

L/TSIO-360-RB

PARTS CATALOG

Form X30597A Supplement 1
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JANUARY 1997

DEFINITIONS OF NOTES, CAUTIONS and WARNINGS

NOTES, **CAUTIONS** and **WARNINGS** are defined for use in this manual as follows:

NOTE...Special interest information which may facilitate performance of a procedure or operation of equipment.

CAUTION...*Used to emphasize certain information or instructions which if disregarded may result in damage to engine or accessories.*

WARNING

Used to provide warning with respect to information and/or instructions which if disregarded will endanger personnel and/or severely damage the engine resulting in subsequent engine malfunction or failure.

Notes, **cautions** and warnings do not impose undue restrictions. They are inserted to obtain maximum safety, efficiency and performance. Abuse, misuse or neglect of equipment can cause eventual engine malfunction or failure. Compliance with instructions and provisions in this manual is mandatory.

CURRENT STATUS OF PAGES

AS OF: JANUARY 1997

See "Manual Revisions," in the introduction section for distribution procedure.

**THE ORIGINAL DATE OF THIS PUBLICATION IS JANUARY 1997
INSERT LATEST PAGES; DESTROY SUPERSEDED PAGES**

WARNING

If the user of this manual is uncertain whether all current revisions have been incorporated into the manual, contact Teledyne Continental Motors. DO NOT PERFORM ANY OPERATION, MAINTENANCE, INSTALLATION OR OTHER OPERATION UNTIL THE MANUAL HAS BEEN CONFIRMED TO BE CURRENT.

MODELS: L/TSIO-360-RB

**FORM X30597A
SUPPLEMENT 1**

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WARNING

BACKGROUND. Replacement parts, materials, appliances, and instruments may be sold as being of aircraft quality when actually the quality and origin of these units are unknown. Users of such units are usually unaware of potential hazards involved with replacement parts not eligible for use on certificated aircraft. Units may be deceptively advertised as "unused," "like new" or "remanufactured." This implies the quality of such units is equal to an original, repaired or overhauled unit.

Federal Aviation Regulations (FAR) 43.13 and FAR 145.57 specify performance rules for replacement of parts and materials used in maintenance and alteration of United States (US) certificated aircraft. As outlined in FAR 91.403, FAR 121.363, FAR 123.45, and FAR 135.143 (a), the **owner/operator** is responsible for continued airworthiness of the aircraft which includes parts replacement.

IDENTIFICATION OF THE APPROVED PARTS. Approved, serviceable replacement parts are identified by:

- a. A Federal Aviation Administration (FAA) Form 8130-3 Airworthiness Approval Tag. An Airworthiness Approval Tag identifies a part or group of parts approved by authorized FAA representatives.
- b. An FAA Technical Standard Order (TSO) number and identification mark that indicates the part or appliance has been manufactured under the requirements of FAR 21 Subpart O.
- c. An FAA Parts Manufacturer Approval (PMA) symbol, together with the manufacturer's name, part number and make and model of the type certified product on which the part might be installed, stamped on the part. An FAA / PMA is issued under FAR 21.305. The make and model information may be on a tag attached to the part.
- d. Shipping ticket, invoice or other document which verifies the part was manufactured by a facility holding an FAA Approved Production Inspection System issued under FAR 21 Subpart F or by a manufacturer holding an FAA Production Certificate issued under FAR 21 Subpart G.
- e. Certificate of airworthiness for export issued by a foreign government under the provisions of FAR 21 Subpart N.

KNOW YOUR SUPPLIER. Many reproduced parts and components are available for purchase and installation on US certified aircraft. Often, an original part is used as a sample to produce duplicates. The reproduced parts appear to be as good as the original part; however, many unknown factors are not readily apparent to the purchaser such as degree of heat treating, plating, inspections, tests and calibrations. Often the faulty part is not discovered until a malfunction or an accident occurs.

SUMMARY. In accordance with FAR certification of materials, parts and appliances for return to service for use on aircraft is the responsibility of the person/agency who signs the approval. The **owner/operator** is responsible for the continued airworthiness of the aircraft. To assure continued safety in aircraft operation, great care must be used when inspecting, testing and determining the acceptability of all parts and materials. Exercise extreme discretion to identify and establish the origin of materials, parts, and appliances.

NOTICE TO ALL USERS

The following publication contains parts listings introduced by general information. It is important all personnel involved with part procurement and installation thoroughly read and understand the information provided. These instructions contain the information required to obtain replacement parts for the aircraft engine and must be followed carefully.

