

NAPB-53 2nd ISSUE AUGUST, 1978

# WITH NORTH AMERICAN ACCESSORIES

4.154 MARINE

ngines

**Perkins** 

#### INSTRUMENT PANELS AND ASSOCIATED PARTS

#### MARINE ENGINES

PLEASE ADD THE FOLLOWING INFORMATION TO YOUR PARTS BOOKS COVERING MARINE ENGINES: INSTRUMENT PANEL "A" DUAL STATION - LOWER PANEL NA004843

Includes:
Tachometer C/W H/Meter 1
Temperature Gauge 1
Oil Pressure Gauge
Volt Meter 1
Ignition Switch
Push Button Switch
INSTRUMENT PANEL "B" SINGLE & DUAL STATION - UPPER PANEL Includes:
Tachometer C/W H/Meter 1
Temperature Gauge
Oil Pressure Gauge
Volt Meter 1
Ignition Switch
Push Button Switch

### THE FOLLOWING PARTS MUST BE USED WITH THE NEW INSTRUMENT PANELS:

#### 4.108(M)

NA004854	HARNESS, engine wiring (Assembly)	٦.
NA003442	BRACKET, harness plug adaptor retaining	1
NA003443	CLIP, harness plug	Ţ
21 82 003	SCREW harnege clin to plate materials	Ţ
NA003765	SCREW, harness clip to plate retaining	2
NA000475	NUT, harness clip to plate	2
	NUT, alternator (batt. term.)	1
0748411	SETSCREW, alt. ground terminal	1
0920053	WASHER, spring	ī
NA003607	CLIP, w/harness to oil cooler mtg. bracket	ī
NA004113	SETSCREW, wiring harness clip retaining	Ť
0920022	WASHER, plain	ī
NA003469	CABLE TIES	3
NA003615	CLIP, w/harness to throttle cable clip screw	1
NA000208	TRANSMITTER, oil pressure	7
NA000474	NUT, oil pressure transmitter	1
NA000209	TRANSMITTED water temporature	
NA000474	TRANSMITTER, water temperature	Τ
NACCU4/4	NUT, water transmitter	1

## PAGE 2 of PARTS BULLETIN NO. 253

.154 (M)		
NA003442 NA003443 NA000475 NA000208 NA000474 NA000209	HARNESS, engine wiring (Assembly)  BRACKET, wiring harness  CLAMP, wiring harness to bracket  NUT, alternator (batt. term.)  TRANSMITTER, oil pressure  NUT, oil pressure transmitter  TRANSMITTER, water temperature  NUT, water temp. transmitter	1 1 1 1 1 1
4.236 (M)		
NA004855 NA003442 NA003443 2182003 NA003765 NA000475 0748411 0920053 NA000208 NA000474 NA000209 NA000474 TA003469	HARNESS, engine wiring (Assembly)  BRACKET, wiring harness  CLAMP, wiring harness to bracket  SCREW, clamp to harness  NUT, clamp to harness  NUT, alternator (batt. term.)  SETSCREW, alt. ground terminal  WASHER, spring  TRANSMITTER, oil pressure  NUT, oil pressure transmitter  TRANSMITTER, water temperature  NUT, water temp. transmitter  CABLE TIES (3-9/16" long)	1 1 2 2 1 1 1 1 1 2
6.354 (M), TO	5.354 (M), T6.354 M.G.T.	
NA004845 NA003704 NA003615 2182003 NA003765 NA003616 NA000475 0748411 0920053 NA003499 NA003443 2182003 NA003765 NA000208 NA000208 NA000474 NA000209 NA000474	HARNESS, engine wiring (Assembly)  BRACKET, wiring harness support clip  CLIP, wiring harness retaining  SCREW, wiring harness clip retaining to bracket  NUT, harness clip retaining  TY-RAP (7-1/4" long)  NUT, alternator (batt. term.)  SCREW, alt. ground terminal  WASHER, spring  BRACKET, wiring harness adaptor plug retaining  CLIP, harness plug adaptor to mtg. bracket  SCREW, adaptor clip retaining to mtg. bracket  NUT, harness clip retaining screw  TRANSMITTER, oil pressure  NUT, oil pressure transmitter  TRANSMITTER, temperature  NUT, temperature transmitter	1 1 1 1 1 1 1 1 2 2 1 1
HT6.354 (M)		
NA004855 NA000475 0748411 0920053 NA003442	HARNESS, engine wiring (Assembly)  NUT, alternator (batt. term.)  SETSCREW, alt. ground terminal  WASHER, spring  BRACKET, wiring harness adaptor plug retaining	1 1 1 1

### PAGE 3 of PARTS BULLETIN NO. 253

### HT6.354(M) - Continued

NA003443 2182003 NA003765 NA000208 NA000474 NA000209 NA000474	SETSCREW NUT, har TRANSMIT NUT, oil TRANSMIT	rness plug , adaptor o ness clip r TER, oil pr pressure t TER, temper perature tr	clip ret retainin ressure ransmit	aining ng scre	to mtg	brac	ket .	1 2 2 1 1 1
THE FOLLOWI PANELS NAOO			KTENSION	NS MAY	BE USED	WITH	INSTRU	MENT
NA004847	HARNESS	EXTENSION,	10 ft.	long	• • • • • • •		• • • •	1
NA004848	HARNESS	EXTENSION,	20 ft.	long	• • • • • •		• • • •	1
NA004849	HARNESS	EXTENSION,	30 ft.	long	• • • • • •			1

C. F. Haskin
Specifications & Alterations Supv.
Service Parts Department

CFH/se

January, 1979

#### - INTRODUCTION -

The quantity shown in the quantity column is the number of parts used on the engine, except where parts are offset in the description column; in this case, the quantity is the number required for the preceding assembly or sub-assembly. For certain parts, such as kits, washers, etc., an "X" will be shown in the quantity column. This "X" indicates that the quantity is "as required".

#### INFORMATION REQUIRED

Whenever parts are ordered, it is essential that full information is given to ensure correct identification. Descriptions and part numbers should always be stated, and in the case of parts required for an individual engine, the engine type or serial number should be supplied. For example:

"Please supply for the 4.154 Marine Engine, (1) of 85827 Crankshaft Kit."

Such an order supplies all the information needed to enable your requirements to be identified accurately and your order will receive prompt attention.

#### SCREW THREADS

All screw threads on this engine, except on certain items of proprietary equipment, are unified series and American pipe series.

The items described in this book are correct at the time of publication. As developments are made, we reserve the right to alter or withdraw items at any time and you would be advised of the changes. This information should be entered in the appropriate pages as soon as it is received to keep your book up-to-date with the latest information.

NAPB #53 2nd Issue August, 1978

NAP/000271 CFH/se

#### - SECTIONAL INDEX -

CAN TARRED DI OCA	PAGES
CYLINDER BLOCK Liners, plugs, cylinder head gasket, rear end oil seal housing	1
nousing	
CYLINDER HEAD Plugs, inserts, guides, rear end cover, inlet and exhaust valves, springs, caps, cotters, front and rear lifting	
plates, water outlet body and connection, thermostat	2
CRANKSHAFT Main and connecting rod bearing sets, crankshaft gear and pulley, p.t.o. pulley, connecting rod, pistons, ring pack	3
CYLINDER HEAD COVER Lube oil filler cap, rocker shaft, brackets, springs, levers, tappets, push rods	4
AIR INDUCTION SYSTEM	- -
Induction manifold, quick start adaptor, air filter cover, breather pipe and hose	5
TIMING GEAR Camshaft and gear, idler gear, timing gear housing and front cover, injection pump adaptor, engine timing pin	6-7
Lube oil pan, dipstick and tube, support bracket, suction and strainer pipe, lube oil pump and delivery pipe, lube oil filter and bracket, connections, flex pipes	8-9
SEA WATER PUMP Mounting bracket, pulley, belt	10
FRESH WATER PUMP Seals, rear body, pulley, hub, repair kit, water inlet connection, hose	11
HEAT EXCHANGER & HEADER TANK Manifold Assembly, water outlet elbow, flange, hoses, pipes, brackets, oil cooler, adaptor, connections, flex pipe	12-13
FUEL OIL LIFT PUMP Pump, spring, repair kit	14
FUEL OIL FILTER Element kit, bracket, drip tray, delivery and return pipes, non-return valve, connections, leak-off pipe, pre-filter	15
FUEL INJECTION SYSTEM Injection pump and driving gear, injection pipes, lever, vibration damper, injector and holder assembly, leak-off pipe, brackets, springs	16

#### - SECTIONAL INDEX -

	PAGES	
FLYWHEEL & HOUSING Flywheel housing, flywheel and ring gear, adaptor plate, starter motor and spacer	17	
ELECTRICAL EQUIPMENT Alternator brackets, alternator, cooling fan, connections, lever, pulley, belt, oil pressure and water temperature transmitters	18	
ENGINE WIRING HARNESS Wiring harness and bracket	19	
ACCESSORIES Throttle and stop control kit, front and rear mounting brackets, trunnions, mounts, labels, tachometer drive shaft.	20	
GASKET SETS Top and bottom overhaul gasket sets	21	

