

Important Notice

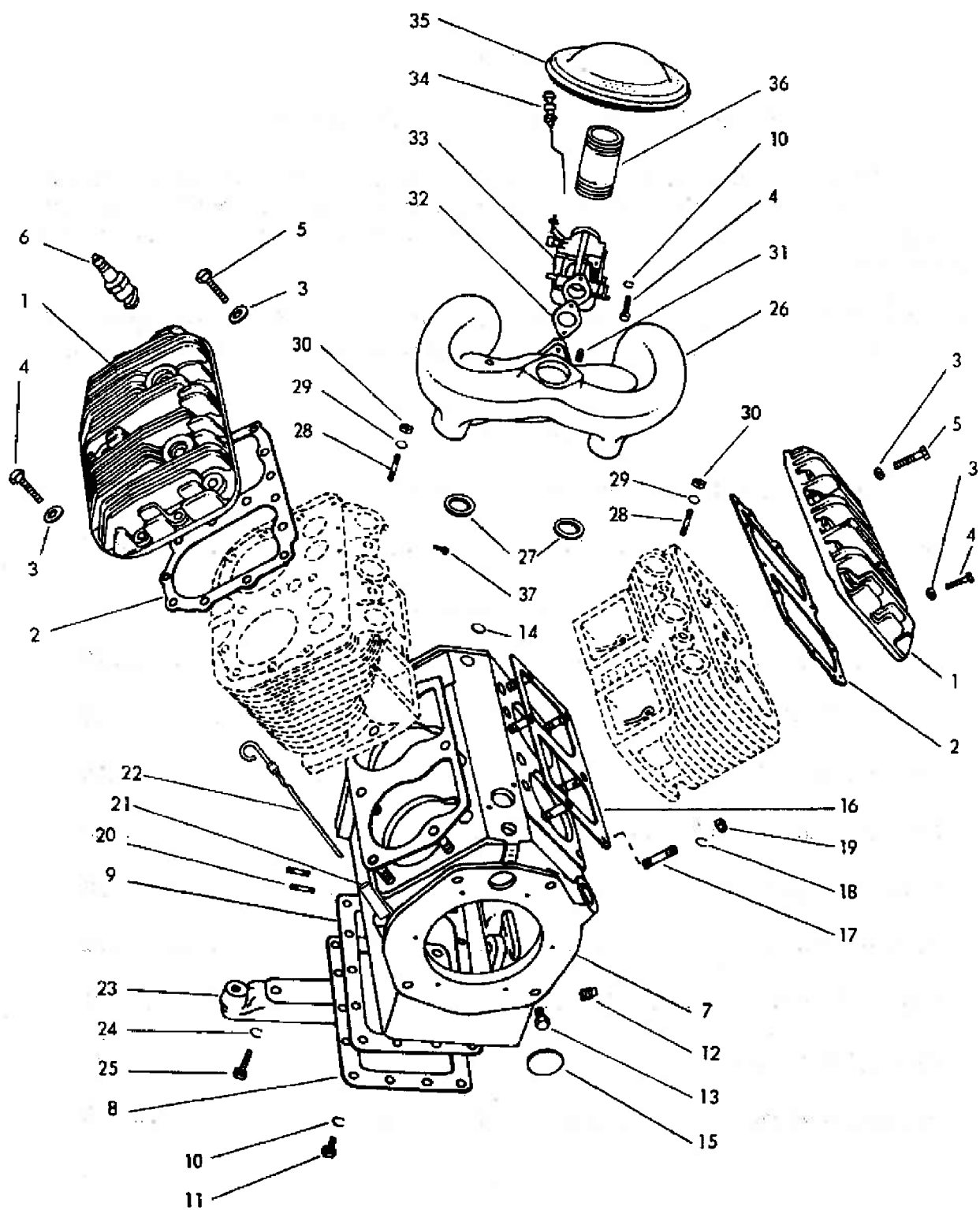
The manuals contained in this computer file are reproductions from the “Wisconsin Engine” counter catalog, part number “S236”. This manual was last produced in the mid 1980’s.

As with any printed data, the information contained in these manuals may not be the most up-to-date available. It is provided as a convenience to our customers and all information should be verified before making repairs to an engine or component.

All service parts are sold through our Distributor Network. Visit our website (www.wisconsinmotors.com) to locate a distributor near you.

Table of Contents

Cylinder Head, Crankcase, Carburetor and Manifold	2 - 4
Bearing Plate, Crankshaft, Piston, Connecting Rod and Flywheel	6 - 8
Cylinder Block Assembly	10
Camshaft and Fuel Pump Mounting.....	12
Oil Filler, Oil Filter and Idler Gear	14
Oil Pump Assembly	16
Gear Cover and Third Bearing	18
Governor Assembly	20
Air Shrouding	22
Magneto Ignition	24
Starting Motor Assembly	26
Engine Gasket Set	28



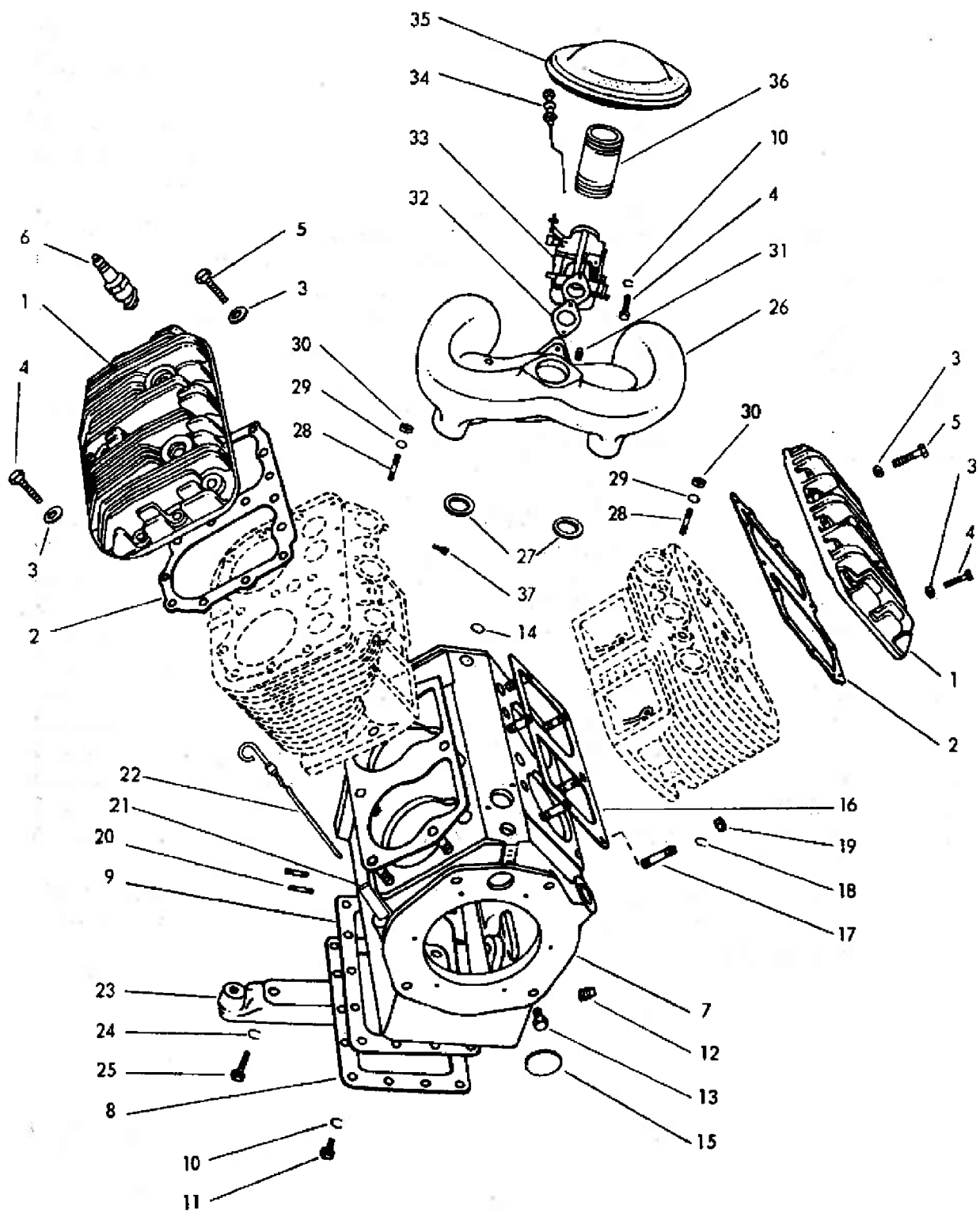
Cylinder Head, Crankcase, Carburetor and Manifold

