

WISCONSIN MODEL VH4D

ILLUSTRATED PARTS CATALOG

**V
H
4
D**

Wisconsin Motors, LLC
10 Industrial Drive
P. O. Box C
Dyer, TN 38330

SERVICE FACILITIES

WIS-CON TOTAL POWER Distributors and Service Centers, located throughout the U.S. and foreign countries, have been carefully selected to insure complete and efficient repair and inspection service to owners of WIS-CON TOTAL POWER Engines. These service centers, equipped and staffed for complete engine repair, also stock engine parts to facilitate immediate delivery for the complete line of WIS-CON TOTAL POWER Engines.

Order parts from the WIS-CON TOTAL POWER Distributor or Service Center in your locality. Refer to the Yellow Pages of the Telephone Directory under ENGINES, or write to WIS-CON TOTAL POWER for a free copy of a list of authorized Distributors and Service Centers. Do not order parts from WIS-CON TOTAL POWER.

The MODEL, SPECIFICATION and SERIAL NUMBER of your engine must be given when ordering parts. The MODEL and SPECIFICATION number are on the name plate. The SERIAL NUMBER is stamped either on the crankcase or the engine's identification tag.

Copy the MODEL, SPECIFICATION and SERIAL NUMBER in the spaces provided below so that it will be available when ordering parts.

MODEL

SPECIFICATION

SERIAL NUMBER

To insure prompt and accurate service, the following information must also be given:

1. State EXACTLY the quantity of each part and part number.
2. State definitely whether parts are to be shipped by express, freight or parcel post.
3. State exact mailing address.

Introduction

This catalog is designed to identify Wisconsin parts.

When ordering parts, it is always advisable to list the engine model, specification number and serial number. With this information, we can check your order for any incorrect part numbers. Use your Service Parts List to insure proper part number and nomenclature identification.

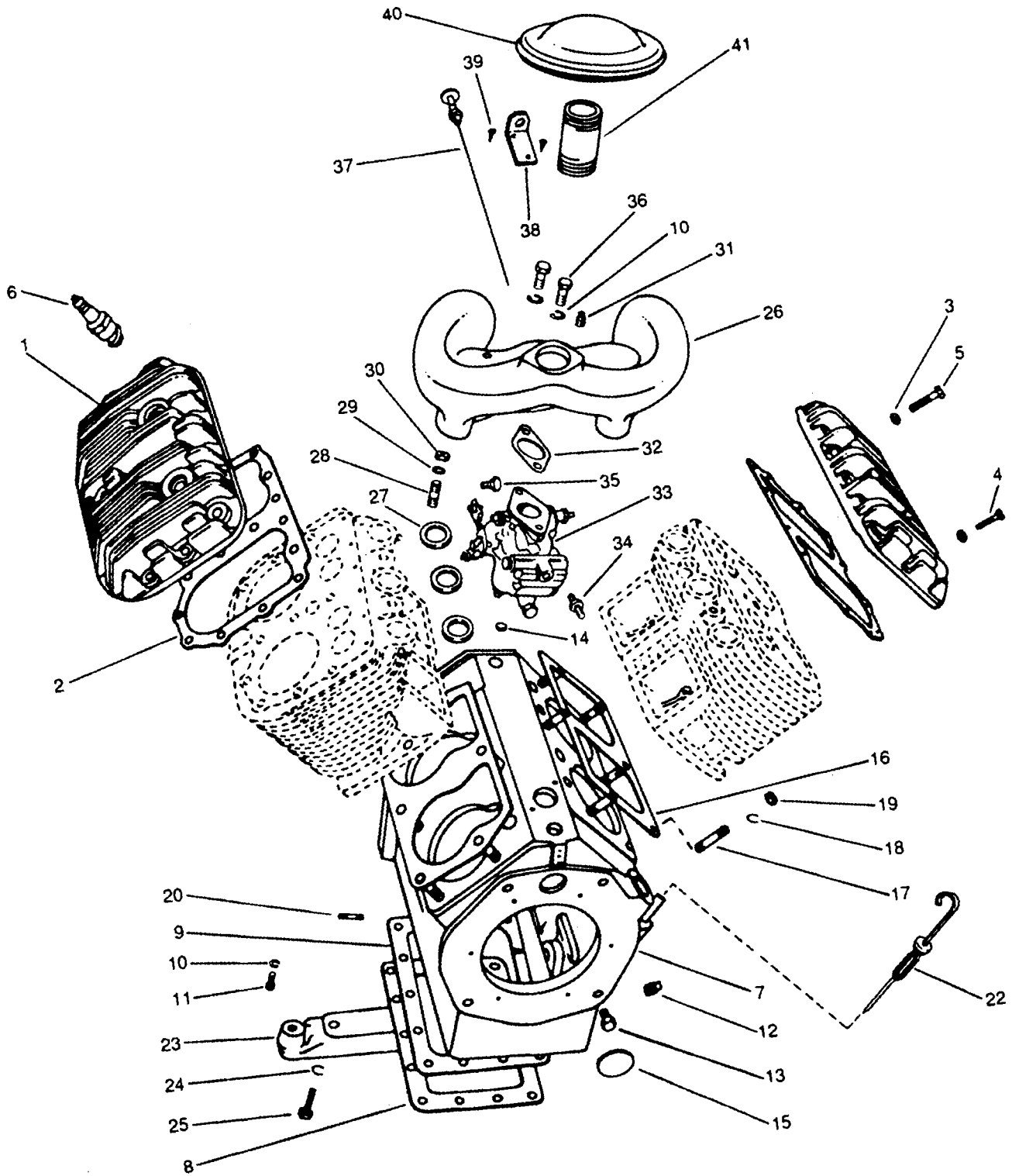
WIS-CON TOTAL POWER reserves the right to modify, alter and improve engines and parts. Part numbers and the structure of parts may change from those shown in this catalog.

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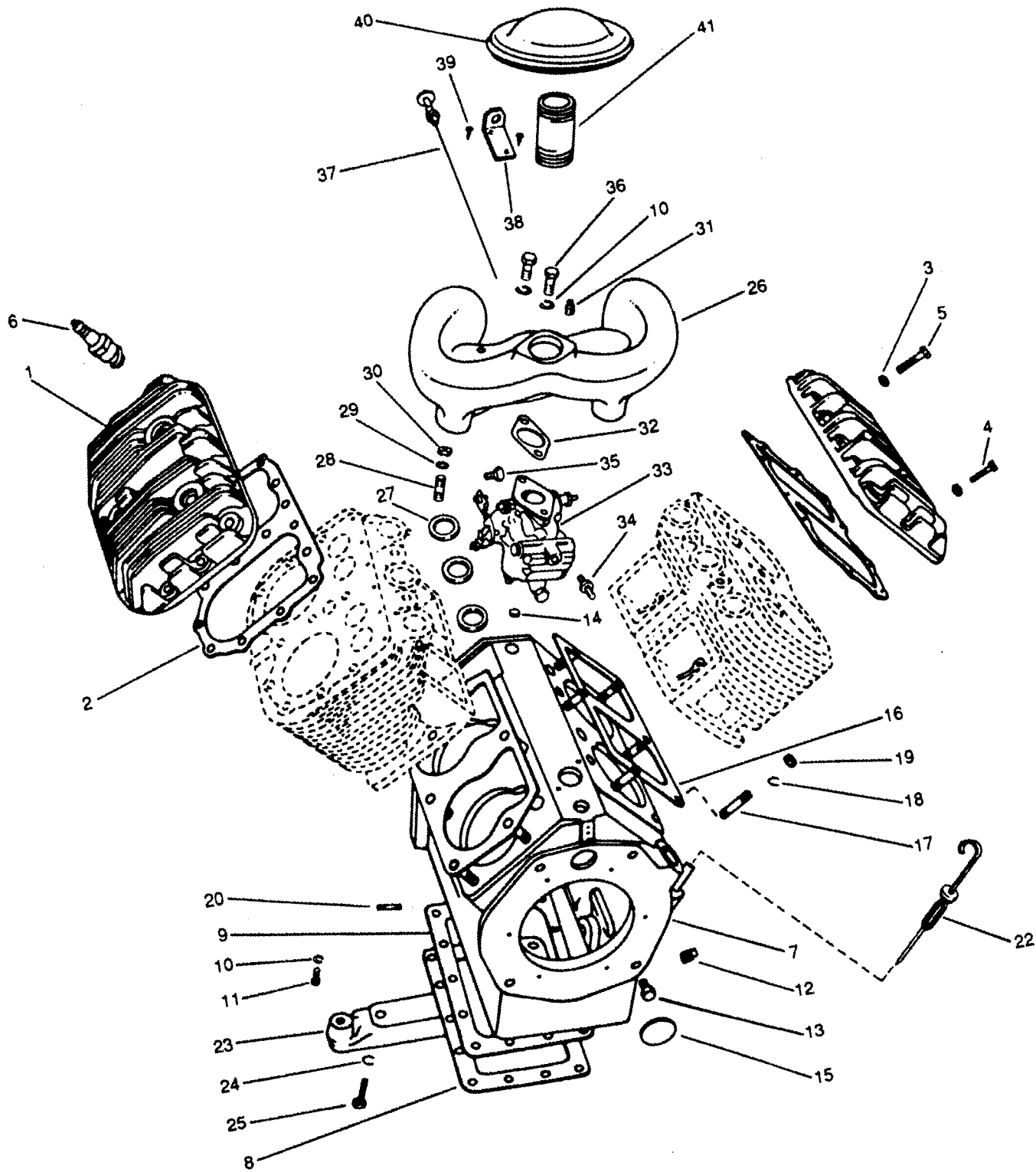
Manifold and Crankcase

ITEM	PART NO.	DESCRIPTION	QTY.
1	AB100	Cylinder head.....	2
2	QD613C	Gasket, cylinder head	2
3	PH77A	Washer, 5/16" steel	34
4	XD19	Screw, 5/16"-18 x 1-1/4" long	30
5	XD20	Screw, 5/16"-18 x 1-3/8" long	4
6	YD6S1	Spark plug, Champion No. D16J.....	4
7	* BA48C	Crankcase assembly (includes items 13, 17, 20, 36; also includes plugs, screen, nozzles, tubes, dipstick).....	1
8	BH141A	Bottom cover, crankcase	1
9	QD610A	Gasket, crankcase bottom cover	1
10	PE4	Lock washer, 5/16" spring lock	14
11	XD14	Screw, 5/16"-18 x 5/8" long	16
12	XK3	Plug, 3/8" pipe, square head	1
13	PF144	Plug for 7/16"-14 taps	4
14	SA26	Plug, 5/8" expansion.....	2
15	SA58	Plug, 1-3/8" expansion	1
16	QD617	Gasket, cylinder base	2
17	PC615	Stud, cylinder block to crankcase.....	12
18	PE63	Lock washer, 7/16" external tooth	12
19	PD12	Nut, 7/16"-20.....	12
20	PC396	Stud, starter bracket	2
21	** RF1495F	Adapter tube (mount with "Loctite") (optional location)	1
22	** RJ173A	Dipstick, standard, 6 1/4" long (optional location)	1
23	BK65	Engine support.....	2
24	PE7	Lock washer, 1/2" spring lock	4
25	XD43	Screw, 1/2"-13 x 1-1/2" long	4
26	LD253	Manifold, inlet and exhaust (vertical)	1
	LD253-14	Manifold inlet and exhaust (horizontal)	1
27	QB75	Gasket, manifold to cylinder block	6
28	PC406	Stud, manifold to cylinder block	4
29	PH22A	Washer, 3/8"	4
30	PD206	Nut, 3/8"-24 (Seez-proof)	4
31	XK1	Plug, 1/8" pipe, square head	1

* BA48C is standard machining number. A dash number is added for any special machining (located on marking pad).

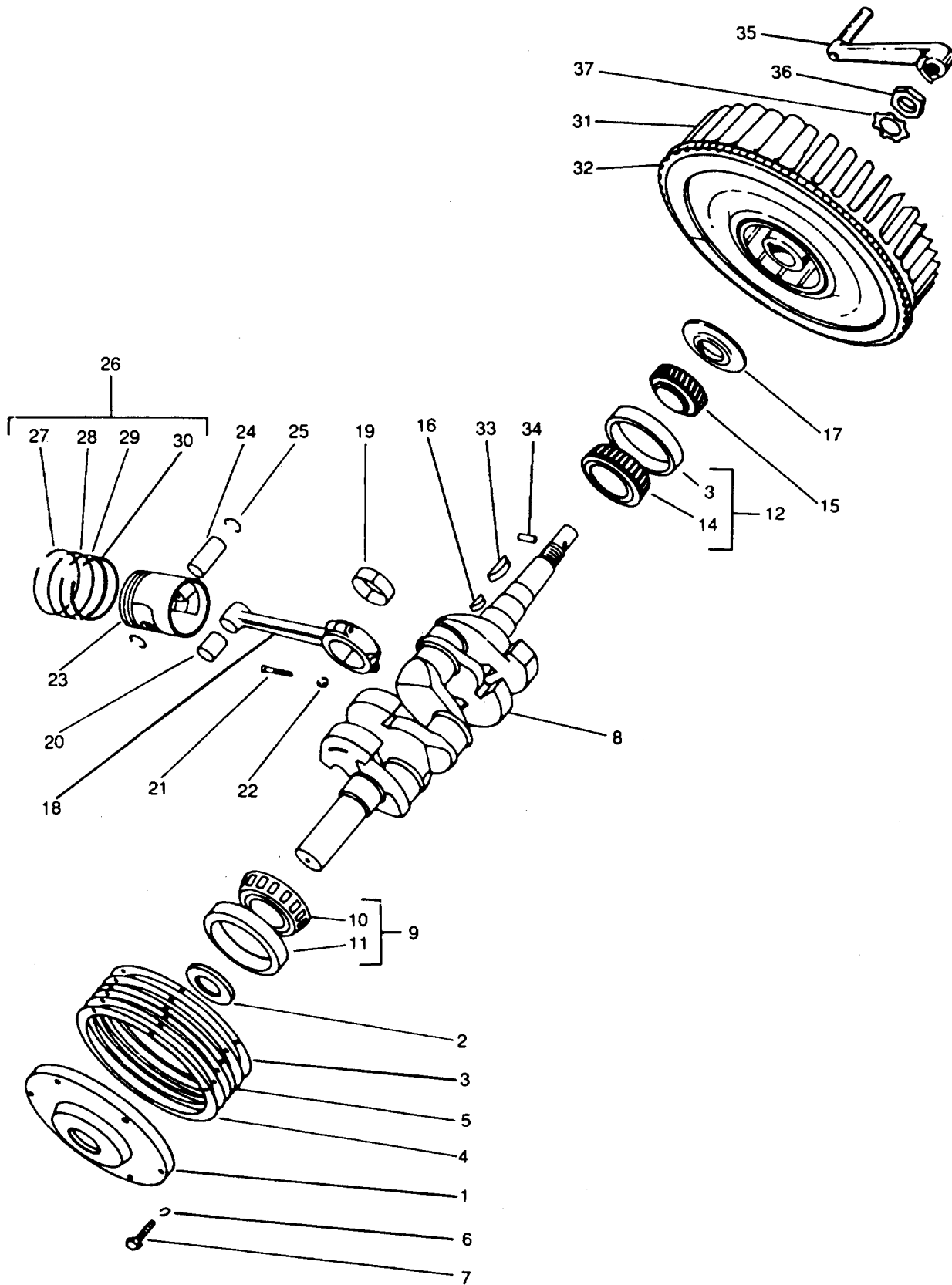
** See page 14 for Standard Dipstick and Adapter.

continued on page 4



Manifold and Crankcase (cont.)

ITEM	PART NO.	DESCRIPTION	QTY.
32	QC71A	Gasket, carburetor flange	3
33	L63S1	Carburetor, Zenith No. 12098B	1
34	RF269	Straight fitting, carburetor	1
35	XA33	Screw, 1/4"-20 x 3/8" long	1
36	XD17	Screw, 5/16"-18 x 1" long	2
37	VE693	Choke control	1
38	PG475	Bracket, choke control	1
39	XA65	Screw, #8 x 1/2" long, self-tapping	2
40	WD98S5	Muffler, standard	1
41	LJ184	Nipple, 1-1/4" x 2-1/2" long	1

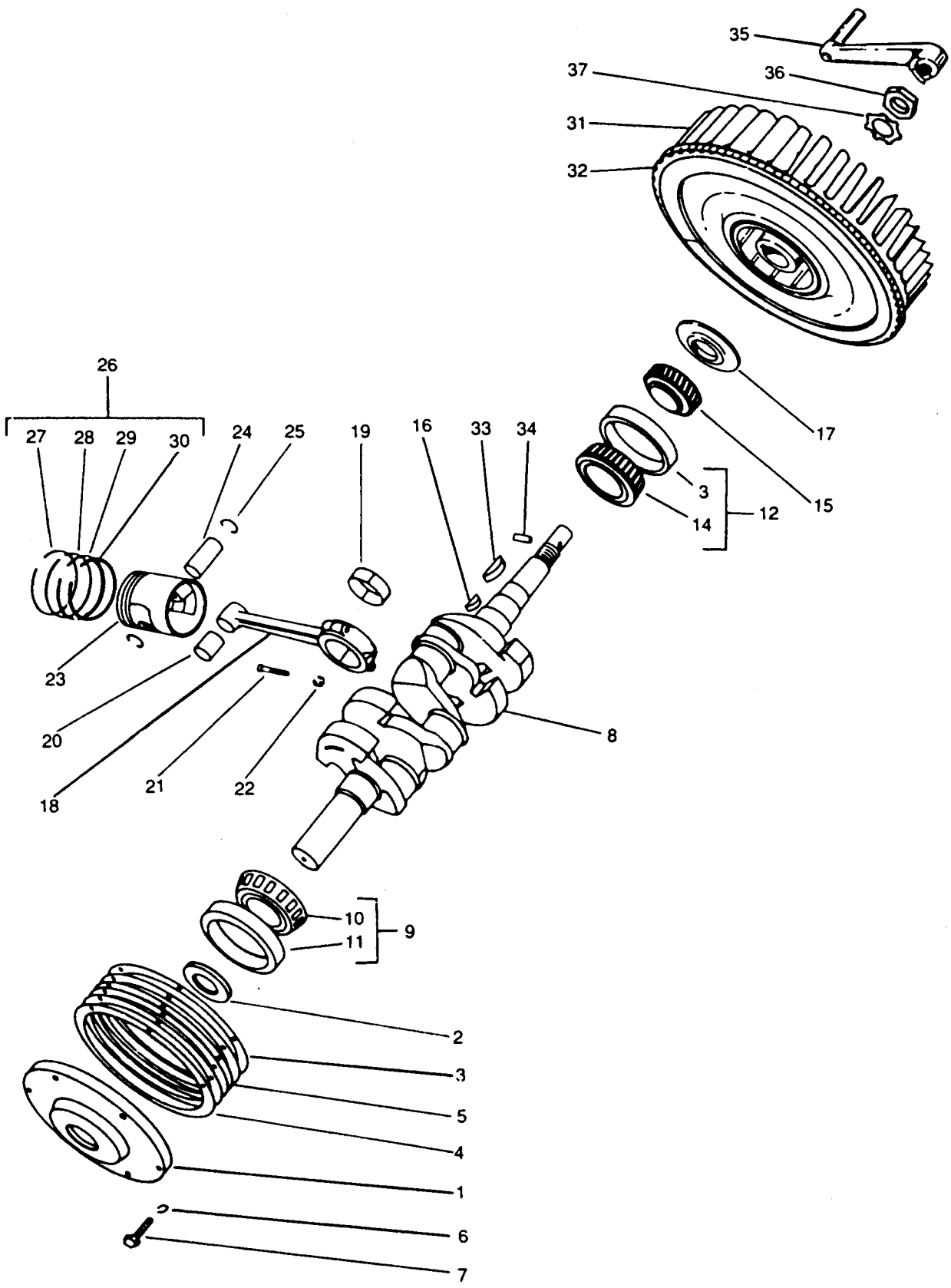


Crankshaft, Piston and Connecting Rod

ITEM	PART NO.	DESCRIPTION	QTY.
1	BG210C1S1	Main bearing plate assembly, standard (includes items 2 & 11, also retainer)	1
2	PH364	Oil seal	1
3	QD527D	Gasket, bearing plate, .003" thick	3
4	QD527C	Gasket, bearing plate, .006" thick	3
5	† QF33C	Shim, main bearing plate, .013" thick	1
6	PE5	Lock washer, 3/8" spring lock	6
7	XD29C	Screw, 3/8"-16 x 1-1/4" long	6
8	CA71A	Crankshaft assembly (standard, includes items 9, 12, & 16; also includes gear)	1
9	ME114	Main bearing assembly, take-off end (includes items 10 - 11)	1
10	* — — —	Bearing cone	1
11	* — — —	Bearing cup	1
12	ME71	Main bearing assembly, flywheel (includes items 13 - 14)	1
13	* — — —	Bearing cup	1
14	* — — —	Bearing cone	1
15	GA36A	Crankshaft gear, standard	1
16	PL53	Woodruff key, No. 8	1
17	RK170	Oil sling	1
18	DA68AS1	Connecting rod, without shell bearings (includes item 20, also bolts, locknuts)	4
19	HA134S	Shell bearing, 2 halves, standard	4
—	HA134S1	Undersize bearing, .001"	1
—	HA134S2	Undersize bearing, .002"	1
—	HA134S10	Undersize bearing, .010"	1
—	HA134S20	Undersize bearing, .020"	1
20	HG157A	Piston pin bushing	4
21	PB148S1	Connecting rod bolt assembly (includes item 22)	8
22	PD246	Locknut, 5/16"-24 thread	8
23	DB190B1SP	Piston, standard (3 ring) pin and retainer	4
—	DB190B2SP	Piston, standard (4 ring) pin and retainer	4

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

continued on page 8

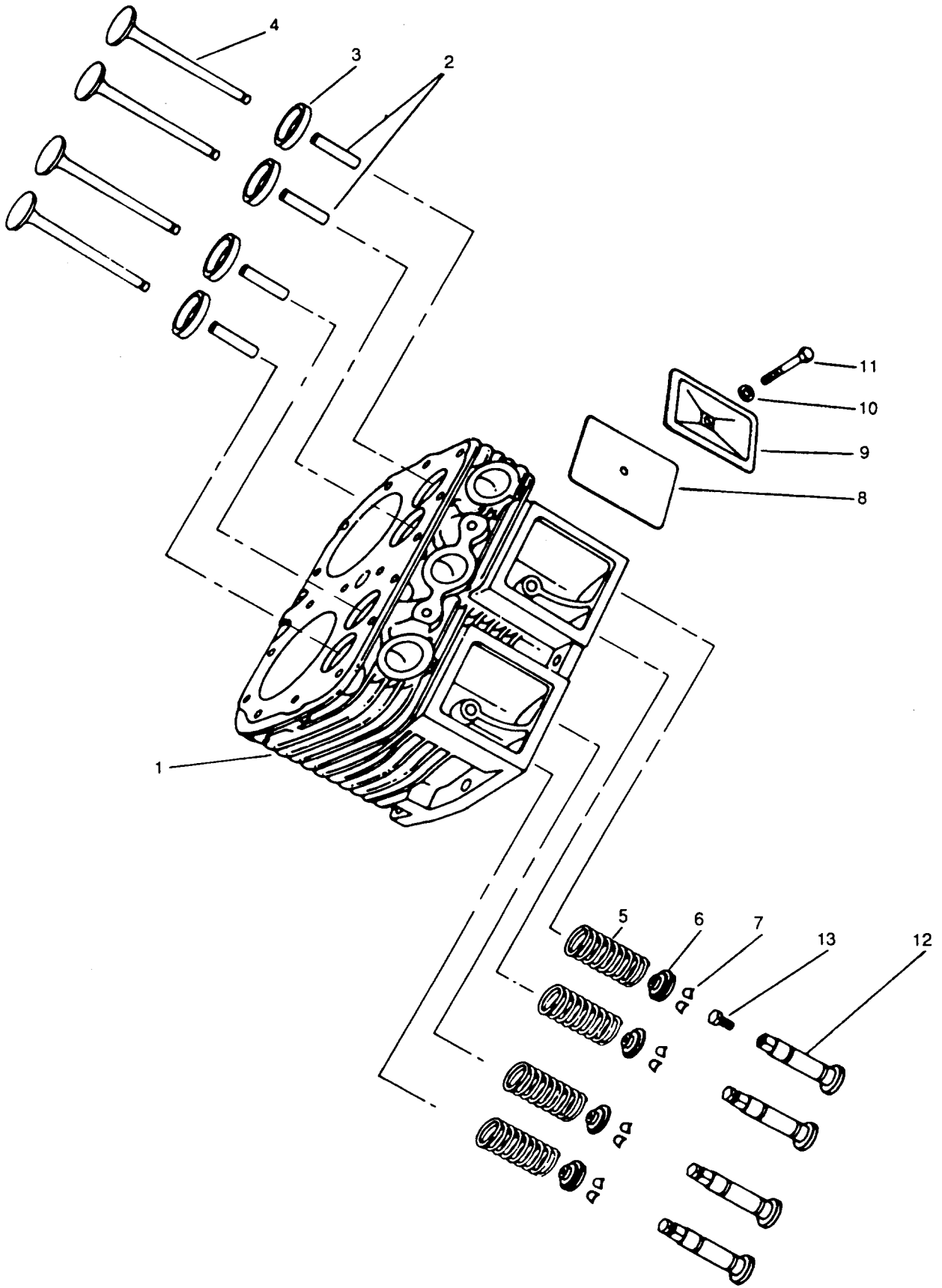


Crankshaft, Piston and Connecting Rod (cont.)