Publication Format

This publication is formatted for practical use and ease of reference. Chapter and page numbering are independent within each section so that revisions can be made by section without affecting the entire publication. A list of chapters is located at the begining of the manual and a chapter index is located at the begining of each chapter.

This manual contains no warranties, either expressed or implied.

Prior to performing parts replacement, the mechanic must meet requirements of FAR 65 and must follow FAR Parts 43, 91 and 145 as applicable. Use this manual in conjunction with Teledyne Continental Motors (TCM) service documents, related publications, accessory manufacturer's instructions, FAR and FAA Advisory Circulars.

WARNING

This manual, the Service Documents, the Overhaul Manual and Maintenance Manual constitute the Instructions for Continued Airworthiness prepared by TCM as approved by the FAA, pursuant to FAR Part 33. As required by FAR § 43.13, each person performing maintenance, alteration or preventive maintenance on the engine or accessories must use the methods, techniques and practices prescribed in the Instructions for Continued Airworthiness. Failure to comply with the Instructions for Continued Airworthiness may result in engine malfunction, engine failure, injury or death.

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CHAPTER 1

INTRODUCTION

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INTRODUCTION

For a list of chapters contained in this manual refer to the Chapter Index on page vi. For a list of parts and figures contained in each chapter, see the first page of each chapter. The chapters, pages and figures contained in this publication are numbered consecutively.

In this edition, currently available parts are listed for L/TSIO-360-RB engines. If accessories or parts attached to any engine installed in an aircraft manufactured in the United States under a production model number do not appear in this catalog, determine whether they are available from the airframe manufacturer before placing an order with a Teledyne Continental Authorized Distributor.

The system figure is followed by figures for assemblies that compose the particular system. The figures are illustrated in exploded form. Each figure has a figure index and parts listing of the components contained appearing on the same or adjacent page.

WARNING

The figures depicted in this publication are for illustration purposes only. They are not intended to be accurate detailed illustrations of any specific engine model, part or equipment.

Index numbers that correspond with the numbers contained in the related figure are assigned to each part number.

In the parts listings, the first column of each system or component identifies the figure number in the top left corner and the index number (following a dash) which identifies each part in numerical order. DO NOT ORDER PARTS BY INDEX NUMBERS. Use the part number which appears in the second column, and use the part name which appears in the third column under DESCRIPTION. Do not order a part that has "No Number" shown with the description, or that has "NS" (not sold) shown in the QUANTITY column. To replace a part "not sold," order the next higher level assembly. Pay particular attention to the quantity of parts required per engine or per assembly. Example: 6 cylinders per engine, 12 pushrods per engine, 2 pushrods per cylinder.

Some customer specification model engines have certain part differences from the basic engine. Check the engine data plate model designation and specification number before ordering parts for the engine.

When ordering parts use the description and model designation shown with the part number. This information is necessary to ensure correct part to assembly or assembly to engine application.

Oversize parts must be ordered by the numbers listed herein with correct descriptions to avoid errors. Authorized Oversize parts are indicated by a suffix such as P003. Authorized Undersize parts are indicated by a suffix such as M005 after the part number.

Repair Parts Sets are usually requested for overhaul work and should be ordered by set part numbers. See "Repair Parts Sets and Materials," Section 1-6.

SCOPE

This publication contains information necessary to order factory replacement parts for the L/TSIO-360-RB model engines.

MANUAL REVISIONS

Teledyne Continental Motors Parts Catalogs are revised as necessary. Revisions to this catalog will be furnished to purchasers who fill out and return the registration post card located in the front of this catalog.

The "Current Status of Pages" on Page iii contains a record of revisions to this catalog. Each issued change to this catalog includes an updated "Current Status of Pages." Upon receipt of a revision, remove the old "Current Status of Pages" and insert the new one.

Each individual revised page contains the date of the change to that page. Accordingly, if the "Current Status of Pages" indicates that a page has been changed, that page in the catalog must be dated in agreement with the status page. Original pages in this catalog are not individually dated.