ITEM	PART NO.	DESCRIPTION	QTY
1	AB100B	Cylinder head	2
2	QD613C	Gasket, cylinder head	2
3	PH77A	Washer, 5/16"	34
4	XD19	Screw, 5/16"-18 x 1-1/4" long	32
5	XD20	Screw, 5/16"-18 x 1-3/8" long	4
6	YD6	Spark plug, Champion No. D16J	4
7	* BA48C110	Crankcase assembly (includes items 13 - 15, 17, & 20; also tubes, plugs, nozzles, screen, screws and dipstick)	1
8	BH141A	Cover, crankcase bottom	1
9	QD610A	Gasket, crankcase bottom cover	1
10	PE4	Lock washer, 5/16"	16
11	XD14	Screw, 5/16"-18 x 5/8" long	14
12	XK3	Plug, 3/8" pipe	2
13	PF144	Plug for 7/16"-14 taps in face of case	4
14	SA26	Plug, 5/8"	2
15	SA58	Plug, 1-3/8"	1
16	QD617	Gasket, cylinder base	2
17	PC615	Stud, cylinder block to crankcase	12
18	PE6	Lock washer, 7/16"	12
19	PD12	Nut, 7/16"-20	12
20	PC396	Stud, starter bracket	2
21	RF1495F	Adapter tube (optional)	1
22	RJ173A	Dipstick (optional)	1
23	BK65	Engine support, cast iron	2
24	PE7	Lock washer, 1/2"	4
25	XD43	Screw, 1/2"-13 x 1-1/2" long	4
26	LD253L	Manifold, intake and exhaust	1
27	QB75	Gasket, manifold to cylinder block	6

* BA48110 is standard machining number. Any special machining is indicated by a number other than "110" stamped on T.O. end of crankcase, located on marking pad.

1-1/2 2 x D + .25

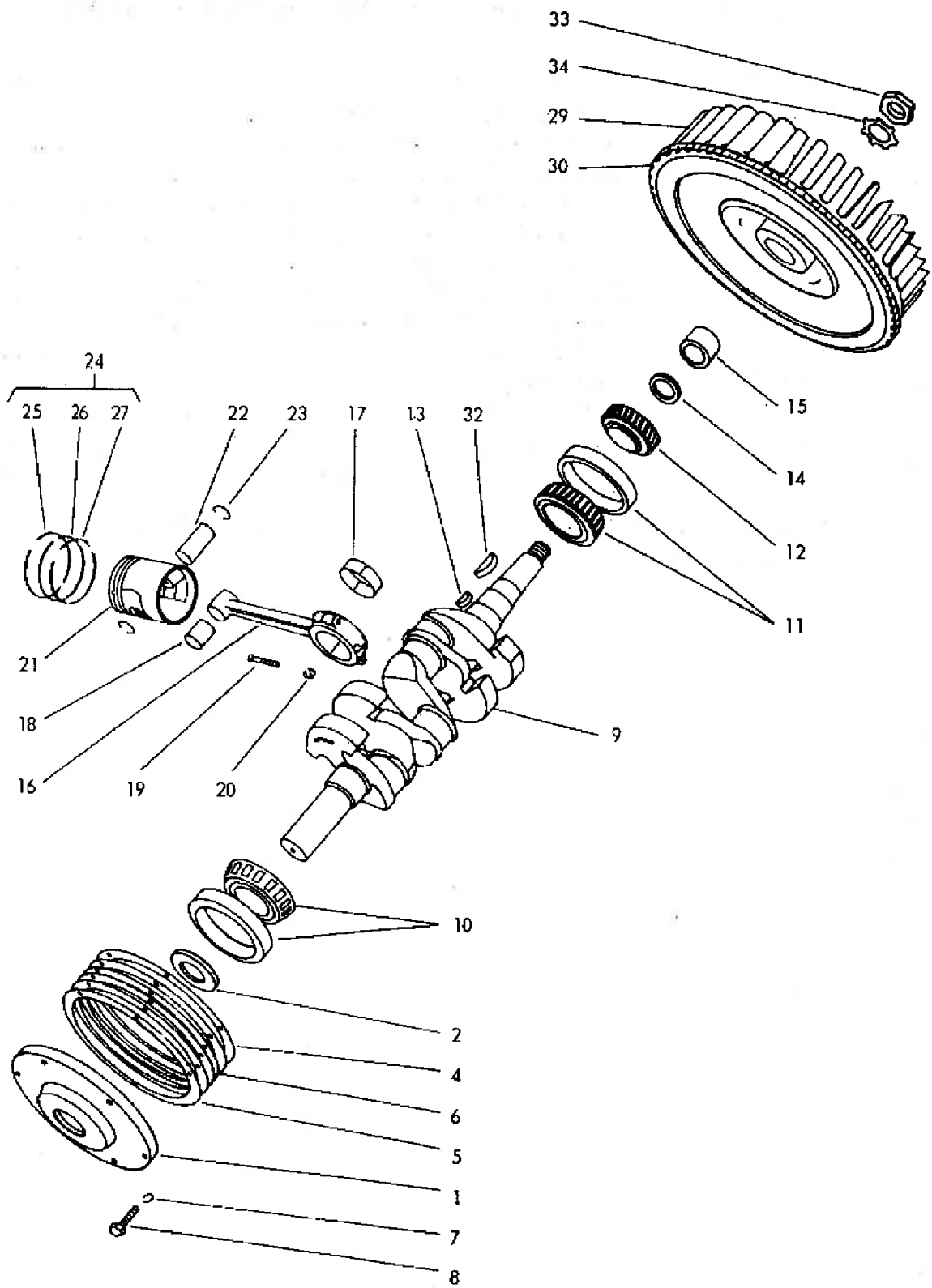
continued on page 4



Cylinder Head, Crankcase, Carburetor and Manifold (cont.)

ITEM	PART NO.	DESCRIPTION	QTY
28	PC406	Stud, manifold to cylinder block, 3/8"-16 and 24 thread x 1-5/8" long	4
29	PH22A	Washer, 3/8"	4
30	PD206	Nut, 3/8"-24 (Seez-proof)	4
31	XK1	Plug, 1/8" pipe, intake manifold	1
32	QC12A	Gasket, carburetor flange	1
33	* L57MS1	Carburetor, Zenith No. 13884A	1
—	LQ37	Carburetor repair kit (see page 32 for carburetor service parts)	1
34	VE693C	Choke control	1
35	WD98S5	Muffler, standard	1
36	LJ184	Nipple, 1-1/4" x 2-1/2" long, W.I. pipe	1
37	XA33	Screw, 1/4"-20 x 1/2" long	1

* See "Carburetors" in Options and Accessories section of this manual for service parts.



