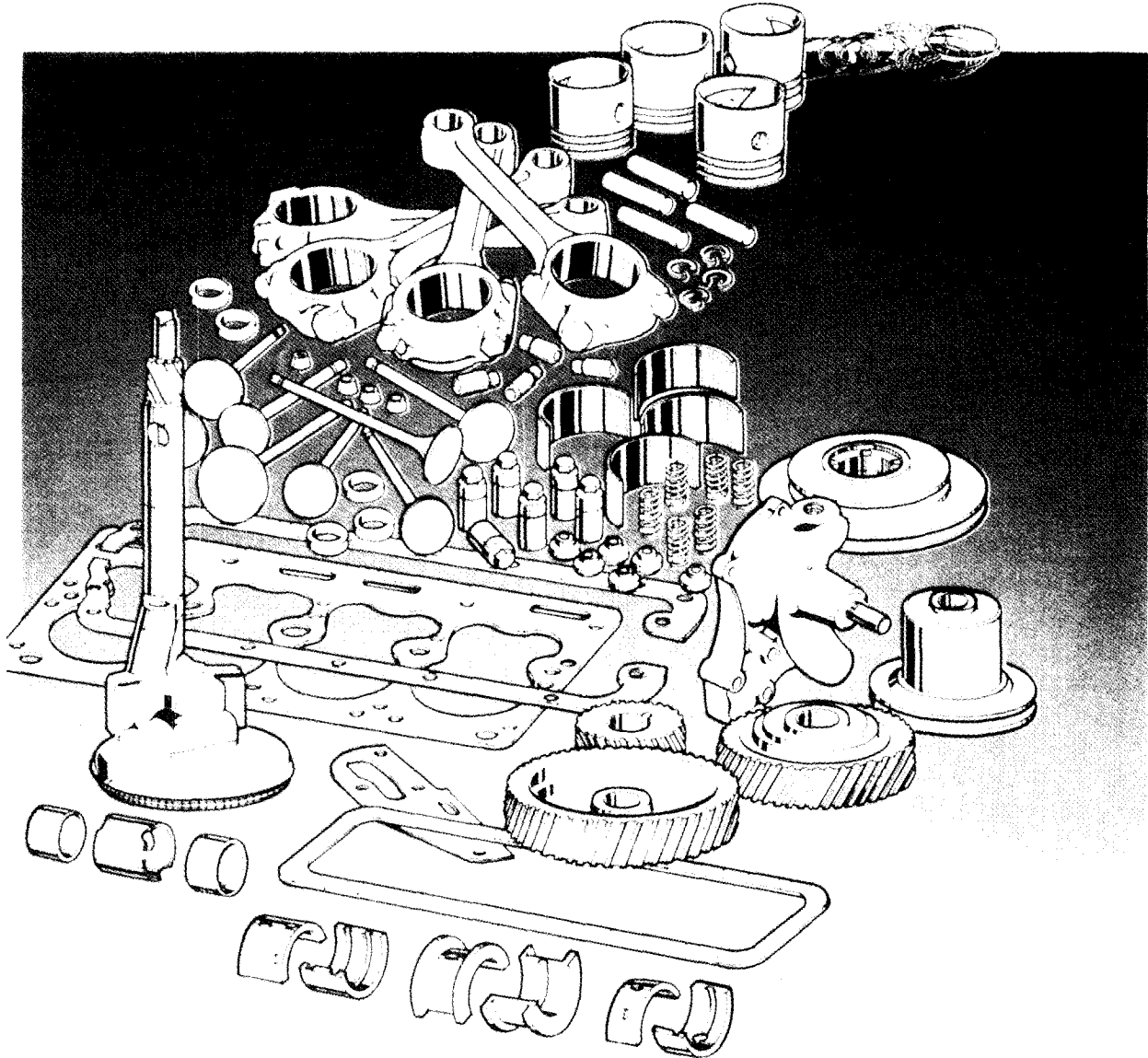


CONTINENTAL L-HEAD QUICK REFERENCE CATALOG

L
-
H
E
A
D



WIS·CON
TOTAL POWER CORP.

INDEX

Forward	I
Specification Number Information	II
Preface	III
Engine Part Classification	IV
Section I Index (L-Head)	V
Section I Index (L-Head)—Continued	VI

FOREWORD

Listings in this catalog are alphabetical. In order to locate subject parts in this catalog, simply refer to the index which shows the part, under its common name, which will indicate the page the information is located on.

Information on size availability and ordering over or under size parts are included at the end of each respective parts section.

The parts listed in this catalog are the common wearing type parts used in rebuilding engines. If a requirement exists for the non or low wearing parts, they can be obtained by consulting the Wis-Con Total Power Warehouse distributor or dealer, giving either the part number required or provide the engine model number, specification number, serial number and application, if possible.

* * *

The following is a list of literature and service parts information available through the Wis-Con Total Power Warehouse distributor/dealer organization:

1. TTP10024 - Continental L-Head Engines Overhaul Manual (Nominal Charge)
2. LIT10137 - Continental TM Engines Overhaul Manual (Nominal Charge)
3. LIT10148 - Continental TMD Engines Overhaul Manual (Nominal Charge)
4. TTP10069 - Continental TMDT Engines Overhaul Manual (Nominal Charge)
(use with TTP10099)
5. LIT10188 - Continental Industrial Service Bulletins (Nominal Charge)
6. LIT10171 - Cross Reference List on "B", "R" and "S" Assemblies
(L-Head & TM/TMD/TMDT)
7. LIT10251 - Wall Chart - Supplement to LIT10171
8. LIT10252 - Catalog - Supplement to LIT10171
9. Service Parts Price List
10. "R" Assembly Price List
11. "S" Assembly Price List
12. Brochures on Short Blocks and "S" Assemblies
13. Microfiche Program - Listing Service Parts Requirements for Current Engines
(Nominal Charge)

* * *

Identification by Engine Series:

- | | | |
|------|--------|--|
| TC | Series | - Includes Engine Model TC56. |
| Y4 | Series | - Includes Engine Models Y69, Y91 and Y112. |
| F4 | Series | - Includes Engine Models F124, F135, F140, F162, and F 163. |
| F6 | Series | - Includes Engine Models F186, F209, F226, F227, F244, and F245. |
| TM | Series | - Includes Engine Models TM13, TM20 and TM27. |
| TMD | Series | - Includes Engine Models TMD13, TMD20 and TMD27. |
| TMDT | Series | - Includes Engine Model TMDT27. |

SPECIFICATION NUMBER INFORMATION

Up until the early 1960's, the specification numbers issued ran from 1 thru 2999 and had **NO** real meaning except in some isolated instances. For these **OLD ENGINES**, it is imperative that you have the **MODEL** along with the specification and the **APPLICATION**.

Then - specification numbers were issued that have reason.

Specification Numbers F163, F227, F245, TC56, Y112, TM13, TMD13, TM20 and TMD20 have the following descriptions:

4000 Series - Non-Material Handling Equipment Specifications
(ie. Welders, Sweepers, Air Compressors and etc.)

5000 Series - Power Units and Standard Specifications

6000 Series - Military Specifications

8000 Series - Material Handling Equipment Specifications

TM27, TMD27 and TMDT27 have the same reasoning except it was taken a step further.

..

4500 Series, 5100 Series and 8500 Series specifications were built with the **ORIGINAL** overhead oiling systems and some of the rocker shaft components as well as the cylinder head may not be available. Refer to Service Bulletin #81-323 and 87-363 for additional information. As a result of these changes the specification numbers were replaced by **4600 Series, 5200 Series and 8600 Series** specifications.

In mid 1989 specification series **4600, 5200 and 8600** were again changed to, **4700, 5300 and 8700 series** specifications. This change is reviewed in the Cylinder Head Screws Section, in the Distributor News Letter #89-14.

At the same time as the mid-1989 TM - TMD - TMDT27 specification number changes were being implemented, another **MAJOR** change was taking place. . .

We now issue specification numbers in a Sequential manner. . .

BEFORE: TM13 - TMD13 - TM20 - TMD20 - TM27 - TMD27 and TMDT27
could all have a specification number of 4601 with different customers.

TODAY: Specification 8052 would be assigned to TM20 and ABC Forklift Company and **NEVER** to another model.

PREFACE

The following terminology will be used throughout the manual and is meant to simplify the process of identifying groupings, any variations will be noted.

- F-4 SERIES** This refers to the following engine models;
F124, F4124, F135, F140, F4140, FA140, F162, F4162,
FA162 & F163. FS145, FS162 & FS4145 are military models that
fall into the F-4 series with very limited parts availability.
F-4 series late models are F135 & F163.
- F-6 SERIES** This refers to the following engine models;
F170, F186, F209, F218, F226, F227, F244, F245, F6170,
F6186, F6209, F6218, F6226, F6227 & F6244.
FS218, FS244, FS6218 & FS6244 are military engines that
fall into the F-6 series with very limited parts availability.
F-6 series late models are F227, F245 & F6227.
- Y-4 SERIES** This refers to the following engine models;
Y69, Y91, Y112, YA112, IY112, Y4069, Y4091 & Y4112.
YS69 & YS116 are military engines that fall into the Y-4 series
with very limited parts availability.

ENGINE PART CLASSIFICATIONS

"Key" Letters

- A. Cylinder Blocks, Cylinder Heads, Cylinder Sleeves, Cylinder Head Gaskets, Pistons, Piston Pins, Piston Rings, Inserts, Cylinder Head Covers and other Miscellaneous Parts.
- B. Flywheel housings, Oil Pans, End Plates, Gear Covers, Bearing Caps, Oil Seals, Filler Blocks, Oil Pan Gaskets and other Miscellaneous Parts.
- C. Crankshafts, Flywheels, Thrust Washers, Ring Gears, Vibration Dampers, Oil Throwers, Stub Shafts and other Miscellaneous Parts.
- D. Connecting Rods, Connecting Rod Bolts.
- E. Exhaust Manifolds, Exhaust Manifold Gaskets, Flanges, Shields, Crabs and other Miscellaneous Parts.
- F. Intake Manifolds, Gaskets and other Miscellaneous Parts.
- G. Bearings and Bushings.
- H. Gears, Chains, Sprockets.
- I. Valves, Valve Guides, Valve Springs, Tappets, Retainers, Camshafts, Push Rods, Rocker Arms and other Miscellaneous Parts.
- K. Hose, Fan Belts, Fan Blades, Water Pumps and Parts, Pulleys, Shrouds, Thermostats, Tubes and other Miscellaneous Parts.
- L. Float-o Screens, Oil Pumps, Tubing, Oil Fillers and other Miscellaneous Parts.
- M. Pulleys, Suppressors, Brackets, Straps and other Miscellaneous Parts.
- O. Starting Jaws, Cranks, Washers, Supports and other Miscellaneous Parts.
- P. Power Unit Parts, House Equipment, Tanks, Tubes and other Miscellaneous Parts.
- S. Governor Springs, Arms, Weights, Governor Rods, Governor Bearings and other Miscellaneous Parts.
- T. Bearing Kits, Water Pump Kits, Piston Kits, Gasket Kits, Valve Kits, Camshaft Kits, Crankshaft Kits, Cylinder Head Kits and other Miscellaneous Kits - Tools.
- U. Gasket Kits.
- V. Belts, Pulleys, Gaskets, Brackets and other Miscellaneous Parts.
- W. Wire and Cable.
- X. Studs, Screws, Nuts, Washers, Gaskets, Keys, Pins, Plugs, Fittings, House Clamps, Hose, Ball Bearings and other Miscellaneous Parts.

DISTRIBUTOR PARTS CATALOG (L-HEAD)

SECTION I

INDEX

Bearings - Crankshaft and Main Bearings	1 - 2
Bushings - Camshaft	1 - 2
Camshafts	3 - 4
Connecting Rods	5
Filler Blocks	6
Gasket Sets - Engine	7 - 8
Gears - Camshaft and Crankshaft Sets	9
Gear - Fan Drive	10
Gear - Idler	11
Manifolds	12
Oil Pumps	13 - 16
Pistons, Rings & Associated Parts	17
Associated Valve Train Parts.....	18
Valves and Associated Parts	19 - 22
Water Pumps.....	23 - 24
Water Pump Pulleys	25 - 28

INDEX (CONTINUED)

Explode View

Cylinder Head, Crankcase, Oil Pan & Flywheel Housing (Figure #1)	30 - 33
Valve & Camshaft (Figure #2)	34 - 35
Piston, Crankshaft and Flywheel (Figure #3)	36 - 37
Front End Plate and Gear Cover (Figure #4)	38 - 39
Oil Pump (Figure #5)	40 - 41
Water Pump (Figure #6)	42 - 43

Gear Cover Identification

Clark Gear Cover Y400 "B" Model with Live Stud Idler	44 - 45
Clark Gear Cover Y400 "C" Model with Fixed Stud Idler	46 - 47
Clark Gear Cover "B" Model F400 and F600 with Fixed Stud Idler	48 - 49
Clark Gear Cover "B" Model F400 and F600 with Live Stud Idler	50 - 51
Clark Gear Cover "C" Model F600 with Fixed Stud Idler (F227A502 & F245A509 CC)	52 - 53
Clark Gear Cover "C" Model F600 with Fixed Stud Idler (F227A408 & F245A502 CC)	54 - 55
Towmotor Gear Cover F400 and F600 Front End with Idler	56 - 57
Towmotor Gear Cover Y400 Front End with Idler	58 - 59

**BEARINGS - CRANKSHAFT AND MAIN BEARINGS
BUSHINGS - CAMSHAFT**

BEARING KIT CRANKSHAFT MAIN BEARING	BEARING KIT CONNECTING ROD	BUSHING KIT CAMSHAFT	NOTES
F Series 4 Cyl Engines Models F124-F140-F162 F400T00323	F400T00324 (Cyl 1-3 & 2-4)	F400T00181*	
Model F135 F163T00103	F400T00264 (Cyl 1-3 & 2-4) F400T00352 (Cyl - All)	F400T00181*	
Model F163 F163T00103	F400T00264 (Cyl 1-3 & 2-4) F400T00352 (Cyl - All)	F400T00181*	
F Series 6 Cyl Engines Models F186 - F209 F600T00380	F600T00381 (Cyl 1-3-5 & 2-4-6)	F600T00250* (Standard) F600T00362* (Heavy Duty)	
Model F209 Clark F226T00223	F226T00224 (Cyl 1-3-5 & 2-4-6)	F600T00250* (Standard) F600T00362* (Heavy Duty)	
F Series 6 Cyl Engines Models F226 - F244 F226T00223	F226T00224 (Cyl 1-3-5 & 2-4-6)	F600T00250* (Standard) F600T00362* (Heavy Duty)	
Models F227 - F245 F6227T00101	F226T00224 (Cyl 1-3-5 & 2-4-6) F600T00395 (Cyl - All)	F600T00250* (Standard) F600T00362* (Heavy Duty)	

**BEARINGS - CRANKSHAFT AND MAIN BEARINGS
BUSHINGS - CAMSHAFT**

BEARING KIT CRANKSHAFT MAIN BEARING	BEARING KIT CONNECTING ROD	BUSHING KIT CAMSHAFT	NOTES
TC Series 2 Cyl Engine Model TC56 Y400T00263	TC56T00102	F226G00229* (Front Only)	
Y Series 4 Cyl Engine Model Y112 Y400T00238 Y400T00263 (Incl: Flange Bearing)	Y400T00236 (Cyl 1-3 & 3-4) Y400T00253 (Cyl - All)	Y400T00252* Y400D03033	

* NOTE: Precision Camshaft Bushings - Finish Reamed.

