Nut, Nylock M8 x 1.25	-
7	12-00751	4	Capscrew, Hex Head M8 x 1.25 x 16 mm	-
8	15-00702	4	Lock Washer, Helical M8	-
9	20-17301	1	Radiator Drain Cap, 1/4" ID	-
10	19-50001	1	Speedy Clamp, Size C	-
11	19-00016	4	Hose Clamp #16	-
12	129420-44560	1	Fan Guard	-
13	171420-49010	1	Hose, Radiator Inlet	-
14	171420-49020	1	Hose, Radiator Outlet	-

Fuel System - General Arrangement

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	729618-51310	1	Injection Pump Assembly	-
2	129100-52100	1	Fuel Feed Pump	-
3	129155-52020	1	Gasket	-
4	129155-51020	2	Stud	-
5	15-01132	2	Lock Washer M6	-
6	14-01131	2	Hex Nut M6 x 1.0	-
7	119653-77950	1	Stop Solenoid 12 Volt (Synchrostart)	-
	119285-77950	1	Stop Solenoid 12 Volt (Yanmar)	-
	119285-77910	1	Harness Connection (Yanmar Solenoid)	-
8	24341-000280	1	O-Ring	-
9	26106-060142	2	Bolt	-
10	129408-59810	1	Fuel Injection Pipe	-
11	129408-59820	1	Fuel Injection Pipe	-
12	129408-59830	1	Fuel Injection Pipe	-
13	129408-59840	1	Fuel Injection Pipe	-
14	119305-59120	2	Retainer	-
15	129150-59131	2	Bolt, M4 x 14 Hex Socket	-
16	719810-53100	4	Fuel Injector (Includes Keys #17 - #24)	-
17	129100-53100	4	Nozzle Holder Assembly	-
18	114250-53080	4	Nozzle Case Nut	-
19	119810-53000	4	Fuel Injection Nozzle Assembly	-
20	114250-53140	4	Stop Plate	-
21	114250-53210	8	Pin	-
22	114250-53130	4	Nozzle Spring Seat	-
23	114250-53120	4	Nozzle Spring	-
24	114250-53400	4	Shim Pack	-
25	103854-39140	1	Banjo Bolt	-
26	101304-59020	1	Pipe Joint 12	-
27	104200-59170	2	Gasket	-
28	129100-59951	1	Check Valve Assembly	-
29	119840-59570	1	Joint	-
30	23414-120000	2	Gasket	-
31	119840-59560	1	Fuel Return Pipe	-
32	121250-59550	3	Fuel Pipe	-
33	124066-59100	9	Clamp 8	-
34	129150-59580	1	Cap	-