Bearing Plate, Crankshaft, Piston, Connecting Rod and Flywheel

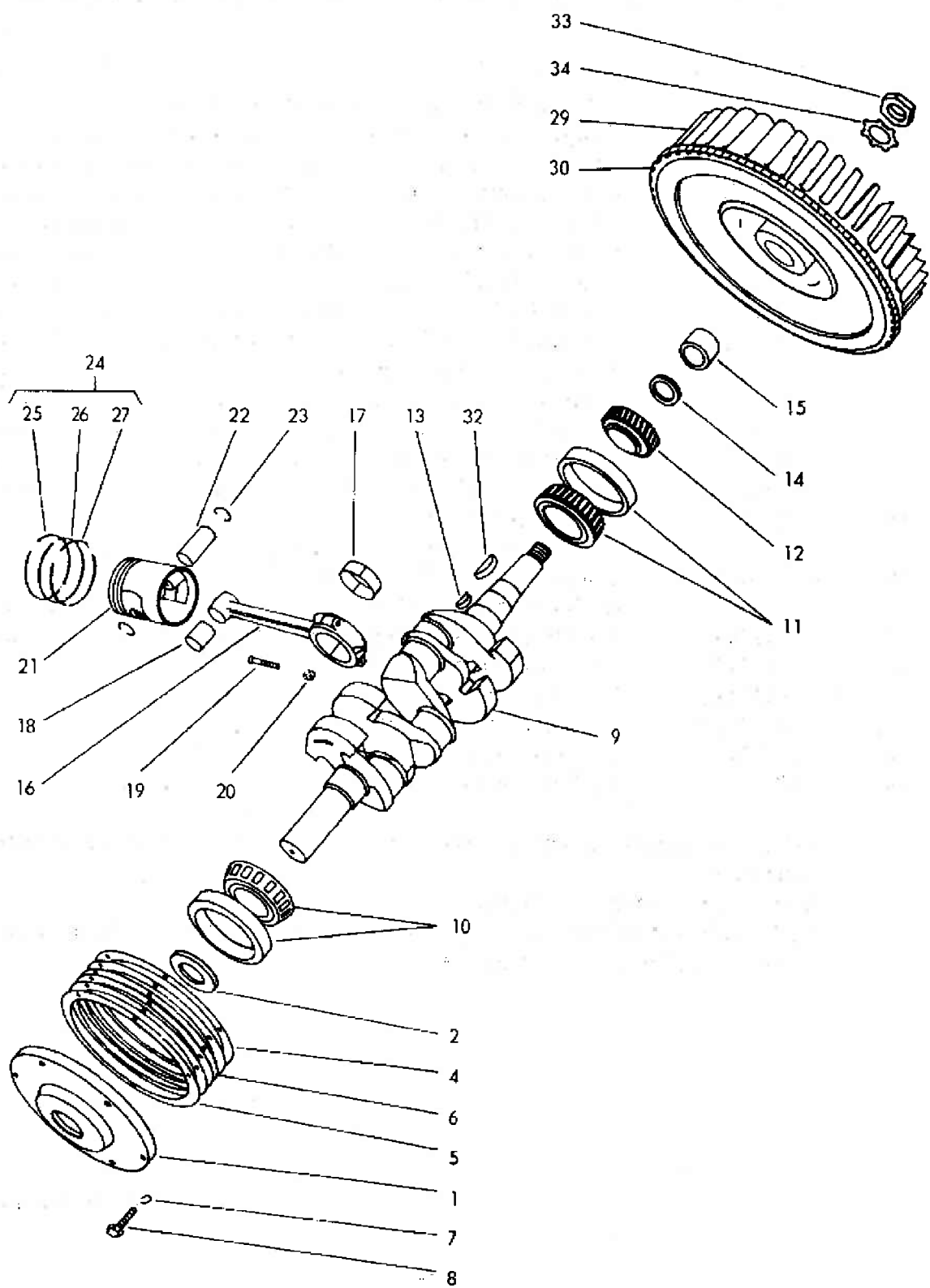
ITEM	PART NO.	DESCRIPTION	QTY
1	BG210C1S2	Bearing plate assembly, main (includes item 2; includes bearing cup; replaces BG210CS2)	1
2	PH364	Oil seal	1
4	QD527C	Gasket, bearing plate, .006" thick	3
5	QD527D	Gasket, bearing plate, .003" thick	3
6	† QF33C	Shim, main bearing plate, .013" thick	1
7	PE5	Lock washer, 3/8"	6
8	XD29C	Screw, 3/8"-16 x 1-1/4" long	6
9	* CA89AS1	Crankshaft assembly, standard (includes items 10 - 15)	1
10	ME114	Main bearing assembly, take-off end	1
11	ME223	Main bearing assembly, flywheel end	1
12	GA36C	Crankshaft gear	1
13	PL21	Woodruff key, No. 3	1
14	HF643	Spacer, crankshaft roller bearing	1
15	ME225	Bearing, inner race, shaft roller (mount with #620 "Loctite")	1
16	ΔDA68AS1	Connecting rod, shell bearing type (includes items 18 - 20)	4
17	HA134S	Shell bearing, standard size (2 halves)	4
—	HA134S1	Undersize bearing, .001"	
—	HA134S2	Undersize bearing, .002"	
—	HA134S10	Undersize bearing, .010"	
—	HA134S20	Undersize bearing, .020"	
18	HG137A	Bushing, piston pin	4

† Use same quantity of shims and gaskets as were removed to give .002 to .005" end play.

ΔFurnished without shell bearings.

* CA89AS1 is standard machining number; a dash number is added for any special machining, located on marking pad.

continued on page 8

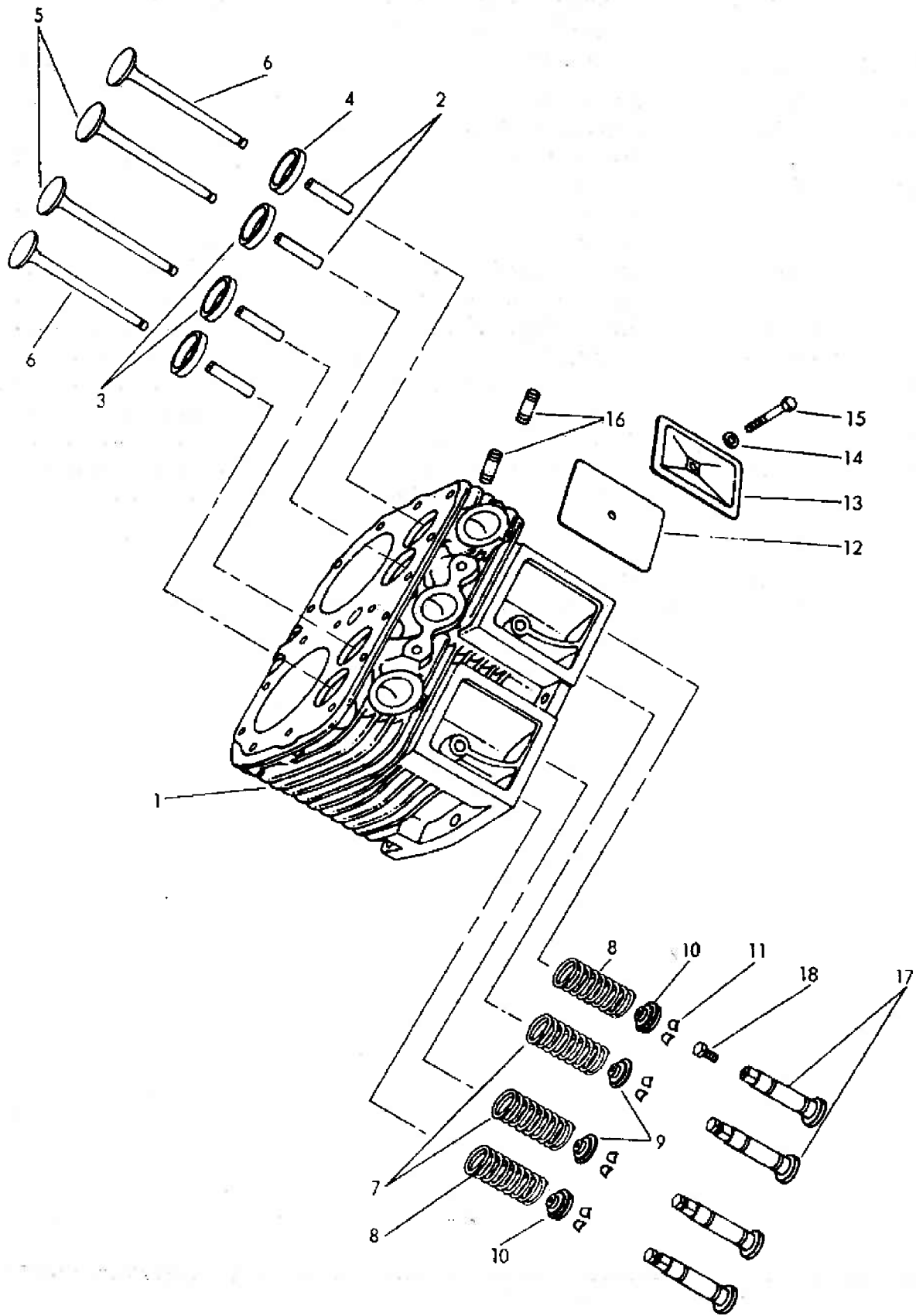


Bearing Plate, Crankshaft, Piston, Connecting Rod and Flywheel (cont.)

