



Parts List

HERCULES

SIX CYLINDER ENGINE

of the

“QX” Series

QXA— $3\frac{1}{8}$ " x $4\frac{1}{8}$ "

QXB— $3\frac{1}{4}$ " x $4\frac{1}{8}$ "

QXC— $3\frac{3}{8}$ " x $4\frac{1}{8}$ "

QXD— $3\frac{7}{16}$ " x $4\frac{1}{8}$ "

QXLD— $3\frac{7}{16}$ " x $4\frac{1}{4}$ "

For Details See Page 5

June 12, 1951

Supersedes All Previous Parts Lists

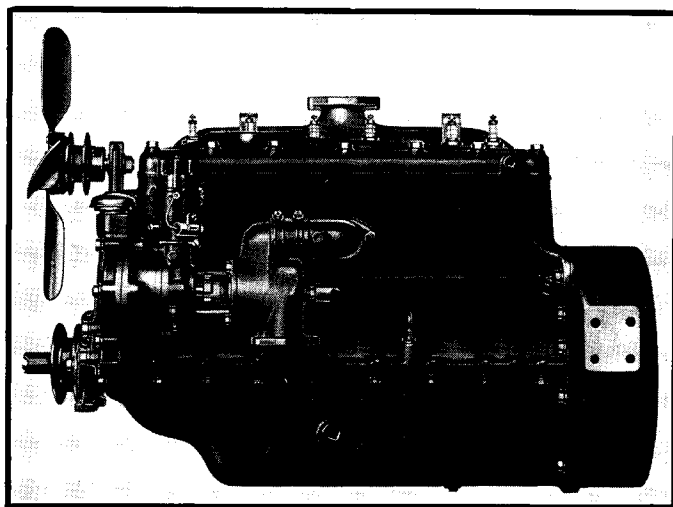
HERCULES MOTORS CORPORATION

CANTON, OHIO, U. S. A.

PARTS LIST
HERCULES
SIX CYLINDER ENGINE

of the
"QX" Series

Engines with serial numbers from $\left\{ \begin{array}{l} 700,001 \text{ to } 800,000 \\ 2,800,001 \text{ to } 2,900,000 \end{array} \right.$



HERCULES MOTORS CORP.
CANTON, OHIO, U. S. A.

HERCULES MOTORS CORPORATION

CANTON, OHIO

Hercules Motors Corporation is a Member of the Internal Combustion Engine Institute and is pleased to warrant all Hercules products sold by it in accordance with the following Basic Warranty adopted by the Institute May 8, 1947, which is subject to future amendment without notice. This warranty is in lieu of any warranty expressed or implied by law and supercedes any different warranty in customer's purchase orders.

BASIC WARRANTY

The Manufacturer warrants each new engine sold by the Manufacturer to be free from defects in material and workmanship for six (6) months from date of shipment, but not to exceed ninety (90) days of service, or such other period of time as may be agreed upon in respect to the application in which the engine is used. The obligation under this Warranty, statutory or otherwise, is limited to the replacement or repair at the Manufacturer's factory or at a point designated by the Manufacturer, of such part as shall appear to the Manufacturer, upon inspection at such point, to have been defective in material or workmanship.

This Warranty does not obligate the Manufacturer to bear the cost of labor or transportation charges in connection with the replacement or repair of defective parts, nor shall it apply to an engine upon which repairs or alterations have been made unless authorized by the Manufacturer.

The Manufacturer makes no Warranty in respect to trade accessories, such being subject to the Warranties of their respective Manufacturers.

The Manufacturer shall in no event be liable for consequential damages or contingent liabilities arising out of the failure of any engine or parts to operate properly.

No express, implied or statutory Warranty other than herein set forth is made or authorized by the Manufacturer.

New service parts are sold subject to the same warranty as new engines.

INSTRUCTIONS *for* ORDERING PARTS

This parts list supersedes all others of previous date.

All prices are subject to change without notice.

All shipments are strictly C. O. D., except when otherwise agreed to by contract with our company.

All parts are shipped F. O. B. Canton, Ohio, except Parcel Post packages, which are prepaid and billed to customer on the invoice.

When ordering by telegram or telephone, be sure to send us confirming order.

DO NOT order anything in sets; for example, "One set of Piston Rings" might be understood as meaning Four—a set for one Piston—or Twenty-four—a set for one Engine.

When in doubt as to whether you can order from this parts book, send in a sketch, or the old part (prepaid) and specify on order "as per sketch," or "as per sample."

When ordering parts, give engine number.

If you return old part as sample be sure to advise us that you are doing so, and put a tag on the part with your name and address, so it may be quickly identified.

PARTS RETURNED FOR CREDIT

All claims must be made within **three** days after receipt of goods. Transportation charges must be prepaid. Never return a part to our factory without writing us a letter informing us what you are returning and why. Place on outside of box or package, tag showing name and address. Tag each article in box or package, stating what, how many, and why returned, specifying number of engine from which part was removed.

Your careful attention and adherence to the above instructions will assist us in giving you prompt and correct service.

**HERCULES MOTORS CORPORATION
CANTON, OHIO, U. S. A.**

JUNE 12, 1951

Supersedes All Previous Parts Lists

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FIVE GEAR ENGINE

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INDEX FOR DIFFERENT MODELS

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SPECIAL PARTS

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IMPORTANT

READ BEFORE ORDERING PARTS

EXPLANATION OF QX ENGINE TYPES

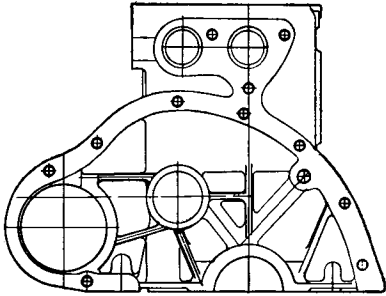


Fig. 1

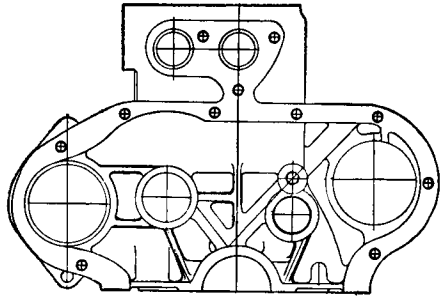


Fig. 2

The "QX" series of Hercules engines are built in various types in which certain details will vary. This book covers parts for all types and before ordering parts for any engine the type to which it belongs should be carefully noted. The feature in which there is the most variation is in the construction at the front end of the cylinder block and the two principal types are illustrated above. Fig. 1 shows the front end of the "QX3" type which is designed for three gears at the front end. This type is commonly used for automotive service and covered in Section II of this book. Fig. 2 shows the front end of the "QX5" type which is designed for five gears at the front end and is commonly used for industrial and marine purposes and covered in Section I of this book.

There are other differences shown by model letters. The following will explain some of the common types:

"QXA3" is three gear engine of $3\frac{1}{8}$ " bore

"QXB3" is three gear engine of $3\frac{1}{4}$ " bore

"QXC3" is three gear engine of $3\frac{3}{8}$ " bore

"QXA5" is five gear engine of $3\frac{1}{8}$ " bore

"QXB5" is five gear engine of $3\frac{1}{4}$ " bore

"QXC5" is five gear engine of $3\frac{3}{8}$ " bore

"QXB5C" is five gear engine of $3\frac{1}{4}$ " bore and has parts for counter-clock-wise rotation.

"QXC5M" is five gear engine of $3\frac{3}{8}$ " bore and has special parts for marine conversion.

"QXC5MC" is five gear engine of $3\frac{3}{8}$ " bore and has special parts for marine conversion and counter-clock wise rotation.

"QXLD" either three or five is an engine with $4\frac{1}{4}$ " stroke

SECTION I — FIVE GEAR ENGINE

QX SERIES

For parts of 3 gear engine which differ from those in 5 gear engine see Section II of this book, Page 37.

Parts carrying mark ■ in front of part number have been selected as those necessary to care for emergency service and maintenance. The quantity of such parts to be carried as spares will depend on the number of engines in service.

If gasket assemblies are ordered then gaskets shown under group headings may be omitted to avoid duplication.

GASKETS AND SEALS (Group 1)

Part No.	No. Req'd.	PART NAME	Illustration Reference
■ 46243-AS	1	Gasket assembly—Primary (Includes parts marked *)	
46085-B	2	*Oil pan gasket—Can be cut off and used in place of 46083-B	
46083-B	2	*Oil pan gasket—Used with flexible front seal	
46033-B	1	*Gear cover gasket	
46065-B	1	*Bellhousing gasket	
46008-B	2	*Valve cover gasket	
46798-B	1	*Manifold gasket—QXC and QXD—replaces 46754-B	
46741-B	1	*Manifold gasket—QXA and QXB	
46665-A	1	*Water outlet gasket	
87-A	2	*Carburetor and valve box gasket	
3427-A	1	*Gear cover cork (replaces 4680-A)	
3426-A	1	*Oil pan cork (replaces 4718-A)	
■ 46244-AS	1	Gasket assembly—Secondary (Includes parts marked **)	
22564-A	1	**Fuel pump gasket	
22164-A	1	**Water pump cover gasket	
46170-A	2	**Water pump cradle and attaching gasket	
87-A	1	**Water pump discharge pipe gasket	
86-A	1	**Water inlet to pump gasket	
22119-A	1	**Oil pump attaching gasket	
10471-A	1	**Governor attaching gasket	
49057-A	1	**Exhaust companion flange gasket—(flat)	
22271-A	1	**Generator gasket	
46662-A	1	**Water opening cover gasket	
7218-A	1	**Water inlet pipe gasket	
■ 47216-C	1	Cylinder head gasket—QXA-3 1/8" and QXB-3 1/4"—replaces 46004-C, 46370-C and 49204-C	
■ 47217-C	1	Cylinder head gasket—QXC-3 3/8"—replaces 46002-C, 46371-C and 49203-C	
■ 46218-C	1	Cylinder head gasket—QXD and QXLD-3 7/16"—Replaces 46240-C and 49202-C	
■ 3543-A	1	Bellhousing oil seal	
■ 11087-AS	1	Front oil seal—interchangeable with 11137-AS	

CYLINDER AND CRANKCASE (Group 2)

Poured Babbitt Bearing Type

The poured babbitt type bearings were used on a few of the QX-5 engines built before engine number 700898 and were not used on any engines after this number. This type bearing was not used in any QX-3 engines.

46500-ESY	1	Cylinder block assembly—3 1/4" bore—Includes valve guides, camshaft bearings, idler bearing, expansion plugs and pipe plugs. Diameter of bore for bearings 2.750"	AE
46502-DS	1	Cylinder block assembly—3 1/4" bore—Same as above; also main bearings, machined to size with caps and screws	AE

Give Engine Number with Each Parts Order

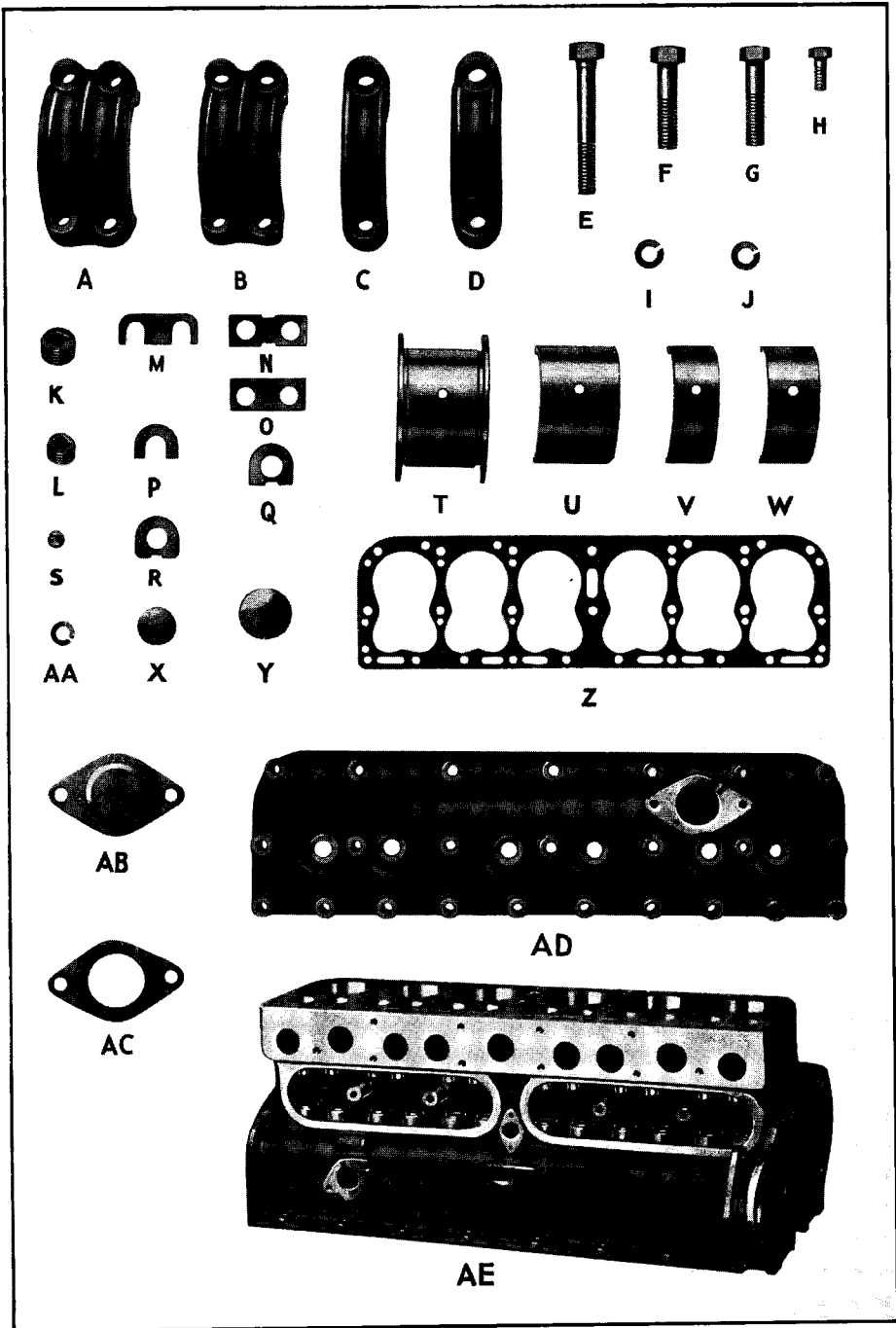


Illustration Reference A to AE Inclusive

MAIN BEARINGS (Group 3)

(Poured babbit bearing type used only on certain engines of QXA-3 1/8" and QXB-3 1/4" sizes see note above)

Part No.	No. Req'd.	PART NAME	Illustration Reference
40096-B	1	Front upper main bearing shell—1/8" thick.....	W
46059-B	1	Center upper main bearing shell—1/8" thick.....	U
40099-B	4	Intermediate upper main bearing shell—1/8" thick.....	V
46042-B	1	Rear upper main bearing shell—1/8" thick.....	T
40092-B	4	Intermediate main bearing cap—babbitted.....	C
40093-B	1	Front main bearing cap—babbitted.....	D
46094-B	1	Rear main bearing cap—babbitted.....	A
46095-B	1	Center main bearing cap—babbitted.....	B
46052-A	4	Center and rear main bearing shim .002".....	M
46053-A	8	Center and rear main bearing shim .003".....	M
40066-A	10	Front and intermediate main bearing shim .002".....	R
40067-A	20	Front and intermediate main bearing shim .003".....	Q

CYLINDER AND CRANKCASE (Group 4)

(Removable shell bearing type)

47321-AS	1	Cylinder block assembly—3 1/4" bore—Includes valve guides, camshaft bearings, idler bearing, main bearings, expansion plugs, pipe plugs and main bearing caps Diameter of bore for bearings 2.645." AE
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MAIN BEARINGS (Group 5)

(Removable shell type—Babbitt lined shells)

49693-AS	1	Main bearing assembly—includes parts marked*.....	
■ 42693-B	2	*Front main bearing shell—babbitt lined brass—interchangeable with 46096-B and 46584-B.....	W*
■ 46694-B	2	*Center main bearing shell—babbitt lined brass—interchangeable with 46097-B and 46585-B.....	U*
■ 46695-B	2	*Rear main bearing shell—babbitt lined steel—interchangeable with 46098-B and 46586-B.....	T*
■ 42696-B	8	*Intermediate main bearing shell—babbitt lined brass—interchangeable with 46099-B and 46587-B.....	V*
46105-A As Req.		Center and rear main bearing shim .002"—Used on some engines.....	O
46101-A	12	Center and rear main bearing shim .003"—Used on some engines.....	O
40550-A As Req.		Front and intermediate bearing shim .002"—Used on some engines.....	P
40552-A	30	Front and intermediate bearing shim .003"—Used on some engines.....	P

Note: Bearing caps used with these bearings are not commonly furnished separately but are listed here for information.