Fuel Lines and Filter Mounting

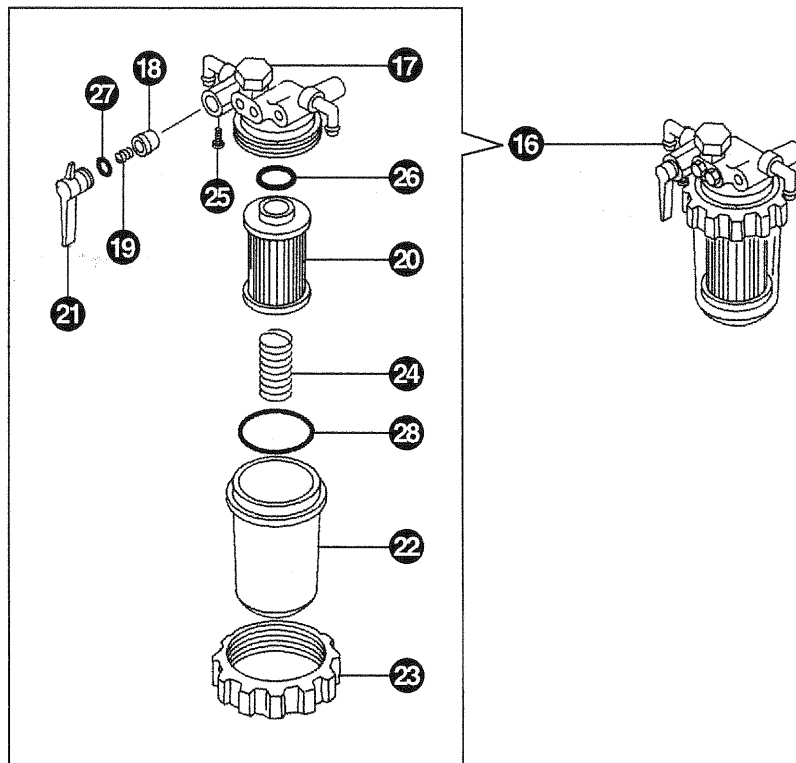


Figure 13

Fuel Lines and Filter Mounting

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	10-51099	1	Manifold	-
2	12-01131	2	Capscrew, Hex Head M6 x 1.0 x 20 mm	-
3	15-01132	2	Lock Washer, Helical M6	-
4	14-04803	1	Hex Nut, Nylock M6 x 1.0	-
5	21-51098	2	St. El. 90, Brs. 1/4 NPT x 1/4 NPT	-
6	21-52016	2	M. Conn. Brs. 1/4 NPT x 5/16 NPT	-
7	41-01012	74"	Hose 5/16" ID	-
11	19-50002	8	Speedy Clamp, Size D	-
12	12-00717	1	Capscrew, Hex Head M8 x 1.25 x 60 mm	-
13	15-00701	1	Flat Washer M8	-
14	15-00702	1	Lock Washer, Helical M8	-
15	21-00046	2	Plug, Plastic 1/4 NPT	-
16	24-57300	1	Fuel Filter Assembly	-
17	21-50027	1	Plug, M12 x 1.5	-
18	104200-55321	1	Taper Valve	-
19	104200-55330	1	Taper Valve Spring	-
20	129100-55650	1	Fuel Element	-
21	129100-55670	1	Lever	-
22	129100-55680	1	Strainer Cup	-
23	129100-55690	1	Retaining Ring	-
24	129100-55700	1	Spring	-
25	104200-55750	1	Screw, M4	-
26	24311-000160	1	O-Ring	-
27	24311-240100	1	O-Ring	-
28	24321-000650	1	O-Ring	-

Engine Electrical, 12 Volt

**DRAWING
NOT YET
AVAILABLE**

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Engine Electrical, 12 Volt

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	22-47302	1	Wire Harness Assembly (Includes Key #11)	-
2	21-00139	1	Adapter, 1/8 BSPT x 1/8 NPT	-
3	21-05400	1	Street Tee, 1/8 NPT	-
4	22-41016	1	Pressure Sender 0 - 80 PSI Standard Ground	-
5	121460-39450	1	Pressure Switch	-
6	22-45201	1	Temperature Sender 250°F Standard Ground	-
7	121250-44901	1	Temperature Switch 110°C	-
8	15-01001	2	Sealing Washer	-
9	129407-77010	1	Starter (See parts detail)	-
10	119620-77201	1	Alternator (See parts detail)	-
11	22-97310	1	Control Panel / Relay Board Assembly (Units with 280-Series Generators - see parts detail)	-
12	22-98405	1	Control Panel / Relay Board Assembly (Units with 184-Series Generators - see parts detail)	-