LIST OF ABBREVIATIONS AND SYMBOLS

SYMBOL	DEFINITION	SYMBOL	DEFINITION
AR (ar)	As Required	NS	Not Sold
dia.	Diameter	\$	Parts included in a set
hd	Head	PD	Pitch diameter (thread)
hex	Hexagon(al)	RF (rf)	Reference
ID	Inside Diameter	NPT	National Pipe Tap (or thread)
in.	Inches	US	Undersize
lg.	Long	No.	Number
mm	Millimeters	†	Oversize parts available
OD	Outside diameter	†	Undersize parts available
OP	Optional	****	End of group of attaching parts
OS	Oversize		

RELATED PUBLICATIONS

The following is a list of related manuals:

1. Overhaul Manual for L/TSIO-360-RB Series Aircraft engine, Form X30596A Supplement No. 1
2. Maintenance Manual for L/TSI0-360-RB Series Aircraft engine, Form X30645A.
3. Operators and Installation Manual for L/TSIO-360-RB Series Aircraft Engine, Form X30644.
4. Teledyne Continental Motors Aircraft Engine Service Documents (including service bulletins.)
5. Fuel Injection Manual, Form X30593A.
6. Starter Service Instructions, Form X30643-2.
7. TCM Ignition Systems Master Service Manual, Form X40000.
8. Alternator Service Instructions, Form X30531-3.

The above publications may be ordered through your Teledyne Continental Motors Distributor or ordered directly, if prepaid, from:

Teledyne Continental Motors
 P. O. Box 90
 Mobile, AL 36601
 ATTN: Publications Sales Department
 Telephone:(334) 438-3411.

For price information on the above publications see TCM Publications Index Form X-2-94, Current Publications and Form X-3-94, Optional Publications.

9. Slick Ignition Systems Master Service Manual Index and Order Form Number F-1100 order through:

Slick Aircraft Products
 Unison Industries.
 530 Blackhawk Park Avenue
 Rockford, Illinois 61104
 ATTN: Subscription Department
 Telephone:(815) 965-4700.

(continued on next page)

10. Precision Fuel System Manuals, Form 15-338, RSA5 Operator and Service Manual and Form 15-900, RSA5AD2 Overhaul Instructions. Order Through:

Precision Airmotive Corporation
3220 100th Street S.W. Bldg. E
Everett, WA 98204
Telephone (206)353-8181

1-6 REPAIR PARTS SETS AND MATERIALS

PART NO.	DESCRIPTION	SIZE	MODEL
646543A1	Gasket Set - Complete Overhaul	Standard	ALL
646560A1	Gasket Set - Single Cylinder	Standard	ALL
649225	Ring Set - Single Cylinder	Standard	ALL
649225P005	Ring Set - Single Cylinder	.005 inch OS on OD	ALL
649225P015	Ring Set - Single Cylinder	.015 inch OS on OD	ALL
649225CP	①Ring Set - Single Cylinder	Standard	ALL
646597A1M010	Bearing Set - Crankshaft	.010 inch US on ID	ALL
646597A1	Bearing Set - Crankshaft	Standard	ALL
626531-1	Enamel-Gold, Engine	1 quart	ALL
626531-2	Enamel-Gold, Engine	1 gallon	ALL
535011S	Lockwire-0.032 In. Dia. Steel	Order by 1 pound Roll	ALL
641543	Silk Thread	1 Spool (260 Yd.)	ALL
642188-1	Gasket Sealant	4.0 ounce Can	ALL
646940	F/I Sealant (50 cc bottle)	1.69 ounce	ALL
646941	Adhesive/Sealant (50 cc bottle)	1.69 ounce	ALL
646942	Gasket Maker (50 cc tube)	1.69 ounce	ALL
646943	Anti-Seize Lubricant	1/4 pound	ALL
646944	Primer	6 ounce (Aerosol Can)	ALL

NOTES:

① For chrome barrel cylinders.