#### - NUMERICAL INDEX -

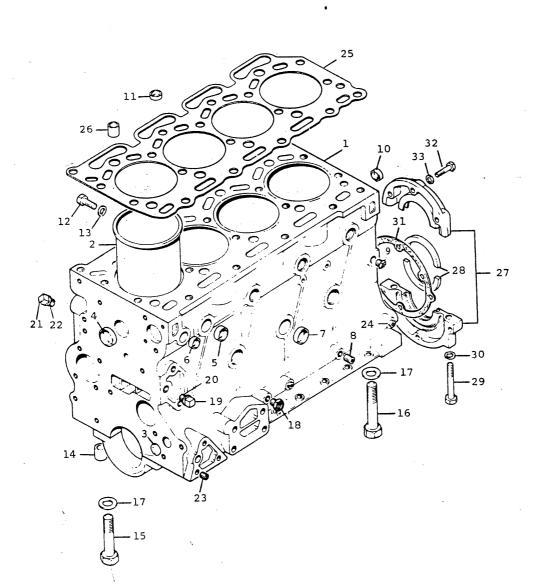
PART NO.	PAGE	PART NO.	PAGE	PART NO.	PAGE
33435	16	0180069	12,13	0746424	17
38360	16	0180070	5	0746452	2,15
30300		0180107	11	0746454	17
68452	1	0180173	15	0746807	6
		0180182	8	0746851	12
85827	3	0180831	4	0748411	18
85833	4			0748413	8,12
86769	3	0200007	5	0748414	18
86769C	3	0200080	11	0748524	10
86820	3	0201091	15	0748525	12
86820A	3	0201397	15	0748611	20
86820B	3	0240568	5	0770101	20
86820C	3		_	0780224	14
86825	3	0350009		0780268	16
86825A	3	0350016	17	0006004	0
86825B	3	0400104	2	0826004	8
86825C	3	0490184	2	0826201 0826203	6 6
86956	11	0490685	16	0826203	16
86999	21	0490775 0490786		0826218	10,12
88994	21	0490786	13	0826243	10,12
89180	2	0500009	6	0826244	2
89213	3	0520463	16	0826248	14
89213C	• • • • • • • • • • • • •	0566003	14,15	0826249	
0050358	20	0571415	8,12	0826256	6
0070101	10	0576001	8,20	0826438	17
0095315	16	0576002	.6,10,14,16	0826444	2
0095332		0576051	.2,15,17,18	0826463	18
0095344	15	0576053	20	0826612	17
0096032	8	0576054	9		
0096201	7,16	0576064	2,9,12	0920002	8
0096231		0576102	• • • • • • • 6	0920003	6,7,10,
0096237	8	0576112	15		12,16.
0096238	1,11	0576151	4,11	0920004	2,10,18
0096239	6	0576153	8	0920051	17
0096240	6			0920052	8,9,20
0096241	2,6,10,11	0650204	15	0920053	1,2,5,6,7,8,
0096242	2	0650205	<u>l</u>		9,10,11,12,
0096431	15,17	0650507	4	0000054	14,16,17,18.
0096432	2	0650593	1	0920054	2,3,10,12,
0096433	17	0650594	5,9	0020055	15,17,18.
0096436	3	0650722	8	0920055 0920056	9,13,20
0096444	18	0706505	1.0	0920036	16
0096631	13,20	0726505	16	0920113	15
0096634	20	0746015 0746053		0920127	15
0096638	••••9	0746053	2,5,6	0920154	15
0170001	3	0746211	6	0920155	1
0170051	20	0746213	1	0920296	20
0180063	5	0746253	6,20	0920299	20
0180065	12	0746254	2,7	0920497	18
0180066	12	0746255	6,8,11	0921167	8
. = 3 - 3 - 3 - 3					

#### - NUMERICAL INDEX -

			D3 677	D3 D2 370		
PART NO.	PAGE	PART NO.	PAGE	PART NO.	PAGE	
0921176	16	24870001	4	32412111	2	•
0921176		210,000			6	
2116078	16	26410063	14		1	
2134177		26560014			20	•
2137435	8				1	
2173706	20	200000			1	•
2182003	19	31134138	3		1	
2182110	1	31134139	6		1	
2182122			4		1	
	8	31137421	3	32418118		
2184463		31137422	3	32418119	1	
		31137431	3	32514309	4	
2211224	4,18	31137432	3	32514311	16	
2211291	16	3113M002	11	32712715	8	
2211401	19	31141645	18	32717109	6	
2224933	9		3	32722511	2	
2238151	9	31147301	3	32754421	4	
2238153	10,12	31161147	17	32762119	3	
		31171091	3	32811104	20	
2411141	15		6			
2411152	1,6,7	31171982	16	33115129	17	
2411160	8	31358119	1	33117119		
2411162	8	31415312	6	33117121	17	
2415217	11	31431491	2	33117418	4	1
2415340	6	31431501	2	33124119	3	*.
2417204	11	31434181	4	33138104	1	
2431154	2,11		4	33172117	6	
2481889	12	31718104	16	33173112	2	
2481890	12,13	31718105	16	33221323	3	
2485613	2	31733125	6	33225412	15	
2485731	2	31742128		33225413	15	
 2485740	1	31743113	4	33261742	2	
2487004	8	31744139		33413121	11	
2487805	4	31745124	2	33415134	2	
		31751107				
2577533	3	-	8	33427119	20	
064700	14	318122//	20	33473107	3	,
2641327		20114121	4	33474004	4	
2644951	16	32114131		33531123		
2645580	16	32114134		33532128 33533103	8	
2654407	9	32114481		33533112	14,15	
2656084	15	32114481		33536459	5	
2656613		32116004		33811112		
2658201		32161114		33811113		
2871954	18	32161317		33811115		
20/1904	• • • • • • • LO	32162316		33812108		
24860155	12	32166208		33817122	4	
	12	32166209		33817409		
24860160	12	32166211	•	33855118		Į.
	12	32166212			4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	, The
	12	32186128		34821415	···	
74000T03	• • • • • • • ±∠	27100170	• • • • • • • • /	24077473	• • • • • • • • • •	

#### - NUMERICAL INDEX -

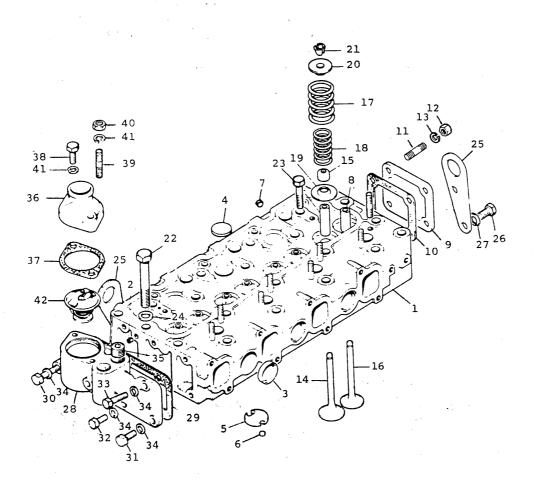
PART NO.	PAGE	PART NO.	PAGE	PART NO.	PAGE
35355346 .	16	37766712		NA003423	15
	16	37787692	5	NA003424	18
	16	37814129	4	NA003425	
	16			NA003426	13
	16	41115041	6	NA003428	10
	20	41151466	4	NA003432	13
	15	41152908	3	NA003433	9
35845052 .	15	41222235	15	NA003434	9
		41242806	8	NA003437	••••9
	2	41312418	11	NA003439	18
	16	41326025	12	NA003440	15
	4	41422031	1	NA003441	19
	1	41422923	6	NA003442	19
	6	41424135	8	NA003443	19
	11	41424208	8	NA003446	••••5
	1	000000	7.0	NA003448	15
	8	NA000208	18	NA003449	16
	8	NA000209	18	NA 003450	16
	11	NA 000227	12	NA003451	12
	6	NA000468	20	NA 003452	12
		NA 000474 NA 000475	18	NA003453	13
	2	NA000475 NA000571		NA003454 NA003460	
	2	NA000571 NA000594	20	NA003460 NA003474	9
	14	NA 000623		NA003474 NA003476	9
	9	NA000623	9	NA003478	20
		NA000721		NA003477	20
	7	NA000904		NA003470	
	5	1,110000		NA003482	20
		NA001253	9	NA003484	20
		NA001309	20	NA003670	17
3687Т001 .	6	NA001458	20	NA003671	
36883107 .	1	NA001471	20	NA 004146	20
		NA001473	20	NA004473	20
37134844 .	17	NA001489	9	NA004800	18
37161432 .	6	NA001699	20		
	12	NA001706	20	NA900085	17
	2	NA001860	13	NA900087	8
	6	NA001905	18	NA900088	8
	6				
	4	NA003347	18		
	4	NA003348	18		
	4	NA 003406			
	••••	NA 003407	20		
	2	NA003410	2		
		NA003412	9	,	
		NA003413 NA003414	12		
	8	NA003414 NA003416			
	12,13	NA003416 NA003419			
	9	NA003419 NA003421	10		
	2	NA003421	8		
37730031		11110007422			3



