

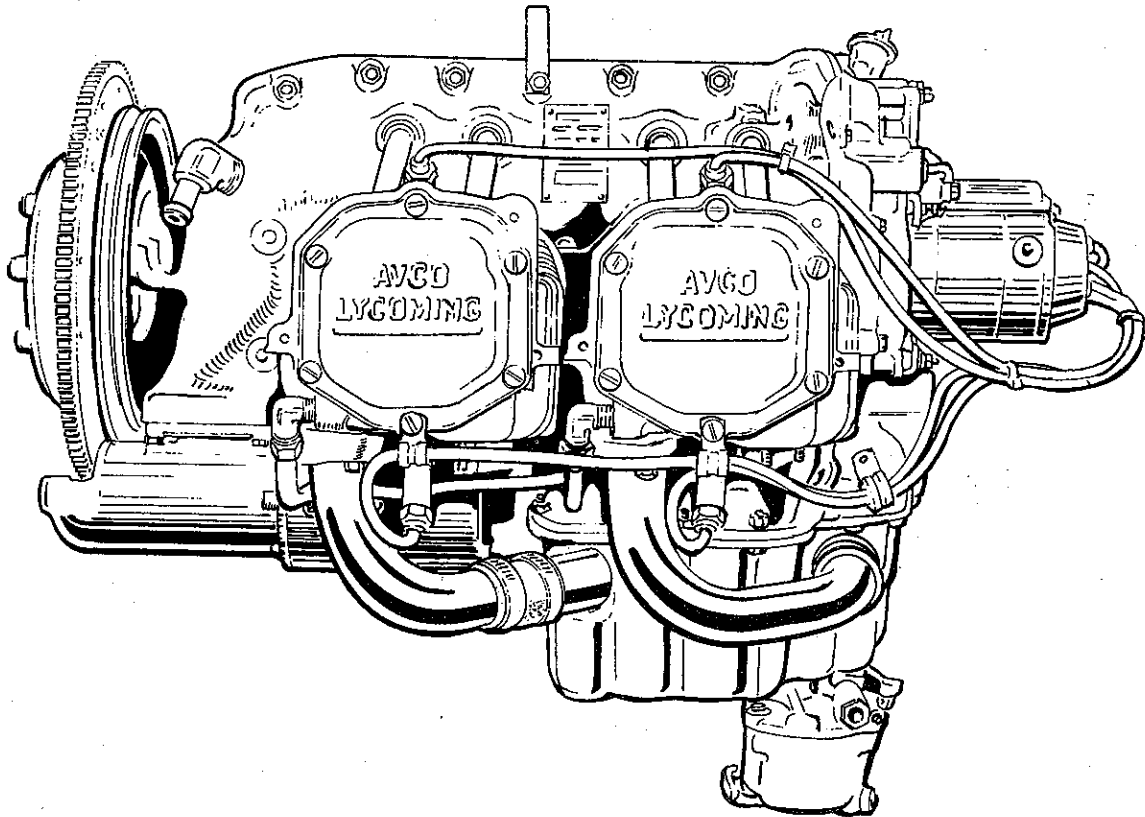
# **PARTS CATALOG**

**PC-302**

**AVCO LYCOMING**

**O-235 SERIES**

## **AIRCRAFT ENGINES**



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**AVCO LYCOMING WILLIAMSPORT DIVISION**  
652 Oliver Street, Williamsport, Pennsylvania 17701  
**AVCO LYCOMING ENGINE GROUP**



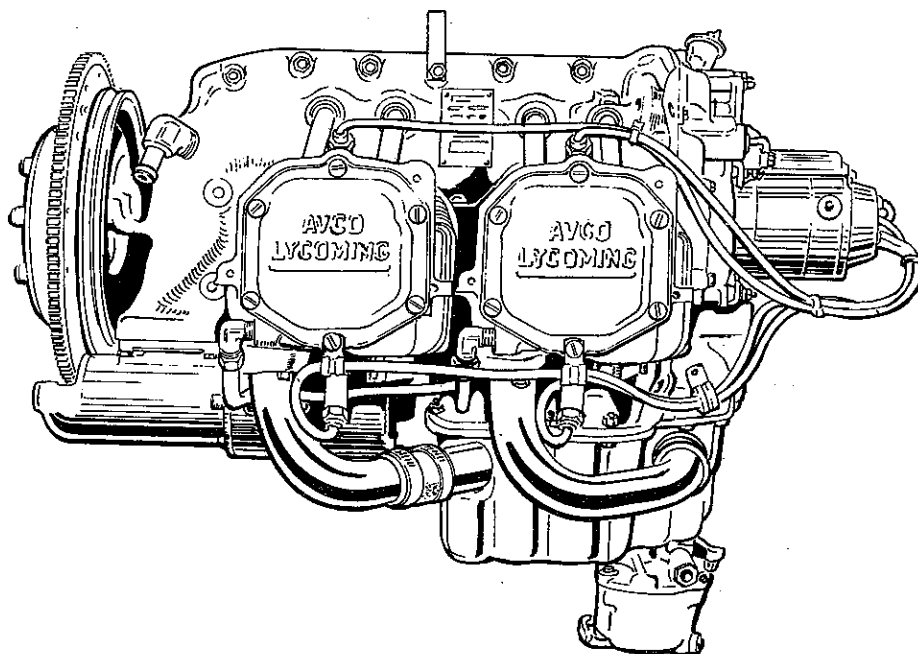
# **PARTS CATALOG**

**PC-302**

**AVCO LYCOMING**

**O-235 SERIES**

## **AIRCRAFT ENGINES**



**JUNE 1982**

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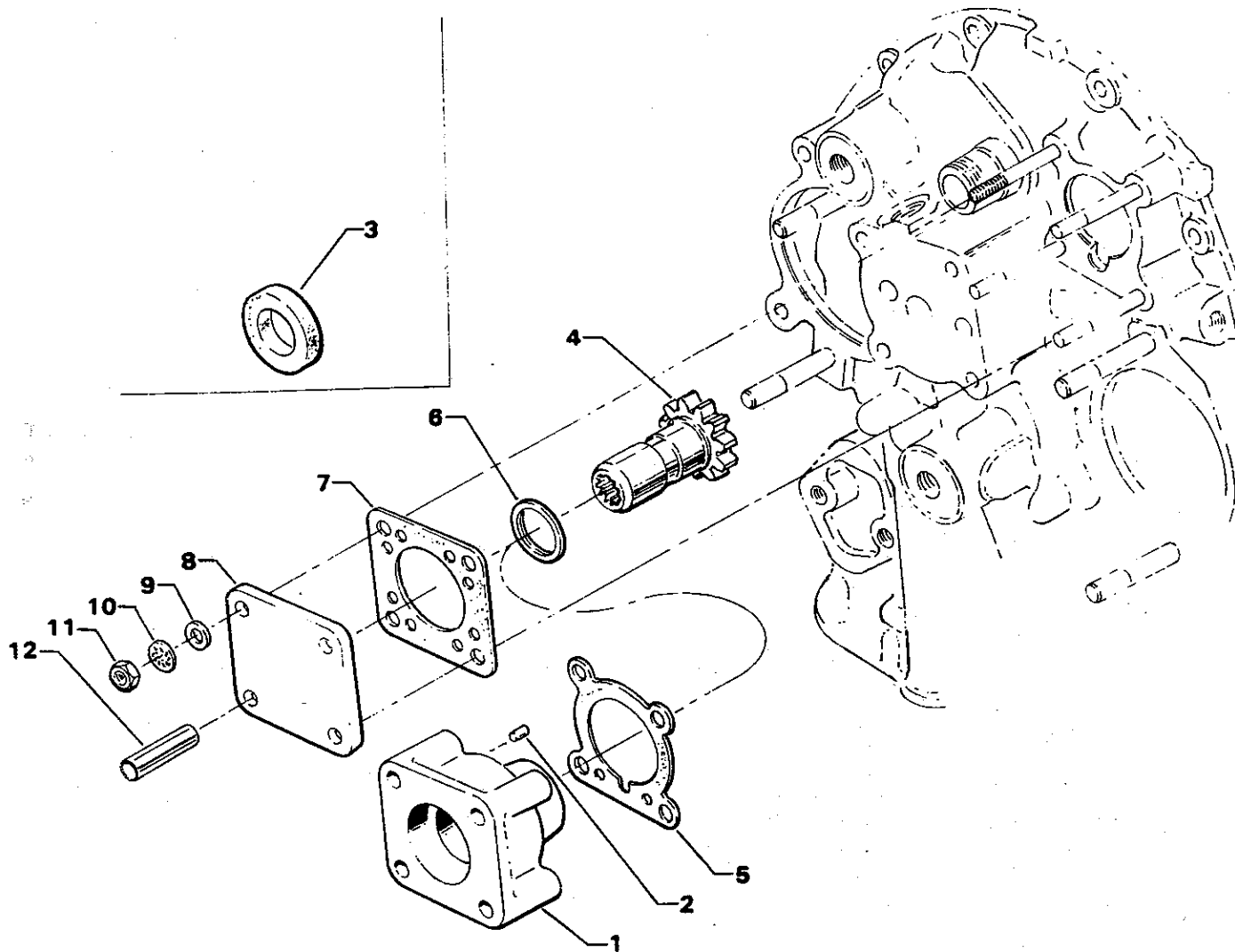
**AVCO** LYCOMING WILLIAMSPORT DIVISION  
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**AVCO** LYCOMING ENGINE GROUP



# TECHNICAL PUBLICATION REVISION

REVISION No. <b>PC-302B</b>	ENGINE MODEL 0-235 Series	PUBLICATION No. PC-302	PUBLICATION DATE June, 1982
The page(s) furnished herewith are intended to replace the corresponding page(s) of the publication indicated above.			
Remove		Insert	
June, 1982 2-13, 3-1, 3-2		January, 1987 2-13, 3-1, 3-2	





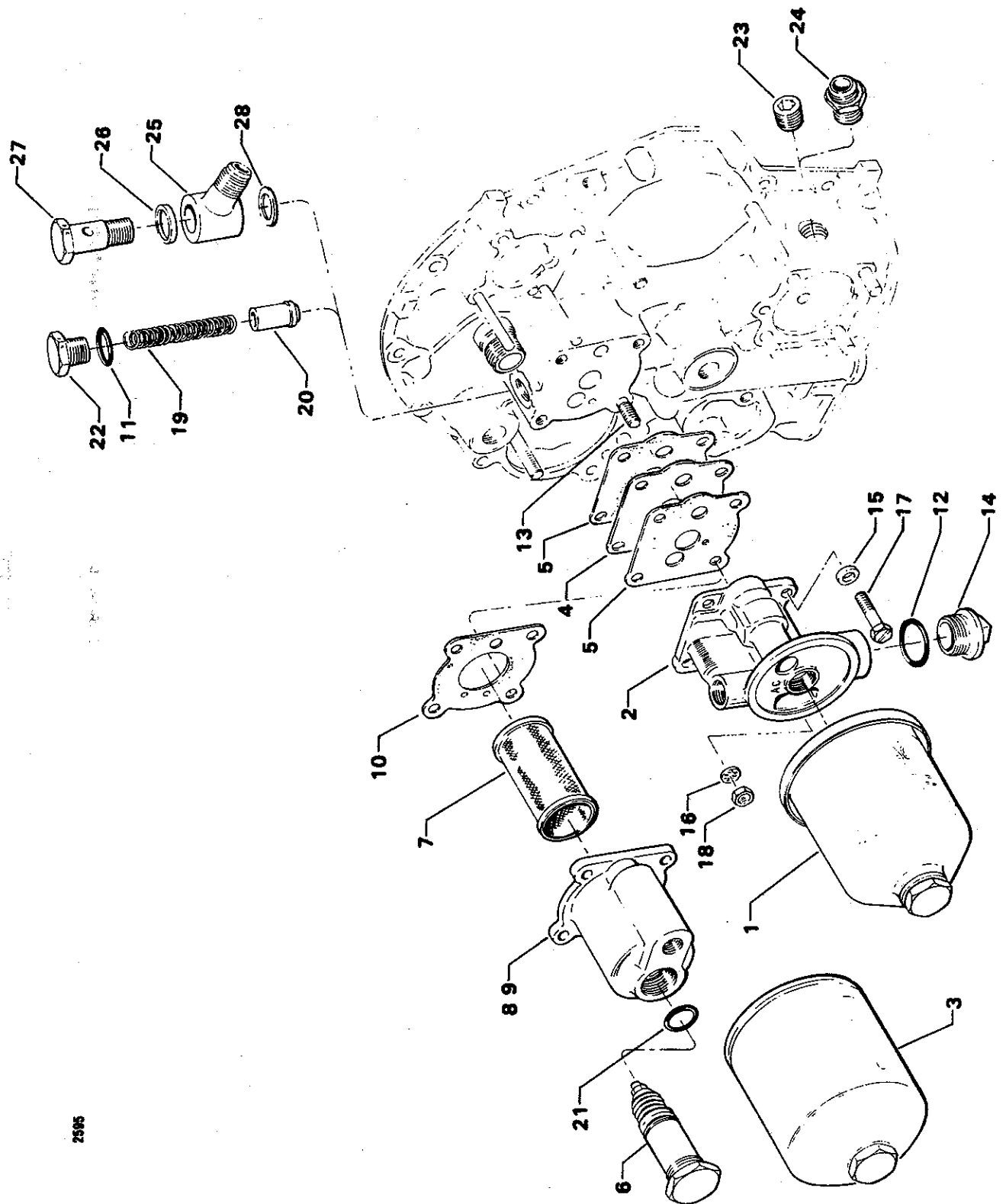
2591

**Figure 12. Vacuum Pump Drive and Cover**

### ACCESSORY HOUSING AND RELATED PARTS

#### OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

\* Do not use spring and plunger on engines equipped with 75944 oil cooler bypass valve or engines without oil cooler installation.



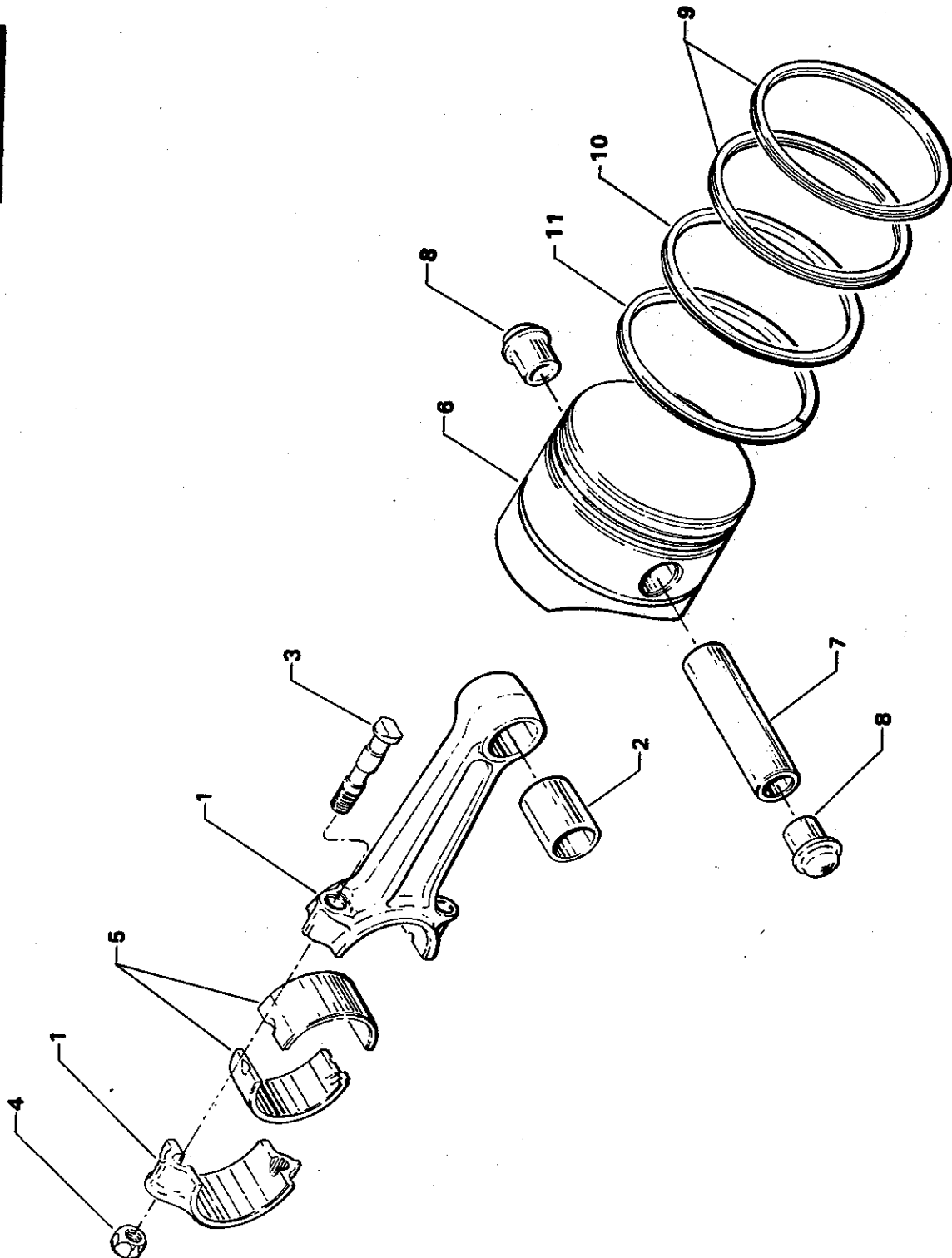
2595

**Figure 13. Oil Filter Assembly and Oil Cooler Bypass Valve**

**CYLINDER, PISTON AND VALVE TRAIN  
CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

[illegible]

\* Used with piloted plug P/N LW-11625.