NOTE: F Series Crankshaft and Rod Bearings available in standard and undersized .010, .020, .030 & .040
TC & Y Series Crankshaft and Rod Bearings available in standard and undersized .010, .020 & .030

NOTE: Refer to Service Bulletins 70-170 (F Series)
70-190 (Y112 Engines)
70-191 (Y Series)
79-292 (Cast-vs-Forged Rod)

CAMSHAFTS

All camshafts fall into a couple of general categories;

1. Cast iron or steel,
2. Solid or hollow nose,
3. Two (2) or three (3) bolt thrust plate.

The three (3) bolt thrust plate style camshafts are becoming quite rare. You can substitute the two (2) bolt style by modifying the front gear plate and redrilling the block for the two bolt plate, you will have to use the corresponding cam gear for the (2) bolt set-up.

F-4 SERIES

PART NUMBER	DESCRIPTION
F140I00400	C.I. Solid nose three (3) bolt thrust plate. Common applications F124, F140 and F162 general specs requiring no power take off from the camshaft.
F400I00343	C.I. Solid nose two (2) bolt thrust plate. Common applications Welders, Air Compressors Sweepers and general specs not requiring power being taken off the cam.
F400I00502	Steel hollow nose two (2) bolt thrust plate. Common applications are Baker forklifts and other specs requiring power taken off the camshaft while using the internal ball type governor.
F400I00505	C.I. Hollow nose two (2) bolt thrust plate. Most common applications are Allis Chalmers, Clark, Baker York and Pettibone Mercury forklifts.
F401I00200	Steel solid nose two (2) bolt thrust plate. Most common applications are Hyster and White lift trucks also any application requiring power off the camshaft using an external bolt on hydraulic pump.

F-6 SERIES

F601I00304	C.I. Solid nose two (2) bolt thrust plate. Welders, air compressors and pumps are the most common applications.
F601I00306	Steel hollow nose two (2) bolt thrust plate. Hyster with internal governor and Clark C500 series fork lifts are the most common users.

CAMSHAFTS (Continued)

F-6 SERIES

PART NUMBER	DESCRIPTION
F601I00307	Steel solid nose two (2) bolt thrust plate. Hyster lift trucks with an external governor is the most common application.
F601I00501	C.I. Hollow two (2) bolt thrust plate. Catapillar and Allis Chalmers lift trucks are the most common applications.
F601I00502	Steel hollow two (2) bolt thrust plate. See F601I00306.

Y-4 SERIES

Y400I00246	C.I. Solid nose two (2) bolt thrust plate. General applications without pumps driven off the cam gear.
Y400I00500	C.I. Hollow two (2) bolt thrust plate. Clark lift trucks are the most common application.
Y400I00501	Steel hollow nose two (2) bolt thrust plate. This would be used on a Hyster as the solid nose camshaft has been discontinued. You must plug the cam nose with the N56I00202 plug.

Common parts for all camshafts;

- X00506 Key
- X18498 7/8" Nut (This is used on earlier camshafts.)
- X18554 1" Nut (This is the nut used on all but the F140I00400 camshaft listed above. The F140I00400 uses a X18242 nut which has limited availability.)
- F400I00246 2 Bolt thrust plate
- D600I00259 3 Bolt thrust plate
- D600H00220 Cast Iron oil pump drive gear.
- F600H00205 Steel oil pump drive gear.
- X03203 Cam thrust plate bolt (for F400I00246 cam thrust plate)
- X00297A Washer for X03203

Service and parts bulletins numbered 72-209, 72-213 and 91-418 to be used as references.

CONNECTING RODS

Connecting rods fall into only two (2) categories—F-SERIES and Y-SERIES—with the F-4 and F-6 having common connecting rods. Both series of connecting rods have several castings that have been used. The early castings had a heavier walled piston pin bushing and these will be noted with Federal Mogul part numbers.

F-4 & F-6 SERIES

CASTING NUMBER	PART NUMBER	DESCRIPTION
F400D500 & F400D502	F400D03033 & F400D05023	Early F-series rods with the F400D500 castings usually having the heavy walled pin bushing. F/M #9324X
F226D400	F226D04002	Late F-series rod forged steel casting
F227D600	F227D06001	Late F-series rod cast iron casting. NOTE: Don't mix F226D400 and F227D600 rods in the same engine.

COMMON COMPONENTS:

- F400G00211 Pin Bushing
- X18546 Rod Nut
- F400D00202 Rod Bolt

TC & Y-4 SERIES

CASTING NUMBER	PART NUMBER	DESCRIPTION
Y400D402	Y400D04021	Y69 & Y91 connecting rod can have both thin wall and thick wall bushings. The difference between these rods and the Y112 is the length of the pin boss which requires a shorter pin bushing. F/M #9889X
Y400D403	Y400D03033 & Y400D04033	Y112 connecting rod. Newer specs all use (4) of the Y400D04033 rod. F/M #9889XA

COMMON COMPONENTS:

- Y400G00234 Pin Bushing (Y69 & Y91)
- Y400G00235 Pin Bushing (Y112)
- Y400D00208 Rod Bolt
- X18547 Rod Nut

NOTE: Refer to Service Bulletins 70-170 (F Series)
70-190 (Y112 Engines)
70-191 (Y Series)

FILLER BLOCKS

ALL FRONT FILLER BLOCKS

IDENTIFICATION

Front Filler Blocks used paper gasket material

D600B00340 -	4 - 3/8" Tapped Holes	Ink Stamped
D600B00323 -	4 - 5/16" Tapped Holes	Ink Stamped
D600B00322 -	3 - 5/16" Tapped and 1 Hole Untapped	Ink Stamped

Front Filler Blocks used with silicone gasket material

F601B00305 -	4 - 3/8" Tapped Holes	Casting P/N
Y401B00300 -	3 - 5/16" Tapped & 1 Hole Untapped	Casting P/N

REAR FILLER BLOCKS

Current F Series with paper gasket material -	F400B00482	Ink Stamped
Current F Series with silicone gasket material -	F601B00425	Casting P/N
Current F Series Rear Guard -	F600B00399	Casting P/N
Y112 Series with paper gasket material -	D600B00406	Ink Stamped
Y112 Series with silicone gasket material -	Y401B00400	Casting P/N
Y112 Series Rear Guard -	D600B00305	Casting P/N

Early F4 & F6 Series

Models F124 - F140 - F162 - F209 - F218 - F226 - F244

All have paper gasket for pan gasket

Rear filler block -	D600B00406
Rear Guard -	D600B00305

GASKET SETS—ENGINE

GASKET SET TOP	GASKET SET BOTTOM	GASKET SET REAR
F Series 4 Cyl Engines Models F124-F135-F140 & F162-F163 F4U01007	F4U03004 F6U03006 (Form-in-Place Type)	F4U05001
F Series 6 Cyl Engines Models F186-F209-F226 F6U01003	F6U03004 F6U03006 (Form-in-Place Type)	F4U05001
Models F227-F244-F245 F6U01004	F6U03004 F6U03006 (Form-in-Place Type)	F4U05001
TC Series 2 Cyl Engine Model TC56 TC56U01002	F6U03006	
Y Series 4 Cyl Engine Model Y69 Y4U01005	Y4U03003 F6U03006 (Form-in-Place Type)	
Model Y91 Y4U01006	Y4U03003 F6U03006 (Form-in-Place Type)	
Model Y112 Y4U01007	Y4U03003 F6U03006 (Form-in-Place Type)	

GASKET SETS—FRONT END

	STANDARD	CLARK	HYSTER	TOWMOTOR	BAKER
Y Series 4 Cyl Engine Models Y69-Y91-Y112	Y4U02011	Y4U02005 Y4U02009 (New Type)	Y4U02012	Y4U02006	Y4U02014
TC Series 2 Cyl Engine Model TC56	Y4U02011				
F Series 4 & 6 Cyl Engines Models F124-F135-F140- F162-F163-F186- F209-F226-F227- F244-F245	F4U02017 F4U02016 (w/o F.E. Plate)	F4U02001 F4U02005 F6U02003 (Steering Pump)	F4U02017 F4U02016 (Internal Governor)	F4U02018	F4U02016 F4U02017 (w/F400B00522 Cover)

GEARS - CAMSHAFT & CRANKSHAFT SETS

	GEAR - CAM	GEAR - CRANK
F Series 4 & 6 Cyl Engines Models F124-F135-F140-F162-F163 F186-F209-F226-F227-F245	F400H00310 (1) # *S-48 Teeth	D600H00300 *S-24 Teeth
	F400H00401 (2) # *S-48 Teeth	D600H00300 *S-24 Teeth
	F400H00227 (2) # *HT-48 Teeth	F400H00326 *HT-24 Teeth
	F124H00302 (3) # *S-48 Teeth	D600H00300 *S-24 Teeth
	F124H00401 (3) # *HT-48 Teeth	F400H00326 *HT-24 Teeth
	F400H00404 (3) # *H-56 Teeth	F600H00317 *H-28 Teeth
	F400H00418 (3) # *HT-56 Teeth	F400H00357 *HT-28 Teeth
TC Series 2 Cyl Engines Model TC56 Y Series 4 Cyl Engines Models Y-69-Y91-Y112	Y400H00304 *S-38 Teeth	Y400H00205 *S-19 Teeth
	Y400H00304 *S-38 Teeth	Y400H00205 *S-19 Teeth
	Y112H00204 *HT-38 Teeth	Y112H00203 *HT-29 Teeth
	Y400H00312 *S-38 Teeth	Y400H00247 *H-19 Teeth
	Y112H00312 *HT-48 Teeth	Y112H00205 *HT-24 Teeth
	Y112H00314	Y400H00244

* NOTE: Gears marked "S" indicate Standard Material, marked "HT" indicate Special Heat Treating and "H" indicates Special Hardness.

#NOTE: Gears marked (1) indicate gear hub length of "1".
Gears marked (2) indicate gear hub length of 1-3/16".
Gears marked (3) indicate gear hub length of 29/32.

NOTE: Gears are available in standard sizes ONLY.

GEAR - FAN DRIVE

	ADAPTER FAN DRIVE (COMPLETE)	GEAR FAN DRIVE	SHAFT FAN DRIVE	PULLEY FAN DRIVE	GASKET ADAPTER TO GEAR COVER
(Clark Style) F Series 4 & 6 Cyl Engines Model F163-F245	F401B03140	F162H00309 20 Teeth	F401K00212	F245K00302 5-27/32 OD Dual 3/8 Belt	F209B00208
Model F244	F209K03340	F162H00309 20 Teeth	F209K02260	F209K00333 5-27/32 OD Dual 3/8 Belt	F209B00208
(Towmotor Style) Models F135-F140 F162-F163	F209K03270	F209H00303 20 Teeth	F209K02240	F209K00327 5-27/32 OD Dual 1/2 Belt	F209B00208
	F209K03410	F224H00202 20 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
	F401K03630	F400H00358 23 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
Models F209-F226-F227 F224-F245	F209K03270	F209H00303 20 Teeth	F209K02240	F209K00327 5-27/32 OD Dual 1/2 Belt	F209B00208
	F209K03360	F244H00202 20 Teeth	F209K02260	F209K00336 5-53/64 OD 1/2 Belt & 3/8 Belt	F209B00208
	F209K03410	F244H00202 20 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
	F401K03630	F400H00358 23 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
(Baker Style) Models F162-F163	F209K03310	F162H00309 20 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
	F401K03300	F162H00309 20 Teeth	F209K02260	F401K00327 5-27/32 OD 7/16 Polly-flex Belt	F209B00208
(Baker Style) F Series 4 & 6 Cyl Engines Models F162-F163	F401K03620	F400H00359 23 Teeth	F209K02260	F401K00327 5-27/32 OD 7/16 Poly-flex Belt	F209B00208
Models F226-F227	F209K03310	F162H00309 20 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208
	F601K03080	F400H00359 23 Teeth	F209K02260	F209K00330 5-53/64 OD Dual 1/2 Belt	F209B00208

NOTE: Reference Service Bulletin #75-250

GEAR - IDLER

	GEAR IDLER	STUD IDLER	PLUNGER THRUST	SPRING THRUST	BUTTON THRUST BOLT	WASHER THRUST	CARRIER PLUNGER
F Series 4 & 6 Cyl Engines (Clark Style) Models F124-F135 F140-F162 F163-F209 F226-F227 F244-F245	F209H03011 (Incl Stud) 43 Teeth	F124H00200 3" Long 1-3/16 OD Live Stud	F400H00207	21RM00215	X06901	F124H00201	
	F209H02011 (Incl Stud) 50 Teeth	F124H00200 2" Long 1-3/16 OD Live Stud	F400H00207	21RM00215	X060901	F124H00201	
	F400H04101 55 Teeth	F400H00226 3-13/32 Long 3-3/8 OD Fixed Stud		X07099 1.5" Long			
	F400H04101 55 Teeth	F400H00226 3-13/32 Long 1-3/8 OD Fixed Stud		X07123 1.18" Long			
	F600H03211 50 Teeth	F600H00228 3-1/16 Long 1-3/8 OD Fixed Stud		X07099 1.5" Long		F124H00201	
F600H04040 55 Teeth	F600H00323 3-5/32 Long 1-3/8 OD Fixed Stud					F600H00233	
(Towmotor - Caterpillar Style) Models F124-F135 F162-F163 F209-F226 F227-F244 F245	F400H03240 39 Teeth	F400H00222 3-1/6 Long 1-1/4 OD	F400H00224	21RM00215		C400H00215	F400H00223
Y Series 4 Cyl Engines (Clark Style) Model Y112	Y400H03360 28 Teeth	Y400H00251 2-7/8 Long 1-1/4 OD Fixed Stud				Y400H00246	
	Y400H03400 28 Teeth	Y400H00339 2-13/16 Long 1-1/4 OD Fixed Stud				Y400H00246	
(Towmotor Style) Model Y112	Y400H03130 35 Teeth	Y400H00207 2-5/8 Long 1-1/4 OD				D600H00202	
	Y400H03170 35 Teeth	Y400H00328 2-9/16 Long 1-1/5 OD	F400H00224	21RM00215		D600H00202	F400H00223

MANIFOLDS

F-4 SERIES

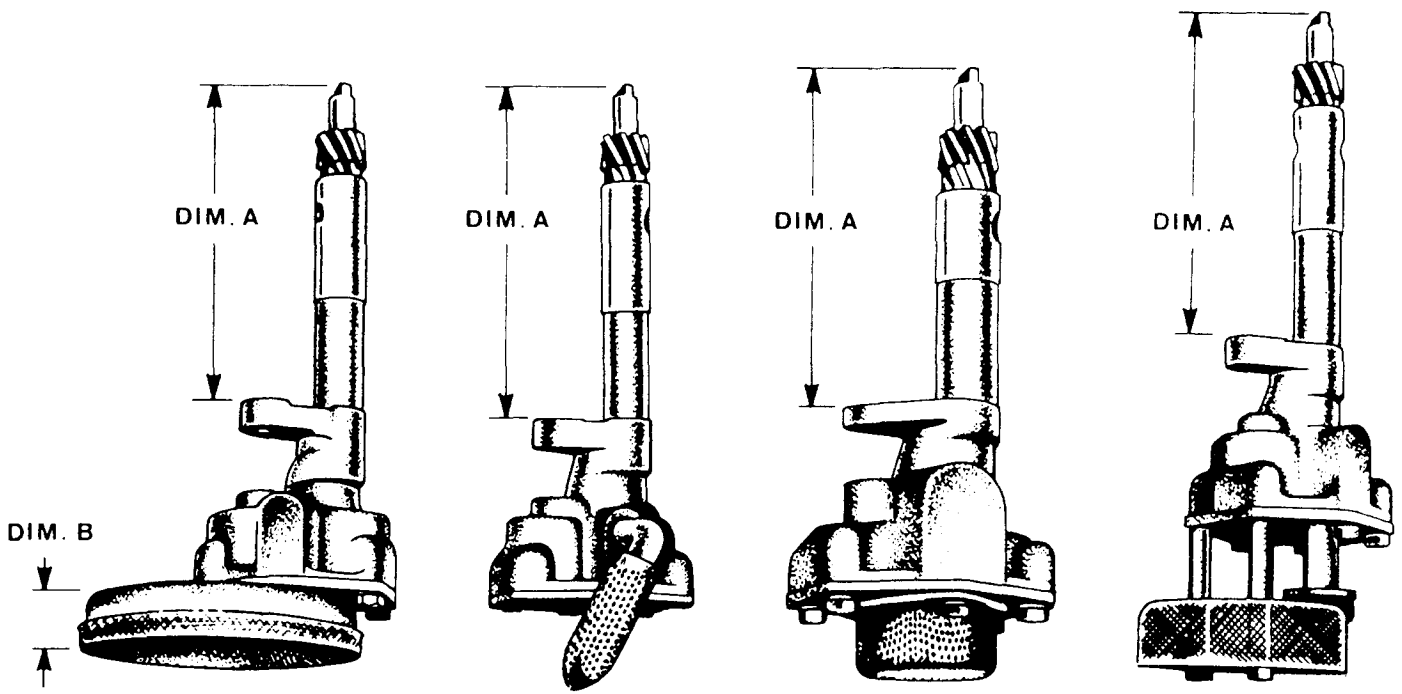
INTEGRAL UPDRAFT MANIFOLDS

- F400E00518 1-1/4" S.A.E. carb—top front outlet with a machined flange for bolt on exhaust pipe. Exhaust outlet gasket part #F400E00257. Is considered the standard manifold on F163 engines.
- F400E00514 1-1/4" S.A.E. carb—exhaust outlets both front and rear. Exhaust outlet elbow part #F400E00321, outlet cover part #F600E00227 and outlet gasket part #F600E00226 are component parts used with this "universal" manifold. Most popular on F163 engines.
- F162E00418 1" S.A.E. carb—top front outlet with a machined flange for bolt on exhaust pipe. Exhaust outlet gasket part #F400E00257.
- F162E00512 1" S.A.E. carb—top front exhaust outlet with 1-1/2" National Pipe Thread for exhaust pipe.

