

PARTS LIST

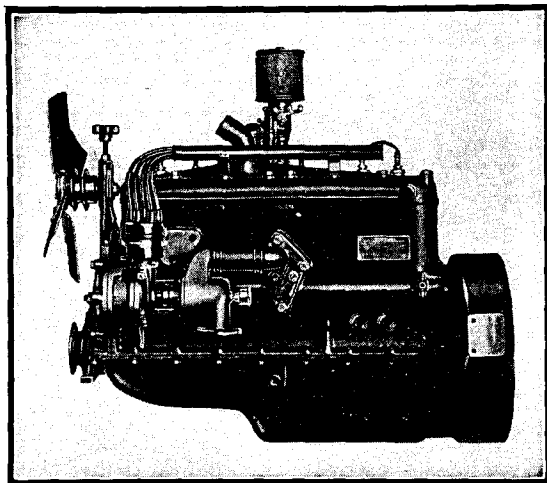
HERCULES

SIX CYLINDER ENGINE

of the

"JX" Series

SERIAL NUMBERS { 500001 — 600000
900001 — 1000000
1300001 — 2000000



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 supersedes 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.

MARCH 18, 1955

Supersedes All Previous Parts Lists

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PARTS LIST

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 each group may be omitted to avoid duplication.

GASKETS

Part No.	No. Req.	PART NAME	Illustration Reference
■ 45998-AS	1	Gasket Assembly—Primary (includes parts marked *)	
40085-B	2	*Oil Pan Gaskets—used with cork type front seals	EF
22024-B	1	*Gear Cover Gasket	FZ
22065-B	1	*Bellhousing Gasket	DI
41005-B	2	*Valve Cover Gasket—replaces 40005B	BL
43814-B	1	*Manifold Gasket	CQ
87-A	2	*Water Outlet & Carburetor Gasket	DR
3427-A	1	*Gear Cover Cork—replaces 4680-A	FW
3426-A	1	*Oil Pan Cork—replaces 4718-A	EM
44087-B	2	*Oil Pan Gasket—used with flexible type front seal	EFA
■ 45999-AS	1	Gasket Assembly—Secondary (includes parts marked **)	
22564-A	1	**Fuel Pump Gasket	AC & FC
22164-A	1	**Water Pump Cover Gasket	HH & IT
22149-A	2	**Water Pump Attaching Gasket	HI & IN
40691-A	1	**Water Pump Discharge or Oil Filter Gasket	
22119-A	1	**Oil Pump Attaching Gasket	FA
10471-A	1	**Governor Attaching Gasket	
40028-A	1	**Exhaust Companion Flange Gasket	CS
22271-A	1	**Generator Attaching Gasket	
86-A	1	**Water Inlet to Pump Gasket	IH
87-A	1	**Water Pipe and Carburetor Gasket	DR
2452-A	1	**Oil Filtrator Shell Gasket	
7218-A	1	**Water Inlet Pipe Gasket	GK
Note: The above assemblies do not include gaskets for cylinder heads, special oil pans, accessories, etc.			
■ 220521-C	1	Cylinder Head Gasket JXA 3 $\frac{3}{8}$ " JXF. JXG 3 $\frac{1}{2}$ " and JXB 3 $\frac{5}{8}$ " Interchangeable with 40003-C, 42200-C, 44202-C and 43224-C	Z
■ 44230-C	1	Cylinder Head Gasket JXC 3 $\frac{3}{4}$ " Interchangeable with 40103-C, 42201-C, 43223-C and 44203-C	Z
■ 44227-C	1	Cylinder Head Gasket JXD 4" Interchangeable with 40237-C, 42236-C, 43218-C and 44204-C	Z
■ 200340-B	1	Bellhousing Oil Seal—Not used on early engines	
■ 11087-AS	1	Gear Cover Oil Seal—Not used on early engines— Interchangeable with 11137-AS	
■ 42542-A	1	Magneto Bracket Gasket—Not used on early engines	

CYLINDER AND CRANKCASE

In ordering cylinder block assemblies it is necessary to determine whether the new block is to replace an old type block or a new type block. The old type block has the water pump discharge pipe with two attaching screw holes, while the new water pump discharge pipe has four attaching screw holes. If the cylinder block, is of the old type it is necessary to order in addition to the cylinder block assembly, water pump discharge pipe 40690-B, gasket 40691-A and attaching parts (see summary) for engines equipped with blind end water pumps. For engines equipped with through shaft water pumps, order water pump discharge pipe 22176-B, gasket 40691-A and attaching parts (see summary). If the cylinder block is to replace one on which there is a bolted on type oil filtrator, the above does not apply as these blocks are interchangeable

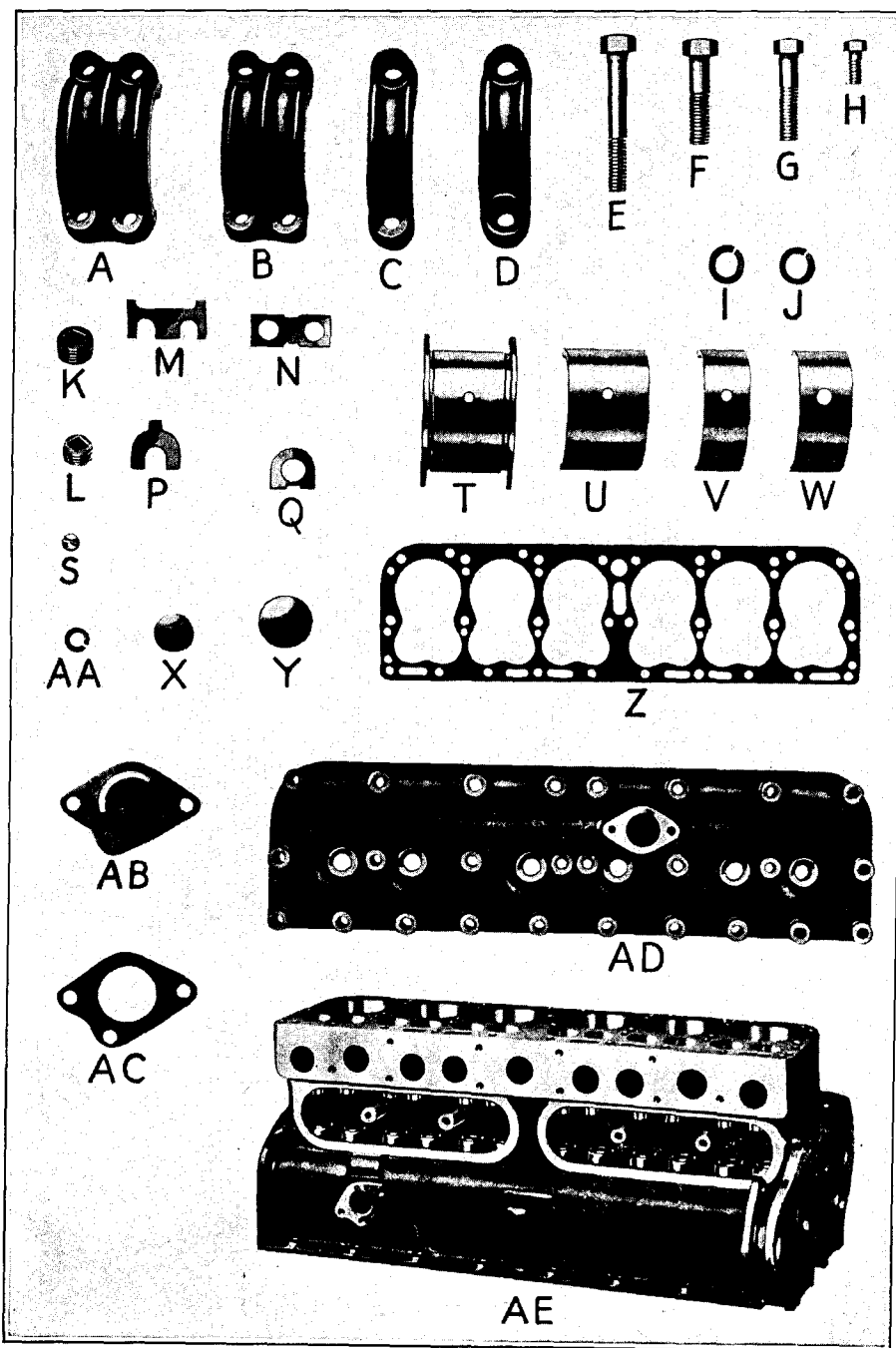


Illustration Reference A to AE Inclusive

CYLINDER AND CRANKCASE (Continued)

SUMMARY

Type	Main Differences	Additional Parts needed when block is replaced.
Old Type	Two tapped holes for water inlet pipe attachment.	1—22176-B Water pump discharge pipe for engines equipped with through shaft water pump. 1—40690-B Water pump discharge pipe for engines equipped with blind end water pump. 1—352-A Water pump discharge pipe screw. 4—312-A Water pump discharge pipe screw lock washer.
New Type	Four tapped holes for water inlet pipe attachment. Any engine having an oil filtrator bolted directly to the block is of the new type.	None

NOTE—When cylinder and crankcase is ordered for engines with poured type bearings we will substitute similar assembly having removable shell type bearings. Be sure to give engine serial number.

Part No.	No. Req.	PART NAME	Illustration Reference
44973-AS	1	Cylinder and crankcase assembly includes valve guides, valve tappet guides, camshaft bearings, idler shaft bearing, main bearing caps, Bearing Assembly 42697 BS and parts marked *. This assembly for shell type bearings. Diameter of bore for bearings 2 ¹ / ₄ "—supercedes 40395-DS and 43311-AS.	AE

■ 40100-BS	1	Main bearing assembly—Poured babbitt type, includes the following 8 items and parts marked **	
40096-B	1	Front upper main bearing (bronze back babbitt lined)	W
40098-B	1	Center upper main bearing (bronze back babbitt lined)	U
40099-B	4	Intermediate upper main bearing (bronze back babbitt lined)	V
40097-B	1	Rear upper main bearing (bronze back babbitt lined)	T
40093-B	1	Front main bearing cap (babbitt lined)	D
40095-B	1	Center main bearing cap (babbitt lined)	B
40092-B	4	Intermediate main bearing cap (babbitt lined)	C
40094-B	1	Rear main bearing cap (babbitt lined)	A
40066-A	7	**Front and intermediate main bearing shim .002"	Q
40067-A	20	**Front and intermediate main bearing shim .003"	Q
40052-A	4	**Center and rear main bearing shim .002"	N
40053-A	8	**Center and rear main bearing shim .003"	N
43582-AS	1	Main bearing assembly—F-77 shell type, includes following 6 items	
43598-B	2	Front main bearing shell	
43599-B	2	Center main bearing shell	
43601-B	2	Rear main bearing shell	
43600-B	8	Intermediate main bearing shell	
42540-A	4	Main bearing thrust flange	
40554-A	4	Main bearing thrust flange dowel pin	

■ 42697-BS	1	Main Bearing Assembly—Thin Babbitt Shell Type—Includes following 4 items and parts marked †—Interchangeable with 40589-AS assembly; 45801-AS assembly and 40588-BS assembly	
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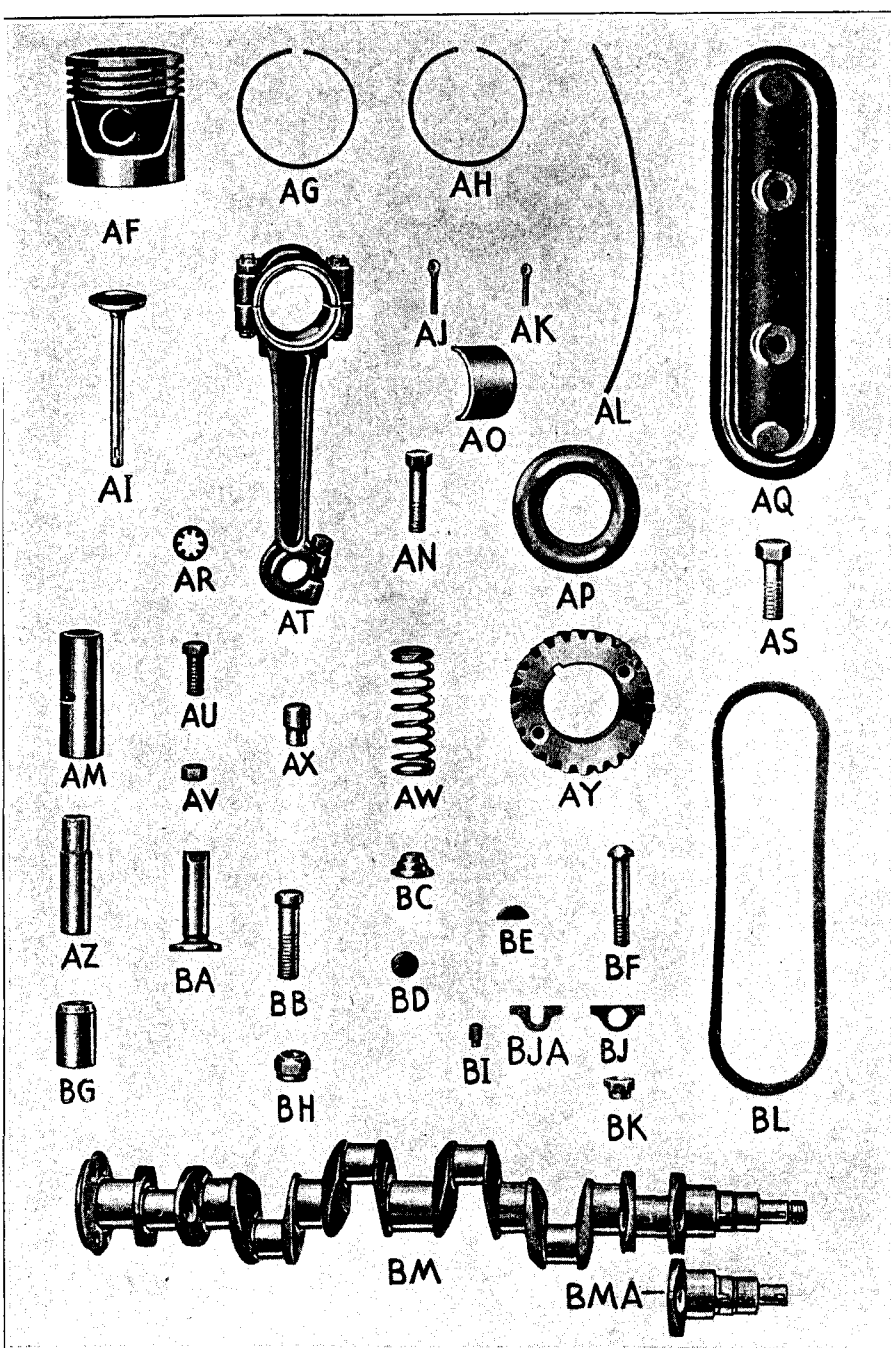


Illustration Reference AF to BM Inclusive

CYLINDER AND CRANKCASE (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
42693-B	2	Front main bearing shell (Thin Babbitt) interchangeable with 40583-B; 40597-B; 45693-B; 45708-B and 42993-B.....	
42694-B	2	Center main bearing shell (Thin babbitt) interchangeable with 40584-B; 40596-B; 45694-B; 45709-B and 42994-B.....	
42695-B	2	Rear main bearing shell (Thin babbitt) interchangeable with 40585-B; 40595-B; 45695-B; and 45710-B.....	
42696-B	8	Inter. main bearing shell (Thin babbitt) interchangeable with 40586-B; 40598-B; 45696-B; 45711-B and 42995-B.....	

Shims are used on some Engines and should not be ordered for Engines without them.

40550-A	As Req.	†Front and intermediate main bearing shim .002".....	F
40552-A	30	†Front and intermediate main bearing shim .003".....	P
40549-A	As Req.	†Center and rear main bearing shim .002".....	M
40551-A	12	†Center and rear main bearing shim .003".....	M

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

40543-B	1	Front main bearing cap.....	
40542-B	1	Center main bearing cap.....	
42537-B	1	Rear main bearing cap—Replaces 40541-B	
40544-B	4	Intermediate main bearing cap.....	
40070-A	10	*Cylinder main bearing screw $\frac{1}{2}$ "x13x2".....	F
40071-A	8	*Cylinder main bearing screw $\frac{7}{16}$ "x14x2".....	G
4731-A	10	*Cylinder main bearing screw lockwasher $\frac{1}{2}$ ".....	J
4732-A	8	*Cylinder main bearing screw lockwasher $\frac{7}{16}$ ".....	I
1609-A	9	*Cylinder expansion plug 1 $\frac{1}{4}$ ".....	Y
14232-A	1	*Cylinder magneto bracket hole expansion plug $\frac{1}{2}$ ".....	
4643-A	1	*Cylinder oil tube expansion plug.....	X
60-A	1	*Cylinder oil tube pipe plug $\frac{1}{4}$ ".....	L
59-A	8	*Cylinder oil tube pipe plug $\frac{1}{8}$ ".....	S
1075-A	4	*Cylinder pipe plug $\frac{1}{2}$ ".....	
22158-A	2	*Pipe plug.....	

One of these plugs is used with the drilled idler gears, shaft and bushing. This construction was used on a few engines before engine number 509876 and on all engines with serial numbers larger. The earlier construction used a metering plug and tube with a protecting screen covering the tube (first of these metering plugs did not have the screen covering.) For these earlier engines, order the following metering plugs assembly.

22156-AS	1	Cylinder oil metering plug assembly. Used with all undrilled idler gears, shafts and bushings.....	
8-A	1	Cylinder drain cock.....	
4879-A	2	Cylinder fuel pump hole cover.....	AB
22564-A	2	Cylinder fuel pump hole cover gasket.....	AC
1048-A	4	Cylinder fuel pump hole cover screw.....	H
615-A	4	Cylinder fuel pump hole cover lockwasher.....	AA
23123-A	6	Valve seat insert (exhaust)—Used on some engines.....	
13132-A	2	Cup plug—used in oil pan attaching flange of certain engines	

CONNECTING ROD

(Where possible replace with 43101-AS assembly)

40090-CSY	6	Connecting rod assembly—spun babbitt bearing (includes bolts, nuts and shims).....	AT
22059-A	12	Connecting rod bolt.....	BF
21056-A	12	Connecting rod bolt nut.....	BK
301-A	12	Connecting rod bolt nut cotter pin.....	AK
22054-A	36	Connecting rod shim .003".....	BJ
22067-A	As Req.	Connecting rod shim .002".....	BJ

CONNECTING ROD (Continued)

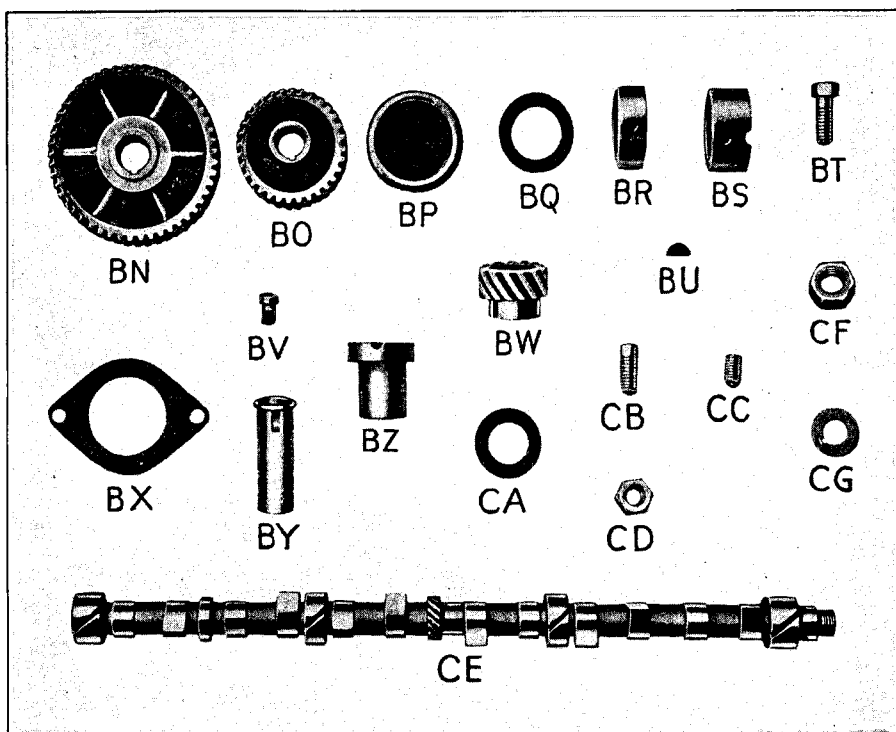
Part No.	No. Req.	PART NAME	Illustration Reference
11702-A	6	Connecting rod piston pin clamp screw—Replaces 22111-A	AN
14761-A	6	Connecting rod piston pin clamp screw lock washer.....	AR
Some of the earlier engines used a lock wire instead of the lock washer.			