2580

**Figure 14. Connecting Rods, Pistons and Ring Assemblies**

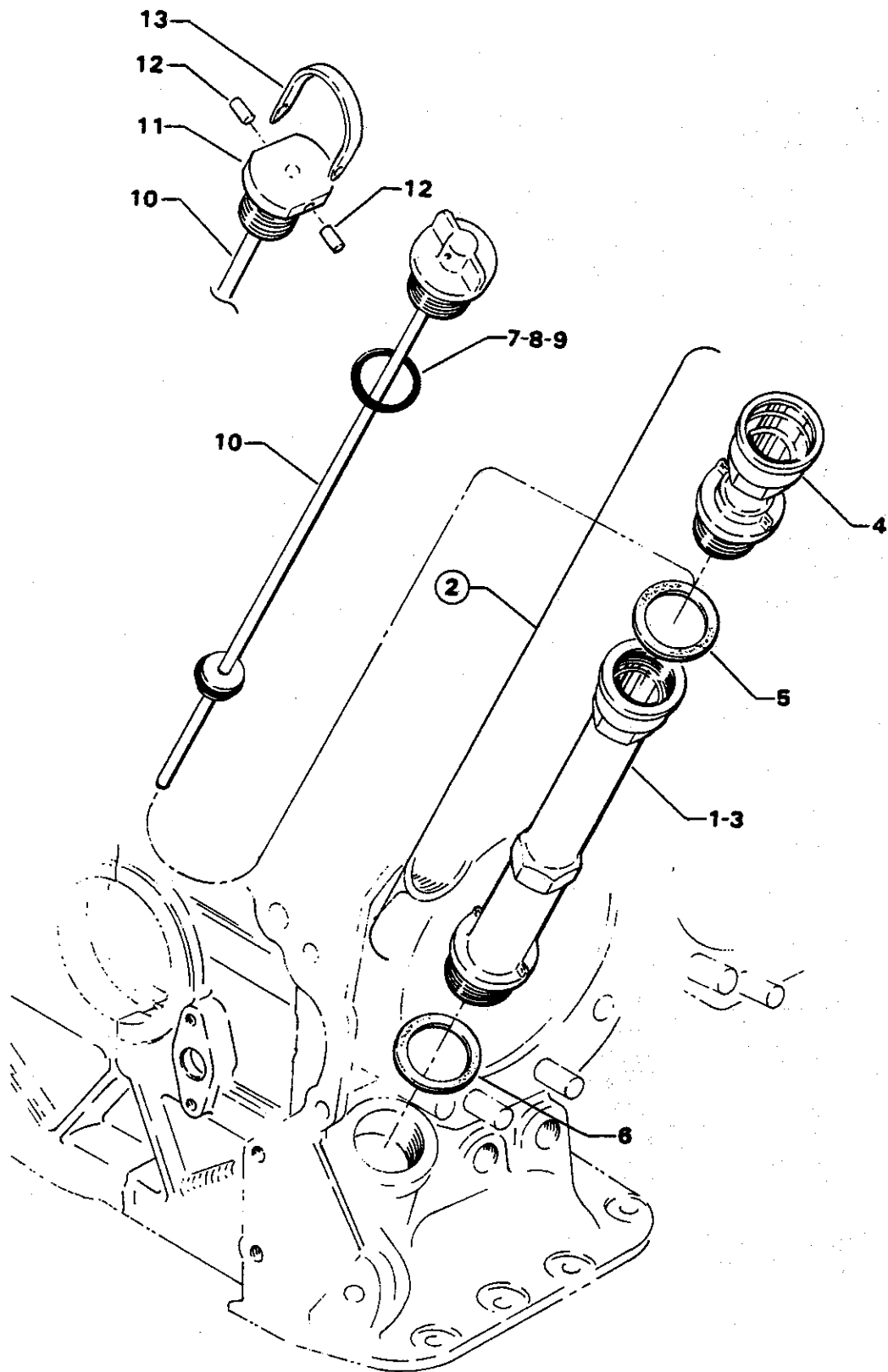
[illegible]

**\*\* Allison valve seat.**

# TECHNICAL PUBLICATION REVISION

REVISION No. <b>PC-302A</b>	ENGINE MODEL O-235 Series	PUBLICATION No. PC-302	PUBLICATION D. June, 1982
The page(s) furnished herewith are intended to replace the corresponding page(s) of the publication indicated above.			
Remove		Insert	
		PC-302A - February, 1984  Page 1-5 Propeller flange bushings clarification.  Page 1-6 Propeller flange bushings added.	





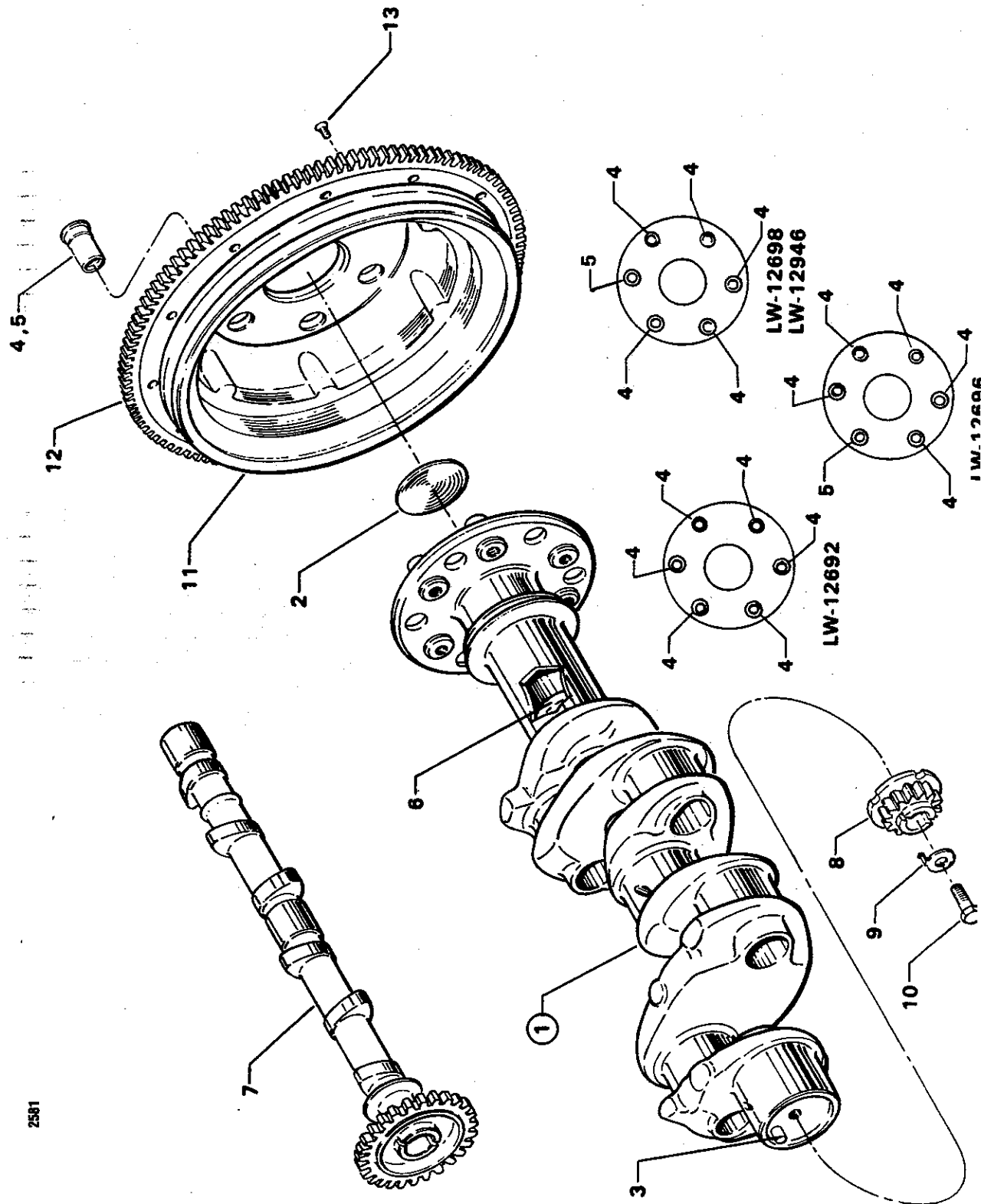
**Figure 2. Oil Level Gage Assemblies**

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**  
**CRANKSHAFT, CAMSHAFT AND RELATED PARTS**

FIG. REF. 3	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY																							
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C							
1	LW-12693*	CRANKSHAFT ASSY.		1	1																						
	LW-12699**	CRANKSHAFT ASSY.		1	1	1																					
	LW-12697**	CRANKSHAFT ASSY.			1		1	1	1	1	1	1	1	1	1	1		1	1								
	LW-18697**	CRANKSHAFT ASSY.																		1							
	LW-12947**	CRANKSHAFT ASSY.															1										
2	STD-1211	PLUG, 2.00 dia. expansion	1																								
3	STD-1065	DOWEL, Stepped, 19/64 x 1/4 dia. x 35/64 long	1																								
4	60814	BUSHING, Propeller flange		6	6																						
	60814	BUSHING, Propeller flange	5																								
5	73757	BUSHING, Propeller flange	1																								
6	61510	PLUG, 1-3/4 OD		1	1													1									
7	75706	CAMSHAFT ASSY.	1																								
8	61155	GEAR, Crankshaft	1																								
9	61156	LOCKPLATE, Crankshaft gear	1																								
10	STD-847	SCREW, 5/16-24 x 1.00 long	1																								
11	69340	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 1.91:1 drive		1	1																						
	68942	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 1.91:1 drive		1	1																						
	76124	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 1.91:1 drive					1																				
	76944	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 3.25:1 drive		1	1	1																					
	78426	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 3.25:1 drive					1	1	1	1	1	1															
	LW-13675	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 3.25:1 drive											1	1	1	1	1	1	1								
	LW-16577	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 3.25:1 drive															1						1				
	LW-18694	SUPPORT ASSY., Starter ring gear, 10/12 pitch, 3.25:1 drive																					1				
	LW-18736	SUPPORT ASSY., Starter ring gear, 12/14 pitch, 3.25:1 drive					1																				
12	60882	GEAR, Starter ring, 10/12 pitch	1																								
	72566	GEAR, Starter ring, 12/14 pitch					1																				
13	STD-1214	SCREW, Truss head, 10-32 x 3/8 long		2	2		2																				

\* Used with controllable pitch propeller.

\*\* Used with fixed pitch propeller.

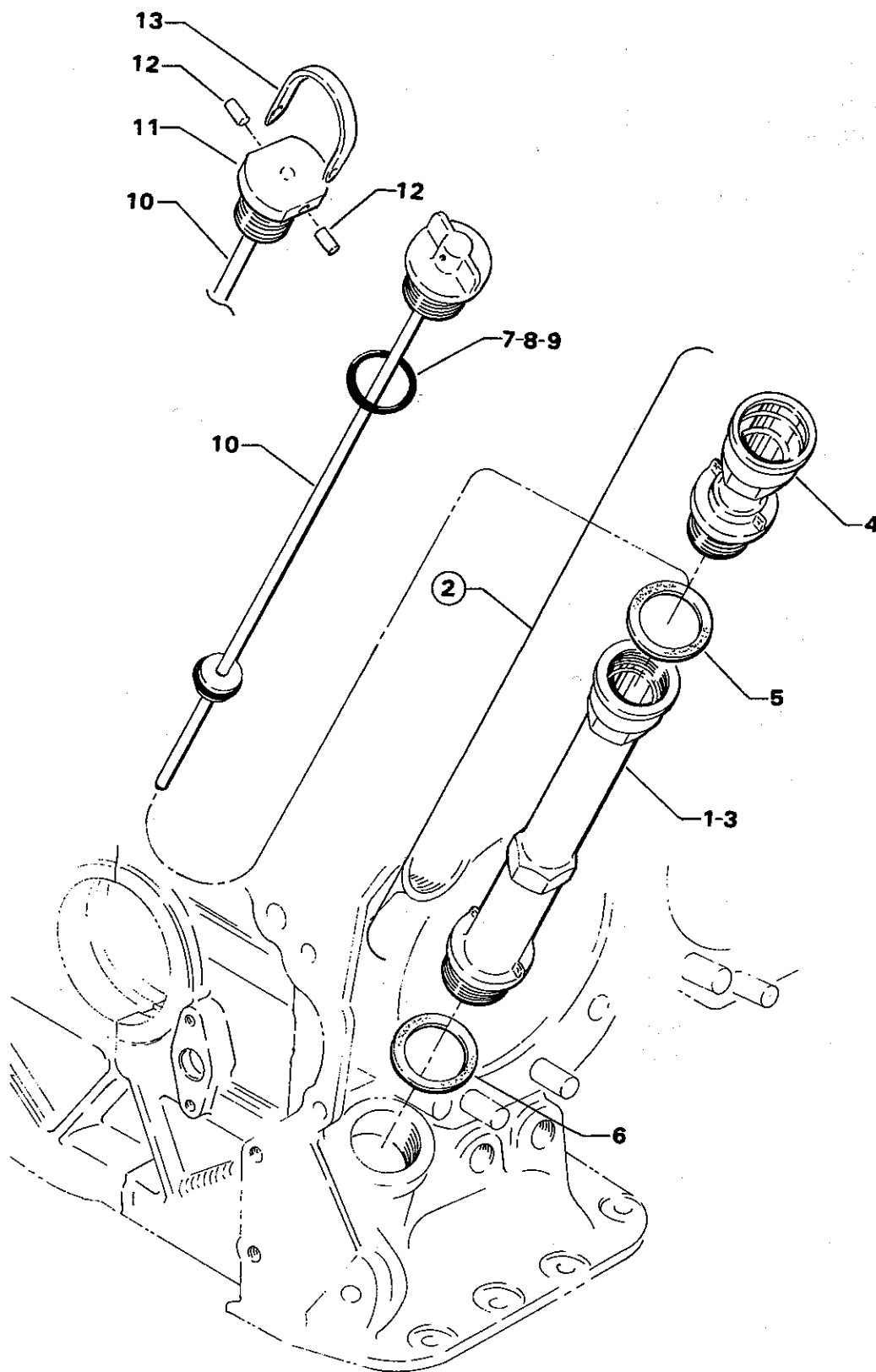


**Figure 3. Crankshaft, Camshaft and Related Parts**

**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**  
**CRANKCASE RELATED PARTS**

\* Used with controllable pitch propeller.

\*\* Used with fixed pitch propeller.



2583

**Figure 2. Oil Level Gage Assemblies**



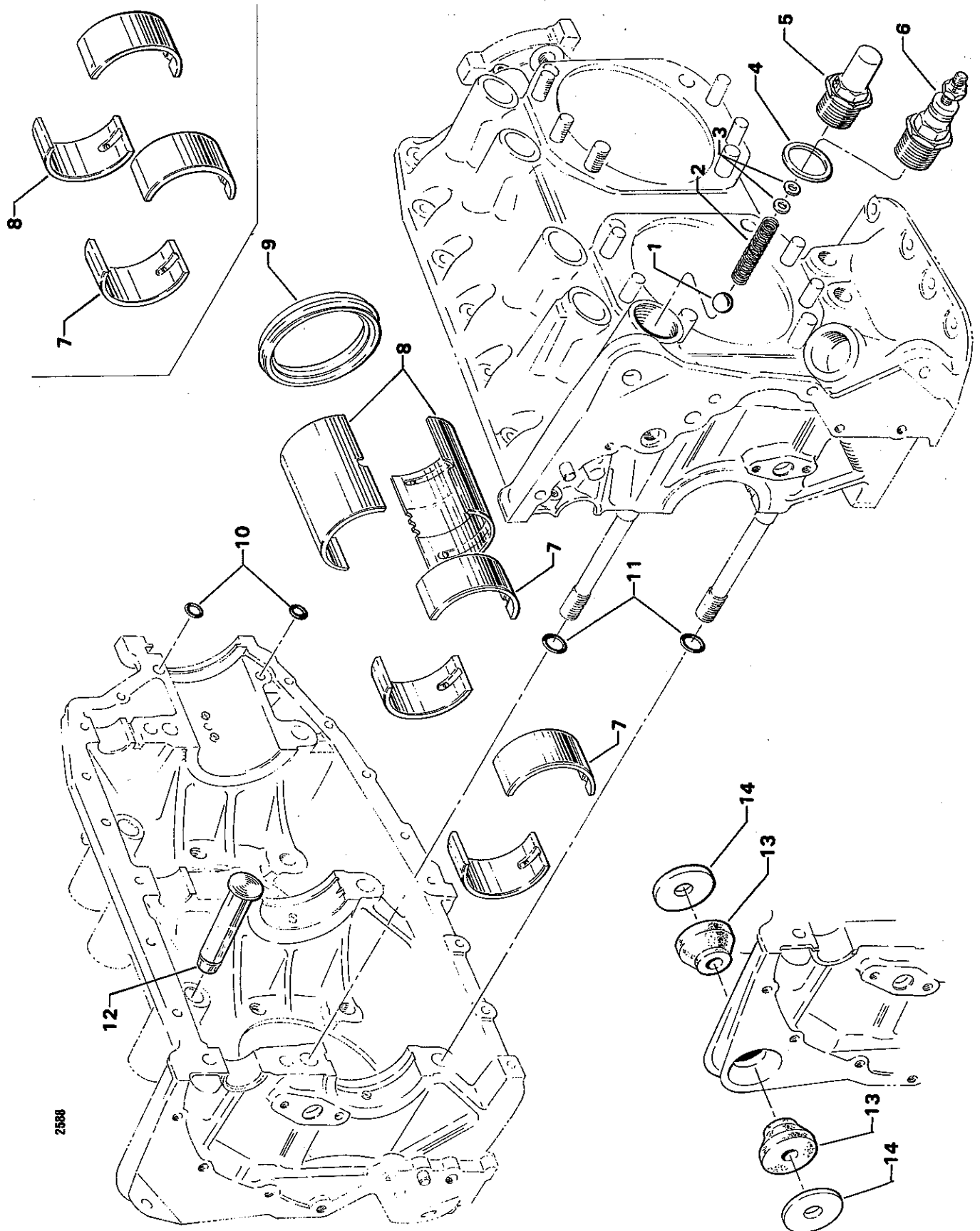


**CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP**  
**CRANKCASE RELATED PARTS**

[illegible]

\* Used with controllable pitch propeller.