INTEGRAL DOWNDRAFT MANIFOLDS

- F400E00423 1-1/4" S.A.E. carb—with a center bottom exhaust outlet. Exhaust outlet gasket part #F400E00205 or F400E00256.
- F400E00601 1-1/4" S.A.E. carb—with a front side outlet.

NOTE: F-6 & Y-4 Manifolds to be issued at a later date.



OIL PUMPS

F Series 4 Cylinder Engines Models F162 - F163

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F400L03301	2 A=7-1/8	F6T02003	No	F218L00204 8UL212	F600H00205 Steel	F400L03550	
F400L03304	2 A=7-1/8	F6T02002	No	F218L00204 8UL212	D600H00220 Cast Iron	F400L03550	

F Series 4 Cylinder Engines Model F163

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F400L04311	1 A=7-1/8 B=3/4	F6T02002	Yes Incl: Oil Relief Valve	F218L00204 8UL212	D600H00220 Cast Iron	D600L02120	
F400L04313	1 A=7-1/8 B=3/4	F6T02003	Yes Incl: Oil Relief Valve	F218L00204 8UL212	F600H00205 Steel	D600L02120	
F400L04331	2 A=7-1/8	F6T02002	Yes	F218L00204 8UL212	D600H00220 Cast Iron	F400L03550	

OIL PUMPS (CONTINUED)

F Series 4 Cylinder Engine

Models F4124 - F4140 - F4162

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F600L04134	1 A=9-1/8 B=3/4	F6T02003	No	F600L00202 8UL212	F600H00205 Steel	D600L02120	
F600L04135	1 A=9-1/8 B=3/4	F6T02002	No	F600L00202 8UL212	D600H00220 Cast Iron	D600L02120	

F Series 4 & 6 Cylinder Engines

Models F163 - F227 - F245

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F400L04312	1 A=7-1/8 B=3/4	F6T02002	Yes	F218L00204 8UL212	D600H00220 Cast Iron	D600L02120	
F400L04314	1 A=7-1/8 B=3/4	F6T02003	Yes	F218L00204 8UL212	F600H00205 Steel	D600L02120	

F Series 4 & 6 Cylinder Engines

Models F124 - F135 - F140 - F162 - F163 - F186 - F209 - F226 - F227 - F244 - F245

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F600L04131	1 A=7-1/8 B=3/4	F6T02003	No	F218L00204 8UL212	F600H00205 Steel	D600L02120	
F600L04132	1 A=7-1/8 B=3/4	F6T02002	No	F218L00204 8UL212	D600H00220 Cast Iron	D600L02120	

F Series 6 Cylinder Engines

Models F227 - F245

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F400L04315	4 A=7-1/8	F6T02002	Yes	F218L00204 8UL212	D600H00220 Cast Iron	F400L02490	F400L00229

OIL PUMPS (CONTINUED)

F Series 6 Cylinder Engines

Models F186 - F209 - F226 - F227 - F244 - F245

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
F600L41332	4 A=7-1/8	F6T02003	No	F218L00204 8UL212	F600H00205 Steel	F400L02490	F400L00229
F600L41333	4 A=7-1/8	F6T02002	No	F218L00204 8UL212	D600H00220 Cast Iron	F400L02490	F400L00229
F600L04146	1 A=7-1/8 B=31/32	F6T02003	No	F218L00204 8UL212	F600H00205 Steel	D600L02120	
F600L41414	1 A=7-1/8 B=31/32	F6T02002	No	F218L00204 8UL212	D600H00220 Cast Iron	D600L02120	

TC Series 2 Cylinder Engines

Model TC 56

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
Y400L40913	3 A=5-13/16	Y400T00205	No	Y400L00245/ Y400L00353 21UL210/ Y401L00204	D600H00220 Cast Iron	TC56L00301	
Y400L05020	3 A=5-13/16	Y400T00281 (**)	No	Y400L00353 Y401L00204	D600H00220 Cast Iron	TC56L00301	
*Y400L40915	3 A=5-13/16	Y400T00207	No	Y400L00245 21UL00210	F600H00205 Steel	TC56L00301	

OIL PUMPS (CONTINUED)

Y Series 4 Cylinder Engines
Models Y69 - Y91 - Y112

PUMP-OIL COMPLETE	STYLE MTG DIM	KIT REPAIR	FULL FLOW FILTER MACHG.	SHAFT-PUMP STUD-GEAR	GEAR-DRIVE	SCREEN PICK-UP	FELT-SCREEN
Y400L04091	1 A=5-13/16	Y400T00207	No	Y400L00245/ Y400L00353 21UL210/ Y401L00204	F600H00205 Steel	D600L02120	
Y400L05000	1 A=5-13/16	Y400T00282 (**)	No	Y400L00353 Y401L00204	F600H00205 Steel	Y400L00356	
Y400L04093	1 A=5-13/16	Y400T00205	No	Y400L00245/ Y400L00353 21UL210/ Y401L00204	D600H00220 Cast Iron	D600L02120	
Y400L05010	1 A=5-13/16	Y400T00281 (**)	No	Y400L00353 Y401L00204	D600H00220 Cast Iron	Y400L00356	

NOTE: Refer to specific engine specifications service list to determine service parts required.

NOTE: For F4 & F6 Oil Pumps - Refer to service bulletin #87-370.

NOTE: For TC56 & Y4 Oil Pumps - Refer to service bulletin #87-367.

* NOTE: NLA & new P/N to be assigned.

** NOTE: Must Order Drive Gear Separately.

PISTONS, RINGS & ASSOCIATED PARTS

	BORE DIA.	PISTON (INCL. PIN & RETAINING RING)	RING KIT PISTON (ENGINE SET)	PIN PISTON	BUSHING PISTON PIN	RETAINER PISTON PIN
F Series 4 Cyl Engine Model F135	3-1/8	F135A04021E	F135T00104	F600A00214	F400G00211	X07108 F227000207*
Model F140	3-3/16	F209A04031E	F140T00182	F600A00214	F400G00211	X07011
Models F162-F163	3-7/16	F163A04081E F163A04082E* F163A04084E**	F163T00119	F600A00214	F400G00211	X07011 F163A00205*
F Series 6 Cyl Engines Model F209	3-3/16	F209A04031E	F209T00133	F600A00214	F400G00211	X07011
Models F226-F227	3-5/16	F227A04111E F227A04113E* F227A04114E**	F227T00115	F600A00214	F400G00211	X07011 F227A00207*
Models F224-F245	3-7/16	F163A04081E F163A04082E*	F245T00110	F600A00214	F400G00211	X07011 F163A00205*
TC Series 2 Cyl Engine Model TC56	3-3/16	Y400A04721E Y400A04722E* Y400A04724E**	TC56T00101	Y400A00225	Y400G00235	PYA00220 Y4000A00254*
Y Series 4 Cyl Engine Model Y91	2-7/8	Y400A04061E	Y91T00124	Y400A00207	Y400G00234	PYA00202
Model Y112	3-3/16	Y400A04721E Y400A04722E*	Y112T00162	Y400A00225	Y400G00235	PYA00202 Y400A00254*

NOTE: Piston and Ring Kits available in standard and oversizes: .020, .030, .040 and .060.
Example for ordering: F163A04081E20 = .020 oversize.

NOTE: Piston Pin F600A00214 and Y400A00225 are available in standard and oversizes: .003 and .005.
Example for ordering: F600A00214003 = .003 oversize.

*NOTE: Optional plug.

**NOTE: Contains both plug and retainer.

ASSOCIATED VALVE TRAIN PARTS

	INSERT EXHAUST VALVE	GUIDE EXHAUST INTAKE	TAPPET EXHAUST INTAKE
F Series 4 Cyl Engine Models F124-F135-F140-F162-F163	F163A00206010 (1.358 OD)	TM27I00316*	F600I02520
F Series 6 Cyl Engines Models F186-F209-F226- F227-F244-F245	F226A00237010 (1.451 OD) F163A00206010 (1.358 OD)	TM27I00316*	F600I02520
TC Series 2 Cyl Engines Model TC56	TC56A00200010 (1.140 OD)	TC56I00203	F600I02520
Y Series 4 Cyl Engines Models Y69-Y91-Y112	Y400A00243010 (1.140 OD)	TC56I00203	F600I02520

NOTE: F600I02520 Tappets available in standard and the following oversizes: .001, .003, .005, .010, .015 and .020.

Example for ordering: F600I02520001 = .001 oversize.

*NOTE: For use on TM/TMD Engines ONLY—Use TM27I00315 Oversize Guide - Service. Refer to SPB #82-329.

VALVES & ASSOCIATED PARTS

VALVE EXHAUST	VALVE INTAKE	LOCK EXH. & INTAKE	SPRING EXH. & INTAKE	RETAINER EXH. & INTAKE	ROTO COIL EXH. & INTAKE
F Series 4 Cyl Engines Models F124-F140-F162 F163 Early Model (Standard Intake & Exhaust) F600I00351 Drilled Stem Std Material Dia head 1-13/64	F600I00229 Drilled Stem Dia Head 1-33/64	Y400I00205 Pin Type	Y400I00215	F400I00202	
(Standard Roto Exh.) F400I00328 Groove Stem Roto Std Material Dia Head 1-13/64		Z120I00235 (E)* Roto Type	Y400I00215		F400I03410(E)*
(Special Valves) F400I00335 Groove Stem Roto Stellite Dia Head 1-13/64 Bottom of Stem to groove is .295 F600I00352 Drilled Stem Std Material Dia Head 1-21/64 F400I00332 Drilled Stem Std Material Dia Head 1-29/64	F600I00343 Groove Stem Roto Dia Head 1-33/64 Bottom of stem to groove is .295	Z120I00235 Roto Type Y400I00205 Pin Type Y400I00205 Pin Type	Y400I00215 Y400I00215 Y400I00215	F400I00250(I)* F400I00202 F400I00202	F400I03410 (E)*

NOTE: E = Exhaust
 I = Intake

VALVES & ASSOCIATED PARTS

VALVE EXHAUST	VALVE INTAKE	LOCK EXH. & INTAKE	SPRING EXH. & INTAKE	RETAINER EXH. & INTAKE	ROTO COIL EXH. & INTAKE
Models F135-F163 (Standard Intake & Exhaust Valve can also be used as Roto Valve by adding Roto Coil.) F601I00303 Groove Stem Roto Std Material Dia Head 1-13/64 Bottom of Stem to Groove is .288	F600I00347 Groove Stem Roto Dia Head 1-33/64 Bottom of Stem to Groove is .250	CVT03234 (2 Req'd)	Y400I00215	F601I00200	F601I00301
(Special Valves) F600I00353 Groove Stem Roto Stellite Dia Head 1-13/64 Bottom of Stem to Groove is .250		CVT03234 (2 Req'd)	Y400I00215	F601I00200	F601I00301
F Series 6 Cyl Engines Models F186-F209- F226-F227 Early Model (Standard Intake & Exhaust) F600I00352 Drilled Stem Std Material Dia head 1-21/64	F600I00229 Drilled Stem Dia Head 1-33/64	12SI00207 Pin Type	F600I00232	F600I00234	
Standard Roto Exh.) F600I00348 Groove Stem Std Material Dia Head 1-21/64		CVT03234 (E)*	F600I00232		F226I03010 (E)*
(Special Valves) F600I00355 Groove Stem Roto Stellite Dia Head 1-21/64 F600I00351 Drilled Stem Std Material Dia Head 1-13/64		CVT03234 (E)* 12SI00207 Pin Type	F600I00232 F600I00232	F600I00234	F226I03010 (E)*

NOTE: E = Exhaust
I = Intake

VALVES & ASSOCIATED PARTS

VALVE EXHAUST	VALVE INTAKE	LOCK EXH. & INTAKE	SPRING EXH. & INTAKE	RETAINER EXH. & INTAKE	ROTO COIL EXH. & INTAKE
F Series 2 Cyl Engines Model TC56 (Standard Intake & Exhaust Valve) Y400I00324 Groove Stem Roto Std Material Dia Head 1-1/64	Y400I00332 Groove Stem Roto Dia Head 1-13/64	Z120I00235	Y400I00233	F400I00250	F400I03410
(Special Valves) Y400I00323 Groove Stem Roto Stellite Dia Head 1-1/64		Z120I00235	Y400I00233	F400I00250	F400I03410
Y Series 4 Cyl Engines Models Y69-Y91-Y112 (Standard Intake & Exhaust Valve) Y400I00322 Drilled Stem Std Material Dia Head 1-1/64 Y Series 4 Cyl Engines Models Y-69-Y91-Y112	Y400I00301 Drilled Stem Dia Head 1-13/64	Y400I00205 Pin Type	Y400I00215	Y400I00204	
(Special Valves) Y400I00324 Groove Stem Roto Std Material Dia Head 1-1/64	Y400I00332 Groove Stem Roto Dia Head 1-13/64	Z120I00235	Y400I00233	F400I00250	F400I03410
Y400I00323 Groove Stem Roto Stellite Dia Head 1-1/64		Z120I00235	Y400I00233	F400I00250	F400I03410

NOTE: Refer to specific engine specifications service list to determine service parts required.