ITEM	PART NO.	DESCRIPTION	QTY.
24	ΔDE65	Piston pin, standard; also available in .005", .010"	4
25	PK52	Retaining ring.....	8
26	ΔDR63	Ring set, standard (3 ring)	2
	ΔDR63A	Ring set, standard (4 ring)	2
27	* — — —	Ring	
28	* — — —	Ring	
29	* — — —	Ring	
30	* — — —	Ring	
31	N101A	Flywheel (includes item 32)	1
32	GH44	Ring gear	1
33	PL83	Woodruff key, No. 23.....	1
34	PA333	Pin, hand crank starting	1
35	U212	Starting crank	1
36	PD123	Nut, flywheel mounting	1
37	PE66	Lock washer, flywheel nut	1

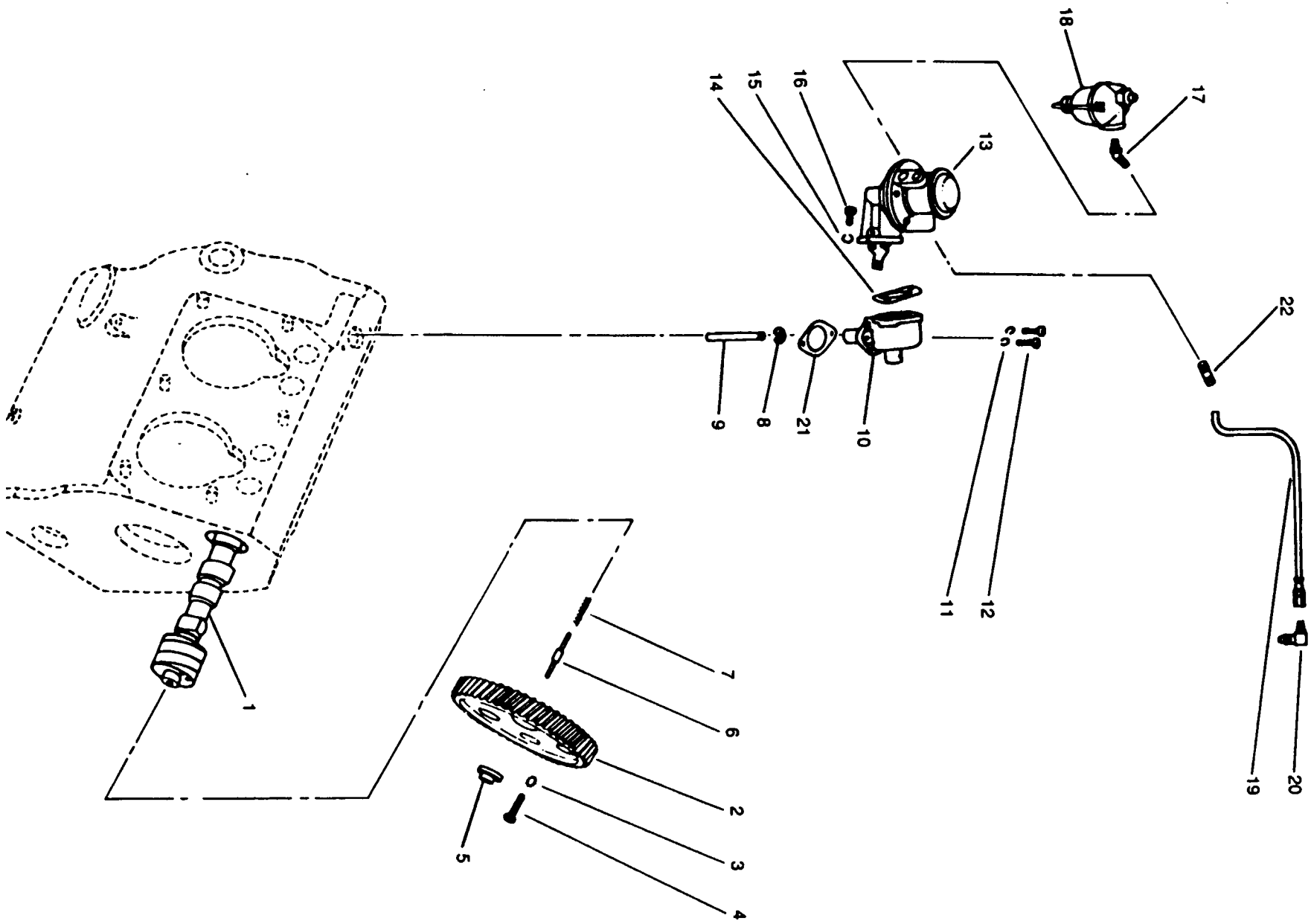
* Not serviced separately.

Δ Also available .010", .020" and .030" oversize.



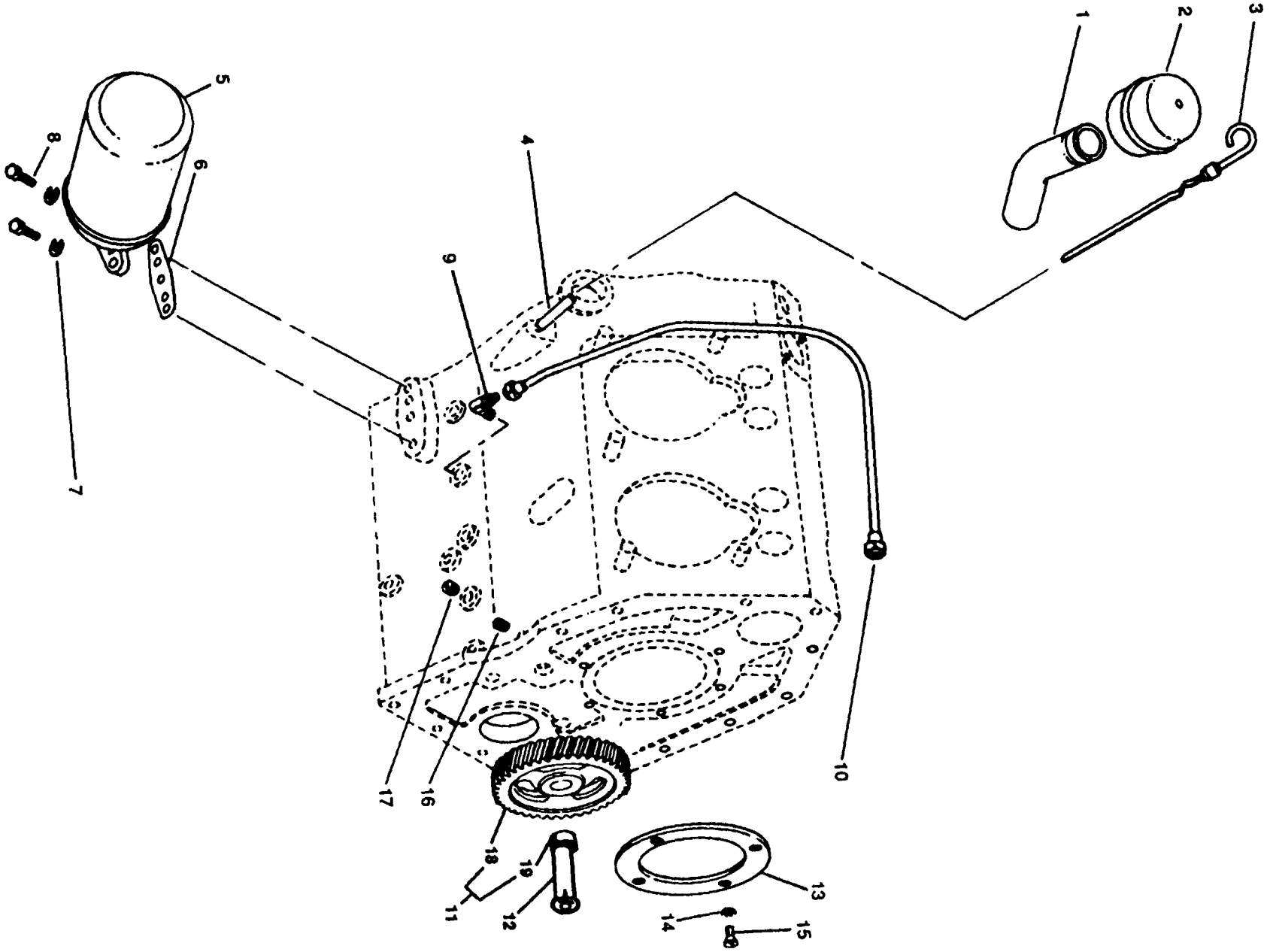
Cylinder Block Assembly

ITEM	PART NO.	DESCRIPTION	QTY.
1	AA98S7	Cylinder block assembly (includes items 2 - 11)	2
2	AD47	Valve stem guide.....	4
3	HG201	Valve seat insert, inlet	4
—	HG273D	Valve seat insert, exhaust.....	1
4	AE75B	Valve, inlet	4
—	AE75D	Valve, exhaust.....	4
5	AF49A	Valve spring, inlet 2-5/16" free length.....	4
—	AF54	Valve spring, exhaust 1-13/16" free length.....	4
6	AG26	Seat, valve spring, inlet	4
—	AG31	Valve rotator and spring seat, exhaust valve spring	4
7	AH9	Lock, valve spring seat	8
8	QD612A	Gasket, valve inspection cover plate	2
9	SA68	Cover plate, valve inspection	2
10	PH14	Washer, 5/16" copper.....	2
11	XD21	Screw, 5/16"-18 x 1-1/2" long	2
12	F61	Valve tappet with adjusting screw	4
13	PB169A	Tappet adjusting screw	4



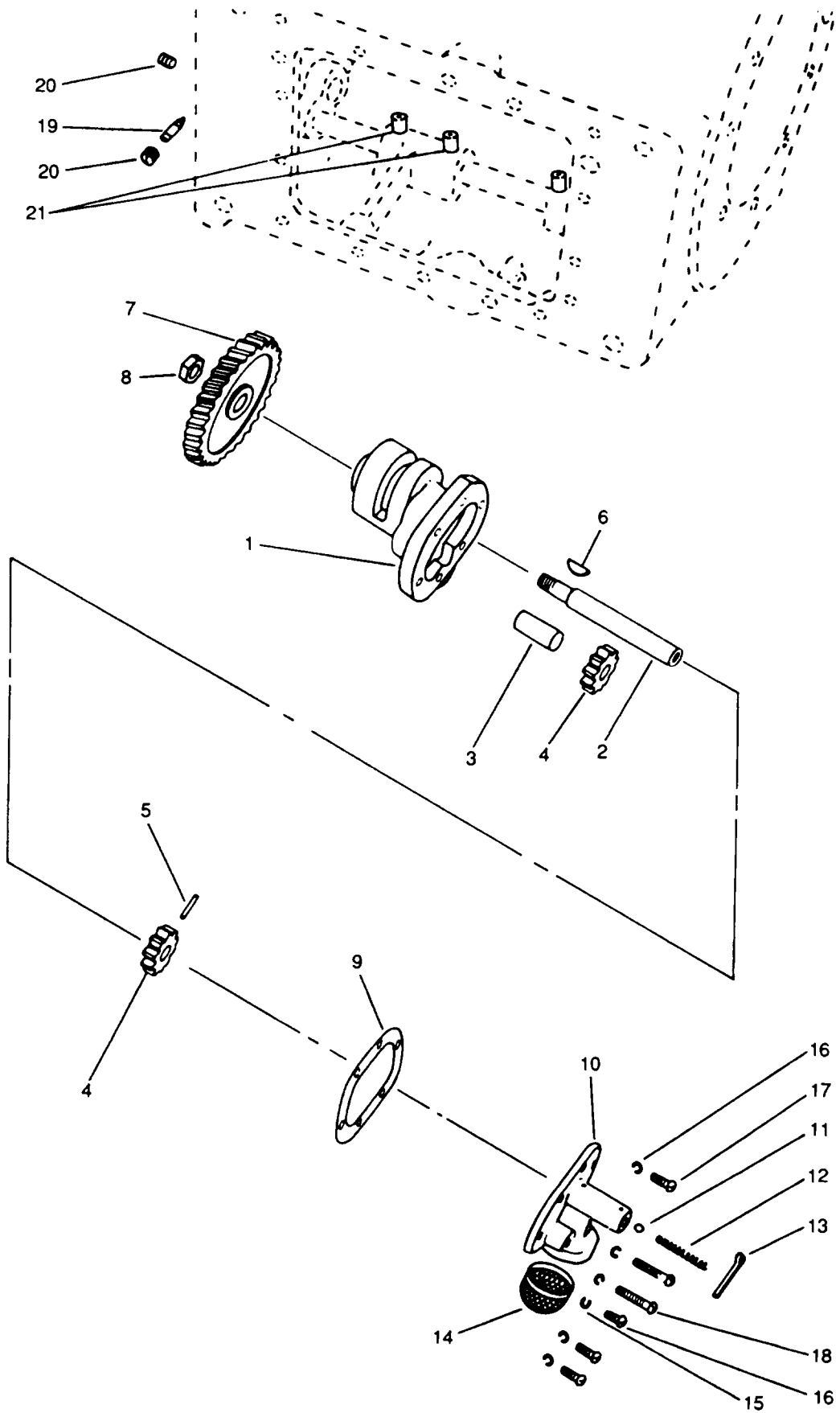
Camshaft and Fuel Pump Mounting

ITEM	PART NO.	DESCRIPTION	QTY.
1	EA113	Camshaft.....	1
2	GB45A	Camshaft gear	1
3	PE46	Lock washer, 5/16" external tooth	3
4	XD17	Screw, 5/16"-18 x 1-1/4" long	3
5	PF52	Button	1
6	PF101	Thrust plunger, camshaft	1
7	PM108	Spring, camshaft thrust plunger	1
8	TA116	Plunger cap.....	1
9	TA111B1	Plunger for fuel pump without primer	1
10	TF96-18	Adapter assembly (includes item 9, and retaining ring)	1
11	PE3	Lock washer, 1/4" spring lock	2
12	XD6	Screw, 1/4"-20 x 3/4" long	2
13	LP38ES1	Fuel pump for open engine.....	1
—	LQ46	Repair kit.....	1
14	QD538A	Gasket, fuel pump mounting.....	1
15	PE4	Lock washer, 5/16" spring lock	2
16	XD15	Screw, 5/16"-18 x 3/4" long	2
17	RF1397	Elbow, 45° male	1
18	LP43	Fuel strainer with shut-off.....	1
—	LQ31	Repair kit (bowl, gasket, screen)	1
19	RM1122C	Fuel line, pump to carburetor	1
20	RF1225	Elbow, fuel line	2
21	QD67	Gasket, fuel pump adapter.....	1
22	RF269	Straight fitting in carburetor	1



Oil Filter and Oil Filler Mounting

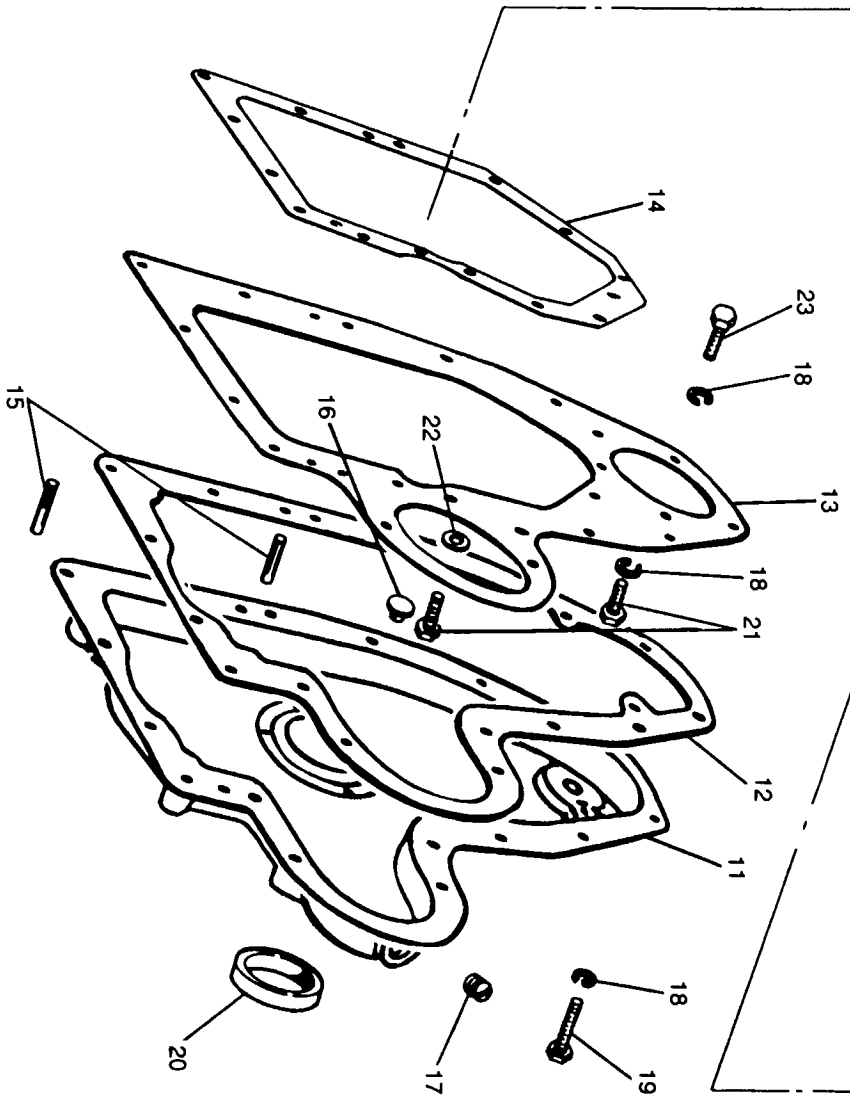
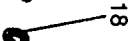
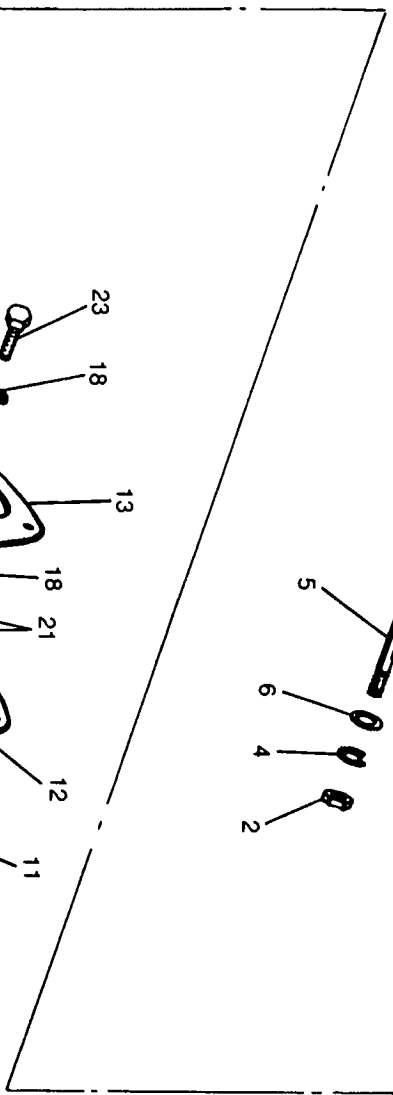
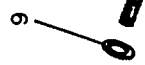
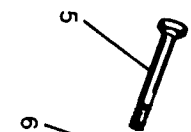
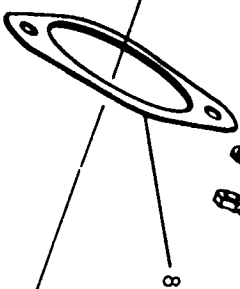
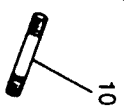
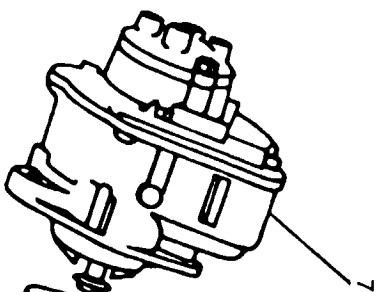
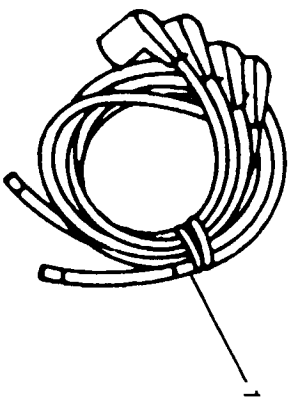
ITEM	PART NO.	DESCRIPTION	QTY.
1	LJ300P	Oil filler tube	1
2	LO60-1	Oil filler and breather cap	1
3	RJ173	Dipstick, standard, 10" long	1
4	RF1495	Adapter tube, below filter (mount with "Loctite")	1
5	RV52S4	Oil filter cartridges, 4 pack	1
—	RV52A1	Oil filter base assembly	1
6	QD595A	Gasket, oil filter mounting	1
7	PE4	Lock washer, 5/16" spring lock	2
8	XD17B	Screw, 5/16"-18 x 1" long	2
9	RF1225	Elbow, fuel line	2
10	RM675	Oil line, crankcase to governor	1
11	GC27B1	Idler gear assembly (includes items 18 & 19)	1
12	PJ105	Stud, idler gear	1
13	BG209	Plate, bearing retainer, flywheel end	1
14	PE49	Lock washer, 5/16" countersunk	4
15	XC68	Screw, 5/16"-18 x 3/4" long	4
16	XE55	Screw, 5/16"-18 x 3/8" long, Allen head set	1
17	PF18	Pipe plug, 1/8" slotted	7
18	GC27B1	Idler gear (includes item 19)	1
19	HG279	Bushing	1



Oil Pump Assembly

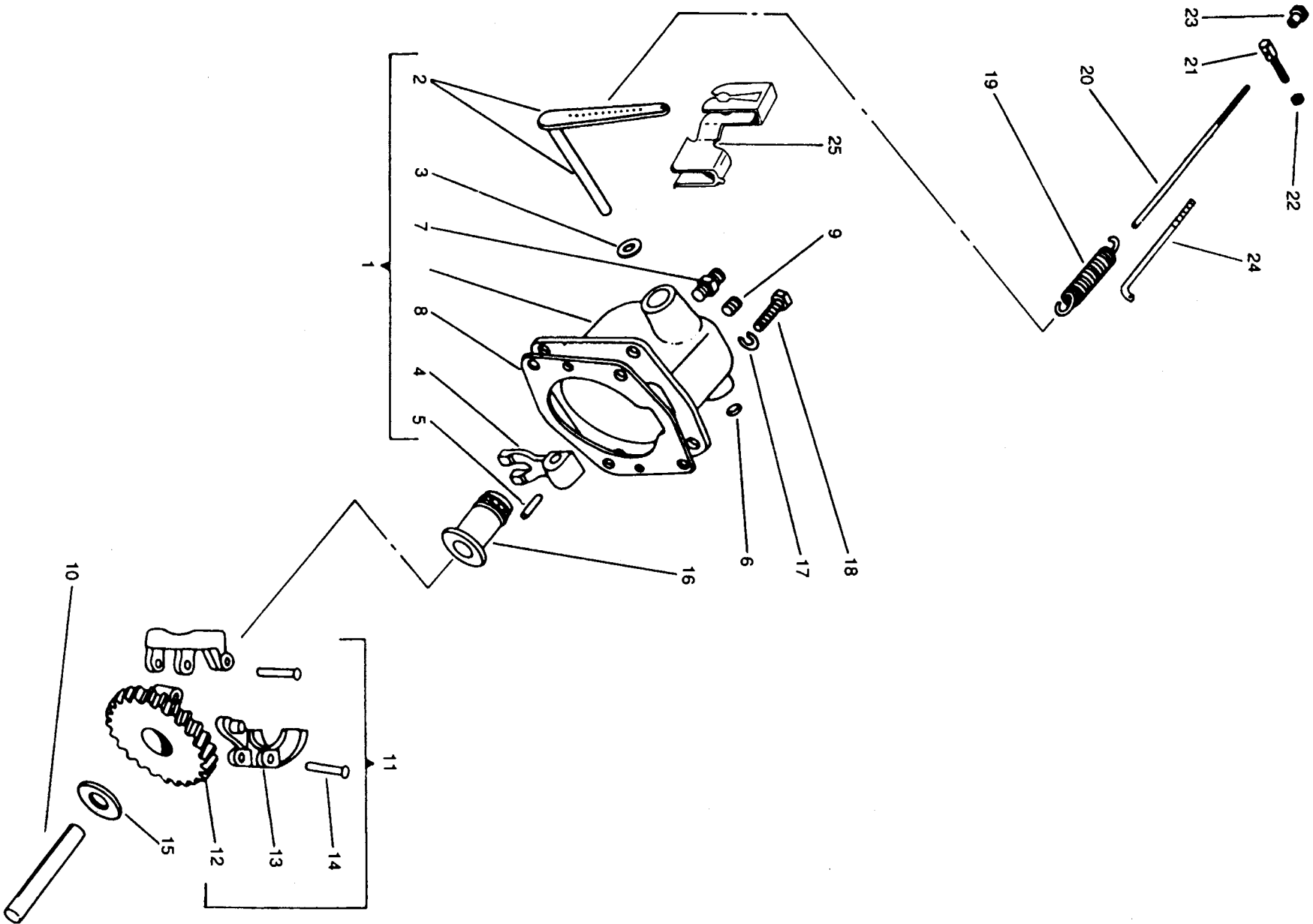
ITEM	PART NO.	DESCRIPTION	QTY.
—	† K129	Oil pump assembly (replaces K95L)	1
1	† KA61D2S1	Body assembly, oil pump (includes items 2 - 5)	1
2	† KD121BS1	Shaft, oil pump drive (includes items 4 - 5) (replaces KD121S1)	1
3	KD122A	Stub shaft, oil pump driven	1
4	† KC66	Gear, internal drive and driven (replaces 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 (not included in engine gasket set)	1
10	KB42S2	Cover assembly, oil pump (includes items 11 - 16)	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 spring lock.....	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 6178653 and after.