\*\* Used with fixed pitch propeller.



2580

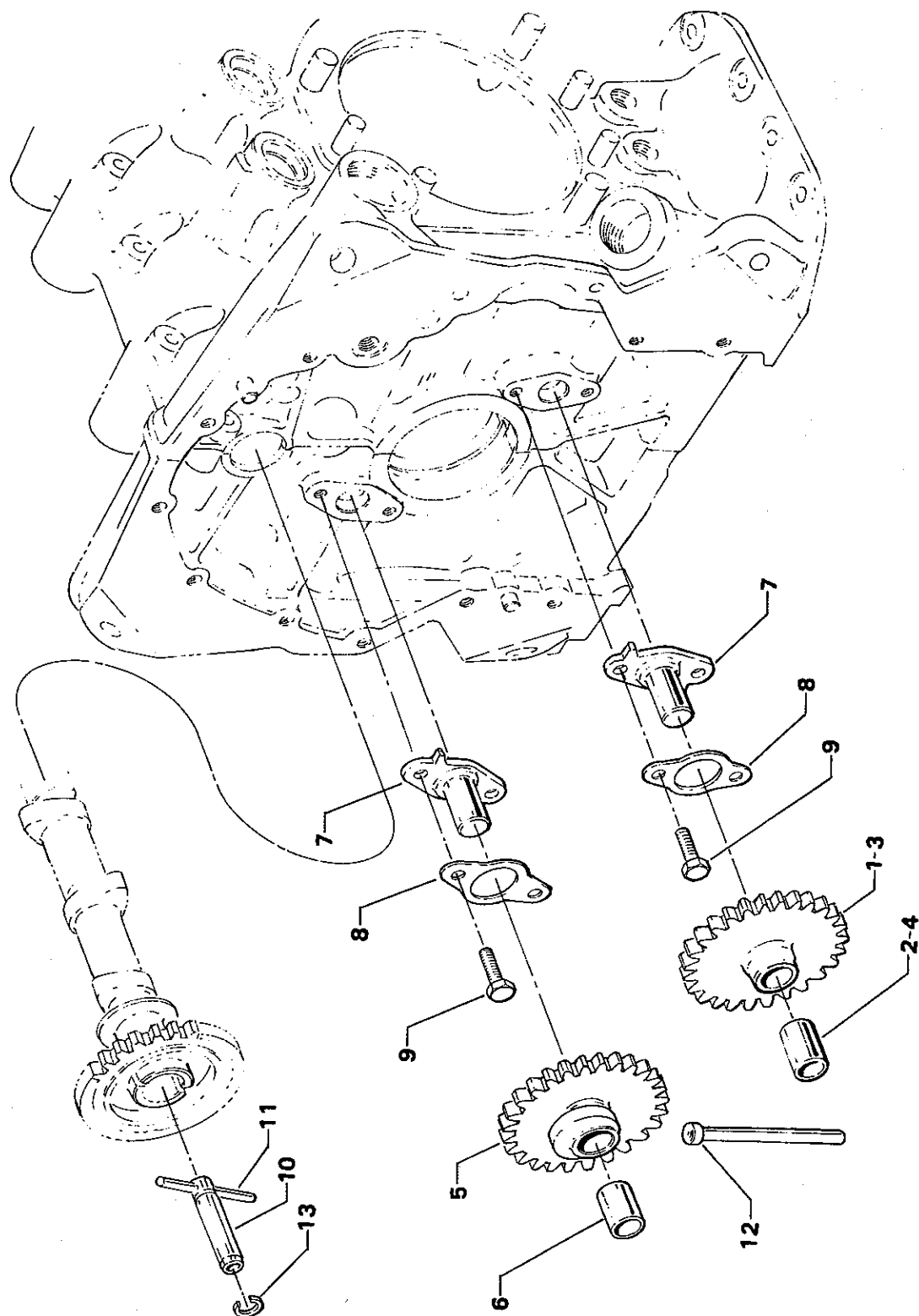
**Figure 4. Crankcase Related Parts**

## CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

### CRANKSHAFT IDLER GEARS AND TACHOMETER SHAFT

[illegible]

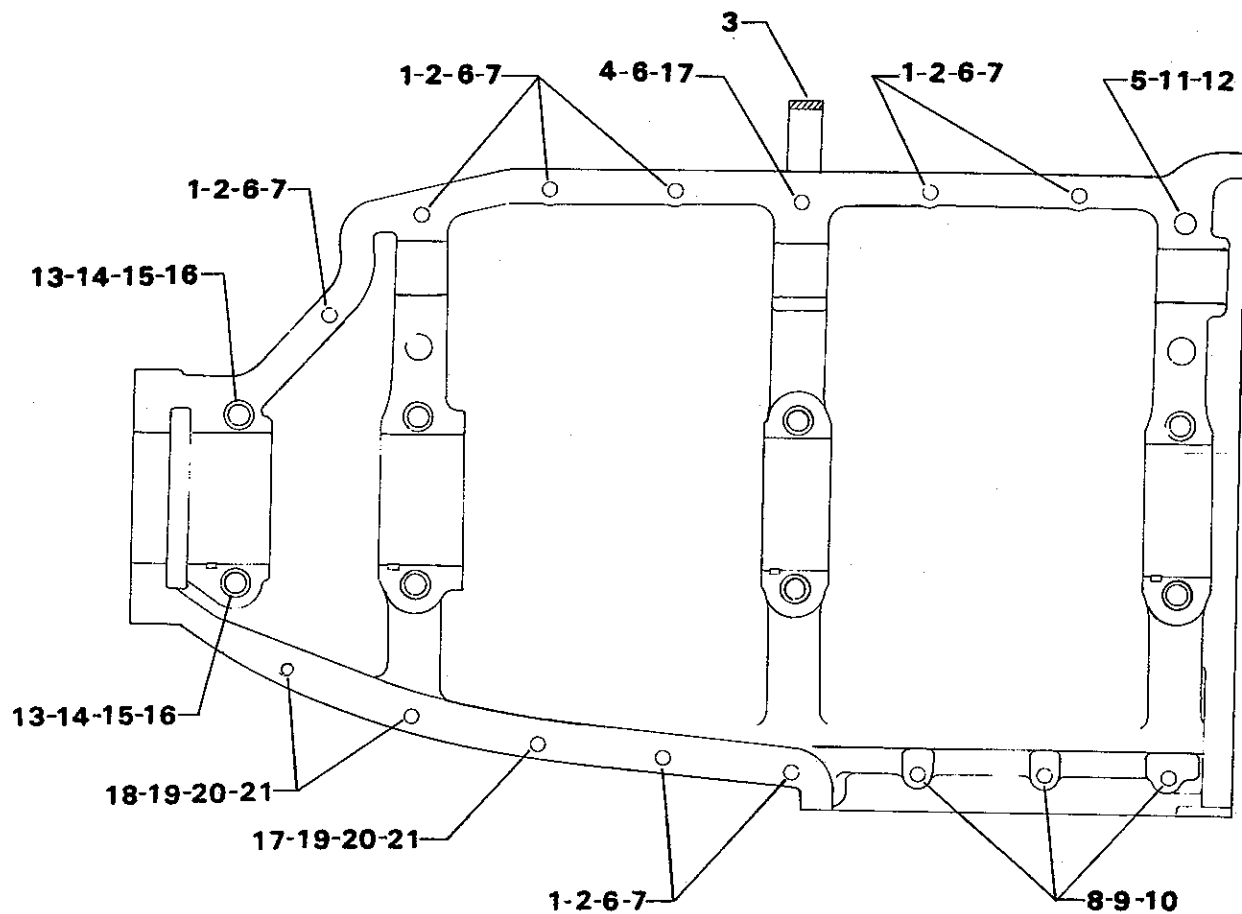
2559



**Figure 5. Crankshaft Idler Gears and Tachometer Shaft**

## CRANKCASE, CRANKSHAFT AND CAMSHAFT GROUP

### CRANKCASE ATTACHING PARTS

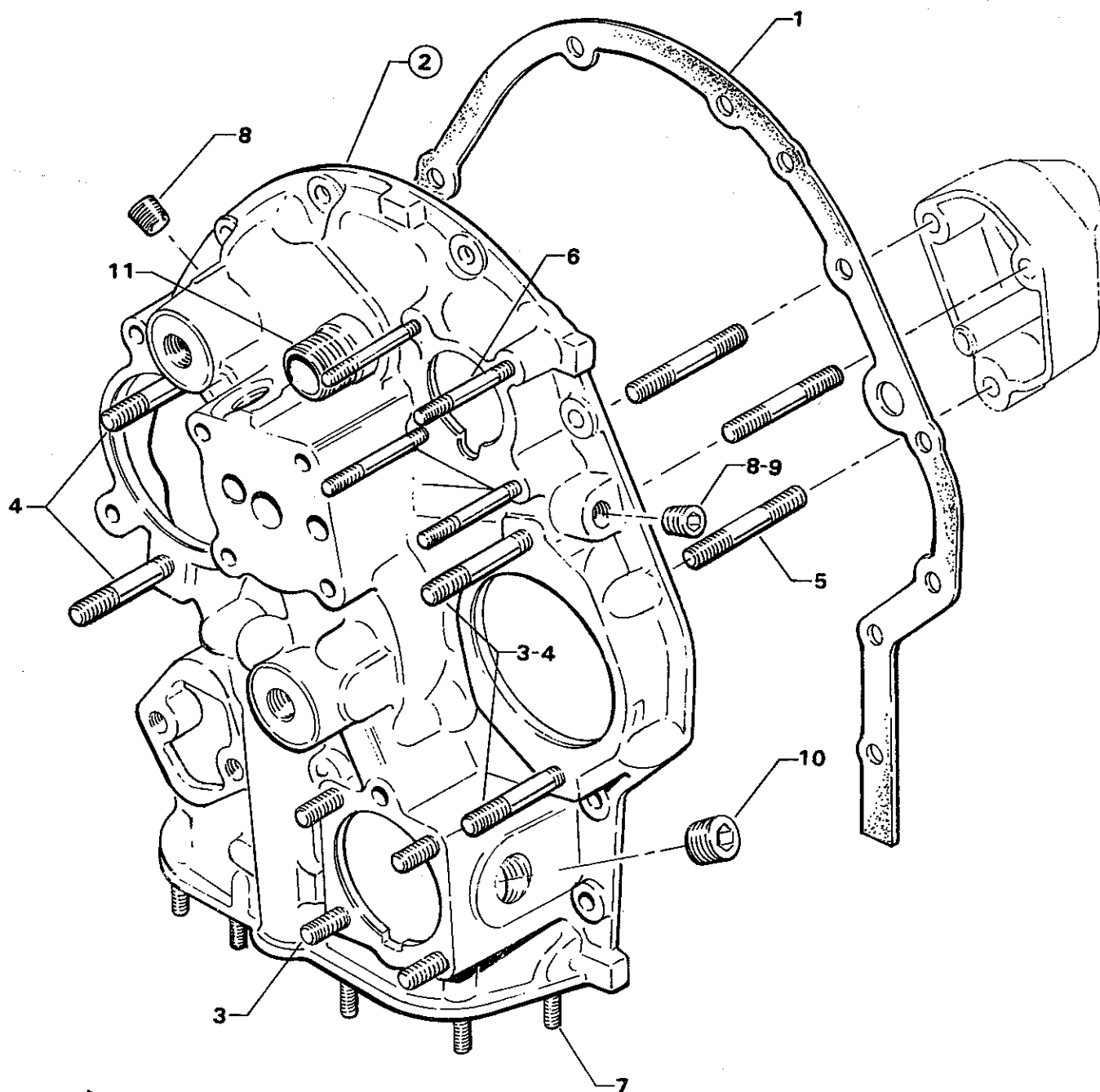


**Figure 6. Crankcase Attaching Parts**

## ACCESSORY HOUSING AND RELATED PARTS

### ACCESSORY HOUSING ASSEMBLY

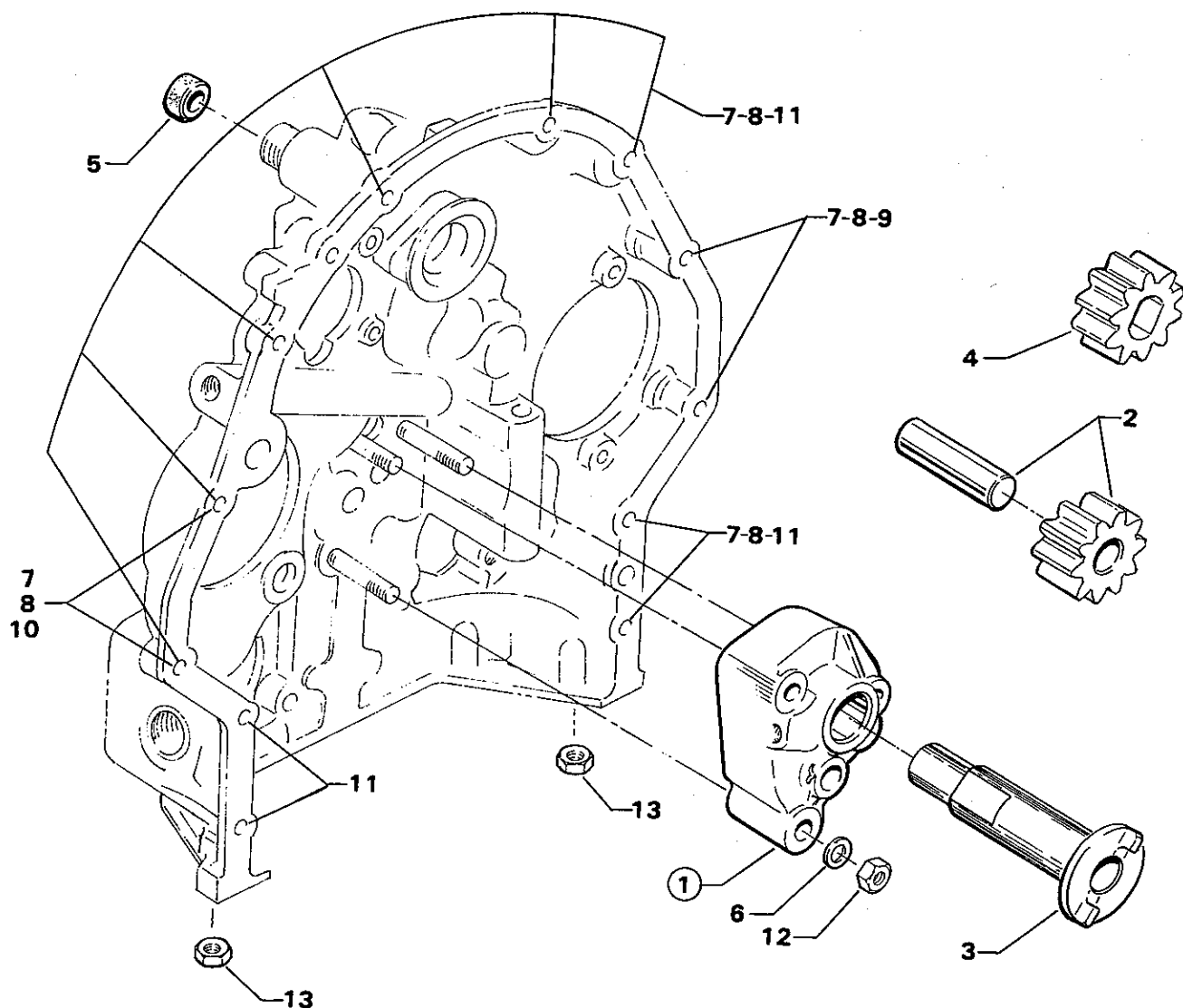
\* LW-16011 Housing provides for two impulse magnetos.