NOTE: E = Exhaust

I = Intake

WATER PUMPS

F Series 4 & 6 Cylinder Engines

Models F124 - F135 - F140 - F162 - F186 - F209 - F226 - F227 - F244 - F245

BODY	PUMP COMPLETE LESS PULLEY	KIT REPAIR	SHAFT	SEAL	GASKET TO C'CASE	HEIGHT TO CRANK	INLET VIEWED FROM REAR
F140K00344	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F140K00367	F400K05134	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Left
F162K00397	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F162K00399	F600K05193	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Right
F162K00500	**	F6T01012	F163K00200	OA200K03040	F400K00340	17-3/8	Right
F209K00500	F209K04122		F163K00200	OA200K03040	F400K00340	12-5/8	Right
F226K00346	F400K04471	F6T01014	F163K00200	OA200K03040	F600K00371	10	Left
F226K00368	F400K05134	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Left
F226K00372	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F226K00417	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F400K00400		F6T01011					
F400K00401		F6T01012					
F400K00404	***						
F400K00418	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F400K00419	F400K05134	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Left
F400K00420	F400K04471	F6T01014	F163K00200	OA200K03040	F600K00371	10	Left
F400K00421	F600K04501	F6T01014	F163K00200	OA200K03040	F600K00371	10	Right
F400K00422	F600K05193	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Right
F400K00423	F600K05203	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Right
F400K00447	F400K04471	F6T01014	F163K00200	OA200K03040	F400K00371	10	Left
F400K00448	F400K05134	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Left
F400K00449	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F400K00511	F400K04300	F6T01013	E223K00200	OA200K03040	F400K00340	14	Left
F400K00512	F400K04471	F6T01014	F163K00200	OA200K03040	F400K00371	10	Left
F400K00513	F400K05134	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Left
F400K00514	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F401K00326	F400K05146	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Left
F600K00450	F600K04501	F6T01014	F163K00200	OA200K03040	F600K00371	10	Right
F600K00451	F600K05193	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Right
F600K00452	F600K05203	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Right
F600K00518	F600K04501	F6T01014	F163K00200	OA200K03040	F600K00371	10	Right
F600K00519	F600K05193	F6T01011	F163K00200	OA200K03040	F400K00340	11-1/2	Right
F600K00520	F600K05203	F6T01011	F163K00200	OA200K03040	F400K00340	12-5/8	Right

**NOTE: Pump sold only with pulley assembled. Must provide complete Part Number or Model and Specification Number of engine. (F162K0429-) or (F162K429—)

***SEE: F600T00275, F600T00282, F600T00283 or F600T00289

G Series 4 Cylinder Engines

Model G193

BODY	PUMP COMPLETE LESS PULLEY	KIT REPAIR	SHAFT	SEAL
G193K00501	G193K05032*	G193T00136	G193K00208	OA200K03040
G193K00502	G193K05021	G193T00142	HD277K00202	OA200K03040
G193K00503	G193K05032*	G193T00139	G193K00208	OA200K03040

* With Pull

WATER PUMPS (CONTINUED)

**TC Series 2 Cylinder Engines
Model TC56**

BODY	PUMP COMPLETE LESS PULLEY	KIT REPAIR	SHAFT	SEAL TO C'CASE	GASKET TO CRANK	HEIGHT	INLET VIEWED FROM REAR
Y400K00409	Y400K03697	Y400T00251	F163K00200	OA200K03040	Y400K00340	10	Left

**Y Series 4 Cylinder Engines
Models Y69 - Y91 - Y112**

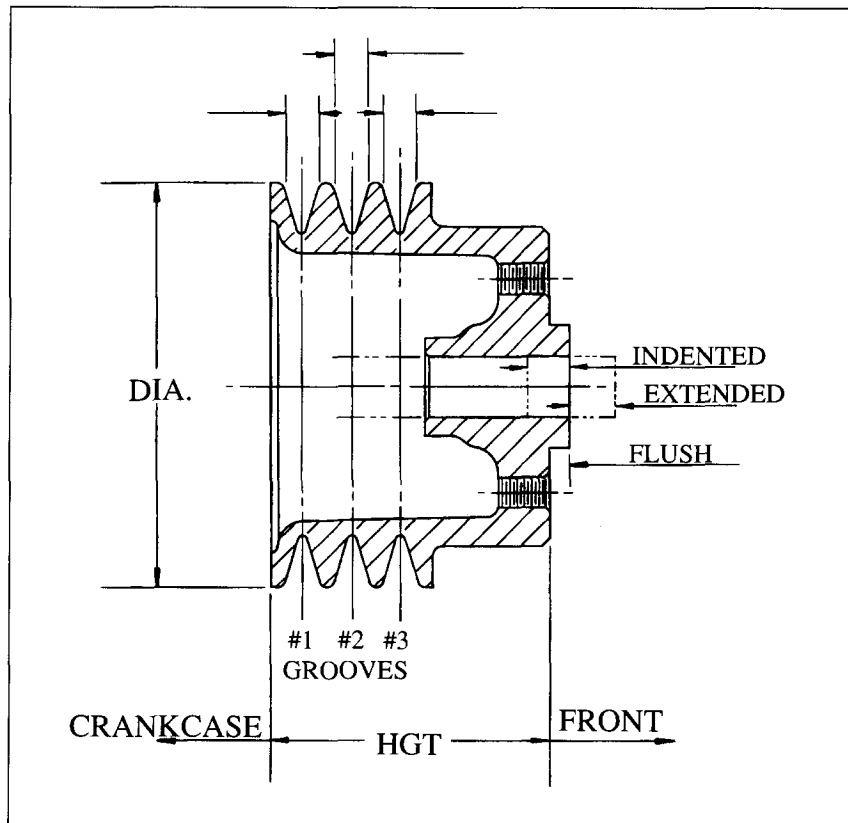
BODY	PUMP COMPLETE LESS PULLEY	KIT REPAIR	SHAFT	SEAL TO C'CASE	GASKET TO CRANK	HEIGHT	INLET VIEWED FROM REAR
Y400K00335	Y400K03353	Y400T00101	Y400K00237	Y400K02660	Y400K00340	N/A	N/A
Y112K00413	Y112K04137	Y400T00101	Y400K00237	Y400K02660	Y400K00340	11-3/4	Right
Y400K00369	Y400K03697	Y400T00251	F226K00223	OA200K03040	Y400K00340	10	Left
Y400K00409	Y400K03697	Y400T00251	F226K00223	OA200K03040	Y400K00340	10	Left
Y400K00410	Y400K03617	Y400T00251	F226K00223	OA200K03040	Y400K00340	10	Right

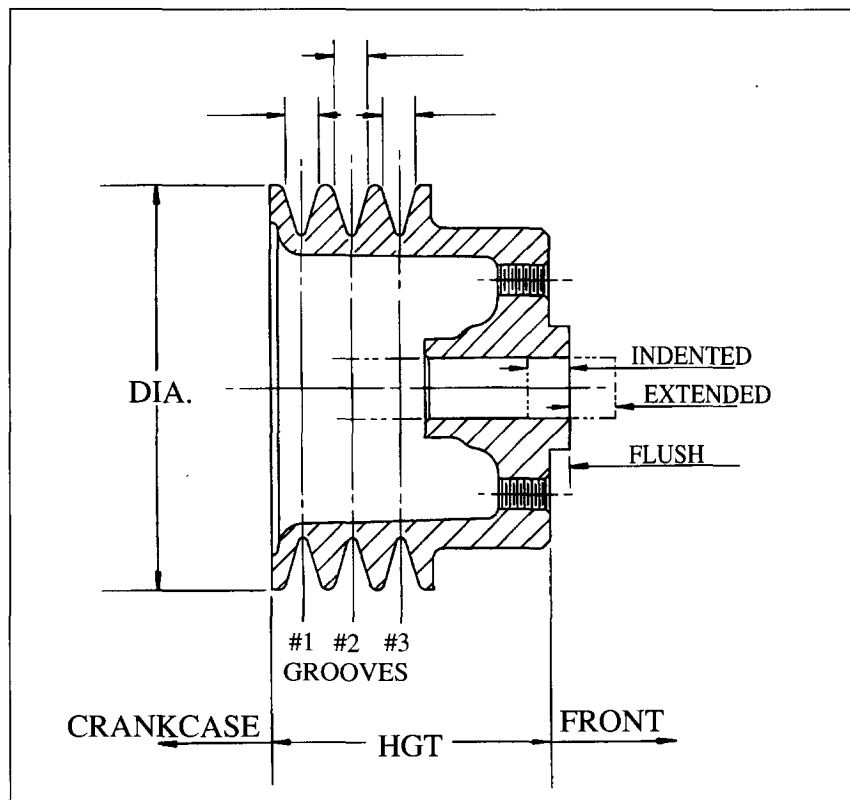
WATER PUMP PULLEYS

MODELS: F163 - F227 - F245 - G193

By measuring the "diameter" & "height" and knowing the number of grooves and the "groove size" you can determine the **Water Pump Pulley**.

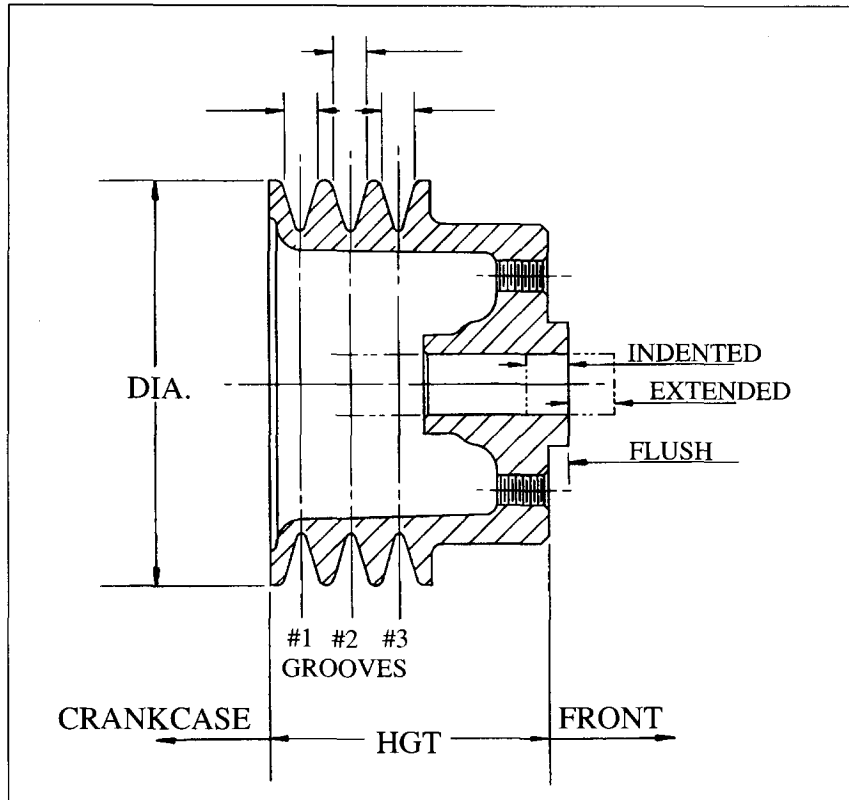
By measuring the Pulley mounting "DIMS" you can determine the **Production Water Pump**.





GRVS	DIA	PULLEY	GR1	GR2	GR3	HGT	PRESS	PUMP	NOTES
1	3-3/4	Y112K00370	3/8			29/32	FLUSH	Y112K03721	
1	3.66	F401K00360	1/2			2.43	FLUSH	F400K51328	
1	4	Y400K00367	3/8			2-27/32	FLUSH	Y400K36011	
1	4-1/16	F244K00319	3/8			2-11/32	FLUSH	F600K52022	
1	4-1/4	F600K00453	.441			1.88	.25	F600K51948	
1	4-1/4	F209K00316	1/2			3-17/64	FLUSH	Y112K04136	Threaded shaft
1	4-1/4	F209K00316	1/2			3-17/64	FLUSH	F400K40040	Threaded shaft
1	4-1/4	F209K00319	1/2			3-9/64	<13/32>	F600K05198	
1	4-1/8	G193K00306	1/2			3-5/16	FLUSH	G193K05032	
1	4-27/32	F400K00389	.660			2-13/16	3/32	F162K03403	
1	4-27/32	F400K00389	.660			2-13/16	3/32	F162K39713	
1	4-27/32	F400K00389	.660			2-13/16	11/64	Y400K36017	
1	4-27/32	F400K00389	.660			2-13/16	3/32	F400K03947	
1	4-27/32	F400K00389	.660			2-13/16	3/32	F162K04296	
1	4-27/32	F400K00389	.660			2-13/16	3/32	F162K34218	
1	4-27/32	F401K00342	1/2			2-23/32	1/32	F400K05124	
1	4-27/32	F401K00342	1/2			2-23/32	1/64	Y400K03601	
1	4-27/32	F401K00342	1/2			2-23/32	11/64	F600K52032	
1	4-27/32	F401K00342	1/2			2-23/32	3/32	F400K05143	

GRVS	DIA	PULLEY	GR1	GR2	GR3	HGT	PRESS	PUMP	NOTES
1	4-27/32	F401K00342	1/2			2-23/32	7/64	F400K51414	
1	4-3/8	F140K00379	1/2			3-9/64	<13/32>	F600K05199	
1	4-5/16	GD193K00302	1/2			2-1/8	3/64	GD193K05021	
1	4-5/16	F401K00301	1/2			2-39/64	<13/64>	F400K05136	
1	4-5/16	Y112K00339	1/2	ADJ		3-7/32	<7/32>	Y400K03602	One fixed - one adjustable (F6T06001)
1	4-7/8	F226K00392	.441			2.32	<.24>	F600K05197	
1	4.47	F400K00453	1/2			2.84	<.17>	F600K51947	
1	5-1/32	GD193K00326	1/2			3-31/32	13/64	G193K05024	
1	5-3/8	F162K00377	1/2			2-29/64	<15/64>	F400K05137	
1	5-3/8	F226K00360	1/2			2-29/64	<37/64>	F600K05194	
1	5-9/16	F401K00324	1/2			2-31/64	FLUSH	F400K04473	Same as 4477 except w/ F226K00223 shaft & Brg
1	5-9/16	F401K00324	1/2			2-31/64	FLUSH	F400K04477	Same as 4473 except w/ F163K00200 shaft & Brg
1	5-9/16	F401K00324	1/2			2-31/64	FLUSH	F400K05121	
1	5-9/16	F401K00324	1/2			2-31/64	FLUSH	F400K05141	
1	5-9/16	F401K00324	1/2			2-31/64	FLUSH	F400K05131	
1	5-9/16	GD193K00209	1/2			3-1/4	13/64	G193K05022	
1	6-3/8	F401K00306	1/2			2-1/8	<1/8>	F600K04502	
2	4-1/4	F401K00329	.423	3/8		2-9/16	1/32	F162K34022	
2	4-3/8	F209K00324	1/2	1/2		3-9/64	<13/32>	F600K51927	
2	4-3/8	F209K00324	1/2	1/2		3-9/64	<13/32>	F209K04122	
2	4-3/8	F209K00324	1/2	1/2		3-9/64	<13/32>	F600K52013	
2	4-3/8	F162K00310	21/32	21/32		3-9/64	FLUSH	F400K40012	Threaded shaft
2	4-3/8	F209K00324	1/2	1/2		3-9/64	<13/32>	F600K51927	
2	4-7/8	F401K00358	.441	3/8		2-1/2	1/32	F400K51327	
2	4-7/8	F400K00438	3/8	3/8		4	<1-5/16>	F600K52023	
2	4.06	Y112K00384	3/8	3/8		2-1/2	.06	Y400K03619	
2	4.06	Y91K00336	3/8	3/8		2-17/32	<5/64>	Y400K36010	
2	4.06	Y112K00385	3/8	3/8		2.31	<.19>	Y400K36021	
2	4.81	F163K00401	3/8	3/8		3.15	<.68>	F162K34111	
2	4.81	F163K00401	3/8	3/8		3.15	<.68>	F600K51910	
2	4.81	F163K00402	3/8	3/8		3.77	<1.30>	F600K51911	
2	5-1/2	F400K00451	3/8	3/8		1.78	.03	F600K52031	