ITEM	PART NO.	DESCRIPTION	QTY
19	PB148S1	Bolt assembly, connecting rod (includes item 20)	8
20	PD246	Locknut, 5/16"-24	4
21	• DB190B1	Piston, cam ground, standard size	4
22	** DE65	Piston pin, standard size; also available in .005 & .010 O/S	4
23	PK52	Retaining ring, piston pin	8
24	DR63	Ring set, standard size (includes items 25 - 27)	1
25	— — —	Compression ring, top groove	4
26	— — —	Scraper ring, 2nd groove	4
27	• — — —	Oil ring, 3rd groove	4
29	N101A	Flywheel (includes item 30)	1
30	GH44	Ring gear	1
32	PL83	Woodruff key, No. 23	1
33	PD123	Nut, flywheel mounting	1
34	PE66	Lock washer, flywheel nut	1

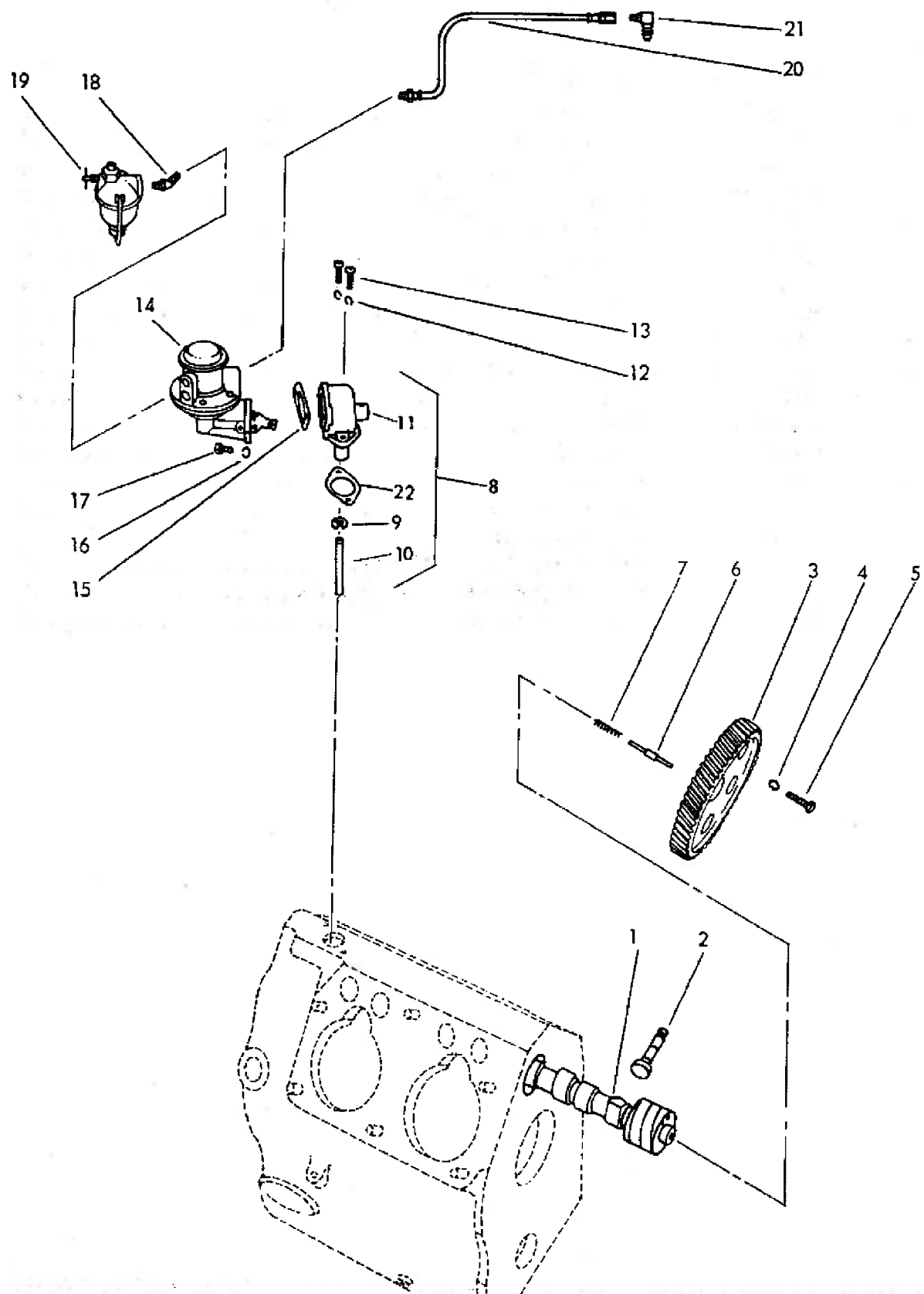
• Available .010", .020", .030" oversize.

** Piston pins are also available .005", .010" oversize.



Cylinder Block Assembly

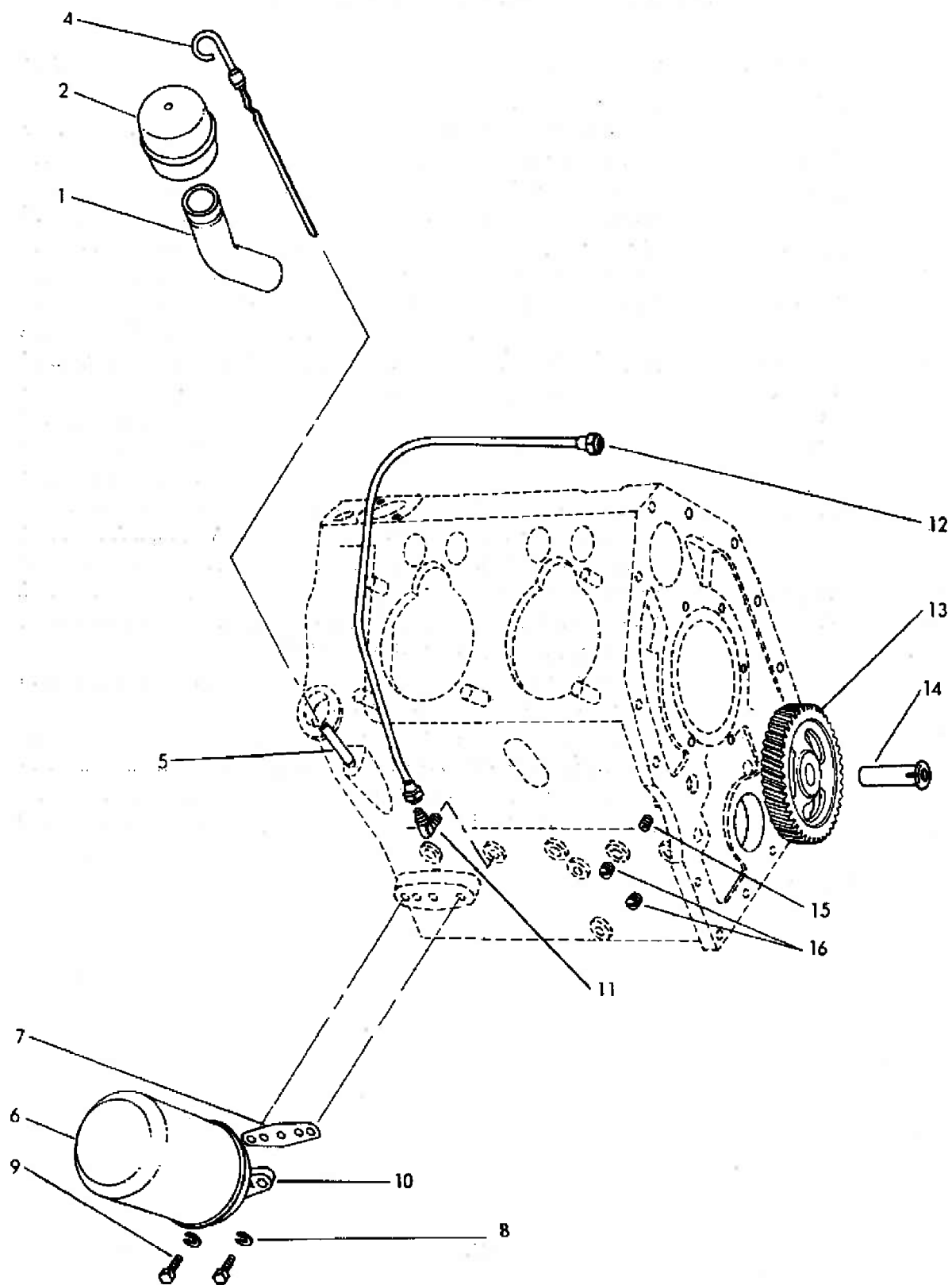
ITEM	PART NO.	DESCRIPTION	QTY
1	AA98S7	Cylinder block assembly (includes items 2 - 16)	2
2	AD47	Guide, valve stem	8
3	HG201	Insert, valve seat, intake	4
4	HG273D	Insert, valve seat, exhaust	4
5	AE75B	Valve, intake	4
6	AE75D	Valve, exhaust	4
7	AF49A	Valve spring, intake	4
8	AF54	Valve spring, exhaust	4
9	AC26	Seat, valve spring, intake	4
10	AG31	Rotator, valve and spring seat, exhaust	4
11	AH9	Lock, valve spring seat	16
12	QD612A	Gasket, valve inspection cover plate	4
13	SA68	Cover plate, valve inspection	4
14	PH14	Washer, 5/16" copper	4
15	XD21	Screw, 5/16"-18 x 1-1/2" long	4
16	PC406	Stud, manifold to cylinder block, 3/8"-16 and 24 thread x 1-5/8" long	4
17	F61	Valve tappet with adjusting screw	8
18	PB169A	Screw, valve tappet adjusting	8