40543-B	Front main bearing cap.....	D
46103-B	Center main bearing cap.....	B
46104-B	Rear main bearing cap.....	A
40544-B	Intermediate main bearing cap.....	C

MAIN BEARINGS (Group 5A)

(Removable Shell Type—F-77 Lined Shells)

47090-AS	1	Main Bearing Assembly includes parts marked **.....
43598-B	2	**Front main bearing.....
43601-B	2	**Center main bearing.....
47093-B	2	**Rear main bearing.....
43600-B	8	**Intermediate main bearing.....
40555-B	4	**Rear bearing thrust washer.....
40554-A	4	**Rear bearing washer dowel.....

Give Engine Number with Each Parts Order

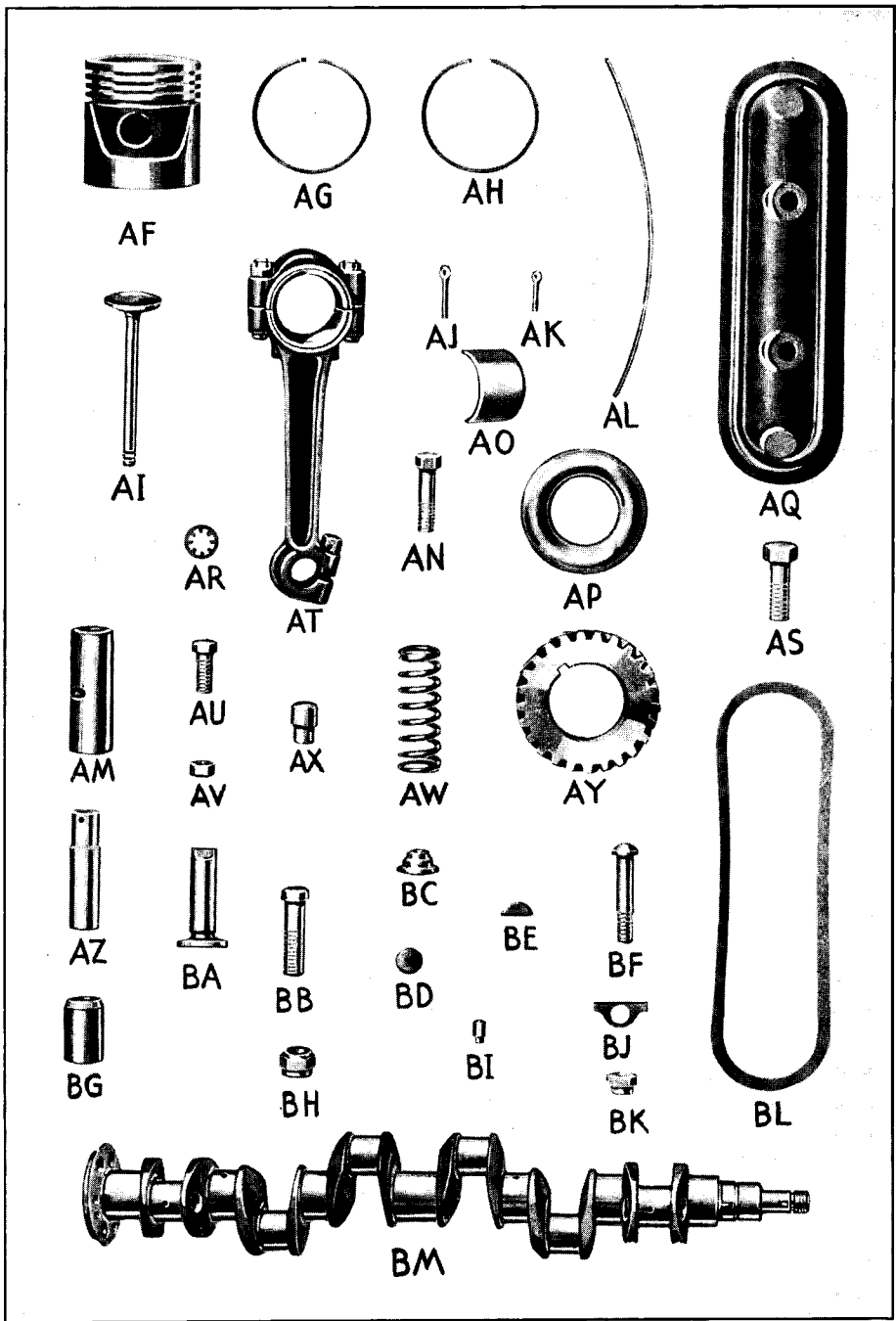


Illustration Reference AF to BM Inclusive

CYLINDER AND CRANKCASE ACCESSORIES (Group 6)

Part No.	No. Req'd.	PART NAME	Illustration Reference
40070-A	10	Front and intermediate bearing cap screw (1/2"-13x2")	F
40071-A	8	Center and rear bearing cap screw (7/16"-14x2")	G
4731-A	10	Main bearing cap screw lock washer (1/2")	I
4732-A	8	Main bearing cap screw lockwasher (7/16")	J
8-A	1	Cylinder drain cock—Replaces 14398-A	
4879-A	2	Fuel pump hole cover	FD
■ 22564-A	2	Fuel pump hole cover gasket	FC
1048-A	4	Fuel pump hole cover screw—5/16"-18x1 1/2"	H
615-A	4	Fuel pump hole cover screw lockwasher (5/16")	AA
7239-A	8	Cylinder block expansion plug (1 1/2" diameter brass)	X
60-A	1	Cylinder block pipe plug (1/4" slotted)	
59-A	9	Cylinder block oil tube pipe plug (1/8" slotted)	S
22158-A	1	Cylinder block oil tube pipe plug (3/8") used on early engines only—later replaced by 3201-A	
3201-A	1	Cylinder block oil tube pipe plug (1/4")	
3278-A	1	Cylinder Block Cup Plug 1" Dia.	
22158-A	1	Cylinder Block Fuel Pump Drive Pin Hole Plug 3/8"	
46028-A	4	Cylinder block valve compartment plug—special	
46026-A	1	Water opening cover	AB
Note: Parts marked * in reference column are not exactly like illustrations.			
■ 46662-A	1	Water opening cover gasket	AC
4423-A	2	Water opening cover screw (3/8"-16x3/4")	
342-A	2	Water opening cover screw lockwasher (3/8")	

CONNECTING ROD (Group 7)

47091-AS	6	Connecting rod and bearing assembly (F-77 bearing) (Includes parts marked †)	
46066-AS	6	Connecting rod and bearing assembly (Babbitt Bearings) (Includes parts marked*)	
47100-CSY	6	†*Connecting rod assembly (Includes bolts, nuts and shims) order bearing shells separately—replaces 46390-CSY	
46156-A	12	Connecting rod cap bolt	AT
6331-A	12	Connecting rod cap nut	BF
301-A	12	Connecting rod cap nut cotter (3/32"x3/4")	BK
46111-A	6	Connecting rod piston pin lock screw	AN
14842-A	6	Connecting rod piston pin lock screw lockwasher	AR
■ 46697-B	12	*Connecting rod bearing shell—babbitt lined—interchangeable with 46192-B, 46588-B and 46193-B	AO
47092-B	12	†Connecting rod bearing shell—F-77	AO

SHIM ASSEMBLY (Group 8)

(For shell type bearings.) (Used on some engines.)

■ 46056-AS	1	Shim assembly—includes parts marked *	
40550-A	30	*Front and intermediate main bearing shim .002"	P
40552-A	10	*Front and intermediate main bearing shim .003"	P
46105-A	12	*Center and rear main bearing shim .002"	O
46101-A	4	*Center and rear main bearing shim .003"	O
46167-A	36	*Connecting rod shim .002"	BJ
46154-A	12	*Connecting rod shim .003"	BJ

PISTON (CAST IRON) 3 1/4" DIAMETER (Group 9)

Note: Pistons and rings are supplied in the following oversizes: .005", .010", .015", .020", .030" and .040". Piston pin supplied .003" and .005" oversize.

On orders for sizes other than specified above, an additional 25% will be added to the list price.

■ 46018-C	6	Piston—3 1/4" diameter cast iron	AF
■ 46128-B	6	Piston pin—length 2 5/32"	AM

Give Engine Number with Each Parts Order

PISTON (CAST IRON) 3 1/4" DIAMETER Group 9 (Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
■ 3806-A	18	Piston ring—compression (replaces 27108-A).....	AG
■ 3906-A	6	Piston ring—oil regulator (replaces 46131-A).....	AH
46021-A	12	Piston bushing.....	

PISTON (ALUMINUM) 3 1/4" DIAMETER (Group 10)

(See note above about oversizes.)

■ 46017-C	6	Piston—3 1/4" diameter aluminum.....	AF
■ 46128-B	6	Piston pin—length 2 5/32".....	AM
■ 125125-A	18	Piston ring—compression (replaces 27108-A and 3806-A).....	AG
■ 3906-A	6	Piston ring—oil regulator (replaces 46131-A).....	AH

CRANKSHAFT (Group 11)

Note: Some installations require shafts that are special in the machined dimensions at front end, therefore, be sure to give engine serial number when ordering crankshaft. We list here only the most commonly used shafts.

46827-E	1	Crankshaft—standard—front end threaded.....	BM
46829-B	1	Crankshaft—power unit—not threaded.....	
40076-A	1	Crankshaft oil thrower—not used on engines equipped with flexible front end seal.....	AP
47045-B	1	Crankshaft gear (23 teeth) replaces 46039-B.....	AY
4413-A	1	Crankshaft gear key—Replaces 4265-A.....	BE
22104-A	4	Crankshaft flywheel bolt.....	BB
1656-A	4	Crankshaft flywheel bolt nut (1/2-20 castle).....	BH
301-A	4	Crankshaft flywheel bolt nut cotter (1/8x1").....	AJ
1707-A	2	Crankshaft flywheel dowel.....	AX
665-A	2	Crankshaft flywheel expansion plug (5/8" diameter).....	BD
4642-A	1	Crankshaft dowel.....	BI

VALVES (Group 12)

Part numbers of valves may change from time to time due to either a change in specifications or source of supply. Your order will be filled with current production parts which will be interchangeable with older parts.

■ 47016-B	6	Valve—exhaust (replaces 46010-A, 46123-A and 49210-A).....	AI
■ 47016-B	6	Valve—intake (QXA-3 1/8" & QXB-3 1/4") (replaces 46020-A & 46120-A).....	AI
■ 47017-B	6	Valve—intake (QXC-3 3/8" & QXD-3 7/16") (replaces 46122-A & 46121-A).....	AI
■ 46958-A	12	Valve springs—intake and exhaust—free length 1 15/16" and cadmium plated—For engines with governed speed below 1600 R.P.M.....	AW
■ 76023-A	12	Valve springs—intake and exhaust—free length 2 1/16"—For engines with speed range above 1600 R.P.M.....	AW
■ 46043-A	12	Valve springs—intake and exhaust—free length 2 1/8" and cadmium plated—For engines with speed range above 1600 R.P.M.....	AW
46013-A	12	Valve spring seat.....	BC
■ 46011-A	24	Valve spring seat lock.....	
47018-A	12	Valve guide (Replaces 27011-A and 46047-A).....	AC
■ 46008-B	2	Valve cover gasket.....	BL
46007-B	2	Valve cover.....	AQ
4337-A	4	Valve cover screw—3/8"-16x2".....	AS

Note: When replacing valves we recommend ordering the following valve and guide assemblies:

47022-AS	6	Valve and guide assembly—includes 47016-B and 47018-A.....
47023-AS	6	Valve and guide assembly—includes 47017-B and 47018-A.....

Give Engine Number with Each Parts Order

VALVE TAPPETS (Group 13)

Part No.	No. Req'd.	PART NAME	Illustration Reference
38010-AS	12	Valve tappet assembly (includes 27317-A; 46019-A and 14974-A).....	
27317-A	12	Valve tappet.....	BA
46019-A	12	Valve tappet adjusting screw.....	AU
14974-A	12	Valve tappet adjusting screw nut.....	AV
46089-A	12	Valve tappet guide.....	BG

CYLINDER HEAD (Group 14)

46204-D	1	Cylinder head 5.5 to 1 ratio— $\frac{7}{8}$ "-18 plugs.....	AD
46382-AS	1	Cylinder head 5.85 to 1 ratio (Replaces 46205-D).....	AD
47200-D	1	Cylinder head 6.5 to 1 ratio—natural gas— $\frac{7}{8}$ "-18 plugs (replaces 46207-D).....	AD
46210-D	1	Cylinder head 5.85 to 1 ratio—14 M. M. plugs.....	AD
49206-D	1	Cylinder head 4.77 to 1 ratio—kerosene—14 M. M. plugs (replaces 46227-D).....	AD
6820-A	24	*Cylinder head attaching screw— $\frac{1}{2}$ "-13x2 $\frac{3}{4}$ ".....	E
1075-A	1	Cylinder head pipe plug $\frac{1}{2}$ ".....	K
■ 47216-C	1	Cylinder head gasket(replaces 46003-C, 46004 C, 46370-C and 49204-C) *Some engines use screw 14849-A— $\frac{1}{2}$ "-13x2 $\frac{3}{8}$ ".	Z

GEAR COVER (Group 15)

(With Cork Seal)

46703-D	1	Gear cover—has pads and 3 $\frac{5}{8}$ " diameter trunnion.....	FR
46704-D	1	Gear cover—pads—no trunnion—used on power unit.....	
■ 46033-B	1	Gear cover gasket.....	FZ
4266-A	8	Gear cover screw— $\frac{3}{8}$ "-16x1 $\frac{3}{4}$ ".....	FU
342-A	8	Gear cover screw lockwasher $\frac{3}{8}$ ".....	FV
■ 3427-A	1	Gear cover cork (replaces 4680-A).....	FW
14594-AS	1	Gear cover thrust screw assembly—Idle.....	CB
14592-AS	1	Gear cover thrust screw assembly—Accessory.....	CC
14591-A	3	Gear cover thrust screw fiber plug.....	
2048-A	3	Gear cover thrust screw nut $\frac{7}{16}$ -14.....	CD
11284-AS	1	Gear cover thrust screw assembly—Camshaft.....	

GEAR COVER (Group 15-A)

(With Flexible Seal)

46709-D	1	Gear cover—Has pads and 3 $\frac{5}{8}$ " diameter trunnion.....	FR
46710-D	1	Gear cover—pads—No trunnion.....	
46033-B	1	Gear cover gasket.....	
■ 11087-AS	1	Gear cover seal assembly—interchangeable with 11137-AS.....	

Note: Attaching screws and thrust screws same as in group 15.

BREATHER (Group 16)

40038-AS	1	Breather cap assembly.....	GA
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Give Engine Number with Each Parts Order

CAMSHAFT (Group 17)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46814-D	1	Camshaft with thrust plunger—Replaces 46817-D	CE
46041-A	2	Camshaft front and rear bearing	BS
46044-A	2	Camshaft center bearing	BR
46049-B	1	Camshaft gear (46 teeth)	BN
4265-A	1	Camshaft gear key—(No. 91 Woodruff 3/4"x1/4")	BU
46045-A	1	Camshaft thrust washer	BQ
40068-A	1	Camshaft thrust plunger	
11284-AS	1	Camshaft thrust adjusting screw assembly	CB
14591-A	1	Camshaft thrust adjusting screw fiber plug	
2048-A	1	Camshaft thrust adjusting screw lock nut	CD

**IDLER SHAFT AND GEAR (Group 18)
(FIRST TYPE)**

Note: Absolutely essential to give engine serial number when ordering idler shaft, gear or bearing.