2587

**Figure 7. Accessory Housing Assembly**





2598

**Figure 8. Oil Pump Assembly and Accessory Housing Attaching Parts**

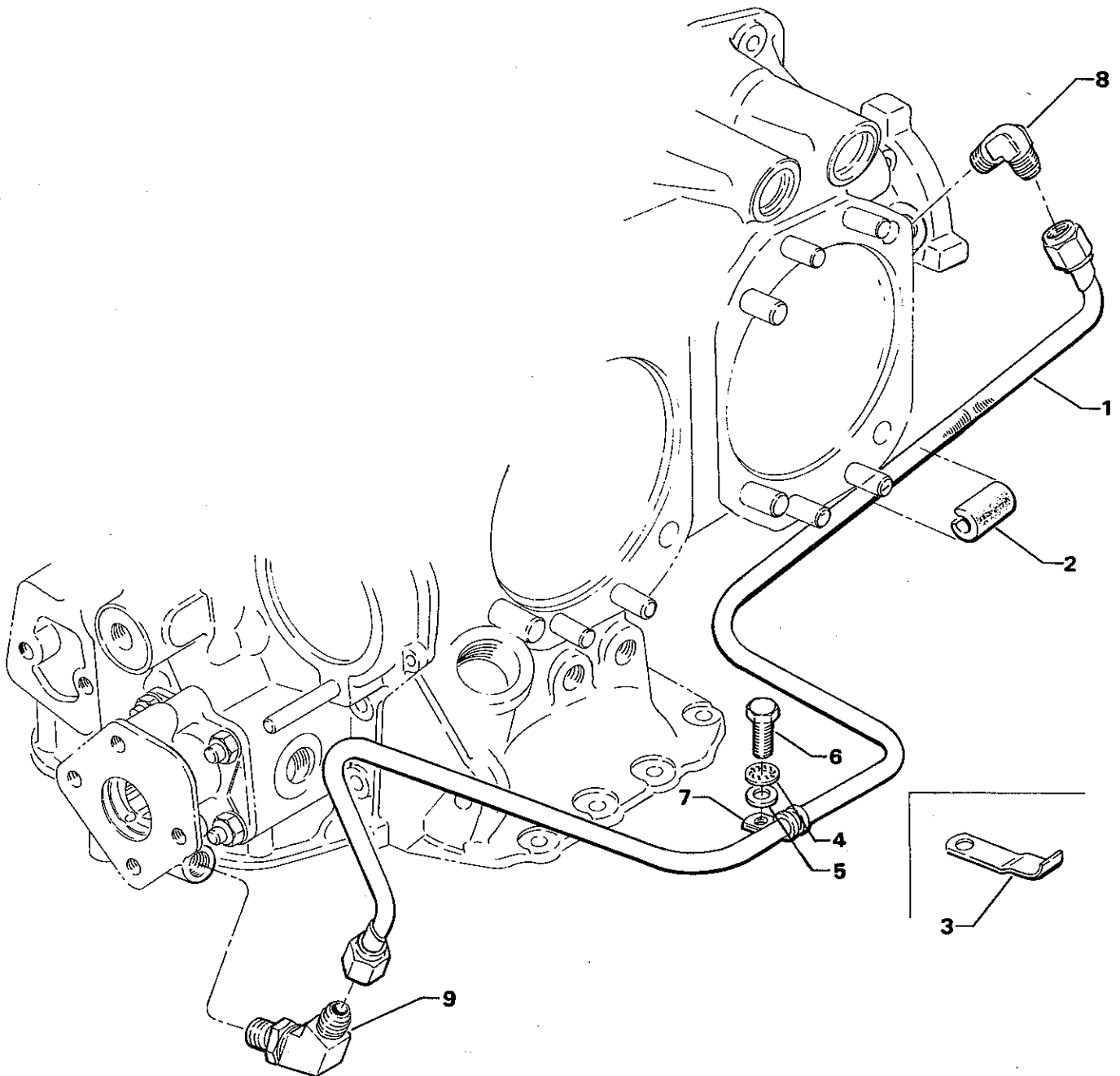
## ACCESSORY HOUSING AND RELATED PARTS

### PROPELLER GOVERNOR OIL LINE

FIG. REF. 9	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	75167	TUBE ASSY., Prop. governor oil line															1								
2	STD-1930	HOSE, 3/8 ID x 1.00 long															1								
3	75165	CLIP, Prop. gov. oil line support															1								
4	STD-35	WASHER, 5/16 plain															3								
5	STD-475	WASHER, 5/16 lock, internal teeth															1								
6	STD-1838	BOLT, 5/16-18 x 15/16 long, hex hd.															1								
8	LW-16266-25-38	CLAMP															1								
8	MS20822-6*	ELBOW, 3/8 flared tube & 1/4 NPT, 90°															1								
9	74070**	ELBOW, 3/8 flared tube & 9/16-18																							
		str. thd., adj. 45°															1								

\* Assemble in right crankcase, front.

**\*\* Assemble in prop. governor adapter.**



2584

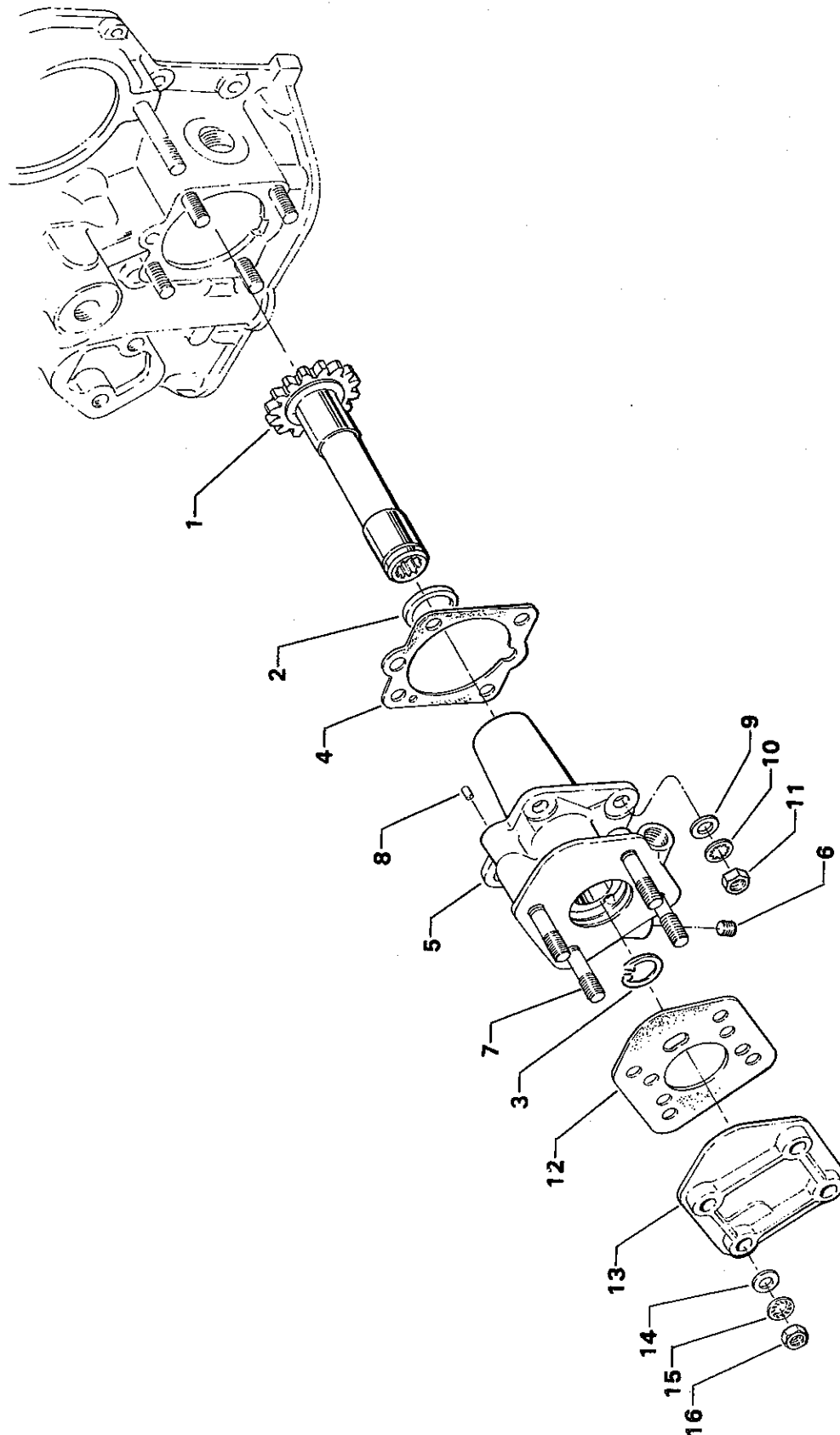
**Figure 9. Propeller Governor Oil Line**

## ACCESSORY HOUSING AND RELATED PARTS

### PROPELLER GOVERNOR DRIVE AND COVER

[illegible]

\* 32 required for Woodward governor; 4 required for AN governor.

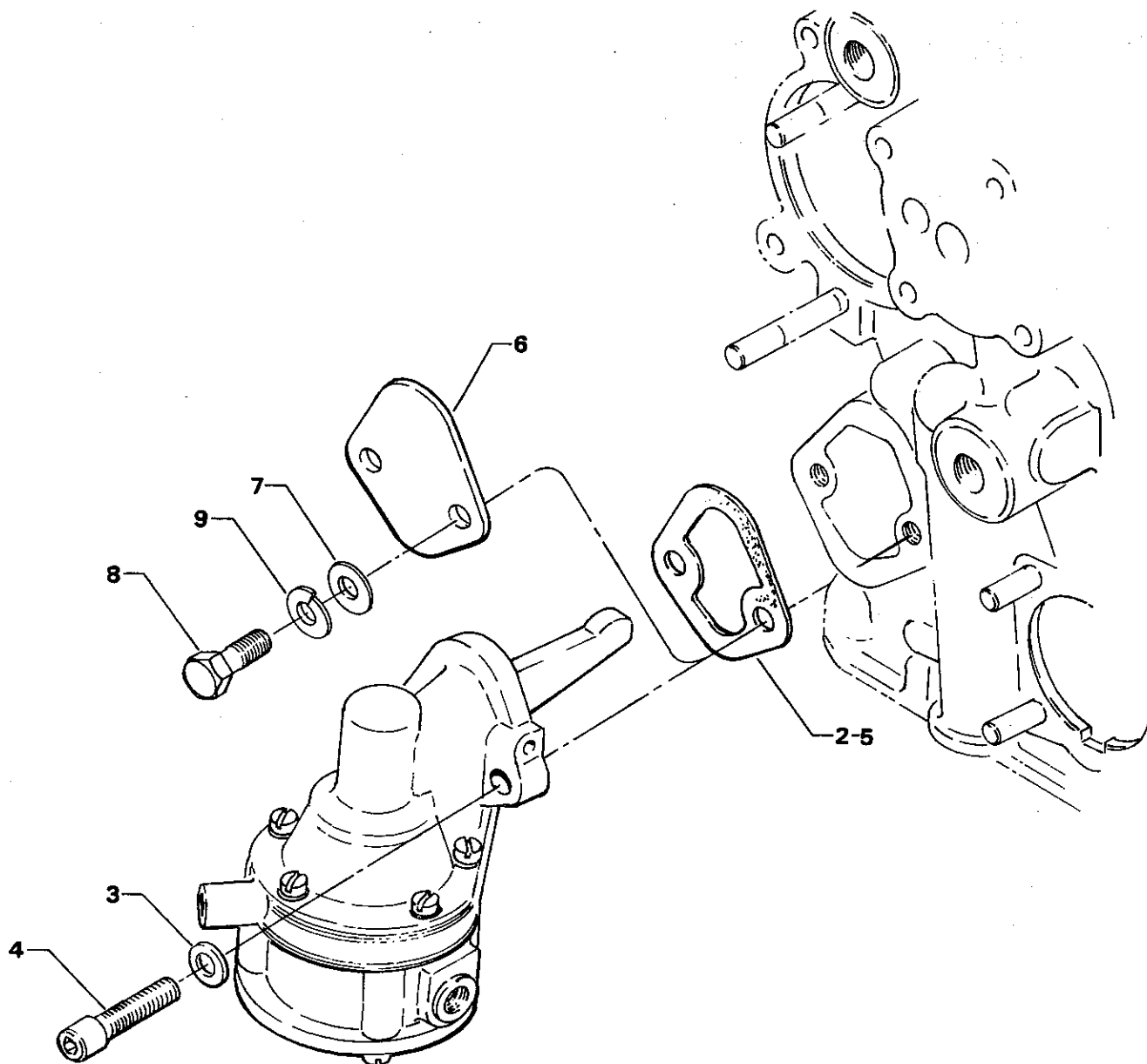


2592

**Figure 10. Propeller Governor Drive and Cover**

## ACCESSORY HOUSING AND RELATED PARTS

### FUEL PUMP ASSEMBLY AND ATTACHING PARTS

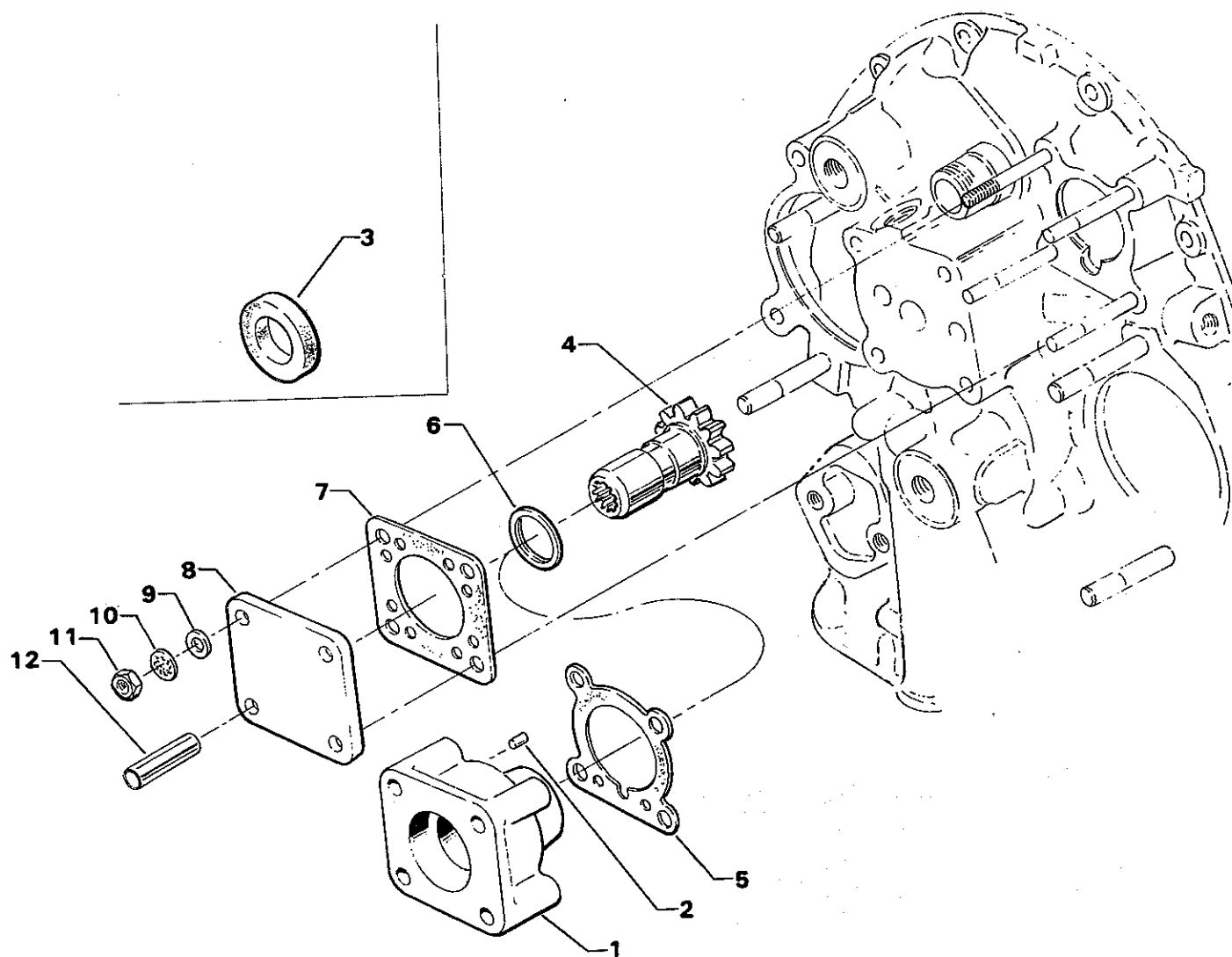


2585

**Figure 11. Fuel Pump Assembly and Attaching Parts**

## ACCESSORY HOUSING AND RELATED PARTS

FIG. REF. 12	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	61098	ADAPTER ASSY., Vacuum pump		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
2	STD-1774	PIN, 1/8 dia. x 1/4 long		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
3	STD-208	SEAL, Oil, 7/8 ID x 1-1/2 OD																							
		x 5/16 wide		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
4	72970	GEAR ASSY., Vacuum pump driven		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
5	61183	GASKET, Accessory adapter	1																						
6	71596	WASHER, Accessory driven gear		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
7	8313	GASKET, Vacuum pump		1	1		1	1	1	1		1	1	1		1	1	1	1	1					
8	60430	COVER, Vacuum pump	1																						
9	STD-8	WASHER, 1/4 plain	4																						
10	STD-160	WASHER, 1/4 lock	4																						
11	STD-1411	NUT, 1/4-20 plain	4																						
12	68593	SPACER, Vacuum pump stud		4	4	4	4	4			4				4	4		4							