CONNECTING ROD
(Shell Type Bearings)

43101-AS	6	Connecting rod and bearing assembly (includes parts marked †).....	
43086-AS	6	Connecting rod and bearing assembly (includes parts marked *).....	
40390-CSY	6	†*Connecting rod assembly (includes bolts, nuts and shims but does not include the bearing shells).....	AT
42692-B	12	*Connecting rod bearing shell (Thin babbitt) interchangeable with 40392-B; 40592-B; 45692-B 45707-B; and 42992-B.....	AO
43081-B	12	†Connecting rod bearing shell (F-77) Replaces 42692-B.....	AO
22059-A	12	Connecting rod bolt.....	BF
21056-A	12	Connecting rod bolt nut.....	BK
301-A	12	Connecting rod bolt nut cotter pin.....	AK
40553-A	As req	Connecting rod shim .002"—Use only on some engines.....	
40556-A	18	Connecting rod shim .003"—Use only on some engines.....	BJA
00287-A	6	xConnecting rod piston pin clamp screw 3/8"-24x1 1/8".....	AN
11702-A	6	xConnecting rod piston pin clamp screw 3/8"-24x1 9/16".....	
14761-A	6	Connecting rod piston pin clamp screw lock washer.....	AR

xWhen ordering clamp screws be sure to measure screw taken from engine or give engine serial number.

Give Engine Number with Each Parts Order



SHIM ASSEMBLIES

FOR POURED TYPE BEARINGS

Part No.	No. Req.	PART NAME	Illustration Reference
■ 43000-AS	1	Shim assembly, includes parts marked †	
■ 45703-AS	1	Shim assembly, includes parts marked *	
40066-A	20	†*Front and intermediate main bearing shim .002"	Q
40067-A	10	†*Front and intermediate main bearing shim .003"	Q
40052-A	8	†*Center and rear main bearing shim .002"	N
40053-A	4	†*Center and rear main bearing shim .003"	N
22067-A	36	*Connecting rod shim .002"	BJ
22054-A	12	*Connecting rod shim .003"	BJ

FOR SHELL TYPE BEARINGS

Used Only On Some Engines

■ 45702-AS	1	Shim assembly, includes parts marked **	
40550-A	30	**Front and intermediate bearing shim .002"	P
40552-A	10	**Front and intermediate bearing shim .003"	P
40549-A	12	**Center and rear bearing shim .002"	M
40551-A	4	**Center and rear bearing shim .003"	M
40553-A	24	**Connecting rod shim .002"	BJA
40556-A	6	**Connecting rod shim .003"	BJA

PISTON (Cast Iron) 3 $\frac{3}{8}$ " Diameter

Pistons and rings are supplied in the following oversizes: .010", .020", .030", .040", .050" and .060". Piston pins supplied in .003" and .005" oversize. On orders for sizes other than specified above, an additional 25% will be added to the list price.

■ 40086-CSY	6	Piston with bushings (State if standard or oversize is wanted)	AF
■ 40029-B	6	Piston pin	AM
22117-A	12	Piston pin bushing	
■ 3807-A	18	Piston ring, compression (supersedes 40017-A)	AG
■ 3907-A	6	Piston ring, oil regulating (supersedes 40115-A)	AH

PISTON (Aluminum) 3 $\frac{3}{8}$ " Diameter

See note above about oversizes.

140124-AS	6	Piston and piston assembly, includes parts marked *	
■ 45954-C	6	*Piston (supersedes 40014-C) (State if standard or over size is wanted)	AF
■ 40029-B	6	*Piston pin	AM
■ 3807-A	18	Piston ring, compression (supersedes 40017-A)	AG
■ 3907-A	6	Piston ring, oil regulating (supersedes 40115-A)	AH

CRANKSHAFT

As there are many special crankshafts in use only the standard type is listed below. Always give engine number when ordering crankshafts.

45853-D	1	Crankshaft (front end is threaded) standard (supersedes 40024-D and 40950-D)	BM
45857-D	1	Crankshaft—Like 45853-D except counterweighted	
45859-D	1	Crankshaft—power unit	BMA
19052-A	1	Crankshaft oil thrower—Not used on engines with seal 11087-AS	AP
■ 44026-B	1	Crankshaft gear (has center punch mark on tooth for timing)	AY
4265-A	1	Crankshaft gear key	BE
22104-A	4	Flywheel bolt $\frac{1}{2}$ "x20x1 $\frac{1}{32}$ "	BB
1656-A	4	Flywheel bolt nut ($\frac{1}{2}$ "x20 S. A. E.)	BH
301-A	4	Flywheel bolt nut cotter ($\frac{3}{32}$ "x $\frac{3}{4}$ ")—Replaces 1710-A	AK
1707-A	2	Flywheel dowel ($\frac{1}{2}$ "x $\frac{5}{8}$ ")	AX
665-A	2	Flywheel dowel plug ($\frac{5}{8}$ " expansion)	BD
4642-A	1	Crankshaft dowel	BI

VALVE—45° SEAT (Commonly Used)

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.

Part No.	No. Req.	PART NAME	Illustration Reference
45814-A	6	Valve, special steel, exhaust (Replaces 40010-A and 45810-A)	AI
40107-A	6	Valve, intake (Replaces 40020-A)	AI
43010-A	12	Valve guide	AZ
■ 40008-A	12	Valve spring, 1 $\frac{1}{16}$ " diameter	AW
22013-A	12	Valve spring seat or washer	BC
■ 40011-A	12	Valve spring seat pin	
40006-B	2	Valve cover	AQ
4068-A	4	Valve cover screw ($\frac{1}{2}$ "x1 $\frac{3}{8}$ x2 $\frac{1}{2}$ ")	AS
■ 41005-B	2	Valve cover gasket (Replaces 40005-B)	BL
23123-A	6	Valve seat insert(exhaust)—Used on some engines	

VALVE—30° SEAT

■ 40210-A	6	Valve, exhaust	
■ 40220-A	6	Valve, intake	
■ 40221-A	12	Valve spring, 1 $\frac{1}{4}$ " diameter cadmium plated	
1613-A	12	Valve spring seat	
■ 21011-A	12	Valve spring seat pin	

PUSH ROD (TAPPET)

■ 43024-AS	12	Push rod assembly (includes 45812-A, 2185-A, 2186-A)	BA
45812-A	12	Push rod	AU
2185-A	12	Push rod screw (hardened)	AV
2186-A	12	Push rod screw nut	AV
■ 22089-A	12	Push rod guide	BG

Give Engine Number with Each Parts Order

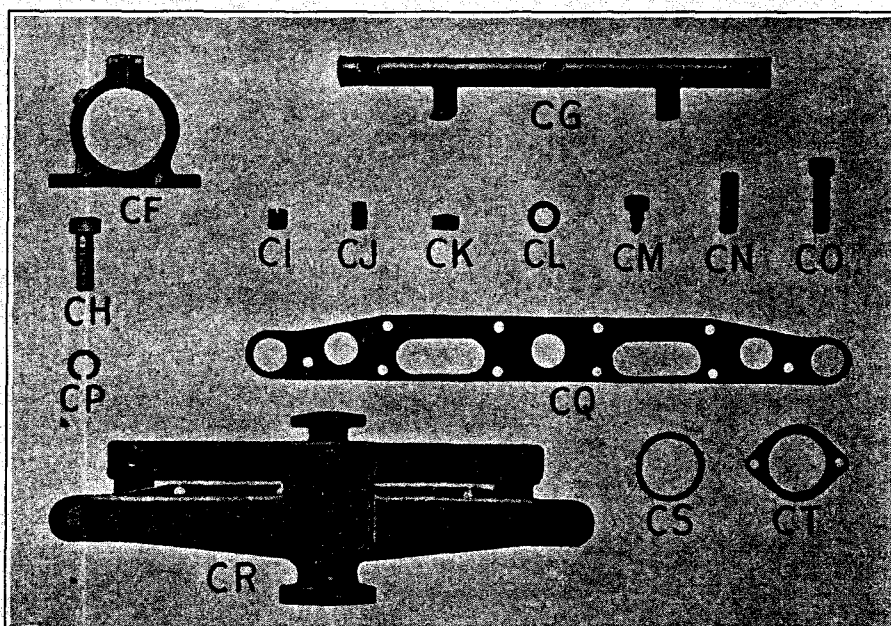


Illustration Reference CF to CT Inclusive

CYLINDER HEAD

Part No.	No. Req.	PART NAME	Illustration Reference
40002-D	1	Cylinder head, 4.7:1 compression ratio—kerosene.....	AD
40203-D	1	Cylinder head, 5.1:1 compression ratio, 18 m. m. spark plug holes....	
40205-D	1	Cylinder head, 5.75:1 compression ratio, flat type.....	
42217-D	1	Cylinder head, 5.16:1 compression ratio—thermostat provision.....	
40234-D	1	Cylinder head, 5.75:1 compression ratio—natural gas.....	
40258-D	1	Cylinder head, 5.16:1 compression ratio—aluminum coated.....	
45586-D	1	**Cylinder head, 5.75:1 compression ratio—flat type, dual ignition.....	
45900-D	1	Cylinder head, 5.8:1 compression ratio (C. W. C.).....	
Note: Cylinder heads marked ** require 3-3390-A pipe plugs or 3-763-A expansion plugs.			
■ 220521-C	1	Cylinder head gasket—Interchangeable with 40003-C, 42200-C, 43224-C and 44202-C.....	Z
■ 201017-AS	26	Cylinder head capscrew ($\frac{1}{2}$ "x1 $\frac{3}{8}$ x3 $\frac{1}{8}$ ") Replaces 4118-A and 6346-A.....	E
1075-A	1	Cylinder head pipe plug $\frac{1}{2}$ ".....	K
3586-A	1	Cylinder head cup plug—1" Brass.....	

GEAR COVER—With Cork Type Seal

(There are many types of gear covers other than those listed)

40037-D	1	Gear cover with combine governor provision, trunnion type.....	FR
40031-D	1	Gear cover with combine governor provision, no trunnion.....	
22031-D	1	Gear cover with combine governor provision, no trunnion—std. P. U.....	
40030-D	1	Gear cover, automotive—trunnion type.....	
■ 22024-B	1	Gear cover gasket.....	FZ
4266-A	8	Gear cover screw ($\frac{3}{8}$ "x1 $\frac{1}{2}$ x1 $\frac{3}{4}$ " U. S. S.).....	FU
342-A	8	Gear cover screw lockwasher ($\frac{1}{2}$ " light).....	FV
■ 14594-AS	3	Thrust adjusting screw assembly.....	
14591-A	3	Thrust adjusting screw fiber plug.....	
2048-A	3	Thrust adjusting screw nut.....	
■ 3427-A	1	Gear cover cork (Replaces Part No. 4680).....	FW
23412-A	1	Gear cover governor hole cover plate.....	
10471-A	1	Gear cover governor hole cover plate gasket.....	BX
1872-A	2	Gear cover governor attaching screw $\frac{1}{16}$ "x1 $\frac{1}{4}$ x1".....	BT
335-A	2	Gear cover governor cover attaching screw lockwasher.....	

GEAR COVER—With Flexible Seal

(There are many types of gear covers other than those listed)

40339-D	1	Gear Cover—Automotive type has trunnion.....	
40340-D	1	Gear Cover—Has governor provision and trunnion.....	FR
42332-D	1	Gear Cover—Has governor provision—no trunnion.....	
11087-AS	1	Gear Cover Oil Seal Assembly—Includes part marked *—interchangeable with 11137-AS.....	
11784-A	1	*Gear Cover Oil Seal Sleeve (Synthetic Rubber)—interchangeable with 11136-A.....	
22024-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 Lock Washer.....	FV
14594-AS	3	Gear Cover Thrust Screw Assembly.....	CB
14591-A	3	Gear Cover Thrust Screw Plug—Fiber.....	
2048-A	3	Gear Cover Thrust Screw Nut.....	

BREATHER

■ 40038-AS	1	Breather cap assembly(oil filler cap).....	GA
40035-A	1	Breather extension pipe.....	

CAMSHAFT

See notes under oil pump assemblies and after each shaft listed below.

40062-DS	1	Camshaft with thrust plug—Engines to 501088 only—use 1156-A oil pump drive gear and following bearings marked †.....	CE
40043-B	2	†Camshaft bearings, front and rear—Engines up to 501088 only—this bearing is 1 $\frac{15}{16}$ " inside diameter.....	

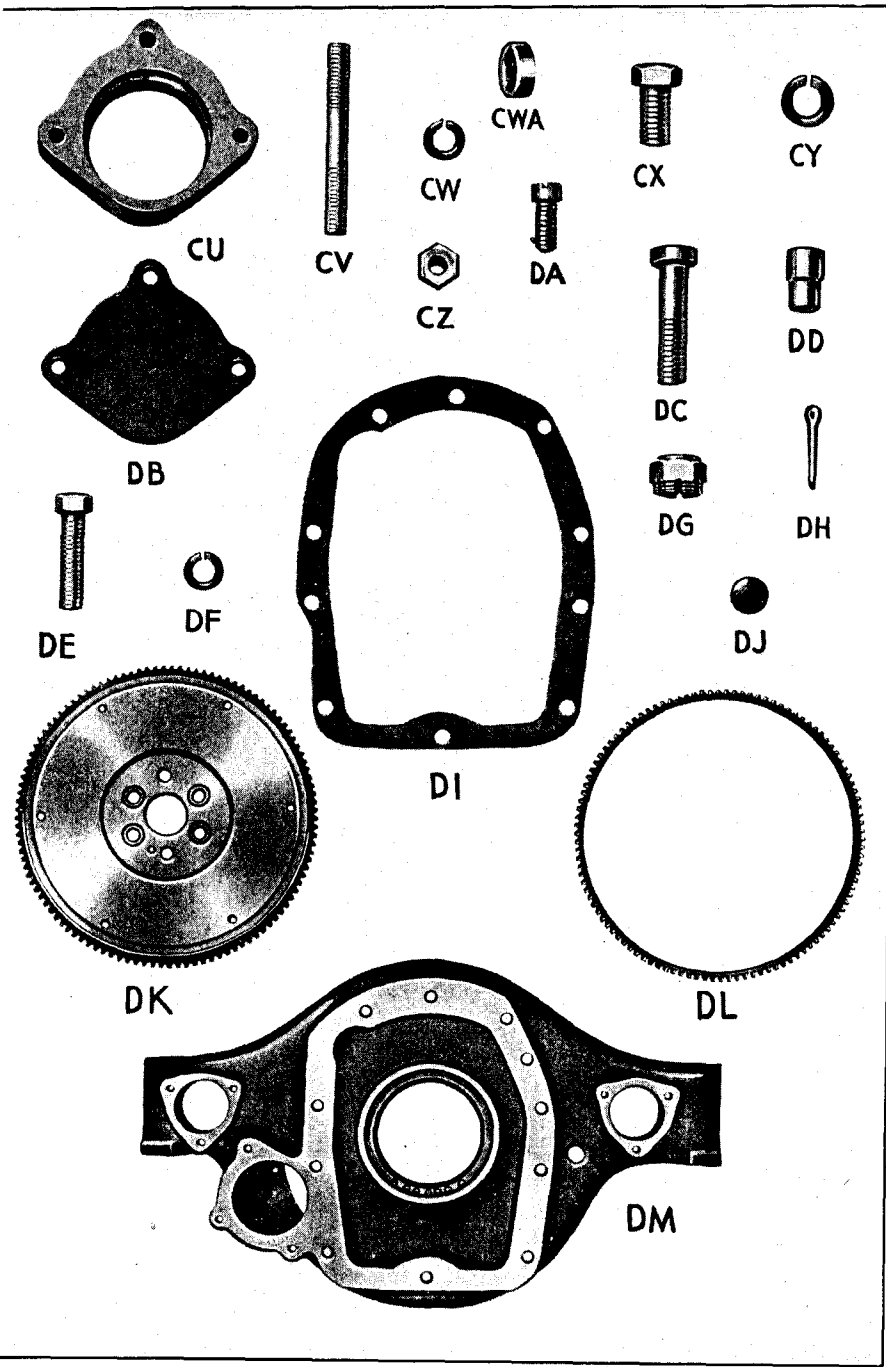


Illustration Reference CU to DM Inclusive

CAMSHAFT (Continued)

Part No.	No. Req	PART NAME	Illustration Reference
40044-DS	2	†Camshaft bearing, Intermediate—Engines up to 501088 only—this bearing is 1 $\frac{15}{16}$ " inside diameter.....	
40069-DS	1	Camshaft with thrust plug standard .326" lift—Engines 501088 to 554168—Forged shaft—superseded by 40569-DS. Use oil pump gear 1156-A with this shaft. Can be replaced by 45689-A shaft with 11023-A nut.....	CE
40569-A	1	Camshaft with thrust plug .326" lift—Engines 554168 to 929808—Cast alloy shaft—Use Oil pump gear 45266-A with this shaft. Superseded by 45689-A shaft with 11023-A nut.....	CE
45689-A	1	Camshaft with thrust plug .326" lift—Engines 929808 and up—cast alloy shaft—use oil pump gear 45266-A with this shaft. Order 11023-A nut with this shaft when used in engines before Number 929808.....	CE
40813-DS	1	Camshaft with thrust plug—High lift .356"—Forged steel shaft—superseded by 40798-DS—Use oil pump gear 1156-A with this shaft can be replaced by 45688-D with 11023-A nut.....	CE
40798-DS	1	Camshaft with thrust plug—High lift .356"—Cast alloy shaft—Use oil pump gear 45266-A with this shaft. Superseded by 45688-A shaft with 11023-A nut.....	CE
45686-D	1	Camshaft with thrust plug—High lift .356"—Cast alloy shaft—Use oil pump gear 45266-A with this shaft. Order 11023-A nut with this shaft when used in engines before 929808—Replaces 45688-D.....	CE
22049-B	1	Camshaft Gear.....	BN
2045-A	1	Camshaft Gear Thrust Washer.....	BQ
4265-A	1	Camshaft Gear Key (No. 91 Woodruff).....	BU
1698-A	1	Camshaft Gear Nut—Engines up to 929808 only.....	CF
11039-A	1	Camshaft Gear Nut Lockwasher—Engines to 929808 only.....	CG
11023-A	1	Camshaft Gear Nut—Engines 929808 and up.....	CF
40068-A	1	Camshaft Thrust Plunger.....	BV
40063-A	2	Camshaft Bearing—Front and Rear—Engines 501088 and up.....	BS
40065-A	2	Camshaft Bearing—Center or Intermediate—Engines 501088 and up.....	BR
14594-AS	1	Camshaft Gear Thrust Adjusting Screw Assembly.....	CB
2048-A	1	Camshaft Gear Thrust Adjusting Screw Nut.....	CD
14591-A	1	Camshaft Gear Thrust Adjusting Screw Fiber Plug.....	