Magneto and Gear Cover

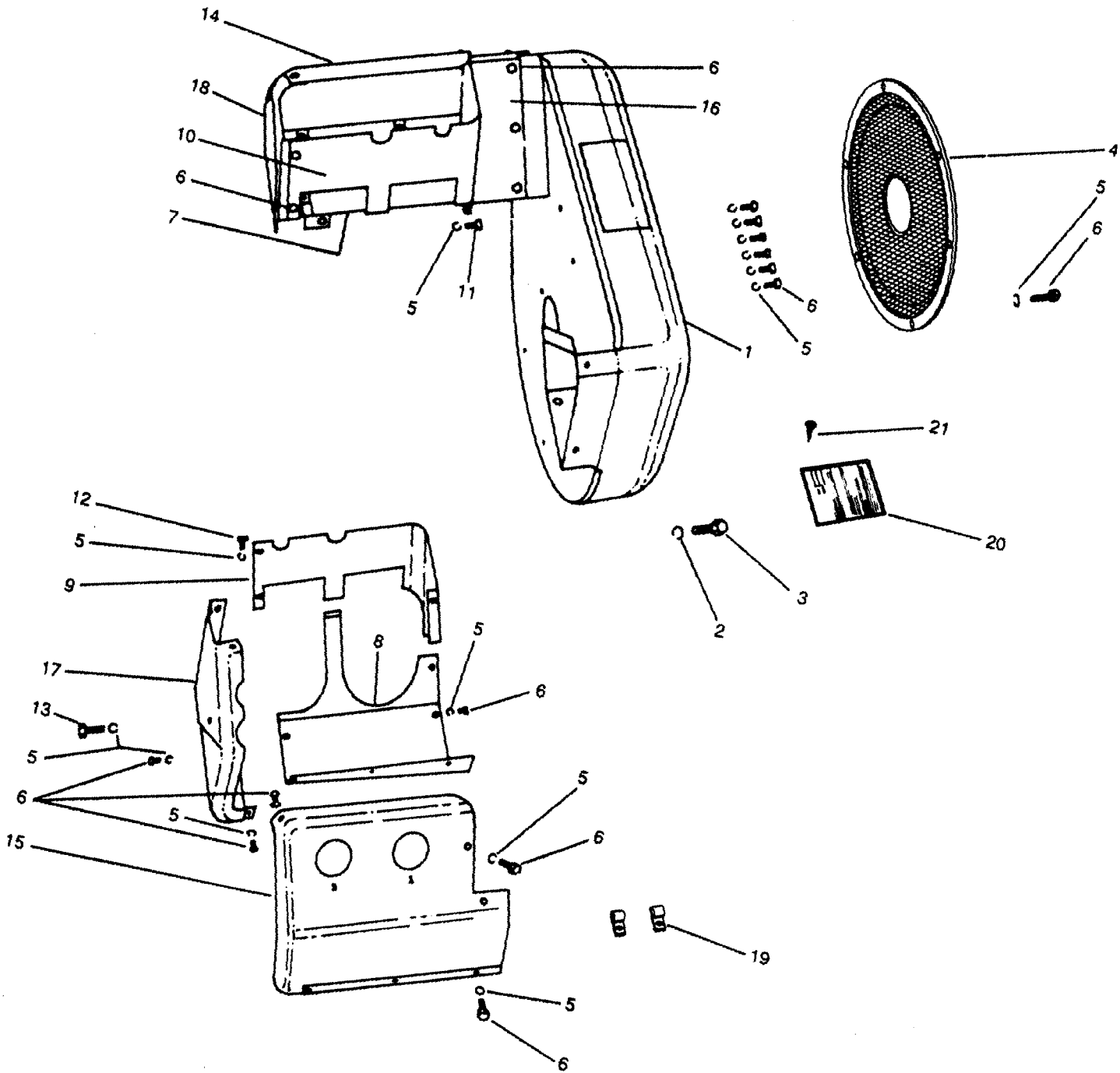
ITEM	PART NO.	DESCRIPTION	QTY.
1	YL100A	Ignition cable set	1
2	PD79	Nut, 3/8"-16 thread	1
3	PD11	Nut, 3/8"-24 thread	1
4	PE5	Lock washer, 3/8" spring lock	2
5	XD33	Screw, 3/8"-16 x 2-1/4" long	1
6	PH22A	Washer, 3/8" steel	1
7	Y97S2	Magneto, Fairbanks Morse No. FMX-4B7A	1
—	YQ8	Points and condenser kit	1
—	YQ9	Overhaul kit	1
8	QD616	Gasket, magneto flange	1
9	GD93C4	Magneto gear	1
10	PC110	Stud, magneto mounting	1
11	BD100KS1	Gear cover assembly (includes items 16, 17, 20; includes shaft)	1
12	QD611	Gasket, gear cover	1
13	WE182A	Spacer, gear cover	1
14	QD614	Gasket, gear cover spacer to case	1
15	PA291	Dowel pin, gear cover	2
16	PF52	Button	1
17	XK3	Pipe plug, 3/8"	1
18	PE4	Lock washer, 5/16" spring lock	15
19	XD19	Screw, 5/16"-18 x 1-1/4" long	10
20	PH299	Oil seal, crankshaft	1
21	XD14	Screw, 5/16"-18 x 5/8" long	5
22	PH14	Washer, 5/16" copper	2
23	XD15	Screw, 5/16"-18 x 3/4" long	2



Governor Assembly

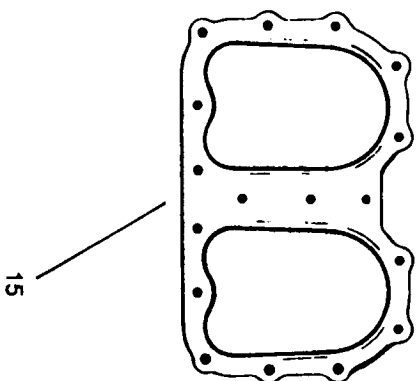
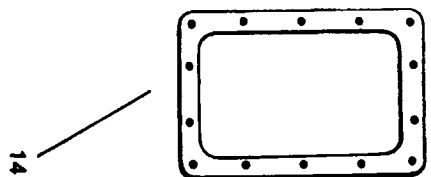
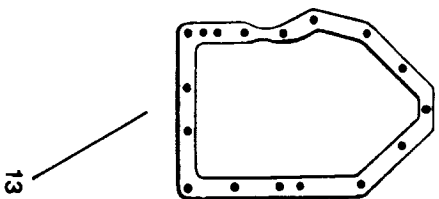
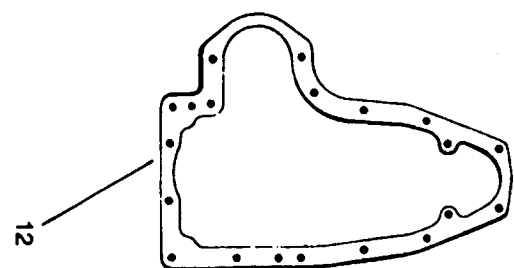
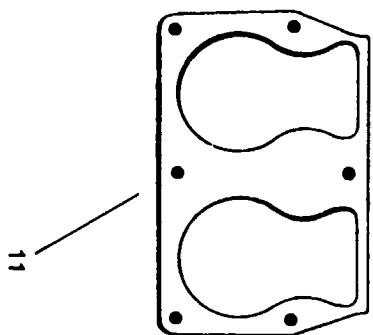
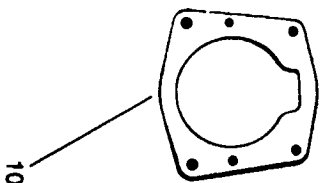
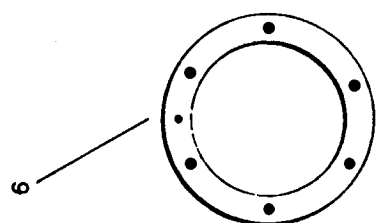
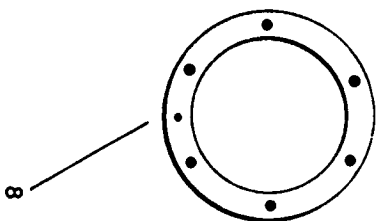
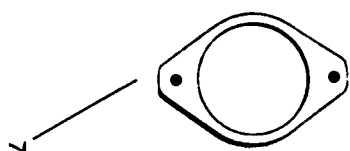
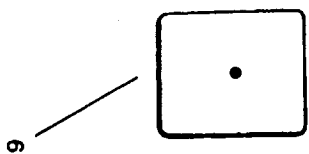
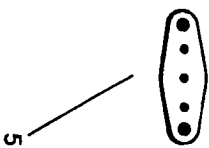
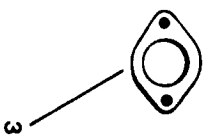
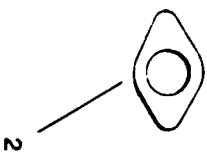
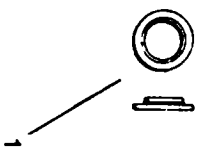
ITEM	PART NO.	DESCRIPTION	QTY.
—	T134K	Governor assembly (includes items 1, 11, & 16)	1
1	TC395S1	Governor housing assembly (includes items 2 - 9; includes housing)	1
2	TC398	Cross shaft and lever	1
3	PH571	Oil seal, governor cross shaft (Neoprene)	1
4	VB151	Governor yoke	1
5	PA367	Roll pin, 1/8" x 3/4" long	1
6	SA52	Plug, 1/2" expansion	1
7	RF269-2	Fitting	1
8	QD615A	Gasket, governor housing	1
9	PF18	Pipe plug, 1/8" slotted	1
10	TC388-1	Governor shaft	1
11	TC535S1	Governor flyweight assembly (includes items 12 - 14; includes pins)	1
12	* — — —	Governor gear	1
13	TC322DS1	Flyweight (includes pins)	2
14	XJ47	Roll pin	2
15	PH313A	Washer, governor gear bushing	1
16	TC391D	Thrust sleeve and bearing	1
17	PE4	Lock washer, 5/16" spring lock	6
18	XD16	Screw, 5/16"-18 x 7/8" long	4
19	PM76	Governor spring	1
20	PI115F	Adjusting screw	1
21	TC367	Adjusting screw pin	1
22	PD77	Nut, 1/4"-20 thread	1
23	PD173A	Nut, governor adjusting screw	1
24	VE874S1	Control rod (includes item 25)	1
25	PK181	Clip, rod end L.H.	1

* Not serviced separately.



Air Shrouding

ITEM	PART NO.	DESCRIPTION	QTY.
1	SE74Y	Flywheel shroud, standard	1
—	SE74YA	Flywheel shroud, with starter mounting pad	1
—	SE74YC	Flywheel shroud, with starter mounting and air cleaner pads	1
2	PE4	Lock washer, 5/16" spring lock	6
3	XD172	Screw, 5/16"-18 x 1/2" long	2
4	SE20B3	Screen, flywheel shroud	1
5	PE3	Lock washer, 1/4" spring lock	39
6	XA33	Screw, 1/4"-20 x 3/8" long	29
7	SE75B	Lower cylinder shroud, right side	1
8	SE76B	Lower cylinder shroud, left side	1
9	SE77C	Heat deflector, left side	1
10	SE77D	Heat deflector, right side	1
11	XA34	Screw, 1/4"-20 x 1/2" long	4
12	XD6	Screw, 1/4"-20 x 3/4" long	2
13	XA36	Screw, 1/4"-20 x 3/4" long	2
14	SE78C	Cylinder head shroud, right side	1
15	SE79C	Cylinder head shroud, left side	1
16	SE80	Side cover, flywheel shroud	1
17	SE82C	Rear shroud cover, left side	1
18	SE83C	Rear shroud cover, right side	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



Engine Gasket Set

ITEM	PART NO.	DESCRIPTION	QTY.
—	Q12J	Gasket set (includes items 1 - 15)	1
1	QB75	Gasket, exhaust and inlet port	6
2	QC71A	Gasket, carburetor flange	3
3	QD67	Gasket, fuel pump adapter	1
4	QD538A	Gasket, fuel pump	1
5	QD595A	Gasket, oil filter	1
6	QD612A	Gasket, valve inspection cover	4
7	QD616	Gasket, magneto	1
8	QD527D	Gasket, main bearing plate .003" thick	3
9	QD527C	Gasket, main bearing plate .006" thick	3
10	QD615A	Gasket, governor housing	1
11	QD617	Gasket, cylinder base	2
12	QD611	Gasket, gear cover	1
13	QD614	Gasket, crankcase	1
14	QD610A	Gasket, bottom cover	1
15	QD613C	Gasket, cylinder head	2
—	Q28	Valve grinding gasket set (includes items 1, 4 and 15)	1

VH4D
Wisconsin Options

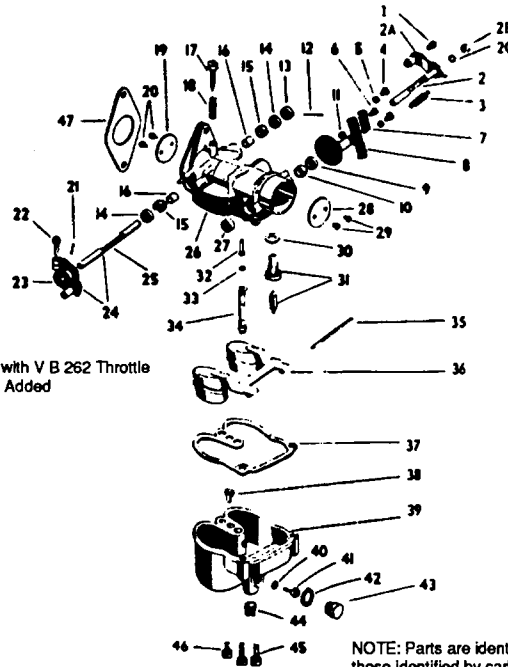
L57 Series (Zenith Model 87A8 Carburetor)

USE WITH MODELS VP4D, VG4D, VH4D, W4-1770

CARB. REF. NO.	ZENITH ASSEM. NO.	WISCONSIN PART NO.	WIS. ENGINE MODEL	CARB. REF. NO.	ZENITH ASSEM. NO.	WISCONSIN PART NO.	WIS. ENGINE MODEL
1	11288	L57	VP4D	6	13821	L57H	VH4D
2	11532	L57-1	VG4D	7	13863	L57K	VH4D
3	12347	L57B	VG4D	8	13884	L57M	W4-1770
4	13401	L57E	VG4D	9		L57M1*	W4-1770
5	13714	L57G	VH4D	10		L57M3	

L57FS1 – no longer available
 L57LS1 – use L57MS1
 LZ57-8 – same as L57-1

* Same as L57M except with VB262 throttle lever and PA379 pin added.



*Same as L57 except with V B 262 Throttle Lever and PA379 Pin Added

NOTE: Parts are identical for all carburetors except those identified by carburetor Ref. No.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	93T8S8-7	Screw, lever swivel (for 1-5, 8) (NLA)	1	5	93T41-8	Lock washer, bracket (for 1-5, 7, 8)	2
2	93C105-3	Shaft, choke (for 1-6)	1	6	93T8S8-8	Screw, tube clamp (for 1-5, 8)	1
2A	93C106-2	Lever assembly, choke (for 1-5, 8)	1	7	93C110-7	Clamp, bracket (for 1-5, 8)	1
—	93CR106-3A	Lever, choke (for 6,7)	1	8	93C109-60	Bracket, choke (for 1-5, 7, 8)	1
2B	93T22S8	Nut, choke lever	1	9	† 93C131-4X2	Retainer, choke shaft packing (for 1-3)	1
2C	93T41-10	Lock washer, choke lever nut	1	10	† 93T57-4	Washer, choke shaft packing (for 1-3)	1
3	93C112-12	Spring, choke lever (for 1-4, 8)	1	(continued on page 28)			
—	93C112-21	Spring, choke lever (for 5, 7)	1				
4	93C140-58	Screw, bracket (for 1-5, 7, 8)	2				

L57 Series (Zenith Model 87A8 Carburetor) (Cont.)

USE WITH MODELS VP4D, VG4D, VH4D, W4-1770 (see pg. 27)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
11	93T21S8	Nut, clamp screw (for 1-5, 8)	1	30	†Δ 93T56-20	Fiber washer, fuel valve seat ...	1
12	93T63-9	Pin, washer retaining (for 1-3)	1	31	† 93C81-17-35	Valve and seat, fuel (for 1-3)	1
13	93C130-4	Washer, shaft thrust (for 1-3) ...	1	—	† 93C81-66-35	Valve and seat, fuel (for 4-8)	1
14	† 93T52-57	Retainer, throttle shaft packing (one required for 4-7)	2	32	93C66-96-40	Jet, discharge (for 1)	1
15	† 93T48-9	Seal, throttle shaft (one additional for 4-8)	1	—	93C66-104-42	Jet, discharge (for 2-4) (NLA) ...	1
16	93C9-75	Bushing, throttle shaft	2	—	93C66-113-50	Jet, discharge (for 8)	1
17	† 93C46-49	Needle, idle adjusting	1	—	93C66-124-40	Jet, discharge (for 5-7)	1
18	93C111-155	Spring, adjusting needle	1	33	†Δ 93T56-73	Fiber washer, well	1
19	93C21-42	Plate, throttle	1	34	93C76-50-1	Well, metering (for 1-7) (NLA)	1
20	† 93T315S5-4	Screw, throttle plate	2	—	93C76-50-3	Well, metering (for 8)	1
21	93T63-9	Roll pin, throttle lever	1	35	† 93C120-18	Axle, float (for 1-3)	1
22	93T8S8-10	Screw, lever stop	1	—	† 93C120-81	Axle, float (for 4-8)	1
23	93CR27-241-1	Lever and stop, throttle (for 1, 2, 4)	1	36	93C85-97	Float assembly	1
—	93CR27-465	Lever and stop, throttle (for 6, 7)	1	37	†Δ 93C142-55	Gasket, bowl to body	1
—	93CR27-307	Lever and stop, throttle (for 3)	1	38	93C52-2-12	Jet, idle	1
—	93CR27-451	Lever and stop, throttle (for 5)	1	39	93B3-129A	Bowl, fuel	1
—	93CR27-472	Lever and stop, throttle (for 8)	1	40	†Δ 93T56-24	Fiber washer, main jet (NLA) ...	1
24	†† 93C29-1037	Shaft and lever, throttle (for 1, 2)	1	41	93C52-7-29	Jet, main (for 5-7)	1
—	†† 93C29-1429	Shaft and lever, throttle (for 3)	1	—	93C52-7-34	Jet, main (for 1)	1
—	†† 93C29-1955	Shaft and lever, throttle (for 6, 7)	1	—	93C52-7-38	Jet, main (for 2-4) (use 93T56-73 fiber washer)	1
—	†† 93C29-1688	Shaft and lever, throttle (for 4)	1	—	93C52-7-40	Jet, main (for 8)	1
—	†† 93C29-1886	Shaft and lever, throttle (for 5)	1	42	† PH499	Fiber washer, passage plug	1
—	†† 93C29-1987	Shaft and lever, throttle (for 8)	1	43	93C138-24	Plug, main passage	1
25	N.S.S.	Shaft, throttle	1	44	93T91-1	Plug, 1/8" pipe (bowl drain)	1
26	N.S.S.	Body, throttle	1	45	93T301S8-14	Screw, bowl to body (long)	2
27	† 93CR37-1X1	Plug, choke shaft hole (one additional in throttle shaft hole for 4-7)	1	46	93T301S8-9	Screw, bowl to body (short)	1
28	93C102-113	Plate, choke	1	47	† QC12A	Gasket, flange (Zenith C141-4-6)	3
29	† 93T315S5-4	Screw, choke plate	2	—	93C181-296	Gasket set	1
				—	LQ37	Repair kit (for 1-8)	1

† Parts included in repair kit

†† Shaft and lever assemblies item 24, includes items 12, 13, 21-23

Δ Gasket Set

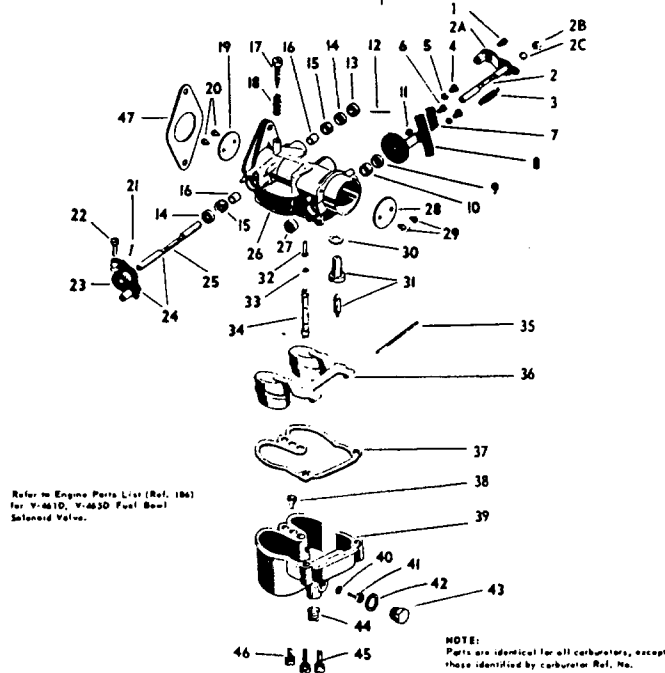
N.S.S. – Not sold separately

NOTE: The idle air bleed bushing and well vent bushing are calibrated parts of the throttle body (item 26) and are not readily removable.

L57, L77 Series (Zenith Model 87A8 Carburetor)

USE WITH MODELS VP4D, VG4D, VH4D, V460D, V461D, V465, V465D

CARB. REF. NO.	ZENITH ASSEM. NO.	WISCONSIN PART NO.	WIS. ENGINE MODEL	CARB. REF. NO.	ZENITH ASSEM. NO.	WISCONSIN PART NO.	WIS. ENGINE MODEL
1	11288	L57	VP4D	14	12708	LZ77S1	V460D
2	11532	L57-1	VG4D			LZ77BS1	V461D
3	12347	L57B	VG4D			LZ77GS1	V465
4	13401	L57E	VG4D	15	12825	LZ77CS1	V465D
5	13714	L57G	VH4D			(with auto- choke) (use LZ77HS1)	V461D



ITEM	PART NO.	DESCRIPTION	QTY.	ITEM	PART NO.	DESCRIPTION	QTY.
1	93T8S8-7	Screw, lever swivel (for 1-5, 14) (NLA)	1	6	93T8S8-8	Screw, tube clamp (for 1-5, 14)	1
2	93C105-3	Shaft, choke (for 1-5, 14)	1	7	93C110-7	Clamp, bracket (for 1-5, 14)	1
—	93C105-302	Shaft, choke (for 15)	1	8	93C109-60	Bracket, choke (for 1-5, 14)	1
2A	93C106-2	Lever, choke (for 1-5, 14)	1	9	† 93C131-4X2	Retainer, choke shaft packing (for 1-3, 14, 15)	1
—	93C106-13AE	Lever assembly, choke clamp (for 15)	1	10	† 93T57-4	Washer, choke shaft packing (for 1-3, 14, 15)	1
2B	93T22S8	Nut, choke lever (for 1-5, 14)	1	11	93T21S8	Nut, clamp screw (for 1-5, 14)	1
2C	93T41-10	Lock washer, choke lever nut	1	12	93T63-9	Pin, washer retaining (for 1-3, 14, 15)	1
3	PM210	Spring, choke lever (for 1-4, 14)	1	13	93C130-4	Washer, shaft thrust (for 1-3, 14, 15)	1
—	93C112-21	Spring, choke lever (for 5)	1				
4	93C140-58	Screw, bracket (for 1-5, 14)	2				
5	93T41-8	Lock washer, bracket (for 1-5, 14)	2				

(continued on page 30)

L57, L77 Series (Zenith Model 87A8 Carburetor) (Cont.)