46136-A	1	Idler shaft—length 2 31/32"—with plunger	BY
46135-B	1	Idler gear—29 teeth—depth of gear and hub 1 13/32"	BO
46137-A	1	Idler shaft bearing—length 2 1/16"	BZ
22107-A	1	Idler shaft thrust washer	CA
40068-A	1	Idler shaft thrust plunger	BV

Give Engine Number with Each Parts Order

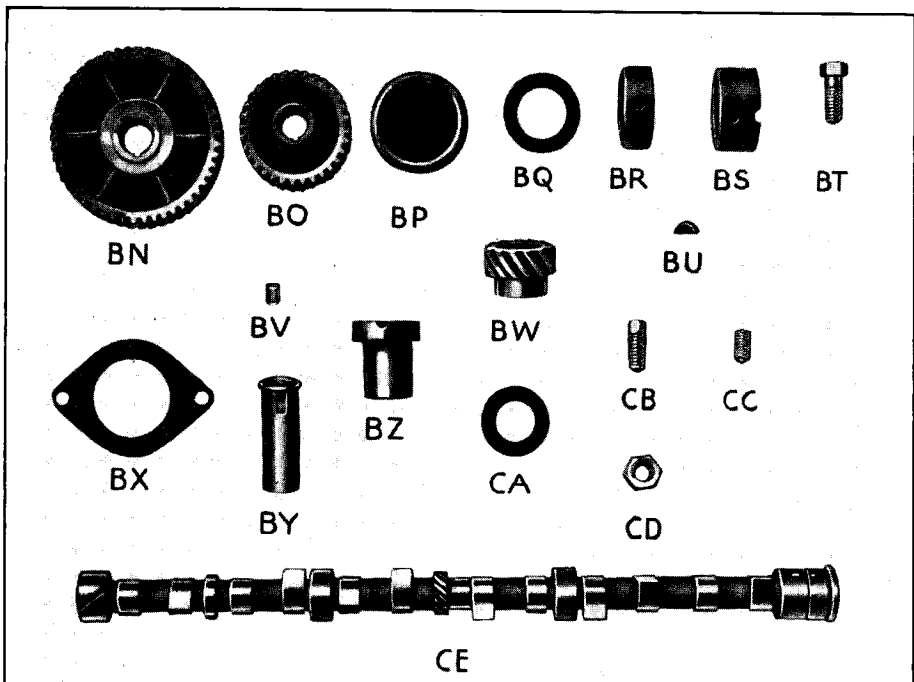


Illustration Reference BN to CE Inclusive

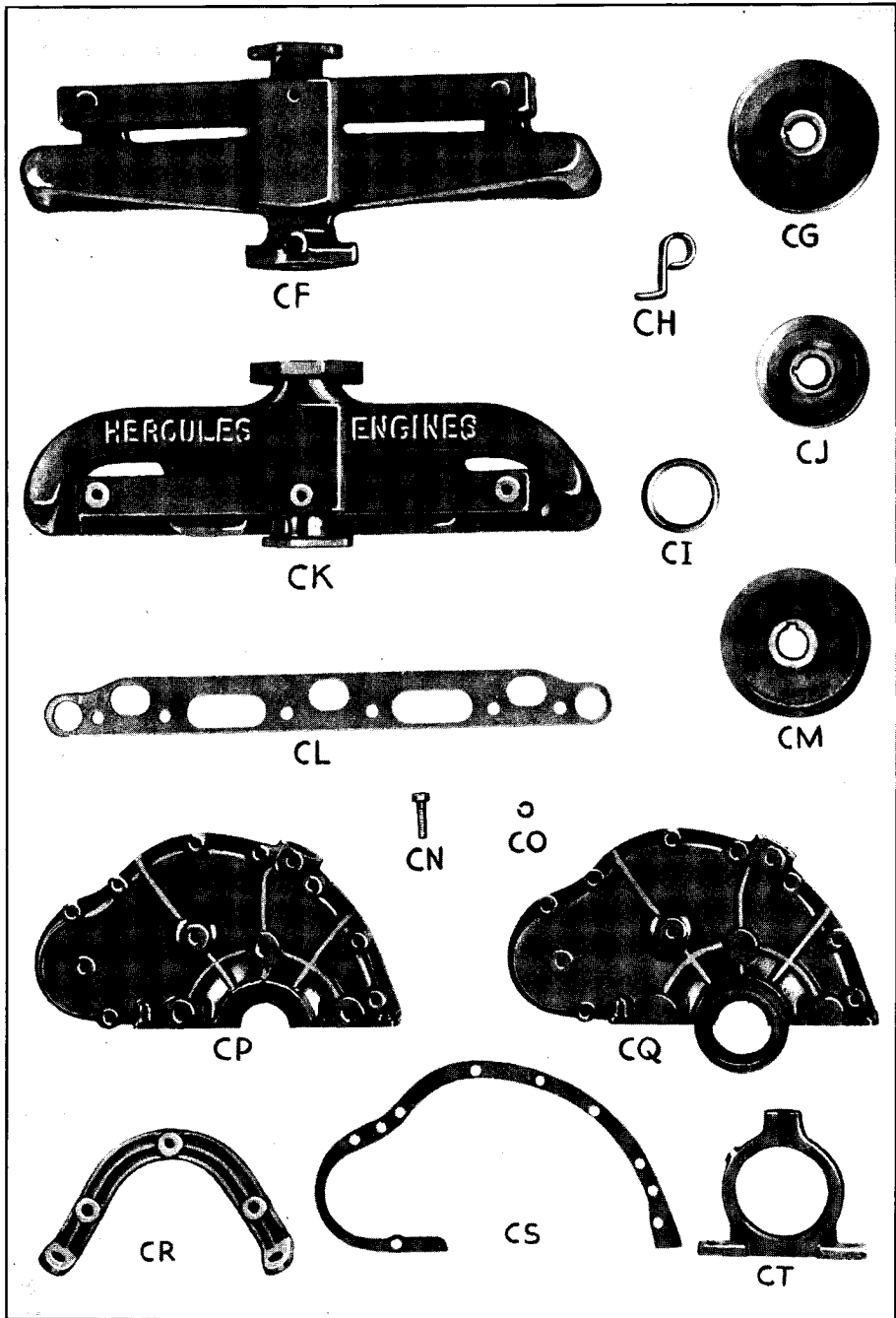


Illustration Reference CF to CT Inclusive

IDLER SHAFT AND GEAR (Group 19)
(SECOND TYPE)

(All marine engines and all late engines.)

Note: The following shaft, gear and bearing when used together will replace shaft gear and bearing listed in Group 18.

Part No.	No. Req'd.	PART NAME	Illustration Reference
46139-A	1	Idler shaft—length 2 3/8"—with plunger.....	
46138-B	1	Idler gear—29 teeth—depth of gear and hub 1 3/16".....	
46140-A	1	Idler shaft bearing—length 1 11/16".....	
22107-A	1	Idler shaft thrust washer.....	CA
40068-A	1	Idler shaft thrust plunger.....	BV

FAN DRIVING PARTS (Group 20)

40284-B	1	Fan driving pulley—4 3/8" diameter—For standard crankshaft.....	CV
42483-B	1	Fan driving pulley—6" diameter—For short crankshaft—46829-B.....	FY
40497-B	1	Fan driving pulley—6" diameter—For standard crankshaft.....	
46275-B	1	Fan driving pulley—5 3/4" diameter—For standard crankshaft.....	CG
4265-A	1	Fan driving pulley key.....	FS
22071-A	1	Fan driving pulley pin—1/4" diameter x 2 3/16" use with 42483-B.....	
40806-A	1	Starting crank grab or jaw—1 3/4" diameter x 3" long.....	FT*
40828-A	1	Starting crank grab or jaw—1 3/4" diameter x 1 11/16" long.....	FT
14734-A	1	Starting crank grab lock washer (1" shakeproof).....	
40287-A	1	Fan belt—7/8" wide—43" outside circumference.....	
46272-A	1	Fan belt—3 1/32" wide—37" outside circumference.....	
40352-A	1	Fan belt—7/8" wide—41 1/2" outside circumference.....	
46878-A	1	Fan belt—7/8" wide—38 7/8" outside circumference.....	

FLYWHEEL (Group 21)

Part numbers on flywheels are stamped on the rims. If flywheel is ordered be sure to give part number of flywheel and serial number of engine for which the wheel is ordered, as there is such a large variety of flywheels used it would be impossible to list all of them in this book. Some of the more common are listed below.

22521-C	1	Flywheel—No. 4 size—11A1 Borg & Beck.....	DK*
22537-C	1	Flywheel—No. 4 size—C10—T.D.....	DK*
23514-C	1	Flywheel—No. 4 size—11CF—CI Long.....	DK*
23518-C	1	Flywheel—No. 3 size—C10—GT—T.D.....	DK*
23682-C	1	Flywheel—No. 4 size—Special.....	
23694-C	1	Flywheel—No. 5 size—Special.....	
23731-C	1	Flywheel—No. 2 size—10 1/2 Fawick cone clutch.....	
23749-C	1	Flywheel—No. 4 size—Special.....	
23754-C	1	Flywheel—No. 5 size—10—A6 Borg & Beck.....	
23756-C	1	Flywheel—Special for 10 rubber bushings.....	
46471-C	1	Flywheel—No. 5 size—10—A6 Borg & Beck.....	
22104-A	4	Flywheel bolt (1/2"—20x1 11/32").....	DC
1656-A	4	Flywheel bolt nut (1/2"—20).....	DG
1710-A	4	Flywheel bolt nut cotter (1/8"—1").....	DH
1707-A	2	Flywheel dowel.....	DD
665-A	2	Flywheel expansion plug (3/8" diameter).....	DJ
24551-C	1	Flywheel ring gear—97 teeth—Supersedes 23471-C.....	
24548-C	1	Flywheel ring gear—112 teeth—Supersedes 22505-C.....	

Note: Parts marked * in reference column are not exactly like illustrations.

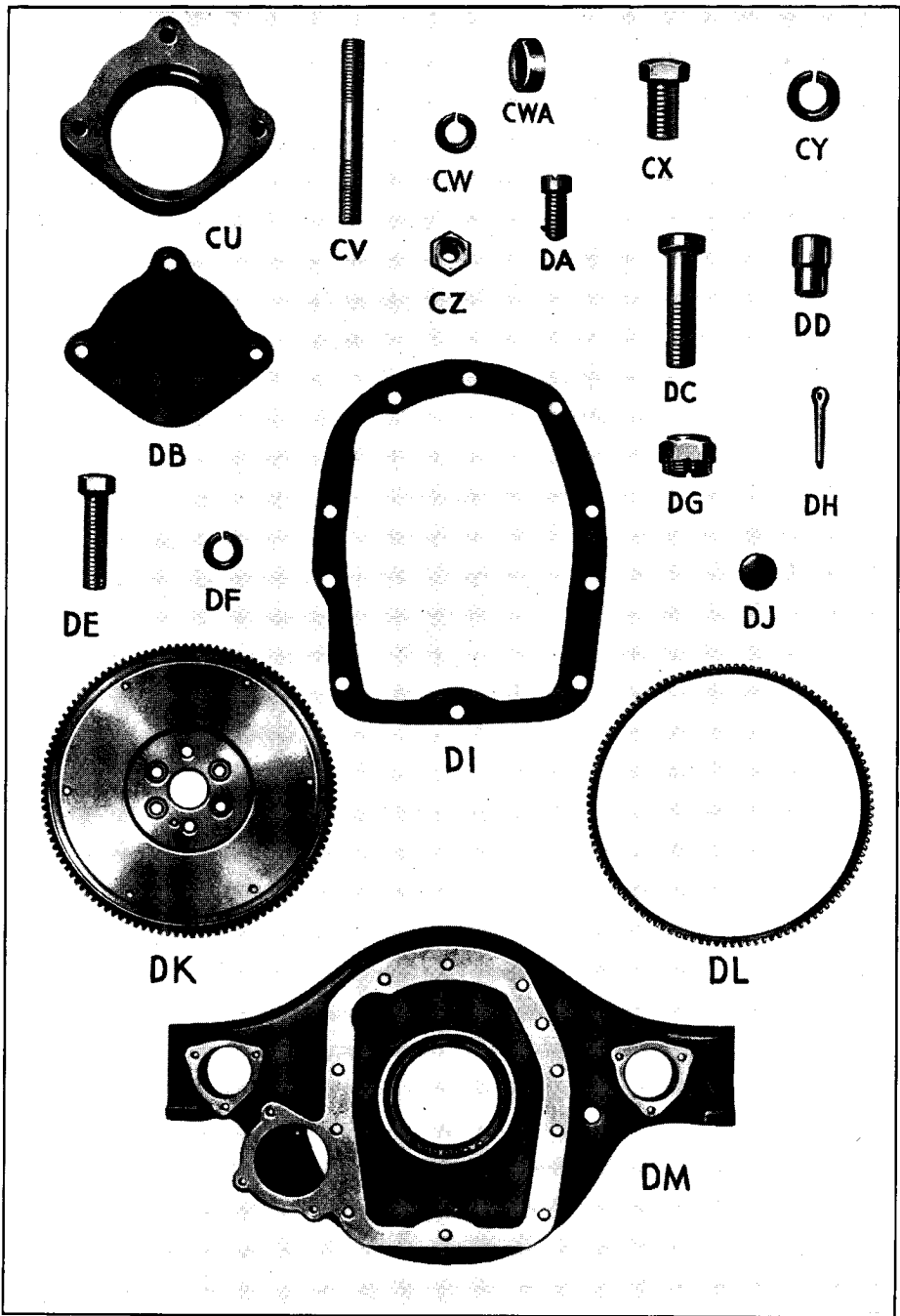


Illustration Reference CU to DM Inclusive

BELLOUSING (Group 22)

As there are many special bellhousings used, always give engine number of engine for which bellhousing is ordered. Some of the bellhousings more commonly used are listed below.

Part No.	No. Req'd.	PART NAME	Illustration Reference
■ 46065-B	1	Bellhousing gasket.....	DI
14856-A	1	Bellhousing attaching screw (1/2"-13x1 1/4").....	CX
4123-A	7	Bellhousing attaching screw (1/2"-13x7/8").....	
2100-A	3	Bellhousing attaching screw (1/2"-13x1/8").....	
794-A	5	Bellhousing attaching screw plain washer (Not used with steel pans.).....	
312-A	11	Bellhousing attaching screw lock washer.....	CY

Note: The above parts used with all types.

The first few engines in this series did not have the oil seal in the bellhousings listed below are machined for the special seal and the seal must be ordered with the bellhousing. When one of these housings together with the seal is used to replace a housing on an engine which did not have the seal, then outside surface of the pilot on the flywheel must be polished with fine grade of emery cloth to avoid rapid wear of the seal.

■ 3543-A	1	Bellhousing oil seal—supersedes 45383-A—not used on some of first engines—Give engine number.....	
46431-D	1	Bellhousing—No. 5 pad type—supersedes 46420-D.....	
46432-D	1	Bellhousing—No. 5 pad special—supersedes 46421-D.....	
46434-D	1	Bellhousing—No. 4 arm type—supersedes 46424-D.....	
46436-D	1	Bellhousing—No. 4 pad type—supersedes 46426-D.....	
46437-D	1	Bellhousing—No. 4 foot and pad—supersedes 46427-D.....	
46438-D	1	Bellhousing—No. 5 pad type—supersedes 46428-D.....	
46440-D	1	Bellhousing—No. 3 pad type—supersedes 46430-D.....	
46449-D	1	Bellhousing—No. 5 foot type.....	

WATER PUMP (Group 23)

(This pump is used when there is a distributor and no magneto.)

46169-CS	1	Water pump assembly—includes parts marked *.....	GC
40161-C	1	*Water pump body.....	GD
46809-C	1	*Water pump cradle.....	GP