#### - CYLINDER BLOCK -

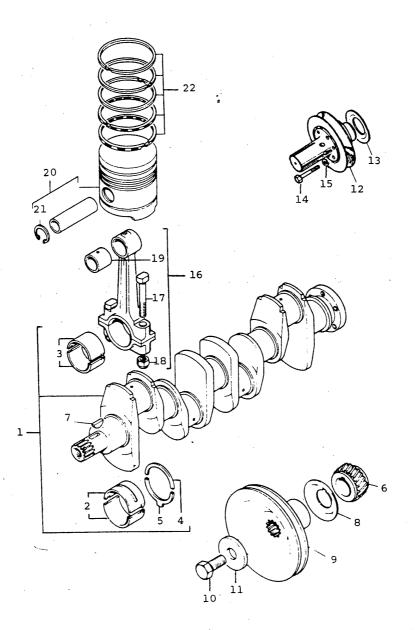
	REF.			
NOTE	NO.	PART NO.	DESCRIPTION	QTY
	1	68452	CYLINDER BLOCK (ASSEMBLY)	]
	2	31358119	LINER, cylinder block	4
	3	32417139	PLUG, block - water jacket	]
	4	32416108	PLUG, block - tappet chamber	4
	5	32417142	PLUG, block - water rail - LHS	4
	6	32417141	PLUG, block - water rail - LHS front.	<u>-</u> [
	7	32417141	PLUG, block - water jacket	7
•	8	32116004	DIUC block - lube oil programs	
	9		PLUG, block - lube oil pressure rail.	4
	9	3241/140	PLUG, block - pressure rail - front	
	10	0405740	and rear	2
	10	2485740	PLUG, block - camshaft chamber -	
		0047-107	rear face	]
	11		PLUG, block - lube oil pump chamber .	]
	12	2182110	SCREW, block - lube oil pump housing	
			top hole	]
	13		WASHER, sealing	]
	14		THIMBLE, main bearing cap	10
	15		SETSCREW, front & middle bearing cap.	8
	16	32166211	SETSCREW, rear bearing cap	2
,				
/	17	33117119	WASHER, main bearing cap setscrew	10
,	18	0650593	PLUG, water drain - LHS	3
	19	0650205	PLUG, block - fuel pump drive oil feed .	1
	20	0920155	WASHER, cyl. block plug	]
	21	0746252	PLUG, block - lube oil filler facing	] 2 2 6
	22	2411152	WASHER, cyl. block plug	2
	23	32114481	PLUG, block - bearer facings	-
	24	32161114	PLUG, block - water drain tapping	2
	25	36812328	GASKET Cyl head to cyl high	-
	26		GASKET, cyl. head to cyl. block	]
	20	22120104	THIMBLE, cyl. head gasket locating	2
	27	41422031	HOUSING, REAR END OIL SEAL (ASSEMBLY)	]
			Includes:	_
	28	36883107	SEAL, oil	2
	29	0096238	SETSCREW, oil seal housing	2
	30	0920053	WASHER, spring	2
	31	36826118	GASKET, oil seal housing to cyl. block .	1
	32	0096231	SETSCREW, housing to block & brg. cap	6
	33	0920053	WASHER, spring	6
		0920053	WASHER, spring	

NOTE: See Accessories Section for tachometer drive shaft, etc.



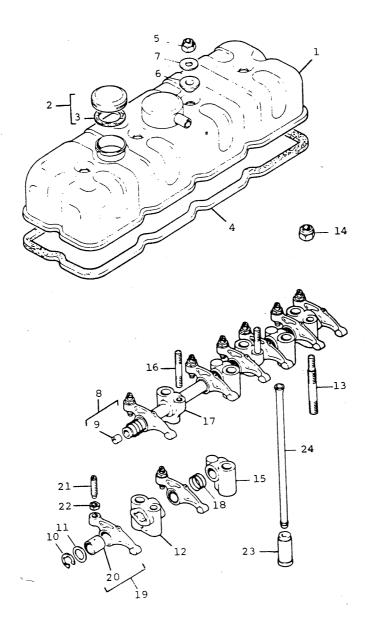
#### - CYLINDER HEAD -

NOTE	REF.	PART NO.	DESCRIPTION	QTY.
	1	89180	CYLINDER HEAD (ASSEMBLY)	· <sub>2</sub> <b>1</b>
	2	32116005	PLUG, cylinder head	1
	3	32418118	PLUG, cylinder head	7
	4	32412111	PLUG, cylinder head	3
	5	37443751	INSERT, combustion chamber	4
	6	2485731	WASHER, insert locating	$\frac{4}{4}$
	7	32722511	INSERT, water jet	4
	8	33261742	GUIDE, inlet & exhaust valve	8
	9	37551115	COVER, cyl. head rear end	ĺ
	10	36847128	GASKET, rear end cover	$\overline{1}$
	11	0826244	STUD, rear end cover	4
	12	0576064	NUT, cover retaining	4
	13	0920053	WASHER, spring	4
	14	31431491	VALVE, inlet	4
	15	33817409	DEFLECTOR, inlet valve	4
	16	31431501	VALVE, exhaust	4
	17	31745124	SPRING, outer	8
	18 19	31744139	SPRING, inner	8
	20	33415134 33423132	WASHER, spring seating	8
,	21	33173112	CAP, valve spring	8
1	21	331/3112	COTTER, cap retaining	8 Pr
	22	32166208	SETSCREW, cyl. head to cyl. block	13
	23	32166209	SETSCREW, cyl. head to cyl. block	13 7
	24	33117119	WASHER, plain	20
				20
	25	36177424	PLATE, engine lifting - front	1
	26	0746452	SETSCREW, lifting plate to cvl. head	2
	27	0920054	WASHER, spring	2
		063 == 664		· •
	25	36177424	PLATE, engine lifting - rear	1 2
	26	0746452	SETSCREW, lifting plate to cyl. head	
	27	0920054	WASHER, spring	2
	28	37766051	BODY water outlet malindan hard	-
	29	36846126	BODY, water outlet - cylinder head GASKET, water outlet body to cyl. head .	1
	30	0096241	SETSCREW, outlet body to cylinder head .	1
	31	0746211	SETSCREW, outlet body to cylinder head .	1
	32	0746254	SETSCREW, outlet body to cylinder head .	3
	33	0096242	SETSCREW, outlet body to cylinder head .	1
	34	0920053	WASHER, spring	1 6
	35	2431154	PLUG, water outlet body	1
			The state of the s	1.
	36	NA003410	CONNECTION, cyl. head water outlet	1
	37	0490184	GASKET, water outlet connection	î
	38	0096432	SETSCREW, outlet conn. to outlet body	ĺ
	39	0826444	STUD, body to connection	ī
	40	0576051	NUT, outlet connection retaining	ī
	41	0920004	WASHER, plain	2
	42	2485613	THERMOSTAT	1



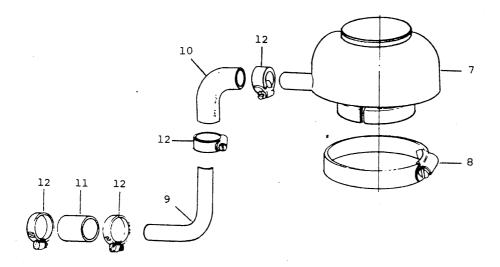
#### - CRANKSHAFT -

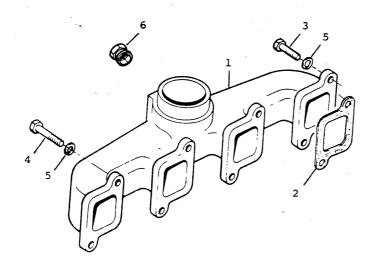
OTE	NO.	PART NO.	DESCRIPTION
	1	85827	CRANKSHAFT KIT (ASSEMBLY)
	2	86820	BEARING SET, crankshaft main - std
	3	86825	BEARING SET, conn. rod - big end
	4	31137421	municimacum ton
	5		THRUSTWASHER, top
	5	31137431	THRUSTWASHER, bottom
	2	86820A	BEARING SET, crankshaft main (010")
	2	86820B	BEARING SET, crankshaft main (020")
	2	`86820C	BEARING SET, crankshaft main (030")
	3	86825A	BEARING SET, connecting rod (010")
	3	86825B	BEARING SET, connecting rod (020")
	3	86825C	BEARING SET, connecting rod (030")
	4	31137422	THRUSTWASHER, top (+.007")
	5	31137432	THRUSTWASHER, bottom (+.007")
	6	31171091	GEAR, crankshaft
	7	2577533	KEY, crankshaft gear
	8	33474004	FLANGE, crankshaft oil thrower
7		31147301	PULLEY, crankshaft
		32162316	SCREW, pulley retaining
		33124119	WASHER, retaining screw
	12	31146741	PULLEY, power take-off
	13		
	$\overline{14}$	0096436	SETSCREW, p.t.o. pulley to crankshaft
			pulley
	15	0920054	WASHER, spring
	16	41152908	CONNECTING ROD (ASSEMBLY)
			Includes:
	17	32762119	BOLT, conn. rod
	18	33221323	NUT, conn. rod cap retaining
	19	31134138	BUSHING, conn. rod - small end
	20	89213	PISTON, STD. (ASSEMBLY) (c/w wrist pin) .
			Includes:
	21	0170001	SNAP RING, wrist pin retaining
A)	22	86769	RING PACK, std
	20	89213C	PISTON, (+.030") c/w wrist pin
	-		Includes:
	21	0170001	SNAP RING, wrist pin retaining
(A)	22	86769C	RING PACK, (+.030")