CHAPTER 2

EXHAUST SYSTEM

FIGURE		PAGE
2-1	Exhaust System	2-2

FIGURE 2-1. EXHAUST SYSTEM

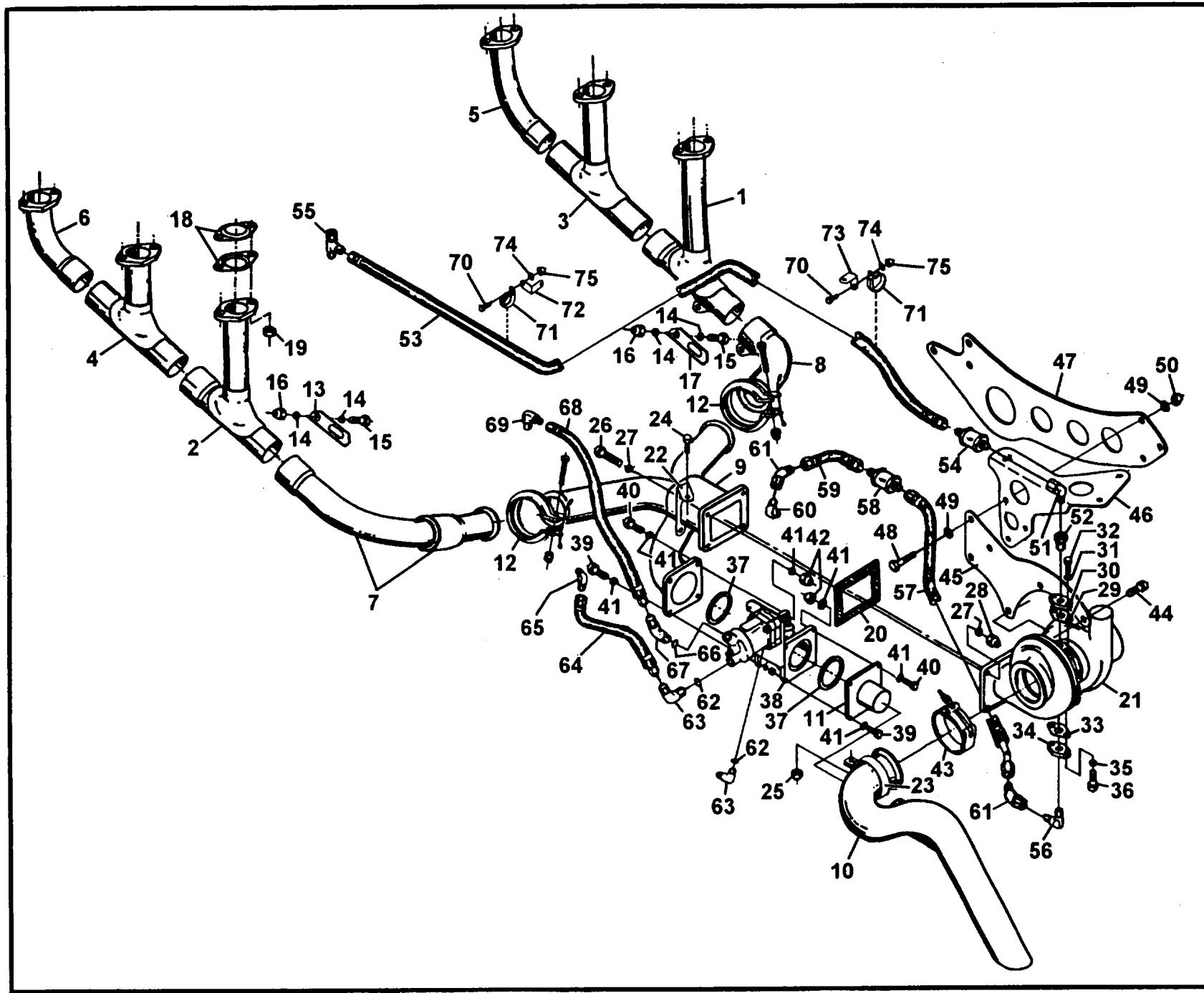


FIG. & INDEX	PART NUMBER	1 2 3	DESCRIPTION	QUANTITY	
				TSIO-360-RB	LTSIO-360-RB
2-1	- 1	654265	Tee, Riser	1	1
	- 2	654264	Tee, Riser	1	1
	- 3	654263	Tee, Riser	1	1
	- 4	654262	Tee, Riser	1	1
	- 5	654261	Tee, Riser	1	1
	- 6	654260	Tee, Riser	1	1
	- 7	654400	Elbow	1	1
	- 8	654401	Elbow	1	1
	- 9	654402	Manifold	1	1
	-10	654403	Tailpipe	1	1
	-11	654404	Tube, Wastegate	1	1
	-12	654407	Clamp	1	1
	-13	634305	Tie Rod	1	1
	-14	654309	Spacer	4	4
	-15	AN3-4A	Bolt	4	4
	-16	MS21043-3	Nut	4	4
	-17	654306	Tie Rod	1	1
	-18	630365	Gasket, Exhaust Flange	12	12
	-19	22022	Nut, Exhaust Flange	12	12
	-20	636465	Gasket, Turbocharger	1	1
	-21	649151-2	Turbocharger	1	1
	-22	654361	Braket, Tailpipe	1	1
	-23	654362	Clamp, Tailpipe	1	1
	-24	AN5C4A	Bolt	1	1
	-25	532393	Nut	1	1
	-26	NAS1006-12A	Bolt	4	4
	-27	NAS1587-6	Washer	8	8
	-28	NAS1021C6	Nut	4	4
	-29	652100	Gasket	1	1
	-30	642659	Adapter	1	1
	-31	MS35338-45	Washer, Lock	2	2
	-32	537750	Bolt	2	2
	-33	652101	Gasket	1	1
	-34	641945	Adapter	1	1
	-35	MS35338-46	Washer, Lock	2	2
	-36	629275	Bolt	2	2
	-37	652457	Gasket, Wastegate	2	2
	-38	649006-8	Wastegate	1	1
	-39	MS20034-4	Bolt	2	2
	-40	MS20034-5	Bolt	6	6
	-41	NAS1587-4	Washer	8	8
	-42	MS20500-428	Nut	8	8
	-43	653337	Clamp, Tail Pipe	1	1
	-44	649197	Bolt, Turbo bracket	3	3
	-45	654286	Bracket, Turbo	1	1
	-46	654299	Bracket, Intercooler	1	1
	-47	654285	Bracket, Turbocharger	1	1
	-48	AN5-7A	Bolt	3	3
	-49	401506	Washer	6	6