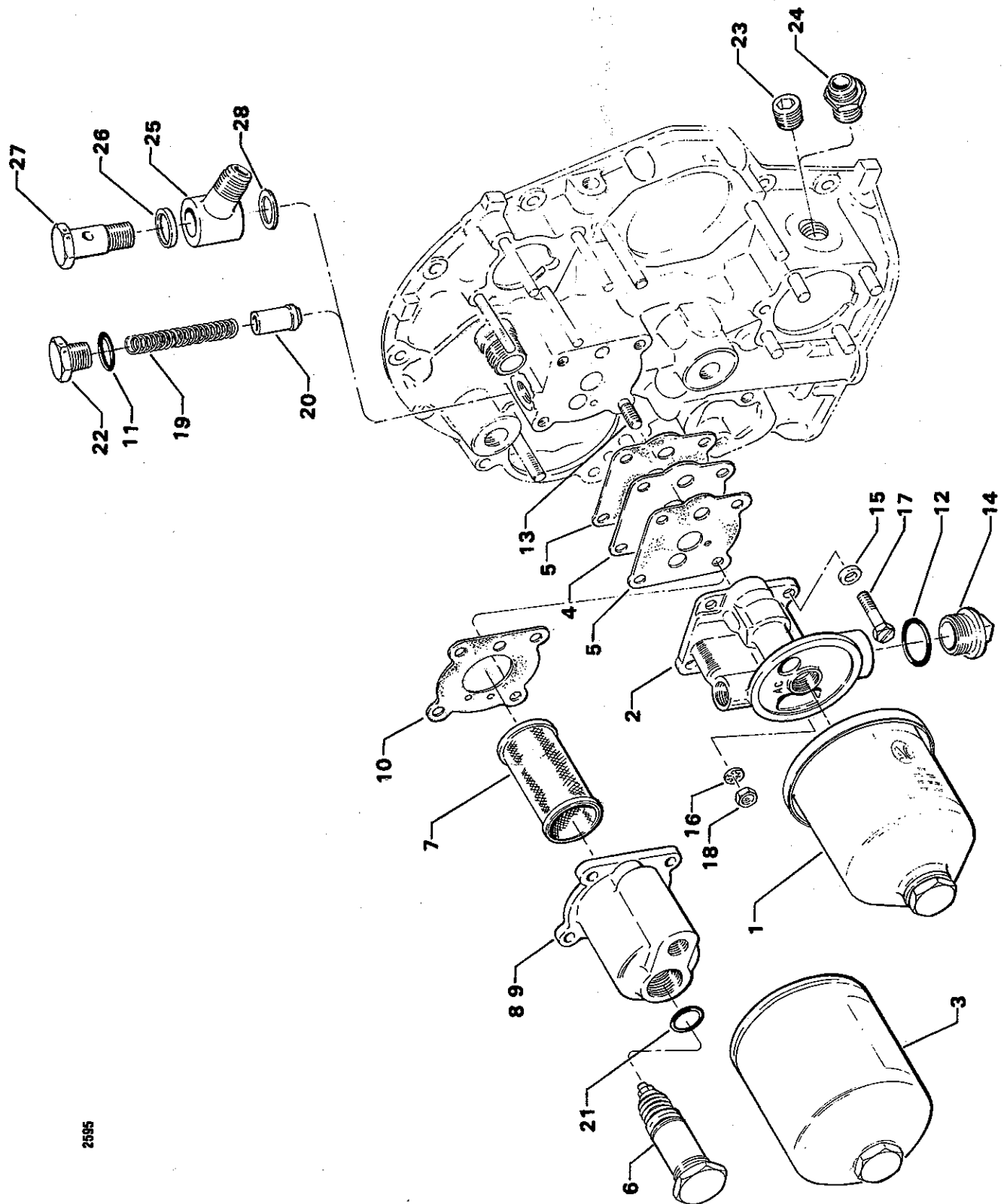
2591

**Figure 12. Vacuum Pump Drive and Cover**

## ACCESSORY HOUSING AND RELATED PARTS

### OIL FILTER ASSEMBLY AND OIL COOLER BYPASS VALVE

\* Do not use spring and plunger on engines equipped with 75944 oil cooler bypass valve or engines without oil cooler installation.

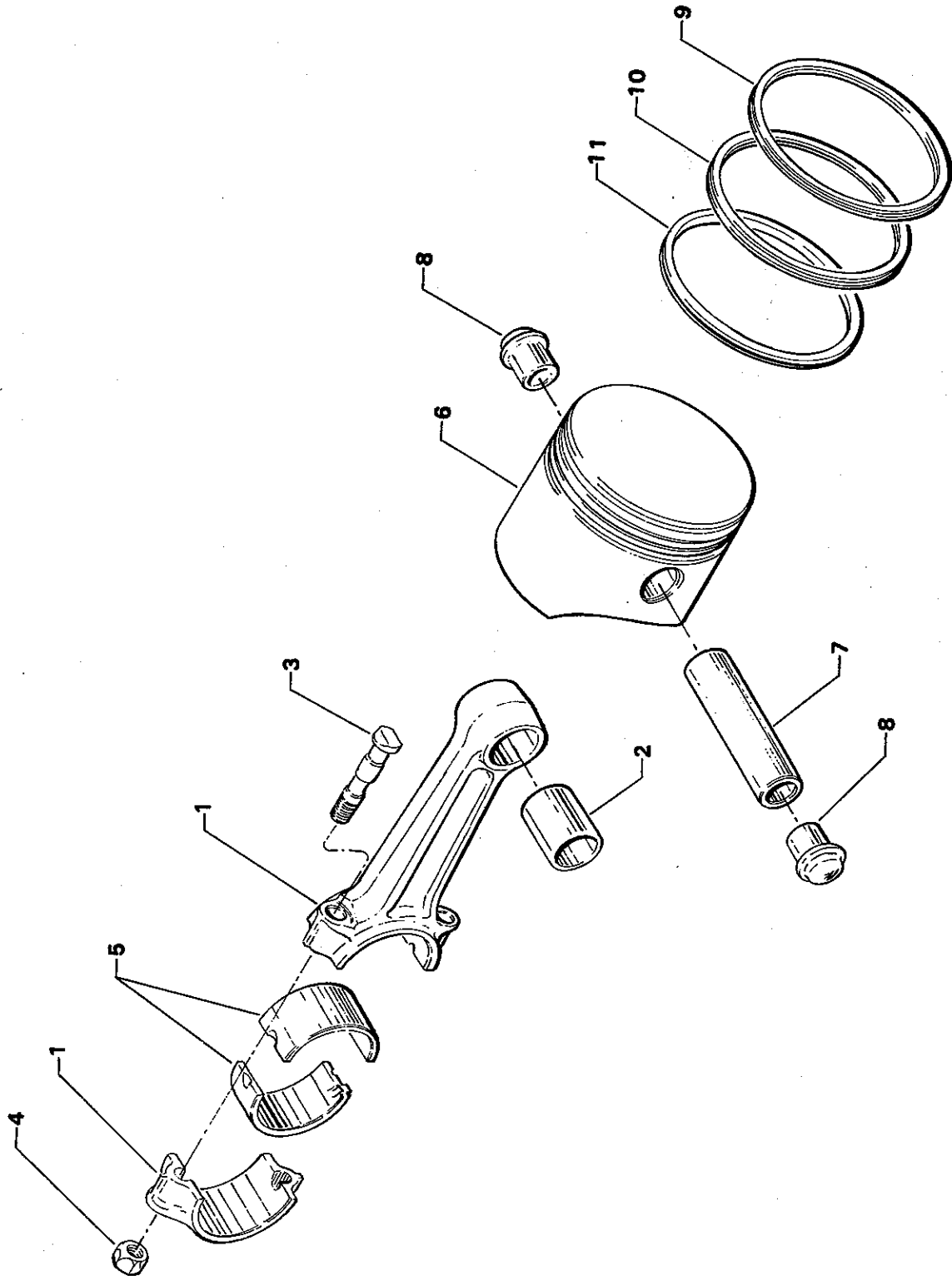


2595

**Figure 13. Oil Filter Assembly and Oil Cooler Bypass Valve**

**CYLINDER, PISTON AND VALVE TRAIN  
CONNECTING RODS, PISTONS AND RING ASSEMBLIES**

[illegible]



2580

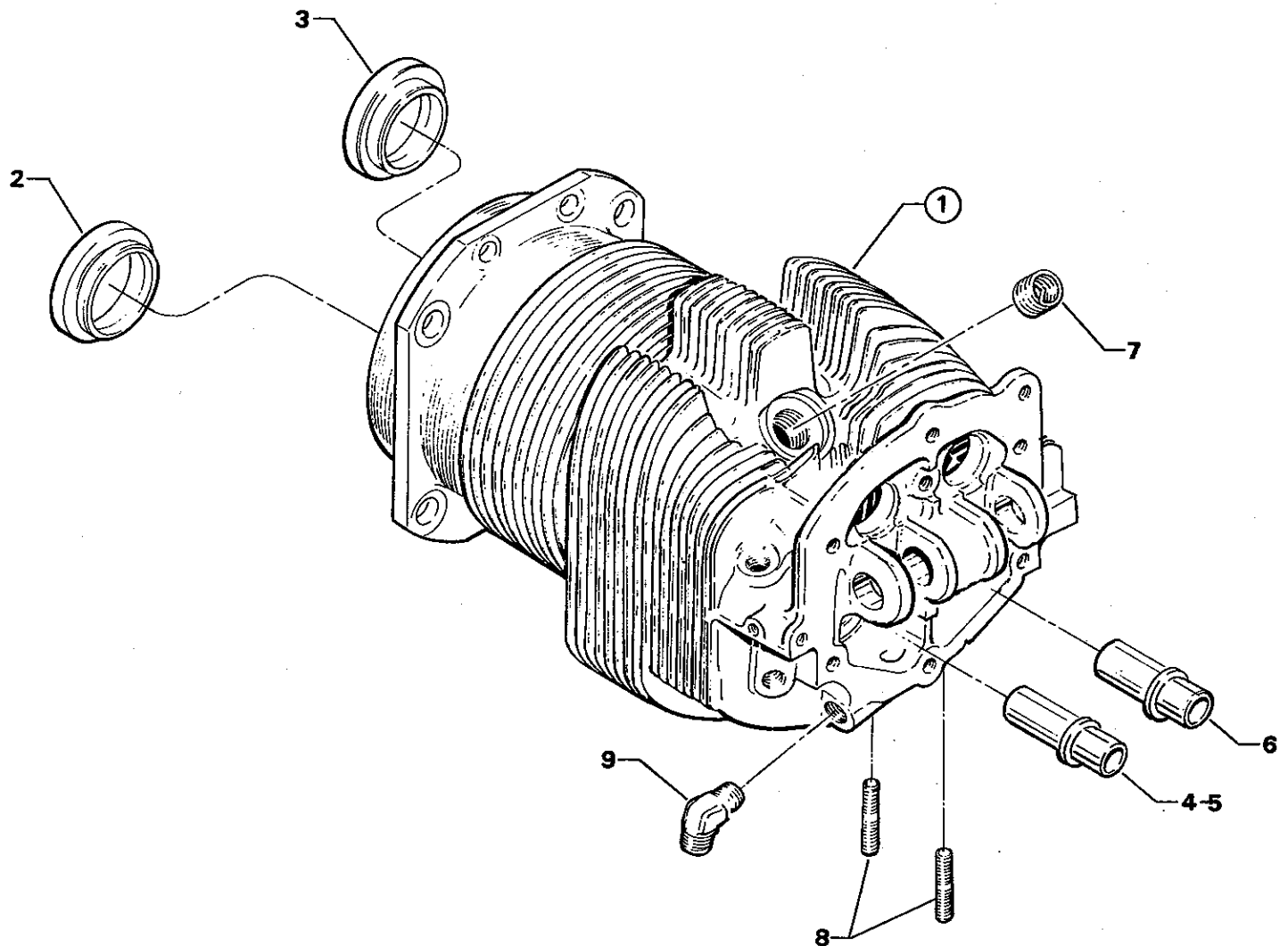
**Figure 14. Connecting Rods, Pistons and Ring Assemblies**

## CYLINDER, PISTON AND VALVE TRAIN CYLINDER ASSEMBLY

[illegible]

**\* Incorporates Allison exhaust valve seats.**

**\*\* Allison valve seat.**

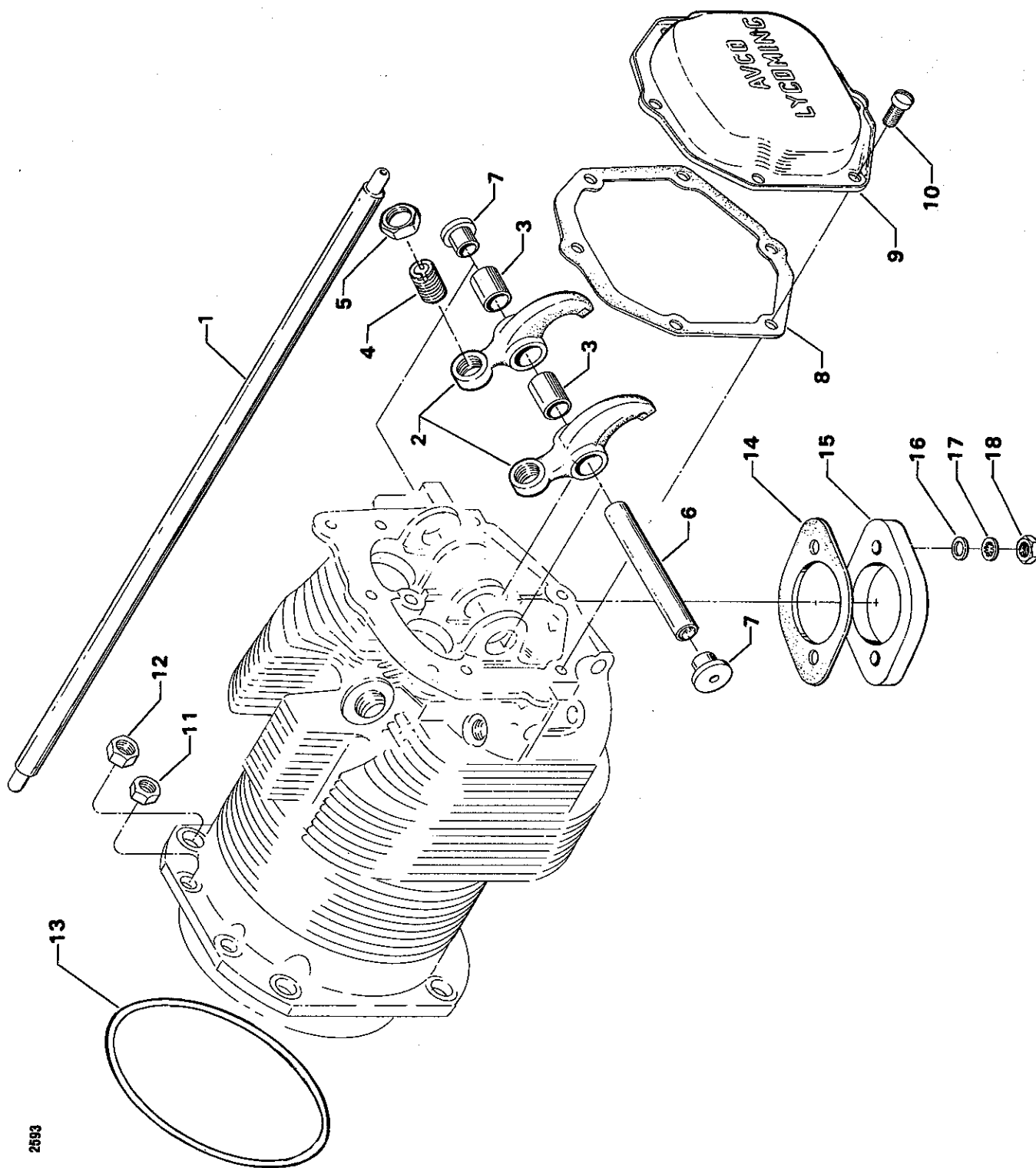


2594

**Figure 15. Cylinder Assembly**

### CYLINDER RELATED PARTS

[illegible]



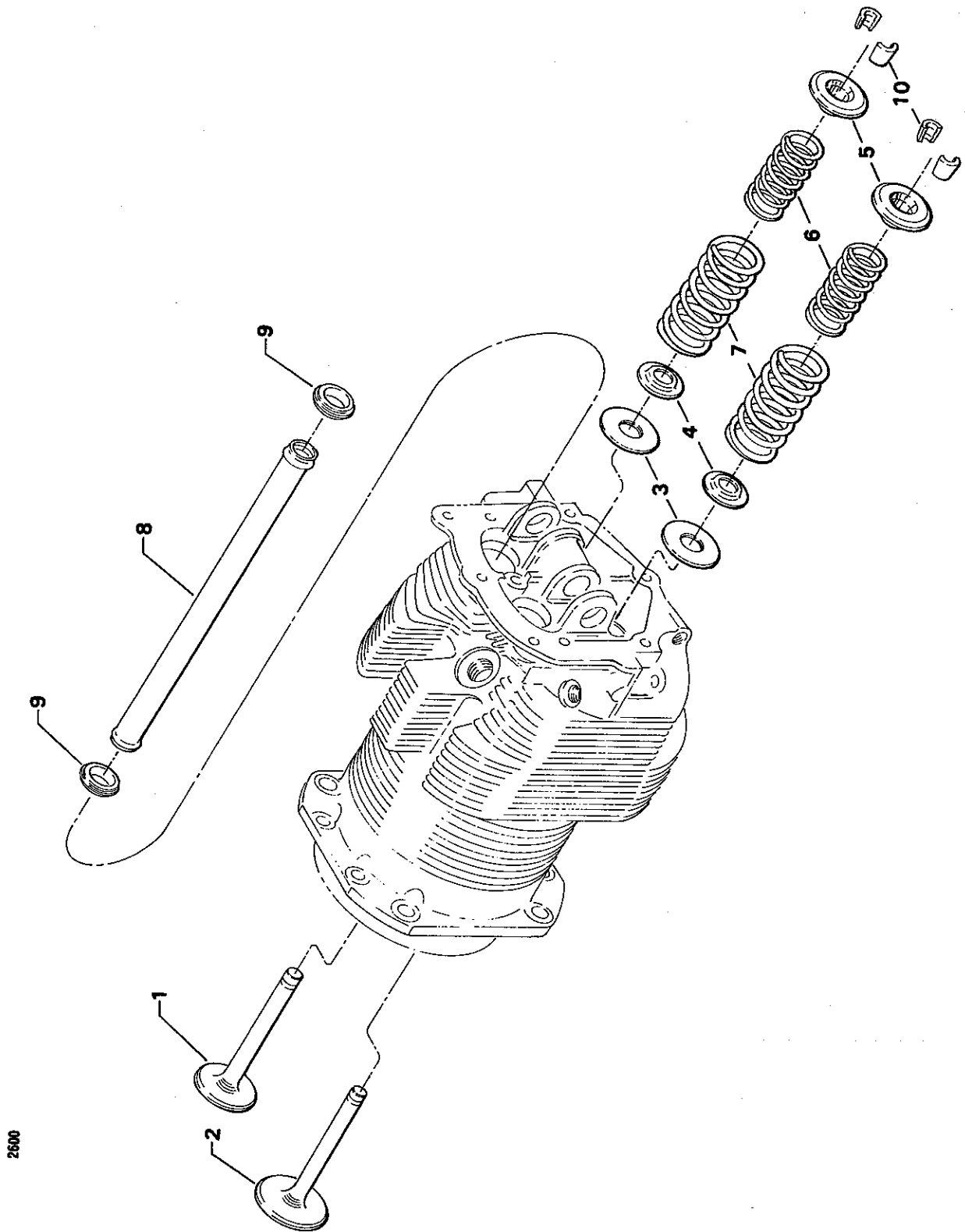
2593

**Figure 16. Cylinder Related Parts**

## CYLINDER, PISTON AND VALVE TRAIN

### VALVE ASSEMBLY

[illegible]