Starting Motor

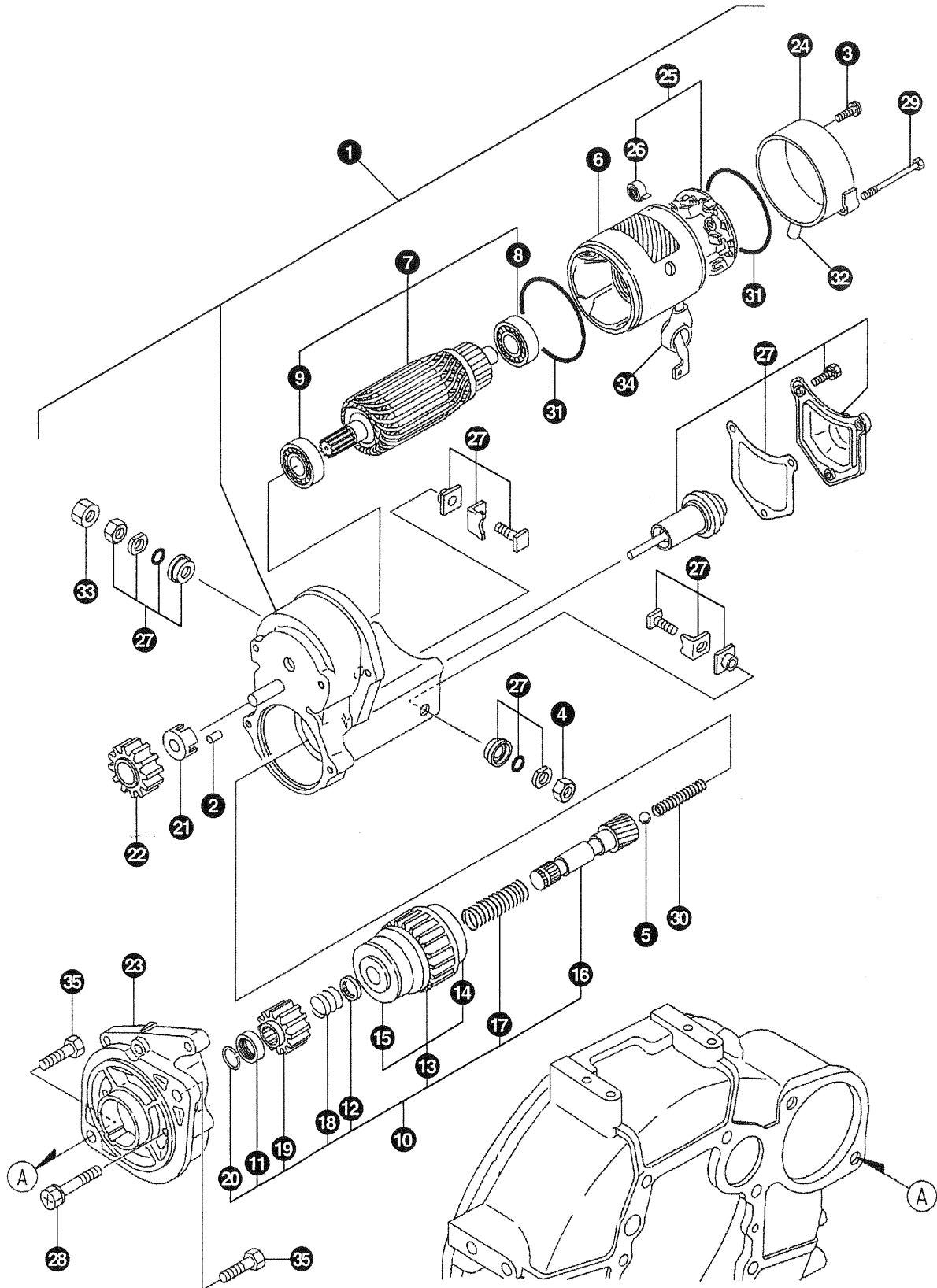


Figure 15

Starting Motor

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	129407-77010	1	Starter (Includes all Keys)	-
2	X0283060061	5	Roller	-
3	X0289030010	2	Screw	-
4	X9490561370	1	Nut	-
5	X9491200240	1	Ball	-
6	129407-77210	1	Yoke	-
7	129407-77220	1	Armature Assembly	-
8	129129-77230	1	Bearing	-
9	129129-77240	1	Bearing	-
10	129407-77250	1	Starter Kit	-
11	X0280210230	1	Nut	-
12	X0283270140	1	Retainer	-
13	129407-77390	1	Starter Clutch	-
14	129129-77440	1	Bearing	-
15	129129-77450	1	Bearing	-
16	129129-77400	1	Shaft	-
17	129129-77410	1	Coil Spring	-
18	129407-77410	1	Spring	-
19	129129-77420	1	Pinion	-
20	129129-77430	1	Ring	-
21	129129-77260	1	Retainer	-
22	129129-77270	1	Pinion	-
23	129407-77280	1	Housing	-
24	129129-77290	1	Frame	-
25	129407-77300	1	Holder Assembly	-
26	X9491730461	4	Spring	-
27	129407-77310	1	Switch Assembly	-
28	129129-77320	2	Bolt	-
29	129407-77330	2	Bolt with Washer	-
30	129129-77340	1	Spring	-
31	129129-77350	2	O-Ring	-
32	129129-77361	1	Drain Bush	-
33	129129-77370	1	Nut	-
34	129129-77380	1	Cap	-
35	26116-120252	2	Bolt, M12 x 25 Plated	-