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY	
			TSIO-360-RB	LTSIO-360-RB
-50	653796	Nut	3	3
-51	631420	Elbow	1	1
-52	646038	Reducer	1	1
-53	646644S6Y26.50	Hose	1	1
-54	642211	Check Valve	1	1
-55	MS51523B6	Tee, Crankcase, 2-4-6- side	1	1
-56	MS51504B6-6	Elbow	1	1
-57	646644S6S7.75	Hose	1	
	646644Y6S10.00	Hose		1
-58	641068	Check Valve	1	1
-59	646644Y6S19.00	Hose	1	
	646644S6S7.75	Hose		1
-60	643951	Elbow, Scavenge Pump	1	1
-61	MS51522B6	Elbow, 45° Swivel	1	1
-62	MS28778-4	O-Ring	2	2
-63	MS51527-B4	Elbow, 45°	2	2
-64	646644S4S21.00	Hose, Wastegate-to-oil-filter-adapter	1	1
-65	649242	Elbow, 45°	1	1
-66	630979-15	O-Ring	1	1
-67	MS51528-B6	Elbow	1	1
-68	646644S6S37.00	Hose, Wastegate-to-controller	1	1
-69	643951	Elbow, Controller	1	1
-70	AN3-4A	Bolt	1	1
-71	MS21919WDF13	Clamp	1	1
-72	643984	① Bracket	1	1
-73	631275-2	② Bracket	1	1
-74	AN960-10L	Washer, Plain	1	1
-75	MS21044N3	Nut, Self Locking	1	1

①Attaches to second bolt from bottom on 2-4-6 of accessory case.

②Attaches to forward aftercooler attaching bolt below bracket.

CHAPTER 3

IGNITION SYSTEM

FIGURE		PAGE
3-1	Ignition System	3-2

Note: For further parts information on Slick magnetos and harnesses refer to Section 1-5, "Related Publications," of this manual.