Give Engine Number with Each Parts Order

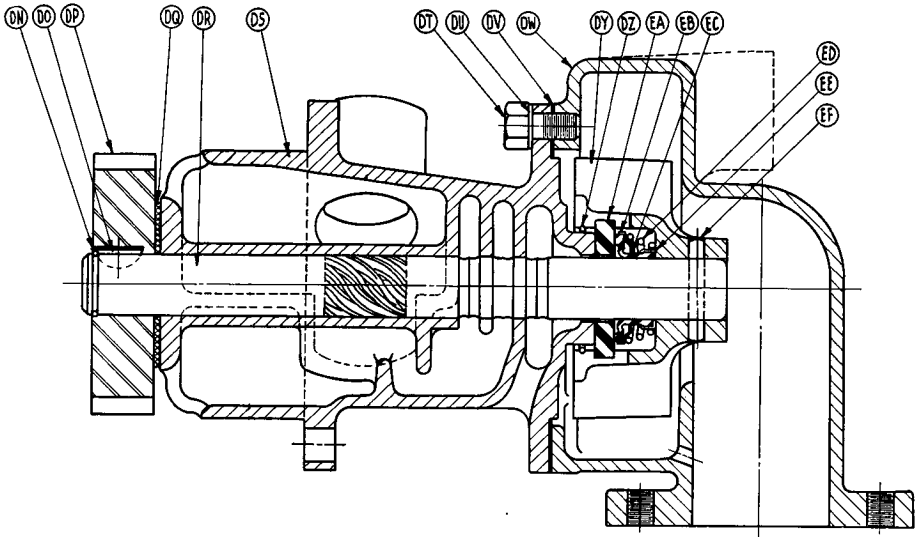


Illustration Reference DN to EF, Inclusive

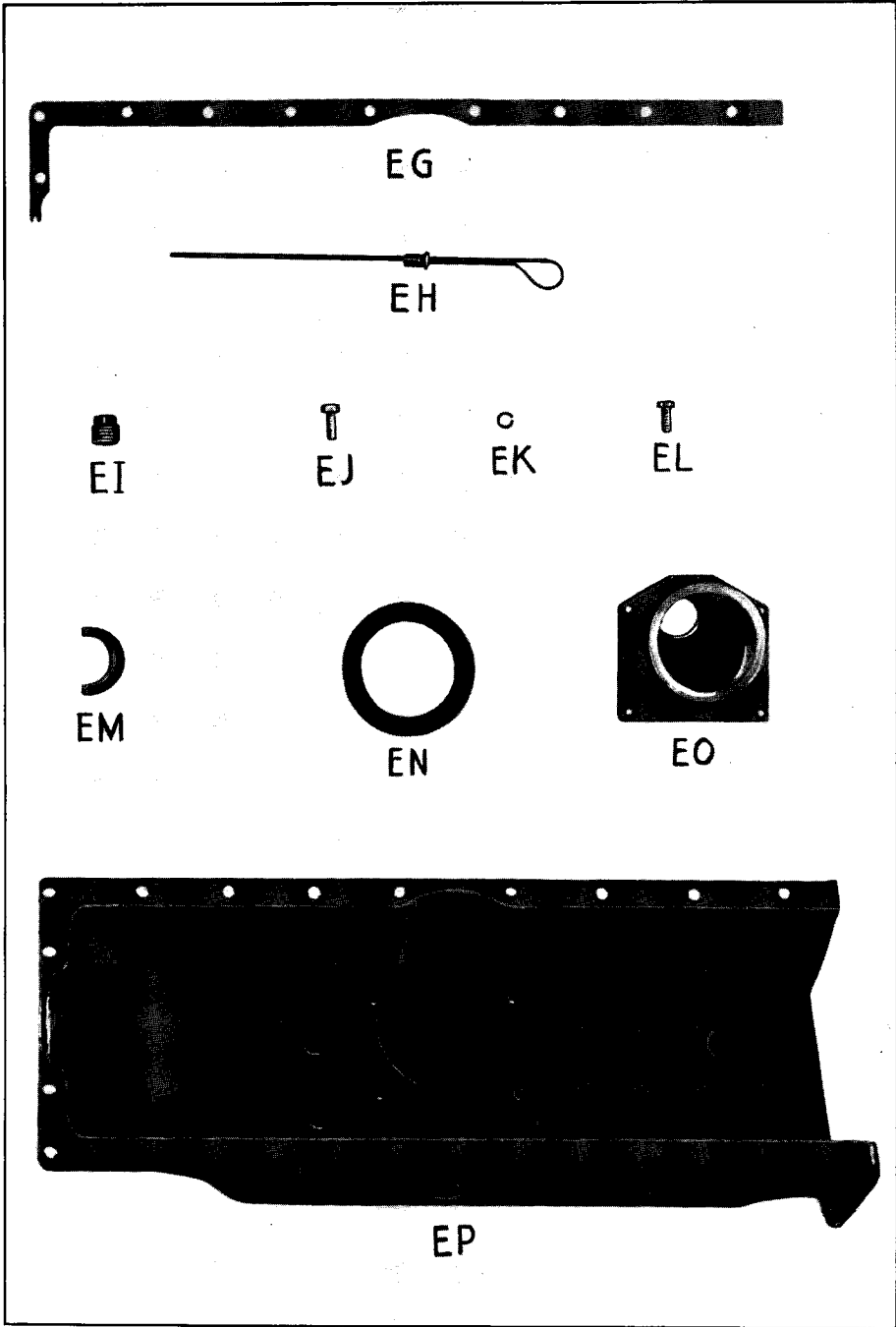


Illustration Reference EG to EP Inclusive

WATER PUMP (Group 23—Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
■ 22164-A	1	*Water pump cradle gasket.....	HH
303-A	4	*Water pump cradle screw— $\frac{5}{16}$ "— $18 \times \frac{3}{4}$ ".....	GN
615-A	4	*Water pump cradle screw lockwasher $\frac{5}{16}$ ".....	GH
46810-B	1	*Water pump shaft.....	GI
40168-A	1	*Water pump shaft bushing.....	HJ
40165-A	1	*Water pump impeller.....	HA
513-A	1	*Water pump impeller key.....	GF
14507-A	1	*Water pump impeller pin.....	GU
46195-B	1	*Water pump driving gear (23 teeth).....	HD
4413-A	1	*Water pump driving gear key.....	GL
22171-B	1	*Water pump drive bushing.....	HK
22336-A	1	*Water pump distributor driving gear.....	GX
1179-A	1	*Water pump distributor driving gear key.....	GE
22168-A	1	*Water pump distributor driving gear snap ring.....	GM
■ 22166-A	1	*Water pump packing.....	GS
21265-A	1	*Water pump packing gland.....	HF
22175-A	1	*Water pump packing bushing.....	HG
22177-A	1	*Water pump packing nut—L.H. thread.....	GZ
23116-A	1	*Water pump oil retainer.....	GT
4024-A	1	*Water pump thrust washer.....	HC
40068-A	1	*Water pump thrust plunger.....	HP
■ 4661-A	1	*Water pump shaft cork washer.....	GY
749-A	1	*Water pump grease cup.....	HE
60-A	1	*Water pump body pipe plug.....	
46805-A	1	Water pump attaching spacer.....	
■ 46170-A	2	Water pump attaching gasket.....	HI
1865-A	3	Water pump attaching screw ($\frac{3}{8}$ "— $16 \times 1 \frac{1}{2}$ ").....	CO
342-A	3	Water pump attaching screw lock washer.....	GU
40650-A	1	Water pump discharge pipe.....	GQ
■ 87-A	1	Water pump discharge pipe gasket.....	CK
1864-A	2	Water pump discharge pipe screw ($\frac{3}{8}$ "— 16×1 ").....	GO
■ 4452-A	1	Water pump discharge pipe hose.....	HB
8159-A	2	Water pump discharge pipe hose clamp.....	GW
342-A	2	Water pump discharge pipe screw lock washer.....	

ACCESSORY DRIVE (MARINE TYPE) (Group 24)

46074-BS	1	Accessory drive assembly—distributor mounted at 10° angle (Consists of 46075 B sleeve and parts marked *).....	
46075-B	1	Accessory drive sleeve.....	ID
46070-BS	1	Accessory drive assembly—distributor mounted at 10° angle (Consists of 46071 B sleeve and parts marked *).....	
46071-B	1	Accessory drive sleeve.....	ID
46072-BS	1	Accessory drive assembly—distributor mounted at 5° angle (Consists of 46073 B sleeve and parts marked *).....	
46073-B	1	Accessory drive sleeve.....	ID
46195-B	1	*Accessory drive gear (23 teeth) R. H.....	IA
4413-A	1	*Accessory drive gear key (No. 61 Woodruff).....	HR
27072-A	1	*Accessory drive shaft.....	IB
27257-A	1	*Accessory drive bushing.....	IC
40068-A	1	*Accessory drive thrust plunger.....	HP
4024-A	1	*Accessory drive thrust washer.....	IF
22336-A	1	*Accessory drive distributor driving gear.....	HM
1179-A	1	*Accessory drive distributor driving gear key.....	HQ
300-A	1	*Accessory drive distributor clamp nut ($\frac{3}{8}$ "—16).....	HU
8051-A	1	*Accessory drive distributor clamp screw ($\frac{3}{8}$ "— $16 \times 1 \frac{1}{8}$ ").....	HT
27076-A	1	*Accessory drive cover plate.....	HY
1779-A	4	*Accessory drive cover plate screw ($\frac{1}{4}$ "— $20 \times \frac{1}{2}$ ").....	HW
628-A	4	*Accessory drive cover plate lock washer ($\frac{1}{4}$ ").....	HX
■ 85-A	1	*Accessory drive cover plate gasket.....	HZ
46170-A	1	Accessory drive attaching gasket.....	IG
1864-A	1	Accessory drive attaching screw ($\frac{3}{8}$ "— 16×1 ").....	HN
682-A	2	Accessory drive attaching screw ($\frac{3}{8}$ "— $16 \times 2 \frac{3}{4}$ ").....	HS
342-A	3	Accessory drive attaching lock washer ($\frac{3}{8}$ ").....	HO

Give Engine Number with Each Parts Order

WATER PUMP (Group 25)

(This pump has through shaft for magneto drive, also provision for driving a distributor.)

Part No.	No. Req'd.	PART NAME	Illustration Reference
47180-DS	1	Water pump assembly—with provision for pressure lubrication—use with parts in group 25-A includes parts marked †	IM
46196-DS	1	Water pump assembly—no provision for external pressure lubrication—includes parts marked *	IL
47178-C	1	†Water pump cover	IM
46801-C	1	*Water pump cover	IM
43257-A	1	†Water pump cover bushing	IR
40167-A	1	*Water pump cover bushing	IR
46803-C	1	†Water pump body	IU
23114-A	1	*Water pump body bushing	JK
■ 4661-A	1	*Water pump shaft cork washer	JG
23116-A	1	†Water pump oil retainer	JF
22175-A	1	*Water pump packing bushing	IO
46812-BS	1	*Water pump shaft	IX
40198-A	1	†Water pump distributor driving gear	JO
1179-A	1	*Water pump distributor driving gear key	JP
22177-A	1	†Water pump packing nut—L.H.	IY
21265-A	2	†Water pump packing gland	IZ
■ 22166-A	1	*Water pump packing—front	JA
■ 21270-A	1	*Water pump packing—rear	JB
8126-A	2	*Water pump thrust washer	JH
22165-A	1	*Water pump impeller	IS
513-A	1	†Water pump impeller key	JQ
1157-A	1	†Water pump impeller pin	JN
■ 22164-A	1	*Water pump cover gasket	IT

Give Engine Number with Each Parts Order

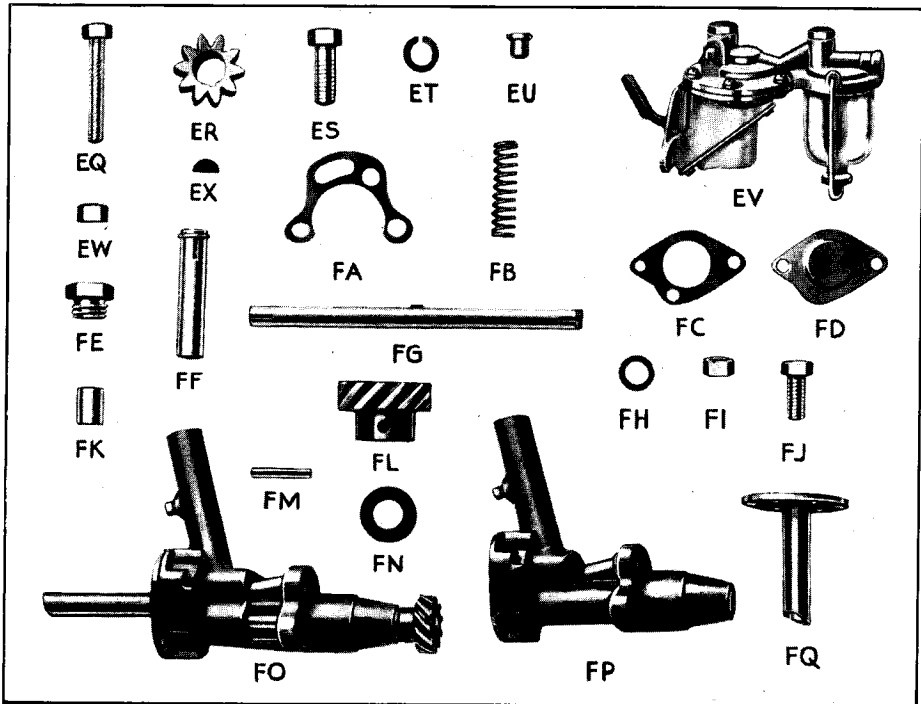


Illustration Reference EQ to FQ Inclusive

WATER PUMP (Group 25—Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
303-A	4	*Water pump cover screw (3/16"-18x3/4")	JL
615-A	4	*Water pump cover screw lock washer (5/16")	JM
23115-A	1	*Water pump steel gland	JC
22178-A	1	*Water pump packing nut—R. H.	JD
40183-B	1	*Water pump drive shaft	IW
46668-B	1	*Water pump sleeve	IQ
45728-B	1	*Water pump sleeve bushing	IP
14904-A	2	*Water pump thrust washer	JE
46195-B	1	*Water pump driving gear	IV
4413-A	1	*Water pump driving gear key	JR
■ 46170-A	1	*Water pump cradle gasket	IN
749-A	2	*Water pump grease cup	JI
46170-A	1	Water pump attaching gasket	IN
1865-A	3	Water pump attaching screw (3/8"-16x1 1/2")	GO
342-A	3	Water pump attaching screw lock washer	GJ
46667-B	1	Water pump discharge pipe	
■ 22151-A	1	Water pump discharge pipe hose	
4275-A	2	Water pump discharge pipe hose clamp	
■ 87-A	1	Water pump discharge pipe gasket	GK
1864-A	2	Water pump discharge pipe screw (3/8"-16x1")	GO
342-A	2	Water pump discharge pipe screw lock washer	GJ
8079-A	1	Distributor hole plug	
8051-A	1	Distributor hole plug screw	
300-A	1	Distributor hole plug screw nut	

WATER PUMP LUBRICATING PARTS (Group 25-A)

3794-A	1	Water pump lubricating tube metering union (in cylinder block)	
47858-A	1	Water pump lubricating tube	
14947-A	2	Water pump lubricating tube ferrule	
14946-A	2	Water pump lubricating tube nut	
14966-A	1	Water pump lubricating tube elbow	
4055-A	1	Water pump lubricating street elbow	

DISTRIBUTOR ATTACHING BRACKET (Group 26)

4343-A	1	Distributor attaching bracket	
4266-A	1	Distributor attaching bracket screw (3/8"-16x1 3/4")	
342-A	1	Distributor attaching bracket lock washer (3/8")	
22335-A	1	Distributor driven gear—on distributor shaft—used with water pump 46169-CS	GR
40199-A	1	Distributor driven gear—on distributor shaft—used with distributor and 46196-CS water pump	
1864-A	1	Distributor driven gear pin	GV

OIL PAN (Group 27)

(With Cork Seal)

46388-D	1	Oil pan—pressed steel	EP
■ 46085-B	2	Oil pan gasket	EG
14855-A	2	Oil pan screw (3/8"-16x1 5/16") special thin head	EL
1864-A	18	Oil pan screw	EJ
342-A	20	Oil pan screw lockwasher	EK
46396-BS	1	Oil pan baffle plate and screen assembly—replaces 46391-BS	
1536-A	4	Oil pan baffle plate attaching screw (1/4"-20x3/8")	
628-A	4	Oil pan baffle plate screw lock washer	
565-A	2	Oil pan pipe plug—3/4" Standard	EI
■ 3426-A	1	Oil pan seal—composition cork—replaces 4718-A	EM

OIL PAN (Group 27A)

(With Flexible Seal)

46417-D	1	Oil pan	
■ 46083-B	2	Oil pan gasket	

Note: Other parts same as in group 27. Seal listed in group 15-A.

Give Engine Number with Each Parts Order

OIL LEVEL GAUGE (Group 28)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46147-AS	1	Bayonet oil level gauge assembly	EH

OIL PUMP ASSEMBLY (Group 29)

47150-CS	1	Oil pump assembly—replaces 46165-CS and 46316-CS—includes parts marked *	
41124-C	1	*Oil pump body	FO
47149-A	1	*Oil pump cover	FP
14069-A	6	*Oil pump cover screw (1/4"-20x3/4")	FQ
628-A	1	*Oil pump cover screw lock washer	
4387-A	2	*Oil pump snap ring	
22154-A	2	*Oil pump gears	ER
1179-A	2	*Oil pump gear key (No. 2 Woodruff)	EX
22124-A	1	*Oil pump shaft	FG
45266-A	1	*Oil pump drive gear	FL
2047-A	1	*Oil pump drive gear washer	FN
4809-A	1	*Oil pump drive gear pin	FM
22155-A	1	*Oil pump idler shaft	FF
2058-A	1	*Oil pump pressure regulator screw	EQ
28-A	1	*Oil pump pressure regulator screw nut (3/16"-24)	EW
1660-A	1	*Oil pressure regulator nut	FE
1347-A	1	*Oil pressure regulator spring	FB
22129-A	1	*Oil pressure regulator piston	FK
1385-A	1	*Oil pressure regulator fitting	EU
22119-A	1	Oil pump attaching gasket	FA

Give Engine Number with Each Parts Order

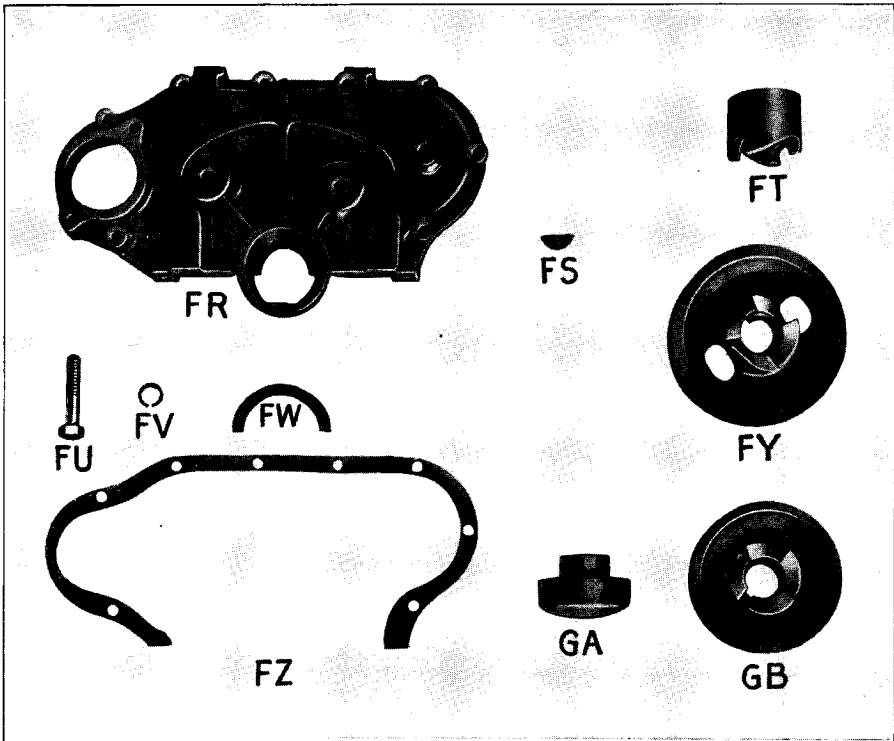


Illustration Reference FR to GB Inclusive

OIL PUMP ASSEMBLY (Group 29—Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
1864-A	3	Oil pump attaching screw (3/8"-16x1")	ES
342-A	3	Oil pump attaching lock washer (3/8")	ET
14972-A	1	Oil pump felt washer	

MANIFOLD (Group 30)

Note: The valve ports in the cylinder block for exhaust valves No. 1 cylinder and No. 6 cylinder in QXC 3 3/8" bore and QXD 3 1/16" bore engines have 1/32" wider spacing from center than those for QXA 3 1/8" bore and QXB 3 1/4" bore. Therefore, certain manifolds can be used only on certain models as indicated. Manifold gaskets must be ordered accordingly.