GRVS	DIA	PULLEY	GR1	GR2	GR3	HGT	PRESS	PUMP	NOTES
2	5-1/2	F400K00451	3/8	3/8		1.78	.03	F162K42913	
2	5-1/2	Y112K00328	21/32	21/32		3-9/64	FLUSH	Y112K04131	Threaded shaft
2	5-3/16	F124K00319	3/8	3/8		2-17/32	FLUSH	10100007	Threaded shaft
2	5-3/16	F124K00319	3/8	3/8		2-17/32	FLUSH	F400K40033	F4124T00114 or 10100007- Threaded shaft
2	5-3/8	F226K00388	1/2	3/8		2-9/16	1/32	F400K51322	
2	5.60	F600K00449	1/2	1/2		2.68	FLUSH	F600K52036	
2	6-3/4	F400K00443	3/8	3/8		2-1/2	<11/16>	F600K52029	
2	6-3/4	F400K00443	3/8	3/8		2-1/2	<11/16>	F162K42911	
3	4-1/16	F140K00356	3/8	3/8	3/8	3-1/32	1/4	F162K04293	
3	4-1/16	F140K00378	3/8	3/8	3/8	3-1/32	11/32	F162K36539	
3	4-1/16	F140K00356	3/8	3/8	3/8	3-1/32	1/4	F162K36523	
3	4-1/16	F140K00378	3/8	3/8	3/8	3-1/32	11/32	F162K04298	
3	4-7/8	F226K00358	3/8	3/8	3/8	3-1/32	<1/16>	F600K05196	
3	4-7/8	F401K00312	3/8	3/8	3/8	3-1/32	<17/32>	F600K51939	
3	4-7/8	F401K00361	3/8	3/8	3/8	3-3/16	<.70>	F600K51942	
3	5-3/16	F209K00318	3/8	3/8	3/8	3-1/32	<1/16>	F600K05195	
3	5-3/16	F209K00328	3/8	3/8	3/8	3-1/32	<11/32>	F162K04294	

FIGURE 1. CYLINDER HEAD, CRANKCASE, OIL PAN AND FLYWHEEL HOUSING

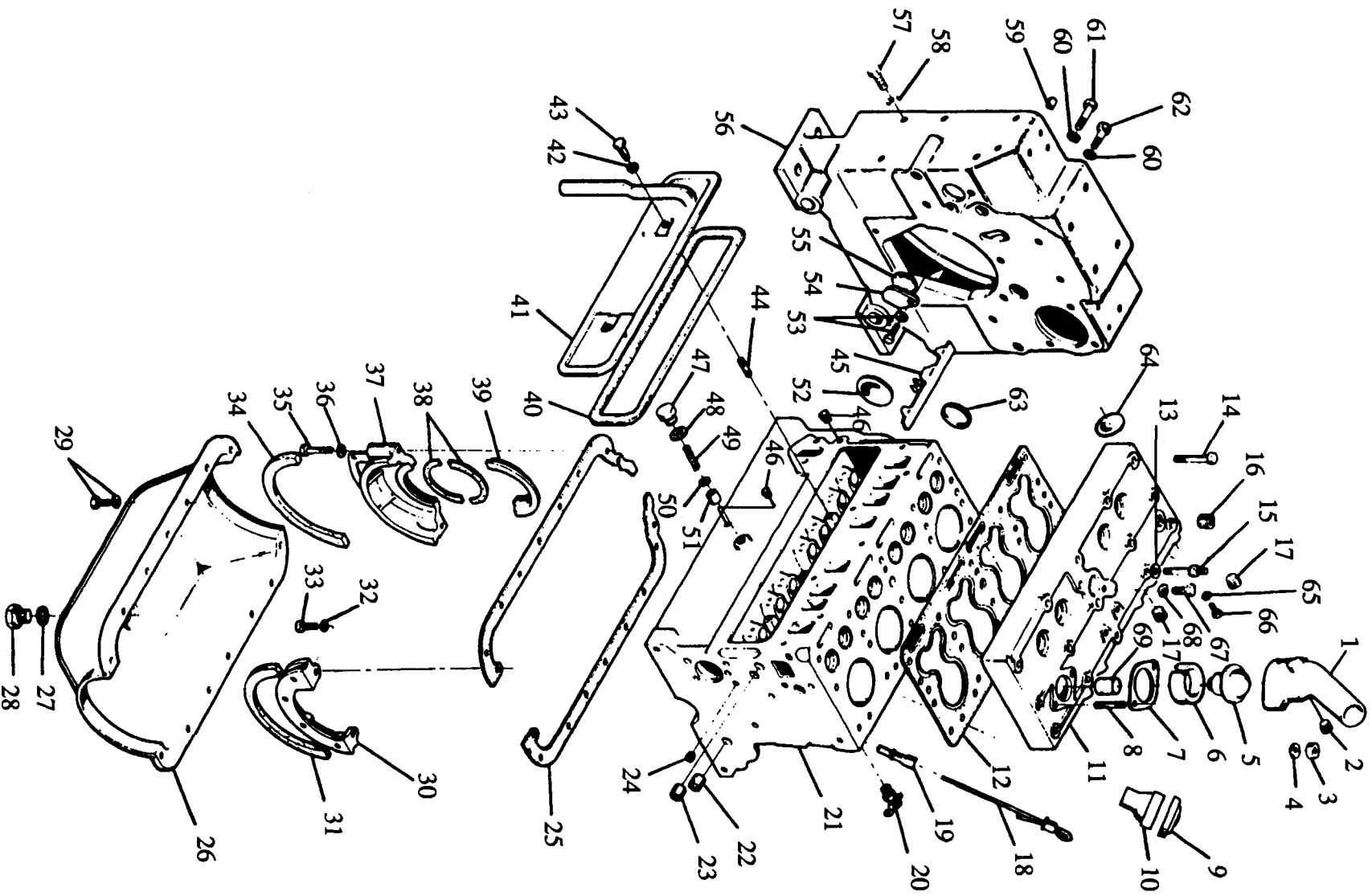


FIGURE 1

ITEM	DESCRIPTION	QUANTITY
1	Elbow, water outlet	1
2	Plug, water outlet elbow	1
2A	Plug, water outlet elbow	1
3	Nut, water outlet elbow-to-cylinder head	2
4	Washer, lock, water outlet elbow to cylinder head	2
5	Thermostat, 180 degree	1
6	Ring, thermostat adapter	1
7	Gasket, water outlet elbow	1
8	Stud, water outlet elbow-to-cylinder head	2
9	Cap, oil filler	1
10	Body, oil filler, crankcase	1
11	Head, cylinder	1
12	Gasket, cylinder head	1
13	Washer, plain, cylinder head-to-crankcase	15
14	Screw, cylinder head-to-crankcase	7
15	Screw, cylinder head-to-crankcase	8
16	Plug, cylinder head, top rear	1
17	Plug, cylinder head, left side	2
18	Rod, oil gauge	1
19	Support, oil gauge rod	1
20	Cock, cylinder water drain	1
21	Short Engine (Service "S" Assembly)	1
	Replacement Engine (Service "R" Assembly)	1
22	Dowel, ring, gear cover and front end plate to-crankcase	1
23	Dowel, ring, front front end plate-to-crankcase, upper right	1
24	Plug, crankcase oil header	2
25	Gasket, oil pan	2
26	Pan, oil	1
27	Washer, drain plug	1
28	Plug, oil drain	1
29	Screw and lockwasher, oil pan-to-crankcase	14
30	Block, filler, front	1
31	Gasket, filler block, front	1
32	Washer, lock, front filler block-to-crankcase	2
33	Screw, front filler block-to-crankcase	2
34	Gasket, filler block, rear	1
35	Screw, rear filler block -to-crankcase	2
36	Washer, lock, rear filler block-to-crankcase	2
37	Block, filler, rear	1
38	Seal, rear bearing, oil	2
39	Guard, rear bearing, oil	1
40	Gasket, valve chamber cover	1
41	Cover, valve chamber	1
42	Gasket, copper, valve chamber cover -to-crankcase	1
43	Nut, valve chamber cover-to-crankcas	

FIGURE 1. CYLINDER HEAD, CRANKCASE, OIL PAN AND FLYWHEEL HOUSING

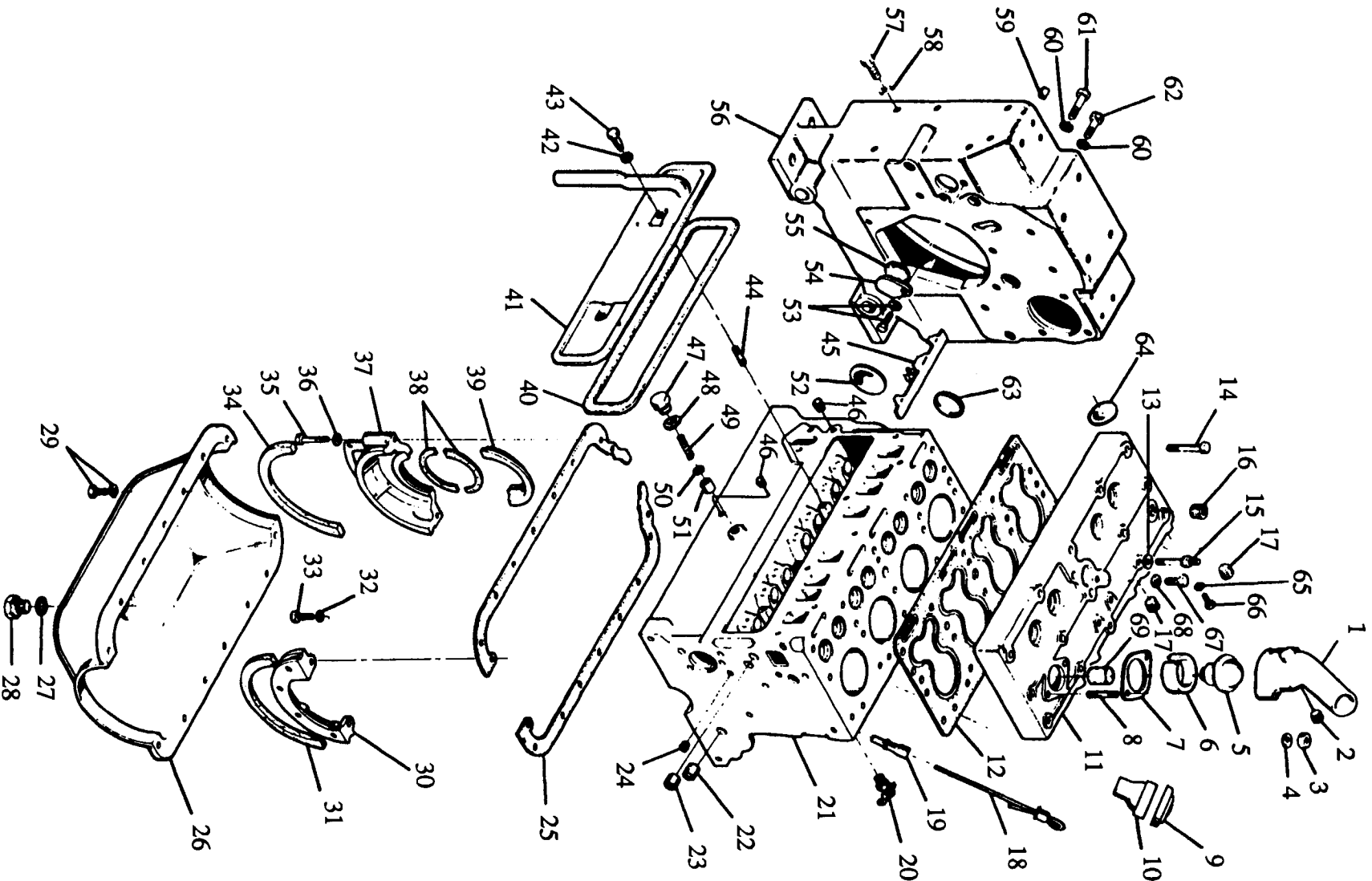


FIGURE 1 (CONTINUED)

ITEM	DESCRIPTION	QUANTITY
44	Stud, valve chamber cover-to-crankcase	2
45	Baffle, valve chamber oil drain, rear	1
	Baffle, valve chamber oil drain, front	1
46	Plug, 'socket, crankcase oil	2
47	Plug, oil relief valve	1
48	Gasket, copper, oil pressure relief valve	1
49	Spring, oil pressure relief valve	1
50	Washer, plain, oil pressure relief valve	UAR
51	Plunger, relief valve	1
52	Plug, expansion, crankcase-at-rear camshaft bearing	1
53	Screw and washer, timing hole cover	1
54	cover, timing hole	1
55	Felt, timing hole cover	1
56	Housing, flywheel	1
57	Screw, flywheel housing plug	16
58	Washer, lock, flywheel housing plug	16
59	Dowel, ring, flywheel housing-to-crankcase	2
60	Washer, lock, flywheel housing-to-crankcase	5
61	Screw, flywheel housing-to-crankcase	2
62	Screw, flywheel housing-to-crankcase	3
63	Plug, expansion, crankcase core hole end	1
64	Plug, expansion, crankcase core hole sides	2
65	Washer, plain, crankcase, left side	2
66	Screw, crankcase left side	2
67	Screw, cylinder head, distributor stud plug	1
68	Washer, plain, cylinder head, distributor stud plug	1
69	Capsule, coolant conditioner	2

Cylinder and Crankcase "S" Assembly

Composed of:

Cylinder and crankcase, bearings, caps, guides, inserts, complete valve mechanism, supports, pistons and rings, connecting rods, crankshaft, camshaft, front end plate, gears, filler blocks, cylinder head, gaskets, gear cover, oil pump, oil pan, studs, nuts, screws, washers, pins and plugs

Crankcase Service "R" Assembly

Composed of:

Cylinder block, connecting rods, camshaft bushings, bearing caps, valve train, tappets, camshaft, main and rod bearings, crankshaft pistons, piston pins, piston rings, front end plate, thrust plate, cam gear, crankshaft gear, oil gauge rod support, oil gauge rod, hole cover-fuel pump, oil guard-rear bearing and service gasket set.