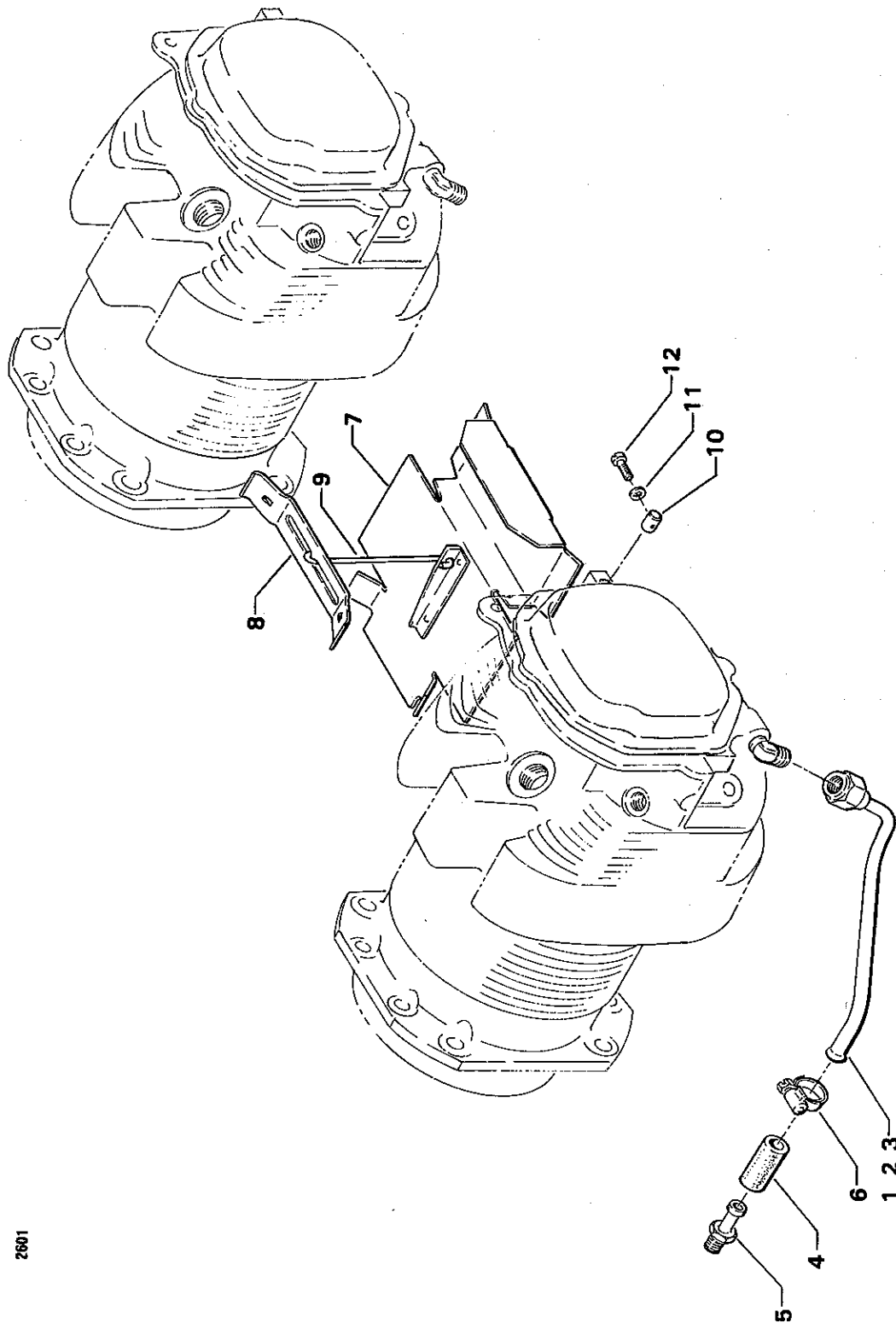


2600

**Figure 17. Valve Assembly**

**CYLINDER, PISTON AND VALVE TRAIN**  
CYLINDER HEAD DRAIN TUBES AND INTERCYLINDER COOLING BAFFLES

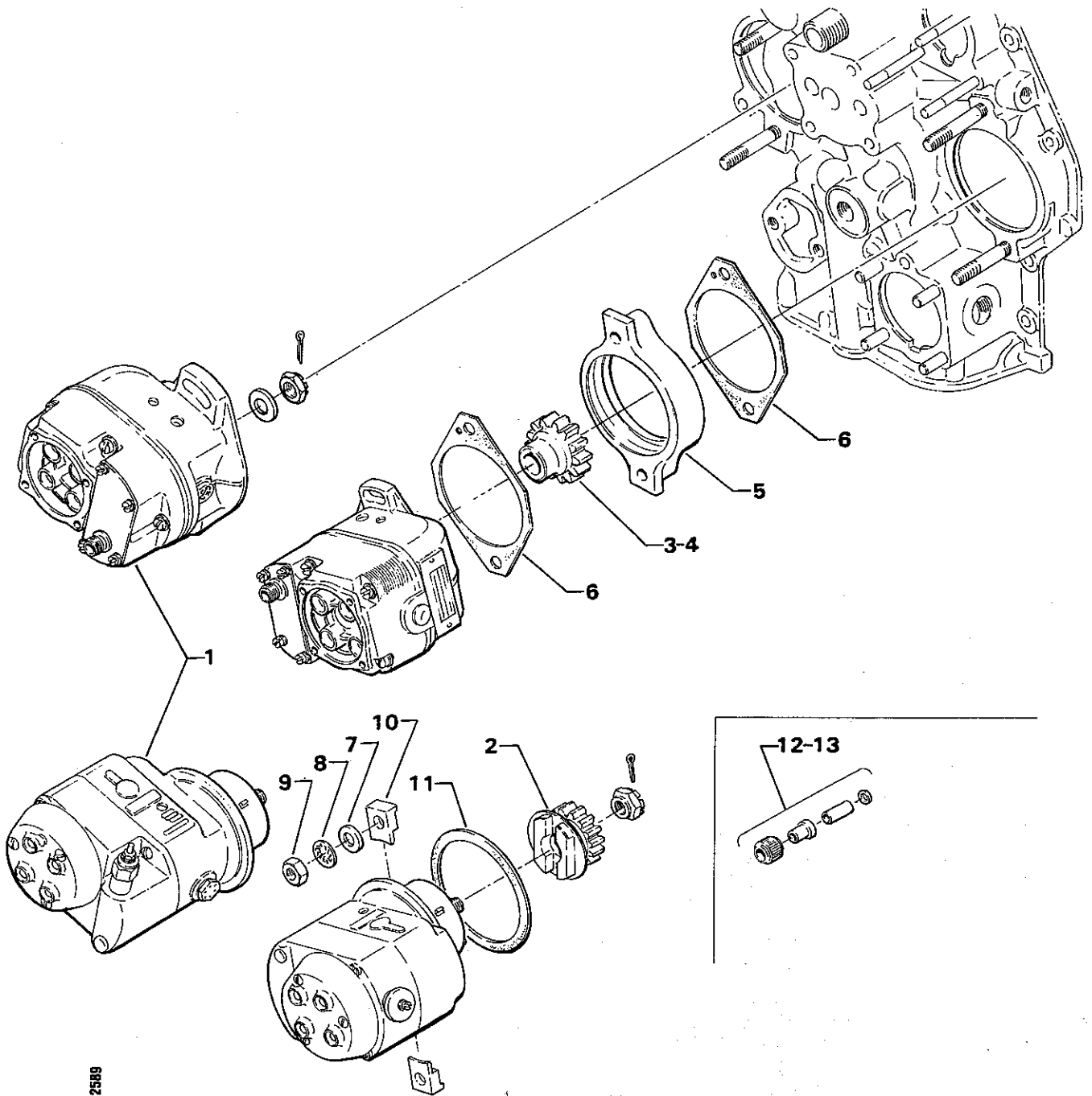
FIG. REF. 18	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	60890	TUBE ASSY., Oil drain, cyl. no. 1	1																						
2	60821	TUBE ASSY., Oil drain, cyl. no. 2	1																						
3	60928	TUBE ASSY., Oil drain, cyls. no. 3 & 4	2																						
4	STD-2180	HOSE, 3/8 ID x 1-13/16	4																						
5	STD-684	NIPPLE, Straight, 3/8 ID hose	4																						
6	LW-15592-5-05	CLAMP, Hose	8																						
7	LW-13304	BAFFLE ASSY., Intercylinder					2	2					2	2	2	2	2	2							
8	71611	RETAINER, Intercylinder baffle					2	2					2	2	2	2	2	2							
9	LW-13303	HOOK, Intercylinder baffle retainer					2	2					2	2	2	2	2	2							
10	65614	PLUG, Baffle attaching												4	4	4									
11	STD-251	WASHER, No. 10 lock												4	4	4									
12	STD-665	SCREW, No. 10-32 x 3/4 fill. hd. dr.												4	4	4									



2601

**Figure 18. Cylinder Head Drain Tubes and Intercylinder Cooling Baffles**





**Figure 19. Magnetos and Magneto Drives**

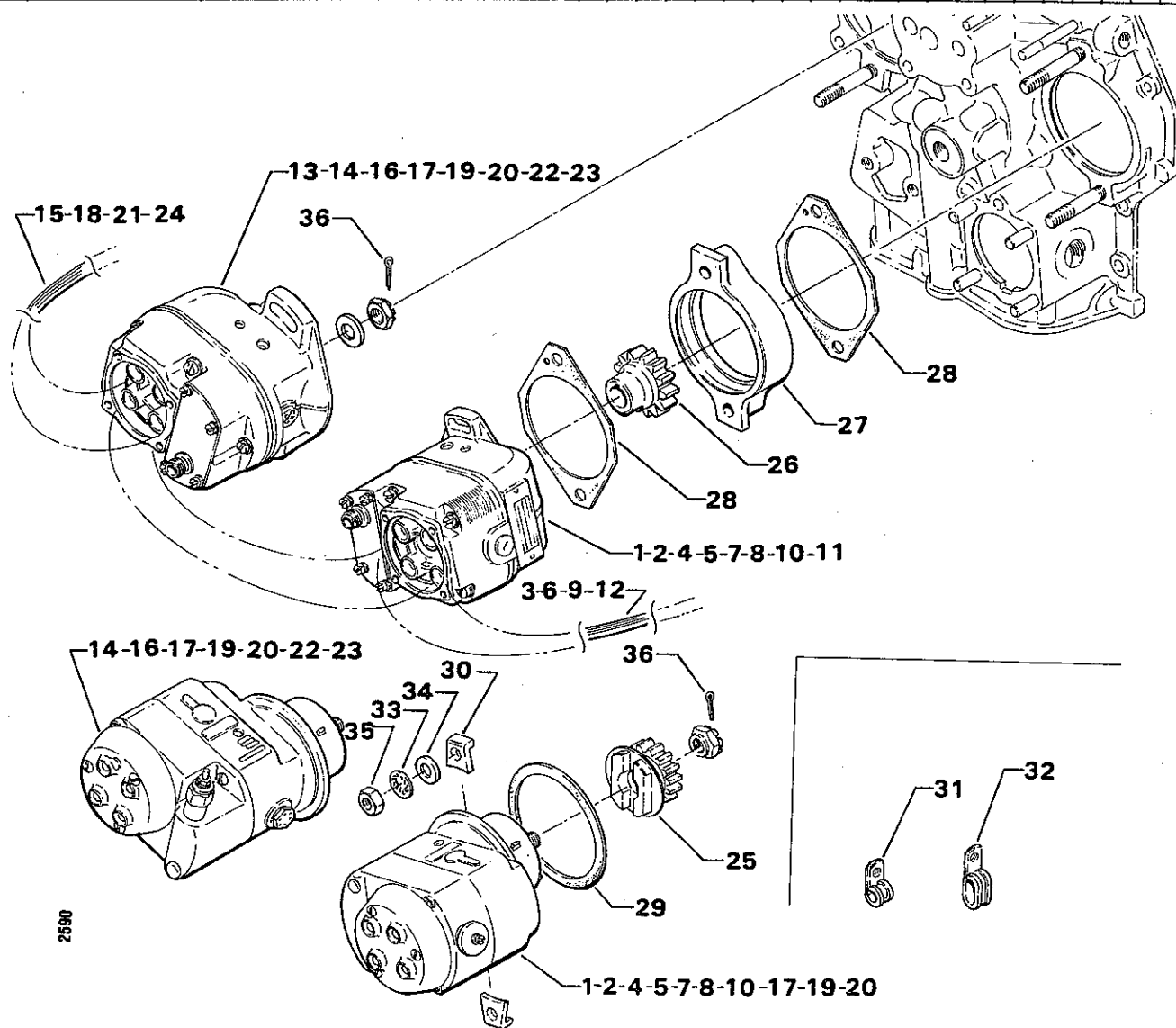
## IGNITION SYSTEM

### MAGNETOS AND MAGNETO DRIVES

## IGNITION SYSTEM

### MAGNETOS AND MAGNETO DRIVES (Cont.)

FIG. REF. 20	PART NUMBER	DESCRIPTION	O N A L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
29	LW-12681	GASKET, Magneto				2		2			2			2	2			2							
30	76961	CLAMP, Magneto				4		4			4			4	4			4							
31	LW-14057	CLIP, 1 wire				2		2			2			2	2			2							
	LW-14057	CLIP, 1 wire												4											
32	LW-14060	CLIP, 2 wire				3		3			3			3	3					3					
33	STD-475	WASHER, 5/16 lock, internal teeth				4		4			4			4	4				4						
34	STD-1727	WASHER, Plain, 3/4 OD x 21/64 ID																							
		x 1/8 thick				4		4			4			4	4				4						
35	STD-1410	NUT, 5/16-18 plain				4		4			4			4	4				4						
36	STD-761	COTTER PIN, 3/32 dia. x 1.00 long				1		1			1			1	1										
	STD-761	COTTER PIN, 3/32 dia. x 1.00 long												2	2				2						

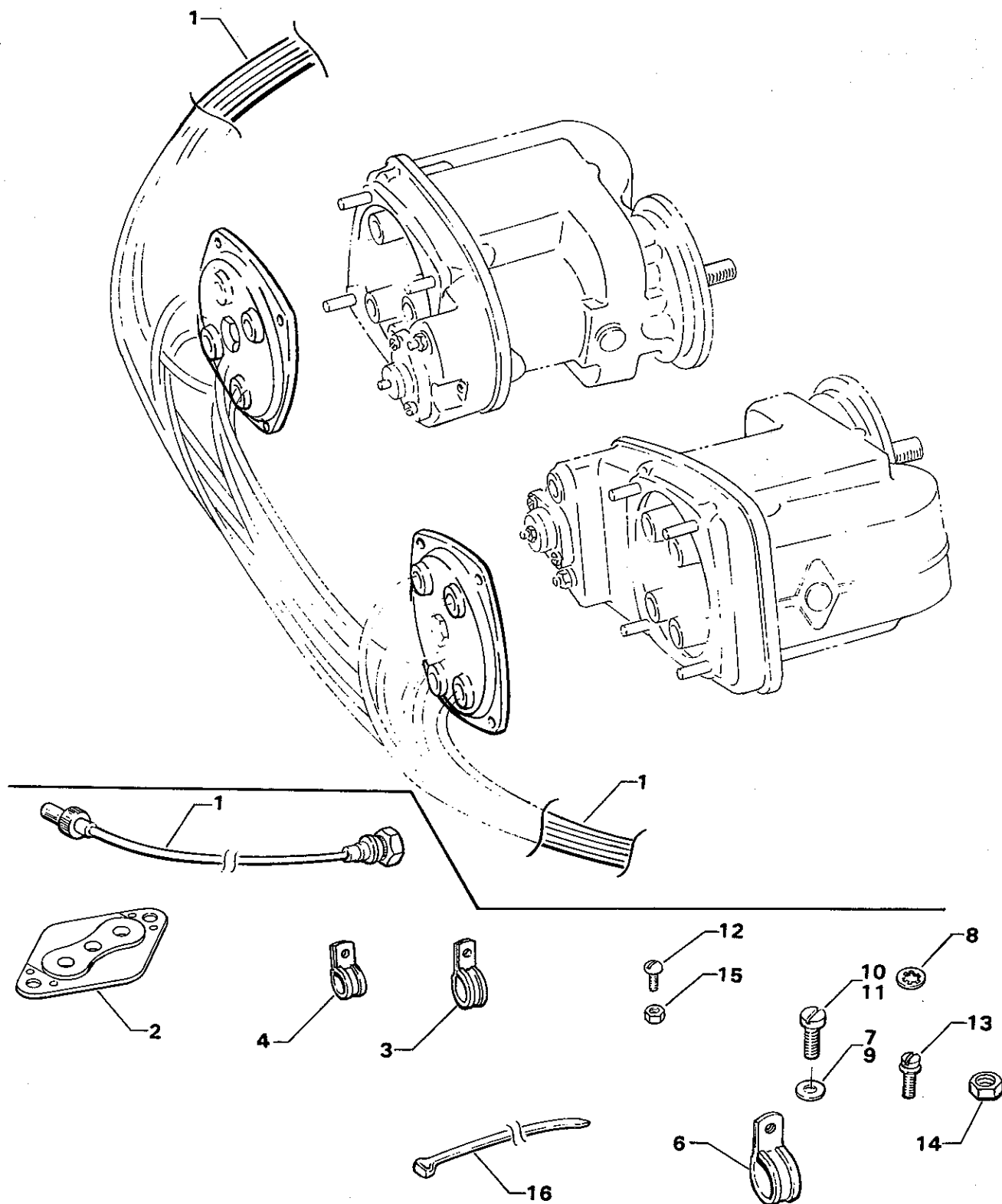


**Figure 20. Magnetos and Magneto Drives**

## IGNITION SYSTEM

### IGNITION HARNESS AND LEAD ASSEMBLY (SLICK)

\* Replacement lead assemblies have spark plug terminal end assembled and are shipped with necessary parts to complete magneto end assembly after being cut to proper length.