IDLER GEAR

The following new type idler gear, shaft and bushing has been developed and can be used on all engines of the "JX" series. However, the original undrilled type gear, shaft and bushing cannot be used on any engine after number 509876. The new type engine can readily be distinguished from the old type by the absence of an oil metering hole in the plug located at the end of the main oil manifold and back of the idler gear.

45375-BS	1	Idler gear and shaft assembly, includes parts marked *.....	
40135-B	1	*Idler gear, drilled for oil holes.....	BO
22107-A	1	*Idler gear thrust washer.....	CA
59-A	1	*Idler gear shaft pipe plug.....	
40136-AS	1	*Idler gear shaft, plunger and pipe plug.....	BY
40137-B	1	Idler gear shaft bushing, drilled for oil hole.....	BZ
40068-A	1	*Idler gear plunger.....	BV
14594-AS	1	Idler gear thrust adjusting screw assembly.....	CB
2048-A	1	Idler gear thrust adjusting screw nut.....	CD
14591-A	1	Idler gear thrust adjusting screw fiber plug.....	

FAN DRIVING PARTS

40284-B	1	Fan drive pulley (steel)—Supersedes 40805-B.....	
40805-B	1	Fan drive pulley (aluminum) automotive type.....	
14734-A	1	Fan pulley lock washer 1".....	
40806-A	1	Starting crank grab (used to hold fan pulley on crankshaft).....	FT
42483-B	1	Fan drive pulley—Std. P. U.—interchangeable with 40286-B.....	FY
22071-A	1	Fan drive pulley pin.....	
5921-A	2	Fan drive pulley pin cotter (3 $\frac{3}{32}$ "x3 $\frac{3}{4}$ ").....	
4265-A	1	Fan pulley key.....	FS

FLYWHEEL

Part numbers on flywheels are stamped on the rims. If flywheel is ordered be sure to give part number of flywheel and engine 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 in a book of this size. Some of the more common are listed below

Part No.	No. Req.	PART NAME	Illustration Reference
22476-C	1	Flywheel No. 4 S. A. E. type.....	
22477-C	1	Flywheel No. 4 Borg and Beck 10" DS-DX.....	
22478-C	1	Flywheel No. 5 Borg and Beck 10" DS-DX.....	
22481-C	1	Flywheel No. 4—12" R. G. Y. Borg and Beck.....	
22483-C	1	Flywheel No. 4—10 QD Borg and Beck.....	
22484-C	1	Flywheel No. 5—10 QD Borg and Beck.....	
22486-C	1	Flywheel 9 AB Long.....	
22485-C	1	Flywheel No. 4—C-8 Twin Disc.....	
22487-C	1	Flywheel No. 4—12 SP Brown Lipe.....	
22503-C	1	Flywheel No. 4, 10 RD Borg and Beck.....	DK
22510-C	1	Flywheel No. 4, 12 QL Borg and Beck.....	
22520-C	1	Flywheel No. 3 special.....	
22521-C	1	Flywheel No. 4, 11A1 Borg and Beck.....	
22531-C	1	Flywheel 29 A Long.....	
22536-C	1	Flywheel, No. 3, 13 Q Borg and Beck.....	
23483-C	1	Flywheel special.....	
23514-C	1	Flywheel No. 4, 11 CF-C1 Long.....	
22488-C	1	Ring gear 110 teeth (Replaces 24547-C).....	DL
22505-C	1	Ring gear, 112 teeth (Replaces 24548-C).....	

Give Engine Number with Each Parts Order

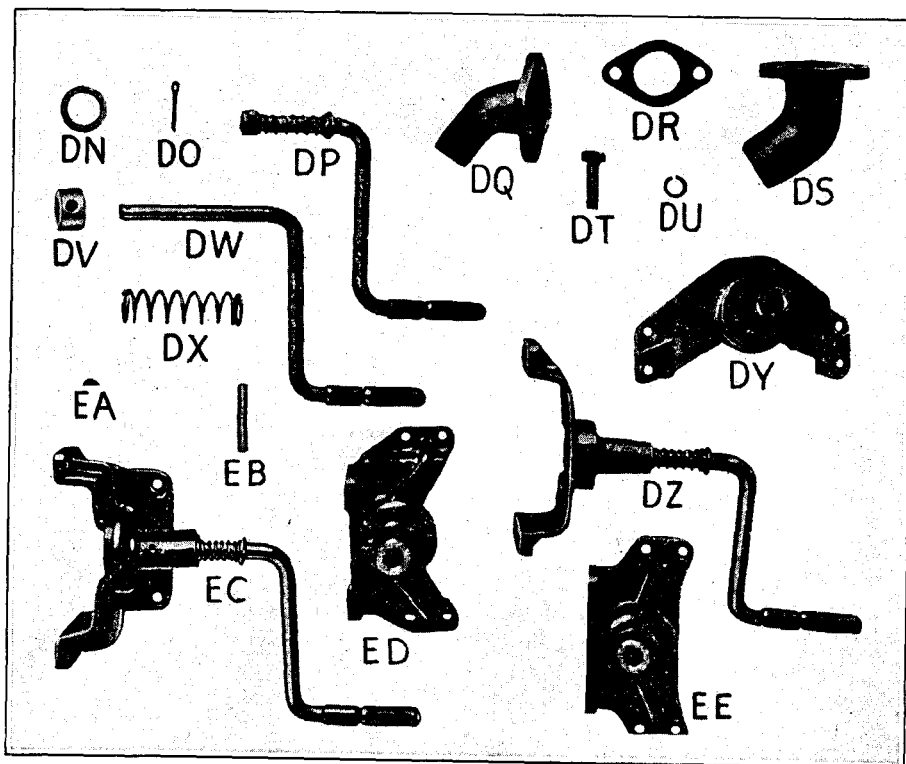


Illustration Reference DN to EE Inclusive

FLYWHEEL (Continued)

Part No.	No. Req	PART NAME	Illustration Reference
22532-C	1	Ring gear, 115 teeth (Replaces 24550-C).....	
22104-A	4	Flywheel bolt ($\frac{1}{2}$ "x20x1 $\frac{11}{32}$ ").....	DC
1656-A	4	Flywheel bolt nut ($\frac{1}{2}$ "x20).....	DG
1710-A	4	Flywheel bolt nut cotter ($\frac{3}{32}$ "x $\frac{3}{4}$ ").....	DH
1707-A	2	Flywheel dowel ($\frac{1}{2}$ "x $\frac{5}{8}$ ").....	DD
665-A	2	Flywheel dowel plug ($\frac{5}{8}$ ").....	DJ

BELLHOUSING—EARLIER TYPE

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

22429-D	1	Bellhousing No. 4 S. A. E. with starter.....	
22436-D	1	Bellhousing No. 3 S. A. E. special.....	
22432-D	1	Bellhousing No. 3 S. A. E.	
22435-D	1	Bellhousing No. 4 S. A. E.	
22453-D	1	Bellhousing No. 3 S. A. E.	
22461-D	1	Bellhousing special plate type.....	
23425-D	1	Bellhousing No. 4 S. A. E. (this bellhousing supersedes No. 22447-D).....	DM
■ 22065-B	1	Bellhousing gasket ($\frac{1}{32}$ " vellumoid).....	DI
4123-A	7	Bellhousing to crankcase screw ($\frac{1}{2}$ "x13x $\frac{1}{8}$ ").....	CX
2100-A	3	Bellhousing screw ($\frac{1}{2}$ "x13x1").....	
312-A	10	Bellhousing to crankcase screw lockwasher ($\frac{1}{2}$ " S. A. E.).....	CY
14856-A	1	Bellhousing screw ($\frac{1}{2}$ "x13x1"—thin head).....	
4731-A	1	Bellhousing screw lockwasher—Use with 14856-A.....	

BELLHOUSING—LATEST TYPE

With patented leather type oil seal. Attaching parts same as listed above.

■ 200340-B	1	Bellhousing oil seal (replaces 3543-A) order with each of the following bellhousings or for any bellhousing so equipped.....	
23455-D	1	Bellhousing No. 4 S. A. E. with starter, replaces 22499-D.....	
24427-D	1	Bellhousing No. 3 S. A. E. replaces 22432-D.....	
24430-D	1	Bellhousing No. 4 S. A. E. replaces 22345-D.....	
24444-D	1	Bellhousing No. 3 S. A. E. replaces 22453-D.....	
24461-D	1	Bellhousing, replaces 22461-D.....	
23453-D	1	Bellhousing No. 4 S. A. E. replaces 23425-D.....	

Be sure requirements are known before ordering bellhousings, always give engine number with order.

ACCESSORY DRIVE
(Marine Type)

40831-BS	1	Accessory drive assembly (includes parts marked *).....	
40832-C	1	*Accessory drive housing.....	ID
40833-B	1	*Accessory drive shaft.....	IB
2165-A	1	*Accessory drive shaft key.....	HR
22168-A	1	*Accessory drive shaft snap ring.....	
■ 22195-B	1	*Accessory drive gear.....	IA
4265-A	1	*Accessory drive gear key.....	HR
4024-B	1	*Accessory drive shaft thrust washer.....	IF
22174-A	1	*Accessory drive shaft bushing.....	IC
40068-A	1	*Accessory drive shaft thrust plunger.....	HP
■ 22336-A	1	*Distributor driving gear.....	HM
1179-A	1	*Distributor driving gear key.....	HQ
■ 22149-A	1	Accessory drive gasket.....	IG
1864-A	3	Accessory drive screw.....	HN
342-A	3	Accessory drive lock washer.....	HO
27076-A	1	Accessory drive cover plate.....	HY
1779-A	4	Accessory drive cover plate screw.....	HW
628-A	4	Accessory drive cover plate lock washer.....	HX
■ 85-A	1	Accessory drive cover plate gasket.....	HZ

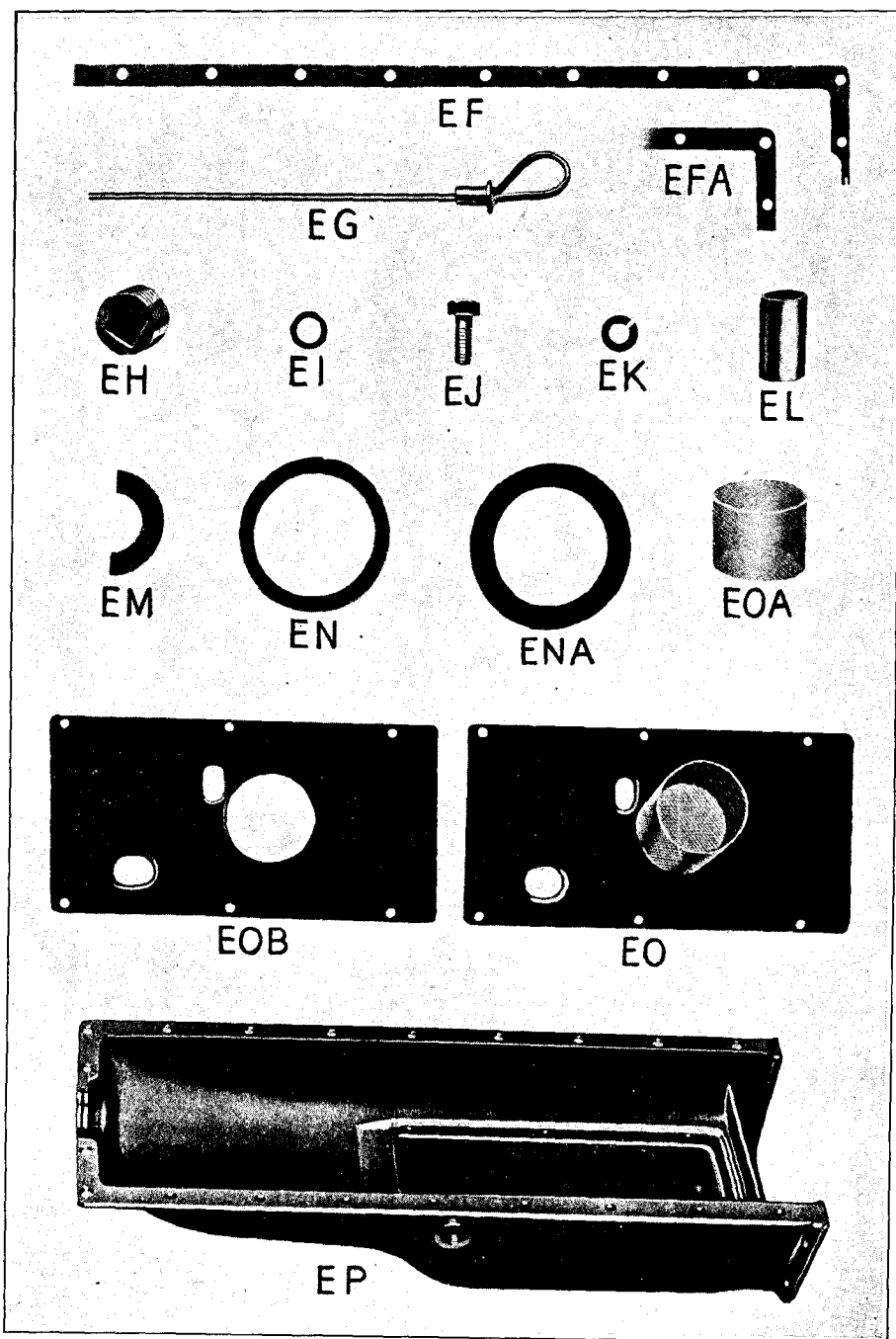


Illustration Reference EF to EP Inclusive

WATER PUMP

(This pump is used when there is a distributor and no magneto.
Supersedes 40169-DS when complete assembly is ordered)

Part No.	No. Req.	Illustration Reference
43185-DS	1	Water Pump Assy. (Includes parts marked *)
43182-AS	1	Water Pump Repair Kit (Includes parts marked x)
43180-AS	1	*Water Pump Body (Includes parts marked †)
43172-D	1	†Water Pump Body
40168-A	1	x†Water Pump Bushing
59-A	1	†Water Pump Pipe Plug
43265-AS	1	x*Water Pump Impeller and Seal Assy. (Includes parts marked †)—Replaces 43181-AS
43173-D	1	†Water Pump Impeller
76188-A	1	x†Water Pump Impeller Pin
■44176-CS	1	†Water Pump Seal Assy. (Includes parts marked §)
3746-A	1	§Water Pump Seal Snap Wire
44177-A	1	§Water Pump Seal Washer
88721-B	1	§Water Pump Seal Flexible Seal
88723-A	1	§Water Pump Seal Spring Guide
88725-A	1	§Water Pump Seal Spring
88722-A	1	§Water Pump Seal Clamp Ring
43178-AS	1	*Water Pump Cradle Assy. (Includes parts marked ¶)
43174-D	1	¶Water Pump Cradle
22171-B	1	x¶Water Pump Bushing
11769-A	1	x¶Water Pump Oil Seal
43179-AS	1	x*Water Pump Shaft and Plunger Assy. (Includes parts marked **)
43163-C	1	**Water Pump Shaft
40068-A	1	**Water Pump Shaft Thrust Button
4265-A	1	x*Water Pump Drive Gear Key
22195-B	1	x*Water Pump Drive Gear
4024-A	1	x*Water Pump Thrust Washer
1179-A	1	x*Water Pump Dist. Dr. Gear Key
22336-A	1	x*Water Pump Dist. Dr. Gear
22168-A	1	x*Water Pump Dist. Dr. Gear Snap Ring
749-A	1	*Water Pump Grease Cup
303-A	4	*Water Pump Body Screw
615-A	4	*Water Pump Body Screw Lockwasher
■43167-A	1	x*Water Pump Body Gasket
1864-A	2	Water Pump Attaching Screw
4266-A	1	Water Pump Attaching Screw
342-A	3	Water Pump Attaching Screw Lockwasher
■22149-A	1	xWater Pump Attaching Gasket

See Page 22 for Water Pump Discharge Pipe and Parts

WATER PUMP

43171-CS	1	Water Pump Assembly—Same as 43185-DS except Distributor provision is 36° from vertical
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WATER PUMP

43186-CS	1	Water Pump Assembly—Same as 43185-DS except body has provisions for Air Compressor Cooling Tubes— Includes
43188-AS	1	Water Pump Body Assembly

WATER PUMP

(This pump is superseded as an assembly by 43185-DS)
This pump is used when there is a distributor and no magneto.

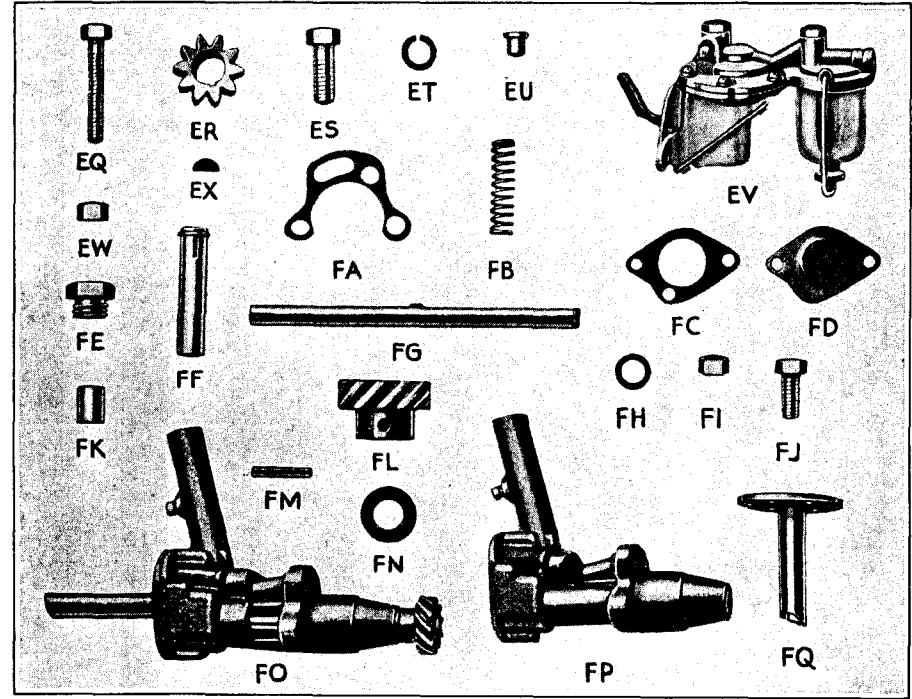
The earlier type pumps had bushings with larger outside diameters than those used later. Both types of bushings are listed below with the outside diameter dimensions given after each bushing. Be sure your requirements are known before ordering.