#### - CYLINDER HEAD COVER -

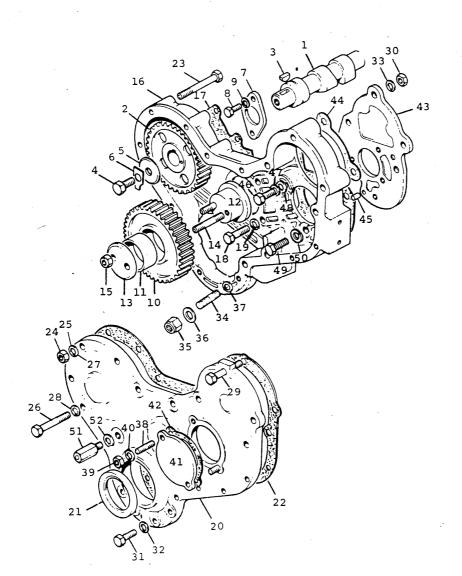
NOTE	NO.	PART NO.	DESCRIPTION	QT
	1	37814129	COVER, cylinder head (Assembly)	
	2	2487805	CAP, lube oil filler	
	3	24870001	GASKET, cap	•
		36811121 33531123 33817122 33427119	GASKET, cyl. head cover to cyl. head NUT, cyl. head cover retaining SEAL, retaining nut	. •
	8	85833	ROCKER SHAFT (ASSEMBLY)	
	9	0650507	PLUG, rocker shaft end	:
	10 11	0180831 33117418	SNAP RING, rocker shaft retaining WASHER, rocker shaft end	
	12 13 14 15 16 17	37521371 32754421 2211224 37521381 32514309 37521361	BRACKET, rocker shaft STUD, long - bracket to cyl. head NUT, No. 1 & No. 7 bracket retaining BRACKET, rocker shaft STUD, bracket to cyl. head cover BRACKET, rocker shaft	
	18	31743113	SPRING, rocker shaft	ı
	19	41151466	LEVER, rocker shaft (Assembly) Includes:	;
	20 21 22	31134158 32114131 0576151	BUSHING, lever  SCREW, tappet adjusting  LOCKNUT, adjusting screw	
	23	31434181	TAPPET	





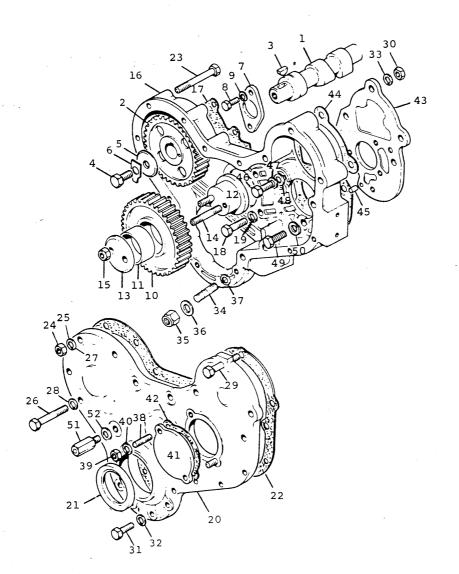
#### - AIR INDUCTION SYSTEM -

<u>Q</u>	DESCRIPTION	NO. PART NO.	NOTE
	MANIFOLD, induction	1 37787692	
	SETSCREW, manifold to cyl. head SETSCREW, manifold to cyl. head	2 36866201 3 0746211 4 0096231 5 0920053	
		6 33536459 - 0650594	
	COVER, air filter	7 0240568 8 0180070	
	PIPE, breather - air filter to cyl. head rocker cover	9 NA003446	
	HOSE, breather pipe	10 34821415 11 0200007 12 0180063	



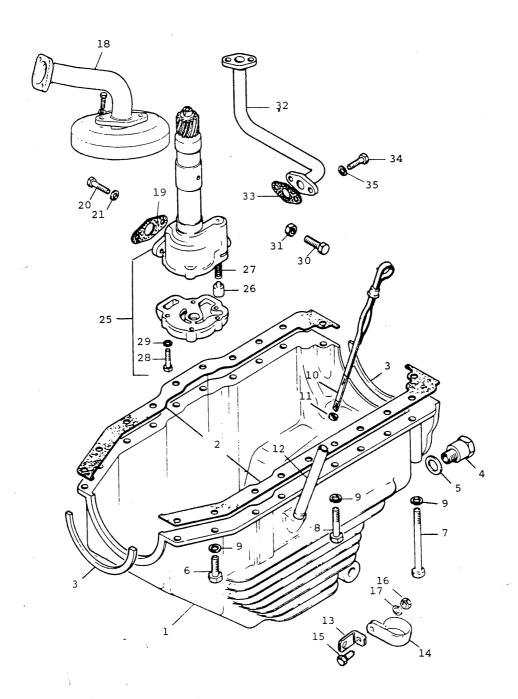
#### - TIMING GEAR -

	REF.		
NOTE	NO.	PART NO.	DESCRIPTION
	1	31415312	CAMSHAFT
	2	31171191	GEAR, camshaft
			KEY, camshaft gear
	3	0500009	SETSCREW, camshaft gear to camshaft
	4	0746807	
	5	33172117	WASHER, gear retaining
	6	31733125	TABWASHER, retaining screw
	7	37467761	PLATE, camshaft thrust
	8	0746253	SETSCREW, plate to cylinder block
	9	0920053	WASHER, spring
	10	41115041	GEAR, idler (Assembly)
	11	31134139	BUSHING, idler gear
	12	32717109	HUB, idler gear
	13	32413121	PLATE, idler gear retaining
	13 14	0826256	STUD, cyl. block to idler gear hub
			NUT, hub retaining
	15	0576102	•
	16	37161432	HOUSING, timing gear
	17	3687T001	GASKET, housing to cylinder block
	18	0746255	SETSCREW, housing to block
	19	0920053	WASHER, spring
	20	41422923	COVER, front - timing gear housing Includes:
	21	2415340	SEAL, front cover
	22	36813149	GASKET, front cover to timing gear hsg
	23	0096239	BOLT, front cover to housing
	24	0576002	NUT, front cover retaining
	25	0920053	WASHER, spring
	26	0746213	SETSCREW, front cover to timing gear
		·	housing and cyl. block
	27	0920053	WASHER, spring
	28	2411152	WASHER, hsg. & cover to block screw
	29	0096240	BOLT, front cover to housing
	29	0096241	BOLT, front cover to housing
	30	0576002	NUT, front cover to housing
	31	0746211	SETSCREW, front cover to housing
	32	0920053	WASHER, spring
	33	0920003	WASHER, plain
	34	0826201	STUD, housing to front cover
	35	0576002	NUT, front cover retaining
	36	0920053	WASHER, spring
	37	0920003	WASHER, plain
	38	0826203	STUD, front cover to f/pump gear cover .
	39	0576002	NUT, f/pump gear cover retaining
	39 40	0920053	WASHER, spring
	41	37461105	COVER, fuel pump drive gear
	41	36835108	



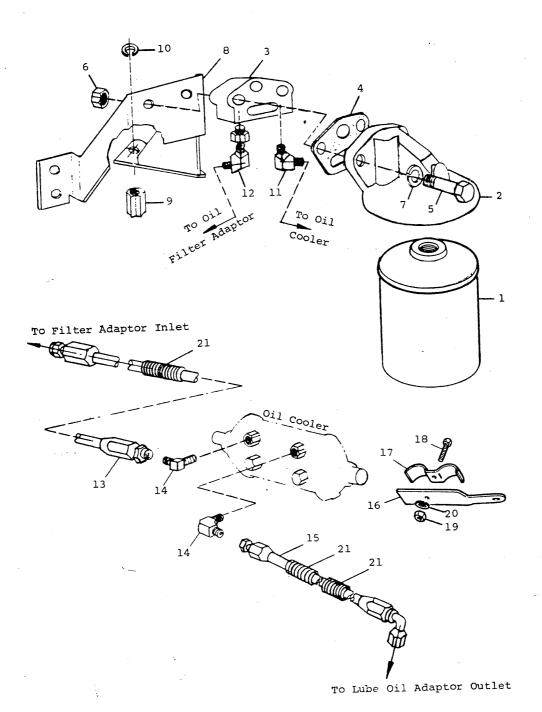
#### - TIMING GEAR -

NOTE	REF.	PART NO.	DESCRIPTION	QTY
	43 44	37537511 36863117	ADAPTOR, fuel injection pump  GASKET, timing gear housing to fuel  pump adaptor	1
	45 46 47 48	0350009 0746254 0920053 0920003	DOWEL, housing to adaptor SETSCREW, housing to adaptor WASHER, spring WASHER, plain	1 3 3 3
	49 50	0096201	SETSCREW, adaptor to timing gear hsg WASHER, spring	1
	51 5 <b>2</b>	32186128 2411152	PIN, engine timing	1