Camshaft and Fuel Pump Mounting

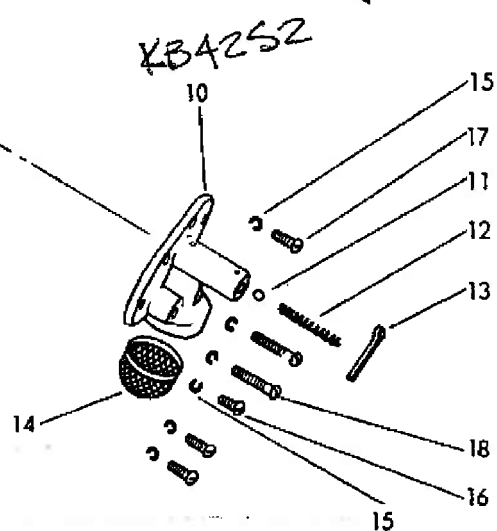
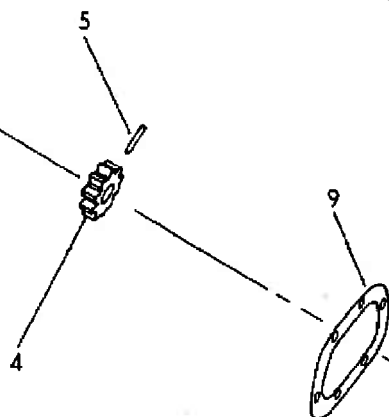
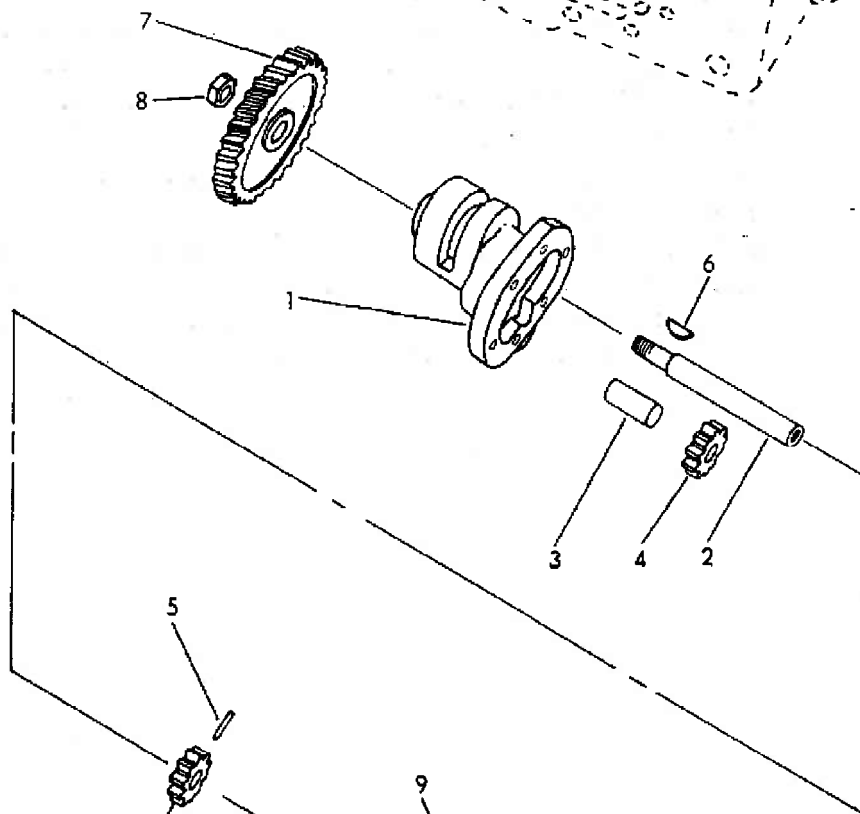
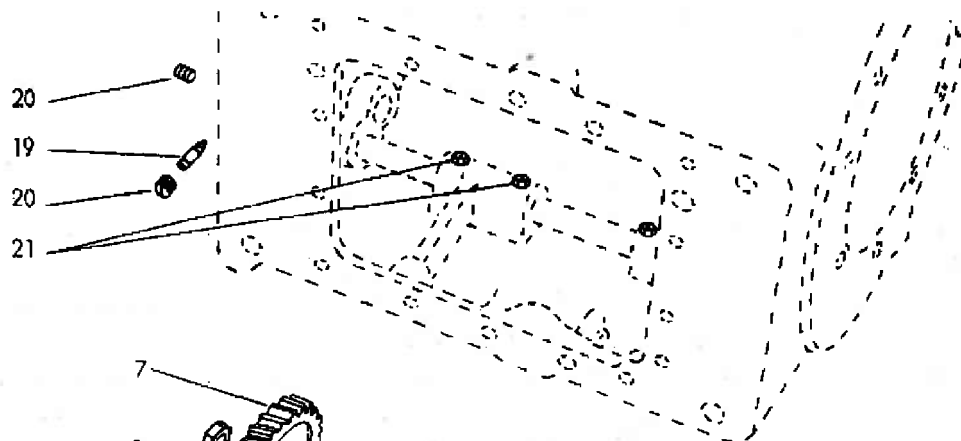
ITEM	PART NO.	DESCRIPTION	QTY
1	EA113	Camshaft	1
2	— — —	Valve tappet assembly (see page 10)	8
3	GB45D	Camshaft gear	1
4	PE46	Lock washer, 5/16"	3
5	XD17	Screw, 5/16"-18 x 1" long	3
6	PF101	Thrust plunger, camshaft	1
7	PM108	Spring, camshaft thrust plunger	1
8	TF96-18	Adapter assembly (includes items 9 and 10)	1
9	* — — —	Retainer clip	1
10	* — — —	Plunger shaft	1
11	TB105C	Adapter	1
12	PE3	Lock washer, 1/4"	2
13	XD6	Screw, 1/4"-20 x 3/4" long	2
14	LP38ES1	Fuel pump with gasket	1
—	LQ46	Repair kit for fuel pump	1
15	QD538A	Gasket, fuel pump mounting	1
16	PE4	Lock washer, 5/16"	2
17	XD15	Screw, 5/16"-18 x 3/4" long	2
18	RF1397	Elbow, fuel strainer mounting	1
19	LP43	Fuel strainer with shut-off mounted to fuel pump inlet	1
—	LQ31	Repair kit (bowl, gasket, screen)	
20	RM1049B	Fuel line, pump to carburetor	1
21	RF1225	Elbow, fuel line, in carburetor	1
22	QD67	Gasket, fuel pump adapter	1
23	XA34	Screw, 1/4"-20 x 1/2" long	2

* Not serviced separately.