Alternator and Mounting

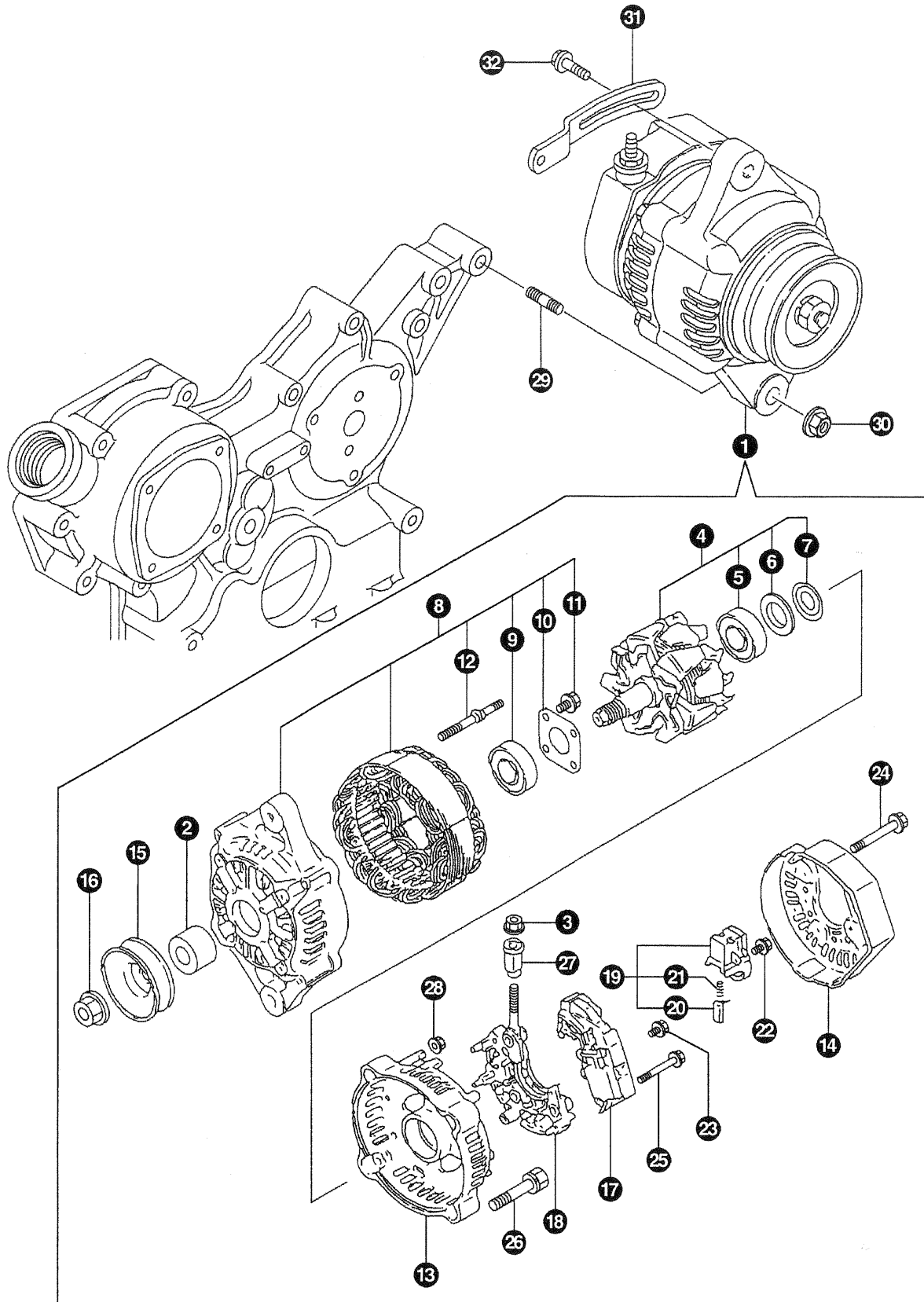


Figure 16

Alternator and Mounting

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	119620-77201	1	Generator	-
2	119620-77490	1	Collar	-
3	X9490561001	1	Nut	-
4	119620-77380	1	Rotor Assembly	-
5	119620-79240	1	Ball Bearing	-
6	119620-79250	1	Bearing Cover	-
7	119620-79360	1	Thrust Washer	-
8	119620-77421	1	Drive Flame Assembly	-
9	119620-79200	1	Ball Bearing	-
10	119620-79210	1	Plate	-
11	119620-79220	4	Screw	-
12	119620-79230	2	Stud Bolt	-
13	119620-77440	1	Rear Flame Assembly	-
14	119620-77450	1	Cover	-
15	119620-77461	1	Pulley	-
16	119620-77471	1	Nut	-
17	119620-77710	1	Regulator Assembly	-
18	119620-79260	1	Holder	-
19	119620-79270	1	Brush Holder	-
20	119620-77480	2	Brush Assembly	-
21	119620-79280	2	Spring	-
22	119620-79290	6	Screw	-
23	119620-79300	1	Screw	-
24	119620-79310	3	Bolt	-
25	119620-79320	2	Screw with Washer	-
26	119620-79330	2	Bolt	-
27	119620-79340	1	Insulation Bush	-
28	119620-79350	2	Nut	-
29	121450-01570	1	Stud	-
30	26366-100002	1	Nut, M10	-
31	129410-77330	1	Tensioning Arm	-
32	26014-080252	1	Bolt, M8 x 25	-

Control Panel / Relay Board Assembly - 12 Volt

Units with 282 Frame Generators

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AVAILABLE**

Control Panel / Relay Board Assembly - 12 Volt

Units with 282 Frame Generators

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
••	22-97310	1	Control Panel / Relay Board Assembly, 12 Volt (Includes all Keys)	-
1	28-90007	1	Plate	-
2	00-40013	1	Plate	-
3	22-90007	1	Rocker Switch	-
4	22-90008	1	Rocker Switch	-
5	22-90009	1	Hour Meter	-
6	12-00093	4	Screw, Round Head Phillips #6-32 x 1/2"	-
7	15-00009	4	Lock Washer, Helical #6	-
8	14-00002	4	Hex Nut #6-32	-
9	22-41032	4	Relay Base	-
10	12-00004	4	Screw, BH Slotted #8-32 x 3/8"	-
11	15-00001	2	Flat Washer #8	-
12	14-00000	2	Hex Nut #8-32	-
13	22-42047	4	Relay, SPDT 12 Volt 20/30 Amp	-
14	22-40018	1	Circuit Breaker 10 Amp	-
15	12-00005	2	Screw, BH Slotted #8-32 x 3/4"	-
16	15-00000	2	Lock Washer, Helical #8	-
17	22-40273	1	Wire Harness	-
18	22-41060	2	Diode 6 Amp 50 Volt	-
19	00-41015	1	Bushing	-