■ 46741-B	1	Manifold gasket—For QXA and QXB manifolds	CL
■ 46798-B	1	Manifold gasket—will replace 46746-B and can be used for all QXC and QXD manifolds and manifold 46753-D—replaces 46754-B	CL
305-A	2	Manifold pipe plugs—1/8" standard pipe	
14895-A	6	Manifold to cylinder stud (7/16"x1 3/4")	
13123-A	6	Manifold to cylinder stud nut (7/16"-20)—Replaces 11795-A	
1388-A	6	Manifold to cylinder stud washer	
4640-A	1	Manifold set screw (3/8"-16x 3/4")	
47705-D	1	Manifold (for 1 1/4" carburetor) center outlet—up draft—QXA and QXB only—replaces 46737-D	CK*
49785-D	1	Manifold (for 1 1/4" carburetor) center outlet—up draft—QXA and QXB only—replaces 46739-D	CK
46740-D	1	Manifold (for 1 1/4" carburetor) center outlet—down draft—QXA and QXB only	CF
46747-D	1	Manifold (for 1 1/4" carburetor) center outlet—up draft—QXC and QXD only	CK
46753-D	1	Manifold (for 1 1/4" carburetor) rear outlet—up draft—QXB or QXC	CK*
46755-D	1	Manifold (for 1 1/4" carburetor) center outlet—up draft—QXC and QXD only	CK*
46766-D	1	Manifold (for 1 1/4" carburetor) center outlet—up draft—QXC and QXD only	CK*
■ 49057-A	1	Exhaust companion flange gasket—flat type	

STARTER ATTACHING PARTS (Group 31)

22064-A	1	Starter adapter—1 1/8" thick—for #5 housing	CU
22066-A	1	Starter adapter—for #4 housing	
2210-A	2	Starter adapter dowel	CWA
4303-A	3	Starter attaching stud (3/8"x3")	CV
752-A	3	Starter attaching nut (3/8"-24)	CZ
342-A	3	Starter attaching lock washer (3/8")	CW
2055-B	1	Starter hole cover	DB
8938-A	3	Starter hole cover screw (3/8"-16x1 5/8")	DE
342-A	3	Starter hole cover lock washer (3/8")	DF

GENERATOR GEAR AND OPENING COVER (Group 32)

40266-B	1	Generator gear (used when no combine governor is used) 14 teeth	
22266-B	1	Generator gear (used with combine governor) 14 teeth	
■ 22271-A	1	Generator gasket	
352-A	2	Generator attaching screw (1/2"-20x1 1/4")	
312-A	2	Generator attaching lock washer	
22270-A	1	Generator opening cover	

IGNITION CABLE BRACKET (Group 33)

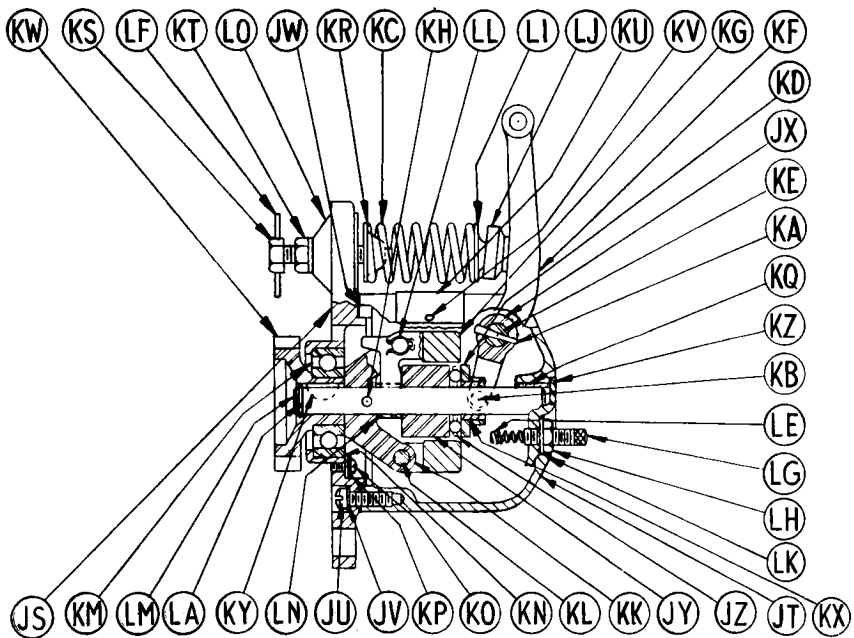
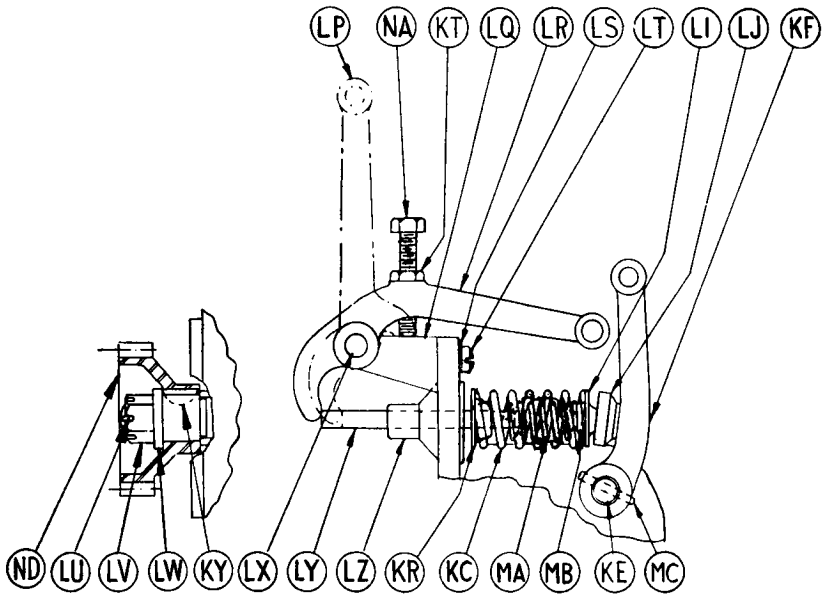
40110-A	2	Cable bracket	CH
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WATER OUTLET PIPES (Group 34)

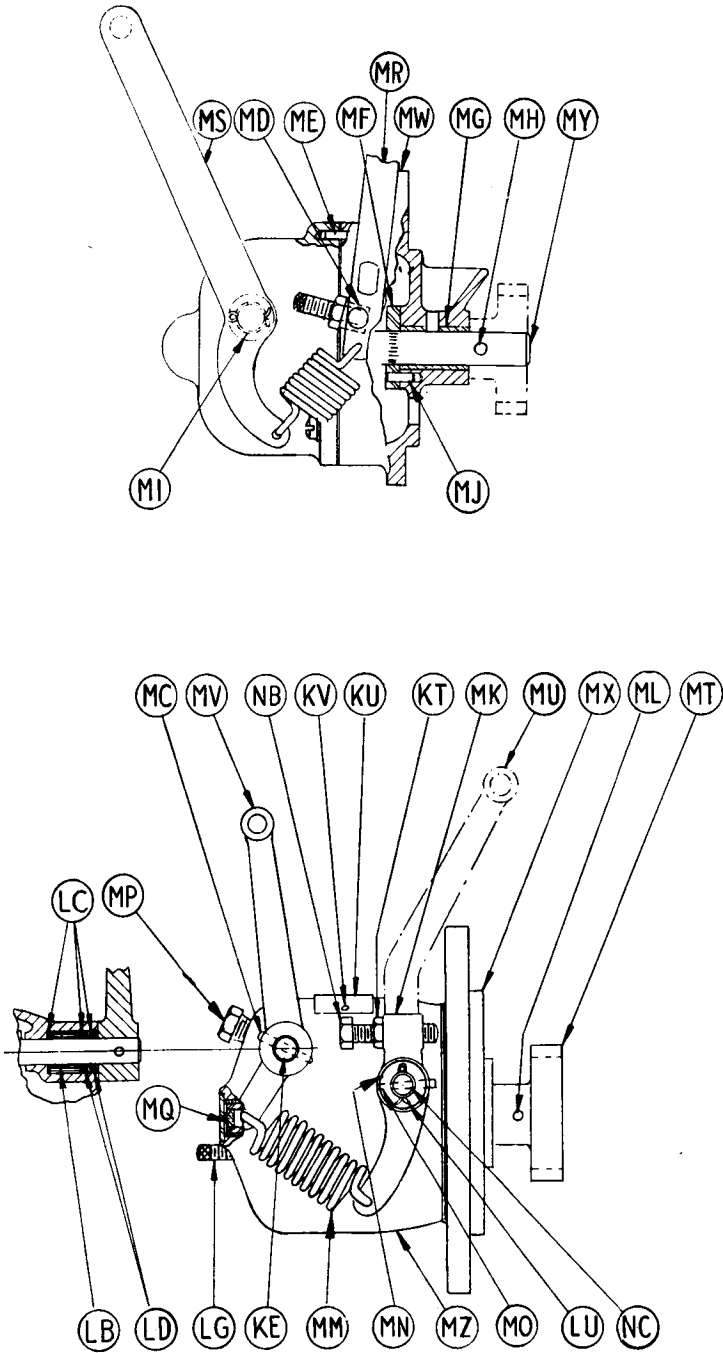
49027-A	1	Water outlet pipe—Special—5 31/32" high—40 degree angle	
46851-B	1	Water outlet pipe—6 19/32" high—33 degree angle	IK

Note: Parts marked * in reference column are not exactly like illustrations.

Give Engine Number with Each Parts Order



Sectional View of Handy Governor



Handy Governor Variations

WATER OUTLET PIPES (Group 34—Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46852-B	1	Water outlet pipe—3 3/4" high—43 degree angle.....	IK
46664-B	1	Water outlet pipe.....	
46671-B	1	Water outlet pipe—horizontal outlet.....	
46666-A	1	Water outlet pipe—has thermostat provision.....	
■ 46665-A	1	Water outlet pipe gasket.....	
315-A	1	Water outlet pipe attaching screw (3/8"-16x7/8").....	
2083-A	1	Water outlet pipe attaching screw (3/8"-16x2 1/4").....	
14997-A	1	Water outlet pipe attaching screw (3/8"-16x3").....	
342-A	2	Water outlet pipe screw lock washer (3/8").....	

WATER PUMP INLET PIPES (Group 35)

22684-B	1	Water inlet pipe—special—for 46196-CS pump.....	IE
46858-B	1	Water inlet pipe—bypass provision for 46196-CS pump.....	
■ 86-A	1	Water inlet pipe gasket.....	
1381-A	2	Water inlet pipe attaching stud.....	
28-A	2	Water inlet pipe attaching stud nut (5/16"-24).....	
615-A	2	Water inlet pipe attaching lockwasher.....	

FAN ASSEMBLIES (Group 36)

46283-CS	1	Fan assembly—6 blade—16" diameter—standard crankshaft.....
46294-CS	1	Fan assembly—6 blade—16" diameter—short crankshaft.....
46877-CS	1	Fan assembly—4 blade—18" diameter—short crankshaft.....
14099-A	2	Fan attaching screw—(3/8"-16x1 7/8").....
14058-A	1	Fan attaching screw—(3/8"-16x1 1/8").....
342-A	3	Fan attaching screw lockwasher (3/8").....

FRONT SUPPORTS (Group 37)

40700-B	1	Front support—bore 3 3/8" diameter for trunnion.....	CT
46231-B	1	Front support—bore 3" diameter—for 46232-A.....	CT
46232-B	1	Front support plate—used with 46231-B.....	
49109-D	1	Front support—power unit type.....	

FUEL PUMP (Group 38)

40559-CS	1	Fuel pump assembly—AC.....	EV
■ 22564-A	1	Fuel pump gasket.....	FC
303-A	2	Fuel pump attaching screw (5/16"-18x3/4").....	FJ
615-A	2	Fuel pump attaching screw lock washer (5/16").....	FH

GOVERNOR HEAD—HANDY (Group 39)

(Gear cover mounting and engine speed 1000 R.P.M. to 1500 R.P.M.)

23380-CS	1	Governor head assembly—includes parts marked *.....	
43442-AS	1	*Governor body and operating lever assembly—includes parts marked **.....	
32754-BS	1	**Governor body assembly—includes parts marked †.....	
28405-B	1	†Governor body.....	JT
62812-A	1	†Governor number plate.....	
14420-A	2	†Governor number plate drive screw.....	
40447-A	1	†Governor shaft bushing.....	KQ
14578-A	1	†Governor expansion plug.....	KZ
43443-AS	1	**Governor operating lever and shaft assembly—includes parts marked ††.....	
43444-AS	1	††Governor operating lever and thrust button assembly — includes parts marked ‡.....	
40455-A	1	‡Governor operating lever.....	KF
40456-A	1	‡Governor operating lever thrust button.....	LJ
40453-A	1	††Governor operating shaft.....	KE
49418-A	1	††Governor operating shaft fork.....	JX
3287-A	1	**Governor operating fork taper pin.....	KA
58849-A	2	**Governor operating shaft packing.....	LD
58850-A	12	**Governor operating shaft roller bearing.....	LB
14581-A	3	**Governor operating shaft bearing retainer washer.....	LC
14579-A	1	**Governor operating lever taper pin.....	KA