USE WITH MODELS VP4D, VG4D, VH4D, V460D, V461D, V465, V465D (see pg. 29)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY.
14	† 93T52-57	Retainer, throttle shaft packing (one required for 4, 5)	2	—	93C66-104-45	Jet, discharge (for 14, 15)	1
15	† 93T48-9	Seal, throttle shaft	2	—	93C66-124-40	Jet, discharge (for 5)	1
		(one additional for 4, 5)	1	33	†Δ 93T56-73	Fiber washer, well	1
16	93C9-75	Bushing, throttle shaft	2	34	93C76-50-1	Well, metering (for 1-5) (NLA)	1
17	† 93C46-49	Needle, idle adjusting	1	—	93C76-55-1	Well, metering (for 14, 15)	1
18	93C111-155	Spring, adjusting needle	1	35	93C120-18	Axle, float (for 1-3, 14, 15)	1
19	93C21-42	Plate, throttle	1	—	† 93C120-81	Axle, float (for 4, 5)	1
20	† 93T315S5-4	Screw, throttle plate	2	36	93C85-97	Float assembly	1
21	N.S.S.	Roll pin, throttle lever	1	37	†Δ 93C142-55	Gasket, bowl to body	1
22	93T8S8-10	Screw, lever stop	1	38	93C52-2-12	Jet, idle	1
23	93CR27-241-1	Lever and stop, throttle (for 1, 2, 4, 14, 15)	1	39	93B3-129A	Bowl, fuel (replaces 93B3-98A)	1
—	93CR27-307	Lever and stop, throttle (for 3)	1	40	†Δ 93T56-24	Fiber washer, main jet (NLA) ...	1
—	93CR27-451	Lever and stop, throttle (for 5)	1	41	93C52-7-29	Jet, main (for 5)	1
24	†† 93C29-1037	Shaft and lever, throttle (for 1, 2)	1	—	93C52-7-34	Jet, main (for 1)	1
—	†† 93C29-1429	Shaft and lever, throttle (for 3)	1	—	93C52-7-38	Jet, main (for 2-4)	1
—	†† 93C29-1386	Shaft and lever, throttle (for 14, 15)	1	—	93C52-7-42	Jet, main (for 14, 15)	1
—	†† 93C29-1688	Shaft and lever, throttle (for 4)	1	42	PH299	Fiber washer, passage plug	1
—	†† 93C29-1886	Shaft and lever, throttle (for 5)	1	43	93C138-24	Plug, main passage	1
25	N.S.S.	Shaft, throttle	1	44	93T91-3	Plug, 1/8" pipe (bowl drain)	1
—	93T52-24	Washer, throttle lever spacer (for 14, 15) (not illustrated)	1	45	93T301S8-14	Screw, bowl to body (long)	2
26	N.S.S.	Body, throttle	1	46	93T301S8-9	Screw, bowl to body (short)	1
27	† 93CR37-1X1	Plug, choke shaft hole (for 1-5, 14) (one additional in throttle shaft hole for 4, 5)	1	47	† QC12A	Gasket, flange (Zenith C141-4-6)	3
28	93C102-113	Plate, choke (for 1-5)	1	—	93C162-71	Auto choke assembly (for 15) (not illustrated)	1
—	93C102-123	Plate, choke (for 14)	1	—	93B190-30A	Auto choke adapter assembly (for 15) (not illustrated)	1
—	93C102-129	Plate, choke (for 15)	1	—	93C146-25	Auto choke adapter gasket (for 15) (not illustrated)	1
29	† 93T315S5-4	Screw, choke plate	2	—	93C181-296	Gasket set	1
30	†Δ 93T56-20	Fiber washer, fuel valve seat ...	1	—	LQ37	Repair kit (for 1-5, 14, 15)	1
31	† 93C81-17-35	Valve and seat, fuel (for 1-3, 14, 15)	1				
—	† 93C81-66-35	Valve and seat, fuel (for 4, 5)	1				
32	93C66-96-40	Jet, discharge (for 1)	1				
—	93C66-104-42	Jet, discharge (for 2-4)	1				

† Parts included in repair kit

†† Shaft and lever assemblies item 24, includes items 12, 13, 21-23

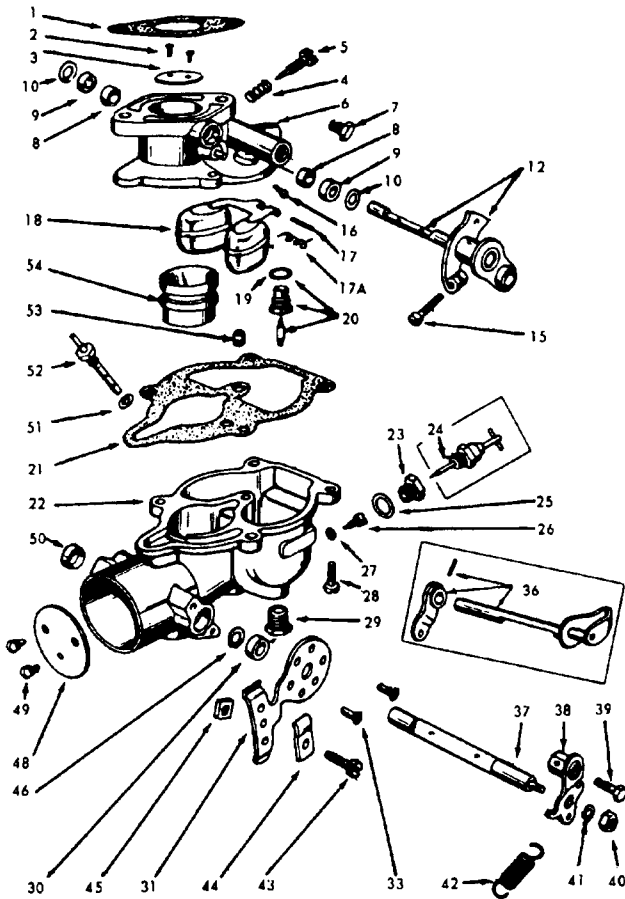
Δ Gasket set

N.S.S. – Not sold separately

NOTE: The idle air bleed bushing and well vent bushing are calibrated parts of the throttle body (item 26) and are not readily removable.

L63 Series (Zenith Model 68-7 Carburetor)

USE WITH MODELS AENL, AGND, VH4D, MVH4D, THD, VH4DO, TRA10D, TJD



* LZ63-16 Choke is on standard side.

* LZ63-1151 Choke is on opposite of standard, internally the same (same as L63S1 use VB262 swivel block).

* LZ63C13 same as L63C except needs VB243 choke lever to hook to antichoke. Also C13 has 1/8" pipe top on bottom for drip tube.

* L63BJ same as L63AQ, only difference is fuel inlet is on opposite side.

CARB. REF.	ZENITH NO.	WISCONSIN NO.
1	12098A•	L63
2	12188G•	L63A
3	12158D•	L63C
4	12325	L63D
5	12199E•	L63E
6	12205A•	L63F
7	12235E•	L63G
8	12236	L63H
9	12239C•	L63J (use L63C)
10	12234F•	L63K
11	12288C•	L63L (use L63CS1)
12	12300	L63M (NLA)
13	12599D•	L63N
14	12375D•	L63R
15	12448D•	L63U (NLA)
16	12449D•	L63V (NLA)
17	12545C•	L63W (NLA)
18	12543C•	L63Y, L63ES1
19	12546	L63Z (NLA)
20	12647	L63AA
21	12253A•	LZ63-2
22	12229D•	LZ63C
23	12238D•	LZ63C2
24	12744B•	L63AF, L63CS1
25	12982B•	L63AN
26	13201A•	L63AP
27	13238A•	L63AQ
28	13405A•	L63AV
29	13420A•	L63BC, L63BLS1
30	13449A•	L63BD
31	13694	L63BL
32	13757	L63BM
33	—	L63BP
34	—	L63BW
35	—	L63BY

NOTE: Beginning with this letter designation • bushings (Ref. 8) were discontinued.

* For shaft and lever use 93C29-491 and PA379 and VB262 (taken from LZ63-11S1, same as standard L63).

* LZ63C13 same as L63C except needs VB243 choke lever to hook to auto choke, also no. 13 has 1/8" pipe top on bottom for drip tube.

L63 Series (Zenith Model 68-7 Carburetor)

USE WITH MODELS AENL, AGND, VH4D, MVH4D, THD, VH4DO, TRA10D, TJD (see pg. 31)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	Δ QC71A	Gasket, flange (Zenith no. C141-4-5)	1	16	93C55-6-12	Jet, idle (for all except 25, 27, 29, 30)	1
2	93T315S5-4	Screw and washer, throttle plate	2	—	93C55-6-10	Jet, idle (for 29, 30)	1
3	93C21-176	Plate, throttle (for all except 5, 7, 8, 10, 12, 14, 18; no. 32 for L63BM)	1	—	93C55-22-11	Jet, idle (for 25, 27)	1
—	93C21-205	Plate, throttle (for 5, 7, 8, 10, 12, 14, 18)	1	17	Δ 93C120-4	Axle, float	1
4	93C111-17	Spring, idle needle	1	17A	93C117-79	Spring, float (for all except 1, 6, 16, 21, 28)	1
5	Δ 93C46-6	Needle, idle adjusting	1	18	93C85-103	Float and hinge assembly	1
6	— — —	Body, throttle (not available for service) ...	1	19	†Δ 93T56-20	Washer, .040" thick fiber, solid type fuel valve and seat (for 93C81-17)	1
7	93T91-3	1/8" plug, fuel inlet R.H.	1	—	†Δ 93T56-70	Washer, .020" thick fiber, spring type fuel valve and seat (for 93C81-50)	1
8	93C9-75	Bushing, throttle shaft (see note)	2	20	Δ 93C81-17-35	Valve and seat, fuel (solid type) (for 1, 4-6, 8, 10, 13, 16, 21, 25, 27-31)	1
9	Δ 93T48-9	Seal, throttle shaft	2	—	Δ 93C81-17-25	Valve and seat, fuel (solid type) (for 18, 20)	1
10	Δ 93T52-57	Retainer, shaft seal (1 used for 28)	2	—	Δ 93C81-50-35	Valve and seat, fuel (spring type) (for 2, 3, 7, 9, 11, 12, 14, 15, 22-24, 26)	1
—	93C131-38	Cup plug (for 28)	1	—	Δ 93C81-50-25	Valve and seat, fuel (spring type) (for 17, 19)	1
12	93C29-491	Shaft and stop lever, throttle (for 1, 3, 6, 9, 11, 17, 19-23, 29, 31)	1	21	†Δ 93C142-74	Gasket, bowl to body	1
—	93C29-858	Shaft and stop lever, throttle (for 4)	1	22	93B3-121B1	Bowl, fuel (for 1, 6, 20, 21)	1
—	93C29-926	Shaft and stop lever, throttle (for 5, 7, 8, 10, 14, 18)	1	—	93B3-121A3	Bowl, fuel (for 2, 5, 10, 12, 18)	1
—	93C29-1928	Shaft and stop lever throttle (for 32) (includes 12-21)	1	—	93B3-121A1	Bowl, fuel (for 3, 7-9, 11, 14, 17, 19, 22, 24, 29, 31)	1
—	93C29-1418	Shaft and stop lever, throttle (for 25, 27)	1	—	93B3-121B2	Bowl, fuel (for 4)	1
—	93C29-1476	Shaft and stop lever, throttle (for 15, 16, 30)	1	—	93B3-121A2	Bowl, fuel (for 13)	1
—	93C29-858	Shaft and stop lever, throttle (for 2, 13, 24)	1	—	93B3-121E1	Bowl, fuel (for 15, 23, 30)	1
—	93C29-1475	Shaft and stop lever, throttle (for 12)	1	—	93B3-121F1	Bowl, fuel (for 16)	1
—	93C29-1584	Shaft and stop lever, throttle (for 26)	1	—	93B3-121D6	Bowl, fuel (for 25)	1
—	93C29-1607	Shaft and stop lever, throttle (for 28)	1	—	93B3-121A7	Bowl, fuel (for 26)	1
15	93T8S8-12	Screw, throttle stop (for all except 25, 27, 30)	1	—	93B3-121A8	Bowl, fuel (for 27)	1
—	93T8S8-10NP	Screw, throttle stop (for 25, 27, 30)	1	—	93B3-121B3	Bowl, fuel (for 28)	1
				23	93C138-24	Plug, main jet passage (for 1, 3, 4, 8, 10, 15, 16, 19-24, 26, 28-31)	1

(continued on page 33)

L63 Series (Zenith Model 68-7 Carburetor) (Cont.)

USE WITH MODELS AENL, AGND, VH4D, MVH4D, THD, VH4DO, TRA10D, TJD (see pg. 31)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
24	93C71-21	Adjustment, main jet (for 2, 5, 6, 7, 9, 11-14, 17, 18, 25, 27)	1	39	93T8S8-7	Screw, choke lever swivel (NLA) (for all except 2, 5, 10, 12, 18, 25)	1
25	PH499	Washer (fiber), plug and adjustment	1	40	93T22S8	Nut, choke shaft (for all except 2, 5, 10, 12, 18, 25) ...	1
26	93C52-7-22	Jet, main (for 1, 4, 16, 20, 21, 28-30) ...	1	41	93T41-10	Lock washer, choke shaft nut (for all except 2, 5, 10, 12, 18, 25)	1
—	93C52-7-33	Jet, main (for 2, 13, 25, 27)	1	42	93C112-6	Spring, choke lever return (for all except 2, 5, 10, 12, 18, 25)	1
—	93C52-7-26	Jet, main (for 5, 7, 11, 12, 14, 17, 18)	1	43	93T8S8-8	Screw, bracket clip (for all except 2, 5, 10, 12, 18, 25) ...	1
—	93C52-7-25	Jet, main (for 6)	1	44	93C110-7	Clip, bracket tube (for all except 2, 5, 10, 12, 18, 25) ...	1
—	93C52-7-19	Jet, main (for 8)	1	45	93T21S8	Nut, clamp screw (for all except 2, 5, 10, 12, 18, 25) ...	1
—	93C52-7-30	Jet, main (for 9)	1	46	Δ 93T57-4	Seal, choke shaft (for all except 26, 28)	1
—	93C52-7-21	Jet, main (for 10)	1	—	Δ 93T48-9	Seal, choke shaft (for 26, 28)	1
—	93C52-7-23	Jet, main (for 3, 15, 19, 22-24, 26, 34, 35)	1	48	93C101-80	Plate, choke (for all except 2, 13, 25, 27)	1
—	93C52-7-24	Jet, main (for 31)	1	—	93C101-85	Plate, choke (for 2, 13, 25, 27)	1
27	†Δ 93T56-24	Washer (fiber), main jet (NLA)	1	49	93T315S5-4	Screw and washer choke plate (for all)	2
28	93T301S10-10	Screws, bowl to body assembly	4	50	Δ 93CR37-1X1	Plug, choke shaft hole (for all except 2, 5, 10, 12, 18)	1
29	93T91-3	Plug, bowl drain	1	51	†Δ 93T56-48	Washer (fiber), discharge jet	1
30	Δ 93C131-4X2	Retainer, choke shaft seal (NLA) (for 1-25, 27, 29-31) ...	1	52	93C66-114-60	Jet, discharge (for 1, 4, 6, 16, 20, 21, 28)	1
—	Δ 93T52-53	Retainer, choke shaft seal (for 26, 28)	1	—	93C66-114-45	Jet, discharge (for 2, 13, 25, 27)	1
31	93C109-60C	Bracket, choke (for 1, 3, 6-9, 11, 14-17, 19-21, 23, 24, 26, 29-31)	1	—	93C66-114-50	Jet, discharge (for 3, 9, 11, 15, 17, 19, 22-24, 26, 29-31)	1
—	93C109-60C2	Bracket, choke (for 4, 13, 27)	1	—	93C66-114-40	Jet, discharge (for 5, 7, 8, 10, 12, 14, 18)	1
—	93C109-60C1	Bracket, choke (for 22)	1	53	93C77-18-12	Jet, well vent (for 1, 4, 6, 16, 20, 21, 28)	1
—	93C109-60E1	Bracket, choke (for 28)	1	—	93C77-18-13	Jet, well vent (for 2, 13, 25, 27)	1
—	93C109-60D1	Bracket, choke (for 32)	1				
33	93C140-58	Screws, choke bracket assembly (for all except 2, 5, 10, 12, 18, 25)	2				
36	93C108-280	Shaft and friction lever, choke (for 2)	1				
—	93C108-279	Shaft and friction lever, choke (for 5, 10, 12, 18)	1				
—	93C108-277	Shaft and friction lever, choke (for 25)	1				
37	93C105-286	Shaft, choke (for all except 2, 5, 10, 12, 18, 25, 32)	1				
38	93C106-2	Lever, choke (for all except 2, 5, 10, 12, 18, 25, 32)	1				

(continued on page 34)

L63 Series (Zenith Model 68-7 Carburetor) (Cont.)

USE WITH MODELS AENL, AGND, VH4D, MVH4D, THD, VH4DO, TRA10D, TJD (see pg. 31)

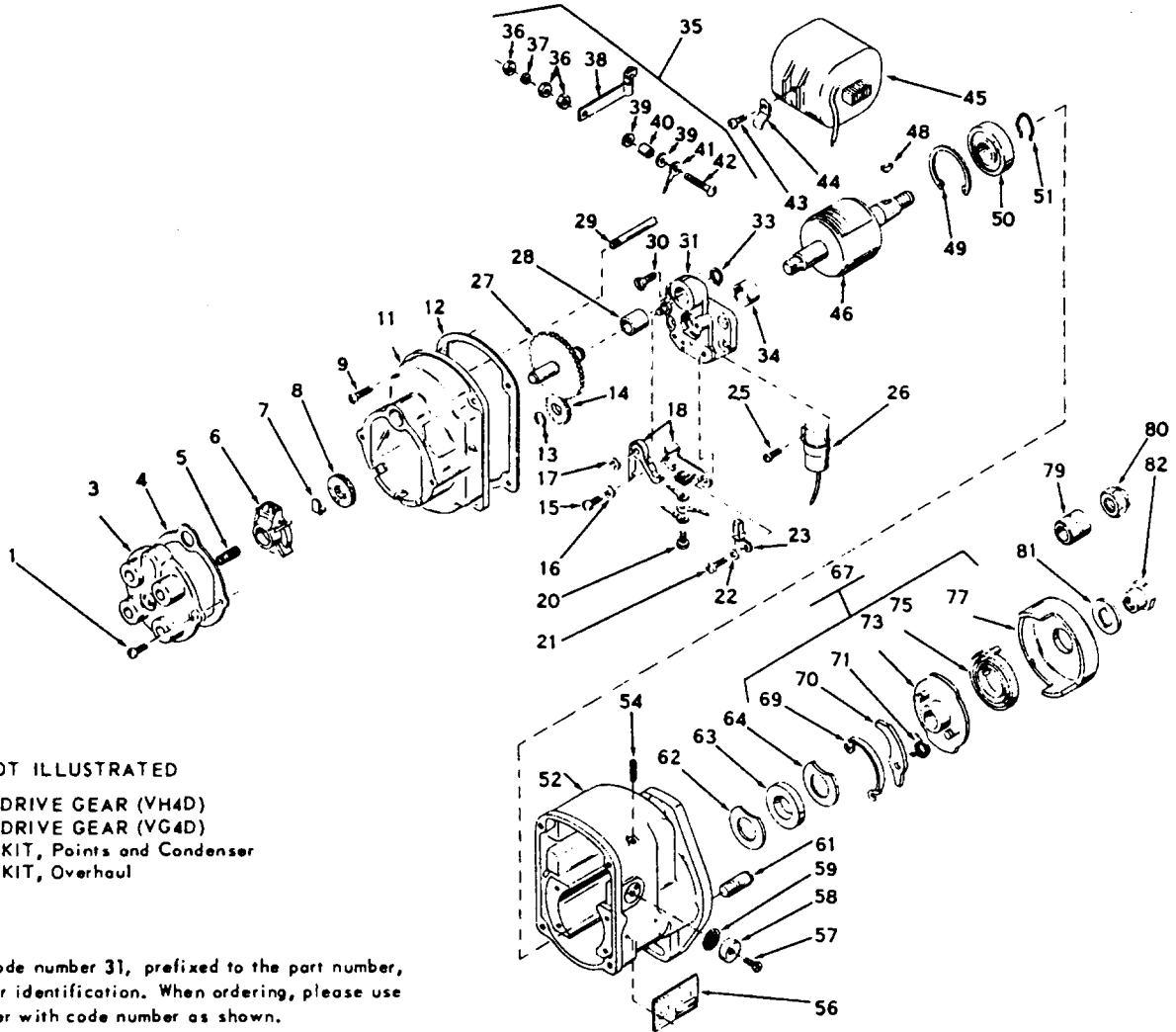
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
—	93C77-18-22	Jet, well vent (for 3, 9, 11, 15, 17, 19, 22-24, 26, 29-31)	1	—	93C181-329	Gasket kit (not illustrated)	1
—	93C77-18-17	Jet, well vent (for 5, 7, 8, 10, 12, 14, 18)	1	—	LQ33	Repair parts kit (with spring type fuel valve and seat) (for 2, 3, 7, 9, 11, 12, 14, 15, 22-24, 26, 32, 33)	1
54	93B38-74-18	Venturi (for 1, 3, 4, 6, 9, 11, 15-17, 19-24, 26, 28)	1	—	LQ39	Repair parts kit (with solid type fuel valve and seat) (for 1, 4-6, 8, 10, 13, 16, 21, 25, 27, 28-31)	1
—	93B38-74-19	Venturi (for 2, 13, 25, 27, 29-31)	1	—	93K2130	Repair parts kit (for 17, 19)	1
—	93B38-74-17	Venturi (for 5, 7, 8, 10, 12, 14, 18)	1	— ††	93/K	Repair parts kit (for 18, 20)	1
—	93C2454AD1X2	Lever, throttle clamp (for 15, 16, 30) (not illustrated)	1				
—	93T8B810-9	Screw, lever clamp (for 15, 16, 30) (not illustrated)	1				
—	93T8B8-10	Screw, lever swivel (for 15, 16, 30) (not illustrated)	1				

† Parts in gasket set

†† Specify Zenith carburetor number

Δ Parts in repair kit

Y97S1, Y97S2 Magnetos (Type FMX4B7A)



NOT ILLUSTRATED

- GD-93C-4 DRIVE GEAR (YH4D)
- GD-103-1 DRIVE GEAR (VG4D)
- YQ-8 KIT, Points and Condenser
- YQ-9 KIT, Overhaul

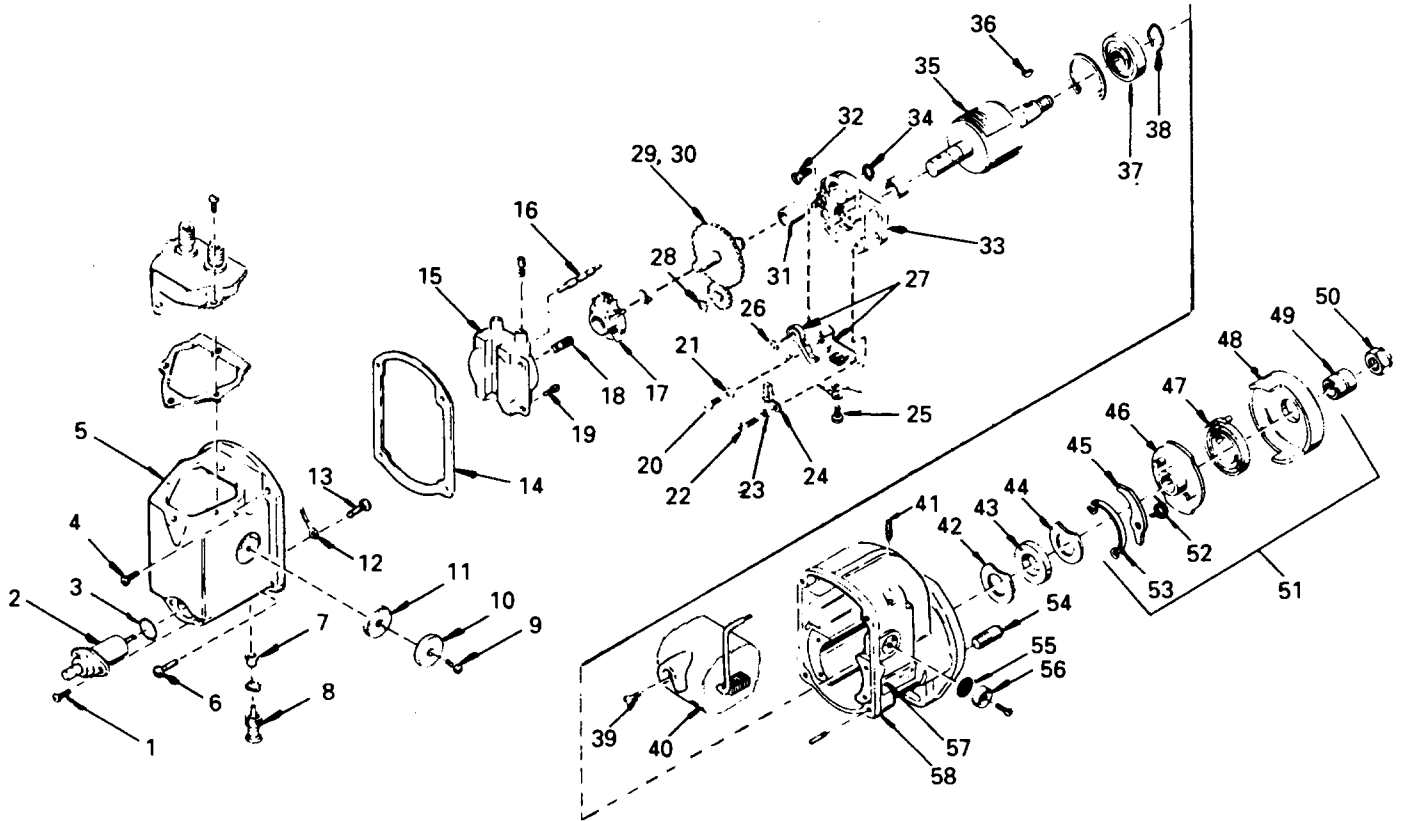
NOTE: Code number 31, prefixed to the part number, is a vendor identification. When ordering, please use part number with code number as shown.