40169-CS	1	Water Pump Assembly (Includes all parts marked *)	GC
43190-AS	1	Water Pump Repair Kit (Includes parts marked +)	

WATER PUMP (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
45735-CS	1	*Water pump body with bushing—supersedes 40161-C(rear half of pump)	GD
40165-A	1	+ *Water pump impeller	HA
513-A	1	+ *Water pump impeller key	GF
14507-A	1	+ *Water pump impeller pin—supersedes 1157-A	GU
40171-CS	1	*Water pump cover with bushings and oil retainer—Fits in block	GP
22164-A	1	+ *Water pump cover gasket	HH
303-A	4	*Water pump cover screw	GN
615-A	4	*Water pump cover screw lockwasher	GH
40172-B	1	+ *Water pump shaft	GI
18163-A	1	+ *Water pump shaft bushing 1 1/16" O. D.	HJ
40168-A	1	+ *Water pump shaft bushing 7/8" O. D.	HJ
22166-A	1	+ *Water pump packing (6 rings)	GS
22177-A	1	+ *Water pump packing nut L. H.	GZ
21265-A	1	+ *Water pump packing gland	HF
22195-B	1	+ *Water pump driving gear	HD
4265-A	1	+ *Water pump driving gear key	GL
22174-A	1	+ *Water pump drive bushing 1 13/16" O. D.	HK
22171-B	1	+ *Water pump drive bushing 1 5/8" O. D.	HK
22175-A	1	+ *Water pump packing bushing	HG
4024-A	1	+ *Water pump thrust washer	HC
23116-A	1	+ *Water pump oil retainer	GT
22336-A	1	+ *Water pump distributor driving gear	CX
1179-A	1	+ *Water pump distributor driving gear key	GE
22168-A	1	+ *Water pump distributor driving gear snap ring	GM
4661-A	1	+ *Water pump shaft cork washer	GY
40068-A	1	+ *Water pump thrust plunger	

Give Engine Number with Each Parts Order



WATER PUMP (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
749-A	1	+ *Water pump grease cup.....	HE
60-A	1	*Water pump pipe plug ($\frac{1}{4}$ ") Used in 40161-C body.....	
61-A	1	*Water pump pipe plug ($\frac{3}{8}$ ") Used in body 45735-CS.....	
1864-A	3	Water pump attaching screw.....	GO
342-A	3	Water pump attaching screw lockwasher.....	GJ
22149-A	1	+ Water pump attaching gasket.....	HI

See note pages 6 and 8 about water pump discharge pipes. The following four items are used on all old type cylinder blocks having two attaching screw holes.

40650-A	1	Water pump discharge pipe (Two attaching screw holes).....	GQ
87-A	1	Water pump discharge pipe gasket.....	GK
1864-A	2	Water pump discharge pipe screw.....	GO
342-A	2	Water pump discharge pipe lockwasher.....	GJ

The following six items are used with the new type cylinder block having four attaching screw holes.

40690-B	1	Water pump discharge pipe (four attaching screw holes).....	
40691-A	1	Water pump discharge pipe gasket.....	
2100-A	3	Water pump discharge pipe screw.....	
4625-A	1	Water pump discharge pipe screw ($\frac{3}{8}$ "-13"x1 $\frac{1}{4}$ " special head).....	
4731-A	4	Water pump discharge pipe lock washer.....	
305-A	1	Water pump discharge pipe plug.....	
40064-A	1	Water pump discharge hose.....	HB
8159-A	2	Water pump discharge hose clamp.....	CW

WATER PUMP

This pump is superseded by 43171-CS

40170-CS	1	Water pump assembly.....	
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This water pump is made up of the same parts as 40169-CS listed above except cover
40171-CS is mounted with distributor provision at 36° from vertical.

WATER PUMP

This pump is used when there is a magneto and no distributor

This water pump assembly has bronze backed babbitt shaft bearings and has been superseded by water pump assembly 40159-DS which has steel backed babbitt shaft bearings.

40179-DS	1	Water pump assembly (includes all parts marked *).....	
22161-C	1	*Water pump body (with bushing) This is the housing covering the impeller.....	IU
40181-C	1	*Water pump cover (with bushings) Intermediate part between 22161-C and 40180-B.....	
22164-A	1	*Water pump cover gasket.....	IT
303-A	4	*Water pump cover screw.....	JL
615-A	4	*Water pump cover screw lockwasher.....	JM
40180-B	1	*Water pump cradle (with bushings) This is the sleeve which fits in block.....	IQ
40164-A	1	*Water pump cradle bushing 2 $\frac{1}{4}$ " long.....	
22149-A	1	*Water pump cradle gasket.....	IN
40182-B	1	*Water pump shaft—13 $\frac{3}{8}$ " long.....	IX
21263-A	1	*Water pump shaft bushing.....	
22165-A	1	*Water pump impeller.....	IS
1157-A	1	*Water pump impeller pin.....	JN
513-A	1	*Water pump impeller key.....	JQ
22195-B	1	*Water pump driving gear.....	IV
4265-A	1	*Water pump driving gear key.....	JR
40178-A	1	*Water pump drive bushing 1 $\frac{5}{16}$ " long.....	
22166-A	1	*Water pump packing (6—ring) front.....	JA
21270-A	1	*Water pump packing (4—ring) rear.....	JB
21265-A	2	*Water pump packing gland.....	IZ
22175-A	1	*Water pump packing bushing 1 $\frac{7}{16}$ " long.....	IO
22177-A	1	*Water pump packing nut L. H.....	IY
22178-A	1	*Water pump packing nut R. H.....	JD

WATER PUMP (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
22173-A	1	*Water pump oil retainer.....	JF
4024-A	2	*Water pump thrust washer.....	JE
8126-A	2	*Water pump thrust washer.....	JH
4661-A	1	*Water pump cork washer.....	JG
40183-B	1	*Water pump drive shaft—4 3/8" long with internal gear.....	IW
749-A	1	*Water pump grease cup.....	JI
40651-A	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.....	
342-A	2	Water pump discharge pipe screw lockwasher.....	
4728-A	3	Water pump attaching screw.....	
342-A	3	Water pump attaching screw lockwasher.....	
22149-A	1	Water pump attaching gasket.....	

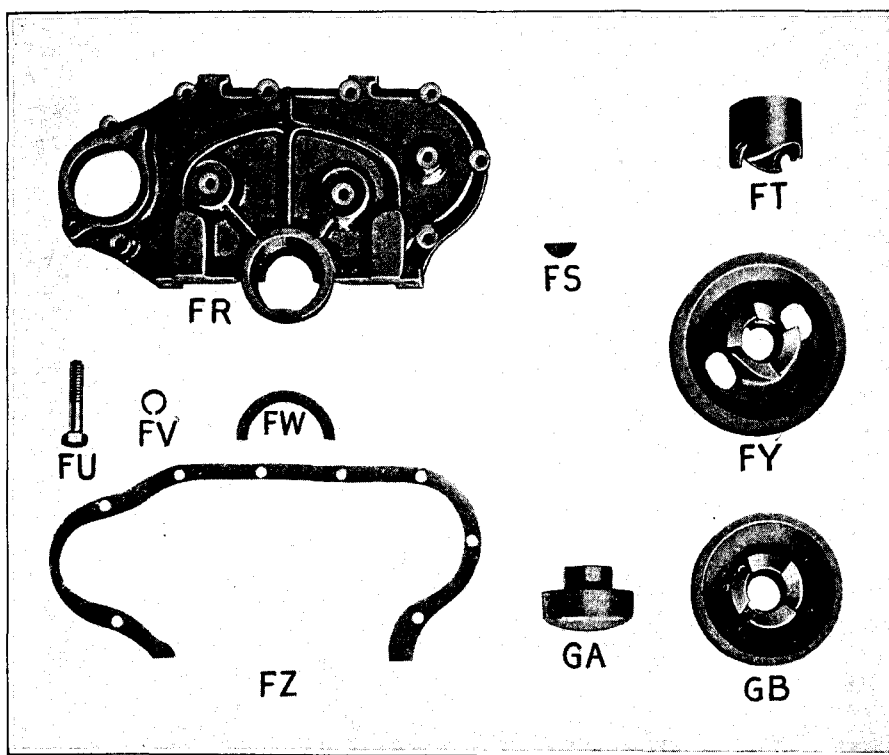
WATER PUMP

This pump is used when there is a magneto and distributor.

This pump supersedes water pump 40179-DS.

40159-DS	1	Water pump assembly (includes parts marked *).....	IL
43196-AS	1	Water pump repair kit, (includes parts marked †).....	
22161-C	1	*Water pump body (with bushing) This is the housing covering the impeller.....	IU
40160-C	1	*Water pump cover (with bushings) Intermediate part between 22161-C 40180-B.....	IM

Give Engine Number with Each Parts Order



WATER PUMP (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
■ 22164-A	1	†Water pump cover gasket.....	IT
303-A	4	*Water pump cover screw.....	JL
615-A	4	*Water pump cover screw lock washer.....	JM
40180-B	1	*Water pump cradle (with bushing) This part supports drive gear shaft and is the sleeve that fits in the cylinder block.....	IQ
■ 22149-A	1	†Water pump cradle gasket.....	IN
40697-BS	1	†Water pump shaft—13 $\frac{3}{8}$ " long.....	IX
23114-A	1	†Water pump shaft bushing.....	JK
4661-A	1	†Water pump cork washer.....	JG
22165-A	1	†Water pump impeller.....	IS
1157-A	1	†Water pump impeller pin.....	JN
513-A	1	†Water pump impeller key.....	JQ
■ 22195-B	1	*Water pump driving gear.....	IV
4265-A	1	*Water pump driving gear key.....	JR
40167-A	1	†Water pump drive bushing.....	IR
■ 22166-A	1	†Water pump packing (6 ring) front.....	JA
■ 21270-A	1	†Water pump packing (4 ring) rear.....	JB
21265-A	2	†Water pump packing gland.....	IZ
23115-A	1	†Water pump packing washer (steel).....	JC
22175-A	1	†Water pump packing bushing 1 $\frac{7}{16}$ " long.....	IO
22177-A	1	*Water pump packing nut L. H.....	IY
22178-A	1	*Water pump packing nut R. H.....	JD
23116-A	1	†Water pump oil retainer.....	JF
14904-A	2	†Water pump thrust washer (bronze).....	JE
8126-A	2	†Water pump thrust washer.....	JH
40183-B	1	*Water pump drive shaft.....	IW
45728-B	1	†Water pump shaft bushing supersedes 22171-B.....	IP
40198-A	1	†Water pump distributor driving gear.....	JO
1179-A	1	†Water pump distributor driving gear key.....	JP
749-A	2	*Water pump grease cup.....	J1
305-A	1	Water pump discharge pipe, pipe plug.....	
22176-A	1	Water pump discharge pipe.....	
22058-A	1	Water pump discharge pipe hose.....	
4275-A	2	Water pump discharge pipe hose clamp.....	
40691-A	1	†Water pump discharge pipe gasket.....	
2100-A	3	Water pump discharge pipe screw.....	
352-A	1	Water pump discharge pipe screw.....	
312-A	4	Water pump discharge pipe screw lock washer.....	
4728-A	3	Water pump attaching screw.....	
342-A	3	Water pump attaching screw lock washer.....	
■ 22149-A	1	†Water pump attaching gasket.....	IN

In order to service worn impeller and housing sides use the following part:

14516-A	1	†Water pump thrust washer.....	
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When water pump is used with magneto only, furnish the following:

8079-A	1	Distributor hole plug.....	
8051-A	1	Distributor hole plug screw.....	
300-A	1	Distributor hole plug screw nut.....	

WATER PUMP (Packless Type)

This is a blind end pump used only with a distributor. This pump can be distinguished from other pumps by the special "Auto Seal" instead of the commonly used packing and packing glands.

40683-CS	1	Water pump assembly (includes parts marked *).....	
45735-CS	1	*Water pump body with bushing and plug 61-A, supersedes 40161-C (rear half of pump).....	
40688-CS	1	*Water pump cover assembly (includes parts marked *).....	
40171-C	1	**Water pump cover or cradle—front part of pump supported in block.....	
40678-A	1	**Water pump drive bushing, bronze.....	
22171-B	1	**Water pump drive bushing, babbitt.....	
■ 22164-A	1	*Water pump cover gasket.....	HH
303-A	4	*Water pump cover screw.....	GN

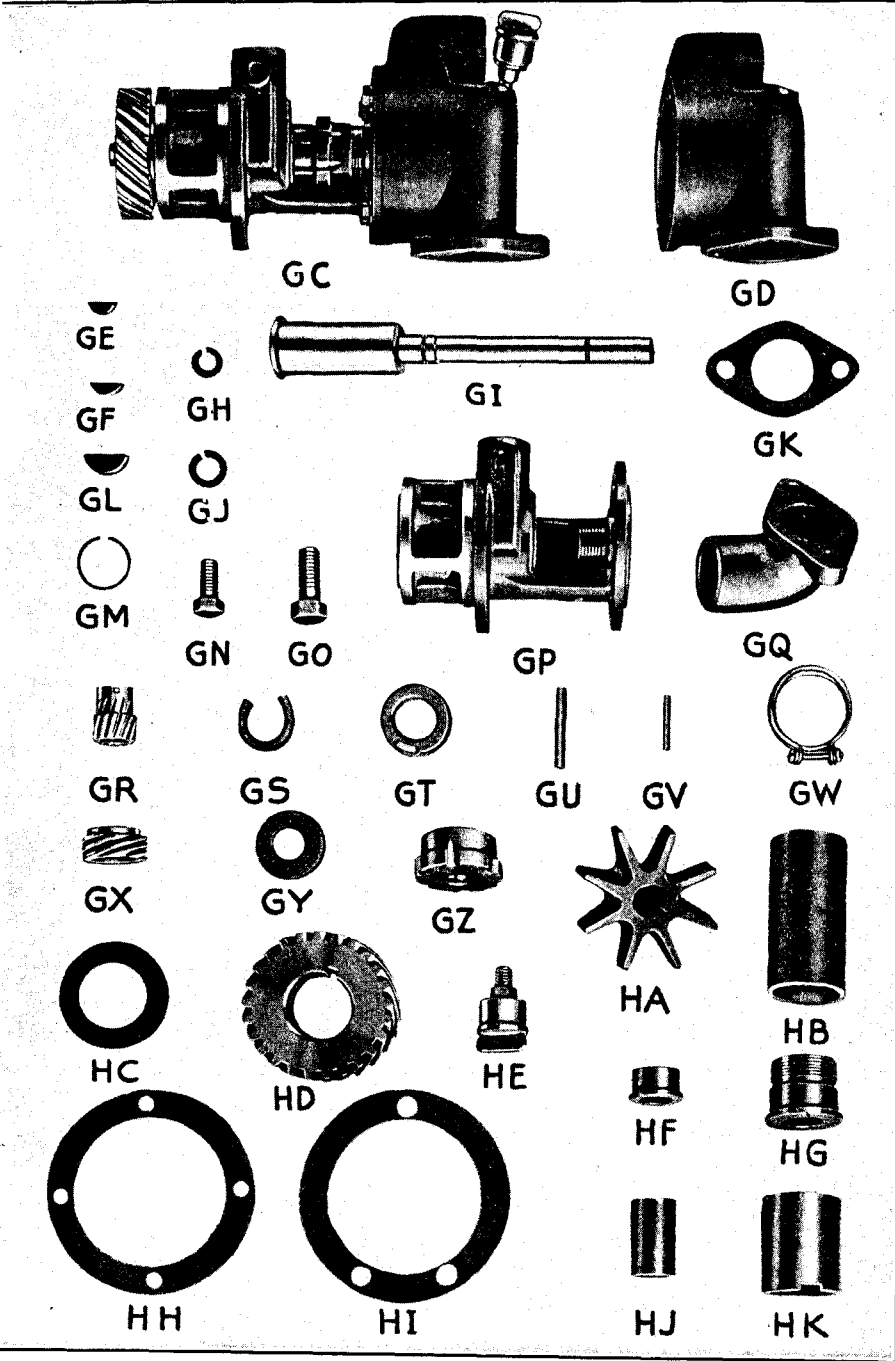


Illustration Reference GC to HK Inclusive

WATER PUMP—Packless Type (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
615-A	4	*Water pump cover lock washer.....	GH
40677-B	1	*Water pump shaft.....	
40168-A	1	*Water pump shaft bushing.....	
40165-A	1	*Water pump impeller.....	HA
513-A	1	*Water pump impeller key.....	GF
1157-A	1	*Water pump impeller pin.....	GU
22195-A	1	*Water pump drive gear.....	HD
4265-A	1	*Water pump drive gear key.....	GL
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
4661-A	1	*Water pump cork washer.....	GY
23116-A	1	*Water pump oil retainer.....	
4024-A	1	*Water pump thrust washer.....	HC
40068-A	1	*Water pump thrust plunger.....	
749-A	1	*Water pump grease cup.....	HE
40684-AS	1	*Water pump seal assembly, includes parts marked † (it is always advisable to obtain the seal assembly instead of replacing parts).....	
28178-A	1	†Water pump seal cup.....	
14511-A	1	†Water pump seal cup pin.....	
28162-A	1	†Water pump seal spring.....	
40686-A	1	†Water pump seal clamp ring.....	
40687-A	1	†Water pump flexible seal.....	
40685-A	1	†Water pump spring guide.....	
28177-A	1	†Water pump seal carbon washer.....	
1864-A	3	Water pump attaching screw.....	GO
342-A	3	Water pump attaching screw lock washer.....	GJ
22149-A	1	Water pump attaching gasket.....	HI
40690-B	1	Water pump discharge pipe.....	
40064-A	1	Water pump discharge pipe hose.....	
8159-A	2	Water pump discharge pipe hose clamp.....	
40691-A	1	Water pump discharge pipe gasket.....	
2100-A	3	Water pump discharge pipe screw.....	
352-A	1	Water pump discharge pipe screw.....	
312-A	4	Water pump discharge pipe screw lock washer.....	
305-A	1	Water pump discharge pipe, pipe plug.....	
60-A	1	*Water pump body pipe plug $\frac{1}{4}$ " used in body 40161-C.....	
61-A	1	*Water pump body pipe plug $\frac{3}{8}$ " used in body 45735-CS.....	

WATER PUMP (Packless Type)

(Bronze Impeller and Stainless Steel Shaft)

This water pump is the same as 40683-CS except for the following parts which replace similar parts listed above.

45723-CS	1	Water pump assembly.....	
45724-BS	1	Water pump shaft—stainless steel.....	HA
45725-A	1	Water pump impeller—bronze.....	GU
14507-A	1	Water pump impeller pin replaces 1157-A.....	

DISTRIBUTOR GEAR

40199-A	1	*Distributor driven gear (used with through shaft water pump).....	
22335-A	1	*Distributor driven gear (used with blind end water pump).....	GR
5813-A	1	Distributor driven gear pin.....	

DISTRIBUTOR ATTACHING BRACKET

4343-A	1	Distributor attaching bracket.....	
4266-A	1	Distributor attaching bracket screw.....	
342-A	1	Distributor attaching bracket lock washer.....	