FIGURE 2. VALVE AND CAMSHAFT

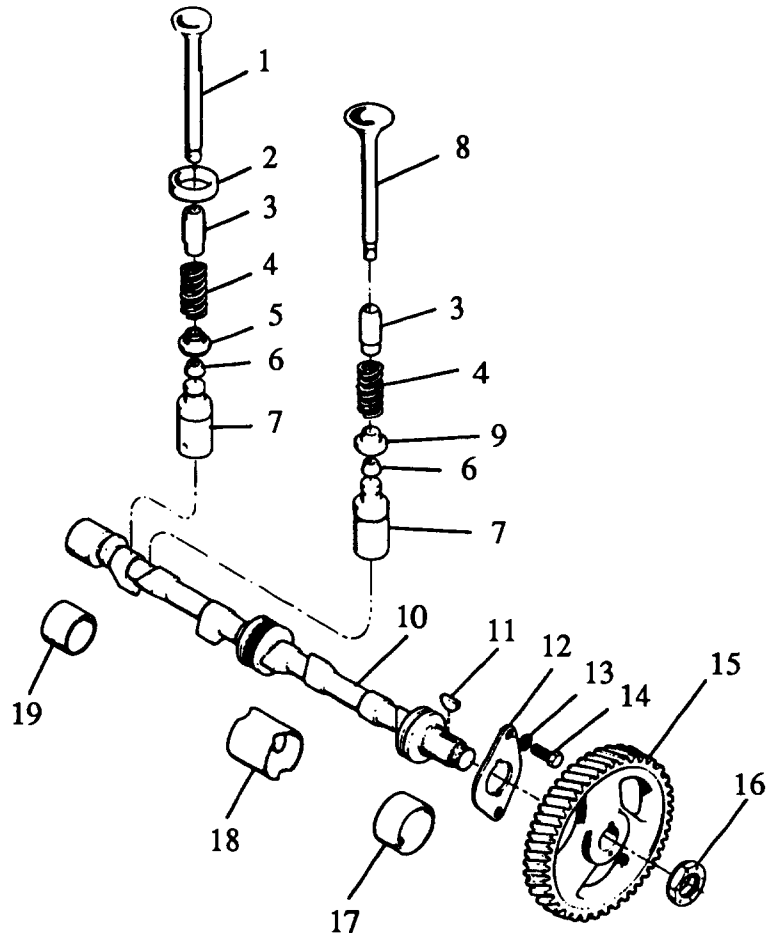


FIGURE 2

ITEM	DESCRIPTION	QUANTITY
1	Valve, exhaust	4
2	Insert, valve seat, exhaust (0.010 oversize for Service)	4
3	Guide, Valve stem, intake and exhaust	8
4	Spring, valve, intake and exhaust	8
5	Roto coil, exhaust.....	4
6	Lock, valve spring retainer, intake and exhaust	16
7	Tappet, valve	8
8	Valve, intake	4
9	Retainer, valve spring, intake	4
10	Camshaft (steel)	1
11	Key, cam gear-to-camshaft.....	1
12	Plate, camshaft thrust	1
13	Washer, lock, thrust plate-to-crankcase	2
14	Screw, thrust plate-to-crankcase	2
15	Gear, camshaft	1
16	Nut, cam gear-to-camshaft.....	1
17	Bushing, camshaft, front.....	1
18	Bushing, camshaft, center.....	1
19	Bushing, camshaft, rear	1

FIGURE 3. PISTON, CRANKSHAFT AND FLYWHEEL

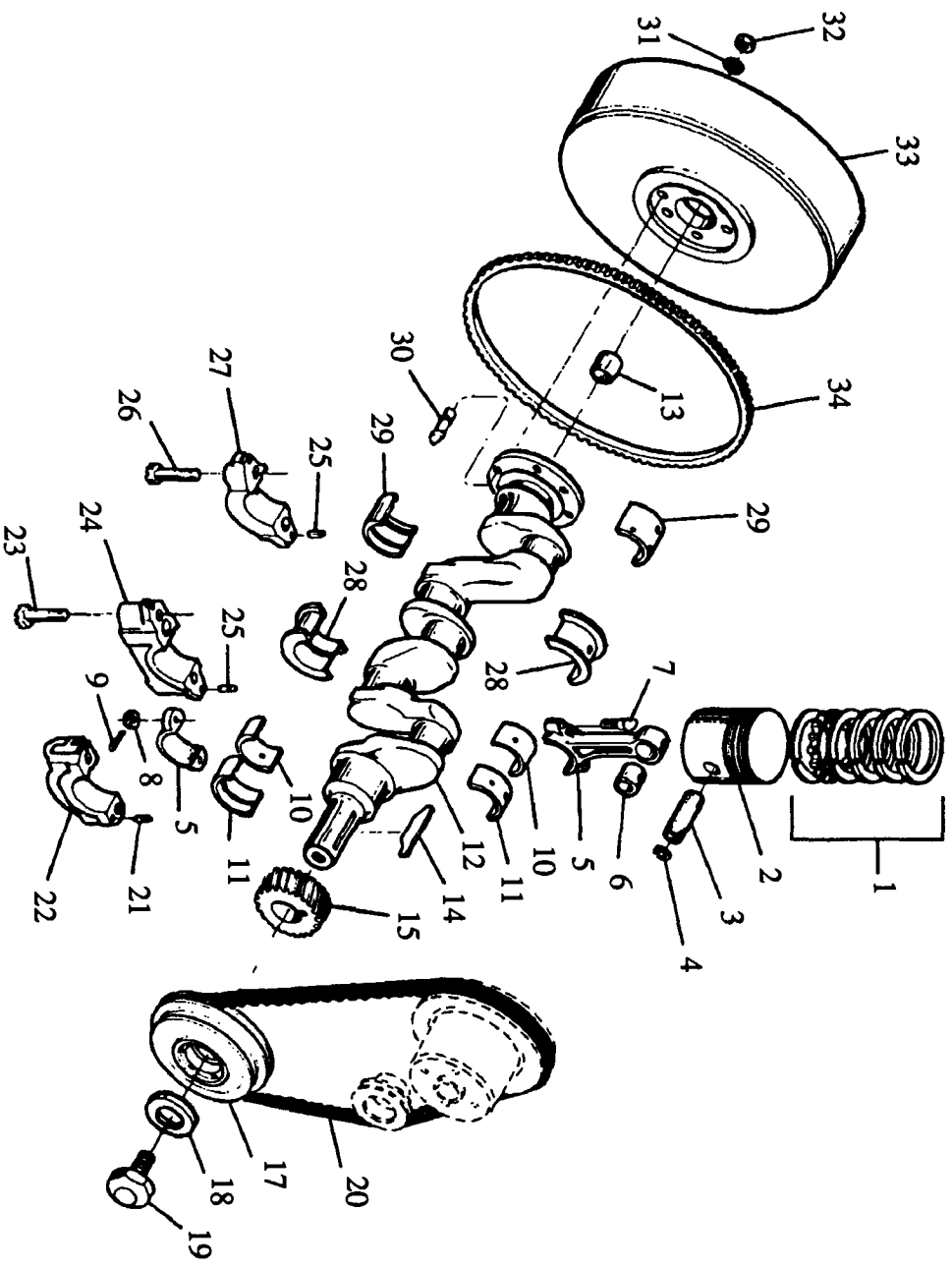


FIGURE 3

ITEM	DESCRIPTION	QUANTITY
1	Ring Kit, re-ring	1
2	Piston (includes: piston, pin and retaining rings).....	4
3	Pin, piston	4
4	Ring, retaining	8
5	Rod, connecting, less bearings (including bushing, bolts and nuts)	4
6	Bushing, piston pin	4
7	Bolt, connecting rod	8
8	Nut, connecting rod bolt	8
9	Pin, cotter, connecting rod nut	8
10	Bearing, connecting rod	4
11	Bearing, crankshaft front, upper and lower	1
12	Crankshaft (includes Index 13).....	1
13	Bearing, crankshaft pilot	1
14	Key, crankshaft gear.....	1
15	Gear, crankshaft.....	1
16	Thrower, crankshaft oil (not required) (not illustrated)	1
17	Pulley, crankshaft	1
18	Washer, pulley-to-crankshaft	1
19	Screw, pulley-to-crankshaft	1
20	Belt, alternator and water pump drive.....	1
21	Dowel, bearing cap-to-crankcase, front	2
22	Cap, crankshaft bearing, front	1
23	Bolt, place, bearing cap-to-crankcase, center	2
24	Cap, crankshaft bearing, center	1
25	Dowel, bearing cap-to-crankcase, center and rear	4
26	Bolt, place, bearing cap-to-crankcase, front and rear	4
27	Cap, crankshaft bearing, rear.....	1
28	Bearing, crankshaft , center, upper and lower	1
29	Bearing, crankshaft, rear, upper and lower	1
30	Bolt, flywheel-to-crankshaft.....	6
31	Washer, lock, flywheel-to-crankshaft	6
32	Nut, flywheel-to-crankshaft.....	6
33	Flywheel (including ring gear)	1
34	Gear, ring, flywheel.....	1

FIGURE 4. FRONT END PLATE AND GEAR COVER

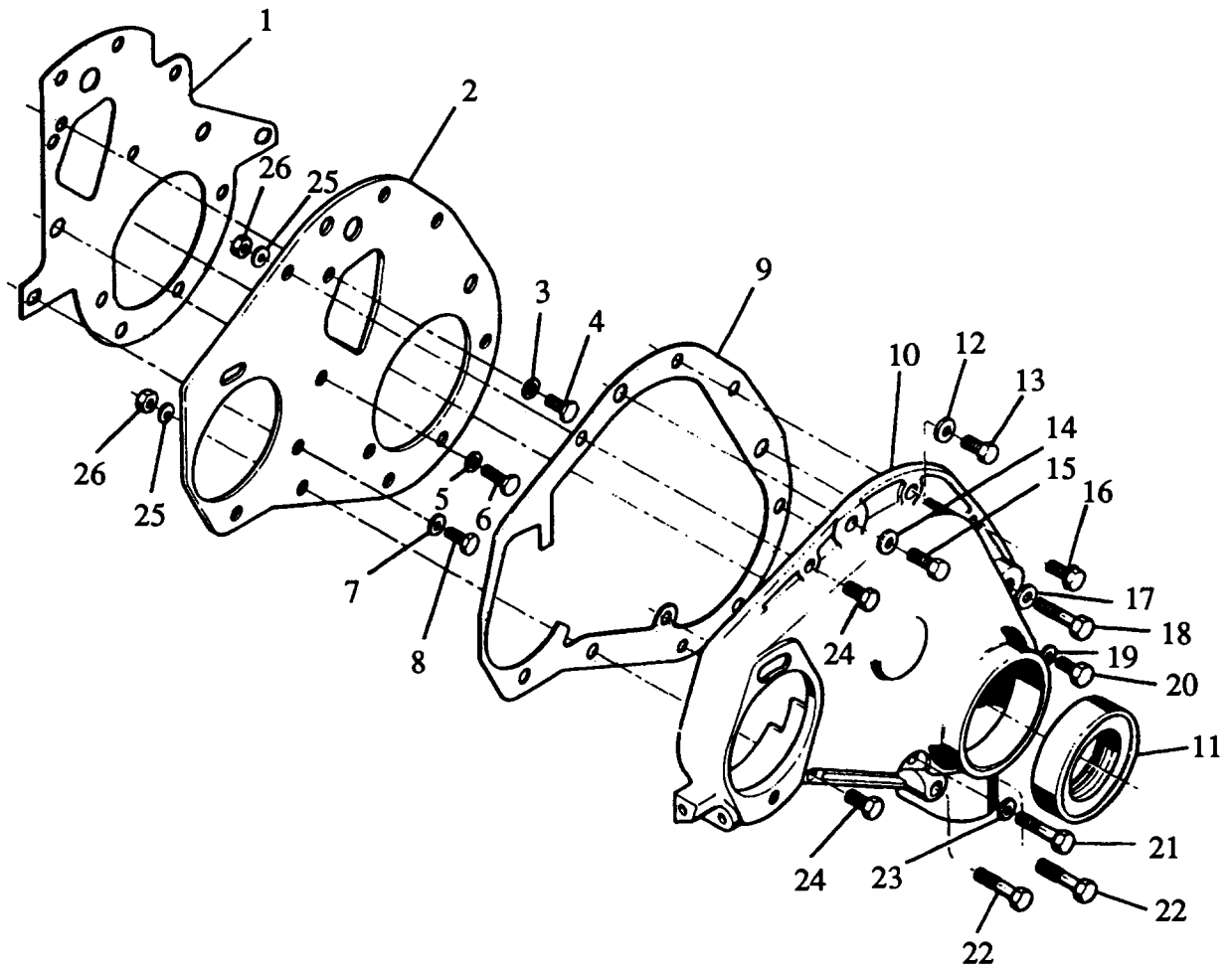


FIGURE 4

ITEM	DESCRIPTION	QUANTITY
1	Gasket, front end plate	1
2	Plate, front end	1
3	Washer, lock, front end plate-to-crankcase, behind gear	1
4	Screw, front end plate-to-crankcase, behind gear	1
5	Washer, lock, front end plate-to-crankcase	1
6	Screw, front end plate-to-crankcase.....	1
7	Washer, plain, front end plate-to-crankcase.....	1
8	Screw, front end plate-to-crankcase.....	1
9	Gasket, gear cover	1
10	Cover, gear	1
11	Seal, oil and felt.....	1
12	Washer, plain, gear cover-to-crankcase	1
13	Screw, gear cover-to-crankcase	1
14	Washer, plain, gear cover-to-crankcase at upper dowel	1
15	Screw, gear cover-to-crankcase at upper dowel	1
16	Screw and lockwasher, gear cover-to-crankcase	1
17	Washer, plain, gear cover-to-crankcase lower dowel	1
18	Screw, gear cover-to- crankcase at lower dowel.....	1
19	Washer, plain, gear cover-to-filler block, upper right.....	1
20	Screw, gear cover-to-filler block, upper right	1
21	Screw, gear cover-to-filler block, upper left	1
22	Screw, washer, gear cover-to-filler block, lower	2
23	Washer, plain, gear cover-to-filler block, upper left	1
24	Screw, gear cover-to-end plate, upper and lower	2
25	Washer, lock, gear cover-to-end plate	2
26	Nut, gear cover-to- end plate	2

FIGURE 5. OIL PUMP

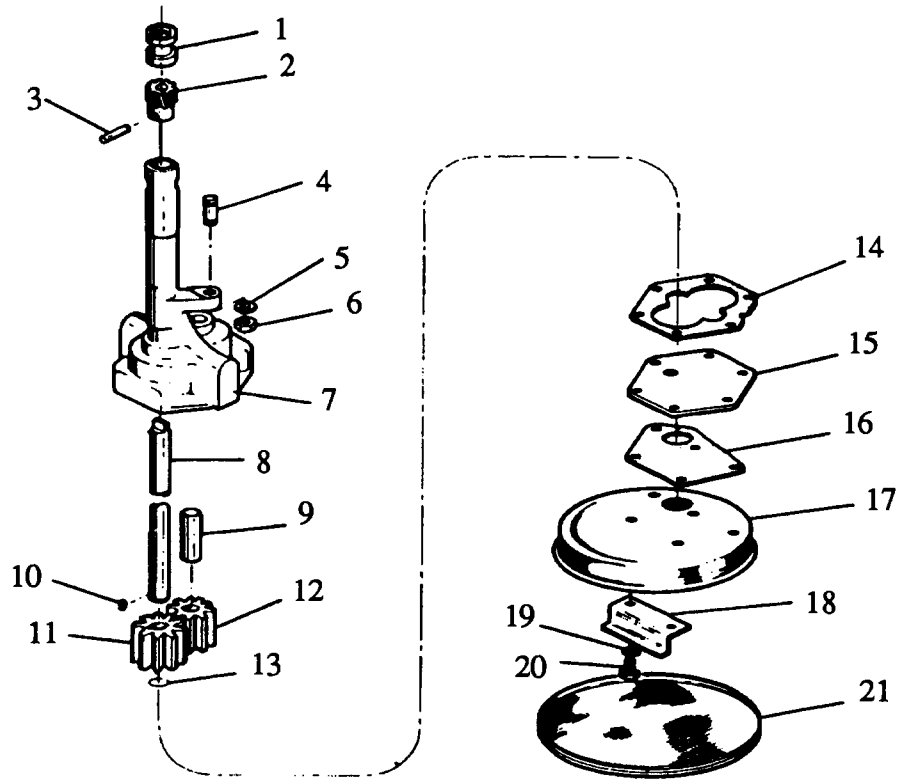


FIGURE 5

ITEM	DESCRIPTION	QUANTITY
1	Bushing, oil pump drive shaft (in crankcase).....	1
2	Gear, oil pump drive	1
3	Pin, oil pump drive gear	1
4	Stud, oil pump body-to-center bearing cap	1
5	Washer, lock, oil pump-to-center bearing cap	1
6	Nut, oil pump-to-center bearing cap	1
7	Body, oil pump *	1
8	Shaft, oil pump drive	1
9	Stud, oil pump idler gear	1
10	Key	1
11	Gear, oil pump, driver	1
12	Gear, oil pump, idler	1
13	Ring, retaining	1
14	Gasket, oil pump	1
15	Cover, oil pump	1
16	Gasket, cover-to-strainer frame	1
17	Frame, oil pump strainer	1
18	Spacer, oil pump strainer	1
19	Washer, lock, oil pump cover-to-body and oil pump strainer thru cover-to-body	6
20	Screw, oil pump cover-to-body and oil pump strainer thru cover-to-body	6
21	Screen , oil strainer	1