Give Engine Number with Each Parts Order

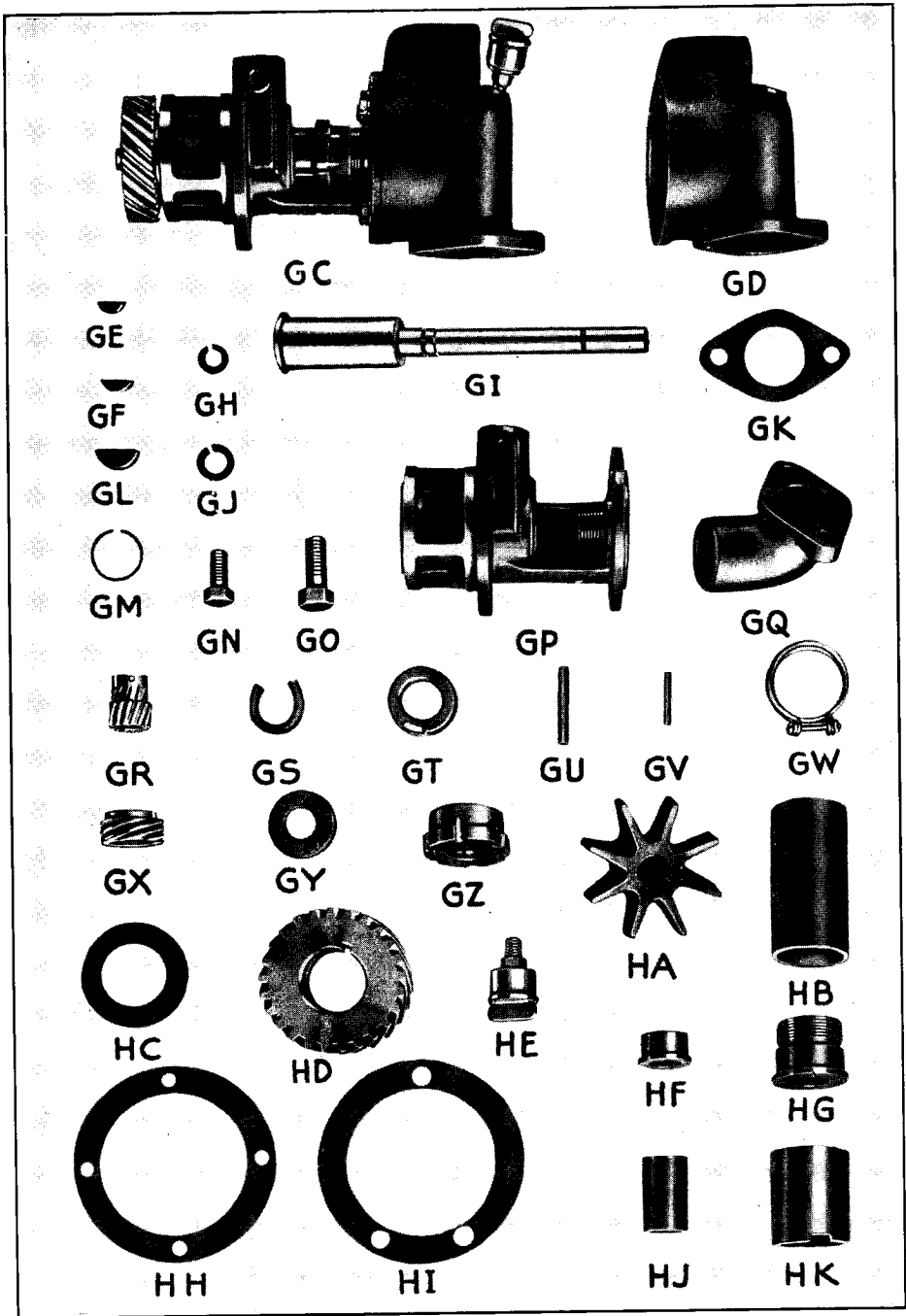


Illustration Reference GC to HK Inclusive

GOVERNOR HEAD—HANDY (Group 39 Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
58845-A	1	**Governor bumper spring	LE
45254-A	1	**Governor bumper spring screw	LG
4200-A	1	**Governor bumper spring screw lock nut	LH
3196-A	1	**Governor bumper spring screw gasket	LK
43445-AS	1	*Governor base and shaft assembly—includes parts marked ††	
40460-AS	1	††Governor shaft assembly—includes parts marked §	
40462-A	1	§Governor shaft	LM
40461-A	1	§Governor weight carrier	KK
14861-A	1	§Governor weight carrier pin	KH
40459-A	2	§Governor weight	KG
58854-A	2	§Governor weight pin	KL
3370-A	4	§Governor weight pin clip	LL
45779-B	1	††Governor base	JS
14585-A	1	††Governor shaft bearing	KM
14586-A	2	††Governor shaft bearing retaining washer	KN
14587-A	2	††Governor shaft bearing retaining screw	KO
14588-A	2	††Governor shaft bearing retaining lockwasher	KP
23861-A	1	*Governor spring — 1000 RPM to 1500 RPM	KC
40457-A	1	*Governor spring pilot (front)	LI
40458-A	1	*Governor spring pilot (rear)	KR
43446-AS	1	*Governor spring adjusting screw assembly — includes parts marked †	
28911-A	1	†Governor spring adjusting screw handle	
14682-A	1	†Governor spring adjusting screw	KS
14132-A	1	*Governor spring adjusting screw lock nut	KT
40450-A	1	*Governor fork riser	JY
58843-A	1	*Governor fork riser thrust bearing	JZ
32755-AS	1	*Governor operating fork base assembly — includes parts marked x	
58847-A	1	xGovernor operating fork base	KD
40452-A	1	xGovernor operating fork base bushing	KX
40463-A	1	*Governor drive gear	KW
4199-A	1	*Governor drive gear key	KY
29877-A	1	*Governor body plug	
13126-A	4	*Governor base screw	JU
1219-A	4	*Governor base screw lockwasher	JV
58839-A	1	*Governor body gasket	JW
3247-A	1	*Governor shaft snap ring	LA
10471-A	1	Governor attaching gasket	
1872-A	2	Governor attaching screw	
335-A	2	Governor attaching screw lockwasher	

GOVERNOR HEAD—HANDY (Group 40)

(1600 R.P.M. and up)

40442-CS	1	Governor assembly (includes same parts as 23380-CS except spring) ..	
40444-A	1	Governor operating spring—range over 1600 R.P.M.	KC

GOVERNOR HEAD—HANDY (Group 41)

(800 R. P. M.)

45228-CS	1	Governor assembly (includes same parts as 23380-CS except as follows:	
45235-A	1	Governor operating lever (replaces 40455-A)	KF
45403-A	1	Governor operating spring—800 R.P.M. operation	KC

GOVERNOR HEAD—HANDY (Group 42)

(With manual operated speed control)

23390-CS	1	Governor assembly (includes same parts as 23380-CS with the following additions and exceptions)	
45252-A	1	*Governor base (replaces 40445-B)	JB
28858-A	1	*Governor operating spring rod	LY
28859-A	1	*Governor operating spring rod pilot	LZ

Give Engine Number with Each Parts Order

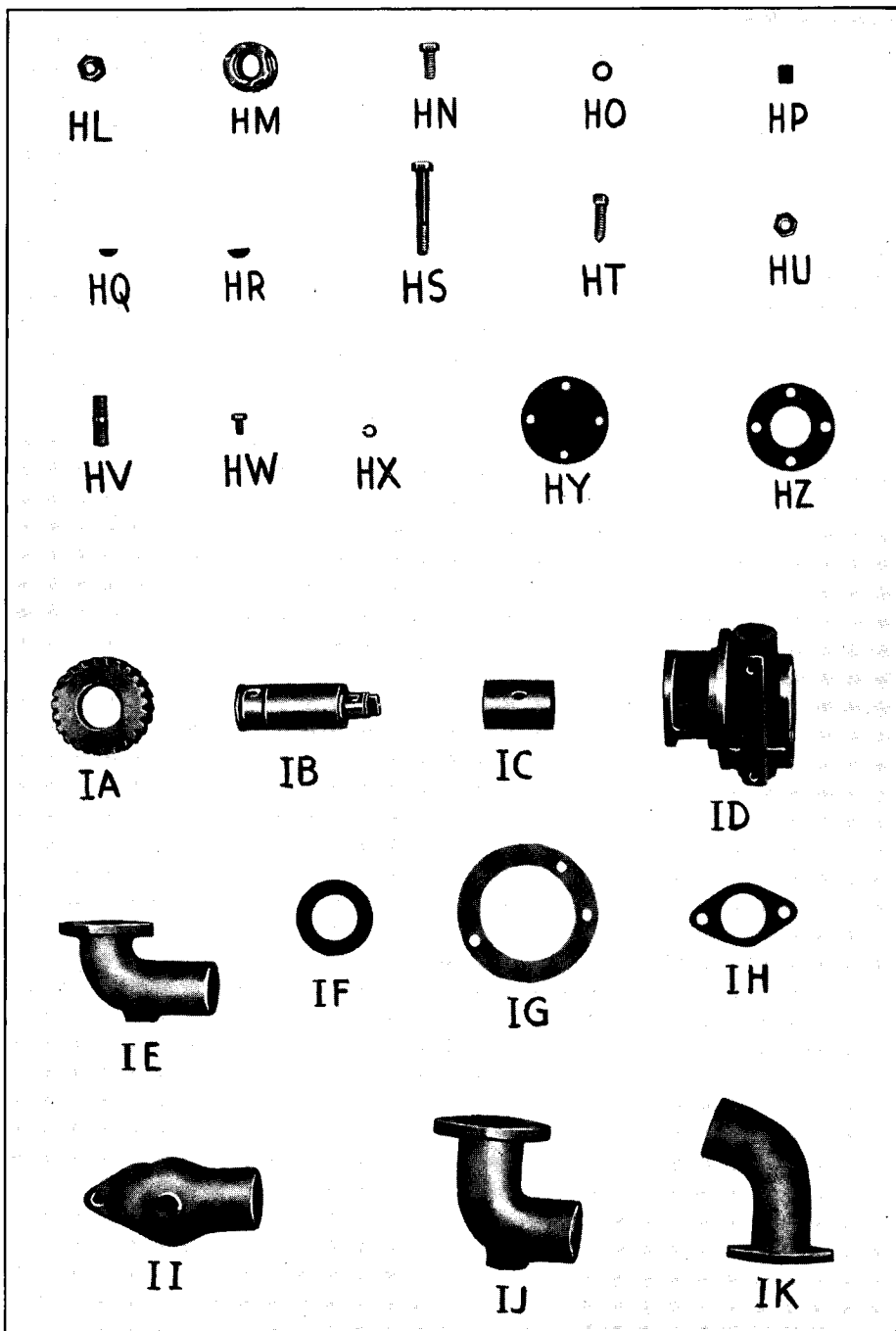


Illustration Reference HL to IK Inclusive

GOVERNOR HEAD—HANDY (Group 42—Continued)

Part No.	No. Req'd.	PART NAME	Illustration Reference
28865-A	1	*Governor manual control lever bracket.....	LQ
4990-A	2	*Governor manual control lever bracket screw.....	LT
4817-A	2	*Governor manual control lever bracket lock washer.....	LS
28864-A	1	*Governor manual control lever shaft.....	LX
28863-A	1	*Governor manual control lever.....	LR
14579-A	1	*Governor manual control lever taper pin.....	KA

GOVERNOR VALVE BOX (Group 43)S.A.E. 1 $\frac{1}{4}$ " size—parallel flanges—offset 1 $\frac{1}{16}$ "

49403-AS	1	Valve box assembly—includes parts marked *.....	
49404-B	1	*Valve box—actual diameter of hole 1 $\frac{1}{16}$ ".....	
5837-A	1	*Butterfly valve.....	
5838-A	1	*Butterfly valve shaft.....	
5839-A	2	*Butterfly valve to lever screw (No. 8-32x1 $\frac{1}{4}$ ").....	
4116-A	2	*Butterfly valve screw lock washer.....	
5841-A	1	*Butterfly valve shaft lever.....	
5842-A	1	*Butterfly valve shaft lever pin.....	
5853-A	1	*Bumper spring.....	
5854-A	1	*Bumper spring screw.....	
5855-A	1	*Bumper spring screw nut.....	
87-A	1	Valve box gasket.....	GK
1151-A	2	Valve box attaching stud (3 $\frac{3}{8}$ " x 1 $\frac{1}{16}$ ").....	
752-A	2	Valve box attaching stud nut (3 $\frac{3}{8}$ "-24).....	
342-A	2	Valve box attaching stud lock washer (3 $\frac{3}{8}$ ").....	

GOVERNOR CONNECTING ROD (Group 44)

(Governor lever to valve box lever)

49406-B	1	Governor connecting rod—length 16 $\frac{1}{16}$ " used with 23380-CS; 23390-CS or 40442-CS governor.....	
49413-B	1	Governor connecting rod—length 14 $\frac{7}{16}$ " used with 45228-CS.....	
10-A	1	Governor connecting rod cotter — 1 $\frac{1}{16}$ " x 1 $\frac{1}{2}$ ".....	
14411-A	1	Governor connecting rod ball joint.....	
1177-A	2	Governor connecting rod ball joint nut (1 $\frac{1}{4}$ "-28).....	
628-A	1	Governor connecting rod ball joint lock washer (1 $\frac{1}{4}$ ").....	

GOVERNOR LUBRICATING PARTS (Group 44 A)

46911-AS	1	Governor lubricating tube assembly—includes nuts*.....	
1532-A	2	*Governor lubricating tube nuts.....	
14819-A	1	Governor lubricating tube nipple.....	
14670-A	1	Governor lubricating tube tee.....	
1533-A	1	Governor lubricating tube union.....	
3375-A	1	Governor lubricating tube metering elbow.....	
14171-A	2	Governor lubricating tube clamp.....	

CARBURETOR ATTACHING PARTS (Group 45)

87-A	1	Carburetor gasket—S.A.E. 1 $\frac{1}{4}$ ".....	GK
14998-A	1	Carburetor attaching stud (3 $\frac{3}{8}$ " x 1 $\frac{1}{4}$ ").....	
14222-A	1	Carburetor attaching stud (3 $\frac{3}{8}$ " x 1 $\frac{1}{16}$ ").....	
752-A	1	Carburetor attaching stud nut (3 $\frac{3}{8}$ "-24).....	
5855-A	1	Carburetor attaching stud nut (3 $\frac{3}{8}$ "-24 thin).....	
342-A	1	Carburetor attaching stud nut lock washer (3 $\frac{3}{8}$ " standard).....	
4461-A	1	Carburetor attaching stud nut lock washer (3 $\frac{3}{8}$ " shakeproof).....	

MAGNETO ATTACHING PARTS (Group 46)

22045-B	1	Magneto bracket.....	
14856-A	2	Magneto bracket to cylinder screw (3 $\frac{3}{8}$ "-13x1").....	
312-A	2	Magneto bracket screw lock washer (1 $\frac{1}{2}$ ").....	
315-A	2	Magneto to bracket screw (3 $\frac{3}{8}$ "-16x1 $\frac{1}{8}$ ").....	
342-A	2	Magneto to bracket lock washer (3 $\frac{3}{8}$ ").....	
2165-A	1	Magneto coupling key (No. 8 Woodruff).....	

Give Engine Number with Each Parts Order

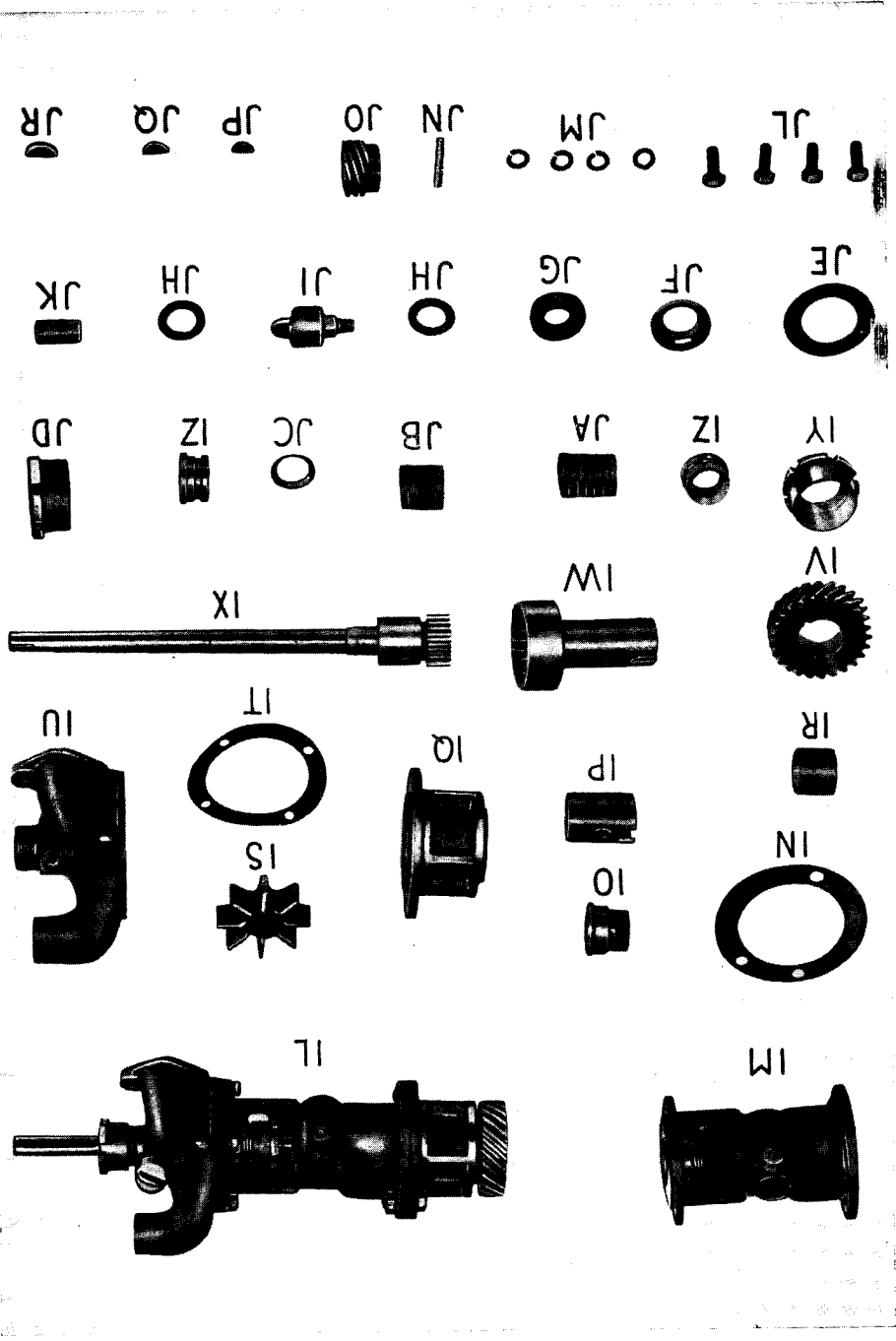


Illustration Reference IM to JR Inclusive

STARTING CRANK (Group 47)

Part No.	No. Req'd.	PART NAME	Illustration Reference
45088-B	1	Starting crank.....	
4448-A	1	Starting crank pin (3/16" diameter x 1 13/16" long).....	
22282-A	1	Starting crank spring.....	
4268-A	1	Starting crank spring washer.....	
1710-A	1	Starting crank spring washer cotter (1/8" x 1").....	
4460-A	1	Starting crank collar.....	