HL



HM



HN



HO



HP



HQ



HR



HS



HT



HU



HV



HW



HX



HY



HZ



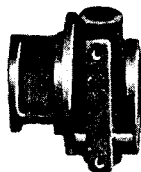
IA



IB



IC



ID



IE



IF



IG



IH



II



IJ



IK

Illustration Reference HL to IK Inclusive

MAGNETO EQUIPMENT

Part No.	No. Req.	PART NAME	Illustration Reference
40045-B	1	Magneto bracket—Attached to block with 2— $\frac{1}{2}$ "-13 screws	
2100-A	2	Magneto bracket screw— $\frac{1}{2}$ "-13 x 1"	
312-A	2	Magneto bracket screw lock washer— $\frac{1}{2}$ " S.A.E.	
315-A	3	Magneto to bracket screw	
342-A	3	Magneto to bracket lock washer	
42541-C	1	Magneto bracket—Attached to block with 3— $\frac{5}{16}$ "-18 screws	
42542-A	1	Magneto bracket gasket	
14823-A	2	Magneto bracket screw— $\frac{5}{16}$ "-18x $\frac{15}{16}$ "	
4248-A	1	Magneto bracket screw— $\frac{5}{16}$ "-18 x 1 $\frac{1}{4}$ "	
615-A	3	Magneto bracket screw lockwasher	
2165-A	1	Magneto coupling key	
859-A	1	Magneto coupling taper pin	

OIL PAN
(With Cork Type Seal)

There are many types of oil pans, we list here only the standard.

40848-D	1	Oil pan (steel)	EP
40085-B	2	Oil pan gasket, half	EF
315-A	20	Oil pan screw ($\frac{3}{8}$ "x16x $\frac{7}{8}$ ")	EJ
342-A	20	Oil pan screw lockwasher	EK
45187-BS	1	Oil pan oil strainer assembly (includes parts marked *)	EO
45188-B	1	*Oil pan oil strainer screen	EOA
40113-B	1	*Oil pan baffle plate	EOB
565-A	2	Oil pan oil strainer pipe plug	EH
303-A	6	Oil pan baffle plate screw	EI
615-A	6	Oil pan baffle plate lockwasher	
3426-A	1	Oil pan cork seal	EN

For oil pans equipped with oil strainer assembly having open bottom. The following felt ring must be ordered for service. When the complete assembly is required order 45187-BS listed above.

1716-A	1	Oil pan oil strainer felt ring	ENA
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OIL PAN
(With Flexible Type Seal)

(There are many types of oil pans other than those listed)

43381-D	1	Oil Pan	EP
44087-B	2	Oil Pan Gasket	EFA
315-A	20	Oil Pan Attaching Screw— $\frac{1}{2}$ "-16"x $\frac{7}{8}$ "	EJ
342-A	20	Oil Pan Attaching Screw Lockwasher	EK
44089-BS	1	Oil Pan Baffle Plate and Strainer Assembly	EO
565-A	2	Oil Pan Pipe Plug— $\frac{3}{4}$ " Std.	EH
303-A	6	Oil Pan Baffle Plate Screw	
615-A	6	Oil Pan Baffle Plate Lock Washer	EI
200323-A	1	Oil Pan Baffle Plate Felt Washer	

OIL PUMP

There are two types of oil pumps with respect to driving gears. The driving gears of the two types are the same except for the material. Oil pumps with steel driving gear 1156-A are to be used with engines having forged steel camshaft such as 40069-DS and 40813-DS shafts. Such a pump is 22152-CS which is suitable for engines with serial numbers up to 554168. Oil pumps with cast alloy driving gear 45266-A are to be used with engines having cast alloy camshaft such as 45688-A and 45689-A shafts. Such a pump is 41123-CS which is suitable for engines with serial numbers 554168 and up. See notes following description of each pump as well as notes following description of each camshaft.

There are also two types of oil pumps with respect to pumping gears. Engines with serial numbers up to 501050 had as original equipment an oil pump with pumping gears $\frac{3}{4}$ " long. Engines with serial numbers 501050 and up have an oil pump with pumping

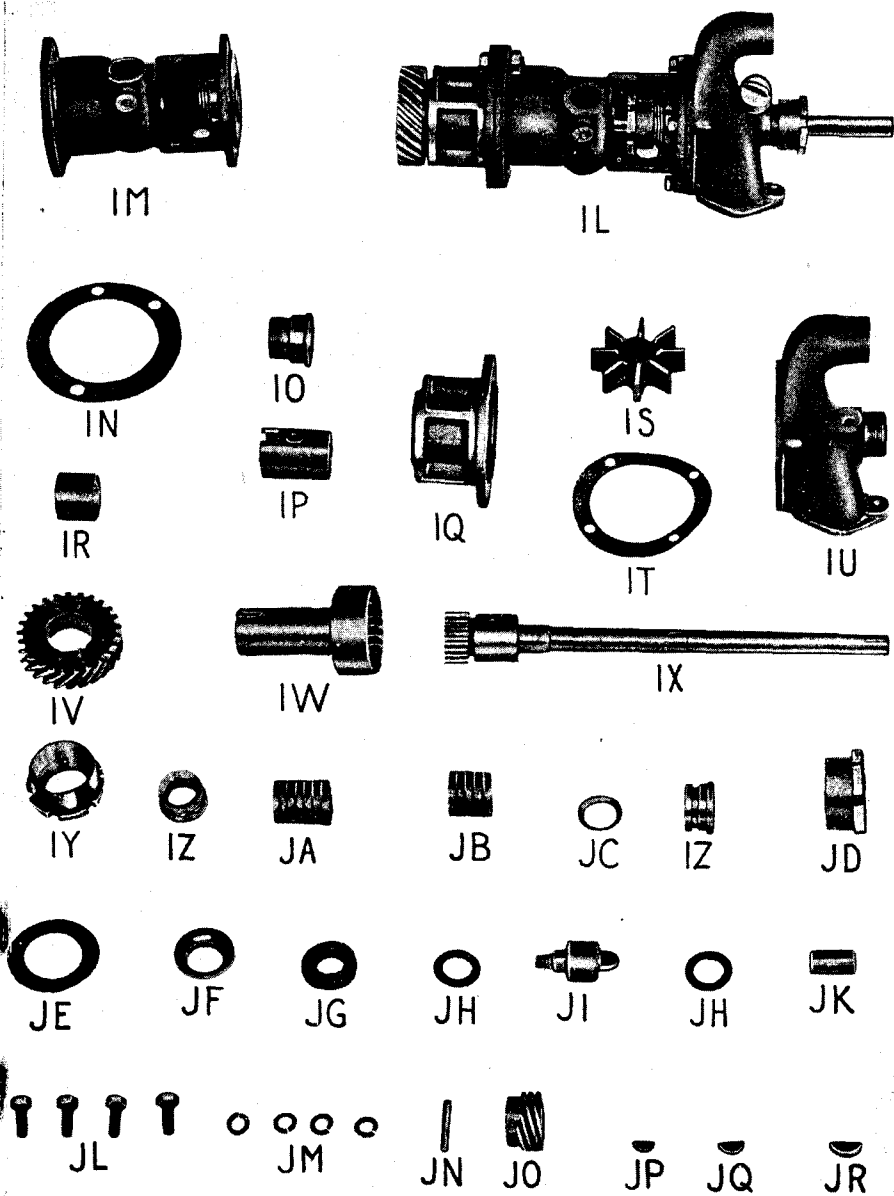


Illustration Reference IL to JR Inclusive

OIL PUMP (Continued)

gears 1 $\frac{1}{4}$ " long. The later type pump, either 22152-CS or 41123-CS can be used as an assembly on any standard JX engine to replace the early type. All details of the early type pump are listed so individual parts can be ordered for repairs.

In an emergency any of the oil pumps as an assembly can be used on any standard JX engine as a temporary repair until the proper pump can be obtained.

OIL PUMP—First Type

Part No.	No. Req.	PART NAME	Illustration Reference
22115-CS	1	Oil Pump Assembly (Includes parts marked *) used in engines up to 501050 only—replace with 22152-CS assembly—This pump has steel driving gear and short pumping gears.....	FO
22116-C	1	*Oil Pump Body.....	FP
22127-A	1	*Oil Pump Cover.....	FQ
1729-A	1	*Oil Pump Cover Screw.....	
4387-A	2	*Oil Pump Snap Ring.....	
22122-A	2	*Oil Pump Gears— $\frac{3}{4}$ " Long.....	ER
22124-A	1	*Oil Pump Shaft— $7\frac{1}{16}$ " Long.....	FC
1156-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
1179-A	3	*Oil Pump Gear Key.....	EX
22125-A	1	*Oil Pump Idler Shaft $2\frac{3}{16}$ " Long.....	FF
22119-A	1	Oil Pump Attaching Gasket.....	FA
1864-A	3	Oil Pump Attaching Screw— $\frac{3}{8}$ "-16x1".....	ES
342-A	3	Oil Pump Attaching Screw Lockwasher.....	ET

OIL PUMP—Second Type

22152-CS	1	Oil Pump Assembly (Includes parts marked *) Suitable for engines up to 554168 only. This pump has steel drive gear and long pumping gears.....	FO
22153-C	1	*Oil Pump Body.....	FP
22127-C	1	*Oil Pump Cover.....	FQ
1729-A	6	*Oil Pump Cover Screw.....	
4387-A	2	*Oil Pump Snap Ring.....	
22154-A	2	*Oil Pump Gears 1 $\frac{1}{4}$ " Long.....	ER
22124-A	1	*Oil Pump Shaft $7\frac{1}{16}$ " Long.....	FC
1156-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
1179-A	2	*Oil Pump Gear Key.....	EX
22155-A	1	*Oil Pump Idler Shaft— $2\frac{1}{16}$ " Long.....	FF
22119-A	1	Oil Pump Attaching Gasket.....	FA
1864-A	3	Oil Pump Attaching Screw— $\frac{3}{8}$ "-16x1".....	ES
342-A	3	Oil Pump Attaching Screw Lockwasher.....	ET

OIL PUMP—Latest Type

This 41123-CS oil pump supersedes other similar pumps such as 46152-CS and 45268-CS in which all parts are interchangeable with parts of 41123-CS.

41123-CS	1	Oil Pump Assembly (Includes parts marked *) Suitable for engines No. 554168 and up. This pump has cast alloy drive gear and long pumping gears.....	FO
41124-C	1	*Oil Pump Body.....	FP
40153-A	1	*Oil Pump Cover.....	FQ
14069-A	6	*Oil Pump Cover Screw— $\frac{1}{4}$ -20x $\frac{5}{8}$ ".....	
628-A	6	*Oil Pump Cover Lockwashers.....	
4387-A	2	*Oil Pump Snap Ring.....	
22154-A	2	*Oil Pump Gears—1 $\frac{1}{4}$ " Long.....	ER

OIL PUMP—Latest Type (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
1179-A	2	*Oil Pump Gear Key	EX
22124-A	1	*Oil Pump Shaft—7 ¹ / ₁₆ " Long	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—2 ¹ / ₁₆ " Long	FF
22119-A	1	Oil Pump Attaching Gasket	FA
1864-A	3	Oil Pump Attaching Screw	ES
342-A	3	Oil Pump Attaching Lockwasher	ET

OIL PUMP ASSEMBLY

(Large Capacity Type)

Can be used in place of 41123-CS if required.

44128-CS	1	Oil Pump Assembly (Includes parts marked *)	
45281-C	1	*Oil Pump Body	
44129-A	1	*Oil Pump Cover	
14069-A	7	*Oil Pump Cover Screw	
628-A	7	*Oil Pump Cover Screw Lockwasher	
4387-A	1	*Oil Pump Snap Ring	
45283-A	1	*Oil Pump Gear—Large	
45285-A	1	*Oil Pump Gear—Small	
1179-A	2	*Oil Pump Gear Key	
22124-A	1	*Oil Pump Shaft	
45266-A	1	*Oil Pump Drive Gear	
2047-A	1	*Oil Pump Drive Gear Washer	
4809-A	1	*Oil Pump Drive Gear Pin	
45282-A	1	*Oil Pump Idler Shaft	
22119-A	1	Oil Pump Attaching Gasket	
1864-A	3	Oil Pump Attaching Screw	
342-A	3	Oil Pump Attaching Screw Lockwasher	

OIL PRESSURE REGULATOR

(Used in and part of all above oil pumps)

2058-A	1	*Oil Pressure Regulator Screw	EQ
28-A	1	*Oil Pressure Regulator Screw Nut	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

OIL PUMP DRIVE GEAR LUBRICATING PARTS

(Used on some engines)

6260-A	1	Oil pump drive gear lubricating tube elbow (In oil pump)	
42811-BS	1	Oil pump drive gear lubricating tube assembly (Includes parts marked *)	
14946-A	1	*Tube nut	
14947-A	1	*Tube ferrule	

OIL GAUGE

40144-AS	1	Bayonet oil gauge	EG
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MANIFOLD

If the manifold on engine does not appear in this list send a sketch or description of manifold wanted and engine number of engine for which manifold is wanted. With the large variety of manifolds in use it is impossible to list them in a book of this size.

MANIFOLD—(Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
40315-E	1	Exhaust and intake manifold 1 $\frac{1}{4}$ " up draft center outlet exhaust.....	CR
40033-E	1	Exhaust and intake manifold 1 $\frac{1}{4}$ " down draft.....	
40055-D	1	Exhaust and intake manifold, 1 $\frac{1}{4}$ " up draft, rear outlet exhaust.....	
40788-D	1	Exhaust and intake manifold, 1 $\frac{1}{4}$ " up draft, center outlet exhaust kerosene.....	
40324-D	1	Exhaust and intake manifold, 1" up draft, center outlet exhaust.....	CQ CN CK CL CJ CM CT CS CO
■ 43814-B	1	Exhaust and intake manifold gasket—Replaces 40723-A and 45805-B.....	
14895-A	10	Exhaust and intake manifold stud (1 $\frac{1}{16}$ "x1 $\frac{1}{2}$ ").....	
13123-A	10	Exhaust and intake manifold stud nut (1 $\frac{1}{16}$ "-20") (replaces 848-A)....	
1388-A	10	Exhaust and intake manifold stud washer.....	
305-A	3	Manifold pipe plug.....	
4640-A	1	Manifold set screw (3 $\frac{3}{8}$ "x16x3 $\frac{1}{4}$ ").....	
40027-A	1	Manifold exhaust companion flange—standard.....	
■ 40028-A	1	Manifold exhaust companion flange gasket.....	
4699-A	2	Manifold companion flange screw.....	
415-A	1	Manifold Pipe Plug—3 $\frac{3}{8}$ " for downdraft manifolds.....	

GOVERNORS

NOTE—Since a great many different types and makes of governors are used it is essential to furnish engine serial number to insure correct parts being shipped.

GOVERNOR HEAD ASSEMBLY (Handy)

23380-CS	1	Governor Head Assembly (Includes parts marked *).....	JT
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	
62812-A	1	†Governor Number Plate	KQ KZ
14420-A	2	†Governor Number Plate Drive Screw	
40447-A	1	†Governor Shaft Bushing	
14578-A	1	†Governor Expansion Plug	
43443-AS	1	**Governor Operating Lever and Shaft Assembly (Includes parts marked ††)	KF LJ KE JX KA LD LB LC KA LE LG LH LK
43444-AS	1	††Governor Operating Lever and Thrust Button Assembly (Includes parts marked †)	
40455-A	1	†Governor Operating Lever	
40456-A	1	†Governor Operating Lever Thrust Button	
40453-A	1	††Governor Operating Shaft	
49418-A	1	††Governor Operating Shaft Fork	
3287-A	1	**Governor Operating Fork Taper Pin	
58849-A	2	**Governor Operating Shaft Packing	
58850-A	12	**Governor Operating Shaft Roller Bearing	
14581-A	3	**Governor Operating Shaft Bearing Retainer Washer	
14579-A	1	**Governor Operating Lever Taper Pin	LM KK KH KG KL LL JS KM KN
58845-A	1	**Governor Bumper Spring	
45254-A	1	**Governor Bumper Spring Screw	
4200-A	1	**Governor Bumper Spring Screw Lock Nut	
3196-A	1	**Governor Bumper Spring Screw Gasket	
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	
40461-A	1	§Governor Weight Carrier	
14681-A	1	§Governor Weight Carrier Pin	
40459-A	2	§Governor Weight	KL LL JS KM KN
58854-A	2	§Governor Weight Pin	
3370-A	4	§Governor Weight Pin Clip	
45779-B	1	††Governor Base	
14585-A	1	††Governor Shaft Bearing	KM KN
14586-A	2	††Governor Shaft Bearing Retaining Washer	

GOVERNOR HEAD ASSEMBLY (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
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 §§)	
58847-A	1	§§Governor Operating Fork Base	KD
40452-A	1	§§Governor 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 ASSEMBLY (Handy)

Same as 23380-CS except operating spring.

0442-CS	1	Governor assembly (Handy).....	
0444-A	1	Governor operating spring, range over 1600 R. P. M.....	KC

GOVERNOR HEAD ASSEMBLY (Handy)

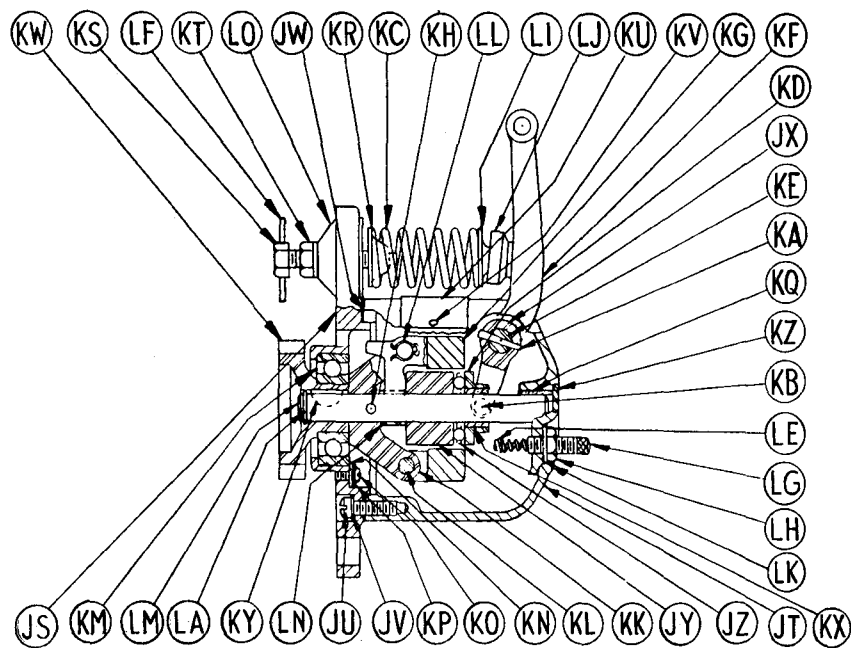
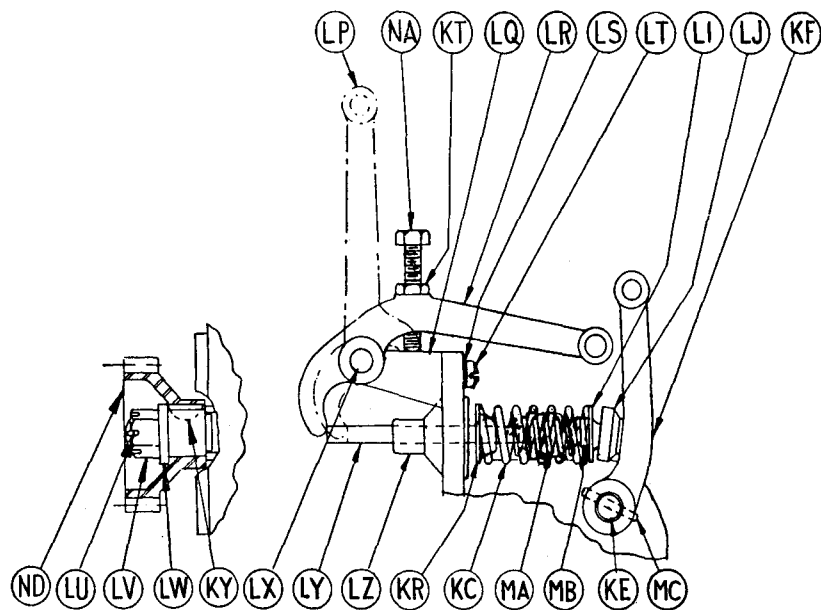
Same as 23380-CS except as follows:

5228-CS	1	Governor assembly.....	
5235-A	1	Governor operating lever.....	KF
5403-A	1	Governor operating spring—800 R. P. M.....	KC

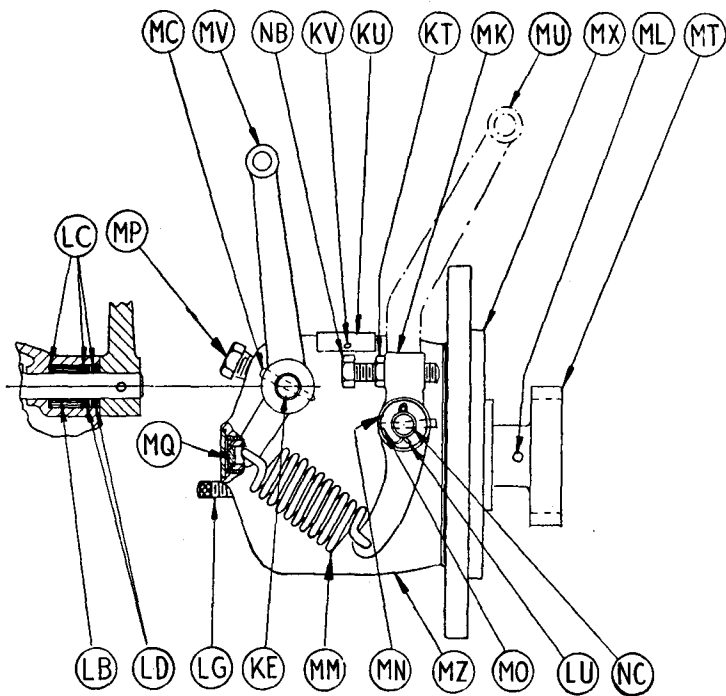
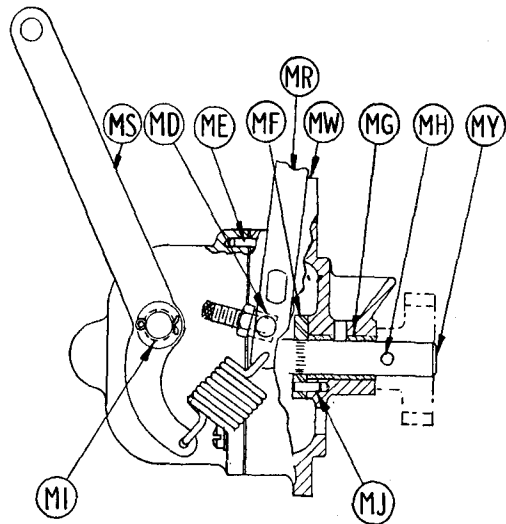
GOVERNOR HEAD ASSEMBLY

This Governor is distinguished by the shaft being mounted on Timken bearings.

2312-CS	1	Governor head assembly (includes parts marked *).....	
5800-B	1	*Governor body.....	
5801-A	1	*Governor body cap.....	
5846-A As Req		*Governor bearing adjusting shim.....	
5802-A	2	*Governor bearing (Timken).....	
5803-A	2	*Governor body screw No. 6x32x 5/8".....	
2882-A	2	*Governor weight.....	
5806-A	1	*Governor weight spider.....	
5805-A	2	*Governor weight rivet.....	
5807-A	1	*Governor weight spider pin.....	
2307-AS	1	*Governor shaft and gear assembly.....	
5829-A	1	*Governor shaft nut.....	
5828-A	1	*Governor shaft nut tongue washer.....	
5810-A	1	*Governor thrust sleeve.....	
5811-A	1	*Governor thrust ball bearing.....	
5812-A	1	*Governor thrust yoke.....	
5842-A	1	*Governor thrust yoke pin.....	
5814-A	1	*Governor thrust yoke shaft.....	
5817-A	1	*Governor connecting rod lever.....	
5813-A	1	*Governor connecting rod lever pin.....	
5862-A	1	*Governor speed adjusting spring, range 1050 R.P.M. to 1350 R.P.M.....	



Sectional View of Handv Governor



Handy Governor Variations

GOVERNOR HEAD ASSEMBLY (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
5820-A	1	*Governor speed adjusting spring, range 1200 R.P.M. to 1500 R.P.M.	
22348-A	1	*Governor speed adjusting spring, range 1400 R.P.M. to 1800 R.P.M.	
22572-A	1	*Governor speed adjusting spring, range over 1800 R.P.M.	
		Specify which spring is required when ordering governor.	
5821-A	1	*Governor adjusting spring collar	
5822-A	1	*Governor adjusting spring bolt	
5823-A	1	*Governor adjusting spring bolt nut	
5824-A	1	*Governor adjusting spring bolt lock wire	
10471-A	1	Governor attaching gasket	
1173-A	2	Governor attaching screw $\frac{7}{16}$ "x14x1 $\frac{1}{4}$ "	
335-A	2	Governor attaching screw lock washer	

GOVERNOR VALVE BOX ASSEMBLIES

S. A. E. 1 $\frac{1}{4}$ " size (actual diameter of hole 1 $\frac{1}{16}$ ")

42470-BS	1	Governor valve box assembly (including parts marked *) offset	
42471-B	1	*Governor valve box	
5837-A	1	*Governor butterfly valve	
5838-A	1	*Governor butterfly valve shaft	
5839-A	2	*Governor butterfly valve screw No. 8x32x $\frac{1}{4}$ "	
4116-A	2	*Governor butterfly valve lock washer	
5841-A	1	*Governor butterfly valve shaft lever	
5842-A	1	*Governor butterfly valve shaft lever pin	
5853-A	1	*Governor bumper spring	
5854-A	1	*Governor bumper spring screw	
5855-A	1	*Governor bumper spring screw nut	
1183-A	2	Governor valve box attaching screw	
752-A	2	Governor valve box attaching screw nut	
342-A	2	Governor valve box attaching screw lock washer	
87-A	1	Governor valve box attaching gasket	

S. A. E. 1 $\frac{1}{4}$ " size (actual diameter of hole 1 $\frac{1}{16}$ ")

5835-AS	1	Governor valve assembly (includes parts marked *) straight	
5836-A	1	*Governor valve box	
5837-A	1	*Governor butterfly valve	
5838-A	1	*Governor butterfly valve shaft	
5839-A	2	*Governor butterfly valve screw	
4116-A	2	*Governor butterfly valve screw lock washer	
5841-A	1	*Governor butterfly valve lever	
5842-A	1	*Governor butterfly valve lever pin	
5853-A	1	*Governor bumper spring	
5854-A	1	*Governor bumper spring screw	
5855-A	1	*Governor bumper spring screw nut	
1864-A	1	Governor valve box attaching screw ($\frac{3}{8}$ "x16x1")	
1183-A	1	Governor valve box attaching screw ($\frac{3}{8}$ "x16x1 $\frac{1}{2}$ ")	
752-A	1	Governor valve box attaching screw nut	
342-A	2	Governor valve box attaching screw lock washer	
87-A	1	Governor valve box attaching gasket	

GOVERNOR AND VALVE BOX ASSEMBLY

40403-CS	1	Governor and valve box assembly (includes parts marked *)	
23559-AS	1	*Governor kit assembly—replaces governor 22312-CS	
40404-AS	1	*Governor valve box assembly	
40406-A	1	*Governor connecting rod	
984-A	2	*Governor connecting rod washer	
301-A	2	*Governor connecting rod cotter pin	

GOVERNOR LUBRICATING TUBE

45780-A	1	Governor Lubricating Tube	
14947-A	2	Governor Lubricating Tube Ferrule	
14946-A	2	Governor Lubricating Tube Nut	
11793-A	2	Governor Lubricating Tube Union	

GOVERNOR LUBRICATING TUBE (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
14945-A	1	Governor Lubricating Tube Union	
14966-A	1	Governor Lubricating Tube Elbow	
3734-A	2	Governor Lubricating Tube Clamp	

STARTER ATTACHING PARTS

22066-A	1	Starter adapter (No. 4 housing)	CU
2055-B	1	Starter hole cover	DB
8938-A	3	Starter hole cover screw ($\frac{3}{8}$ "x16x1 $\frac{5}{8}$ " hex. hd.)	DE
342-A	3	Starter hole cover screw lock washer ($\frac{3}{8}$ " S. A. E.)	DF
4303-A	3	Starter attaching stud	CV
752-A	3	Starter attaching stud nut	CZ
342-A	3	Starter attaching stud lockwasher	CW
2210-A	1	Starter adapter collar dowel—special	CWA
4072-A	3	Starter hole cover screw (used when adapter is omitted)	

GENERATOR ATTACHING EQUIPMENT

40266-B	1	Generator gear (used when combine governor is not used) 14 teeth	
22266-B	1	Generator gear (used with combine governor) 14 teeth	
40267-B	1	Generator gear (used with offset generator and no governor) 17 teeth	
40978-B	1	Generator gear (used with offset generator and governor) 17 teeth	
22270-A	1	Generator opening cover	
22271-A	1	Generator gasket	
352-A	2	Generator attaching screw (used on earlier engines)	
312-A	2	Generator attaching screw lockwasher	
14907-A	2	Generator attaching stud (used in present engines)	
626-A	2	Generator attaching stud nut	

CABLE TUBE

40109-B	1	Cable tube assembly (18" long)	CG
40110-A	3	Cable bracket ($\frac{7}{8}$ " long)	

WATER OUTLET PIPES

There is such a wide variety of water inlet and outlet pipes used it is impossible to list them in a book of this size. Many manufacturers using these models of engines supply their own special pipes which the Hercules Motors Corporation do not usually service. When ordering give engine number and a complete description of pipe wanted, giving outside and inside diameters, angles and length together with kind of material or send in the pipe as a sample.

40653-B	1	Water outlet pipe	II
22650-B	1	Water outlet pipe 1 $\frac{1}{4}$ " O. D. 35 deg.	DQ
22666-B	1	Water outlet pipe 2" O. D. 5 $\frac{1}{4}$ " high	IK
22660-B	1	Water outlet pipe 2" O. D. support lug on left side	
22664-A	1	Water outlet pipe, support lug on side	
22670-A	1	Water outlet pipe 2" O. D. 4 $\frac{1}{2}$ " high	
22678-B	1	Water outlet pipe 1 $\frac{1}{2}$ " O. D. 27 deg.	DS
22682-B	1	Water outlet pipe, with support lug on top	
14224-A	1	Cylinder head to outlet pipe gasket ($\frac{1}{32}$ " vellumoid)	DR
1864-A	2	Cylinder head to outlet pipe cap screw	DT
342-A	2	Cylinder head to outlet pipe screw lockwasher ($\frac{3}{8}$ " S. A. E.)	DU

WATER INLET PIPES

Used with through shaft water pump

40652-B	1	Water inlet pipe 2" O. D.	II
40682-B	1	Water inlet pipe same as 40652-B except $\frac{1}{4}$ " pipe plug hole	
86-A	1	Water inlet pipe gasket	IH
4537-A	1	Water inlet pipe screw $\frac{5}{16}$ "x18x3 $\frac{1}{2}$ "	HS
303-A	2	Water inlet pipe screw $\frac{5}{16}$ "x18x $\frac{3}{4}$ "	HT
615-A	2	Water inlet pipe lockwasher	

Give Engine Number with Each Part Order

WATER INLET PIPES

Used with blind end water pump

Part No.	No. Req.	PART NAME	Illustration Reference
40661-B	1	Water inlet pipe, 2" O. D. 3 $\frac{1}{2}$ " from flange to center of pipe.....	
7218-A	1	Water inlet pipe gasket.....	
1864-A	2	Water inlet pipe screw (3 $\frac{3}{8}$ "x16x1").....	
342-A	2	Water inlet pipe lockwasher.....	
40657-B	1	Water inlet pipe 1 $\frac{1}{2}$ " O. D.	
7218-B	1	Water inlet pipe gasket.....	
1864-A	1	Water inlet pipe screw (3 $\frac{3}{8}$ "x16x1").....	
2083-A	1	Water inlet pipe screw (3 $\frac{3}{8}$ "x16x2 $\frac{1}{4}$ ").....	
342-A	2	Water inlet pipe lockwasher.....	
40654-B	1	Water inlet pipe 2" O. D. 2 $\frac{3}{8}$ " high.....	
40653-B	1	Water inlet pipe 2" O. D. 2 $\frac{3}{8}$ " high.....	
7218-A	1	Water inlet pipe gasket (used with 40654-B).....	
14224-A	1	Water inlet pipe gasket (used with 40653-B).....	
682-A	1	Water inlet pipe screw (3 $\frac{3}{8}$ "x16x2 $\frac{3}{4}$ ").....	
1864-A	1	Water inlet pipe screw (3 $\frac{3}{8}$ "x16x1").....	
342-A	2	Water inlet pipe lockwasher.....	
305-A	1	Water inlet pipe plug 1 $\frac{1}{8}$ ".....	
620-A	1	Water inlet pipe plug 1 $\frac{1}{4}$ ".....	

FAN ASSEMBLIES

There is such a wide variety of fan assemblies used it is impossible to list all of them in a book of this size. Some of the more common are listed below. Many manufacturers using these models of engines supply their own fan assemblies which the Hercules Motors Corporation do not usually service. When ordering please give all available dimensions and part numbers; also engine number.

40270-CS	1	Fan assembly, 18" dia. blade, "V" pulley, bracket 5 $\frac{1}{8}$ " high.....
40346-CS	1	Fan assembly, 18" dia. blade, "V" pulley, bracket 7 $\frac{3}{8}$ " high.....
40351-CS	1	Fan assembly, 18" dia. blade, "V" pulley, bracket 5 $\frac{3}{8}$ " high.....
40355-CS	1	Fan assembly, 17 $\frac{1}{2}$ " dia. blade, "V" pulley, bracket 5 $\frac{3}{8}$ " high.....
40285-CS	1	Fan assembly, 18" dia. blade, "V" pulley, bracket 4 $\frac{7}{8}$ " high.....
40489-CS	1	Fan assembly, 18" diameter blade, "V" pulley, 1.11:1 drive ratio, bracket 4 $\frac{7}{8}$ " high.....
40488-CS	1	Fan assembly, 18" dia. blade, "V" pulley, bracket 4 $\frac{1}{8}$ " high.....
40357-CS	1	Fan assembly, 20" diameter blade, 2 "V" pulley, 6 blades, bracket 5 $\frac{1}{8}$ " high.....
40507-CS	1	Fan assembly, 18" diameter blade, "V" pulley, 6 blades, bracket 4 $\frac{1}{8}$ " high, blower type.....
40513-CS	1	Fan assembly, 20" diameter blade, "V" pulley, bracket 9 $\frac{1}{8}$ " high, rear mounting—superseded by 45494-CS.....
45480-CS	1	Fan assembly, 20" diameter blade, "V" pulley, 6 blades, bracket 16 $\frac{1}{4}$ " high.....
45494-CS	1	Fan assembly, 20" diameter blade, "V" pulley, bracket 6 $\frac{1}{8}$ " high—supersedes 40513-CS.....
8533-A	2	Fan attaching screw.....
312-A	2	Fan attaching screw lockwasher.....

FAN BELT

40276-C	1	Fan belt, "V" type, 39 $\frac{7}{8}$ " outside circumference.....
40273-B	1	Fan belt, "V" type, 48 $\frac{3}{8}$ " outside circumference.....
40287-A	1	Fan belt, "V" type, 44" outside circumference.....
40352-A	1	Fan belt, "V" type, 41 $\frac{1}{2}$ " outside circumference.....
40348-A	1	Fan belt, "V" type, 42" inside circumference.....
45481-A	1	Fan belt, "V" type, 47 $\frac{1}{2}$ " outside circumference.....

FUEL PUMP

22559-AS	1	Fuel pump—Bowl straight out from crankcase.....
40559-BS	1	Fuel pump—Same as 22559-CS except bowl is toward rear of engine.....
40563-BS	1	Fuel pump—Same as 40559-BS except with hand primer.....

EV

FUEL PUMP (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
40562-BS	1	Fuel Pump—Same as 40563-BS except bowl is toward front of engine.....	
■ 22564-A	1	Fuel pump gasket.....	FC
303-A	2	Fuel pump attaching screw.....	FJ
615-A	2	Fuel pump attaching lockwasher.....	
42919-A	1	Fuel pump drive pin.....	
3557-A	1	Fuel pump ell (in fuel pump).....	
When fuel pump is not used, use the following parts:			
4879-A	1	Fuel pump hole cover.....	FD
■ 22564-A	1	Fuel pump hole cover gasket.....	FC
1048-A	2	Fuel pump hole cover screw.....	
615-A	2	Fuel pump hole cover screw lockwasher.....	FH

STARTING CRANK (Long Type)

45089-BS	1	Starting crank assembly (includes all parts marked †) overall length 15 $\frac{1}{2}$ ".....	
22282-A	1	†Starting crank spring.....	DX
4268-A	1	†Starting crank washer ($\frac{7}{8}$ "x1 $\frac{1}{4}$ ").....	DN
1710-A	1	†Starting crank washer pin ($\frac{1}{8}$ "x1").....	DO
4448-A	1	†Starting crank pin ($\frac{1}{8}$ "x1 $\frac{1}{8}$ ").....	EB
4460-A	1	†Starting crank collar.....	DV
4199-A	1	†Starting crank collar key (No. 3 Woodruff).....	EA

STARTING CRANK (Short Type)

45088-BS	1	Starting crank assembly (includes all parts marked *) overall length 13 $\frac{3}{8}$ ".....	DP
22282-A	1	*Starting crank spring.....	DX
4268-A	1	*Starting crank washer ($\frac{7}{8}$ "x1 $\frac{1}{4}$ ").....	DN
1710-A	1	*Starting crank washer pin ($\frac{1}{8}$ "x1").....	DO
4448-A	1	*Starting crank pin ($\frac{5}{16}$ "x1 $\frac{1}{8}$ ").....	EB
4460-A	1	*Starting crank collar.....	DV
4199-A	1	*Starting crank collar key (No. 3 Woodruff).....	EA

FRONT SUPPORT

22771-C	1	Front support (used with above starting crank assemblies).....	
4068-A	4	Front support screw.....	
312-A	4	Front support screw lockwasher ($\frac{1}{2}$ " S. A. E.).....	

TRUNNION BRACKET

Earlier type trunnion bracket used steel shim, screw and lock washer; the latest design eliminates the shim and uses screw, lock washer and lock nut. The shim may be eliminated on any engine provided the longer screw with the lock nut is used.

40700-B	1	Trunnion bracket.....	CF
1701-A	1	Trunnion bracket screw.....	CH
3293-A	1	Trunnion bracket screw nut $\frac{5}{16}$ " thick.....	
312-A	1	Trunnion bracket screw lockwasher.....	CP

OIL FILTRATOR

Used with magneto drive water pump and eliminates water pump discharge pipe.