Oil Filler, Oil Filter and Idler Gear

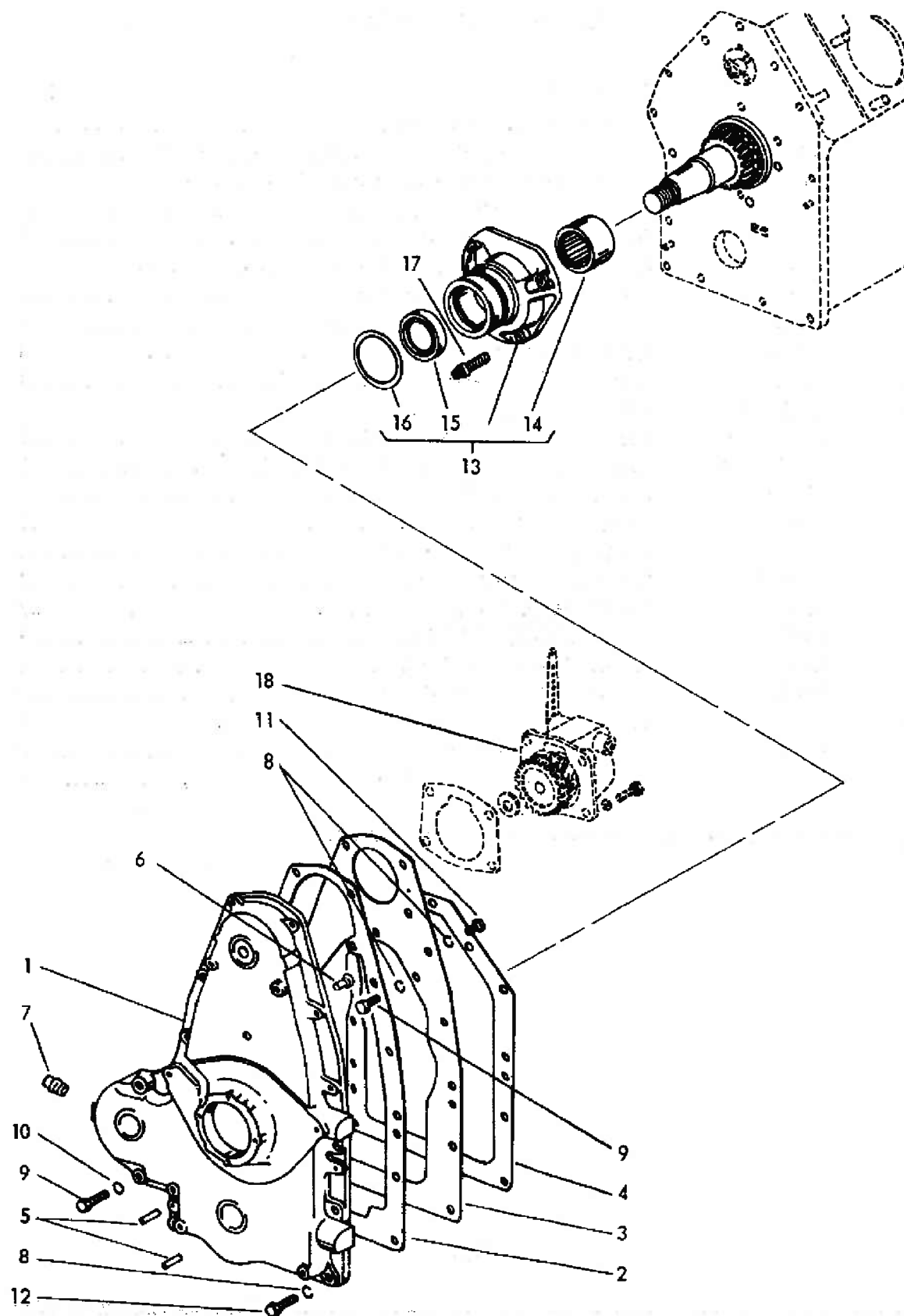
ITEM	PART NO.	DESCRIPTION	QTY
1	LJ300P	Tube, oil filler	1
2	LO60-1	Cap, oil filler and breather	1
4	RJ173	Dipstick (10" long), below oil filler	1
5	RF1495	Dipstick adapter, below oil filler tube (mount with "Loctite")	1
6	RV52S4	Oil filter cartridges (4 pack)	1
7	QD595A	Gasket, oil filter mounting	1
8	PE4	Lock washer, 5/16"	2
9	XD17B	Screw, 5/16"-18 x 1" long	2
10	RV52A1	Oil filter base assembly (includes filter base and stud)	1
11	RF1225	Elbow, oil line to governor	1
12	RM675	Oil line, crankcase to governor	1
13	GC27D	Idler gear	1
14	PJ105	Stud, idler gear	1
15	XE55	Screw, 5/16"-18 x 3/8" long Allen set	1
16	PF18	Pipe plug, 1/8" slotted	5



Oil Pump Assembly

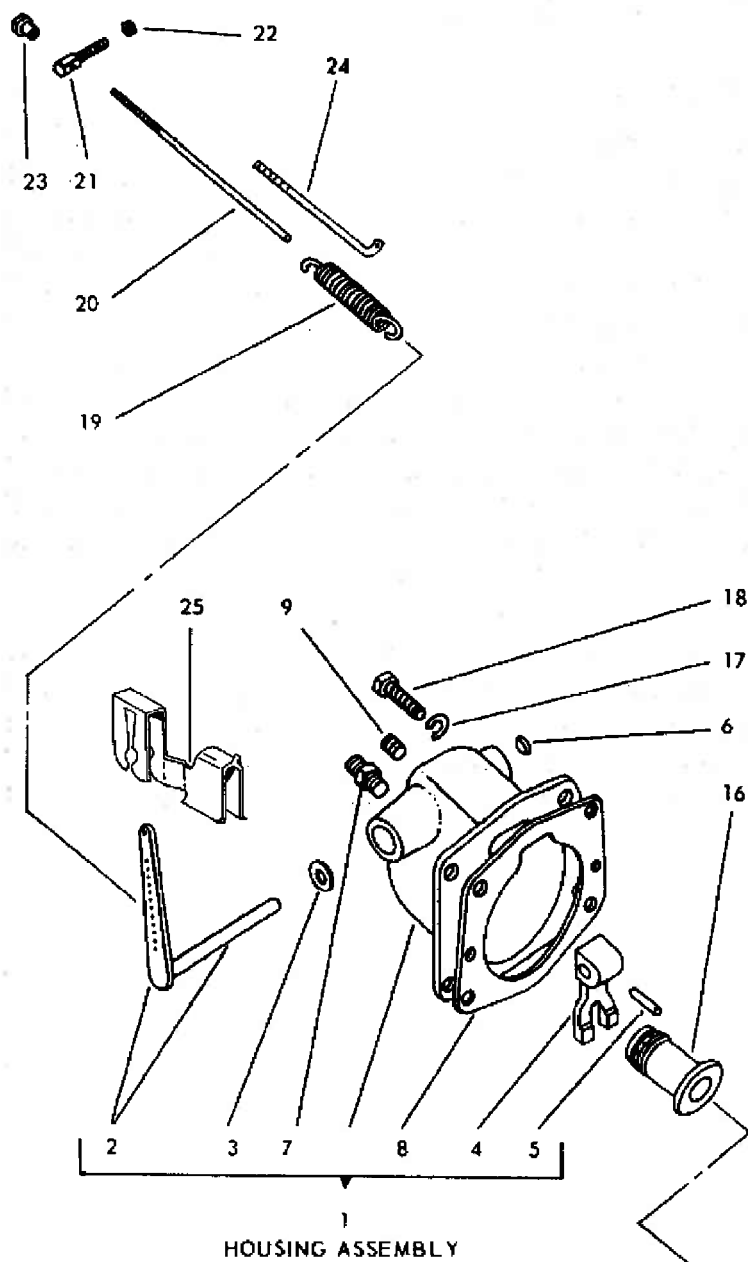
ITEM	PART NO.	DESCRIPTION	QTY
—	† K129S1	Oil pump assembly (replaces K95Q)	1
1	† KA61D2S1	Body assembly, oil pump (includes items 2 - 5)	1
2	† KD121BS2	Shaft, oil pump drive (includes items 4 and 5; replaces KD121BS1).....	1
3	KD122A	Stub shaft, oil pump driven	1
4	† KC66	Gear, internal drive and driven (replaces KC56A)	2
5	PA64	Pin, driver gear, internal 1/8" dia. x 3/4" long	1
6	PL137	Woodruff key, No. 1, drive gear,	1
7	GD94C	Gear, oil pump drive, external	1
8	PD195	Locknut, drive gear 7/16"-20 thread	1
9	QD535A	Gasket, oil pump cover	
	KB53 -1	(not included in engine gasket set)	1
10	KB42S2	Cover assembly, oil pump (was KB42S2)	1
11	ME60	Check ball, 1/4" dia.	1
12	PM111	Spring, relief valve	1
13	XI16	Cotter pin, relief valve, 1/8" x 1"	1
14	RD112	Screen, oil pump strainer	1
15	PE14	Lock washer, #10	7
16	XA7	Screw, #10-32 x 3/8" long	1
17	XA8	Screw, #10-32 x 1/2" long	4
18	XA56	Screw, #10-32 x 1-1/4" long.....	2
19	PI143B	Lock screw, oil pump.....	1
20	PF18	Pipe plug, 1/8" slotted	2
21	RF1143	Nozzle, crankcase oil spray.....	4

† For engines with serial number 6178652 and after.