*Not Serviced Separately

FIGURE 6. WATER PUMP

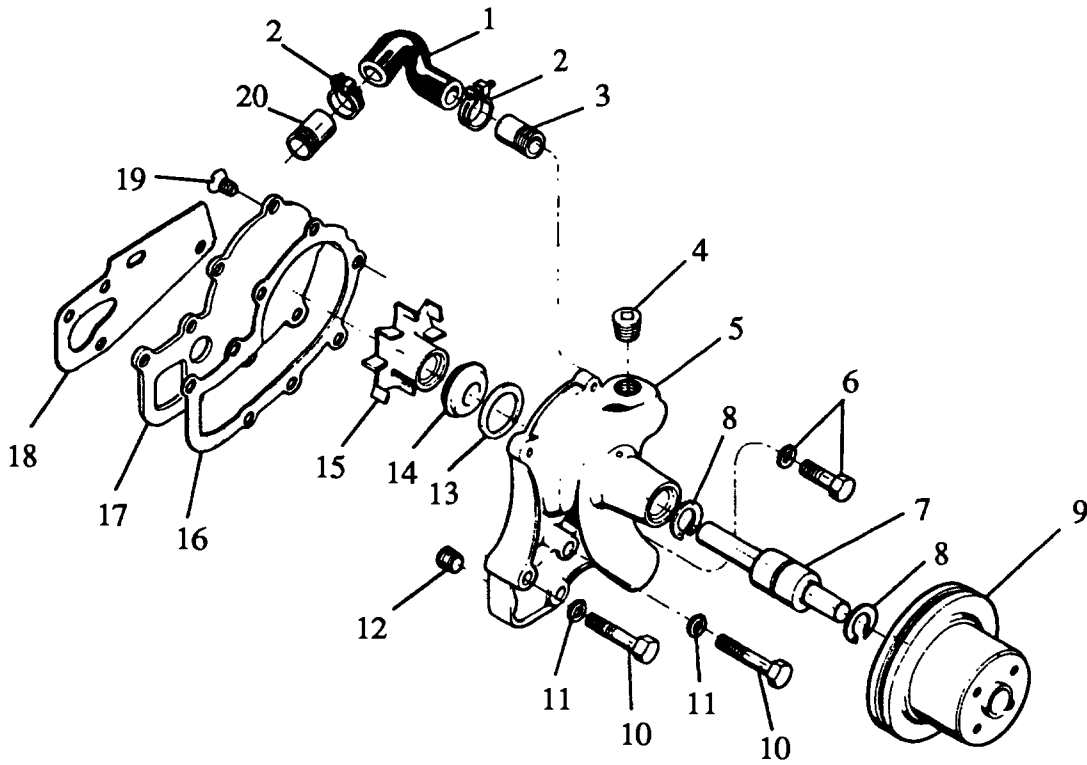


FIGURE 6

ITEM	DESCRIPTION	QUANTITY
1	Hose, water outlet elbow-to-water pump by pass	1
2	Clamp, hose, water outlet elbow and water pump	2
3	Nipple, water pump by-pass	1
4	Plug, pipe	1
5	Body, water pump	1
6	Screw and washer, water pump-to-crankcase, right side	1
7	Bearing and shaft, water pump	1
8	Ring, retaining	2
9	Pulley, water pump *	1
10	Screw, water pump-to-crankcase	3
11	Washer, lock, water pump-to-crankcase	3
12	Plug, pipe	1
13	Gasket, water pump seal	1
14	Seal, water pump	1
15	Impeller, water pump	1
16	Gasket, plate-to-body	1
17	Plate, water pump back	1
18	Gasket, water pump-to-crankcase	1
19	Screw, water pump plate-to-body	4
20	Nipple, water outlet elbow by-pass	1

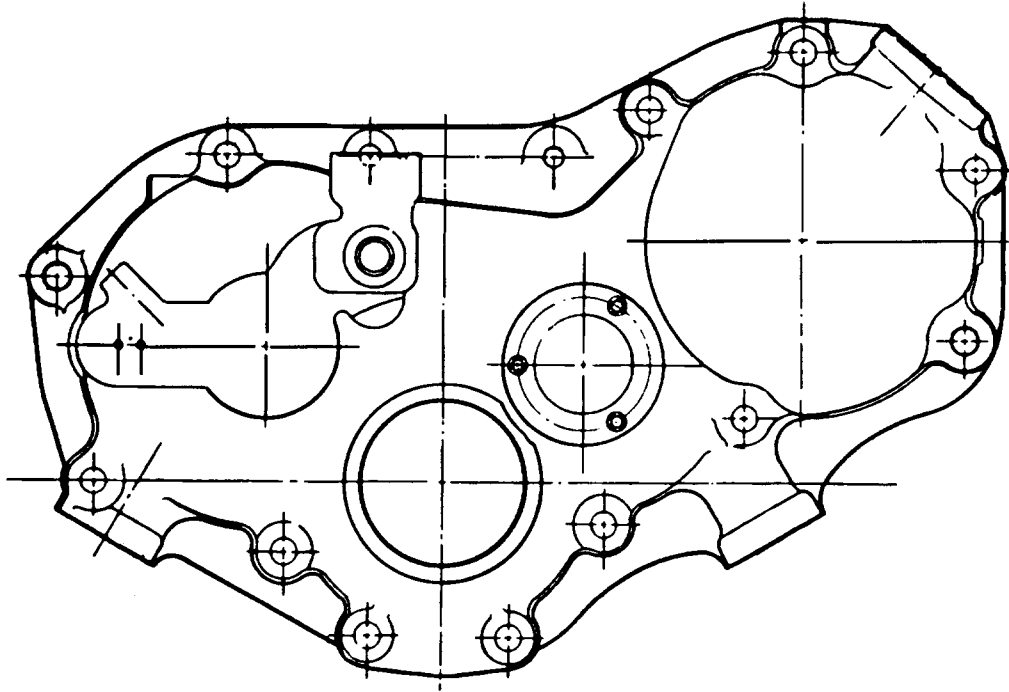
*Not Serviced Separately

Use: Complete Pump -or- Service Pump (Less Pulley)

THE FRONT END GASKET KIT IS Y4U02009

CLARK GEAR COVER

Y400 "B" Model
with live stud idler



THE FRONT END GASKET KIT IS Y4U02009

The Hydraulic System on this engine is located on the side opposite manifold with the pump mounted on the front end plate side and driven off the crankshaft gear thru the idler. The engine was produced with 39° helix angle gears only.

The oil filter return line on this "B" Model front end must be routed to the gear cover - outboard bearing support - to assure proper wash of the bearings.

The idler parts are:

X17033 Pin- Idler Gear Thrust Washer to Crank	(3)
Y69G00203 Bearing Needle -Idler Stud Inner	(1)
Y400H00246 Washer - Idler Gear Thrust	(1)
Y112H03152 Gear Assy- Idler	(1)
Y112B00215 Spring - Idler Gear Thrust to Plunger	(1)
F400H00207 Plunger - Idler Gear Thrust	(1)
Y112B03151 Support Assy - Idler Stud including:	(1)
1- X06901 Screw - Thrust Button	
1- X14221 Washer - Thrust Button	
1- Y400G00238 Bearing - Needle	
Y69B00215 Gasket - Idler Support	(1)
X04038 Stud - Support to gear cover	(3)
X14324 Washer - Support to gear cover	(6)
X18472 Nut lock - Support to gear cover	(3)
X01706 Pin - Support to gear cover	(2)

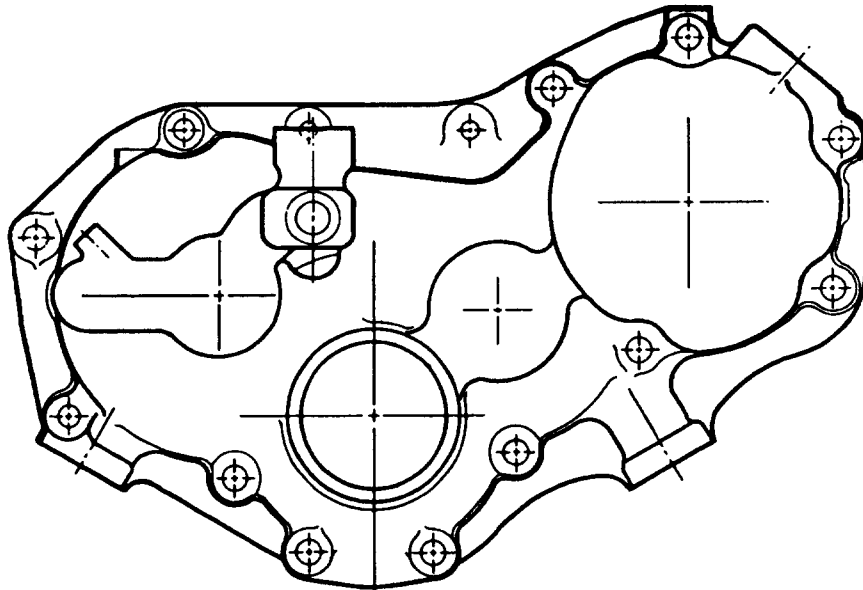
These gear covers can be identified by the Casting Number Y400B00603 or Y400B00506 located on the front face above and behind the crankshaft pulley.

The live stud "B" Model arrangement is readily distinguished from the fixed stud "C" Model engine in that "B" Model has an opening for the idler stud outboard bearing support - the "C" Model does not.

THE FRONT END GASKET KIT IS Y4U02009

CLARK GEAR COVER

**Y400 "C" Model
with fixed stud idler**



THE FRONT END GASKET KIT IS Y4U02009

This engine has the Hydraulic System located on the side opposite manifold, mounted on the front end plate and driven off the crankshaft gear thru the idler.

This engine was produced with 39° helix angle gears only.

The idler is lubricated internally; therefore, the oil filter return line must be routed to the crankcase, not the gear cover.

The idler parts are:

X17033 Pin - Idler Gear Thrust Washer to Crankcase	(3)
Y400H00251 Stud - Idler Gear	(1)
Y400H00246 Washer - Idler Gear Thrust	(1)
Y400H03360 Gear - Idler	(1)
Y400H00252 Washer - Idler Thrust	(1)
X22099 Screw - Lock	(1)

In working with this idler see Instruction Drawing Y400H03370 for assembly instructions and be sure to maintain .004 clearance between the gear and its thrust washer.

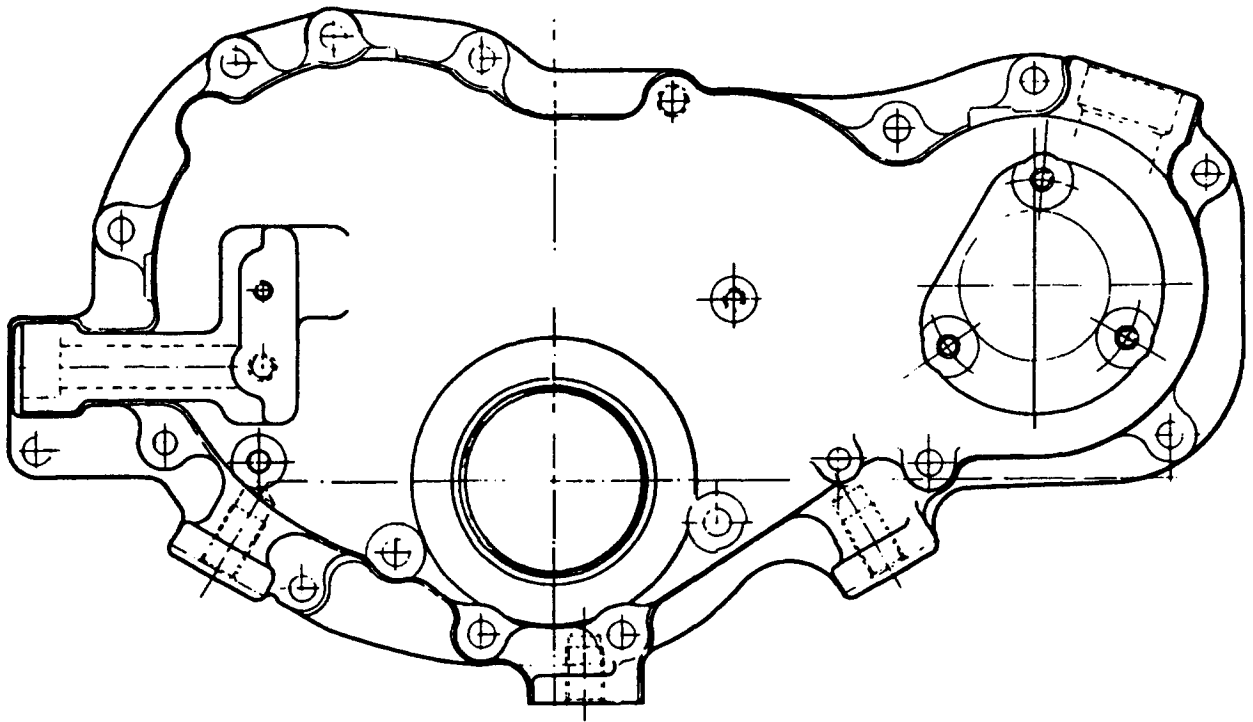
These gear covers can be identified by Casting Numbers Y400B00608 or Y400B00467 located on the front above and behind the crankshaft pulley.

The fixed stud idler front end can be easily distinguished from the live stud model by the absence of an outboard bearing support.

THE FRONT END GASKET KIT IS F4U02005

CLARK GEAR COVER

"B" Model F400 & F600
with fixed stud idler



THE FRONT END GASKET KIT IS F4U02005

The Hydraulic System is located on the side opposite manifold with the pump mounted on the front end plate and driven off the crankshaft gear thru the idler.

It was produced with 21° helix gears only

The oil filter return line on the "B" Model front end must be routed to the front of the gear cover, at the idler stud, to assure a good "wash" of the bearings.

The idler parts are:

X17033 Pin - Idler gear thrust washer to crankcase	(2)
F600H00228 Stud - Idler gear	(1)
X17090 Pin - Idler stud (end)	(1)
F600H03211 Gear Assy. Idler including:	(1)
1- F600H00321 Gear	
1- X13210 Bearing Ball - Inner	
1- X13211 Bearing Ball - Outer	
F124H00201 Washer - Idler gear thrust	(1)
F600H00229 Sleeve - Idler gear retainer	(1)
F600H00230 Guide - Idler gear retainer	(1)
X07099 Spring - Idler gear retainer	(1)

This gear cover should be readily identifiable by the casting number that appears on the front face in the area of the camshaft gear.

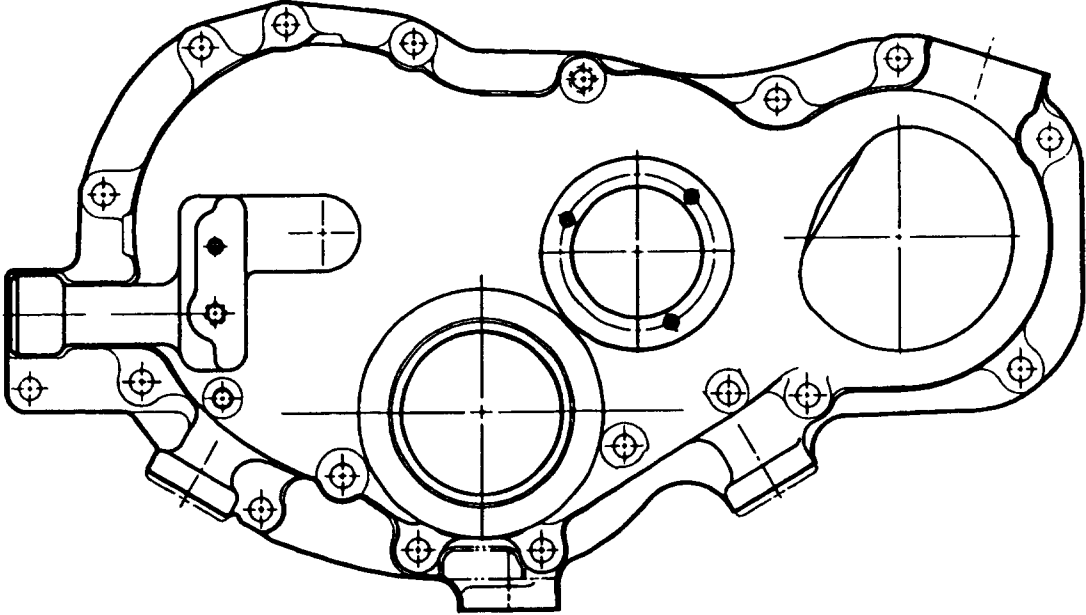
The fixed stud "B" Model gear cover Casting Numbers are F244B00600, F244B00501, and F244B00502.