22240-CS	1	Oil filtrator assembly (includes parts marked *).....	
22246-BS	1	*Oil filtrator base and inlet tube.....	
2445-A	1	*Oil filtrator shell.....	
■ 2452-A	1	*Oil filtrator shell gasket.....	
18245-A	1	*Oil filtrator shell cap nut.....	
2448-A	1	*Oil filtrator shell cap nut gasket.....	
7330-A	1	*Oil filtrator base inlet tube.....	
22248-A	1	*Oil filtrator oil reverse valve.....	
2379-A	1	*Oil filtrator oil reverse valve bushing.....	
22249-A	1	*Oil filtrator oil reverse valve spring.....	
8579-A	1	*Oil filtrator drain plug.....	

OIL FILTRATOR (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
8575-A	1	*Oil filtrator drain plug gasket.....	
7343-A	1	*Oil filtrator differential valve ball.....	
8577-A	1	*Oil filtrator differential valve spring.....	
8578-A	1	*Oil filtrator differential valve plug.....	
8575-A	1	*Oil filtrator differential valve plug gasket.....	
■ 22251-BS	1	*Oil filtrator slug assembly (includes parts marked **)	
On orders for felts the Slug assembly will be furnished.			
2403-A	21	**Oil filtrator felt washers.....	
22252-A	1	**Oil filtrator outlet tube.....	
2406-A	1	**Oil filtrator felt retaining washer (top).....	
2407-A	1	**Oil filtrator felt retaining washer (bottom).....	
2405-A	1	**Oil filtrator spacer coil.....	
2408-A	1	**Oil filtrator cork washer.....	
2409-A	1	**Oil filtrator cork washer retainer.....	
2410-A	1	**Oil filtrator compression spring.....	
2411-A	1	**Oil filtrator compression spring nut.....	
2808-A	1	*Oil filtrator name plate.....	
■ 40691-A	1	Oil filtrator gasket.....	
1608-A	3	Oil filtrator attaching screw.....	
352-A	1	Oil filtrator attaching screw.....	
312-A	4	Oil filtrator attaching screw lock washer.....	

OIL FILTRATOR

Used with blind end water pump and eliminates water pump discharge pipe.

40240-CS	1	Oil filtrator assembly (includes parts marked *).....	
40241-BS	1	*Oil filtrator base and inlet tube.....	
2445-A	1	*Oil filtrator shell.....	
■ 2452-A	1	*Oil filtrator shell gasket.....	
18245-A	1	*Oil filtrator shell cap nut.....	
2448-A	1	*Oil filtrator shell cap nut gasket.....	
7330-A	1	*Oil filtrator base inlet tube.....	
22248-A	1	*Oil filtrator oil reverse valve.....	
2379-A	1	*Oil filtrator oil reverse valve bushing.....	
22249-A	1	*Oil filtrator oil reverse valve spring.....	
8579-A	1	*Oil filtrator drain plug.....	
8575-A	1	*Oil filtrator drain plug gasket.....	
7343-A	1	*Oil filtrator differential valve ball.....	
8577-A	1	*Oil filtrator differential valve spring.....	
8578-A	1	*Oil filtrator differential valve plug.....	
8575-A	1	*Oil filtrator differential valve plug gasket.....	
■ 22251-BS	1	*Oil filtrator slug assembly (includes parts marked **)	
On orders for felts the Slug Assembly will be furnished.			
2403-A	21	**Oil filtrator felt washers.....	
22252-A	1	**Oil filtrator outlet tube.....	
2406-A	1	**Oil filtrator felt retaining washer (top).....	
2407-A	1	**Oil filtrator felt retaining washer (bottom).....	
2405-A	1	**Oil filtrator spacer coil.....	
2408-A	1	**Oil filtrator cork washer.....	
2409-A	1	**Oil filtrator cork washer retainer.....	
2410-A	1	**Oil filtrator compression spring.....	
2411-A	1	**Oil filtrator compression spring nut.....	
2808-A	1	*Oil filtrator name plate.....	
■ 40691-A	1	Oil filtrator gasket.....	
1608-A	3	Oil filtrator attaching screw.....	
352-A	1	Oil filtra or attaching screw.....	
312-A	4	Oil filtrator attaching screw lock washer.....	

OIL CONDITIONER OR FILTRATOR AND COOLER

Use only with blind end water pump
(Eliminates Water Pump Discharge Pipe)

40243-CS	1	Oil conditioner assembly (includes parts marked *).....	
40244-CS	1	*Oil conditioner base assembly.....	

OIL CONDITIONER OR FILTRATOR AND COOLER (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
620-A	5	*Oil conditioner base pipe plug $\frac{1}{4}$ "	
40242-B	1	*Oil conditioner cooling unit (order new unit listed under 40207-CS)	
40247-A	1	*Oil conditioner cooling unit gasket	
752-A	3	*Oil conditioner cooling unit nut	
342-A	3	*Oil conditioner cooling unit lock washer	
40990-C	1	*Oil conditioner cover	
40248-A	1	*Oil conditioner cover gasket	
14069-A	9	*Oil conditioner cover screw ($\frac{1}{4}$ "x20x $\frac{3}{4}$ ")	
628-A	9	*Oil conditioner cover lock washer	
1865-A	2	*Oil conditioner cover screw ($\frac{3}{8}$ "x16x1 $\frac{1}{2}$ ")	
342-A	2	*Oil conditioner cover lock washer	
620-A	4	*Oil conditioner cover pipe plug $\frac{1}{4}$ "	
2451-A	1	*Oil conditioner shell	
2452-A	1	*Oil conditioner shell gasket	
2447-A	1	*Oil conditioner clean-out fitting	
2448-A	1	*Oil conditioner clean-out fitting gasket	
2449-A	1	*Oil conditioner clean-out fitting cap	
2450-A	1	*Oil conditioner clean-out fitting cap gasket	
27251-A	1	*Oil conditioner inlet tube	
7343-A	1	*Oil conditioner differential valve ball	
8577-A	1	*Oil conditioner differential valve spring	
8578-A	1	*Oil conditioner differential valve plug	
8575-A	1	*Oil conditioner differential valve plug gasket	
27250-A	1	*Oil conditioner by-pass valve ball	
40249-A	1	*Oil conditioner by-pass valve spring	
15248-A	1	*Oil conditioner by-pass valve plug	
8579-A	1	*Oil conditioner drain plug	
8575-A	1	*Oil conditioner drain plug gasket	
2402-BS	1	*Oil conditioner slug assembly (includes parts marked **)	
		The slug assembly 2402-BS will be supplied on all orders for felt washers.	
2403-A	28	**Oil conditioner felt washer	
2406-A	1	**Oil conditioner felt retaining washer (top)	
2407-A	1	**Oil conditioner felt retaining washer (bottom)	
2408-A	1	**Oil conditioner cork washer	
2409-A	1	**Oil conditioner cork retaining washer	
2411-A	1	**Oil conditioner felt core retaining washer	
2410-A	1	**Oil conditioner compression spring	
2412-A	1	**Oil conditioner check valve nut	
7343-A	1	**Oil conditioner check valve ball—supersedes 2413-A	
7344-A	1	**Oil conditioner check valve spring—supersedes 2414-A	
2415-A	1	**Oil conditioner check valve rivet	
2404-A	1	**Oil conditioner outlet tube	
2405-A	1	**Oil conditioner spacer coil	
2808-A	1	**Oil conditioner name plate	
40691-A	1	Oil conditioner attaching gasket	
14496-A	2	Oil conditioner attaching screw ($\frac{1}{2}$ "x13x4 $\frac{1}{4}$ ")	
352-A	2	Oil conditioner attaching screw ($\frac{1}{2}$ "x13x1 $\frac{1}{4}$ ")	
312-A	4	Oil conditioner attaching screw lockwasher	

OIL CONDITIONER OR FILTRATOR AND COOLER

Latest type with improved cooling unit, all parts same as listed under the 40243-CS assembly, except as follows:

40207-CS	1	Oil conditioner assembly	
45542-B	1	Oil conditioner cooling unit (new improved type)	

AIR COMPRESSOR AND DRIVE (Belt Driven)

85174-CS	1	Air compressor—6 cu. ft.	
15795-A	1	Air compressor gasket	
1173-A	4	Air compressor attaching screw ($\frac{1}{16}$ "x14x1 $\frac{1}{4}$ ")	
335-A	4	Air compressor attaching lockwasher $\frac{1}{16}$ "	
40565-C	1	Air compressor bracket	
4354-A	3	Air compressor bracket screw ($\frac{1}{2}$ "-13x3 $\frac{1}{2}$ ")	
312-A	3	Air compressor bracket lockwasher $\frac{1}{2}$ "	

AIR COMPRESSOR AND DRIVE (Belt Driven) (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
40567-BS	1	Air compressor oil inlet tube assembly.....	
1532-A	2	Air compressor oil inlet tube nut.....	
1533-A	1	Air compressor oil inlet tube union.....	
1659-A	1	Air compressor oil inlet tube elbow.....	
40568-BS	1	Air compressor oil drain tube assembly.....	
2397-A	2	Air compressor oil drain tube nut.....	
2396-A	1	Air compressor oil drain tube union.....	
4086-A	1	Air compressor oil drain tube elbow.....	
43867-BS	1	Air compressor water inlet tube assembly.....	
43868-BS	1	Air compressor water outlet tube assembly.....	
2397-A	4	Air compressor water tube nut.....	
2396-A	4	Air compressor water tube union.....	
40511-B	1	Air compressor pulley.....	
40500-B	1	Air compressor and fan driving pulley.....	
4265-A	1	Air compressor and fan driving pulley key.....	
42255-A	2	Air compressor and fan drive belt.....	
40566-B	1	Breather and oil filler pipe.....	
40506-CS	1	Fan assembly (or similar type fan assembly).....	
43186-DS	1	Water pump assembly—for details see page 20.....	

TACHOMETER AND DRIVE

Cannot be used on engines having belt driven air compressor and distributor ignition.

16167-CS	1	*Tachometer drive assembly—For use with distributor ignition.....	
40721-CS	1	*Tachometer drive assembly—For use when distributor is not required.....	
8051-A	1	Tachometer drive attaching set screw.....	
300-A	1	Tachometer drive attaching set screw nut.....	
40199-A	1	*Tachometer drive gear—For use with engines having through shaft water pump.....	
22335-A	1	*Tachometer drive gear—For use with engines having blind end water pump.....	
14644-A	1	Tachometer gauge or head.....	
14645-A	1	Tachometer gauge clamp.....	
85833-A	1	Tachometer drive swivel.....	
85700-A	1	*Tachometer cable (flexible drive shaft) 48".....	
80650-B	1	*Tachometer cable (flexible drive shaft) 54".....	
9379-A	1	Tachometer cable clip.....	

*Please specify which drive, gear and cable is required.

Model "JXB"

Supplement showing parts which are different from model "JXA". The model "JXB" Hercules has 3 $\frac{5}{8}$ " cylinders. The model "JXA" Hercules has 3 $\frac{3}{8}$ " cylinders.

CYLINDER AND CRANKCASE

See note on page 6 about ordering cylinder block assemblies.

NOTE—When cylinder and crankcase is ordered for engines with poured type bearings we will substitute similar assembly having removable shell type bearings. Be sure to give engine serial number.

44100-AS	1	Cylinder and crankcase assembly includes valve guides, valve tappet guides, camshaft bearing, idler shaft bearing, main bearing caps, bearing shells and parts marked * on page 10. This assembly for shell type bearings Diameter of bore for bearings 2 $\frac{1}{4}$ "—Super-sedes 40396-DS, 42024-DS, and 43990-AS.....	AE
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CYLINDER HEAD

Part No.	No. Req.	PART NAME	Illustration Reference
40102-D	1	Cylinder head, 5.4:1 compression ratio—standard.....	AD
40208-D	1	Cylinder head, 5.83:1 compression ratio, flat type.....	
40213-D	1	Cylinder head, 5.4:1 compression ratio, 18 m. m. spark plug holes....	
45576-D	1	**Cylinder head, 5.4:1 compression ratio, flat type, dual ignition.....	
45903-D	1	Cylinder head, 5.83:1 compression ratio.....	
40231-D	1	Cylinder head, 5.79:1 compression ratio.....	
40235-D	1	Cylinder head, 6.05:1 compression ratio.....	
40239-D	1	Cylinder head, 6.1:1 compression ratio—thermostat provision.....	
40255-D	1	Cylinder head, 6.25:1 compression ratio—natural gas.....	
45578-D	1	*Cylinder head, 6.2:1 compression ratio, 14 m. m. spark plug holes, aluminum.....	
45584-D	1	Cylinder head, 5.78:1 compression ratio.....	
45589-D	1	Cylinder head, 6.25:1 compression ratio—thermostat provision.....	
45590-D	1	Cylinder head, 5.83:1 compression ratio, 18 m. m. spark plug holes....	
45594-D	1	**Cylinder head, 5.83:1 compression ratio, flat type, dual ignition.....	
45575-D	1	Cylinder head, 5.83:1 compression ratio—thermostat provision.....	
45596-D	1	Cylinder head, 5.4:1 compression ratio—thermostat provision.....	
45901-D	1	Cylinder head, 5.8:1 compression ratio, (C. W. C.).....	
45598-D	1	Cylinder head, 6.25:1 compression ratio, 18 m. m. spark plug holes....	
Note: Cylinder heads marked * require 26-3182-A plain washers.			
Cylinder heads marked ** require 3-3390-A pipe plugs or 3-763-A expansion plugs.			
■ 44202-C	1	Cylinder head gasket—interchangeable with 40003-C, 42200-C and 43224-C.....	Z

PISTON (Cast Iron) 3⅝" Diameter

See note about oversizes page 12.

The pistons first used were ⅝" longer than the pistons which replaced them. However, the new type piston is interchangeable with any piston which is ⅝" longer.

40118-C	6	Piston with bushings, 4⅜" long—(state if standard or oversize wanted).....	
■ 40128-B	6	Piston pin.....	AM
22021-A	12	Piston pin bushing.....	
■ 3810-A	18	Piston ring, compression.....	AC
■ 3960-A	6	Piston ring, oil regulating.....	AH

PISTON (Aluminum) 3⅝" Diameter

See note about oversizes page 12

The pistons first used were ⅝" longer than the pistons which replaced them. However, the new type piston is interchangeable with any piston which is ⅝" longer.

43142-AS	6	Piston and pin assembly, includes parts marked *.....	
■ 40119-C	6	*Piston, 4⅜" long (state if standard or oversize wanted).....	AF
■ 40128-B	6	*Piston pin.....	AM
■ 3810-A	18	Piston ring, compression.....	AC
■ 3960-A	6	Piston ring, oil regulating.....	AH

Model "JXG"

Supplement showing parts which are different from model "JXA". The model "JXG" Hercules (formerly "JXA-2") has 3½" cylinders. The model "JXA" Hercules has 3⅝" cylinders.

CYLINDER AND CRANKCASE

NOTE—When cylinder and crankcase is ordered for engines with poured type bearings we will substitute similar assembly having removable shell type bearings. Be sure to give engine serial number.

CYLINDER AND CRANKCASE (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
44571-AS	1	Cylinder and crankcase assembly include valve guides, valve tappet guides, camshaft bearings, idler shaft bearings, valve inserts, main bearing caps, bearing shells and parts marked * on page 10. This assembly for shell type bearings. Diameter of bore for bearings 2 $\frac{1}{64}$ " (supersedes 42031-DS).....	AE

CYLINDER HEAD

40206-D	1	Cylinder Head 4.72:1 compression ratio—standard.....	AD
44202-C	1	Cylinder Head Gasket—interchangeable with 40003-C, 42200-C and 43224-C.....	Z

PISTON—Aluminum 3 $\frac{1}{2}$ " Diameter

See note about oversizes on page 12

43141-AS	6	Piston and Pin Assembly, includes parts marked *	
45959-C	6	*Piston—state if standard or oversize is wanted.....	AF
40029-B	6	*Piston Pin.....	AM
3809-A	18	Piston Ring—Compression (Supersedes 22212-A).....	AG
3909-A	6	Piston Ring—Oil regulating (Supersedes 40019-A).....	AH

Model "JXC"

Supplement showing parts which are different from model "JXA". The model "JXC" Hercules has 3 $\frac{3}{4}$ " cylinders. The model "JXA" Hercules has 3 $\frac{5}{8}$ " cylinders.

CYLINDER AND CRANKCASE

See note on page 6 about ordering cylinder block assemblies.

NOTE—When cylinder and crankcase is ordered for engines with poured type bearings we will substitute similar assembly having removable shell type bearings. Be sure to give engine serial number.

44976-AS	1	Cylinder and crankcase assembly includes valve guides, valve tappet guides, camshaft bearings, idler shaft bearing, main bearing caps, bearing shells and parts marked * on page 10. This assembly for shell type bearings. Diameter of bore for bearings 2 $\frac{1}{64}$ " (supersedes 40741-DS, 42030-DS and 42931-DS)	AE
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CYLINDER HEAD

40202-D	1	Cylinder head, 5.35:1 compression ratio—standard.....	AD
40209-D	1	Cylinder head, 5.35:1 compression ratio, flat type.....	
40214-D	1	Cylinder head, 4.24:1 compression ratio, kerosene.....	
40215-D	1	Cylinder head, 5.63:1 compression ratio.....	
45903-D	1	Cylinder head, 5.78:1 compression ratio.....	
40208-D	1	Cylinder head, 5.80:1 compression ratio, flat type.....	
40217-D	1	Cylinder head, 5.63:1 compression ratio, aluminum, 14 m. m. spark plug holes.....	
40218-D	1	Cylinder head, 4.75:1 compression ratio, kerosene at 4000 feet altitude.....	
40219-D	1	Cylinder head, 5.0:1 compression ratio.....	
40229-D	1	Cylinder head, 5.35:1 compression ratio, 18 m. m. spark plug holes ..	
40235-D	1	Cylinder head, 6.1:1 compression ratio.....	
40239-D	1	Cylinder head, 6.1:1 compression ratio—thermostat provision	
40256-D	1	Cylinder head, 5.8:1 compression ratio, dual ignition, flat type.....	
40261-D	1	Cylinder head, 5.8:1 compression ratio, flat type, dual ignition.....	
40263-D	1	Cylinder head, 4.46:1 compression ratio, flat type.....	
40265-D	1	*Cylinder head, 6.0:1 compression ratio, flat type, dual ignition, 4400 feet altitude.....	

CYLINDER HEAD (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
45571-D	1	*Cylinder head, 6.0:1 compression ratio, aluminum, 14 m. m. spark plug holes.....	
45572-D	1	Cylinder head, 6.0:1 compression ratio, aluminum, 14 m. m. spark plug holes.....	
45575-D	1	Cylinder head, 5.78:1 compression ratio.....	
45580-D	1	*Cylinder head, 6.70:1 compression ratio, 14 m. m. spark plug holes, aluminum.....	
45581-D	1	*Cylinder head, 7.0:1 compression ratio, 14 m. m. spark plug holes, aluminum.....	
45583-D	1	Cylinder head, 6.7:1 compression ratio.....	
45593-D	1	Cylinder head, 5.35:1 compression ratio.....	
45595-D	1	Cylinder head, 6.0:1 compression ratio, flat type.....	
45902-D	1	Cylinder head, 5.8:1 compression ratio, (C. W. C.).....	

Note: Cylinder heads marked * require 26-3182-A plain washers.

Cylinder heads marked **require 3-3390-A pipe plugs or 3-763-A expansion plugs.

■ 44230-C	1	Cylinder head gasket—interchangeable with 40103-C, 42201-C, 43223-C, and 44203-C.....	Z
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PISTON (Cast Iron) 3 $\frac{3}{4}$ " Diameter

See note about oversizes page 12.