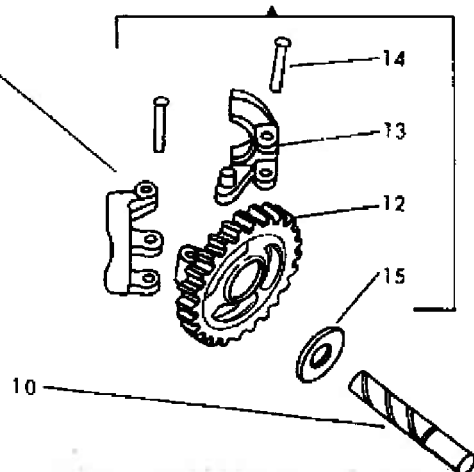


Gear Cover and Third Bearing

ITEM	PART NO.	DESCRIPTION	QTY
1	BD100MS1	Gear cover assembly	1
2	QD611	Gasket, gear cover to spacer	1
3	WE182A	Spacer, gear cover	1
4	QD614	Gasket, gear cover spacer to crankcase	1
5	PA291	Dowel pin, gear cover to crankcase	2
6	PF52	Button, camshaft thrust	1
7	XK3	Pipe plug, 3/8"	1
8	PE4	Lock washer, 5/16"	17
9	XD14	Screw, 5/16"-18 x 5/8" long	5
10	PII14	Washer, 5/16" copper	2
11	XD15	Screw, 5/16"-18 x 3/4" long	2
12	XD19	Screw, 5/16"-18 x 1-1/4" long	10
13	BG358AS1	Housing assembly, third bearing (includes items 14 - 16)	1
14	ME224	Bearing, crankshaft, straight roller	1
15	PH299	Oil seal, crankshaft and flywheel end	1
16	JK72	O-ring seal, third bearing housing	1
17	XB88	Cap screw 3/8"-16 x 1" long (special)	3
18	— — —	Governor assembly (see page 20)	1



11
FLYWEIGHT ASSEMBLY



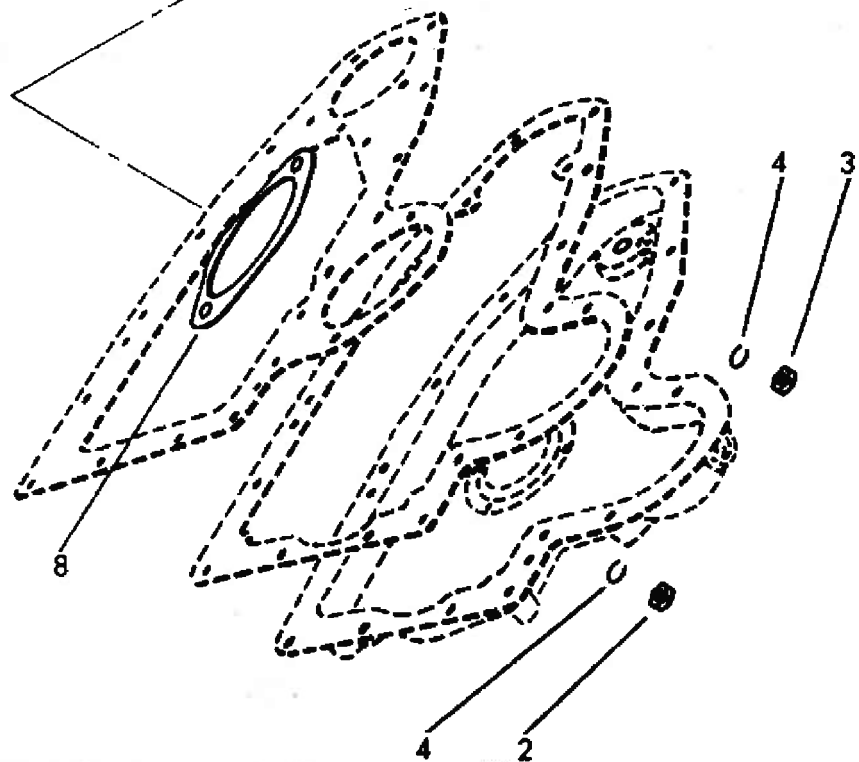
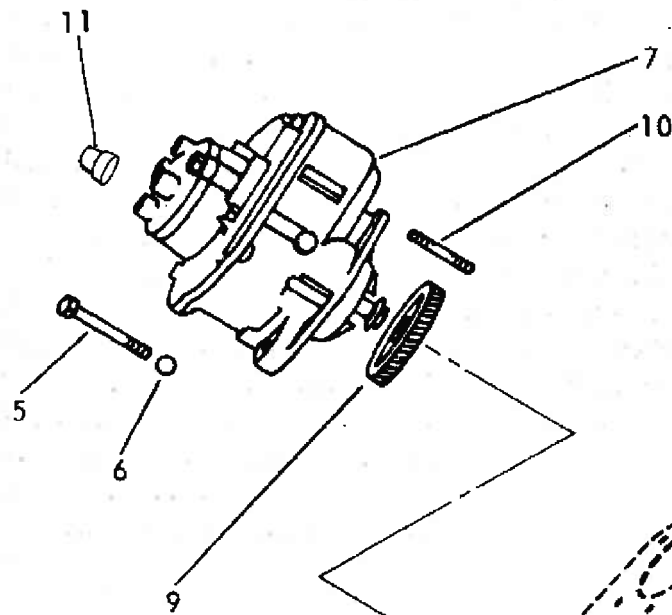
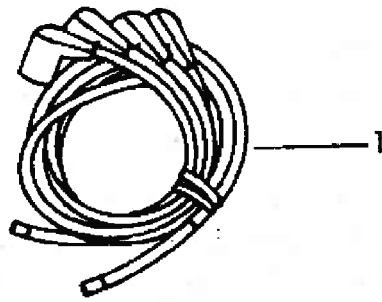
Governor Assembly

ITEM	PART NO.	DESCRIPTION	QTY
—	T134U	Governor assembly (without linkage; includes items 2, 11 and 16)	1
1	TC395S1	Housing assembly, governor (includes items 2 - 9)	1
2	TC398	Cross shaft and lever, governor	1
3	PH571	Oil seal (Neoprene)	1
4	VB151	Governor yoke	1
5	PA367	Roll pin, 1/8" x 3/4" long	1
6	SA52	Plug, 1/2" expansion	1
7	RF269-2	Fitting	1
8	QD615A	Gasket, governor housing	1
9	PF18	Plug, 1/8" slotted, pipe	1
10	TC388-1	Governor shaft	1
11	TC535S1	Flyweight assembly, governor (includes gear, weights, washer and pins)	1
12	* — — —	Governor gear (use governor flyweight assembly, item 11)	1
13	TC322DS1	Governor flyweight assembly (includes thrust pin)	2
14	XJ47	Rivet, governor flyweight	2
15	PH313A	Washer, governor gear bushing	1
16	TC391D	Thrust sleeve and bearing	1
17	PE4	Lock washer, 5/16"	4
18	XD16	Screw, 5/16"-18 x 7/8" long	4
19	PM76	Governor spring	1
20	PI115F	Screw, governor adjusting	1
21	TC367	Pin, governor adjusting screw support	1
22	PD77	Nut, 1/4"-20	1
23	PD173A	Nut, governor adjusting screw	1
24	VE878S1	Control rod assembly	1
25	PK181	Clip, rod end, L.H.	1

* Not serviced separately.