This fixed stud arrangement is readily distinguished from the "live stud" engines in that the gear cover does not have a hole at the idler for assembly of an outboard bearing support.

THE FRONT END GASKET KIT IS F4U02005

CLARK GEAR COVER

"B" Model F400 & F600
with live stud idler



THE FRONT END GASKET KIT IS F4U02005

The Hydraulic System on this engine is located on the side opposite manifold with the pump mounted on the front end plate side and driven off the crankshaft gear thru the idler. This style was produced with both 37° or 21° helix gears and the gear cover must be removed to determine which were employed with the particular engine unless the nameplate is intact and the specification number can be obtained. The idler arrangement, except for the idler gear itself, is the same for both helix angles.

These covers can be identified by the Casting Number F400B00501, F400B00512 or F400B00532 located on the front face of the mounting flange in the area of the camshaft gear. Over the years several versions of the outboard bearing support and thrust arrangement were used; however, consider the latest components to be applicable in your service work and use the following:

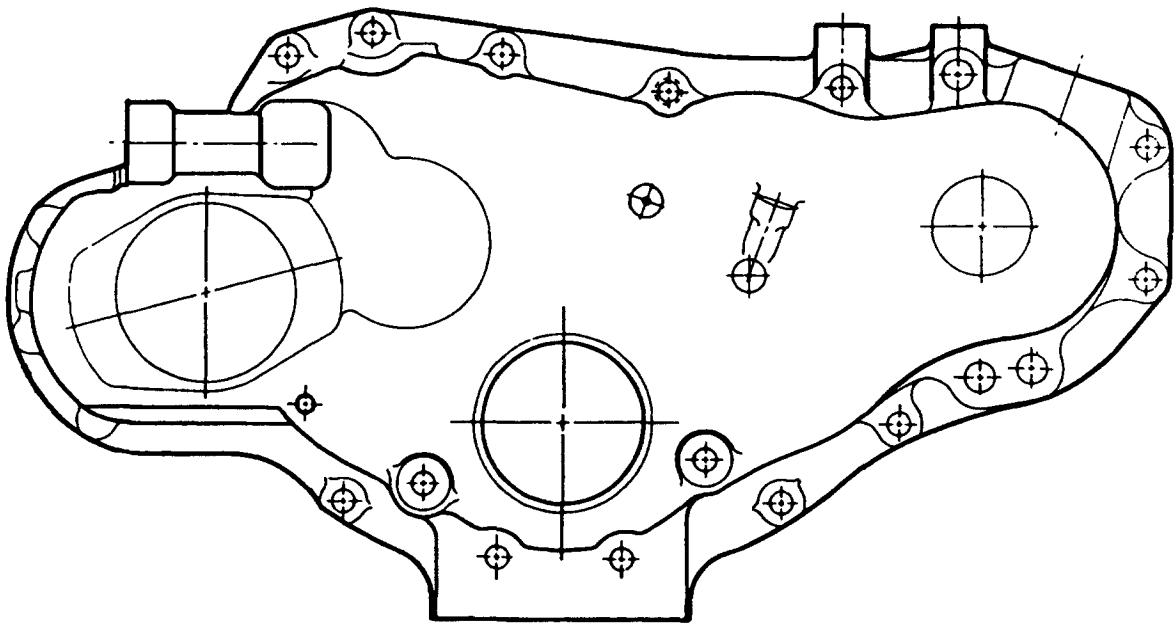
X17033 Pin - Idler Thrust Washer to Crankcase	(2)
F124G00200 Bearing Idler Stud-Needle	(1)
F124H00201 Washer - Idler Thrust	(1)
F209H02011 Gear Assy 21 Idler- Including:	(1)
1- F124H00200 - Stud Idler	
or	
F209H03011 Gear Assy 37 Idler including:	(1)
1- F124H00200 - Stud Idler	
F400B00245 Support - Idler Stud	(1)
F400B00227 Gasket	(1)
X14324 Plain Washer - Support to Gear Cover	(6)
X18472 Nut - Support to Gear Cover	(3)
X01904B Stud - Support to Gear Cover	(3)
X01720 Pin - Support to Gear Cover	(2)
X13099A Bearing Ball - Idler Stud	(1)
21RM00215 Spring - Idler Thrust	(1)
F400H00207 Plunger - Idler Thrust	(1)
X14221 Washer	(1)
X06901 Screw	(1)

The oil filter return line should be routed to the idler support to assure "wash" of the bearings. The live stud idler and fixed stud idler can be distinguished by the gear cover - the live stud has the outboard bearing support bolted to the gear cover - the fixed stud is cast closed. This arrangement was produced with and without cam gear governor - aside from the gear cover, casting parts should be interchangeable as far as the idler is concerned.

THE FRONT END GASKET KIT IS F6U02002

CLARK GEAR COVER

"C" Model F600
with fixed stud idler



THE FRONT END GASKET KIT IS F6U02002

This gear cover handles hydraulics on both sides of the engine. The implement pump is located on the side opposite manifold mounted on the front end plate and driven off the crankshaft thru an idler.

The steering pump is also mounted on the front end plate - its location is on the manifold side and here the camshaft serves as the idler.

When a drive line cooling pump (Hydra Cool) is used that pump is mounted on the gear cover and is tang driven off the nose of the steering pump gear.

This front end was produced with 21° helix gears only.

This idler arrangement is lubricated internally and the oil filter return line should not be routed to the gear cover as that would pressurize the filter outlet and result in reduced flow through the oil filter.

The idler parts are:

F400H00226 Stud - Idler Gear	(1)
F400H04101 Gear Assy Idler - including:	(1)
2- X13210 Bearing Ball	
2- X07653 Ring - Retainer Snap	
F600H00232 Sleeve Idler Gear Retainer	(1)
X07123 Spring - Retainer - Idler Gear	(1)

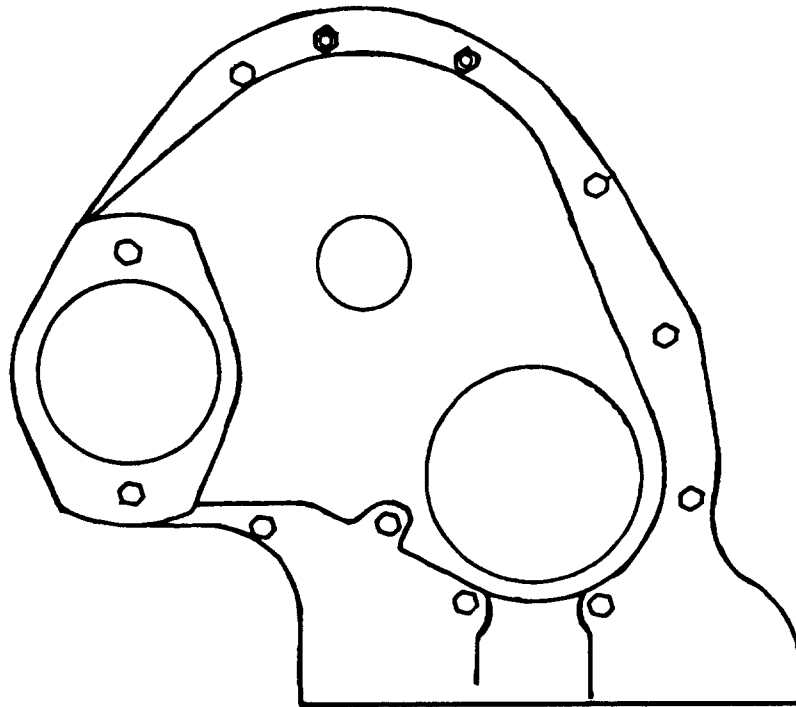
These gear covers should be readily identifiable by the casting number that appears on the front face of the mounting flange at the top directly above the crankshaft pulley.

The Casting Number is F227B00603 and if it does not have the opening for Hydra Cool pump drive it machined into a finished F227B00603. If there is a third hydraulic pump location it is machined into F227B00403.

As of January 1,1973, this front end is limited to the F600 engine only due to special crank-case casting requirements. F400 engines crankcases with special idler stud location are not available.

THE FRONT END GASKET KIT IS F4U02004

HYSTER F4 GEAR COVER



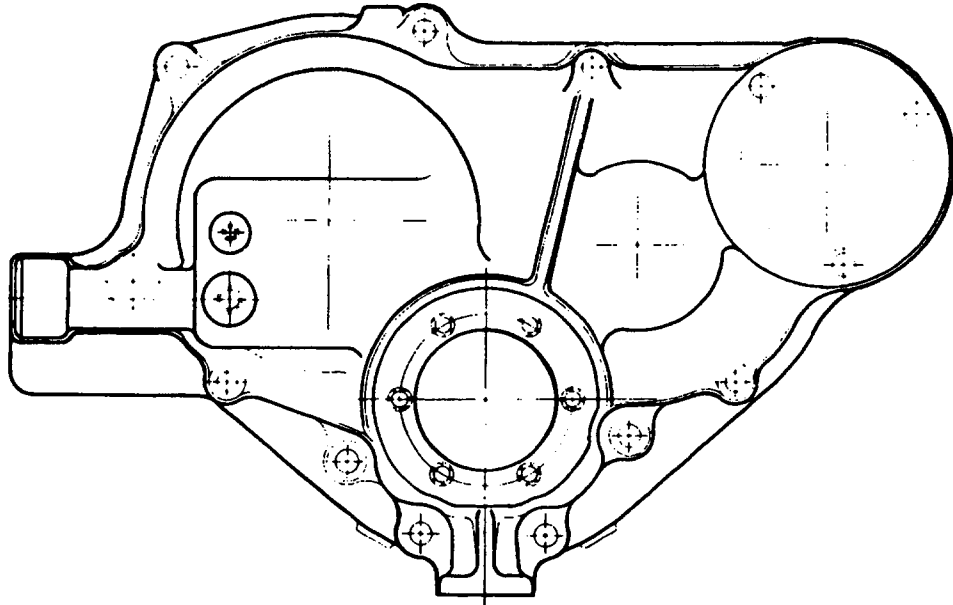
THE FRONT END GASKET KIT IS F4U02004

This front end can be identified by Casting Number F162B00412 located on the front face of the gear cover above the crankshaft opening (directly above the hydraulic pump).

THE FRONT END GASKET KIT IS F4U02006

TOWMOTOR GEAR COVER

**F400 & F600
Front end with idler**



THE FRONT END GASKET KIT IS F4U02006

This engine drives the Hydraulic System directly off the nose of the crankshaft thru a set of coupling gears and an internal spline drive sleeve.

The accessory drive pulley is located on the side opposite the manifold and is driven thru an idler off the crankshaft gear.

This front end can be identified by Casting Number F400B00513 located directly above the Hydraulic Pump (crankshaft opening) on the front face of the gear cover.

Idler parts used with this engine are:

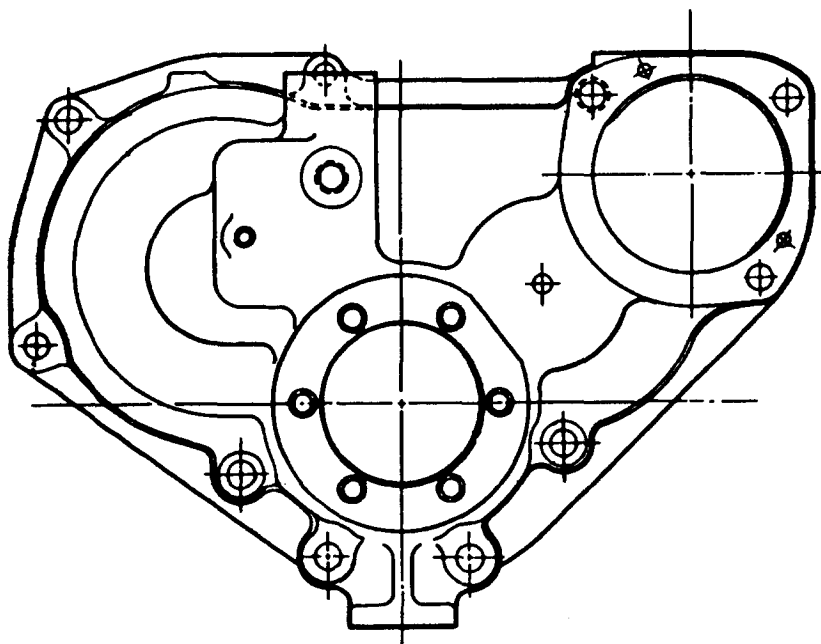
F400H00222 Stud - Idler	(1)
X17033 Pin	(3)
1- Idler Gear to Bushing	
2- Idler Gear Thrust Washer to Crankcase	
C400H00215 Washer - Idler Gear Thrust	(1)
F400H03240 Gear Assy Idler including	(1)
1- F400G00219 Bushing	
F400H00223 Carrier - Idler Thrust Plunger	(1)
21RM00215 Spring - Idler Thrust Plunger	(1)
F400H00224 Plunger - Idler Thrust Plunger	(1)
8PK00214 Button - Idler Thrust	(1)

This engine has an accessory housing along the engine side opposite the manifold which serves as a distributor drive arrangement in addition to its purpose of providing for the fan drive feature of this engine.

THE FRONT GASKET KIT IS Y4U02006

TOWMOTOR GEAR COVER

Y400 Front end with idler



THE FRONT GASKET KIT IS Y4U02006

This engine drives the Hydraulic System directly off the nose of the crankshaft thru a set of coupling gears and an internal spline drive sleeve.

The accessory drive pulley is located on the side opposite manifold and is driven thru an idler off the crankshaft gear.

This front end can be identified by Casting Number Y112B00503 located on the front face of the gear cover above the crankshaft opening (directly above the hydraulic pump).

Idler parts used with this engine are:

Y400H00238 Stud - Idler Gear	(1)
D600H00202 Washer - Idler Gear Thrust	(1)
Y400H03170 Gear Assy Idler including:	(1)
1- Y400G00230 Bushing	
F400H00223 Carrier - Idler Plunger	(1)
21RM00215 Spring - Idler Thrust	(1)
F400H00224 Plunger - Idler Thrust	(1)
8PK00214 Button - Idler Thrust	(1)

SERVICE AND PARTS
Available from your Authorized
WIS-CON TOTAL POWER
Service Center

**L
-
H
E
A
D**

 **WIS-CON**
TOTAL POWER CORP.

HEADQUARTERS:

3409 Democrat Road P.O. Box 181160 Memphis, Tennessee 38181
Phone: (901) 365-3600 TELEX: 462-1058 (ITT) FAX NO: (901) 369-4050

EUROPEAN:

Rue Joseph Deflandre, 13 B-4053 Chaudfontaine (Liege) Belgium
Phone: (32) (41) 675320 TELEX: 42631 TDY TP B FAX NO: (32) (41) 677987