Control Panel / Relay Board Assembly - 12 Volt

Units with 184 Frame Generators

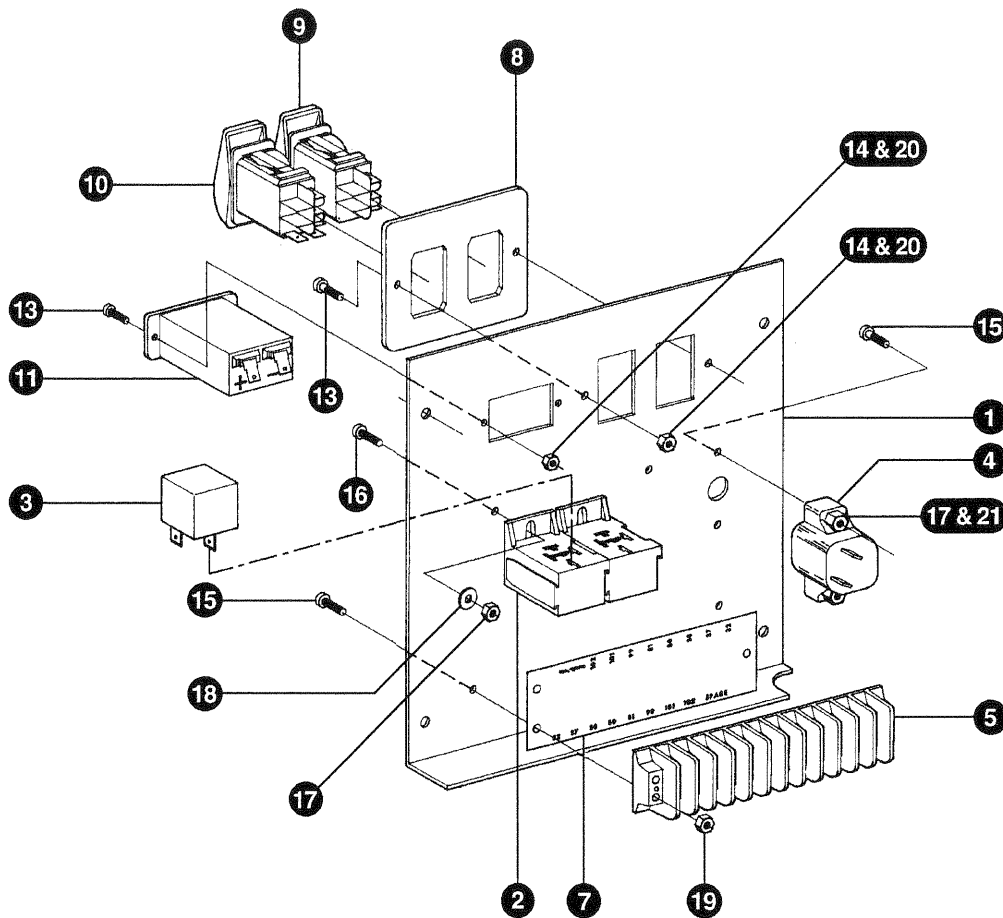


Figure 18: A-6432/C-2911

Control Panel / Relay Board Assembly - 12 Volt

Units with 184 Frame Generators

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
**	29-98405	1	Control Panel / Relay Board (Includes all Keys)	-
1	28-90004	1	Plate	-
2	22-41032	4	Relay Base	-
3	22-42047	4	Relay, SPDT	-
4	22-40018	1	Circuit Breaker 10 Amp	-
5	22-40193	1	Terminal Board	-
6	28-41060	1	Diode	-
7	22-00063	1	Number Strip	-
8	00-40013	1	Label	-
9	22-90007	1	Preheat / Shutdown - Bypass Switch	-
10	22-90008	1	Engine Control Switch	-
11	22-90009	1	Hour Meter	-
12	22-40019	1	Wire Harness	-
13	12-00093	2	Machine Screw, Round Head, Phillips #6-32 x 1/2"	-
14	14-00002	4	Hex Nut #6-32	-
15	12-00005	4	Machine Screw, Binding Head, Slotted #8-32 x 3/4"	-
16	12-00004	2	Machine Screw, Binding Head, Slotted #8-32 x 3/8"	-
17	14-00000	4	Hex Nut #8-32	-
18	15-00001	2	Flat Washer #8	-
19	14-00003	2	Hex Nut, Nylock #8-32	-
20	15-00009	4	Lock Washer #6	-
21	15-00000	2	Lock Washer #8	-