**Figure 21. Ignition Harness and Lead Assembly (Slick)**

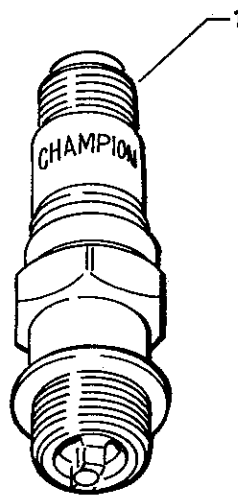
## IGNITION SYSTEM

### SPARK PLUGS

[illegible]

**NOTE**

The above spark plugs are those used in current production only; this list does not include additional spark plugs that are approved for use in these engines. See latest edition of Service Instruction No. 1042 for complete listing of all approved spark plugs.

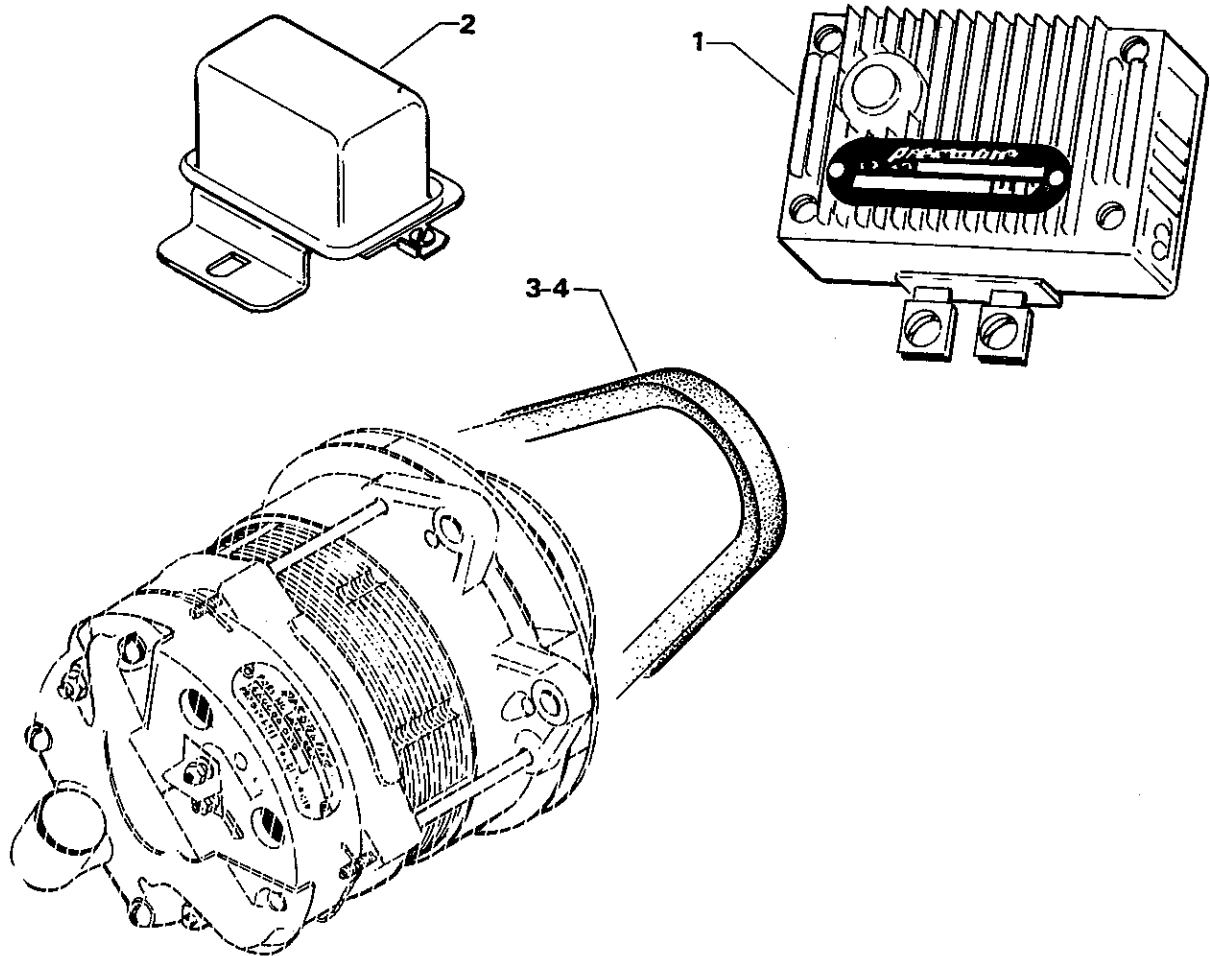


**Figure 22. Spark Plugs**

## ELECTRICAL COMPONENTS

## VOLTAGE REGULATORS, RELAY, ALTERNATOR AND GENERATOR DRIVE BELTS

FIG. REF. 23	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																					
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C					
1	72205	REGULATOR, Voltage (12V - 20 Amp.)		1	1		1																		
	62833	REGULATOR, Voltage (12V - 35 Amp.)		1	1		1																		
	71745	REGULATOR, Voltage (12V - 50 Amp.)		1	1																				
	LW-10185	REGULATOR, Voltage, 12V, full transistor		1	1		1	1	1	1	1	1	1		1	1	1	1							
	LW-15895	REGULATOR, Voltage, 12V, transistorized		1			1							1		1									
	LW-10179	REGULATOR, Voltage, 24V, full transistor					1								1										
2	78059	RELAY, Overvoltage, 12V		1			1	1	1		1		1		1	1	1								
3	60886	BELT, Generator drive		1	1		1																		
4	76026	BELT, Alternator drive (3/8 wide)		1	1	1	1	1	1	1	1	1	1	1	1	1	1								

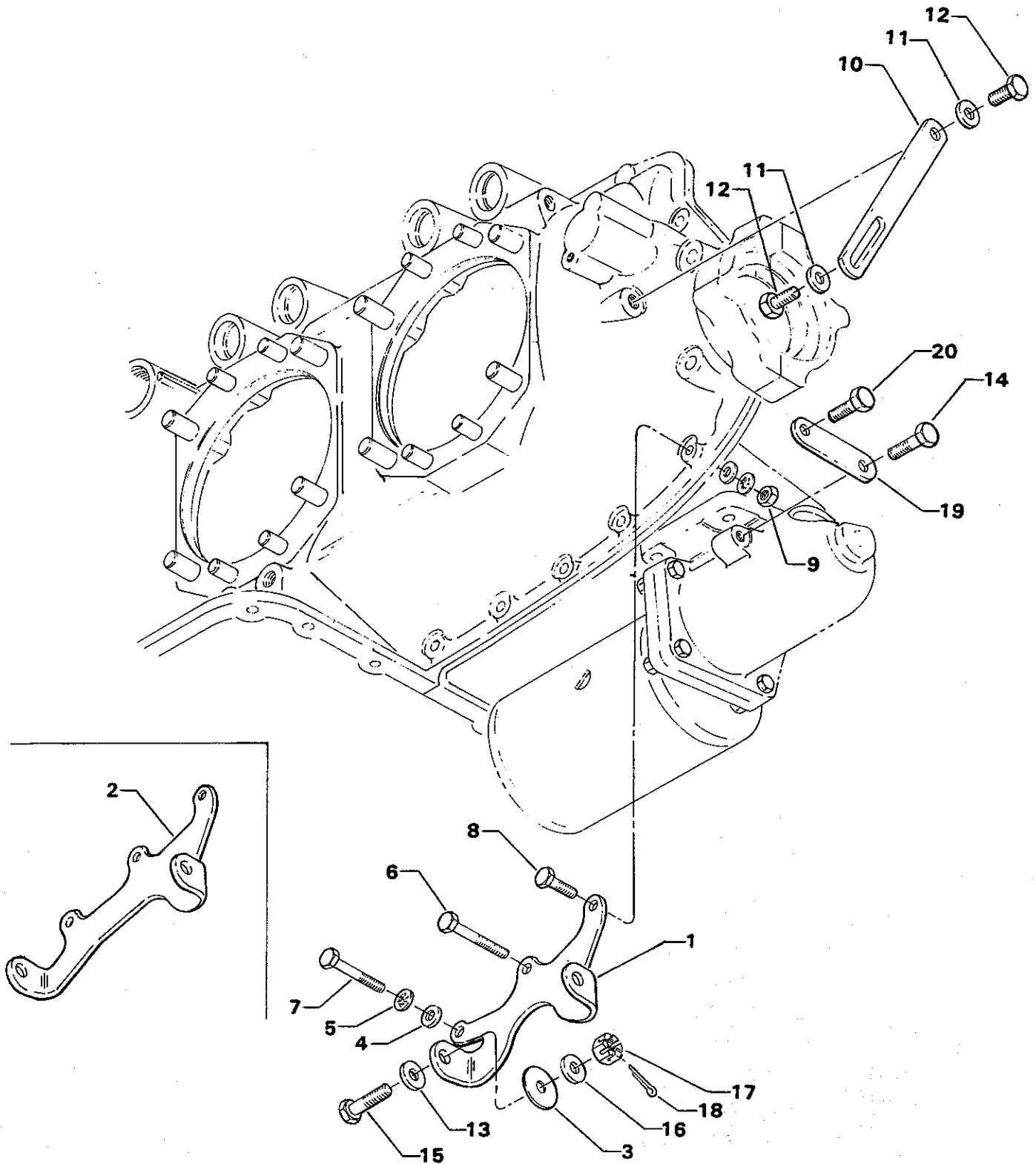


2586

**Figure 23. Voltage Regulators, Alternator and Generator Drive Belts**

## ELECTRICAL COMPONENTS

### GENERATOR MOUNTING AND ATTACHING PARTS



**Figure 24. Generator Mounting and Attaching Parts**

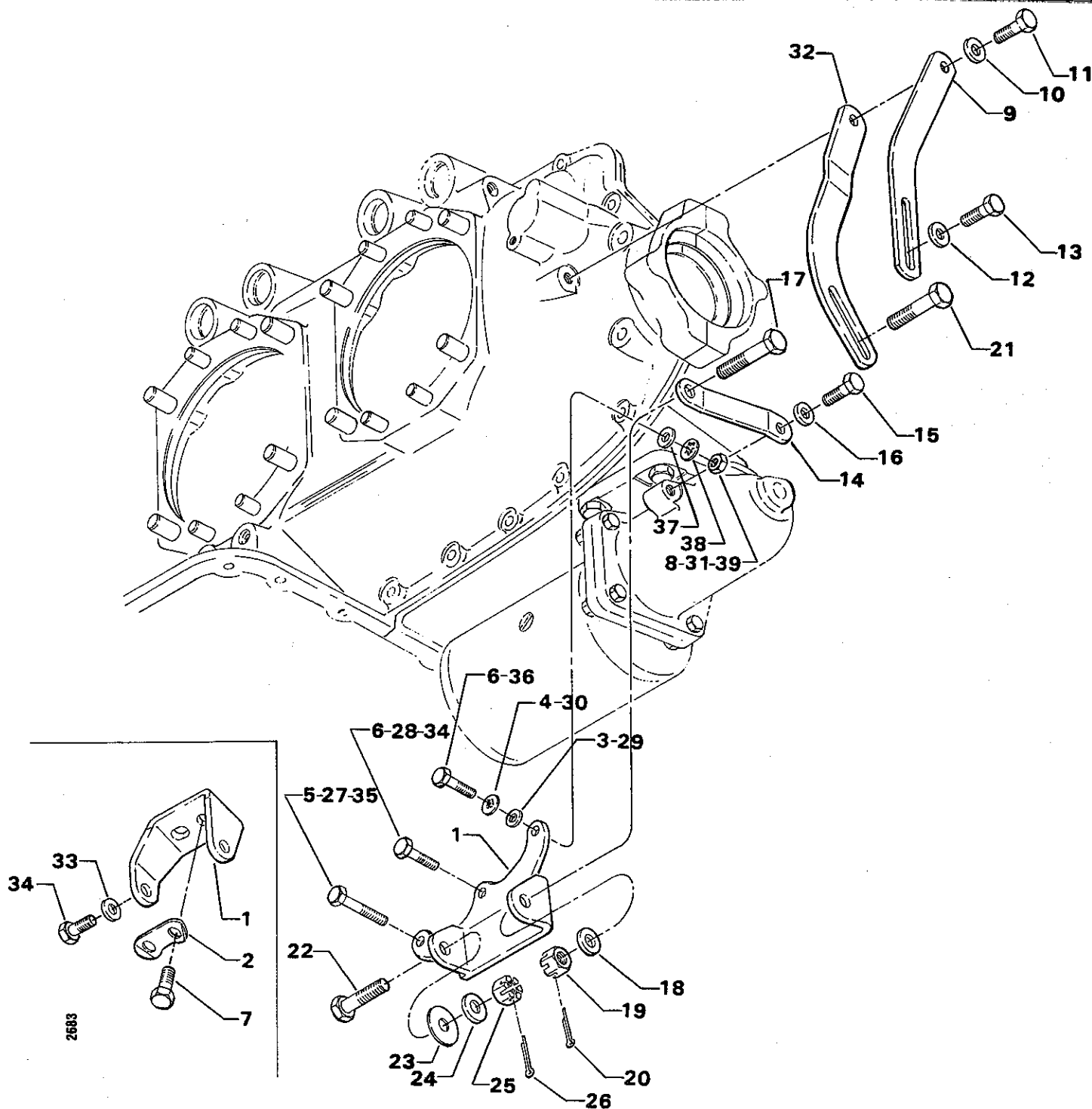
## ELECTRIAL COMPONENTS

### ALTERNATOR MOUNTING AND ATTACHING PARTS

## ELECTRICAL COMPONENTS

### ALTERNATOR MOUNTING AND ATTACHING PARTS (Cont.)

FIG. REF. 25	PART NUMBER	DESCRIPTION	O N A L L	QUANTITY PER ASSEMBLY																		
				C 1	C 1 B	C 1 C	C 2 A	C 2 C	F 2 A	F 2 B	H 2 C	J 2 A	K 2 A	K 2 B	K 2 C	L 2 A	L 2 C	M 1	N 2 A	N 2 C		
37	STD-8	WASHER, 1/4 plain												12	12							
38	STD-160	WASHER, 1/4 shakeproof lock												3	3							
39	STD-1411	NUT, 1/4-20 plain												1	1							



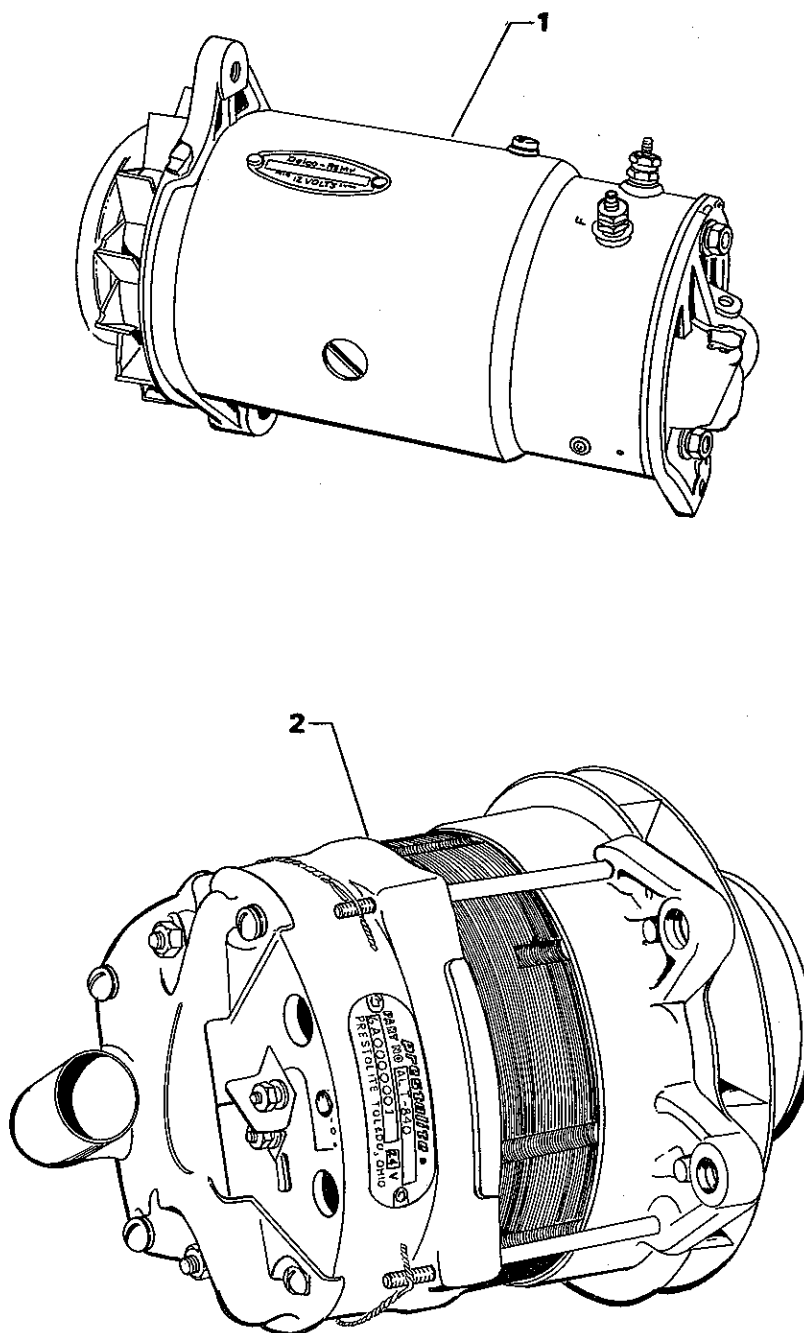
### Figure 25. Alternator Mounting and Attaching Parts