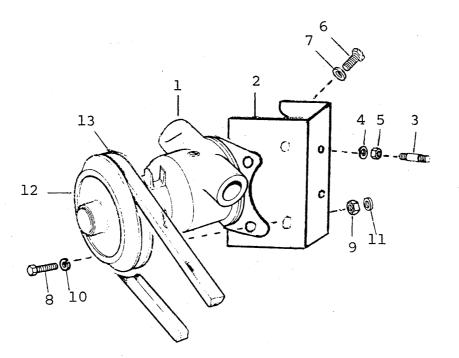
### - LUBRICATING OIL SYSTEM -

NOTE	REF.	PART NO.	DESCRIPTION	QTY.
	1	41424135	LUBE OIL PAN (ASSEMBLY)	1
		2137435	INSERT, helicoil	2
	2	41424208	GASKET, oil pan to cyl. block	2 1
	3	0490775	GASKET, oil pan - front and rear	2
	4	2487004	PLUG, oil pan drain	2
	5	2411160	WASHER, drain plug	2
	4	0650722	PLUG, oil pan drain	1
	5	2411162	WASHER, oil pan plug	ī
	4	32161317	PLUG, oil pan - alt. dipstick hole	ī
	5	0921167	WASHER, oil pan plug	ī
	6	0746255	SETSCREW, oil pan to timing dear had	2
	7	2184435	SETSCREW, long - oil pan to block	2
	8	0746255	SETSCREW, Oil pan to block	13
	8	0096237	SETSCREW, oil pan to block	3
	. 9	0920053	WASHER, spring	20
	10	31785434	DIPSTICK, lube oil (Assembly) Includes:	1
	11	33812108	WASHER, dipstick	1
/	12	41242806	TUBE, lube oil dipstick (Assembly) Includes:	1
		33533103	NUT, dipstick tube	1
	13	NA003422	BRACKET, dipstick tube support	1
	14	0180182	CLIP, support bracket	ī
	15	0748413	SETSCREW, clip to bracket	ī
	16	0571415	NUT, clip retaining	1
	17	0920053	WASHER, spring	1
	18	37727718	PIPE, lube oil suction & strainer (Assy)	1
	19	36832125	GASKET, suction pipe to lube oil pump	ī
	_	0826004	STUD, suction pipe to pump	2
	_	0576001	NUT, suction pipe retaining	2
	-	0920052	WASHER, spring	2
	20	0746015	SETSCREW, suction pipe bracket to lube oil pump body	1
	21	0920002	WASHER, plain	ī
	25	NA900087	LUBE OIL PUMP (ASSEMBLY)	1
	26	32712715	PLUNGER, relief valve	1
	27		SPRING, relief valve	ī
	28	0096032	SETSCREW, cover to body	5
	29	0920052	WASHER, spring	1 5 5
	30	32114134	SCREW, pump body locating	1
	31	0576153	NUT, screw locking	1
	32	NA 900088	PIPE, lube oil delivery (Assembly)	ī
	33	36831121	GASKET, delivery pipe	1
	34	0746053		4
	35	0920052	WASHER, spring	4



### - LUBRICATING OIL SYSTEM -

NOTE	NO.	PART NO.	DESCRIPTION
	1	2654407	FILTER, lube oil
	2	37764181	HEAD, lube oil filter
	3 4 5 6 7	37586241 36862517 0096638 0576054 0920055	ADAPTOR, lube oil filter GASKET, filter adaptor BOLT, filter & adaptor to support brkt. NUT, filter & adaptor retaining WASHER, spring
	8 9	NA 003412 0576064	BRACKET, support - lube oil filter NUT, support bracket retaining - to
	10	0920053	cyl. head rear cover studs WASHER, spring
	11	NA001253	CONNECTION, 450 lube oil filter
	12	NA000631	adaptor - in
	13	NA003433	PIPE, flex - filter adaptor to oil cooler
,	14 15	NA003474 NA003434	CONNECTION, elbow - cooler in and out  PIPE, flex - oil cooler to cyl. block lube oil adaptor
	16	NA003437	BRACKET, support - flex pipes to starter motor retaining studs
	17	NA003476	CLAMP, flex pipes retaining
	18	2224933	SCREW, pipe clamp retaining
	19	2238151	NUT, clamp retaining screw
	20	0920052	WASHER, spring
	21	NA001489	GUARD, flex hose
		0650594	DIUC fitted in lube oil adapted



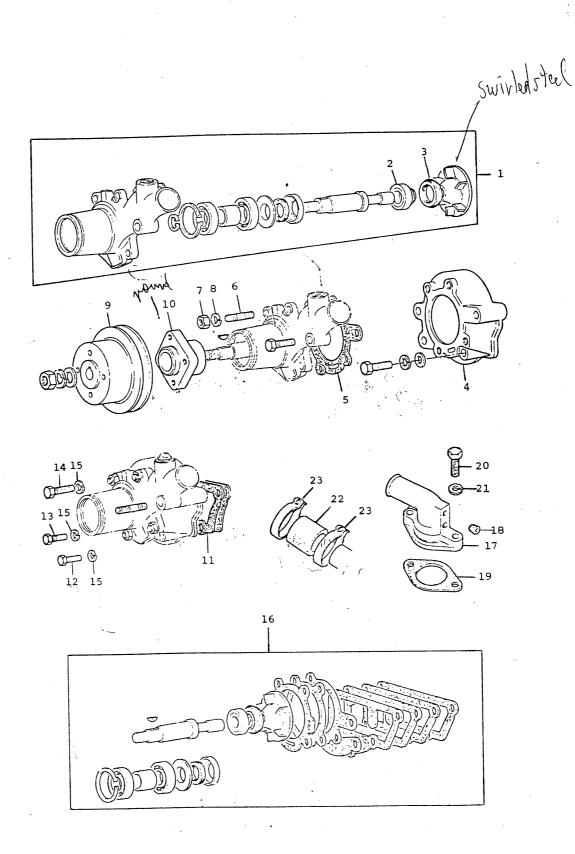
#### - SEA WATER PUMP -

	REF.		·	
NOTE	NO.	PART NO.	DESCRIPTION	QTY.
(A)	1	NA003428	SEA WATER PUMP (ASSEMBLY)	1
	2	NA003421	BRACKET, sea water pump mounting	1
	3	0826232	STUD, pump mounting bracket to timing gear housing	2
	4	0576002	NUT, bracket retaining	2
	5	0920053	WASHER, spring	2
	6	0096241	SETSCREW, front cover to timing case - to sea water pump mtg. bracket	1
	7	0920003	WASHER, plain	1
	8	0748524	SETSCREW, sea water pump to support bracket	2
	. 9	2238153	NUT, sea water pump retaining	
		0920054	WASHER, spring	2 2
	11	0920004	WASHER, plain	2
	12	NA003419	PULLEY, sea water pump	. 1
/	1.3	0070101	BELT, sea water pump driving	1

Sherwood # 45 Ports from Depas, Clearate, FL

Note:

<sup>(</sup>A) Component parts for Sea Water Pump #NA003428, ITT - Jabsco Part No. 11850-0101, will be supplied by the ITT - Jabsco Service Organization.