The 22215-C piston has been superseded by piston 22208-C which has four ring grooves while the 22215-C piston has only three ring grooves. The 22215-C piston is listed here for convenience in ordering parts for engines equipped with this three ring type piston. On orders for new pistons the 22208-C piston will be supplied.

■ 22215-CSY	6	Piston with bushings, three ring type.....	
■ 22029-B	6	Piston pin.....	AM
22021-A	12	Piston pin bushing.....	
■ 3812-A	12	Piston ring, compression (supersedes 611-A).....	AG
■ 3911-A	6	Piston ring, oil regulating (supersedes 40116-A).....	AH

PISTON (Cast Iron) 3 $\frac{3}{4}$ " Diameter

See note about oversizes page 12.

■ 22208-CSY	6	Piston with bushings, four ring type (state if standard or oversize wanted).....	
■ 22029-B	6	Piston pin.....	AM
22021-A	12	Piston pin bushing.....	
■ 3811-A	18	Piston ring, compression (supersedes 40117-A).....	AG
■ 3911-A	6	Piston ring, oil regulating (supersedes 40116-A).....	AH

PISTON (Aluminum) 3 $\frac{3}{4}$ " Diameter

See note about oversizes page 12.

43143-AS	6	Piston and pin assembly, includes parts marked*.....	
■ 22097-C	6	*Piston (state if standard or oversize wanted).....	AF
■ 22029-B	6	*Piston pin.....	AM
■ 3811-A	18	Piston ring, compression (supersedes 40117-A).....	AG
■ 3911-A	6	Piston ring, oil regulating (supersedes 40116-A).....	AH

Model "JXD"

Supplement showing parts which are different from model "JXA." The model "JXD" Hercules has 4" diameter cylinders. The model "JXA" Hercules has 3 $\frac{3}{8}$ " cylinders.

CYLINDER AND CRANKCASE

See note on page 6 about ordering cylinder block assemblies.

Part No.	No. Req.	PART NAME	Illustration Reference
NOTE—When cylinder and crankcase is ordered for engines with poured type bearings we will substitute similar assembly having removable shell type bearings. Be sure to give engine serial number.			
44977-AS	1	Cylinder and crankcase assembly includes valve guides, valve tappet guides, camshaft bearings, idler shaft bearing, main bearing caps bearing shells and parts marked * on page 10. This assembly for shell type bearings. Diameter of bore for bearings 2 $\frac{1}{4}$ "—superse- des 40388-DS and 42003-DS	AE

CYLINDER HEAD

40236-D	1	Cylinder head, 5.63:1 compression ratio—standard	AD
40238-D	1	Cylinder head, 5.78:1 compression ratio	
40224-D	1	Cylinder head, 5.94:1 compression ratio	
40253-D	1	Cylinder head, 6.6:1 compression ratio—natural gas	
40225-D	1	Cylinder head, 5.8:1 compression ratio, flat type	
40260-D	1	Cylinder head, 5.63:1 compression ratio—thermostat provision	
40262-D	1	*Cylinder head, 6.0:1 compression ratio, 14 m. m. spark plug holes, aluminum, dual ignition	
40264-D	1	**Cylinder head, 5.63:1 compression ratio, flat type, dual ignition	
45570-D	1	*Cylinder head, 6.00:1 compression ratio, 14 m. m. spark plug holes, aluminum	
45573-D	1	Cylinder head, 8.00:1 compression ratio	
45574-D	1	Cylinder head, 5.38:1 compression ratio	
45577-D	1	**Cylinder head, 5.78:1 compression ratio, dual ignition, flat type	
45579-D	1	Cylinder head, 5.78:1 compression ratio	
45582-D	1	Cylinder head, 5.63:1 compression ratio, 18 m. m. spark plug holes	
45585-D	1	Cylinder head, 5.63:1 compression ratio	
45587-D	1	Cylinder head, 7.0:1 compression ratio	
45588-D	1	**Cylinder head, 5.78:1 compression ratio, flat type, dual ignition, thermostat provision	
45591-D	1	Cylinder head, 5.63:1 compression ratio, 18 m. m. spark plug holes	
45592-D	1	Cylinder head, 5.9:1 compression ratio, (C. W. C.) TC	
45571-D	1	Cylinder head, 6.6:1 compression ratio, 14 m. m. spark plug holes, aluminum	
45597-D	1	Cylinder head, 5.9:1 compression ratio, (C.W.C.)	
45599-D	1	Cylinder head, 7.0:1 compression ratio, 18 m. m. spark plug holes	
Note: Cylinder heads marked * require 26-3182-A plain washers.			
Cylinder heads marked ** require 3-3390-A pipe plugs or 3-763-A expansion plugs.			
■ 44227-C	1	Cylinder head gasket—interchangeable with 40237-C, 42236-C, 42318-C and 44204-C	Z

PISTON (Aluminum) 4" Diameter

See note about oversizes page 12.

Part No.	No. Req.	PART NAME	Illustration Reference
42099-CS	6	Piston and pin assembly, includes parts marked *	
■ 42095-C	6	*Piston—interchangeable with 40120-C (state if standard or oversize is wanted)	AF
■ 22238-B	6	*Piston pin	AM
■ 3813-A	12	Piston ring, compression (supersedes 22213-A) 2nd and 3rd groove	AG
■ 43149-A	6	Piston ring, oil regulating (supersedes 2817-A and 3913-A)	AH
■ 42297-A	6	Piston ring, compression—Top groove	AG

TOOLS

Wrenches for servicing the "JX" 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—9/16" x 5/8"	
3777-A	2	Open end tappet wrench—1/16" 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	
13172-A	1	Pliers	
13174-A	1	Hammer	
13175-A	1	Screw driver	

Power Unit Section

There are many different types of both open and closed power units manufactured to different specifications. The parts listed in this section cover only the major items of the most commonly used closed type unit. Many applications require special radiators, hoods, side panels, instrument panels, etc. Therefore, it is necessary to give the engine serial number when ordering parts.

As there are many different makes and types of accessories such as air cleaners, carburetors, oil filters, starters, generators et cetera we cannot cover them in this book.

ACCESSORIES

Part No.	No. Req.	PART NAME	Illustration Reference
87-A	1	Carburetor Gasket.....	
1864-A	2	Carburetor Attaching Screw— $\frac{3}{8}$ "-16x1".....	
342-A	2	Carburetor Attaching Lock Washer.....	
5059-A	1	Carburetor Choke Control.....	
45061-BS	1	Air Cleaner.....	
45372-B	1	Air Cleaner Elbow.....	
4824-A	1	Air Cleaner Elbow Screw— $\frac{1}{4}$ "-20x1 $\frac{3}{8}$ ".....	
628-A	1	Air Cleaner Elbow Lock Washer.....	
42470-BS	1	Governor Valve Box Assembly (For details see page 36).....	
40449-B	1	Governor Connecting Rod.....	
14411-A	1	Governor Connecting Rod Ball Joint.....	
1177-A	1	Governor Connecting Rod Ball Joint Nut.....	
628-A	1	Governor Connecting Rod Ball Joint Lock Washer.....	
52153-CS	1	Magneto—Bosch (For attaching parts see page 28).....	
40159-DS	1	Water Pump—(For attaching parts see pages 23 and 24).....	
40289-CS	1	Fan Assembly.....	
40287-A	1	Fan Belt.....	
42483-B	1	Fan Drive Pulley—interchangeable with 40286-B.....	
22071-A	1	Fan Drive Pulley Pin.....	
5921-A	1	Fan Drive Pulley Cotter.....	

BAYONET OIL GAUGE

45114-AS	1	Bayonet Oil Gauge—Replaces 40144-AS.....	
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MANIFOLD

40611-B	1	Manifold Extension Spacer.....	
40819-A	1	Manifold Extension Spacer Gasket.....	
4683-A	1	Manifold Extension Spacer Screw— $\frac{1}{16}$ "-14x1 $\frac{1}{2}$ ".....	
40034-E	1	Manifold (For attaching parts see page 31).....	
40027-A	1	Manifold Companion Flange.....	
40028-A	1	Manifold Companion Flange Gasket.....	

BELLHOUSING

3217-A	3	Bellhousing Leveling Screw— $\frac{3}{4}$ "-10x1 $\frac{7}{8}$ ".....	
45421-D	1	Bellhousing No. 4 (For attaching parts see page 18).....	
45422-D	1	Bellhousing No. 3 (For attaching parts page 18).....	

FLYWHEEL

(For flywheels and attaching parts see pages 17 and 18)

GEAR COVER

42332-D	1	Gear Cover (used with patented seal).....	
22031-D	1	Gear Cover (used with cork seals).....	
14592-AS	2	Gear Cover Thrust Screw Assembly.....	
(For attaching parts see page 14)			

CRANKSHAFT

Part No.	No. Req.	PART NAME	Illustration Reference
45859-B		Crankshaft (For detail parts see Page 12)	

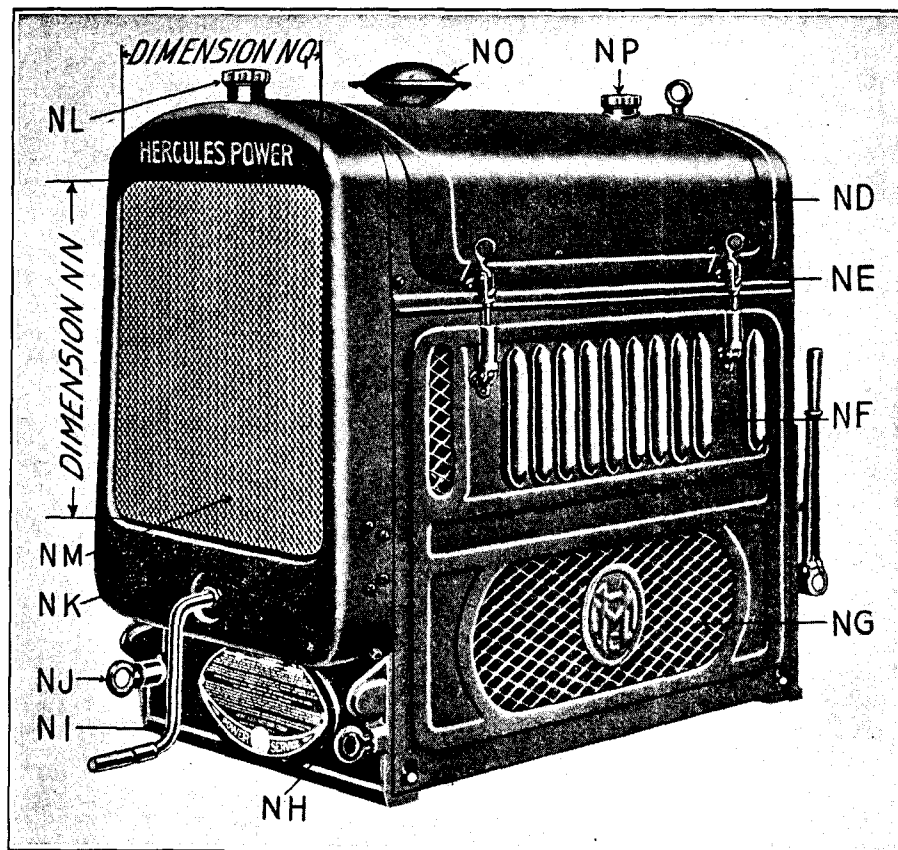
STARTING CRANK

45088-BS	1	Starting Crank	NI
4460-A	1	Starting Crank Collar	
4448-A	1	Starting Crank Collar Pin	
4199-A	1	Woodruff Key	
4268-A	1	Crank Washer	
1710-B	1	Starting Crank Washer Pin	
22282-A	1	Spring	

HOOD

5124-C	1	Hood	ND
5048-A	2	Hood Anti-Squeak—each piece $\frac{3}{4}$ "x $\frac{1}{8}$ "x3 $\frac{3}{4}$ "	
2362-A	4	Hood Attaching Screw—No. 14-20x1"	
5034-A	4	Hood Attaching Nut No. 14-20	
628-A	4	Hood Attaching Lock Washer	
5927-A	4	Hood Latch Hook	
4694-A	12	Hood Latch Hook Rivet	

Give Engine Number with Each Parts Order



SIDE PANELS

Part No.	No. Req.	PART NAME	Illustration Reference
5007-C	1	Side Panel R. H.	
5006-C	1	Side Panel L. H.	NF
5018-A	4	Side Panel Buttons	
5926-BS	4	Side Panel Latch	NE
4694-A	12	Side Panel Latch Rivet	
5947-C	2	Bottom Side Panel	NG
1712-A	12	Bottom Side Panel Attaching Screw— $\frac{1}{2}$ "-13x $\frac{3}{4}$ "	
312-A	12	Side Panel Attaching Lock Washer	

INSTRUMENT PANEL

5002-D	1	Instrument Panel	
1700-A	4	Instrument Panel Screw	
5035-A	4	Instrument Panel Lock Washer	
13851-AS	1	Instrument Panel Oil Gauge	
45025-A	1	Instrument Panel Oil Gauge Pipe	
1532-A	1	Instrument Panel Oil Gauge Pipe Nut	
1533-A	1	Instrument Panel Oil Gauge Pipe Union	
52316-A	1	Instrument Panel Ignition Switch—Replaces 50201-A	
5042-A	2	Instrument Panel Ignition Switch Screw	
5043-A	2	Instrument Panel Ignition Switch Nut	
5024-A	1	Instrument Panel Eye Bolt	
5025-C	1	Instrument Panel Hinged Cover	
5052-A	1	Instrument Panel Hinged Cover Lock	
5042-A	3	Instrument Panel Hinged Cover Lock Screw	
5043-A	3	Instrument Panel Hinged Cover Lock Screw Nut	
5017-A	2	Instrument Panel Hinged Cover Rivet $\frac{3}{8}$ "x3"	

FRONT SUPPORT

45101-D	1	Front Support	NH
8552-A	4	Front Support to Engine Screw— $\frac{1}{2}$ "-13x2 $\frac{3}{4}$ "	
312-A	4	Front Support of Engine Lock Washer	
5024-A	2	Front Support Eye Bolt	NJ
5023-A	1	Front Support Instruction Plate	
2189-A	4	Front Support Instruction Plate Pin	
5044-A	3	Front Support Leveling Screw— $\frac{3}{4}$ "-10x2"	

MUFFLER

45056-BS	1	Muffler Assembly	NO
45058-B	1	Muffler Pipe Clamp	
4694-A	4	Muffler Pipe Clamp Rivet	
1701-A	1	Muffler Pipe Screw— $\frac{1}{2}$ "-13x2"	

RADIATOR AND WATER PIPES

45894-DSY	1	Radiator Assembly (Includes parts marked *)	
45894-D	1	*Radiator Core	NM
5255-D	1	*Radiator Shell	NK
5036-A	8	*Screw—Shell to Core—No. 24x16x $\frac{1}{8}$ " Rd. Hd.	
300-A	8	*Nut—Shell to Core— $\frac{3}{8}$ "-16	
342-A	8	*Lock Washer—Shell to Core	
1729-A	4	*Screw—Core to Shell—No. 14-20x $\frac{5}{8}$ " Flat Head	
5034-A	4	*Nut—Core to Shell—No. 14-20	
628-A	4	*Lock Washer—Core to Shell— $\frac{1}{4}$ "	
18536-A	1	Radiator Top Hose—2 $\frac{3}{8}$ " O.D.x2" I.D.x1 $\frac{1}{2}$ "	
4523-A	2	Radiator Bottom Hose—2 $\frac{3}{8}$ " O.D.x2" I.D.x2"	
5046-A	6	Radiator Top and Bottom Hose Clamp	
4857-A	1	Radiator Lower Tube—2" O.D. x1 $\frac{1}{2}$ " Steel Tube	
4315-A	2	Screw—Core to Front Support $\frac{5}{16}$ "-12x1 $\frac{3}{16}$ "	
5035-A	2	Lock Washer—Core to Front Support	

RADIATOR AND WATER PIPES (Continued)

Part No.	No. Req.	PART NAME	Illustration Reference
5076-A	1	Pipe Coupling— $\frac{1}{4}$ " Std.	
4861-A	1	Pipe Nipple— $\frac{1}{4}$ "	
5075-A	1	Pipe Elbow— $\frac{1}{4}$ " Std.	
620-A	1	Pipe Plug— $\frac{1}{4}$ " Sq. Hd.	
29046-A	1	Radiator Filler Cap.	NL
5097-A	1	Radiator Nipple— $\frac{1}{4}$ " x $\frac{7}{8}$ "	
22660-A	1	Water Outlet Pipe—Attaches to Cylinder Head	
14224-A	1	Water Outlet Pipe Gasket	
315-A	2	Water Outlet Pipe Screw— $\frac{3}{8}$ "-16x $\frac{7}{8}$ "	
342-A	2	Water Outlet Pipe Lock Washer	
40652-B	1	Water Inlet Pipe—Attaches to Water Pump	
86-A	1	Water Inlet Pipe Gasket	
303-A	1	Water Inlet Pipe Screw— $\frac{5}{16}$ "-18x $\frac{3}{4}$ "	
4537-A	1	Water Inlet Pipe Screw— $\frac{5}{16}$ "-18x $3\frac{1}{2}$ "	
615-A	2	Water Inlet Pipe Lock Washer	

GAS CONTROL

5081-A	1	Gas Control Lever	
878-A	1	Gas Control Lever Spring	
5079-A	1	Gas Control Short Lever	
5084-A	1	Gas Control Long Lever	
205-A	2	Gas Control Lever Screw— $\frac{1}{4}$ "-20x $\frac{5}{8}$ "	
628-A	2	Gas Control Lever Screw Lock Washer	
45024-A	1	Gas Control Center Lever	
4080-A	1	Gas Control Lever Plain Washer	
301-A	1	Gas Control Center Lever Cotter Pin	
45023-A	1	Gas Control Rod—Short	
45022-A	1	Gas Control Rod—Long	
5099-A	2	Gas Control Rod Ball Joint	
1177-A	2	Gas Control Rod Ball Joint Nut	
628-A	2	Gas Control Rod Ball Joint Lock Washer	
10-A	2	Gas Control Rod Cotter Pin	

GAS TANK

5063-C	1	Gas Tank	
5040-A	1	Gas Tank Cap	NP
27619-BS	1	Gas Tank Strainer	
5094-A	1	Gas Tank to Carburetor Pipe	
5028-A	2	Gas Tank Support	
5048-A	1	Gas Tank Anti-Squeak— $\frac{3}{4}$ " x $\frac{1}{8}$ " x 30"	
5093-BS	2	Gas Tank Hold Down Strap Assembly	
300-A	4	Gas Tank Hold Down Strap Nut	
342-A	4	Gas Tank Hold Down Strap Lock Washer	
14534-A	1	Gas Tank Filler Neck Washer	
13597-A	1	Gas Tank Cap Gasket	
7059-A	1	Elbow—Gas Tank to Carburetor Pipe	
1783-A	1	Gas Tank to Carburetor Pipe Clamp	
1784-A	1	Gas Tank to Carburetor Pipe Clamp Screw	
5090-A	4	Gas Tank Support Clamp	
2100-A	4	Gas Tank Support Clamp Screw	
312-A	4	Gas Tank Support Clamp Lock Washer	
620-A	1	Gas Tank Drain Pipe Plug	

TIE RODS

5315-A	2	Tie Rod	
5038-A	2	Tie Rod to Instrument Panel Screw— $\frac{1}{2}$ "-13x $1\frac{1}{4}$ "	
5033-A	2	Tie Rod Set Screw Nut— $\frac{1}{2}$ "-13	