Y97S1, Y97S2 Magnetos

USE WITH MODELS VG4D, VH4D, W4-1770 (see pg. 35)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	31-8S9D	Screw, no. 8-32 thread x 9/16" long	2	41	31L2514C	Wire	1
3	31W800	Cover	1	42	31-8S14N	Screw, no. 8-32 thread x 7/8" long	1
4	31B682	Gasket	13	43	31-6S4U	Screw, no. 6-32 thread x 1/4" long	1
5	31E2460B	Brush and spring	1	44	31D6120	Coil clip	1
6	31M2765	Distributor rotor	1	45	31R2477C	Coil	1
7	31A2766	Spring clip	1	46	31HW2480	Magnetic rotor	1
8	31G2501	Seal	1	48	31-3K1	Key	1
9	31-10S14D	Screw, no. 10-24 thread x 7/8" long	4	49	31B1498B	Snap ring	1
11	31AZ2430	End cap	1	50	31C5949	Bearing	1
12	31H2498	Gasket	1	51	31B1498D	Snap ring	1
13	31D1498	Snap ring	1	52	31T2425	Housing	1
14	31Q5952	Rotor gear	1	54	31-31SS14A	Set screw, coil - 5/16"-24 thread x 7/8" long..	2
15	31-6S6U	Support screw, no. 6-32 thread x 3/8" long..	1	56	31N195	Name plate	1
16	31D2458	Washer, no. 6	1	57	31-6S4U	Screw, no. 6-32 thread x 1/4" long	2
17	31C1498G	Snap ring	1	58	31B6030A	Vent cover	2
18	31A2437A	Point set	1	59	31C6032B	Vent screen	2
20	31-6S6Z	Terminal screw, no. 6-32 thread x 3/8" long..	1	61	31S2568	Stop pin	1
21	31-8S6U	Support screw, no. 8-32 thread x 3/8" long..	1	62	31A2492C	Washer	1
22	31B5969	Washer, no. 8	1	63	31G3861	Shaft seal	1
23	31G2788	Cam wick	1	64	31A2492A	Washer	1
25	31-8S5NA	Screw, no. 8-32 thread x 5/16" long	1	67	31BW2563C28	Coupling, 27° lag angle	1
26	31AXMR2433	Condenser	1	69	31A1498J	Lock spring	1
27	31Y5939	Shaft and gear	1	70	31Q2566	Coupling pawl	2
28	31D5950C	Bearing	1	71	31S5963	Pawl spring	2
29	31J983A	Lead rod	1	73	31S2563-27	Hub, 27° lag angle	1
30	31-8S6G	Support screw, no. 8-32 thread x 3/8" long..	1	75	31E2565	Coupling spring	1
31	31X4631	Support	1	77	31Y5957	Coupling shell	1
33	31D1498	Snap ring	1	79	31F2572	Gear bushing	1
34	31A5950A	Bearing	1	80	31M2570	Coupling nut	1
35	31L2514C	Switch	1	—	YQ8	Points and condenser kit (not illustrated)	1
36	31-8N1	Nut	3	—	YQ9	Overhaul kit (not illustrated)	1
37	31-8LW5	Lock washer	1	—	GD93C4	Drive gear (VH4D) (not illustrated)	1
38	31M2514	Insulated lever	1	—	GD103-1	Drive gear (VG4D) (not illustrated)	1
39	31C6018	Insulating washer	2				
40	31K2457A	Insulating bushing	1				

Y98CS1, Y98CS2 Fairbanks-Morse Magnetos (Type FMXZE4B7-4)



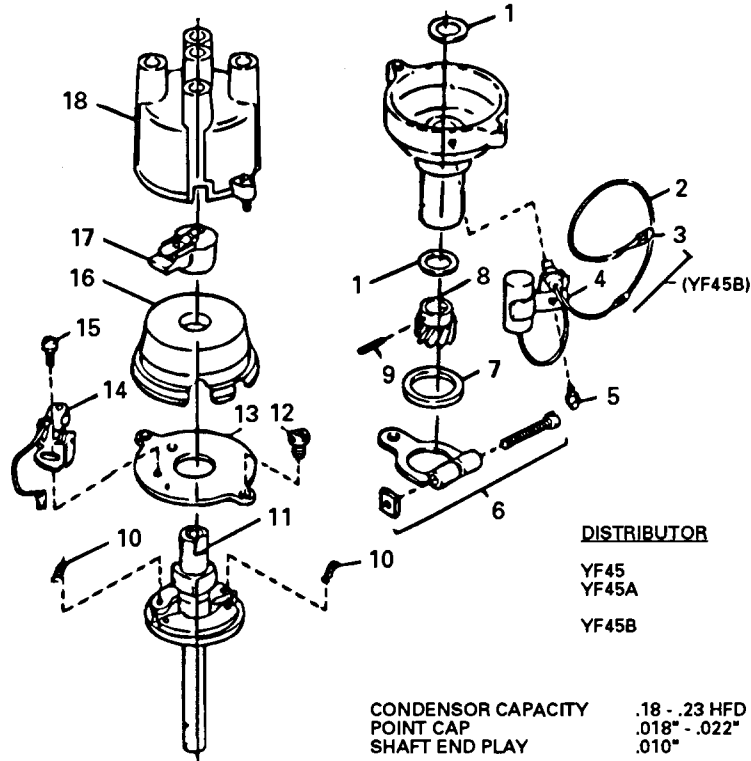
Y98CS1, Y98CS2 Fairbanks-Morse Magnetos

USE WITH MODELS VG4D, VH4D (see pg. 37)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	31-6S6D	Condenser mounting screw	1	29	31Q5952	Rotor gear	1
2	31AXMR2433	Condenser	1	30	31Q5939	Distributor shaft and gear	1
3	31H2473	Seal, condenser "O" ring	1	31	31D5950C	Bearing	1
4	31-10S10D	End cap screw	1	32	31-8S6G	Screw	1
5	31LY2430A	End cap assembly	1	33	31X4631	Bearing support	1
6	31-10S18D	End cap screw	1	34	31D1498	Rotor gear snap ring	1
7	31F4373	Spacer	1	—	31G1498	Distributor shaft snap ring	1
8	31HW2514	Plunger and nut assembly	1	35	31TS2480	Rotor	1
9	31-6S6N	Vent cover screw	1	36	31-3K1	Key	1
—	31A1233	Vent cover copper wool	1	—	31SK90	Service kit	1
—	31B1355	Ground strip guide	1	37	31C5949	Bearing	1
10	31A1232	Vent cover - end cap	1	—	31D5949A	Bearing	1
11	31A6032A	Vent screen - end cap	1	38	31B1498D	Rotor drive end shaft snap ring	1
12	31L2514C	Switch assembly	1	39	31-6S4U	Cover screw	1
—	31H2514	Terminal strip	1	40	31RS2477C	Coil	1
13	31-688N	Screw, terminal	1	41	31SS14A	Coil set screw	1
—	31-6LW1	Lock washer	1	42	31A2492C	Washer	2
—	31-6N1	Screw nut	1	—	31E2493	Washer	1
—	31W2514	Lever	1	43	31G3861	Shaft seal	1
14	31K2498	Gasket	1	44	31A2492A	Washer	1
15	31L2474E	Distributor block	1	45	31Q2566	Coupling pawl	1
16	31F983B	High tension lead	1	46	31CZ2563	Coupling	1
—	31D1182	Suppressor insulator	1	47	31E2565	Coupling spring	1
17	31M2765	Distributor rotor	1	48	31Y5957	Coupling shell	1
—	31A2766	Spring clip	1	49	31F2572	Gear bushing	1
18	31E2460B	Brush and spring	1	50	31M2570	Coupling nut	1
19	31-8S8D	Screw	1	51	31BW2563C30	Coupling complete	1
20	31-6S6U	Support screw	1	52	31S5963	Coupling spring	1
21	31D2458	Washer	1	53	31-29-45	Snap ring	1
22	31-8S6U	Support screw	1	54	31S2568	Stop pin	1
—	31G2457A	Bushing	1	55	31B6030A	Vent cover	1
23	31B5969	Washer	1	56	31C6032B	Vent screen - housing	1
24	31G2788	Cam wick	1	57	31A195	Name plate	1
25	31-6S6Z	Terminal screw	1	58	31WW2425	Housing	1
26	31C1498G	Fulcrum pin snap ring	1				
27	31A2437A	Points set	1				
28	31B1498B	Rotor drive end bearing snap ring	1				
				Y98CS1 For VG4D, MVG4D with GD103-1 gear.			
				Y98CS2 For VH4D, MVH4D with GD93C4 gear.			

YF45S1, YF45AS1, YF45B Colt Distributor

USE WITH MODELS VG4D, VH4D, V465D, W4-1770



DISTRIBUTOR	APPLICATION
YF45	VH4D, VG4D, V465D
YF45A	VH4D, W4-1770, (TOP MOUNTED)
YF45B	VG4D (TOP MOUNTED)

CONDENSOR CAPACITY	.18 - .23 HFD
POINT CAP	.018" - .022"
SHAFT END PLAY	.010"

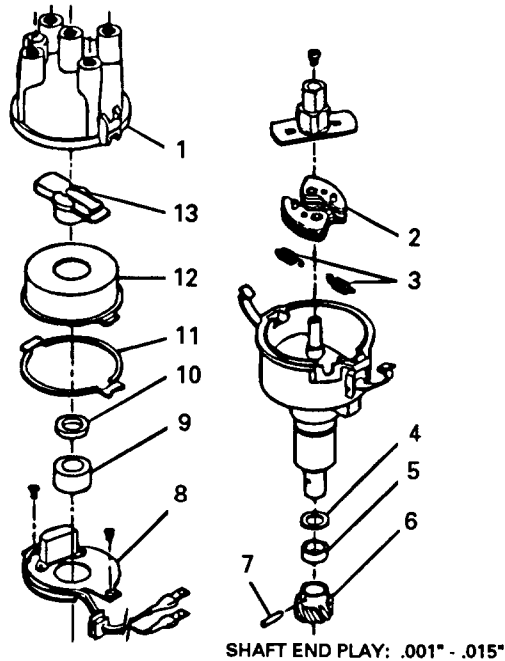
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	* — — —	Washer	2	—	† 31-13001679	Gear kit (YF45B)	1
2	YL394-18	Extension wire (not used with YF453)	1	11	* — — —	Shaft assembly	1
3	31-13001655	Clip	1	12	31-13001616	Insert	2
—	YQ26	Breaker kit (includes 4, 5, 14, 15, 19)	1	13	31-13001598	Breaker plate	1
4	* — — —	Condenser assembly	1	14	* — — —	Breaker set	1
5	* — — —	Screw	1	15	* — — —	Screw and washer assembly	1
—	PG54341	Advance arm kit (includes 6, 7)	1	16	31-13001604	Shield	1
6	* — — —	Advance arm assembly	1	—	YQ27	Distributor cap and rotor kit (includes 17, 18)	1
7	* — — —	Washer	1	17	† 31-13001607	Rotor	1
8	* — — —	Gear	1	18	* — — —	Cap	1
9	* — — —	Pin	1	19	* — — —	Lube capsule (not illustrated)	1
—	31-13001666	Shaft kit (includes 10, 11)	1	20	* — — —	Spacer (not illustrated)	1
10	† 31-13001661	Spring kit	1				
—	† 31-13001677	Gear kit (YF45)	1				
—	† 31-13001678	Gear kit (YF45A)	1				
		(includes 1, 8, 9)	1				
		(includes 1, 8, 9, 20)	1				

* Not serviced separately.

† Also sold separately.

YF50S1, YF50AS1 Ignition Distributor

USE WITH MODELS VH4D, W4-1770, VG4D, V465D



ITEM	PART NO.	DESCRIPTION	QTY
—	20121003	Distributor cap and gasket (includes 1, 11)	1
1	* ———	Vented distributor cap	1
2	20120015	Advance weights set	1
3	20120012	Advance spring set	1
—	20121001	Gear kit (includes 4-7)	1
4	* ———	Thrust washer set	1
5	* ———	Spacer (YF50AS1)	1
6	* ———	Gear	1
7	* ———	Roll pin	1
8	20120005	Electronic module (includes screws)	1
9	20120004	Magnet assembly	1
—	2012006	Rotor and spacer (includes 10, 13)	1
10	† 20120011	Rotor spacer	1
11	† 20120010	Distributor cap gasket	1
12	20120003	Dust cover	1
13	* ———	Rotor	1
—	YL394-18	Wire, extension (not illustrated)	2

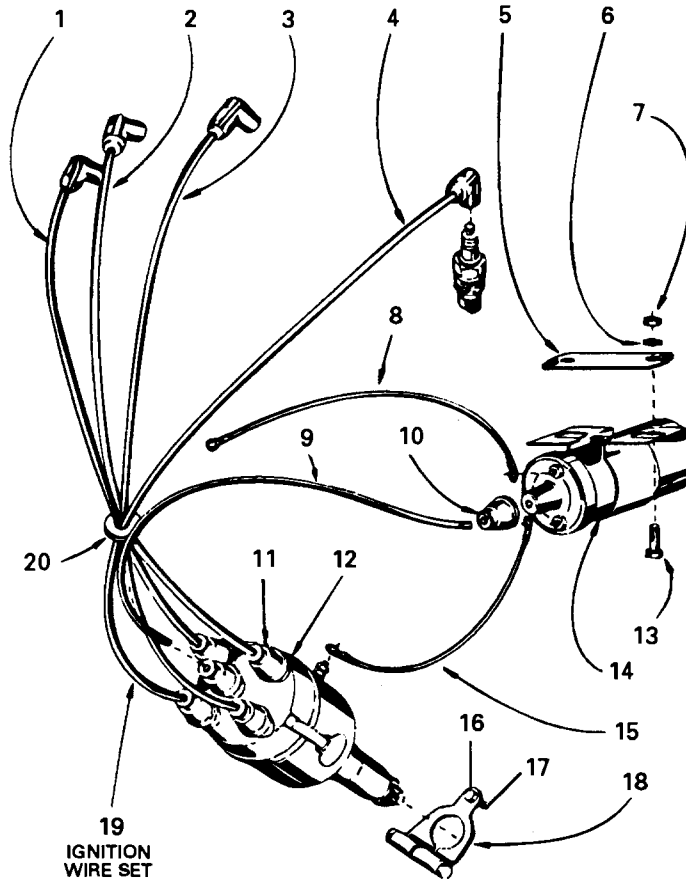
* Not serviced separately.

† Also sold separately.

EKA102 Ignition Coil And Distributor Group

USE WITH MODELS VG4D, VH4D

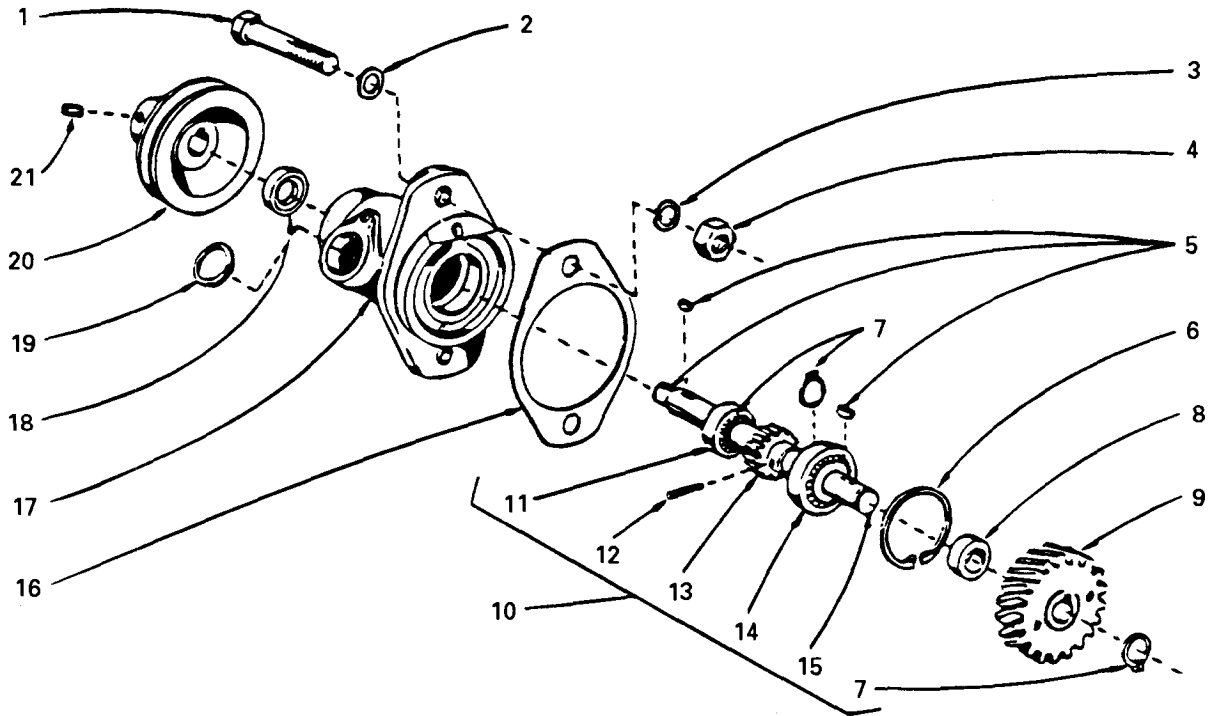
APPLICABLE TO
ACCESSORY DRIVE
OR GEAR GENERATOR
DRIVE MOUNTING



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	YL339-42	Cable assembly, no. 4 spark plug	1	11	YD20	Terminal protector	5
2	YL339-32	Cable assembly, no. 3 spark plug	1	12	YF45S1	Distributor, Colt (replaces YF10CS1)	1
3	YL339-28	Cable assembly, no. 1 spark plug	1	13	XD15	Screw, 5/16"-18 thread x 3/4" long	2
4	YL339-36	Cable assembly, no. 2 spark plug	1	14	YF38B	Ignition coil (replaces YF5A)	1
5	PG791	Support plate	1	15	YL352-8	Ignition wire assembly, 8" long	1
6	PE4	Lock washer, 5/16" long	2	16	PE3	Lock washer, 1/4"	1
7	PD78	Nut, 5/16"-18 thread	2	17	XD4	Screw, 1/4"-20 thread x 1/2" long	1
8	YL352-30	Ignition wire assembly, 30" long	1	18	PG543A1	Advance arm assembly	1
—	YL352-23	Wire assembly, 23" long	1	19	YL285F	Distributor ignition cable set (includes 1-4, 9, 20)	1
9	YL358-8	Cable assembly	1	20	PH198	Grommet	1
10	YD20A	Terminal protector	1				

**TF112C Accessory Driv Assembly
(Replaced By TF122C)**

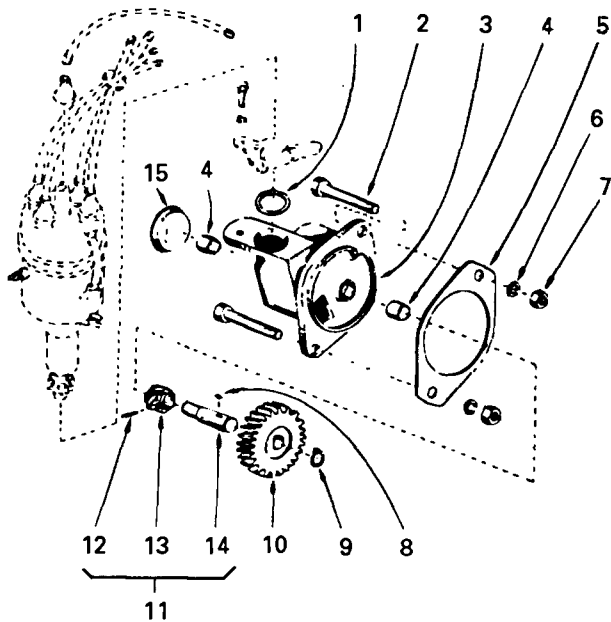
USE WITH MODELS VE4D, VF4D, VH4D



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD32	Screw, 3/8"-16 thread x 2" long	2	12	PA281	Pin, 1/8" x 7/8" long	1
2	PH22A	Washer, 3/8" I.D. x 1 1/16" O.D. x 3/32" thick	2	13	GF90	Gear	1
3	PE5	Lock washer, 3/8"	2	14	ME139	Bearing, Nice no. 1633NS	1
4	PD79	Nut, 3/8"-16 thread	2	15	JD362	Shaft	1
5	PL55	No. 6 Woodruff key	2	16	QD616	Gasket	1
6	PK107	Lock ring	1	17	TB141CS2	Housing assembly (includes JK59, PH541) (replaces TB141S2)	1
7	PK108	Lock rings	3	18	PH541	Oil seal (replaces PH274)	1
8	HF470	Spacer	1	19	JK59	"O" ring	1
9	GD121	Drive gear	1	20	MD363	Drive pulley	1
10	JJ320	Drive shaft assembly (includes 7, 11-15)	1	21	XE65	Screw, no. 10-32 thread x 1/4" long	1
11	ME112	Bearing, Nice no. 1623NS	1				

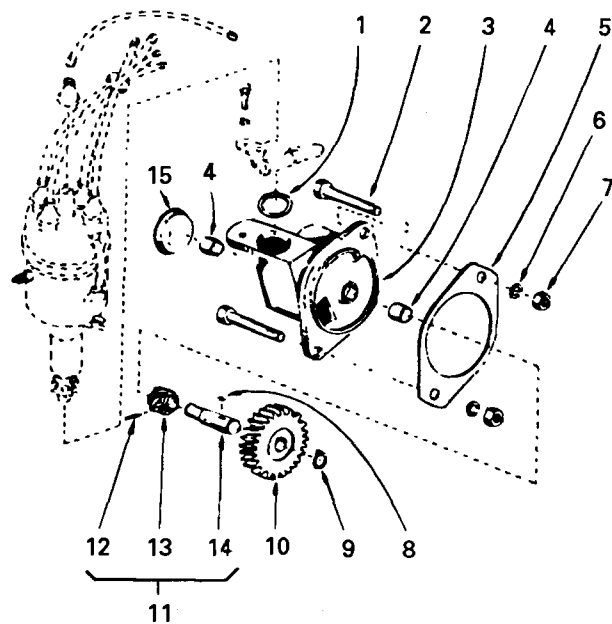
TF128 Distributor Drive Assembly

USE WITH MODELS VE4D, VF4D



TF129 Distributor Drive Assembly

USE WITH MODEL VH4D

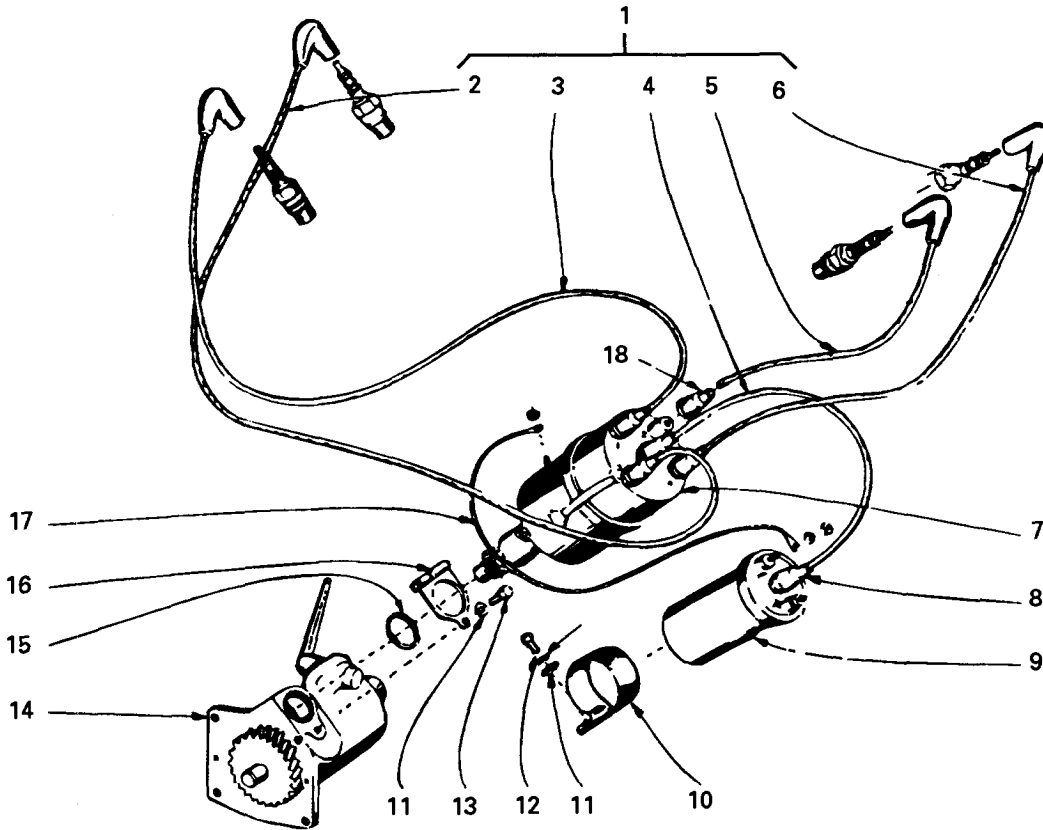


ITEM	PART NO.	DESCRIPTION	QTY
1	JK59	Packing ring	1
2	XD32	Screw, 3/8"-16 thread x 2" long	2
3	TB146S1	Housing assembly (includes bushings, cup plug)	1
4	HG182	Bushing	2
5	QD616	Gasket	1
6	PE5	Lock washer, 3/8"	2
7	PD79	Nut, 3/8"-16 thread	2
8	PL161	No. 213 Woodruff key	1
9	PK109	Lock ring	1
10	GD140	Drive gear	1
11	JJ324	Drive shaft and gear assembly (includes 12-14)	1
12	PA367	Pin	1
13	GF88	Gear	1
14	TA132	Drive shaft	1
15	SA143	Cup plug	1