OIL FILTER (Group 48)

(For engines and open units with standard oil pan)

28751-BS	1	Oil filtrator assembly—DeLuxe—includes cartridge *	
28794-B	1	*Oil filter cartridge.....	
46947-B	1	Oil filtrator support bracket—for cylinder head mounting.....	
303-A	4	Oil filtrator to bracket screw (3/16"-18 x 3/4").....	
4173-A	4	Oil filtrator to bracket screw nut (3/16"-18).....	
615-A	4	Oil filtrator to bracket screw lock washer 5/16".....	
49181-AS	1	Oil filtrator inlet tube assembly.....	
11024-A	2	Oil filtrator inlet tube nut.....	
11027-A	2	Oil filtrator inlet tube union.....	
49182-BS	1	Oil filtrator outlet tube assembly.....	
11024-A	2	Oil filtrator outlet tube nut.....	
11026-A	2	Oil filtrator outlet tube elbow.....	
4667-A	1	Pipe plug—special—for oil pan.....	

THERMOSTAT (Group 49)

(In water outlet hose.)

3483-A	1	Thermostat—Fulton Sylphon—for 2" I.D. hose.....	
5046-A	2	Hose clamps.....	

THERMOSTAT AND BYPASS (Group 50)

77713-A	1	*Thermostat—Fulton.....	
■ 46665-A	1	*Water outlet pipe gasket.....	
4877-A	1	*Water outlet pipe screw (3/8"-16 x 2 1/2").....	
46976-C	1	*Thermostat bypass tube.....	
■ 14458-A	2	*Thermostat bypass tube hose.....	
14188-A	4	*Thermostat bypass tube hose clamp.....	
315-A	1	Water outlet pipe screw (3/8"-16 x 7/8").....	
342-A	2	Water outlet pipe screw lock washer.....	
		With above parts marked * use the following for standard power unit—determined by radiator core being 17 1/4" high.	
46856-C	1	Water outlet pipe.....	
46857-B	1	Water inlet pipe.....	
49025-A	1	Water inlet pipe tube—1 3/4" O.D. x 7 3/4" long.....	
		With above parts marked * use the following for large type power unit—determined by radiator core being 20" high.	
46859-C	1	Water outlet pipe.....	
49354-A	1	Water outlet pipe tube—2" O.D. x 6" long.....	
46858-B	1	Water inlet pipe.....	
49355-A	1	Water inlet pipe tube—2" O.D. x 9" long.....	

MISCELLANEOUS ACCESSORIES (Group 51)

(Commonly used on Standard Power Unit)

46550-A	1	Air cleaner—Air Maze type.....	
13851-AS	1	Oil pressure gauge—mounts on panel of power unit.....	
29046-A	2	Gas tank and radiator cap—for power unit.....	
27619-AS	1	Gas tank strainer—for power unit.....	
14287-A	1	Radiator hose—top—for power unit—2" I.D. x 3" long.....	
5046-A	2	Radiator hose clamp—top—for 2 3/8" O. D. hose.....	
4452-A	1	Radiator hose—bottom—for power unit—1 3/4" I.D. x 2 1/2" long.....	
8159-A	2	Radiator hose clamp—bottom—for 2 1/8" O.D. hose.....	

Give Engine Number with Each Parts Order

MODEL "QXA-5"

(3 $\frac{1}{8}$ " x 4 $\frac{1}{8}$ ")

Supplement showing parts which are different from QXB-5. The QXA-5 Hercules has 3 $\frac{1}{8}$ " bore.

CYLINDER AND CRANKCASE (Group 52)

(Removable shell type bearings)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46507-DSY	1	Cylinder block assembly—3 $\frac{1}{8}$ " bore—includes valve guides, camshaft bearings, idler bearing, expansion plugs, pipe plugs and main bearing caps. Diameter of bore for bearings 2.645"-----	AE

(Note: For main bearings see Group 5)

CYLINDER HEAD (Group 53)

46204-D	1	Cylinder head—5.15 to 1 ratio $\frac{7}{8}$ "—18 plugs-----	AD
46382-AS	1	Cylinder head—5.5 to 1 ratio $\frac{7}{8}$ "—18 plugs—replaces 46205-D-----	AD
49204-C	1	Cylinder head gasket—replaces 46370-D-----	Z

PISTON (CAST IRON) 3 $\frac{1}{8}$ " DIAMETER (Group 54.)

(See note about oversizes under Group 9)

46118-C	6	Piston—3 $\frac{1}{8}$ " diameter—Cast Iron-----	AF
46129-A	6	Piston pin—length 2 $\frac{1}{32}$ "-----	AM
3804-A	18	Piston ring—compression (replaces 46015-A)-----	AG
3904-A	6	Piston ring—oil regulator (replaces 46131-A)-----	AH
46021-A	12	Piston bushing-----	

MODEL "QXC-5"

(3 $\frac{3}{8}$ " x 4 $\frac{1}{8}$ ")

Supplement showing parts which are different from QXB-5. The QXC-5 Hercules has 3 $\frac{3}{8}$ " bore.

CYLINDER AND CRANKCASE (Group 55)

(Removable shell type bearings.)

47346-AS	1	Cylinder block assembly—3 $\frac{3}{8}$ " bore—includes valve guides, camshaft bearings, idler bearing, expansion plugs, pipe plugs and main bearing caps. Diameter of bore for bearings 2.645"-----	AE
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Note: For main bearings see Group 5.

CAMSHAFT (Group 56)

46814-D	1	Camshaft—high lift-----	CE
47017-A	6	Intake valve—head diameter 1 $\frac{3}{64}$ "—replaces 46121-A and 47020-A-----	

CYLINDER HEAD (Group 57)

49208-AS	1	Cylinder head—5.85 to 1 ratio $\frac{7}{8}$ "—18 plugs—replaces 46206-D-----	AD
46211-D	1	Cylinder head—6.9 to 1 ratio $\frac{7}{8}$ "—18 plugs-----	AD
46213-D	1	Cylinder head—5.07 to 1 ratio $\frac{7}{8}$ "—18 plugs-----	AD
49206-D	1	Cylinder head—5.07 to 1 ratio—14 M. M. plugs—replaces 46227-D-----	AD
47217-C	1	Cylinder head gasket—replaces 46002-C, 46371-C and 49203-C-----	Z

Give Engine Number with Each Parts Order

PISTON (CAST IRON) 3³/₈" DIAMETER (Group 58)

(See note about oversizes under Group 9)

Part No.	No. Req.	PART NAME	Illustration Reference
■ 46133-C	6	Piston—3 ³ / ₈ " diameter—cast iron (supersedes 46115-C).....	AF
■ 46022-B	6	Piston pin—length 2 ²⁹ / ₃₂ ".....	AM
■ 3807-A	18	Piston ring—compression (replaces 40017-A).....	AG
■ 3907-A	6	Piston ring—oil regulator (replaces 40115-A).....	AH
■ 46132-A	12	Piston bushing.....	

PISTON (ALUMINUM) 3³/₈" DIAMETER (Group 59)

(See note about oversizes under Group 9.)

■ 46249-C	6	Piston—3 ³ / ₈ " diameter—aluminum (replaces 46116-C and 46255-C)...	AF
■ 46022-A	6	Piston pin—length 2 ²⁹ / ₃₂ ".....	AM
■ 47117-A	12	Piston ring—compression.....	
■ 49230-A	6	Piston ring—oil regulator—bottom groove—X-90—replaces 46251-A.....	
■ 47116-A	6	Piston ring—compression—top.....	

MODEL "QXD-5"(3⁷/₁₆" x 4¹/₈")

Supplement showing parts which are different from QXB-5. The QXD-5 Hercules has 3⁷/₁₆" bore.

CYLINDER AND CRANKCASE (Group 60)

(Removable shell type bearings)

47320-AS	1	Cylinder block assembly—3 ⁷ / ₁₆ " bore—Includes valve guides, main bearings, camshaft bearings, idler bearing, expansion plugs, pipe plugs and main bearing caps. Diameter of bore for bearings 2.645	AE
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Note: For main bearings see Group 5.

VALVES (Group 61)

47017-A	6	Intake valve—head diameter 1 ³⁹ / ₆₄ "—replaces 46121-A and 47020-A...
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CYLINDER HEAD (Group 62)

46381-AS	1	Cylinder head—6.5 to 1 ratio 7/8—18 plugs —replaces 46360-D and 46366-D.....
46365-D	1	Cylinder head—6.29 to 1 ratio 7/8—18 plugs.....
46378-D	1	Cylinder head—6.05 to 1 ratio 14mm plugs.....
■ 47218-C	1	Cylinder head gasket—replaces 46363-C, 45240-C and 49202-C.....

PISTON (ALUMINUM) 3⁷/₁₆" (Group 63)

(See note about oversize under Group 9)

46356-AS	6	Piston and pin assembly—includes parts marked *.....
■ 46257-C	6	*Piston—3 ⁷ / ₁₆ " diameter—aluminum.....
■ 46022-A	6	*Piston pin—length 2 ²⁹ / ₃₂ ".....
■ 47115-A	18	Piston rings—compression—replaces 3842-A.....
■ 3942-A	6	Piston ring—oil regulator.....

PISTON (ALUMINUM) 3⁷/₁₆" (Group 64)

(With special rings)

(See note about oversizes under Group 9)

■ 46345-C	6	Piston—3 ⁷ / ₁₆ " diameter—aluminum.....
■ 46022-A	6	Piston pin—length 2 ²⁹ / ₃₂ ".....
■ 46346-A	6	Piston ring—compression—top groove.....
■ 46347-A	12	Piston ring—compression—2nd and 3rd groove.....
■ 46355-A	6	Piston ring—oil regulating—bottom groove—replaces 46348-A.....

Give Engine Number with Each Parts Order

MODEL "QXLD-5"

(3⁷/₁₆" x 4¹/₄")

Supplement showing parts which are different from QXD-5. The QXLD-5 has the same bore 3⁷/₁₆" but has 4¹/₄" stroke.

CYLINDER HEAD (Group 65)

Part No.	No. Req'd.	PART NAME	Illustration Reference
49201-D	1	Cylinder Head 6.59 to 1 ratio 14 M/M plugs	
46380-D	1	Cylinder Head 6.59 to 1 ratio 14 M/M plugs	

PISTON (ALUMINUM) (Group 65-A)

47122-AS	6	Piston and Pin Assembly—Includes Parts Marked *	
49234-C	6	*Piston, 3 ⁷ / ₁₆ " Dia.	
46022-B	6	*Piston Pin	
46340-A	6	Piston Ring, Compression, Top Groove	
46341-A	6	Piston Ring, Compression, 2nd Groove	
49233-A	12	Piston Ring, Oil Control, 3rd and 4th Groove	

CRANKSHAFT (Group 65-B)

46839-E	1	Crankshaft—4 ¹ / ₄ Inch Stroke—Counterweighted	
49528-E	1	Crankshaft—4 ¹ / ₄ Inch Stroke—Marine	

COUNTER CLOCKWISE ROTATION MODELS

Supplement showing parts which are different from standard models. The models QXB5MC; QXC5MC, etc. rotate counter clockwise looking at gear compartment end of engine.

TIMING GEARS AND ACCESSORY DRIVE (Group 66)

(Parts common to all counter clockwise models)

46816-D	1	Camshaft—high lift—for C.C.W. engine.....	
46050-B	1	Camshaft gear—counter clockwise engine.....	
46040-B	1	Crankshaft gear—counter clockwise engine.....	
46141-B	1	Idler gear—counter clockwise engine.....	
46317-CS	1	Oil pump assembly—includes#	
46159-A	1	#Oil pump cover.....	
45275-A	1	#Oil pump drive gear—for counter clockwise engine.....	
46076-B	1	Accessory drive assembly—distributor at 10 degree angle..... (Consists of 46075-B sleeve and parts marked *)	
46075-B	1	Accessory drive sleeve.....	ID
46078-B	1	Accessory drive assembly—distributor at 5 degree angle..... (Consists of 46073-B sleeve and parts marked *)	
46073-B	1	Accessory drive sleeve.....	ID
46077-B	1	*Accessory drive gear—counter clockwise engine.....	IA
4413-A	1	*Accessory drive gear key (No. 61 Woodruff).....	HR
27072-A	1	*Accessory drive shaft.....	IB
27257-A	1	*Accessory drive bushing.....	IC
40068-A	1	*Accessory drive thrust plunger.....	
4024-A	1	*Accessory drive thrust washer.....	
27073-A	1	*Accessory drive distributor driving gear.....	
1179-A	1	*Accessory drive distributor driving gear key.....	
300-A	1	*Accessory drive distributor clamp nut.....	
8051-A	1	*Accessory drive distributor clamp screw.....	
27076-A	1	*Accessory drive cover plate.....	
1779-A	4	*Accessory drive cover plate screw (1/4"-20x1/2").....	
628-A	4	*Accessory drive cover plate lock washer (1/4").....	
85-A	1	*Accessory drive cover plate gasket.....	
27335-A	1	Distributor driven gear.....	

Give Engine Number with Each Parts Order

PISTON (ALUMINUM) 3¼" DIAMETER (Group 67)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46119-C	6	Piston—3¼" diameter aluminum—for counter clockwise engine (like 46017-C except marking).....	
46248-A	6	Piston ring—compression—top groove.....	
46247-A	12	Piston ring—compression—2nd and 3rd grooves.....	
46127-A	6	Piston ring—oil regulating—bottom groove.....	
46128-A	6	Piston pin—length 2 ²⁹ / ₃₂ ".....	

PISTON (ALUMINUM) 3³/₈" DIAMETER (Group 68)

46255-C	6	Piston—3 ³ / ₈ " diameter—aluminum—for counter clockwise engine (like 46254 except marking—replaces 46250-C).....	
47116-A	6	Piston ring—compression—top groove—replaces 46245-A.....	
47117-A	12	Piston ring—compression—2nd and 3rd groove—replaces 46246-A.....	
49230-A	6	Piston ring—oil regulating—bottom groove—replaces 46251-A.....	
46022-A	6	Piston pin—length 2 ²⁹ / ₃₂ ".....	

PISTON (ALUMINUM) 3⁷/₁₆" DIAMETER (Group 69)

46344-C	6	Piston—3 ⁷ / ₁₆ " diameter—aluminum—for counter clockwise engine (like 46345 except marking).....	
46022-A	6	Piston pin—length 2 ²⁹ / ₃₂ ".....	
46346-A	6	Piston ring—compression—top groove.....	
46347-A	12	Piston ring—compression—2nd and 3rd groove.....	
46355-A	6	Piston ring—oil regulating—bottom groove.....	

WRENCHES AND TOOLS (Group 70)

Wrenches for servicing the "QX" series engines may be obtained from the Hercules Motors Corporation. The wrenches listed below are all that are needed to make the majority of repairs and adjustments.

3172-A	1	Socket— ⁷ / ₈ ".....	
3109-A	1	Socket— ³ / ₄ ".....	
3171-A	1	Socket— ⁵ / ₈ ".....	
3170-A	1	Socket— ⁹ / ₁₆ ".....	
11462-A	1	Socket— ¹ / ₂ ".....	
2245-B	1	Speeder handle.....	
2252-A	1	Speed wrench universal.....	
4976-A	1	Plain T handle.....	
4978-A	1	Open end wrench— ¹ / ₈ " x ⁵ / ₈ ".....	
3777-A	2	Open end tappet wrench— ¹ / ₈ " x ¹ / ₂ ".....	
14897-A	1	Open end tappet wrench— ³ / ₈ ".....	
2255-A	1	Oil adjusting wrench— ¹ / ₂ " socket.....	
2268-A	1	Oil adjusting crowfoot wrench.....	
3296-A	1	Water pump spanner wrench.....	
200082-A	1	Connecting rod expander.....	
13173-A	1	Pliers.....	
13174-A	1	Hammer.....	
13175-A	1	Screw driver.....	