Gasket Set

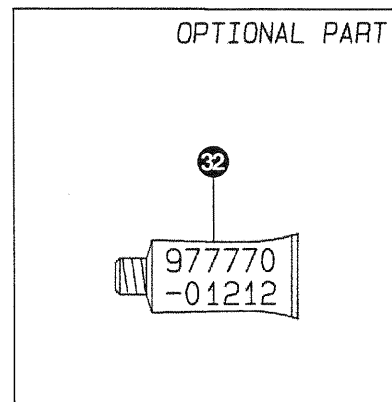
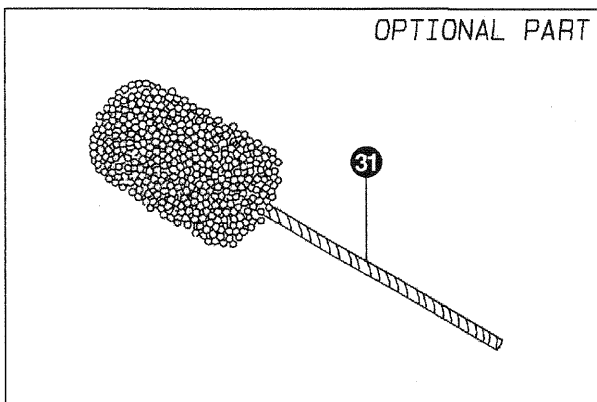
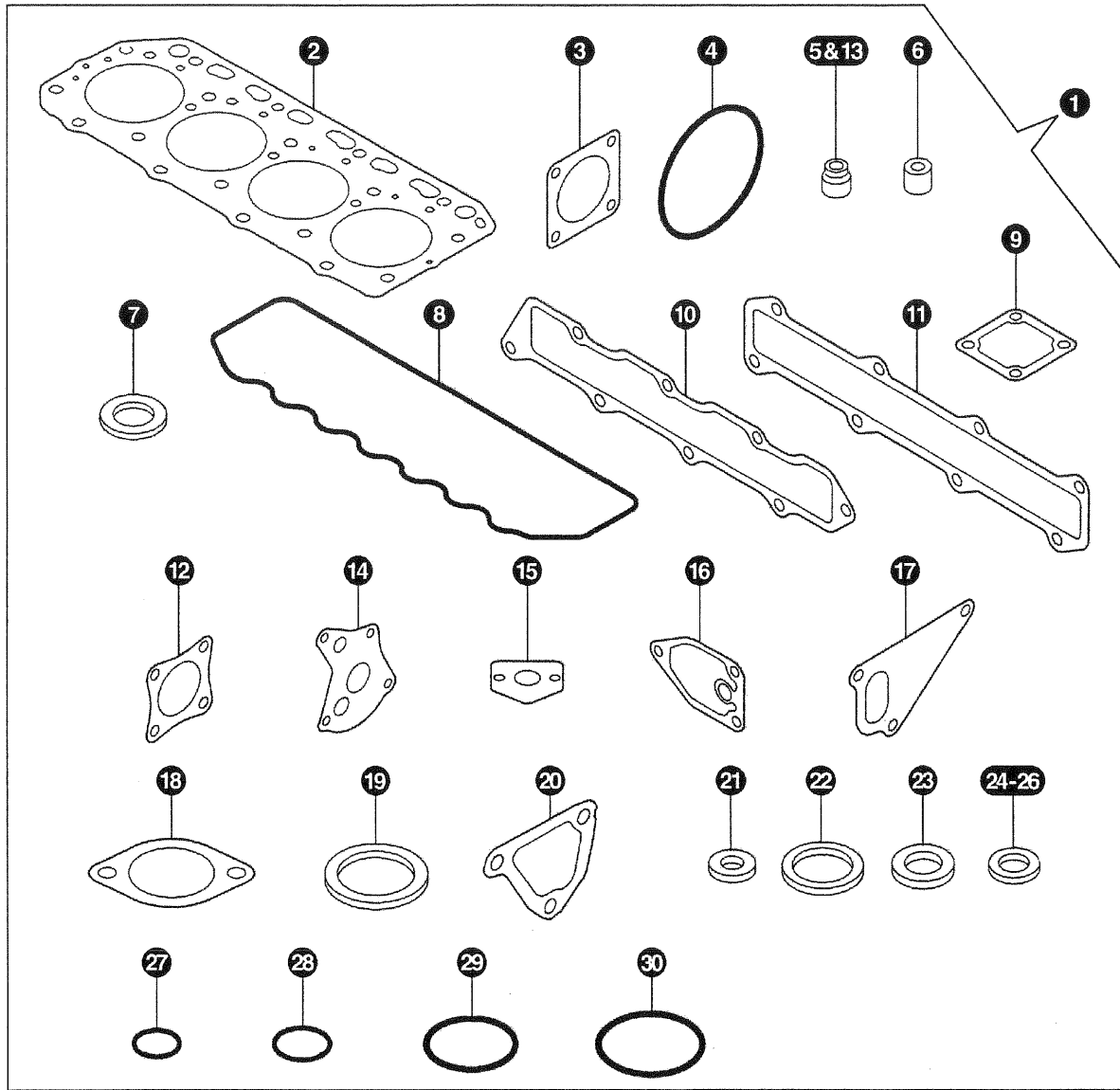


Figure 19

Gasket Set

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	729618-92600	1	Gasket Set (Includes Keys #2 - #30)	-
2	129408-01330	1	Cylinder Head Gasket	-
3	124240-01883	1	Gasket (Non-ASB.)	-
4	121850-51960	1	Fuel Injection Pump O-Ring	-
5	124460-11340	4	Valve Stem Seal	-
6	119625-11871	4	Nozzle Protector	-
7	117625-11880	4	Nozzle Seat	-
8	129550-11310	1	Bonnet Gasket	-
9	129150-77511	1	Gasket (Non-ASB.)	-
10	129407-12110	1	Intake Manifold Gasket	-
11	129407-13110	1	Manifold Gasket	-
12	129400-13201	1	Gasket (Non-ASB.)	-
13	121400-11340	4	Valve Stem Seal	-
14	129150-32020	1	Lubricating Oil Pump Gasket	-
15	129150-35041	1	Gasket (Non-ASB.)	-
16	129150-35111	1	Gasket (Non-ASB.)	-
17	129100-42020	1	Cooling Water Pump Gasket	-
18	129795-49551	1	Gasket (Non-ASB.)	-
19	129150-49811	1	Gasket (Non-ASB.)	-
20	129100-49840	1	Thermostat Housing Gasket	-
21	129155-52050	1	Gasket	-
22	104200-59171	2	Gasket 12	-
23	22190-080002	7	Seal Washer 8S	-
24	22190-220002	1	Seal Washer 22S	-
25	23414-120000	2	Round Gasket 12	-
26	23414-100000	2	Round Gasket 10	-
27	24311-000120	3	O-Ring, 1A P-12.0	-
28	24311-000160	3	O-Ring, 1A P-16.0	-
29	24311-000320	2	O-Ring, 1A P-32.0	-
30	24341-000500	1	O-Ring, 1A S-50.0	-
31	129400-92420	1	Flex Horn (Optional part)	-
32	977770-01212	1	Liquid Gasket (Optional part)	-