ITEM	PART NO.	DESCRIPTION	QTY
1	JK59	Packing ring	1
2	XD32	Screw, 3/8"-16 thread x 2" long	2
3	TB146S1	Housing assembly (includes bushings and cup plug)	1
4	HG182	Bushing	2
5	QD616	Gasket	1
6	PE5	Lock washer, 3/8"	2
7	PD79	Nut, 3/8"-16 thread	2
8	PL161	No. 213 Woodruff key	1
9	PK109	Lock ring	1
10	GD140	Drive gear	1
11	JJ324	Drive shaft and gear assembly (includes 12-14)	1
12	PA367	Pin, 1/8" x 3/4" long	1
13	GF88	Gear	1
14	TA132	Drive shaft	1
15	SA143	Cup plug	1

TF132A Top Mounted Distributor Drive And Ignition Coil Group

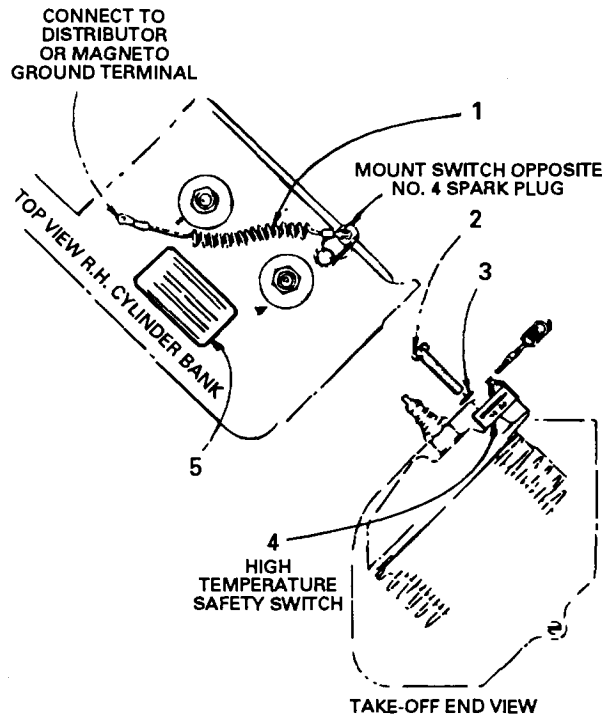
USE WITH MODEL VH4D



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	YL385	Ignition cable set (includes 2-6).....	1	10	PG1257	Strap (YF38A)	1
2	YL339-32	Cable, no. 3 cylinder	1	—	PG556B	Strap (YF41A)	—
3	YL339-28	Cable, no. 1 cylinder	1	11	PE3	Lock washer, 1/4"	2
4	YL358-12	Coil cable	1	12	XB75	Screw, 1/4"-20 thread x 3/4" long	1
—	YD20	Terminal cap	5	13	XD5	Screw, 1/4"-20 thread x 5/8" long	1
—	YD20A	Terminal cap	1	14	T113	Governor assembly	1
5	YL339-14	Cable, no. 2 cylinder	1	15	JK59	"O" ring	1
6	YL339-14	Cable, no. 4 cylinder	1	16	PG543A1	Clamp assembly	1
7	YF45AS1	Distributor, Colt (includes clamp assembly)	1	17	YL352-11	Ignition wire assembly	1
8	YD20A	Terminal cap	1	18	YD20	Terminal cap	5
9	YF41AS1	Ignition coil assembly (includes PG556B)	1				

YC66DS1 High Temperature Safety Switch Kit

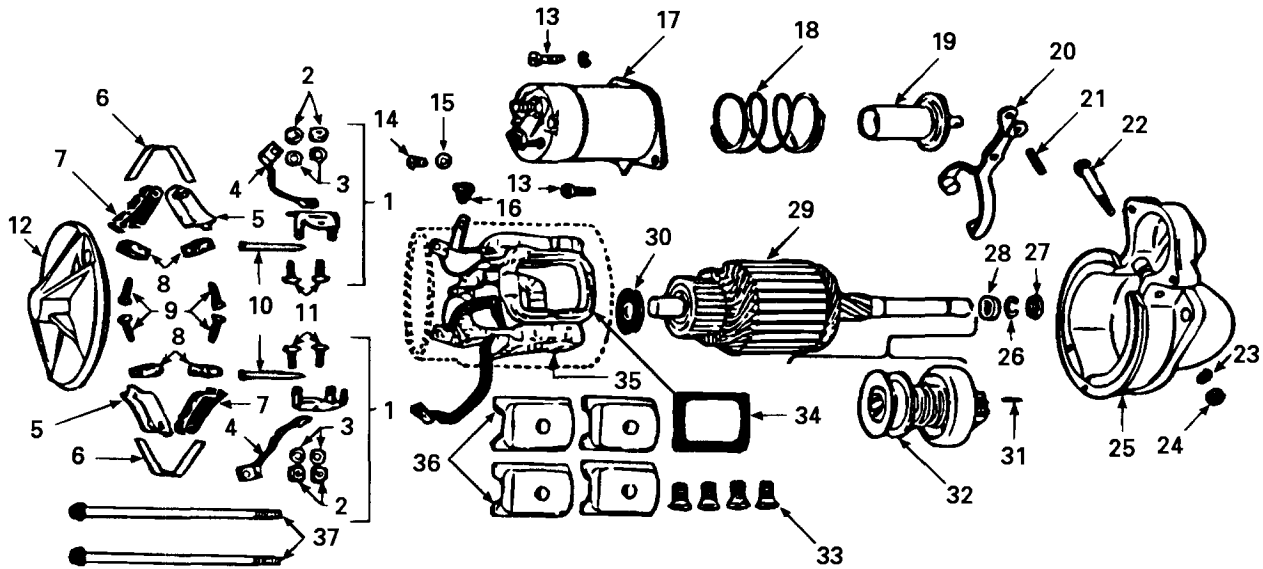
USE WITH VH4D



ITEM	PART NO.	DESCRIPTION	QTY
—	YC66DS1	High temperature safety switch kit (includes 1-5).....	
1	YL357-44	Wire assembly, 42" long	1
2	XD22	Cap screw, 5/16"-18 thread x 1-3/4" long	1
3	PH77A	Washer, 5/16" I.D.	1
4	YC66D	High temperature safety switch	1
5	SD233	Instruction decal	1

YA53A (12 Volt) Starting Motor, Delco Remy No. 1109424

USE WITH MODELS VG4D, VH4D



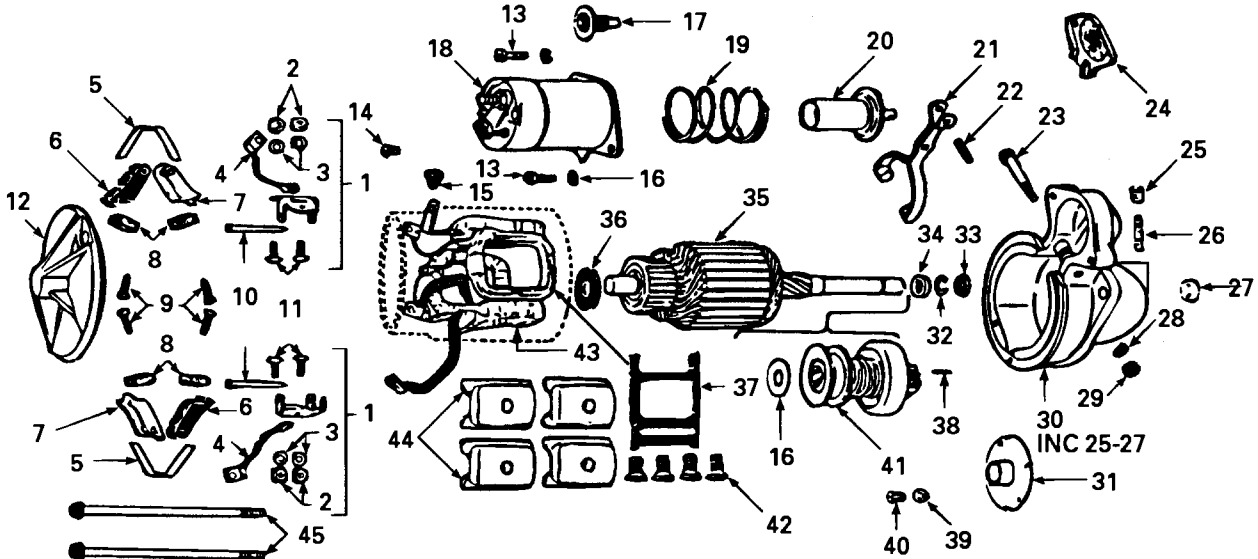
ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11)	2
2	* ———	Nut	4
3	* ———	Lock washer	4
4	* ———	Lead	2
5	* ———	Brush holder	2
6	18-1926622	Spring	2
7	* ———	Brush holder	2
8	18-1906945	Brush	4
9	* ———	Screw	2
—	* ———	Screw	2
10	* ———	Pin	2
11	* ———	Screw	4
12	18-1974157	Frame	1
13	* ———	Screw	2
14	* ———	Screw	1
15	* ———	Lock washer	1
16	18-1893370	Grommet	1
17	18-1114458	Solenoid switch	1
18	18-1958679	Spring	1
19	18-1941113	Plunger	1
20	18-1951567	Shift lever	1
21	18-1987049	Pin	1
22	18-1932197	Stud	1
23	* ———	Lock washer	1
24	* ———	Nut	4
25	18-1965225	Drive housing (includes bushing)	1
26	18-1862383	Bushing (not illustrated) ...	1
27	18-1928022	Ring	1
28	18-1928023	Collar	1
29	18-1928021	Collar	1
30	18-1947353	Armature	1
31	18-1914842	Washer	1
32	18-809593	Dowel pin	1
33	18-1877348	Drive	1
34	* ———	Screw	4
35	18-1927853	Insulator	4
36	18-1974375	Field coil	1
37	* ———	Pole shoe	4
—	18-1939970	Thru bolt	1
—	18-1941111	Thru bolt	1
—	18-1956226	Contact (not illustrated)	1
—	18-1970263	Boot (not illustrated)	1
—	* ———	Washer (not illustrated)	1
—	* ———	Screw (not illustrated)	2
—	* ———	Lock washer (not illustrated)	2
—	18-820149	Center bearing plate (includes bushing) (not illustrated)	1
—	18-1894023	Bushing (not illustrated) ...	1

* Not serviced separately.

ITEM PART NO. DESCRIPTION QTY

YA53B, YA53B1 * Starting Motor Assemblies, Delco Remy No. 1998299

USE WITH MODELS W2-1230, W2-1235, W2-1250, W4-1770 (BEGINNING WITH SERIAL NO. 6047578),
VG4D, (BEGINNING WITH SERIAL NO. 6053300), VH4D (BEGINNING WITH SERIAL NO. 6047578)

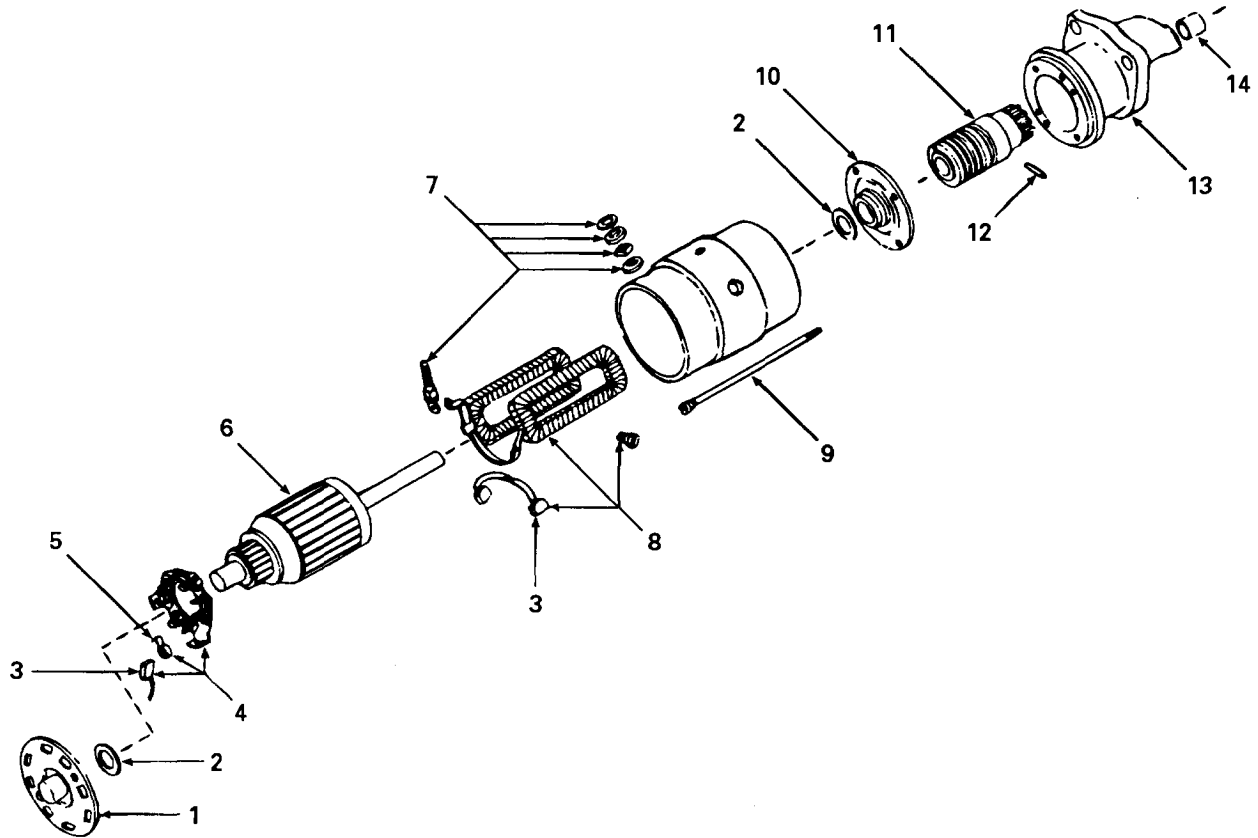


ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	18-1928015	Support brush holder (includes 2-4, 10, 11).....	2	28	* ---	Lock washer	1
2	* ---	Nut	4	29	* ---	Nut	4
3	* ---	Lock washer	4	30	18-1965225	Drive housing (includes item 27)	1
4	* ---	Lead	2	31	18-820149	Center bearing plate (includes bushing)	1
5	18-1926622	Spring	2	---	18-1894023	Bushing	1
6	* ---	Brush holder	2	32	18-1928022	Ring	1
7	* ---	Brush holder	2	33	18-1928023	Collar	1
8	18-1906945	Brush	4	34	18-1928021	Collar	1
9	* ---	Screw	2	35	18-1947353	Armature	1
---	* ---	Screw	2	36	18-1914842	Washer	1
10	* ---	Pin	2	37	18-1976832	Insulator	1
11	* ---	Screw	4	38	18-809593	Dowel pin	1
12	18-1974157	Frame	1	39	* ---	Lock washer	4
13	* ---	Screw	2	40	* ---	Screw	4
14	* ---	Screw	1	41	18-1877348	Drive assembly	1
15	18-1893370	Grommet	1	42	* ---	Screw	4
16	* ---	Washer	1	43	18-1974375	Field coil assembly	1
17	18-1978337	Contact assembly	1	44	* ---	Pole shoe	4
18	18-1114524	Solenoid switch	1	45	18-1939970	Thru bolt	1
19	18-1978281	Spring	1	---	18-1941111	Thru bolt	1
20	18-1987391	Plunger	1	---	18-1978333	Nut, M10 x 1.5	2
21	18-1951567	Shift lever	1	---	18-1978336	Nut, M5 x 0.8	2
22	18-1987049	Pin	1				
23	18-1932197	Stud	1				
24	18-1970263	Boot	1				
25	* ---	Plug	1				
26	18-1916439	Wick	1				
27	18-1862383	Bushing	1				

* Not serviced separately.
** YA53B1 - same as YA53B except location of Thru bolt (Ref. 45) reversed.

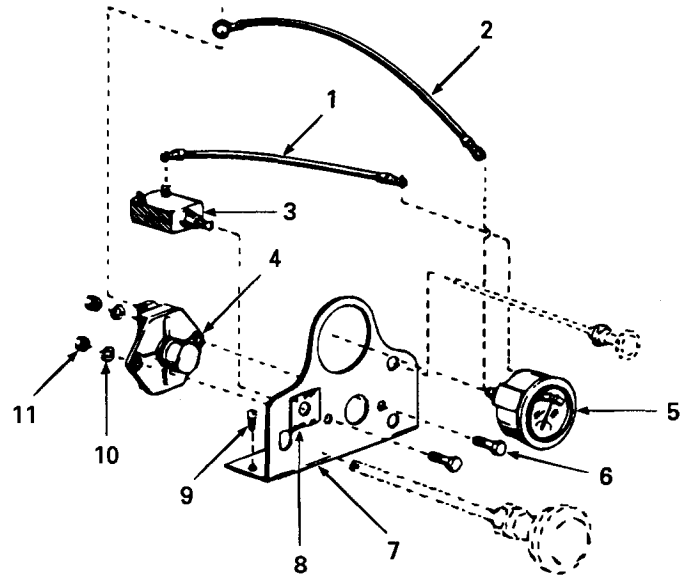
YA61 (12 Volt) Starting Motor Assembly, Pr stolite No. MHA-7021

USE WITH MODELS TJD, VG4D, VH4D, W2-880, W4-1770



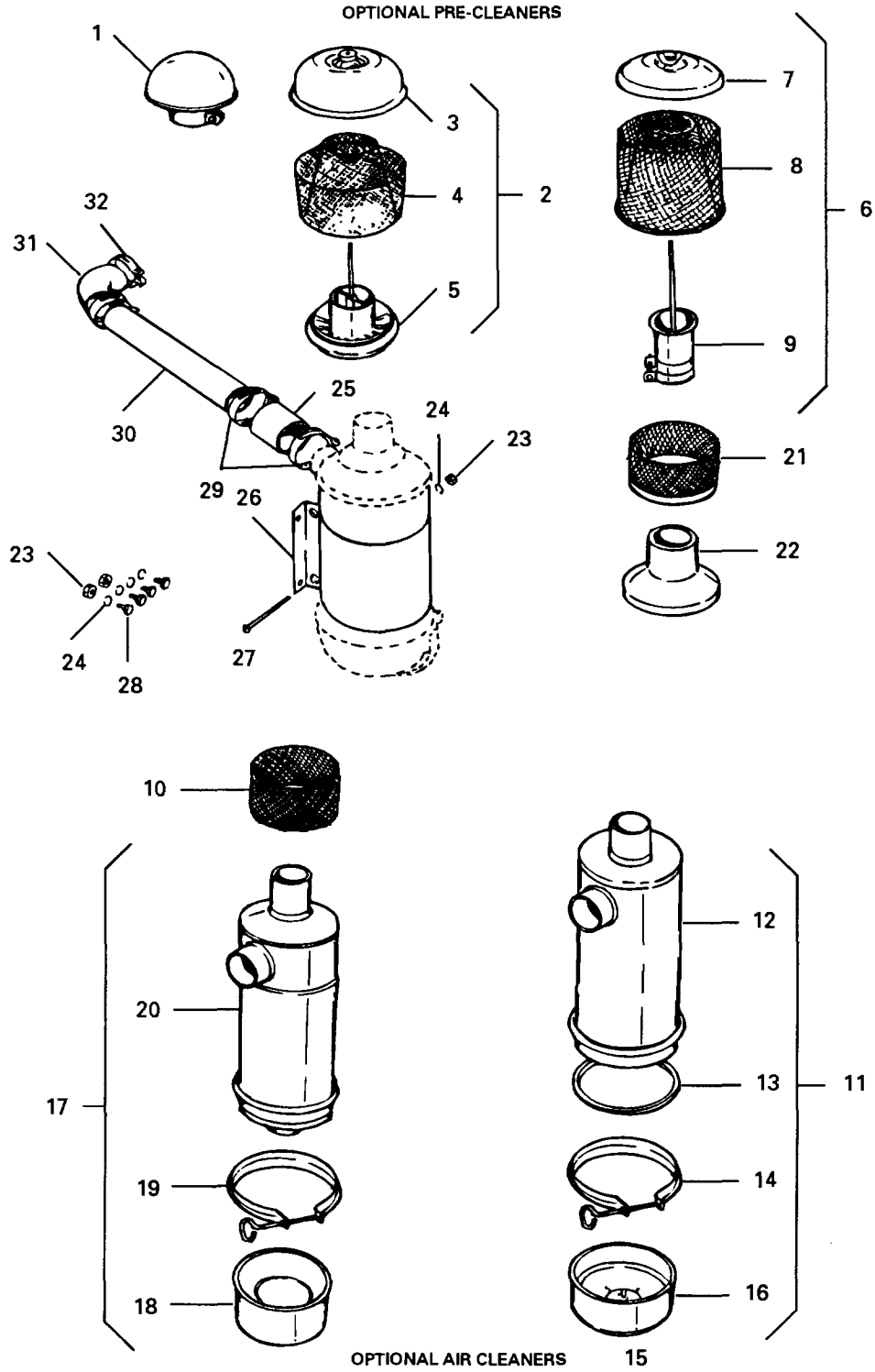
ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	28MDT1002	Head assembly (includes bronze bearing, lube felt)	1	8	28MDU2005AS1	Field coil package (includes brush set, screw)	1
2	28P90-263	Thrust washer package	1	9	28GJ20S	Thru bolt package	1
3	28MDL2012CS	Brush set	1	10	28MCH1051	Bearing plate assembly	1
4	28MDL1064	Brush plate assembly (includes item 5; includes brush)	1	11	93EBC1	Bendix drive assembly	1
5	28MZ19S	Spring set	1	12	28-90-2140	Pin package	1
6	28MDL2246	Armature assembly	1	13	28PS1473S	Pinion housing assembly (includes item 14)	1
7	28-90-711	Terminal stud package	1	14	28MG77A	Bronze bearing	1

EPC125 Control Panel Group
USE WITH MODELS VE4D, VF4D, VH4D



ITEM	PART NO.	DESCRIPTION	QTY
1	YL374-5	Ignition wire assembly	1
—	YL352-8	Wire assembly, 8" long	1
2	YL353-5	Ignition wire assembly	1
3	YC9BS1	Ignition switch assembly	1
4	YC10C	Starting switch	1
5	YE2	Ammeter	1
6	XD6	Screw, 1/4"-20 thread x 3/4" long	2
7	VE439D	Control panel (replaces VE439)	1
8	SD109	Tag	1
9	XA65	Screw, no. 8 x 1/2" long	4
10	PE3	Lock washer, 1/4"	2
11	PD77	Nut, 1/4"-20 thread	2

LAA102, LAA103 Sid Mount Air Cleaner Ass mbli s



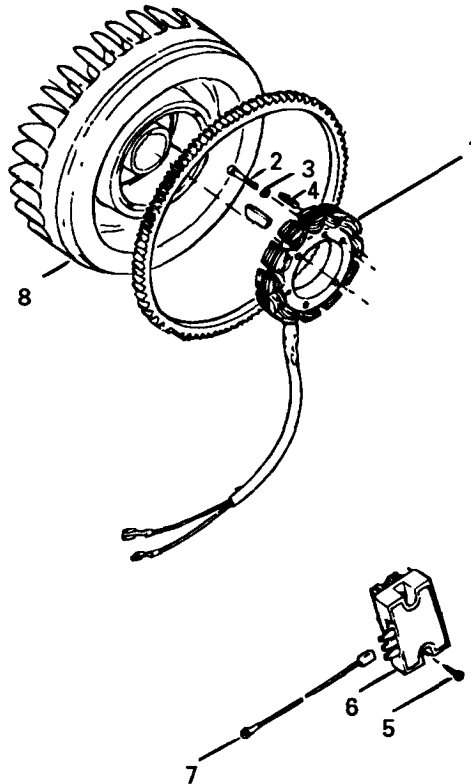
LAA102, LAA103 Side Mount Air Cleaner Assemblies