#### - FRESH WATER PUMP -

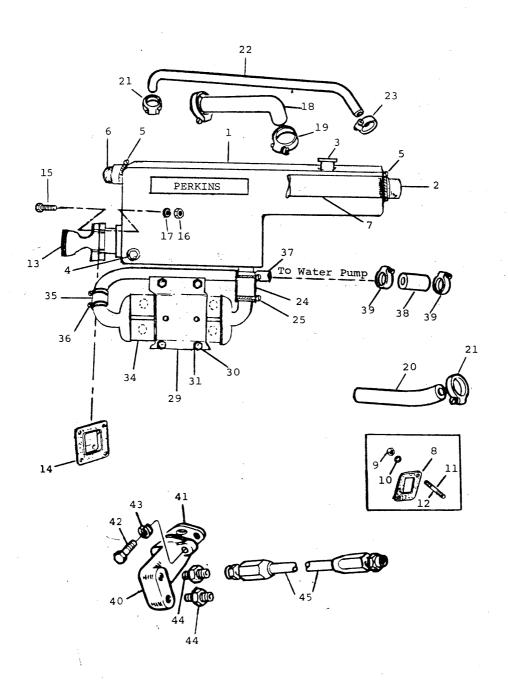
	REF.			
NOTE	NO.	PART NO.	DESCRIPTION	
	<b>→</b> 1	41312418	FRESH WATER PUMP (ASSEMBLY)	
	2	2415217 2417204	SEAL SEAL	1 1
	4 5 6 7 8 9	37712412 36822522 0826249 0576151 0920053 3113M002 33413121	BODY, rear - water pump  GASKET, front to rear body  STUD, front to rear body  NUT, body securing  WASHER, spring  PULLEY, water pump  HUB, pulley	1 1 6 6 6 1 1
	11 12 13 14 15	36867149 0096241 0096238 0746255 0920053	GASKET, water pump to cylinder block SETSCREW, pump to block SETSCREW, pump to block SETSCREW, pump to block WASHER, spring	1 3 1 1 5
÷	16	86956	REPAIR KIT, WATER PUMP (ASSEMBLY)	X
	17 18 19 20 21	NA003454 2431154 36834132 0746255 0920053	CONNECTION, water inlet PLUG, water inlet connection GASKET, water inlet connection SETSCREW, water inlet connection WASHER, spring	1 1 1 2 2
	22 23	0200080 0180107	HOSE, outlet body to pump	1 2

-> ordered \$132 + youthatte + courses to FT.L. 5-10-99

\*WYFK K15

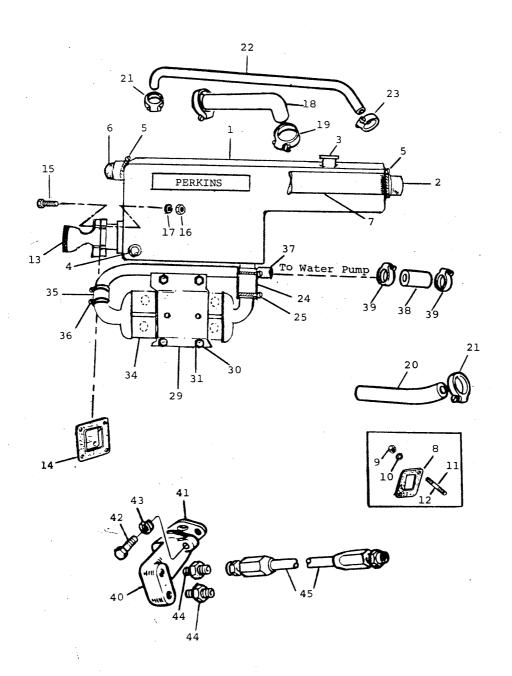
Volvo Penta?

Parlins Power, Miami
305 592 9745
Juan



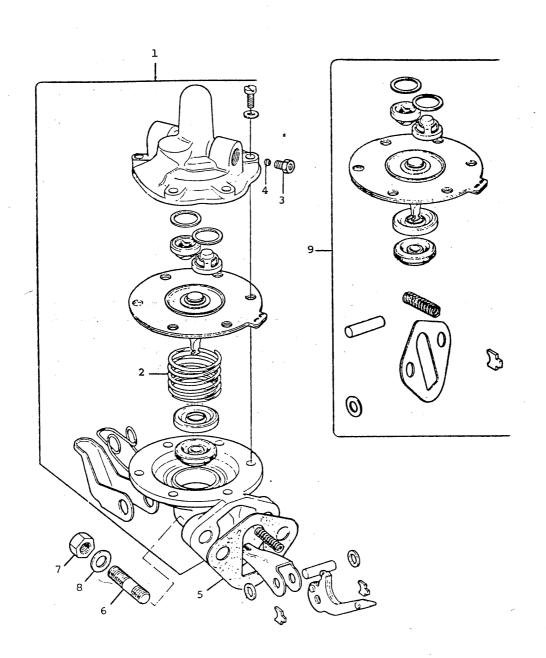
#### - HEAT EXCHANGER & HEADER TANK -

NOTE	REF.	PART NO.	DESCRIPTION Q	$\mathbf{TY}$
	1	41326025	MANIFOLD, HEAT EXCHANGER & HEADER TANK . Includes:	1
	2	24860162	END COVER, water inlet	. 1
	3	24860155	CAP, filler	1
	4	24860161	PLUG, drain	ī
	5	2481889	CLIP, end cover hose	2
	5	2481890	CLIP, hose	2 2
		24860160		ī
	7	24860163	STACK, tube	-1
	_	37731321	ELBOW, heat exch. water outlet	1
	8	36866442	GASKET, cyl. head to exhaust manifold - heat exchanger	4
	9.	0576064	NUT, exhaust manifold retaining	8
	10	0920003	WASHER, plain	8
a .	11	0826232	STUD, cyl. head to manifold - heat exch.	4
	12	0826243	STUD, cyl. head to manifold - heat exch.	4
	13	37766712	ELBOW, exhaust manifold water outlet	1
	13	37426472	FLANGE, exhaust manifold outlet	. 1
,	14	36841135	GASKET, outlet flange	1
/	15	0748525	BOLT, flange to manifold	4
		2238153	NUT, flange retaining	4
	17	0920054	WASHER, spring	4
	18	NA003460	HOSE, header tank to cyl. head water outlet connection	1
	19	0180069	CLIP, hose	2
	20	NA003451	HOSE, flex - sea water pump to heat exchanger	1
	21	0180066	CLAMP, hose	2
	22	NA003452	PIPE, sea water pump to heat exhanger .	1
	23	0180065	CLAMP, pipe	1
	24	NA003480	HOSE, heat exchanger manifold to oil cooler	1
	25	0180069	CLAMP, hose	2
	-	NA003413	BRACKET, oil cooler support	1
		0746851	SETSCREW, support bracket to block	2
	_	0920056	WASHER, spring	2
	29	NA 000227	CLAMP, oil cooler retaining and sump pump support	1
	30	0748413	SETSCREW, clamp to support bracket	4
	31	0571415	NUT, cooler clamp retaining	4
	_	0920053	WASHER, spring	4
	_	0920003	WASHER, plain	4



#### - HEAT EXCHANGER & HEADER TANK -

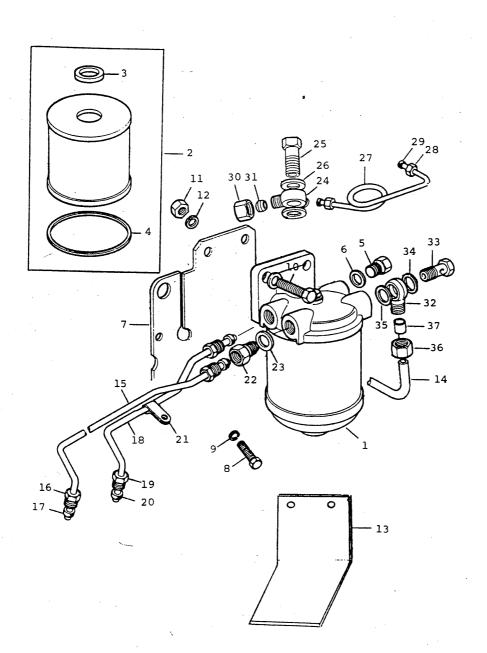
NOTE	REF.	PART NO.	DESCRIPTION	QTY.
	34	NA003426	COOLER, oil - engine & gearbox	1
	35	33855118	HOSE, cooler outlet to water pump	1
	36	0180069	return pipe	1 2
	37	NA003453	PIPE, oil cooler to water pump	1
	38 39	•	HOSE, pipe to water pump connection CLAMP, hose	1 2
	40 41 42 43	0096631	ADAPTOR, cyl. block lube oil pipes GASKET, adaptor to cylinder block SETSCREW, adaptor to block WASHER, spring	1 1 2 2
	44	NA000571	CONNECTION, cyl. block adaptor - in and out	2
i i	45	NA003432	PIPE, flex - lube oil adaptor to filter adaptor	1
	-	37731321	ELBOW, sea water - heat exchanger to exhaust manifold	1
	-	2481890	CLIP, sea water elbow	î
	_	NA001860	HOSE, header tank leak-off	1



## - FUEL OIL LIFT PUMP -

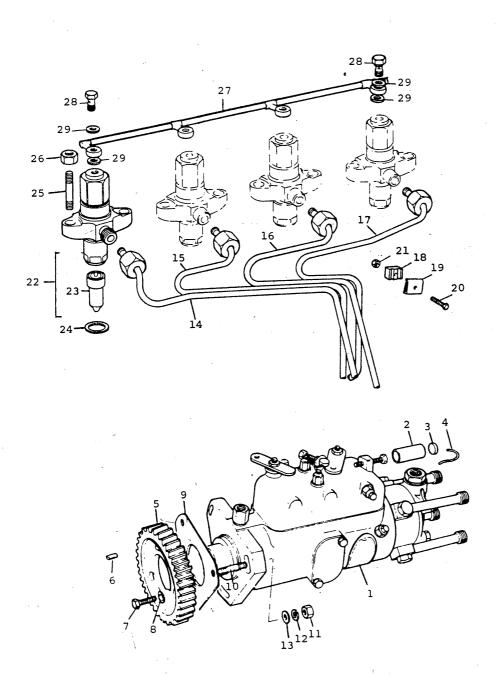
NOTE	REF.	PART NO.	DESCRIPTION	QTY.
(A)	1	2641327	FUEL OIL LIFT PUMP (ASSEMBLY)	1
	2	0780224	SPRING, diaphragm	1
	3 4	33533112 0566003	NUT, lift pump inlet	1
	5 6 7 8	36862165 0826248 0576002 0920053	GASKET, lift pump to cylinder block STUD, lift pump to cylinder block NUT, lift pump retaining WASHER, spring	1 2 2 2
	9	26410063	REPAIR KIT, LIFT PUMP (ASSEMBLY)	х