Give Engine Number with Each Parts Order

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SPECIAL PARTS

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(Parts for Five Gear Engine listed in Section I Index)

SECTION II THREE GEAR ENGINE

(Supplementary to Section I)

GASKETS (Group 71)

Part No.	No. Req'd.	PART NAME	Illustration Reference
■ 46241-AS	1	Gasket assembly—primary (includes parts marked *).....	
46085-B	2	*Oil pan gasket—can be cut off and used in place of 46083-B.....	
46083-B	2	Oil pan gasket—used with flexible front seal.....	
46124-B	1	*Gear cover gasket.....	
46065-B	1	*Bellhousing gasket.....	
46008-B	2	*Valve cover gasket.....	
46798-B	1	*Manifold gasket—QXC and QXD—replaces 46754-B.....	
46741-B	1	*Manifold gasket—QXA and QXB.....	
46665-A	1	*Water outlet gasket.....	
87-A	1	*Carburetor gasket.....	
3427-A	1	*Gear cover cork (replaces 4680-A).....	
3426-A	1	*Oil pan cork (replaces 4718-A).....	
■ 46242-AS	1	Gasket assembly—secondary (includes parts marked **).....	
46808-A	1	**Water pump cover gasket.....	
46170-A	1	**Water pump attaching gasket.....	
46662-A	1	**Water pump discharge pipe gasket.....	
7218-A	1	**Water inlet to pump gasket.....	
22119-A	1	**Oil pump attaching gasket.....	
2030-A	1	**Exhaust companion flange gasket—ring type.....	
■ 47216-C	1	Cylinder head gasket—QXA-3 1/8" and QXB-3 1/4" —replaces 46004-C, 46370-C and 49204-C.....	
■ 47217-C	1	Cylinder head gasket—QXC-3 3/8" bore —replaces 46002-C, 46371-C and 49203-C.....	
■ 47218-C	1	Cylinder head gasket—QXD-3 7/16" bore—replaces 46240-C and 49202-C.....	

CYLINDER AND CRANKCASE — "QXB-3" (Group 72) (Removable shell type bearings.)

47457-AS	1	Cylinder block assembly—3 1/4" bore (Includes valve guides, camshaft bearings, expansion plugs, pipe plugs and main bearing caps) Diameter of bore for bearings 2.645"—replaces 46302-ESY.....	AE
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MAIN BEARINGS (Removable shell type) (See Group 5 and 5-A in Section I)

CYLINDER AND CRANKCASE ACCESSORIES (Group 73)

(Same as Group 6 in Section I with following exceptions.)

14126-A	1	Water opening expansion plug—1 3/4" diamter.....	Y
4618-A	1	Screw—for boss below water inlet—3/8"-16x 1/2"..... Omit water opening cover 46026-A and attaching parts not used on "QX3".	

CONNECTING ROD

(See Group 7 in Section I)

SHIM ASSEMBLY (FOR SHELL TYPE BEARINGS)

(See Group 8 in Section I)

PISTON (CAST IRON) 3 1/4" DIAMETER

(See Group 9 in Section I)

PISTON (ALUMINUM) 3 1/4" DIAMETER

(See Group 10 in Section I)

Give Engine Number with Each Parts Order

CRANKSHAFT

(See Group 11 in Section I)

VALVES

(See Group 12 in Section I)

VALVE TAPPETS

(See Group 13 in Section I)

CYLINDER HEAD

(See Group 14 in Section I)

GEAR COVER (Group 74)

(With Cork seal)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46701-D	1	Gear cover—considered standard.....	CO
46702-D	1	Gear cover—no trunnion provision.....	CP
■ 46124-B	1	Gear cover gasket.....	CS
4266-A	8	Gear cover screw 3/8"-16x1 3/4".....	CN
342-A	8	Gear cover lock washer (3/8").....	CO
■ 3427-A	1	Gear cover seal (replaces 4680-A).....	FW
14592-AS	1	Gear cover thrust screw assembly (water pump).....	CC
11284-AS	1	Gear cover thrust screw assembly (camshaft).....	CB
14591-A	2	Gear cover thrust screw fiber plug.....	
2048-A	2	Gear cover thrust screw nut.....	CD

GEAR COVER (Group 75)

(With Flexible seal)

46707-D	1	Gear cover—Standard.....	
46708-D	1	Gear cover—No trunnion.....	
■ 46124-B	1	Gear cover gasket.....	
■ 11087-AS	1	Gear cover oil seal assembly.....	

Note: Attaching screws and thrust screws same as in Group 74

BREATHER (Group 76)

40038-AS	1	Breather cap assembly.....	GA
28789-A	1	Breather pipe.....	FX
78-A	1	Breather pipe attaching screw (5/16"-18x 1/8").....	
615-A	1	Breather pipe attaching screw lockwasher (5/16").....	

CAMSHAFT

(See Group 17 in Section I)

FAN DRIVING PARTS

(See Group 20 in Section I)

FLYWHEEL

(See Group 21 in Section I)

BELLHOUSING

(See Group 22 in Section I)

46065-B	1	Bellhousing gasket.....	
14856-A	1	Bellhousing attaching screw.....	
4123-A	7	Bellhousing attaching screw.....	
2100-A	3	Bellhousing attaching screw.....	
312-A	11	Bellhousing attaching lock washer.....	
3543-A	1	Bellhousing oil seal.....	

Give Engine Number with Each Parts Order

WATER PUMP (Group 77)

(For engines with distributor mounted 28 1/2°—Superseded by 47169-CS)

Part No.	No. Req'd.	PART NAME	Illustration Reference
49259-CS	1	Water pump assembly (Includes parts marked *)	Replaces 46197-CS
49265-AS	1	*Water pump assembly (Includes parts marked #)	
49260-C	1	#Water pump body—Replaces 46198-C	
46199-C	1	*Water pump cover	DS DW
49261-A	1	#Water pump bushing—long	
49264-A	1	#Water pump bushing—short	
14232-A	1	#Water pump expansion plug 1/2"	
■ 46808-A	1	*Water pump cover gasket	DV
4318-A	4	*Water pump cover screw (3/16"-18x5/8")	DT
3285-A	4	*Water pump cover screw washer—copper	
46200-B	1	*Water pump shaft	DR
46201-A	1	*Water pump gear (23 teeth)	DP
1279-A	1	*Water pump gear key (No. 6 Woodruff)	DO
967-A	1	*Water pump gear snap ring	DN
46194-B	1	*Water pump impeller	DY
26174-A	1	*Water pump impeller pin	EF
■ 46168-AS	1	**Water pump seal assembly (includes **)	
76192-A	1	**Water pump carbon washer	EA
40687-A	1	**Water pump seal—rubber	EC
40686-A	1	**Water pump seal clamp ring	EE
40685-A	1	**Water pump seal spring guide	EB
76193-A	1	**Water pump seal spring	ED
46807-A	1	*Water pump seal snap ring	DZ
46806-A	1	*Water pump thrust washer	DQ
60-A	1	*Water pump body pipe plug (1/4" slotted)	
46339-A	1	*Distributor driven gear	GR
■ 46170-A	1	Water pump attaching gasket	HI
5497-A	2	Water pump attaching screw (3/8"-16x1 1/4")	GO
14994-A	1	Water pump attaching stud (3/8"x2 1/4")	
752-A	1	Water pump attaching nut (3/8"-24)	
342-A	3	Water pump attaching lock washer (3/8")	GJ
46661-B	1	Water pump discharge pipe	
■ 46662-A	1	Water pump discharge pipe gasket	
4266-A	1	Water pump discharge pipe screw (3/8"-16x1 3/4")	
4728-A	1	Water pump discharge pipe screw (3/8"-16x1 3/8")	
342-A	2	Water pump discharge pipe lock washer (3/8")	
■ 22058-A	1	Water pump discharge pipe hose	
4275-A	2	Water pump discharge pipe hose clamp	

WATER PUMP (Group 77-A)

(For engines with distributor mounted 18°)

47160-CS	1	Water pump assembly—includes same parts as 49259-CS except as follows:	
47162-AS	1	*Water pump body assembly—includes parts marked †	
		Replaces 49265-AS.	
47161-C	1	†Water pump body—replaces 49260-C	DS

WATER PUMP (Group 77-B)

(For engines with distributor mounted 28 1/2°—with bronze bushings in body) Supersedes 49259-CS

47169-CS	1	Water Pump Assembly—Includes Parts Marked *	
47187-C	1	*Water Pump Cover	
4318-A	4	*Water Pump Cover Attaching Screw	
3285-A	4	*Water Pump Cover Attaching Screw Washer	
41178-B	1	*Water Pump Cover Attaching Gasket	
47185-CS	1	*Water Pump Body and Bushing Assembly—Includes Parts Marked #	
47170-C	1	#Water Pump Body—Not Serviced Separately	
49261-A	1	X#Water Pump Body Bushing—Long	

Give Engine Number with Each Parts Order

WATER PUMP (Group 77-B—Continued)

Part No.	No. Req'd	PART NAME	Illustration Reference
49264-A	1	X#Water Pump Body Bushing—Short	
200072-A	1	X#Water Pump Body Oil Seal	
14232-A	1	#Water Pump Body Plug	
125175-AS	1	X#Water Pump Seal Assembly	
46201-A	1	X*Water Pump Gear	
46806-A	1	X*Water Pump Gear Thrust Washer	
1279-A	1	X*Water Pump Gear Key	
967-A	1	X*Water Pump Gear Snap Ring	
47172-B	1	X*Water Pump Shaft	
47174-C	1	X*Water Pump Impeller	
200400-A	1	X*Water Pump Impeller Pin	
61-A	1	X*Water Pump Pipe Plug	
47189-AS	1	Water Pump Repair Kit—Includes Parts Marked X and Gear 46339-A	
46170-A	1	X Water Pump Attaching Gasket	
42-A	1	Water Pump Attaching Screw	
14994-A	2	Water Pump Attaching Stud	
752-A	2	Water Pump Attaching Stud Nut	
342-A	3	Water Pump Attaching Lockwasher	
Water Pump Discharge Pipe and parts as listed in Group 77			

WATER PUMP (Group 77-C)

(For engines with distributor mounted 18°)

47168-CS	1	Water Pump Assembly—Includes same parts as 47169-CS except as follows:	
47186-CS	1	*Water Pump Body and Bushing Assembly—Includes Part marked †.	
47171-C		†Water Pump Body	

DISTRIBUTOR ATTACHING BRACKET

(See Group 26 in Section I for bracket parts only. Use with the following gear.)

46339-A	1	Distributor driven gear. (Three gear engine only).....	GR
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OIL PAN

(See Groups 27 and 27-A in Section I)

OIL LEVEL GAUGE

46145-AS	1	Bayonet oil level gauge assembly.....	EH
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OIL PUMP ASSEMBLY

(See Group 29 in Section I)

MANIFOLD

(See Group 30 in Section I)

Also use following:

46027-A	1	Companion flange.....	
2030-A	1	Companion flange gasket—ring type.....	CI
4699-A	2	Companion flange screw—7/16"-14x1 1/4".....	

Give Engine Number with Each Parts Order

STARTER ATTACHING PARTS

(See Group 31 in Section I)

GENERATOR DRIVE AND ATTACHING PARTS (Group 78)

Part No.	No. Req'd.	PART NAME	Illustration Reference
46903-B	1	Generator drive pulley.....	
46902-B	1	Generator bracket.....	
14977-A	2	Generator to bracket screw ($\frac{5}{16}$ "-24x1 $\frac{1}{4}$ ").....	
309-A	2	Generator to bracket screw nut ($\frac{5}{16}$ "-24).....	
615-A	2	Generator to bracket screw lockwasher ($\frac{5}{16}$ ").....	
299-A	2	Generator to bracket screw cotter.....	
352-A	2	Generator bracket to engine screw ($\frac{1}{2}$ "-13x1 $\frac{1}{4}$ ").....	
312-A	2	Generator bracket to engine screw lock washer ($\frac{1}{2}$ ").....	
28501-A	1	Generator adjusting bracket.....	
14978-A	1	Generator adjusting bracket spacer.....	
78-A	1	Generator adjusting bracket screw ($\frac{5}{16}$ "-18x $\frac{7}{8}$ ").....	
8191-A	2	Generator adjusting bracket plain washer.....	
615-A	1	Generator adjusting bracket lock washer ($\frac{5}{16}$ ").....	

IGNITION CABLE BRACKET

(See Group 33 in Section I)

WATER OUTLET PIPES

(See Group 34 in Section I)

WATER PUMP INLET PIPES (Group 79)

40661-B	1	Water inlet pipe.....	1J
45752-B	1	Water inlet pipe.....	
■ 7218-A	1	Water inlet pipe to pump gasket.....	
1864-A	2	Water inlet pipe attaching screw ($\frac{3}{8}$ "-16x1").....	
342-A	2	Water inlet pipe attaching screw lockwasher ($\frac{3}{8}$ ").....	

FAN ASSEMBLIES

(See Group 36 in Section I)

FRONT SUPPORT (Group 80)

40700-B	1	Front trunnion support.....	CT
46230-C	1	Front support (used with 46701-D gear cover).....	CR
3164-A	3	Front support stud—($\frac{1}{2}$ "x1 $\frac{1}{16}$ "—for 46230-C).....	HV
626-A	3	Front support stud nut $\frac{1}{2}$ ".....	HL
4731-A	3	Front support stud nut lock washer ($\frac{1}{2}$ ").....	

Give Engine Number with Each Parts Order

MODEL "QXA-3"(3 $\frac{1}{8}$ " x 4 $\frac{1}{8}$ ")

Supplement showing parts which are different from QXB-3.
The "QXA-3" Hercules has 3 $\frac{1}{8}$ " bore.

CYLINDER AND CRANKCASE (Group 81)
(Removable shell type bearings)

Part No.	No. Req.	PART NAME	Illustration Reference
47460-AS	1	Cylinder block assembly—3 $\frac{1}{8}$ " bore—Includes valve guides, camshaft bearings, expansion plugs, pipe plugs and main bearings and caps. Diameter of bore for bearings 2.645" — replaces 46303-DSY	

Note: For main bearings see Group 5 and 5-A in Section 1.

CYLINDER HEAD (QXA)

(See Group 53 in Section I)

PISTON (CAST IRON) 3 $\frac{1}{8}$ " DIAMETER

(See Group 54 in Section I)

MODEL "QXC-3"(3 $\frac{3}{8}$ " x 4 $\frac{1}{8}$ ")

Supplement showing parts which are different from QXB-3.
The "QXC-3" Hercules has 3 $\frac{3}{8}$ " bore.

CYLINDER AND CRANKCASE (Group 82)

(Removable shell type bearings)

47458-AS	1	Cylinder block assembly—3 $\frac{3}{8}$ " bore—Includes valve guides, camshaft bearings, expansion plugs, pipe plugs, and main bearings and caps. Diameter of bore for bearings 2.645" — replaces 46307-DSY and 46312-DSY	
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VALVES (Group 83)

(See Group 12 in Section I for all parts except following:)

47017-A	6	Intake valve—head diameter 1 $\frac{39}{64}$ "	
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CYLINDER HEAD (QXC)

(See Group 57 in Section I)

PISTON (CAST IRON) 3 $\frac{3}{8}$ " DIAMETER

(See Group 58 in Section I)

PISTON (ALUMINUM) 3 $\frac{3}{8}$ " DIAMETER

(See Group 59 in Section I)

Give Engine Number with Each Parts Order

MODEL "QXD-3"

(3⁷/₁₆" x 4¹/₈")

Supplement showing parts which are different from QXB-3. The QXD-3 Hercules has 3⁷/₁₆" bore.

CYLINDER AND CRANKCASE (Group 84)

(Removable shell type bearings)

Part No.	No. Req'd.	PART NAME	Illustration Reference
47341-AS	1	Cylinder block assembly—3 ⁷ / ₁₆ " bore—Includes valve guides, camshaft bearings, main bearings, expansion plugs, pipe plugs and main bearing caps. Diameter of bore for bearings 2.645".—replaces 46310-ESY	

Note: For main bearings see Group 5 and 5-A, Section I.

VALVES (Group 85)

(See Group 12 in Section I for all parts except following:)

47017-A	6	Intake valve—head diameter 1 ³⁹ / ₆₄ "—replaces 46121-A.....	
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CYLINDER HEAD

(See Group 62 in Section I)

PISTON—ALUMINUM—3⁷/₁₆" DIAMETER

(See Group 63 and Group 64 in Section I)

MODEL "QXLD-3"

(3¹/₁₆" x 4¹/₄")

Supplement showing parts which are different from QXD-3. The QXLD-3 has the same bore 3⁷/₁₆" but has 4¹/₄" stroke.

CYLINDER HEAD (Group 86)

49201-D	1	Cylinder Head 6.59 to 1 ratio 14 M/M plugs
46380-D	1	Cylinder Head 6.59 to 1 ratio 14 M/M plugs

PISTON (ALUMINUM) (Group 87)

47122-AS	6	Piston and Pin Assembly—Includes Parts Marked *
49234-C	6	*Piston, 3 ⁷ / ₁₆ " Dia.
46022-B	6	*Piston Pin
46340-A	6	Piston Ring, Compression, Top Groove
46341-A	6	Piston Ring, Compression, 2nd Groove
49233-A	12	Piston Ring, Oil Control, 3rd and 4th Groove

CRANKSHAFT (Group 88)

46839-E	1	Crankshaft—4 ¹ / ₄ " Stroke—Counterweighted
49528-E	1	Crankshaft—4 ¹ / ₄ " Stroke—Marine

Give Engine Number with Each Parts Order