USE WITH MODEL VH4D

ITEM	PART NO.	DESCRIPTION	QTY
			18
			22P14889
			Outer oil cup
			1
1	LO96	Stack cap, United Specialties	—
		air cleaner	22P15463
			Inner oil cup
			1
—	LO86	Stack cap,	19
		Donaldson air cleaner	22P2846
			Clamp assembly
			1
			20
			* — — —
			Body
			(order complete air cleaner)
			1
2	LO114	Pre-cleaner, collector type	21
		(service parts include 3-5)	LO134
		(optional)	LO133
			Pre-screener (LO109)
			1
3	22P20116	Cover assembly	23
			PD77
			Nut, 1/4"-20 thread
			4
4	22P20115	Body	24
			PE3
			Lock washer, 1/4"
			6
5	22P20120	Sleeve assembly	25
			LL27
			Rubber hose
			1
6	LO109	Pre-cleaner, collector type	26
		(service parts include 7-9)	PG291
		(optional) (NLA)	27
			XA74
			Screw,
			1/4"-20 thread x 2-1/4" long
			2
7	81A16380	Cap assembly	28
			XD4
			Screw,
			1/4"-20 thread x 1/2" long
			4
8	81B16382	Body assembly	29
			LK8
			Hose clamp, 2-1/8" I.D.
			3
9	81A16370	Sleeve assembly	30
			LJ120
			Tube
			1
10	LO147A	Pre-screener (LO114)	31
			LL67
			Rubber elbow
			1
11	LO121S1	Air cleaner, United Specialties	32
		no. 45D4 (for replacement	LK10
		order LO157-1S1) (service parts	Hose clamp, 2" I.D.
		include 12-16) (obsolete)	1
		(optional)	1
12	* — — —	Body assembly	* Not serviced separately.
			Note: LAA102 includes LO86, LAA103 includes
			LO114; all other parts are the same.
13	81-615A6	Gasket	
14	81-214B1K011	Clamp assembly	
15	81-415B1K11	Baffle	
16	81-496B1K111	Oil cup	
		(order baffle separately)	
			1
17	LO157-1S1	Air cleaner, 2-1/2" stack	
		(service parts include 18-20)	
		(replaces LO119AS1) (22P14818	
		oil cup assembly must be used	
		for service on LO119AS1)	
		(optional)	1
ITEM	PART NO.	DESCRIPTION	QTY

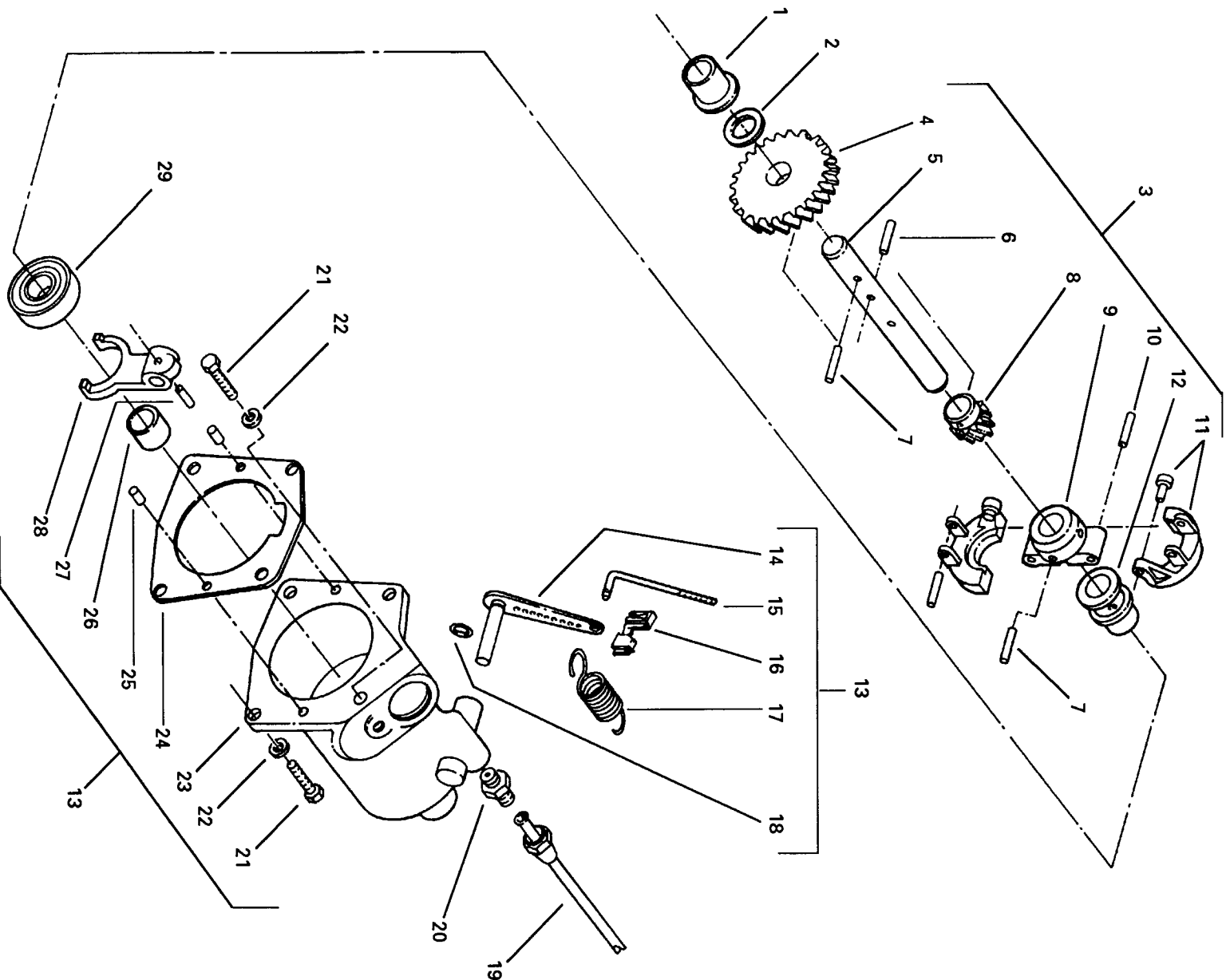
ENA132 (30 Amp) Flywheel And Flywh I Alt rator

USE WITH MODELS VH4D, VG4D, W4-1770



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
—	ENA132	Flywheel alternator assembly (includes 1-7, 9, 10)	1	—	PD77	Nut 1/4 - 20 (not illustrated)	2
1	YB84	Alternator stator assembly ...	1	8	N101E16	Flywheel assembly, VH4D	1
2	XB106	Screw, no. 10-32 thread x 1" long	4	—	SE74YA	Air shroud, VH4D (not illustrated)	1
3	PE14	Lock washer, no. 10	4	—	SE76B11	Lower air shroud, VH4D (not illustrated)	1
4	PA340	Roll pin, 3/16" x 1-1/8" long	2	—	N101E16	Flywheel assembly, W4-1770	1
5	XA35	Screw, 1/4-20 thread x 5/8" long	2	—	SE74YA	Air shroud, W4-1770 (not illustrated)	1
6	YJ70	Rectifier/regulator module ...	1	—	SE76B11	Lower air shroud, W4-1770 (not illustrated)	1
7	YL393-24	Wire assembly	1	—	N100D9	Flywheel assembly, VG4D	1
—	BD100K4S1	Gear cover, VH4D (not illustrated)	1	—	SE124AM	Air shroud, VG4D (not illustrated)	1
—	BD100M1S1	Gear cover, W4-1770	1	—	SE126A14	Lower air shroud, VG4D (not illustrated)	1
—	BD101BS1	Gear cover, VG4D	1				
—	PE3	Lockwasher - 1/4" (not illustrated)	2				

T113 Governor Assembly



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T113 Governor Assembly

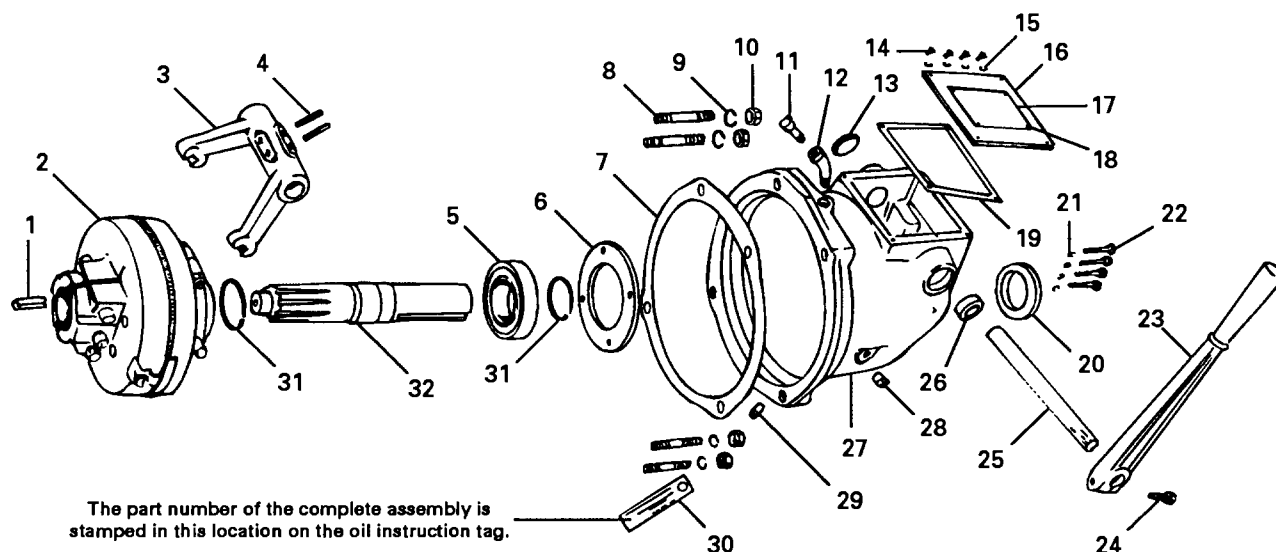
USE WITH MODELS VH4D, VH4 (see pg. 53)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	HG271	Bushing	1	15	VE879S1	Control rod (includes clip)	1
2	PH313B	Thrust washer	1	16	PK178	Clip	1
3	TA133	Drive shaft assembly (includes 2 - 10, 27)	1	17	PM76	Governor spring	1
4	GD143	Drive gear	1	18	JK52	"O" ring	1
5	TA134	Drive shaft	1	19	RM476	Oil line	1
6	PA367	Roll pin	1	20	RF269-2	Fitting	1
7	PA359	Roll pin	2	21	XD17	Screw, 5/16"-18 thread x 1" long	4
8	GF90	Distributor gear	1	22	PE4	Lock washer, 5/16"	4
9	TC346B1	Hub	1	23	TC507	Housing	1
10	PA340	Roll pin	2	24	QD615A	Housing gasket	2
11	TC322DS1	Flyweight (includes thrust pin)	2	25	PA473	Dowel pin	2
12	TC348ES1	Thrust sleeve and ME100B bearing assembly	1	26	HG268	Bushing	1
13	TC507S1	Governor housing assembly (includes 12 - 14, 16, 18, 21 - 26)	1	27	PA367	Roll pin	1
14	TC506	Cross shaft and lever	1	28	VB98A6	Yoke	1
				29	* — — —	Thrust bearing	1

* Not serviced separately.

WW61E Clutch Tak -Off Assembly

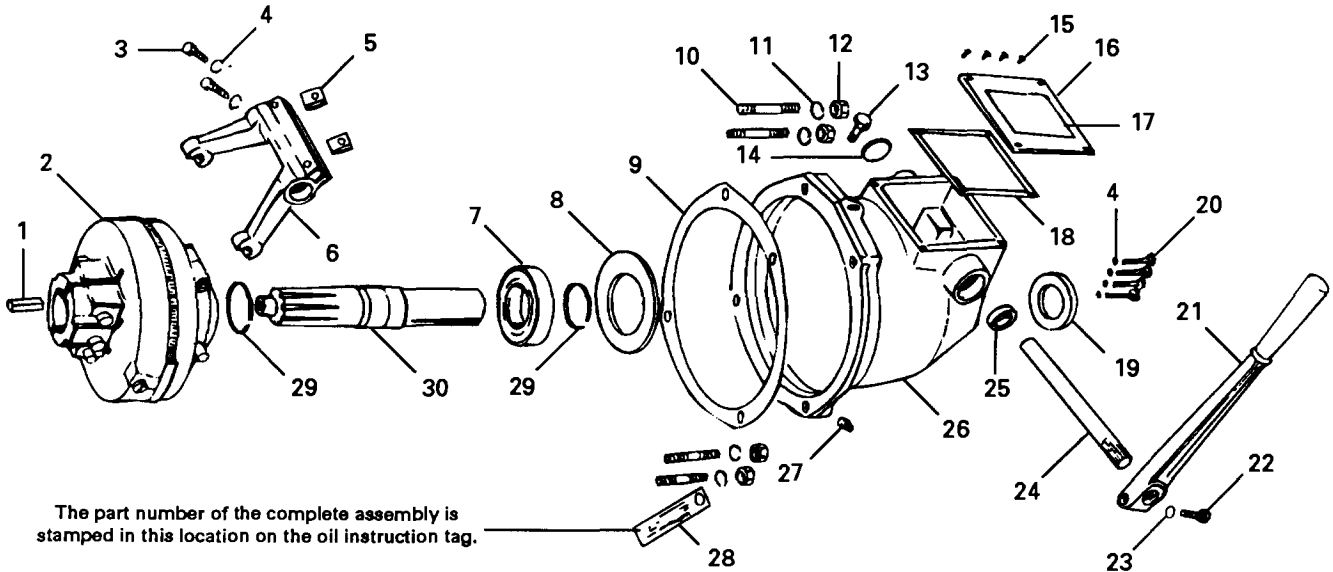
USE WITH MODELS VH4D, VE4, VF4, W4-1770



ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PL140	Key, 5/16" square x 1-1/8" long	1	20	PH344A	Take-off shaft oil seal, Victor no. 60534	1
2	WC288A	Clutch assembly, Rockford Drilling Model 5-1/2 L.O.C. no. CLA1467AF	1	21	PH30A	Washer, 1/4"	4
3	VB64A	Clutch yoke	1	22	XD8	Screw, 1/4"-20 thread x 1-1/4" long	4
4	PA341	Roll pin, 1/4" x 1-1/8" long	2	23	VB55-1	Shifting lever	1
5	ME36B	Bearing, N.D. no. 7208 (replaces ME36A)	1	24	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1
6	BG225A	Bearing retainer plate	1	25	WA61	Yoke shaft	1
7	QD618	Housing to crankcase gasket ...	1	26	PH234A	Yoke shaft oil seal, Trottel no. BR124484	1
8	PC392	Studs	4	27	BG234	Housing	1
9	PE6	Lock washer, 7/16"	4	28	XK1	Pipe plug, 1/8"	2
10	PD12	Nut, 7/16"-20 thread	4	29	XK2	Pipe plug, 1/4"	1
11	LO44A	Breather (replaces LO44)	1	30	SD79	Oil instruction tag	1
12	XK77A	Street ell, 1/8" x 45° (replaces XK77)	1	31	PK148	Snap ring, beginning with engine serial no. 3205301	2
13	SA58	Welch plug, 1-3/8"	1	—	PK136	Snap ring, engines to and including serial no. 3205300	2
14	XA34	Screw, 1/4"-20 thread x 1/2" long	4	32	WA96B	Clutch take-off shaft.....	1
15	PE3	Lock washer, 1/4"	4	—	BG210C1S2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
16	BH158	Housing cover	1	—	CA71A23S1	Crankshaft assembly (includes crankshaft, gear, bearings, key)	1
17	SD125A	Instruction plate (replaces SD132)	1				
18	XA106B	Drive screw (replaces XA64) ...	2				
19	QD652	Cover gasket.....	1				

WW58A Clutch Take-Off Assembly (Obsolete)

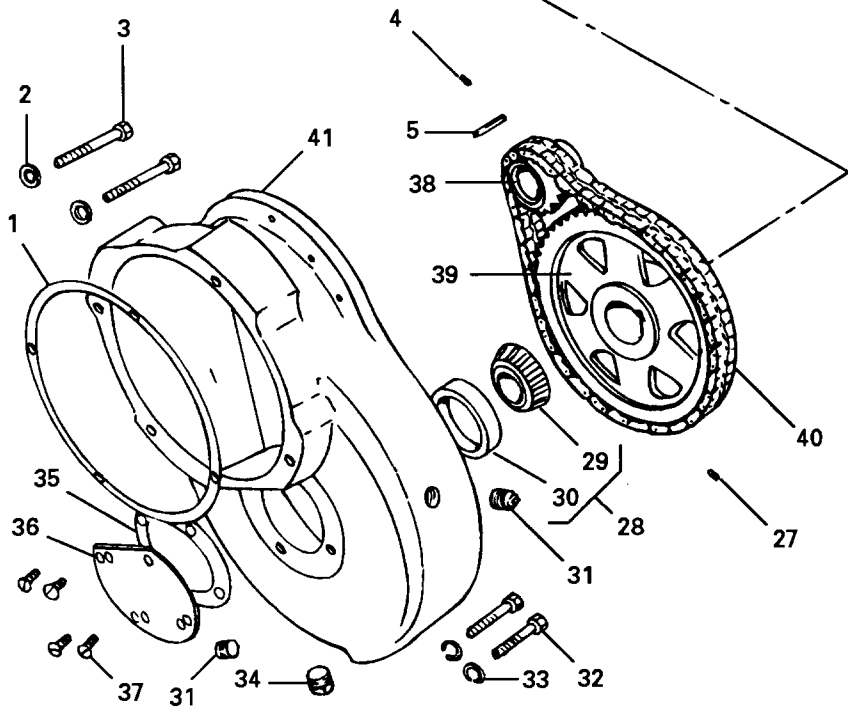
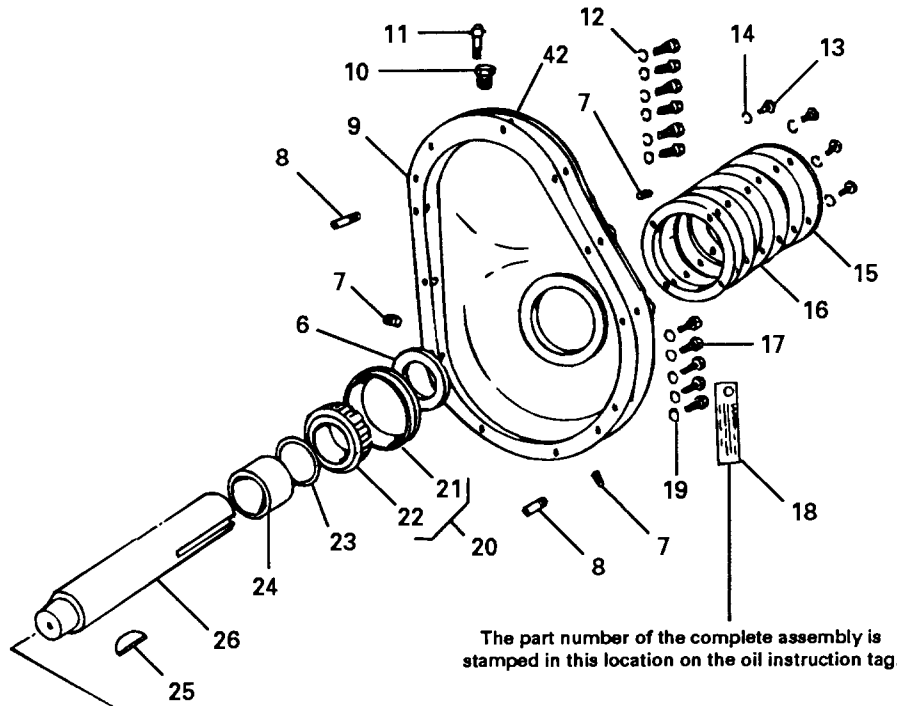
(Up to and including serial no. 3012339, replaced by WW61E thereafter)



The part number of the complete assembly is stamped in this location on the oil instruction tag.

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	PL140	Key, 5/16" square x 1-1/8" long	1	16	63PT557	Housing cover	1
2	WC288A	Clutch assembly, Rockford no. CLA1467AF	1	17	63PT1800	Instruction plate	1
3	63PT582	Cap screw	2	18	63PT673	Cover gasket	1
4	63CL4701	Lock washer	6	19	63PT581	Take-off shaft oil seal	1
5	63PT533	Key	2	20	63PT579	Screw	4
—	63PT1707	Clutch yoke roll pin	2	21	63UPT532	Shifting lever	1
6	63PT1704	Clutch yoke (replaces PT531) ...	1	22	63PT352	Screw	1
7	ME36B	Bearing, Rockford no. 63PT578	1	23	PE5	Lock washer (replaces 63PT353)	1
8	63PT536	Bearing retainer plate	1	24	63PT1705	Yoke shaft	1
9	QD618	Housing to crankcase gasket ...	1	25	63PT583	Oil seal	1
10	PC419	Stud (replaces PC242)	4	26	63PT539	Housing	1
11	PE6	Lock washer, 7/16"	4	27	63PT577	Pipe plug	2
12	PD12	Nut, 7/16"-20 thread	4	28	SD79	Oil instruction tag	1
13	LO44	Breather	1	29	63PT535	Snap ring	2
14	63PT584	Plug	1	30	63PT623	Clutch take-off shaft	1
15	63PT1832	Screw	4	—	BG210BS2	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1

WW27J Reduction Gear Assembly



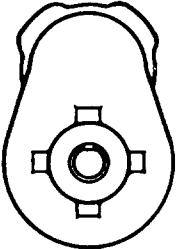
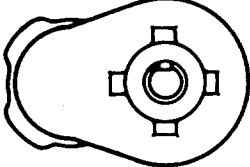
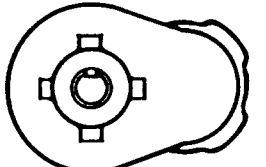
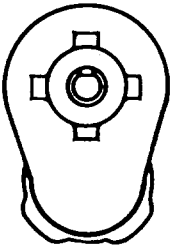
WW27J Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VF4D (see pg. 57)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	QD618	Housing to crankcase gasket ...	1	22	ME76-2	Cone (not sold separately)	1
2	PH2	Washer, 7/16" I.D. x 1/16" thick	2	23	PH206	Collar	1
3	XD37	Screw, 7/16"-14 thread x 1-3/4" long	2	24	HF265	Take-off shaft spacer	1
4	XE17	Screw, 1/4"-20 thread x 3/8" long	1	25	WA55	Take-off shaft	1
5	PL88	Key, 1/4" square x 2" long	1	26	PL24	No. 29 Woodruff key	1
6	PH202	Take-off shaft oil seal	1	27	XE44	Screw, 5/16"-18 thread x 5/8" long	1
7	XK2	Plug, 1/4" pipe thread	3	28	ME77	Inner bearing assembly (includes 29 and 30)	1
8	PA279	Cover to housing dowel pin	2	29	ME77-2	Cone (not sold separately)	1
9	QD857	Cover to housing gasket	1	30	ME77-1	Cup (not sold separately)	1
10	XK88	Reducer bushing, 3/8" to 1/8" pipe	1	31	XK3	Plug, 3/8" pipe thread	2
11	LO44	Breather assembly	1	32	XD130	Screw, 7/16"-14 thread x 2-1/4" long	2
12	PE5	Lock washer, 3/8"	6	33	PE6	Lock washer, 7/16"	2
13	XD15	Screw, 5/16"-18 thread x 3/4" long	4	34	XK6	Plug, 1/2" pipe thread	1
14	PE4	Lock washer, 5/16"	4	—	XK4	Plug, 1/2" pipe thread (optional)	1
15	BG150	Outer bearing retainer plate	1	35	QD543A	Inner bearing retainer plate gasket	1
16	QD544	Outer bearing retainer plate gasket	6-12	36	BG151	Inner bearing retainer plate	1
17	XD27A	Screw, 3/8"-16 thread x 1" long	11	37	XC68	Screw, 5/16"-18 thread x 3/4" long	4
18	SD79	Oil instruction tag	1	—	BG210C1S1	Main bearing plate assembly (includes plate, oil seal, bearing cup)	1
19	PH22	Washer, 3/8" I.D. x 1/16" thick	5	—	CA89BS1	Crankshaft assembly (includes crankshaft, spacer, bearings, key, gear, bearing race)	1
20	ME76	Outer bearing assembly (includes 21 and 22)	1				
21	ME76-1	Cup (not sold separately)	1				