Modular Base Frame - 282 Frame Generators

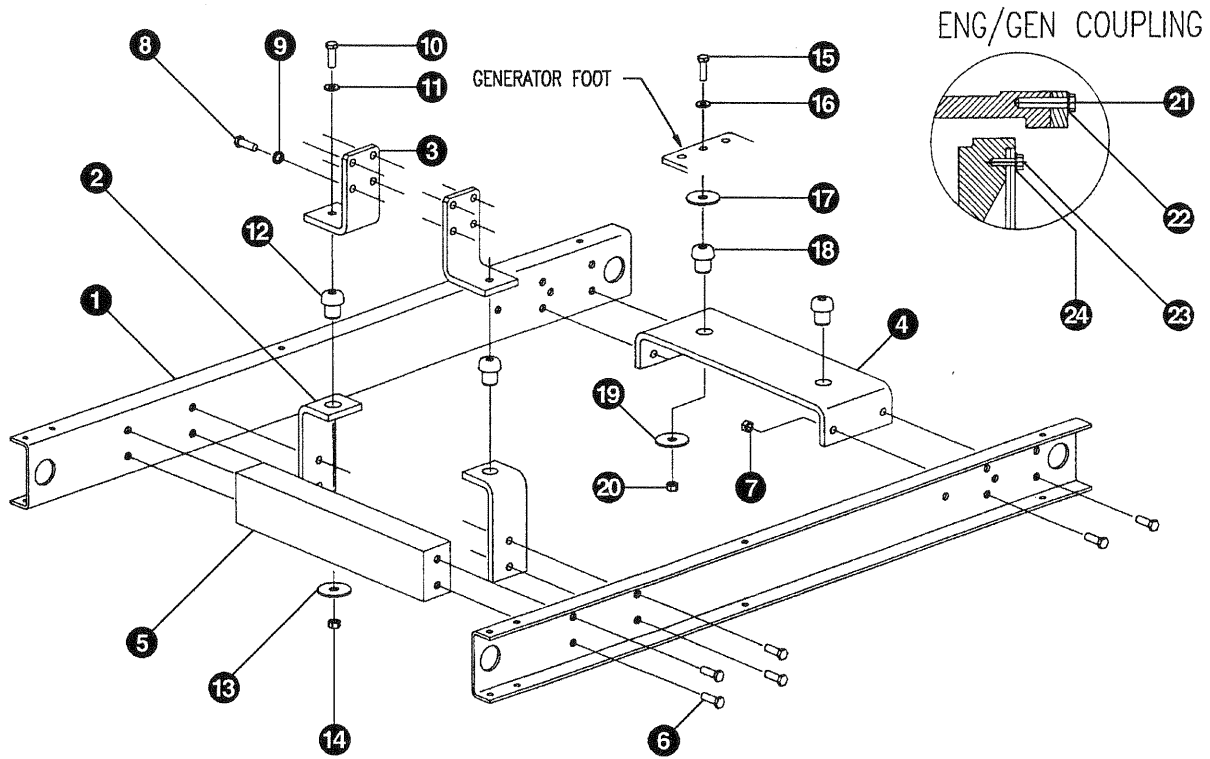


Figure 20: A-7027/B-4833

Modular Base Frame - 282 Frame Generators

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-87302	2	Side Rail	-
2	23-87301	2	Bracket, Lower Engine Support	-
3	23-87306	2	Bracket, Upper Engine Mounting	-
4	39-87312	1	Generator Support	-
5	39-87307	1	Base Frame Support	-
6	12-80313	12	Capscrew, Hex Head Flanged 3/8-16 x 1-1/4"	-
7	14-00302	12	Lock Nut, Flanged 3/8-16 Prevailing Torque	-
8	12-00831	8	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
9	15-00802	8	Lock Washer, Helical M10	-
10	12-00817	2	Capscrew, Hex Head M10 x 1.5 x 55 mm	-
11	15-00805	2	Flat Washer M10	-
12	33-83151	2	Mount, Centerbonded 200 lb	-
13	15-00014	2	Head/Tail Washer	-
14	14-00812	2	Hex Nut, Nylock M10 x 1.5	-
15	12-00965	2	Capscrew, Hex Head M12 x 1.75 x 70 mm	-
16	15-00007	2	Flat Washer M12	-
17	15-00016	2	Head Washer	-
18	33-82254	2	Mount, Centerbonded 300 lb	-
19	15-00026	2	Tail Washer	-
20	14-00830	2	Hex Nut, Nylock M12 x 1.75	-
21	12-00832	12	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
22	15-00802	12	Lock Washer, Helical M10	-
23	12-00751	8	Capscrew, Hex Head M8 x 1.25 x 16 mm	-
24	15-00702	8	Lock Washer, Helical M8	-