Air Shrouding

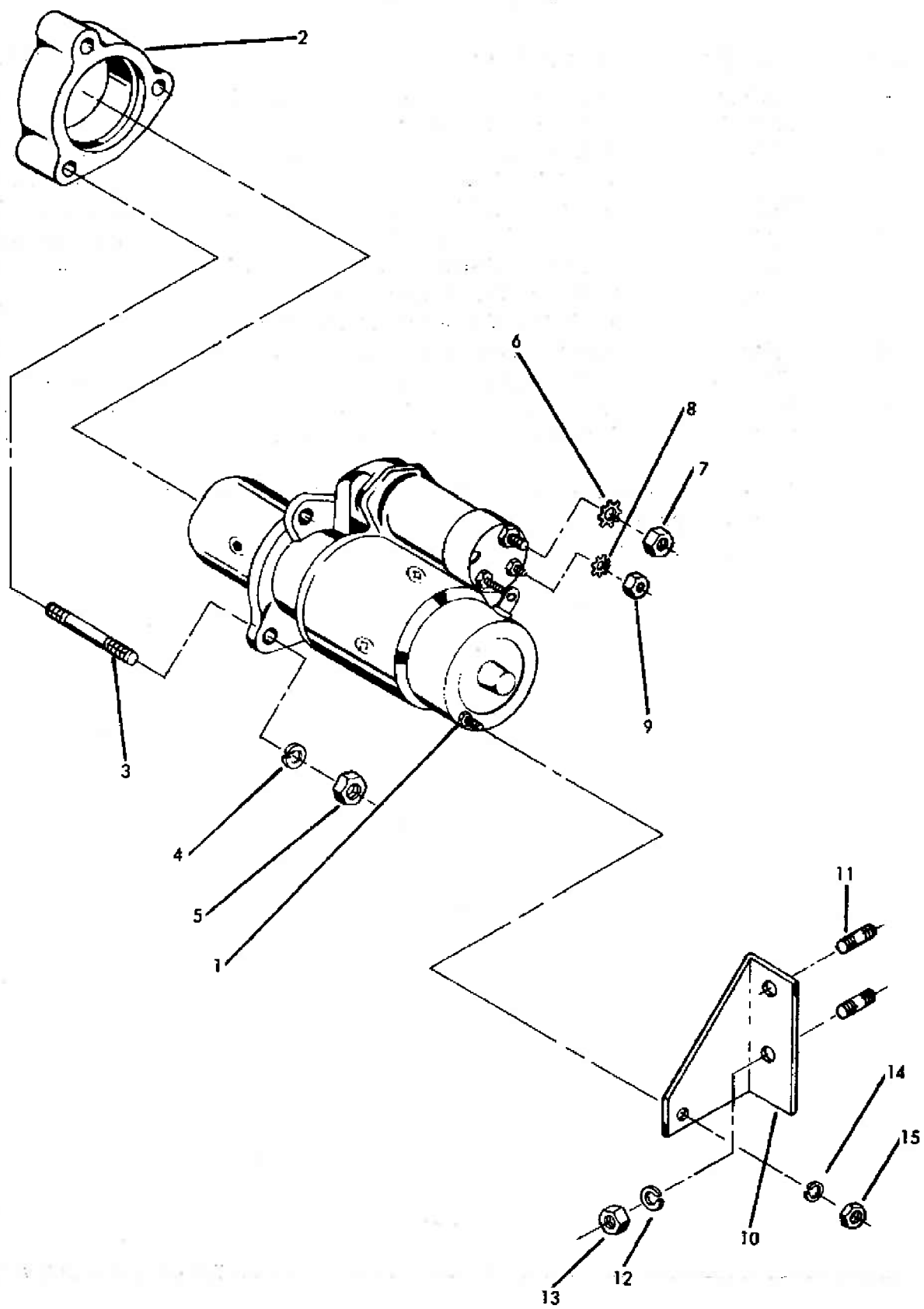
ITEM	PART NO.	DESCRIPTION	QTY
1	SE74YA	Flywheel shroud, standard engine	1
2	PE4	Lock washer, 5/16"	6
3	XD13	Screw, 5/16"-18 x 1/2" long	4
4	XD172	Screw, 5/16"-18 x 1/2" long	2
5	SE20H	Screen, flywheel shroud	1
6	PE3	Lock washer, 1/4"	16
7	XA33	Screw, 1/4"-20 x 3/8" long	16
8	SE75B	Lower cylinder shroud, R.H.	1
9	SE76B	Lower cylinder shroud, L.H.	1
10	SE77C	Heat deflector, L.H.	1
11	SE77D	Heat deflector, R.H.	1
12	XA34	Screw, 1/4"-20 x 1/2" long	4
13	XA36	Screw, 1/4"-20 x 3/4" long	4
14	SE78C	Cylinder head shroud, R.H.	1
15	SE79C	Cylinder head shroud, L.H.	1
16	SE80	Side cover, flywheel shroud	1
17	SE82C	Rear shroud cover, L.H.	1
18	SE83C	Rear shroud cover, R.H.	1
19	PG314	Clip, spark plug ignition cables	2
20	SD312A	Engine name plate	1
21	XA67	Screw, #4 x 1/4" long, self-tapping	4
22	PH196	Washer, 1/4" x 1/16"	6
23	SD314	Tag, warning	1



Magnetos Ignition

ITEM	PART NO.	DESCRIPTION	QTY
—	EYC109	Magneto assembly (includes items 1-11)	1
1	YL100A	Cable set, magneto ignition	1
2	PD79	Nut, 3/8"-16.....	1
3	PD11	Nut, 3/8"-24.....	1
4	PE5	Lock washer, 3/8"	2
5	XD33	Screw, 3/8"-16 x 2-1/4" long	1
6	PH22A	Washer, 3/8" steel	1
7	* Y97S2	Magneto, "Fairbanks-Morse" No. FMX 4B7A, with gear and gasket	1
8	QD616	Gasket, magneto flange	1
9	GD93C4	Magneto gear	1
10	PC110	Stud, magneto mounting.....	1
11	YD20	Terminal protector	4

* See "Magnetos" in Options and Accessories section of this manual for service parts.



Starting Motor Assembly

ITEM	PART NO.	DESCRIPTION	QTY
1	* YA53B	Starting motor, 12 volt, Delco Remy No. 1998299	1
2	BG328	Adapter, starting motor	1
3	PC542	Stud, adapter and starter	3
4	PE5	Lock washer, 3/8"	3
5	PD79	Nut, 3/8"-16.....	3
6	PE56A	Lock washer, 3/8"	1
7	PD26	Nut, 3/8"-16.....	1
8	PE45	Lock washer, #10	1
9	PD153A	Nut, #8-32	1
10	PG1301	Bracket, starter support	1
11	PC396	Stud, starter bracket	2
12	PE4	Lock washer, 5/16"	2
13	PD10	Nut, 5/16"-24.....	2
14	PE3	Lock washer, 1/4"	1
15	PD77	Nut, 1/4"-20.....	1

* See "Starters" in Options and Accessories section of this manual for service parts.



1



2



3



4



16



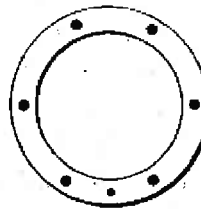
5



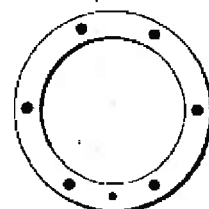
6



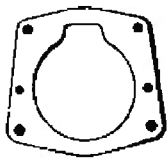
7



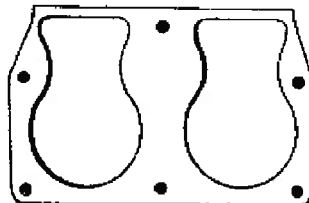
8



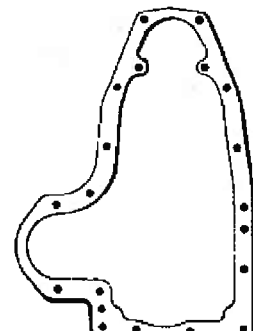
9



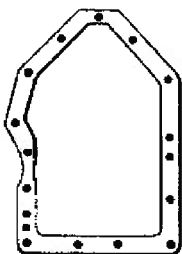
10



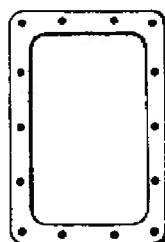
11



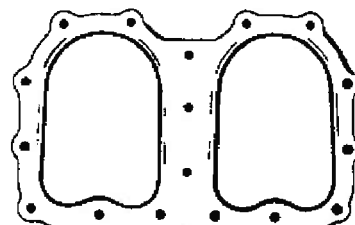
12



13



14



15

Engine Gasket Set

ITEM	PART NO.	DESCRIPTION	QTY
—	Q12J	Gasket set (includes items 1 - 15)	1
1	QB75	Gasket, intake and exhaust ports	6
2	QC12A	Gasket, carburetor flange	1
3	QD67	Gasket, fuel pump adapter	1
4	QD538A	Gasket, fuel pump	1
5	QD595A	Gasket, oil filter flange	1
6	QD612A	Gasket, valve inspection cover	4
7	QD616	Gasket, distributor or magneto flange	1
8	QD527C	Gasket, main bearing plate	3
9	QD527D	Gasket, main bearing plate	3
10	QD615A	Gasket, governor housing	1
11	QD617	Gasket, cylinder base	2
12	QD611	Gasket, gear cover	1
13	QD614	Gasket, crankcase face	1
14	QD610A	Gasket, oil pan	1
15	QD613C	Gasket, cylinder head	2
16	QD535A	Gasket, oil pump cover, .003" thick (not included in gasket set)	1
—	Q28	Valve grinding gasket set (includes items 1, 6 and 15)	1