Note: (A) Rotate 1800



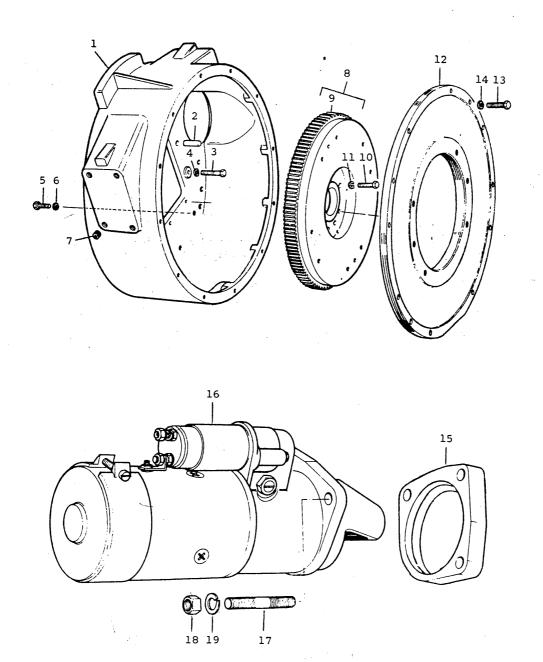
## - FUEL OIL FILTER -

NOTE	REF.	PART NO.	DESCRIPTION	QTY.
	1	2656613	FUEL OIL FILTER (ASSEMBLY)	1
	2	26560017	ELEMENT KIT, fuel oil filter Includes:	1
	3	26560014	SEAL, element seating	2
	4	0490786	SEAL, element sealing	
	5	0650204	PLUG, filter - No. 4 Port	2 1
	6	0920154	WASHER, filter plug	1
	7	37581172	BRACKET, support - fuel filter	1
	8	0746452	SETSCREW, bracket to cyl. head	2
	9	0920054	WASHER, spring	2
		0096431	· · · · · · · · · · · · · · · · · · ·	1 2 2 2 2
		0576051		2
		0920054		2
	13	NA003423		1
	14	NA 003448	PIPE, lift pump to fuel filter	1
	15	35845052	PIPE, fuel oil filter to fuel pump Includes:	1
	16	33532128	NUT, fuel oil pipe	2
/	17	33811113	FERRULE, fuel oil pipe	2
	18	41222235	PIPE, fuel inj. pump return to filter Includes:	1
		33532128	NUT, fuel oil pipe	2
		33811113	FERRULE, fuel oil pipe	2
	21	0180173	CLIP, fuel oil pipe	1
	22	2658201	VALVE, non-return - fuel oil filter	1
	23	2411141	WASHER, non-return valve	1
	24	0201397	CONNECTION, banjo - filter overflow	1
	25	0095344	BOLT, banjo connection	1
	26	0920146	WASHER, banjo bolt	2
	27	NA003440	PIPE, injector leak-off to filter	1
	28	33225412	NUT, leak-off pipe	2
	29	33811112	FERRULE, leak-off pipe	2
	30	0576112	NUT, leak-off connection	1
	31	0566003	FERRULE, leak-off pipe	1
	32	0201091	CONNECTION, banjo - filter to pipe	1
	33	0095332	BOLT, banjo	1
	34	0920127	WASHER, banjo bolt	1
	35 36	0920154	WASHER, banjo bolt	1
	36 37	33225413 33811115	NUT, fuel pipe	1 1
	<i>J</i> /		<del></del>	
	_	35833594	PIPE, flexible - filter to tank	
	_	2656084 33533112	PRE-FILTER, fuel oil (supplied loose) NUT, pre-filter (supplied loose)	1 1
	_	0566003	FERRULE, pre-filter (supplied loose)	1
	_	0300003	random, promittee (auppited 100se)	1.



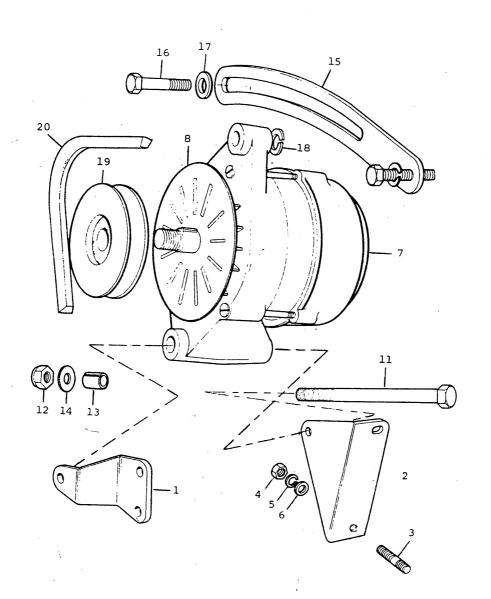
# - FUEL INJECTION SYSTEM -

NOTE	REF.	PART NO.	DESCRIPTION	QT
	1	38360	PUMP, fuel injection - c/w control levers	
	2	2644951	SLEEVE, throttle lever adj. screw	
	3	31718104	SEAL, adj. screw sleeve	
	4	31718105	WIRE, sleeve seal	
	5	31171982	GEAR, inj. pump driving	
	6	2116078	DOWEL, driving gear	
	7	0096201	SETSCREW, gear to pump	
	8	0920053	WASHER, spring	
	9	0490685	GASKET, inj. pump to adaptor	
	10	0826218	STUD, pump adaptor to inj. pump	
		0576002	NUT, pump retaining	
		0920053	WASHER, spring	
		0920003	WASHER, plain	
	13	0320003	mainit, prairi	
	14	35355346	PIPE, fuel injection - No. 1 Cylinder	
		35355347	PIPE, fuel injection - No. 2 Cylinder	
		35355348	PIPE, fuel injection - No. 3 Cylinder	
	17		PIPE, fuel injection - No. 4 Cylinder	
		•	_	
		NA003449	LEVER, stop - fuel inj. pump	
<i>f</i> 1	-	NA003450	STOP, inj. pump stop lever	
	18	36844116	DAMPER wibration final init mine	
		36511123	DAMPER, vibration - fuel inj. pipe PLATE, vibration damper	
		0726505	BOLT, vibration damper	
	21	2211291	NUT, damper bolt	
	21	2211291	Noi, damper boic	
	22	2645580	INJECTOR & HOLDER (ASSEMBLY)	
			Includes:	
	23	33435	NOZZLE, fuel oil	
		0920113	WASHER, injector seating	
	25	32514311	STUD, cyl. head to injector	
	26	0576002	NUT, injector retaining	
	27	35587366	PIPE, injector leak-off (Assembly)	
	28	0095315	BOLT, banjo	
	29	0921176	WASHER, banjo bolt	
	ر ہے	0,211,0	mainty sairjo sort	
	_	0520463	BRACKET, stop control spring - fitted to	
			timing case blockside bolt	
	-	31751107	SPRING, stop control return	
		0520463	BRACKET, throttle control spring - bend	
			slightly to fit spring - fitted	
			to top bolt of timing case	
	-	0780268	SPRING, throttle control return	