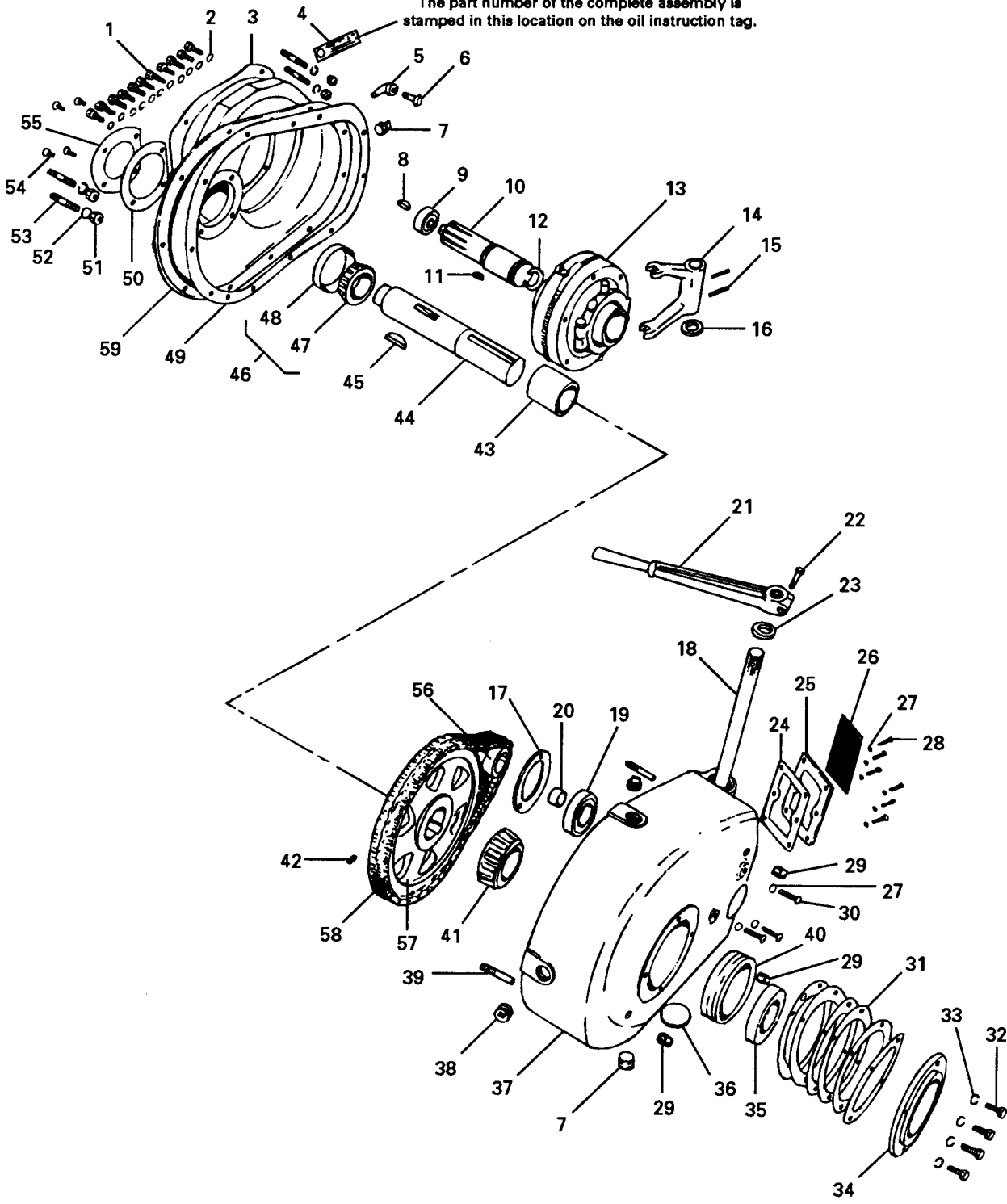
WW27J Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VF4D (see pg. 57)

Determine position of take-off shaft when viewing from flywheel end of engine. (Views showing take-off end are shown).	Assembly Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No.38	Ref. No.39	Ref. No.40	Ref. No. 41	Ref. No.42
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.	Housing Cover Part No.
 <p>TAKE-OFF SHAFT BELOW - 6 o'clock position</p>	WW 27 J	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 4	BH 119 C
	WW 27 J 1	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 4	BH 119 C
	WW 27 J 2	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 4	BH 119 C
	WW 27 J 3	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 4	BH 119 C
	WW 27 J 4	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 4	BH 119 C
	WW 27 J 5	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 4	BH 119 C
 <p>TAKE-OFF SHAFT ON LEFT SIDE as Viewed from Flywheel End</p>	WW 27 J 6	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 5	BH 119 C 1
	WW 27 J 7	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 5	BH 119 C 1
	WW 27 J 8	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 5	BH 119 C 1
	WW 27 J 9	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 5	BH 119 C 1
	WW 27 J 10	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 5	BH 119 C 1
	WW 27 J 11	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 5	BH 119 C 1
 <p>TAKE-OFF SHAFT ON RIGHT SIDE as Viewed from Flywheel End</p>	WW 27 J 12	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 6	BH 119 C 2
	WW 27 J 13	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 6	BH 119 C 2
	WW 27 J 14	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 6	BH 119 C 2
	WW 27 J 15	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 6	BH 119 C 2
	WW 27 J 16	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 6	BH 119 C 2
	WW 27 J 17	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 6	BH 119 C 2
 <p>TAKE-OFF SHAFT ON TOP - 12 o'clock position</p>	WW 27 J 18	2.07 to 1	Counter Engine-Wise	GG 66-3	GG 67-1	.....	BG 149 G 7	BH 119 C 5
	WW 27 J 19	3.00 to 1	Counter Engine-Wise	GG 79-1	GG 77-1	.....	BG 149 G 7	BH 119 C 5
	WW 27 J 20	3.84 to 1	Counter Engine-Wise	GG 80-1	GG 69-1	.....	BG 149 G 7	BH 119 C 5
	WW 27 J 21	2.00 to 1	Engine-Wise	GG 81	GG 71	GJ 8	BG 149 G 7	BH 119 C 5
	WW 27 J 22	2.67 to 1	Engine-Wise	GG 82	GG 71	GJ 9	BG 149 G 7	BH 119 C 5
	WW 27 J 23	3.79 to 1	Engine-Wise	GG 83	GG 73	GJ 10	BG 149 G 7	BH 119 C 5

WW62A Reduction Gear Assembly

The part number of the complete assembly is stamped in this location on the oil instruction tag.



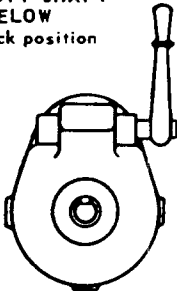
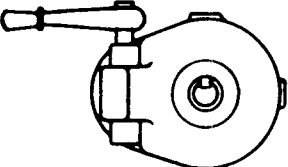
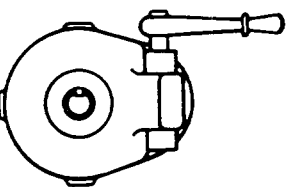
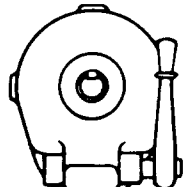
WW62A Reduction Gear Assembly

USE WITH MODELS W4-1770, VH4D, VE4D, VF4D (see pg. 60)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	XD28	Screw, 3/8"-16 thread x 1-1/8" long	11	33	PE4	Lock washer, 5/16"	4
2	PE5	Lock washer, 3/8"	11	34	BG150	Outer bearing retainer plate	1
3	QD618	Housing to crankcase gasket ...	1	35	PH202	Take-off shaft oil seal	1
4	SD79	Oil instruction tag	1	36	SA58	Expansion plug, 1-3/8"	1
5	XK77A	Street ell, 1/8" pipe x 45°	1	37	BH143B	Housing cover	1
6	LO44	Breather assembly	1	38	XK6	Plug, 1/2" pipe thread	1
7	XK4	Plug, 1/2" pipe thread	5	39	PA279	Cover to housing dowel pin	2
8	PL140	Key, 5/16" square x 1-1/8" long	1	—	ME76	Outer bearing assembly (includes 40 and 41)	1
9	ME189	Pilot bearing	1	40	ME76-1	Cup (not sold separately)	1
10	WA87A	Clutch drive shaft	1	41	ME76-2	Cone (not sold separately)	1
11	PL17	No. 13 Woodruff key	1	42	XE44	Screw, 5/16"-18 thread x 5/8" long	1
12	PK82	Retaining ring	1	43	HF265A	Take-off shaft spacer	1
13	WC288A	Clutch assembly	1	44	WA55H	Take-off shaft	1
14	VB64A	Clutch shifter yoke	1	45	PL24	No. 29 Woodruff key	1
15	PA341	Roll pin, 1/4" diameter x 1-1/8" long	2	46	ME77	Inner bearing assembly (includes 48 and 49)	1
16	HF392A	Spacer, 3/16" thick	1	47	ME77-2	Cone (not sold separately)	1
17	BG216	Clutch bearing plate	1	48	ME77-1	Cup (not sold separately)	1
18	WA61D	Clutch shifter shaft	1	49	QD856	Cover to housing gasket	1
19	ME119	Clutch shaft bearing	1	50	QD543A	Inner bearing retainer plate gasket	1
20	HF372	Bearing spacer	1	51	PD12	Nut, 7/16"-20 thread	4
21	VB55-1	Clutch shifter lever	1	52	PE6	Lock washer, 7/16"	4
22	XD30	Screw, 3/8"-16 thread x 1-1/2" long	1	53	PC419	Housing to crankcase stud	4
23	PH234A	Shifter lever shaft oil seal	1	54	XC68	Screw, 5/16"-18 thread x 3/4" long	4
24	QD592	Inspection hole cover gasket ...	1	55	BG151	Inner bearing retainer plate	1
25	BH127B	Inspection opening cover	1	—	BG210C1S2	Main bearing plate assembly, W41770 (includes CA89CS1)	1
26	SD125A	Instruction plate	1	—	CA71A23S1	Crankshaft assembly, VH4D	1
27	PH30	Washer, 1/4" I.D. x 1/16" thick	9	—	CA55-1S1	Crankshaft assembly, VE4D, VF4D, WW62-etc., to and including engine serial no. 653269	1
28	XA34	Screw, 1/4"-20 thread x 1/2" long	6	—	CA55-23S1	Crankshaft assembly, VE4D, VF4D, WW62A-etc., units beginning with serial no. 653270	1
29	XK2	Plug, 1/4" pipe thread	2				
30	XD7	Screw, 1/4"-20 thread x 1" long	3				
31	QD544	Outer bearing retainer plate gasket	8-12				
32	XD15	Screw, 5/16"-18 thread x 3/4" long	4				

WW62A Reduction Gear Assembly

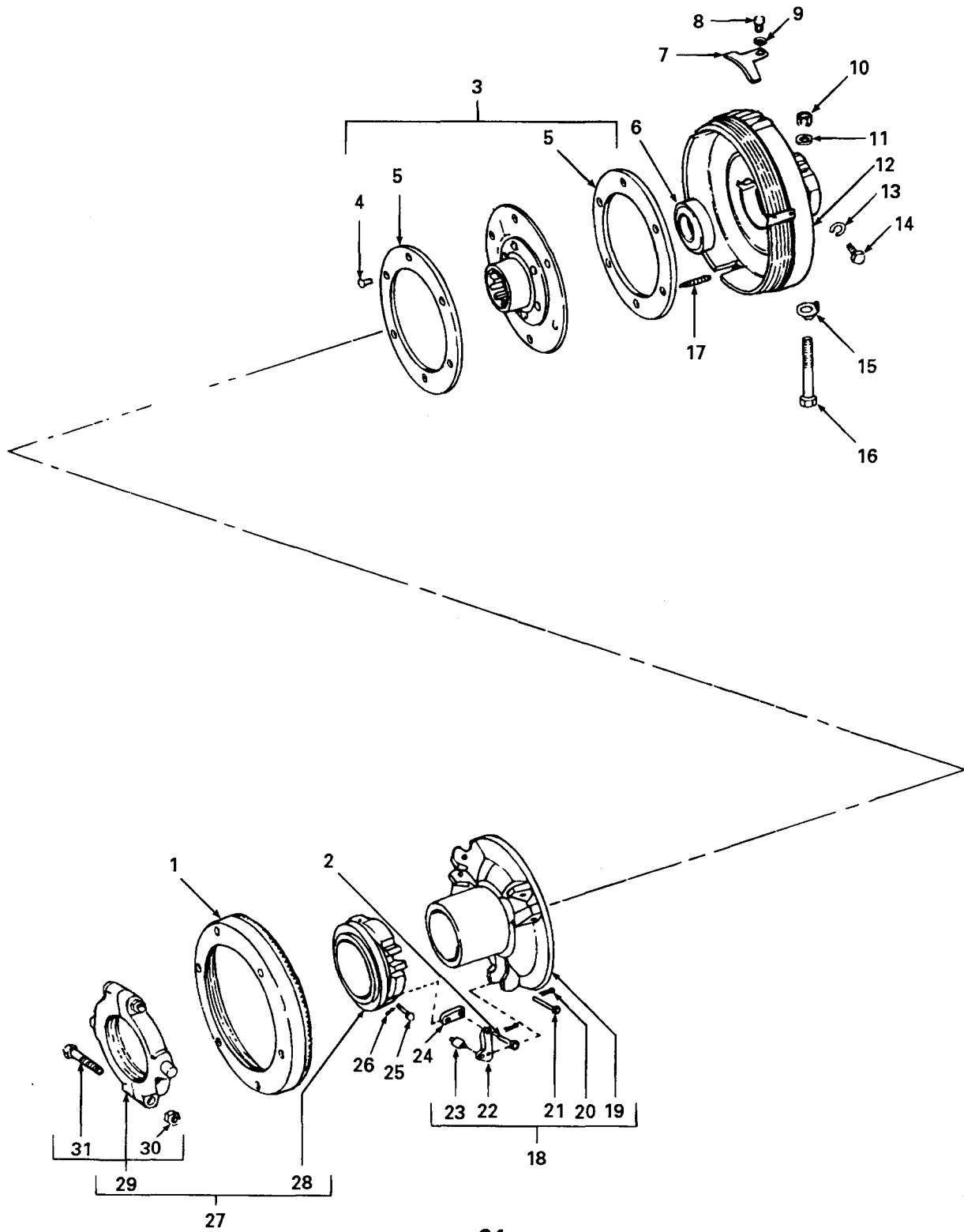
USE WITH MODELS W4-1770, VH4D, VE4D, VF4D (see pg. 60)

Determine position of take-off shaft when viewing from flywheel end of engine. (View facing take-off end are shown.)	Assembly Number	Reduction Ratio	Rotation of Take-off Shaft	Ref. No. 56	Ref. No. 57	Ref. No. 58	Ref. No. 59
				Driver Gear Part No.	Driven Gear Part No.	Chain Part No.	Housing Part No.
TAKE-OFF SHAFT BELOW 6 o'clock position 	WW 62 A	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B
	WW 62 A 1	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B
	WW 62 A 2	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B
	WW 62 A 3	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B
	WW 62 A 4	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B
	WW 62 A 5	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B
TAKE-OFF SHAFT ON LEFT SIDE as viewed from flywheel end 	WW 62 A 6	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 1
	WW 62 A 7	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 1
	WW 62 A 8	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 1
	WW 62 A 9	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 1
	WW 62 A 10	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 1
	WW 62 A 11	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 1
TAKE-OFF SHAFT ON RIGHT SIDE as viewed from flywheel end 	WW 62 A 12	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 2
	WW 62 A 13	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 2
	WW 62 A 14	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 2
	WW 62 A 15	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 2
	WW 62 A 16	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 2
	WW 62 A 17	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 2
TAKE-OFF SHAFT ON TOP 12 o'clock position 	WW 62 A 18	2.07 to 1	Ctr. Engine-Wise	GG 116	GG 67-1	.....	BG 215 B 3
	WW 62 A 19	3.00 to 1	Ctr. Engine-Wise	GG 117	GG 77-1	.....	BG 215 B 3
	WW 62 A 20	3.84 to 1	Ctr. Engine-Wise	GG 118	GG 69-1	.....	BG 215 B 3
	WW 62 A 21	2.00 to 1	Engine-Wise	GG 113	GG 71	GJ 8	BG 215 B 3
	WW 62 A 22	2.67 to 1	Engine-Wise	GG 114	GG 71	GJ 9	BG 215 B 3
	WW 62 A 23	3.79 to 1	Engine-Wise	GG 115	GG 73	GJ 10	BG 215 B 3

WW62A R duction G ar Ass mbly
USE WITH MODELS W4-1770, VH4D, VE4D, VF4D

Part Number	Net Wt.		Part Number	Net Wt.		Part Number	Net Wt.				
	Lb	Oz		Lb	Oz		Lb	Oz			
BG215	19	8	† PL140 Square key, 5/16" x 1-1/8" long			WW62A9	86				
BG215-1	19	8				1	8	WW62A10	85		
BG215-2	19	8				2	8	WW62A11	87		
BG215-3	19	8				2	8	WW62A12	89		
BH143	20							WW62A13	89		
GG67-1 (62 teeth)	8	11				Complete clutch reduction gear assemblies for			WW62A14	89	
GG67A (65 teeth)	9					engines beginning with serial			WW62A15	86	
GG69-1 (73 teeth)	10	15				no. 653270 (with ball bearing			WW62A16	85	
GG71 (40 teeth)	5	4				pilot). For engines to and in-			WW62A17	87	
GG73 (53 teeth)	7	10				cluding serial no. 653269,			WW62A18	89	
GG77-1 (69 teeth)	10	4				WW62-etc. units (with needle			WW62A19	89	
GG113 (20 teeth)	1	14				bearing pilot) were used.			WW62A20	89	
GG114 (15 teeth)		14				These are replaced by corres-			WW62A21	86	
GG115 (14 teeth)		11				ponding WW62A-etc. assem-			WW62A22	85	
GG116 (30 teeth)	2	10	blies by cutting off 19/32"			WW62A23	87				
GG117 (23 teeth)	2	1	from end of engine crank-			WW62A24	89				
GG118 (19 teeth)	1	12	shaft for clearance of the			WW62A25	89				
GG131 (28 teeth)	3		ball bearing pilot.			WW62A26	89				
GJ8 (27" long)	1	13				WW62A27	89				
GJ9 (26" long)	1	12									
GJ10 (30" long)	2		WW62A	89		† For engines beginning with					
† ME15B Ball (pilot) bearing (furnished by Rockford with clutch, Rockford no. CL5616)		8	WW62A1	89	8	serial no. 653270.					
†† ME115 Needle (pilot) bearing		3	WW62A2	89		†† For engines to and including					
†† PL103 Square key, 5/16" x 1-5/8" long		1	WW62A3	86		serial no. 65369.					
			WW62A4	85							
			WW62A5	87							
			WW62A6	89							
			WW62A7	89	8						
			WW62A8	89							

WC288A Clutch Assembly

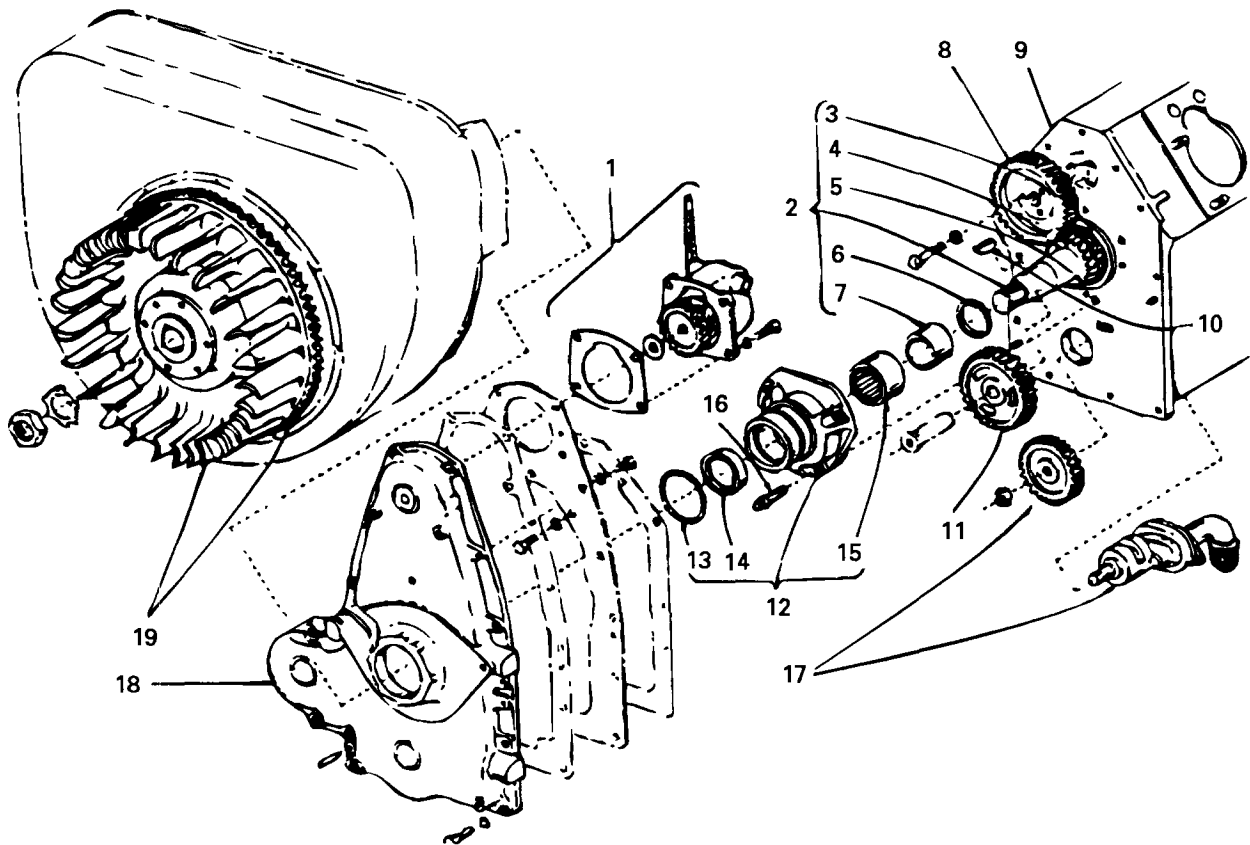


WC288A Clutch Assembly

USE WITH MODELS VE4D, VF4D, AGND, VH4D, W4-1770, W2-1230, W2-1235, W2-1250

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	63CL5147	Adjusting ring	1	16	63CL5318	Screw, 3/8"-24 thread x 2-1/2" long ...	2
2	63CL5152	Short link pin	3	17	63CL5087	Return spring	3
3	63UCL1124410	Driven member assembly (includes 4 and 5; includes splined center and plate assembly)	1	18	63UCL5146-1A	Pressure plate and lever assembly (includes 19-23)	1
4	63CL1011	Tubular rivet	6	19	63UCL51461	Pressure plate assembly	1
5	63CL5321-40	Facing (Thermoid DK)	2	20	63CL5092	Cotter pin, 1/16" x 3/8" long ...	3
6	ME189	Pilot bearing	1	21	63CL5156	Lever pin	3
7	PK105	Adjusting lock (replaces 63CL4973)	1	22	63CL5544	Lever	6
8	63CL8807-1	Screw, 1/4"-20 thread x 3/8" long	1	23	63LM408	Roller	3
9	63CL3468	Lock washer, 1/4"	1	24	63CL4776	Connecting link	6
10	PD11	Nut, 3/8"-24 thread (replaces 63CL5319)	2	25	63CL5153	Long link pin	3
11	PE5	Lock washer, 3/8" (replaces 63PT353)	1	26	63CL5092	Cotter pin, 1/16" x 3/8"	6
12	63CL5210-1	Clutch housing	1	27	63UCL4-5145	Release sleeve assembly (includes 28-31)	1
13	PE46	Lock washer, 5/16"	1	28	63CL5145	Release sleeve	1
14	XD14-2	Screw, 5/16"-18 thread x 5/8" long	1	29	63UCL65144	Release bearing assembly (includes 29 and 30; includes release bearing)	1
15	63CL5211	Screw lock	1	30	63CL7356	Elastic stop nut, 5/16"-24 thread	2
				31	63CL33351	Screw, 5/16"-24 thread x 1-3/4" long	2

BG358AS1 3rd Bearing Parts (Wisconsin Spec No. 390568)



ASSEMBLY NOTES:

1. Bearing cup (3) must extend .125 inches out from face of crankcase.
2. When mounting bearing race (7), apply 1/8 inch wide bead of Loctite 601 to I.D. at center, and to crankshaft.
3. Torque housing screws (16), 40 to 45 foot pounds.

BG358AS1 3rd B aring Parts

USE WITH MODEL VH4D (see pg. 66)

ITEM	PART NO.	DESCRIPTION	QTY	ITEM	PART NO.	DESCRIPTION	QTY
1	T89R1S1	Governor assembly Note: All parts same as standard T89KS1 governor except: TC405P flyweight assembly including GD100A6 gear in place of TC405J and GD100A3 gear. Also TC395-4 housing in place of TC395 1	1	13	JK72	"O" ring seal 1	1
2	CA71GS1	Crankshaft assembly (includes 3-7) 1	1	14	PH299	Oil seal 1	1
3	ME223	Roller bearing, flywheel end 1	1	15	ME224	Needle bearing 1	1
4	PL21	No. 3 Woodruff key 1	1	16	XB88	Cap screw, 3/8"-16 thread x 1" long 3	3
—	ME114	Roller bearing, t.o. end (not illustrated) 1	1	17	K129A	Oil pump assembly Note: All parts same as standard K95L oil pump except: KB46-1S2 cover assembly replaces KB42S2 KD121BS1 drive shaft replaces KD121S1	1
5	GA36C	Gear 1	1	18	BD100MS1	Gear cover assembly (includes PF52A, PH299, TC388-1, XK3) 1	1
6	HF643	Bearing spacer 1	1	19	N101B14	Flywheel assembly (includes GH44) 1	1
7	ME225	Needle bearing 1	1	—	BG209	Plate (not illustrated) 1	1
8	GB45D	Camshaft gear 1	1	—	PE49	Lock washer (not illustrated) 4	4
9	BA48C105S1	Crankcase assembly 1	1	—	RK170	Oil sling (not illustrated) 1	1
10	PL165	"B" Woodruff key 1	1	—	XC68	Screw (not illustrated) 4	4
11	GC27D	Idler gear 1	1				
12	BG358AS1	Bearing and housing assembly (includes 13-15) 1	1				

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