Modular Base Frame - 184 Frame Generators

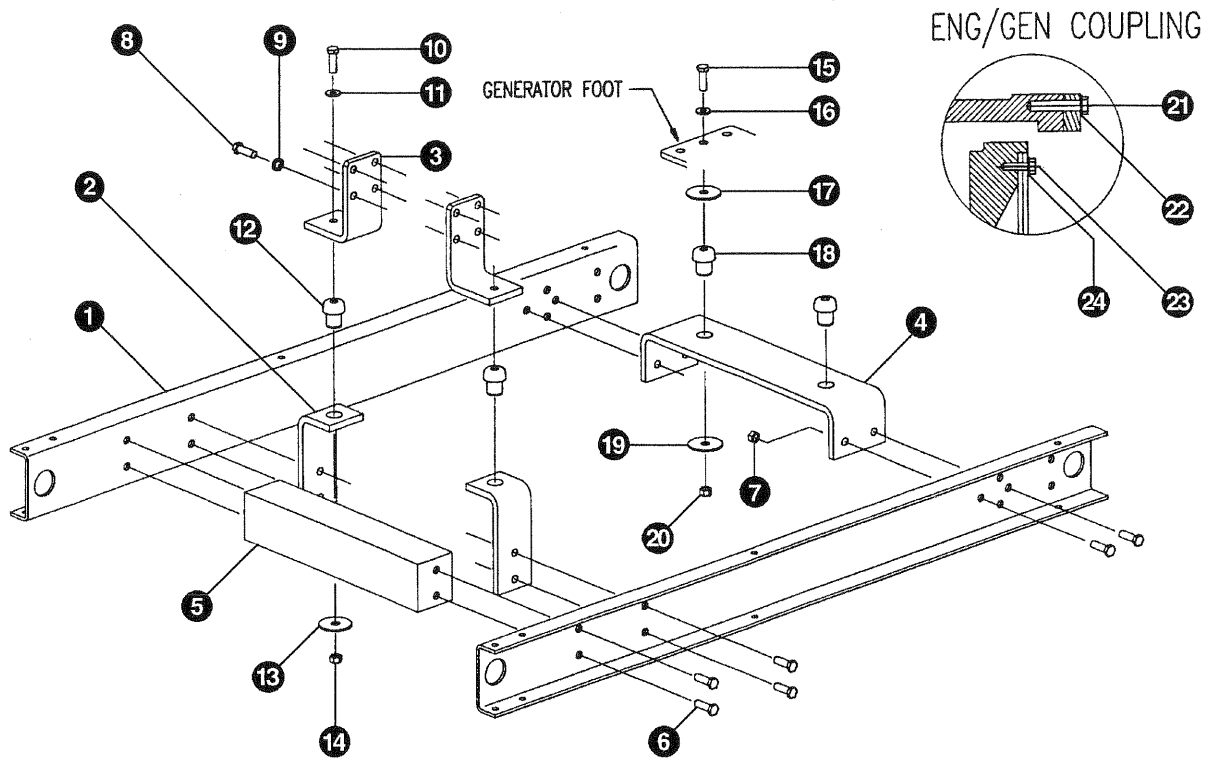


Figure 21: A-6913/B-4828

Modular Base Frame - 184 Frame Generators

KEY	PART NUMBER	QTY	DESCRIPTION	SERIAL NUMBER
1	39-87302	2	Side Rail	-
2	23-87301	2	Bracket, Lower Engine Support	-
3	23-87306	2	Bracket, Upper Engine Mounting	-
4	39-87304	1	Generator Support	-
5	39-87307	1	Base Frame Support	-
6	12-80313	12	Capscrew, Hex Head Flanged 3/8-16 x 1-1/4	-
7	14-00302	12	Lock Nut, Flanged 3/8-16 Prevailing Torque	-
8	12-00831	8	Capscrew, Hex Head M10 x 1.5 x 25 mm	-
9	15-00802	8	Lock Washer, Helical M10	-
10	12-00832	2	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
11	15-00805	2	Flat Washer M10	-
12	33-83151	2	Mount, Centerbonded 200 lb	-
13	15-00014	2	Head/Tail Washer	-
14	14-00812	2	Hex Nut, Nylock M10 x 1.5	-
15	12-00965	2	Capscrew, Hex Head M12 x 1.75 x 70 mm	-
16	15-00007	2	Flat Washer M12	-
17	15-00016	2	Head Washer	-
18	33-82254	2	Mount, Centerbonded 300 lb	-
19	15-00026	2	Tail Washer	-
20	14-00830	2	Hex Nut, Nylock M12 x 1.75	-
21	12-00832	12	Capscrew, Hex Head M10 x 1.5 x 30 mm	-
22	15-00802	12	Lock Washer, Helical M10	-
23	12-00751	8	Capscrew, Hex Head M8 x 1.25 x 16 mm	-
24	15-00702	8	Lock Washer, Helical M8	-

Notes

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