## ELECTRICAL COMPONENTS

### GENERATOR AND ALTERNATOR ASSEMBLIES

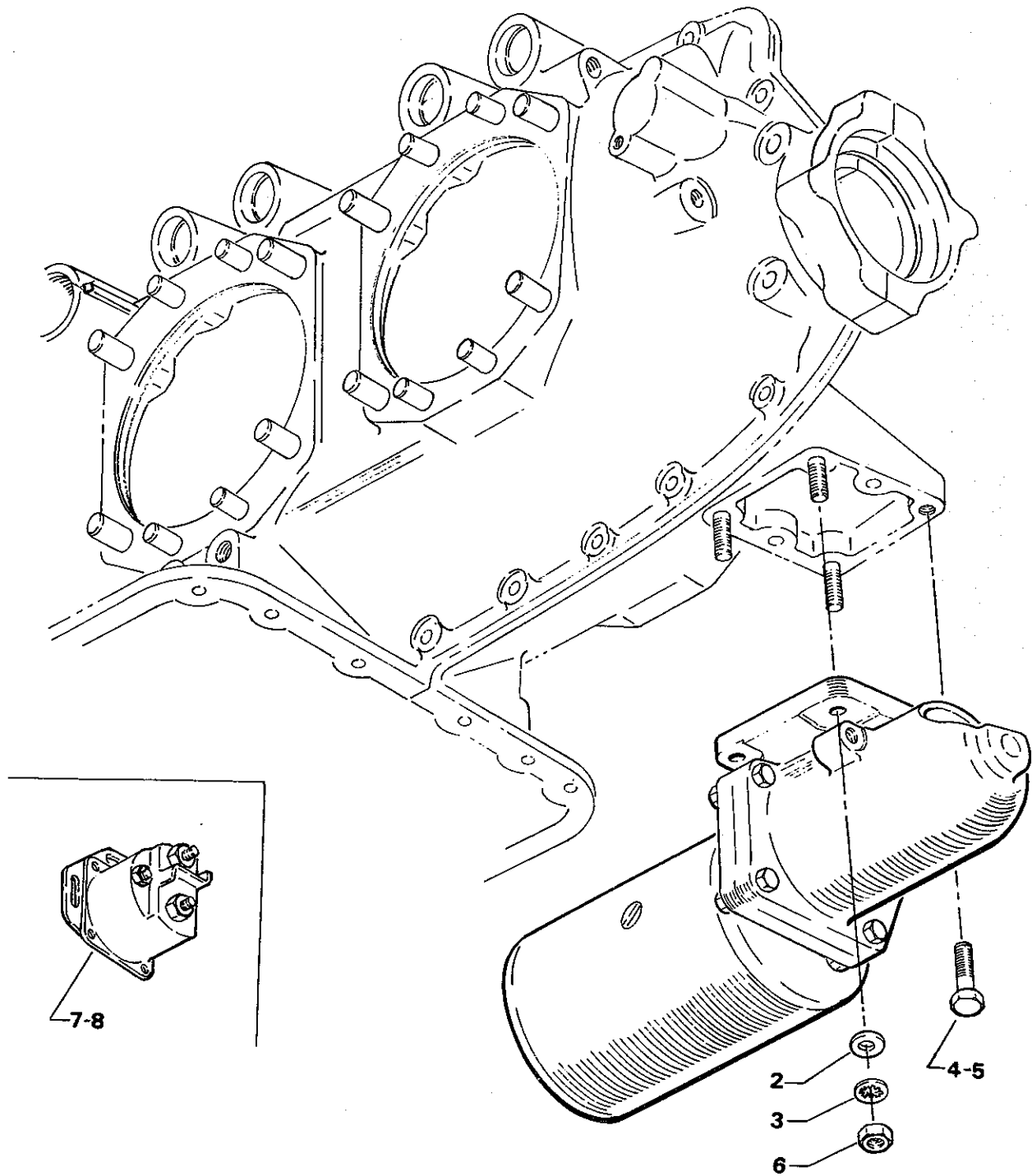
[illegible]

\* 3.25:1 Ratio.



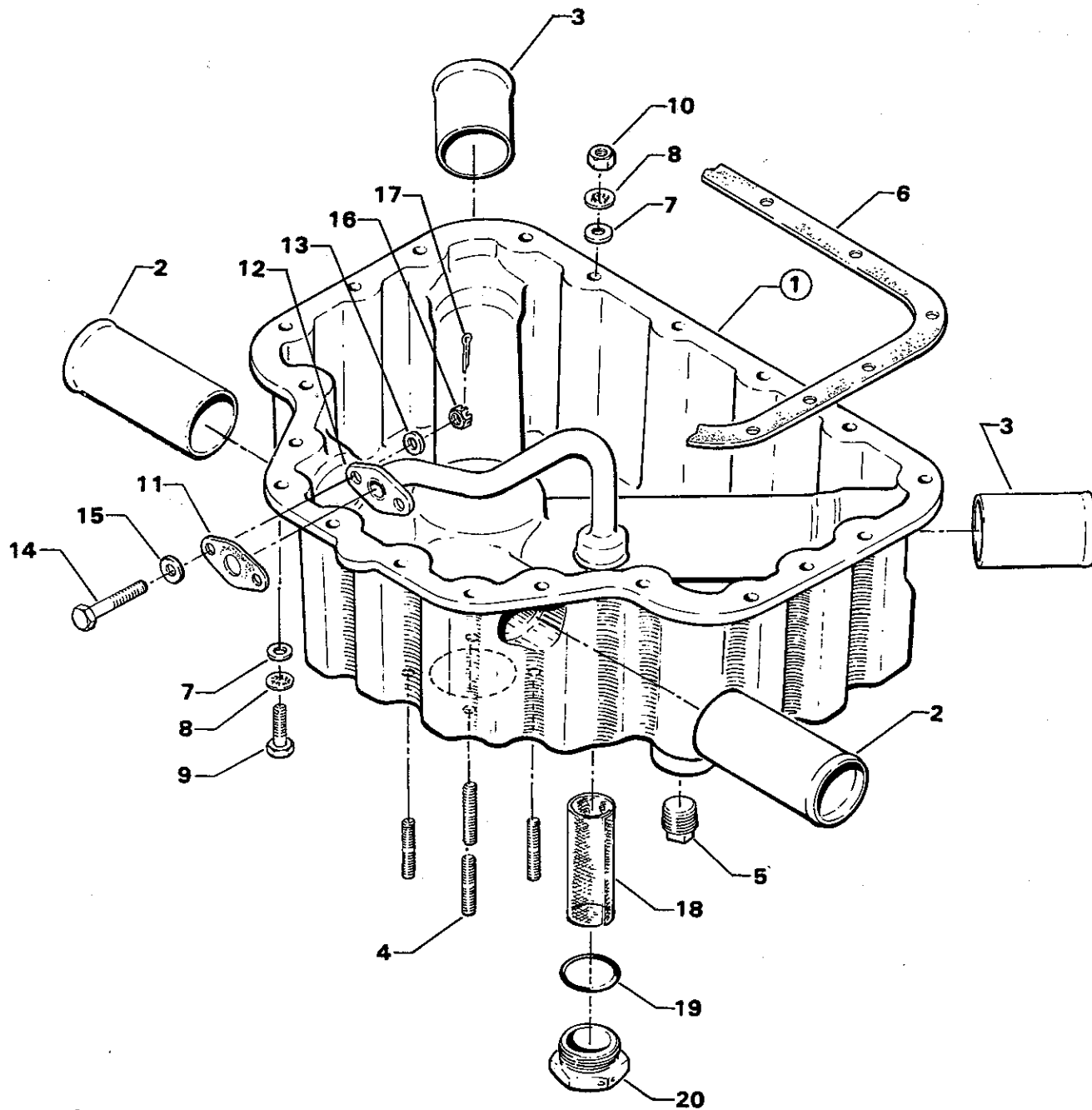
**Figure 26. Generator and Alternator Assemblies**

[illegible]



**Figure 27. Starter Motor and Attaching Parts**

[illegible]

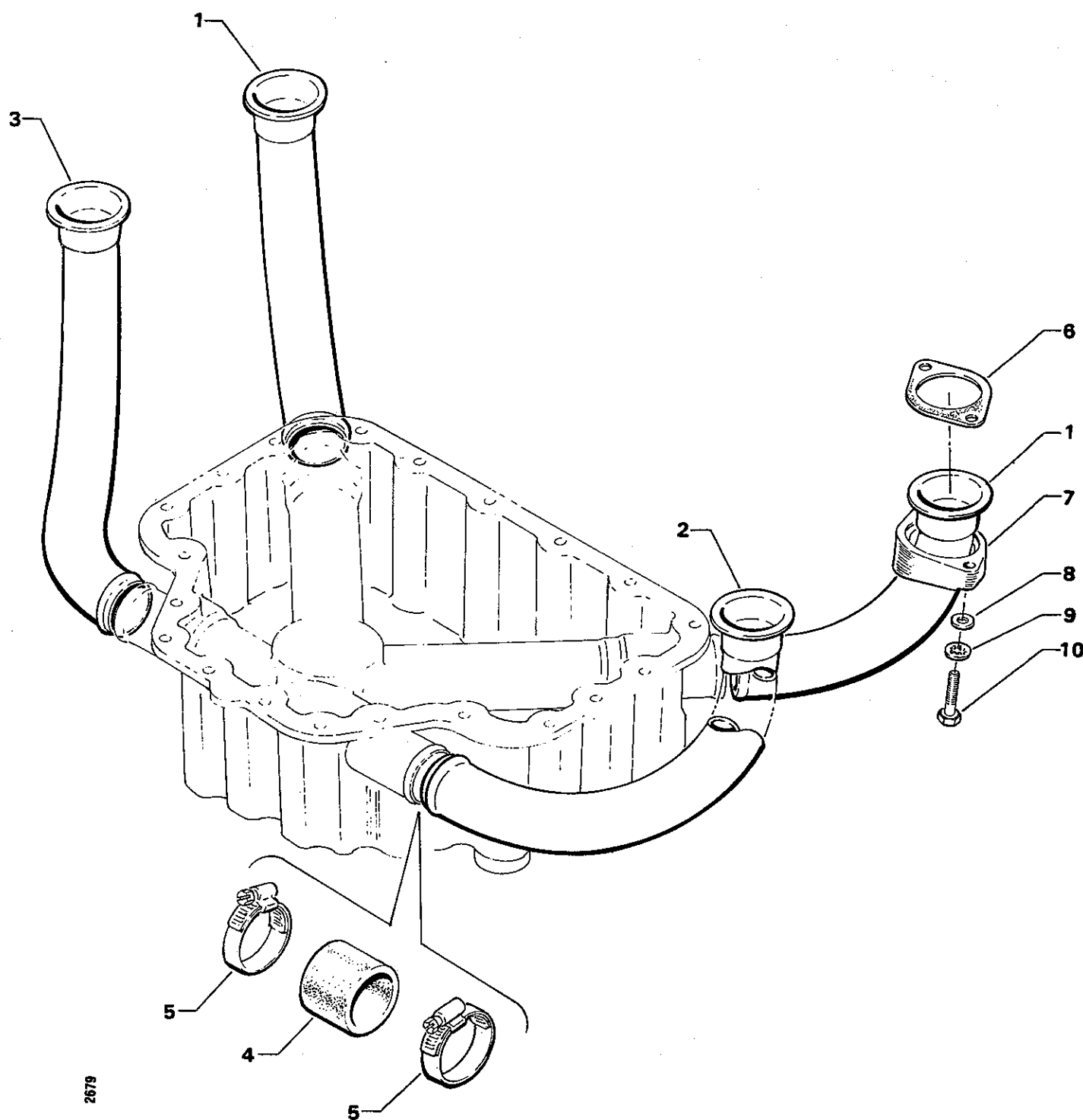


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**Figure 28. Oil Sump Assembly and Oil Suction Screen**

## OIL SUMP AND INDUCTION SYSTEM INTAKE PIPE ASSEMBLY

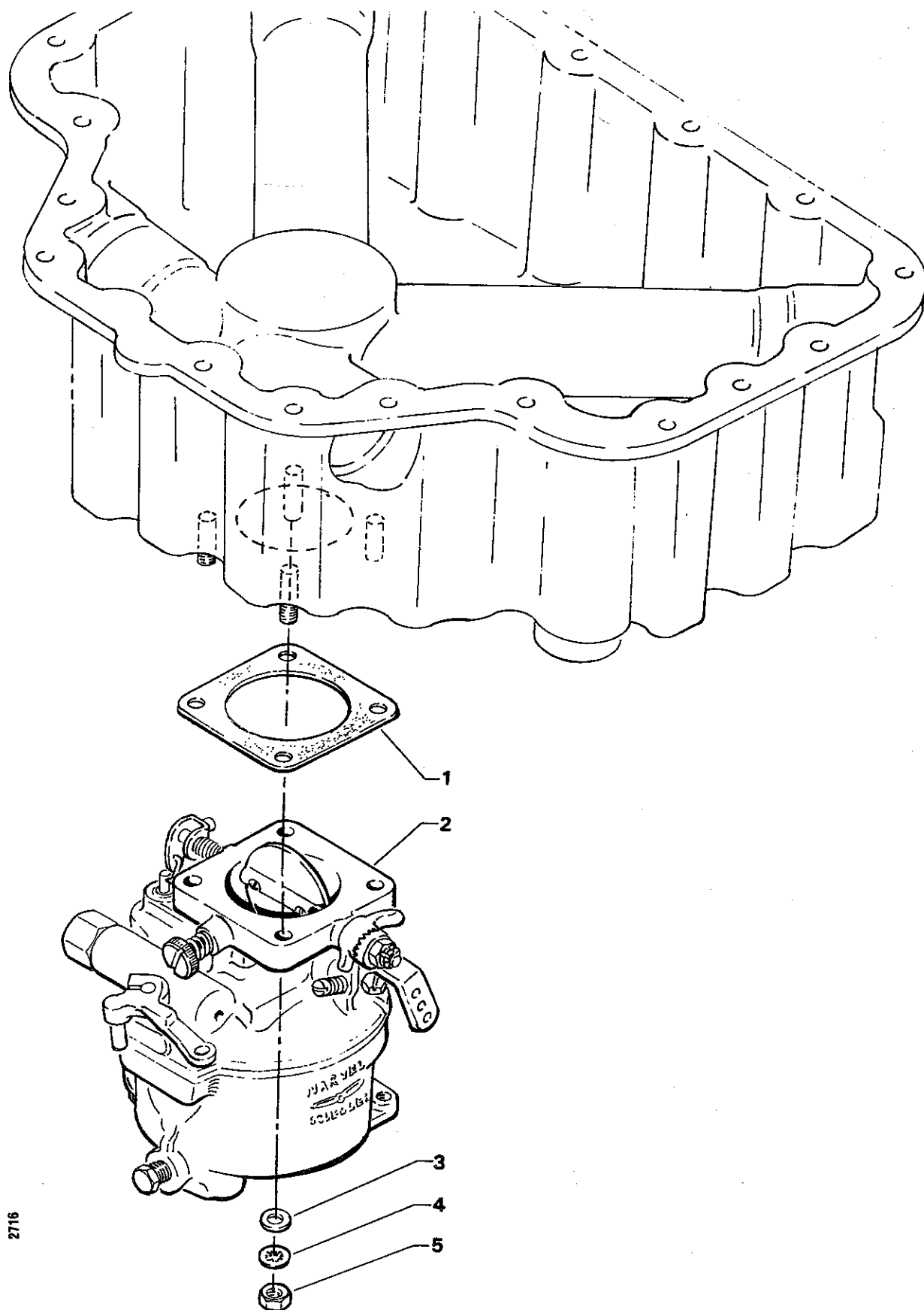
[illegible]



**Figure 29. Intake Pipe Assembly**

## OIL SUMP AND INDUCTION SYSTEM CARBURETOR ASSEMBLY

[illegible]



**Figure 30. Carburetor Assembly**

## OIL SUMP AND INDUCTION SYSTEM PRIMING SYSTEM

[illegible]

\* Assemble in cylinder heads.