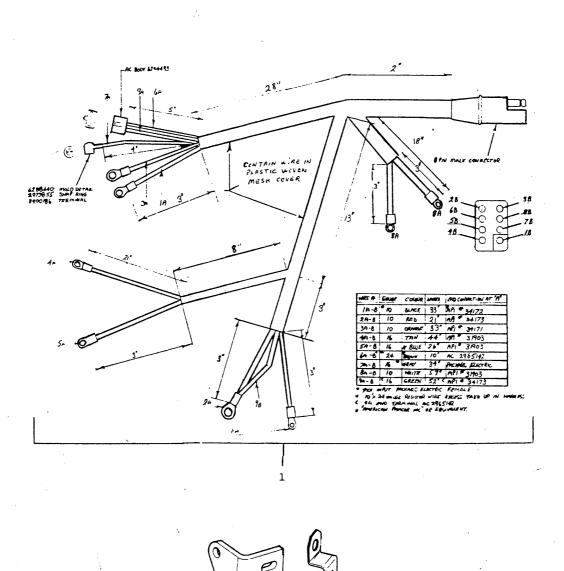
#### - FLYWHEEL & HOUSING -

NOTE	REF.	PART NO.	DESCRIPTION	QTY.	
	1 2 3 3 4	37134844 0350016 0096433 0746424 33115129	HOUSING, flywheel  DOWEL, cyl. block to flywheel housing.  SETSCREW, housing to cyl. block  SETSCREW, housing to cyl. block  WASHER, housing to block setscrew	1 2 2 6 8	
	5 6	0746454 0920053	SETSCREW, oil pan to flywheel housing WASHER, spring	4 4	
	7	32114441	PLUG, flywheel housing blanking	8	
	8	NA 900085	FLYWHEEL & RING GEAR (ASSEMBLY)	1	
	9	31161147	Includes: RING, starter	. 1	
	10 11	2182122 33117121	SETSCREW, flywheel to crankshaft WASHER, flywheel to crankshaft	6 6	<b>Υ</b> <b>×</b>
,	12 13 14	NA003406 0096431 0920054	ADAPTOR PLATE, gear box to flywheel hsg. SETSCREW, plate to housing	1 12 12	X
	- -	2184463 0826612	SCREW, adaptor plate to gearbox STUD, gearbox to adaptor plate	2 4	
	15	NA003425	SPACER, starter motor	1	
	16	NA 000623	STARTER MOTOR (Delco-Remy)	1	
	17 18 19	0826438 0576051 0920054	STUD, starter motor to flywheel housing. NUT, starter motor retaining WASHER, spring	3 3 3	
	<u>-</u> -	NA003670 2134177	NUT, battery terminal	1	
	- -	NA003671 0920051	NUT, switch & resistor terminal WASHER, spring	2 2	



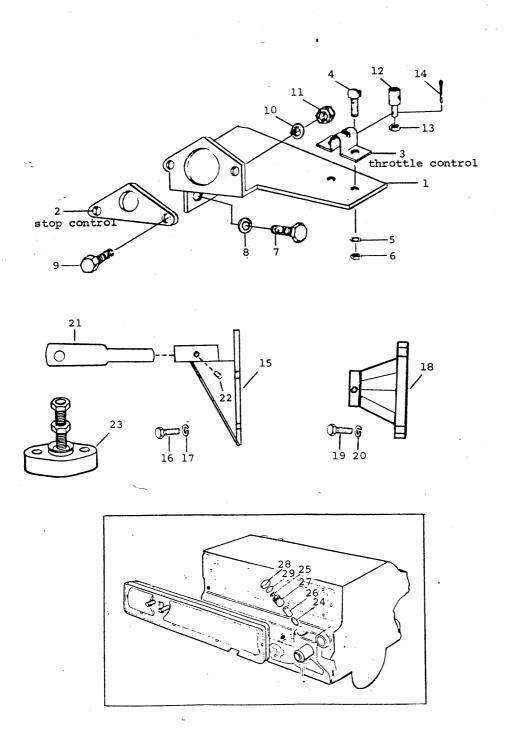
#### - ELECTRICAL EQUIPMENT -

NOTE	NO.	PART NO.	DESCRIPTION	YTÇ
	1	NA003347	BRACKET, alternator - front	1
	2	NA003348	BRACKET, alternator - rear	1
	3	0826463	STUD, cyl. block to alt. bracket	2
	4	0576051	NUT, alternator bracket retaining	2
	5	0920054	WASHER, spring	2 2
	6	0920004	WASHER, plain	2
	7	NA001905	ALTERNATOR, 61 Amp. c/w regulator - (Delco #1102921)	1
	8	2871954	FAN, alternator cooling	ī
		NA004800	CONNECTION, alternator terminal	
	_	NA000904	CONNECTION, alternator terminal	1 3 1 1
	11	0096444	BOLT, alternator to bracket	ر 1
	12	2211224	NUT, alternator retaining	1
	13	NA000721	BUSHING, alt. clamping bolt	1
		0920004	WASHER, plain	1
	1-1		MADIEN, PIGIT	1
	15	NA003424	LEVER, alternator adjusting	1
*	16	0748414	SETSCREW, lever to alternator	ī
, in the second	17	0920497	WASHER, plain	î
	18	0920053	WASHER, spring	ī
	19	31141645	PULLEY, alternator (2-3/4" dia	
			3/8" groove)	1
·	20	NA003439	BELT, alternator & water pump driving	1
	_	NA000475	NUT, alternator - bat. term	1
	_	0748411	SETSCREW, alternator - ground term	ī
	_	0920053	WASHER, spring	ī
	_	NA 000208	TRANSMITTER, oil pressure	1
	-	NA000474	NUT, oil pressure transmitter	ī
	_	NA000209	TRANSMITTER, water temp	1
		NA000474	NUT, water temp. transmitter	ī
				_



#### - ENGINE WIRING HARNESS -

QTY.	DESCRIPTION	PART NO.	REF.	NOTE
1	ENGINE WIRING HARNESS (ASSEMBLY)	NA003441	1	
1	BRACKET, wiring harness - to rear lift- ing eye setscrew	NA003442	2	
1	CLAMP, wiring harness to bracket	NA003443	3	
2 2	SCREW, clamp to harness support bracket. NUT, clamp to bracket retaining	2182003 2211401	<b>4</b> 5	

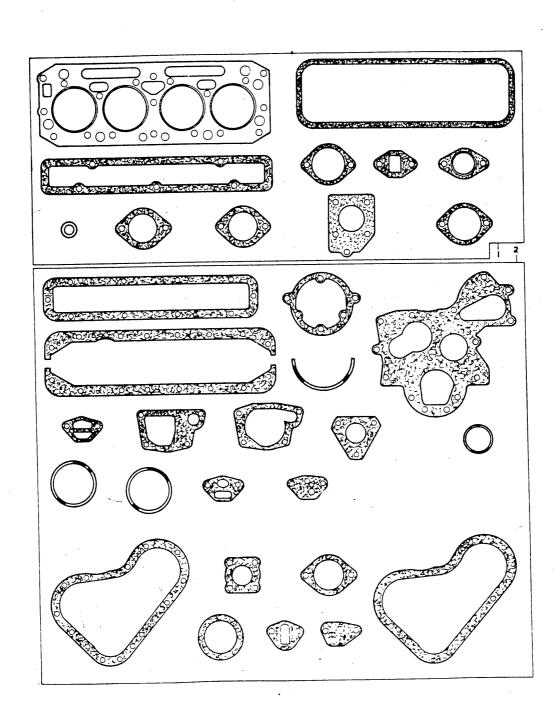


# - ACCESSORIES -

NOTE	REF.	PART NO.	DESCRIPTION
		NA003482	THROTTLE & STOP CONTROL KIT (ASSEMBLY) .
	1	NA003477	
	2	NA003478	BRACKET, solenoid mounting
	3	NA001309	BRACKET, stop control support
	4	2173706	CLAMP, throttle cable
	5	0920296	SCREW, clamp to solenoid bracket
	6	0576053	WASHER, tooth lock
	7	0746253	NUT, cable clamp screw
	8	0920299	SCREW, bracket to plug
	9	NA003484	WASHER, spring
	10	0920052	SCREW, stop brkt. to solenoid brkt.
	11		WASHER, spring
	12	NA 001471	Noi, bidcket retaining
	13	NA001471	PIN, pivot
	14	NA001473	WASHER, Plain
		MACCIADO	PIN, cotter
	15	NA001699	BRACKET, engine rear mounting
	16	0748611	SETSCREW, mtg. bracket to gearbox
	17	0920055	WASHER, spring
	18	NA003407	BRACKET, engine front mounting
7	19	0096634	SETSCREW, mtg. brkt. to block
	19	0096631	SETSCREW, mtg. brkt. to block
	20	0920055	WASHER, spring
(A)	21	NA 000594	TRUNNION, engine rear mounting
	22	NA000468	SCREW, trunnion to support bracket
(A)	21	NA 000594	TRUNNION, engine front mounting
	22	NA000468	SCREW, trunnion to support bracket
	23	NA004146	MOUNTS, flexible
	-	NA004473	
	-	NA001706	cent to w/filler cap)  PLAQUE, rotation identification
	_	31815577	LABEL, engine name
		25022525	
	-	35833535	PIPE, flexible - fuel tank to lift pump (supplied loose)
	24	33473107	SHAFT, tachometer drive
	25	0170052	SNAP RING shaft retains
	26	0050358	SNAP RING, shaft retaining
	27	0770101	BEARING, tachometer drive
	28	32417114	SLEEVE, tachometer drive
	29	32811104	CAPNUI, Lachometer drive sleeve
•			WASHER, capnut

#### Note:

<sup>(</sup>A) Order Qty. (4) each of Part Numbers NA003786 Mounting Pad and NA003787 Bushing.



#### - GASKET SETS -

NOTE	REF.	PART NO.	DESCRIPTION		
	1 .	88994	GASKET SET, TOP OVERHAUL (ASSEMBLY)	X	
	2	86999	GASKET SET, BOTTOM OVERHAUL (ASSEMBLY) .	х	

# PERKINS PARTS for PERKINS PRODUCTS