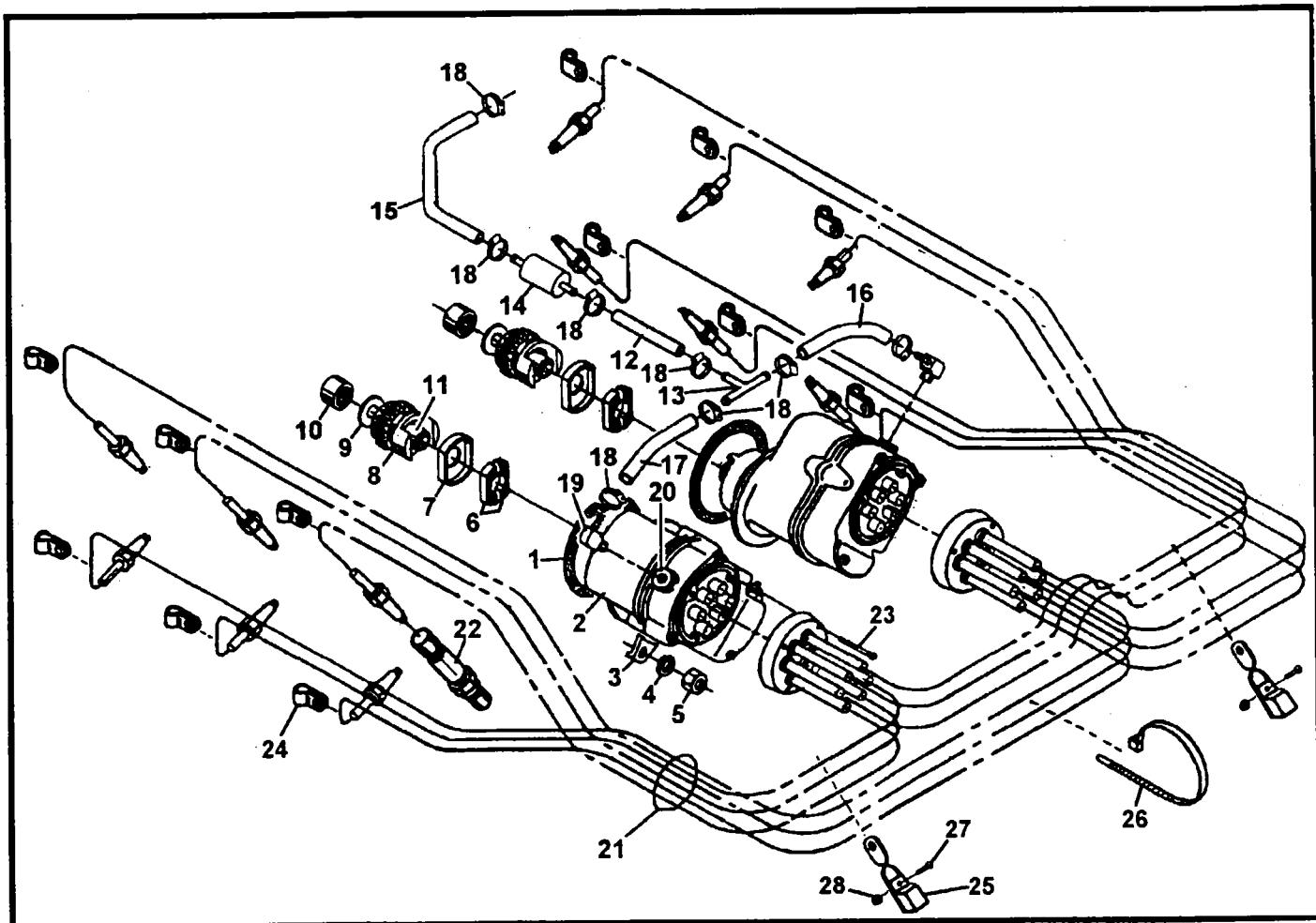


FIGURE 3-1. IGNITION SYSTEM

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
3-1	- 1	649954 Gasket, Magneto	2
	- 2	653292 Magneto, Slick, TSI0-360-RB Only	2
		653280 Magneto, Slick, LTSI0-360-RB Only	2
ATTACHING PARTS			
-3	630535	Washer, Mag Holding	4
-4	MS35338-45	Washer, Lock	4
-5	AN315-5R	Nut, Plain	4

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
3-1	-6	Bushing, Mag. Drive Coupling	4
	-7	Retainer, Mag. Coupling	2
	-8	Gear Assembly, Mag. Drive	2
	-9	Washer, Thrust	2
	-10	Bearing, Needle	2
	-11	Sleeve, Magneto Coupling	2
	-12	Hose, 9.50 Inches Long	1
	-13	Tee, Mag., Air Reference	1
	-14	Filter Assembly, Magneto	1
	-15	Hose, 11.50 Inches Long	1
	-16	Hose, Tee To Right Mag.	1
	-17	Hose, Tee To Left Mag.	1
	-18	Clamp, Hose	8
	-19	Elbow, 90°	2
	-20	Bushing	2
	-21	Harness, Ignition, Slick	1
	-22	Sparkplug, Champion RHM38E	12
	-23	M1553 ① Screw, Harness Cap	6
	-24	M2754 ① Clamp, Single Lead	12
	-25	M2758 ① Clamp, Six Lead	2
	-26	M3169 ① Tie, Cable	AR
	-27	No Number ① Screw	AR
	-28	No Number ① Nut, Self Locking	AR

①These part numbers are available from Unison Industries.

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CHAPTER 4

FUEL INJECTION SYSTEM

FIGURE		PAGE
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4-3	Fuel Manifold Valve	4-7
4-4	Fuel Manifold Valve Fitting Locations	4-8
4-5	Fuel Pump Fitting Locations	4-9

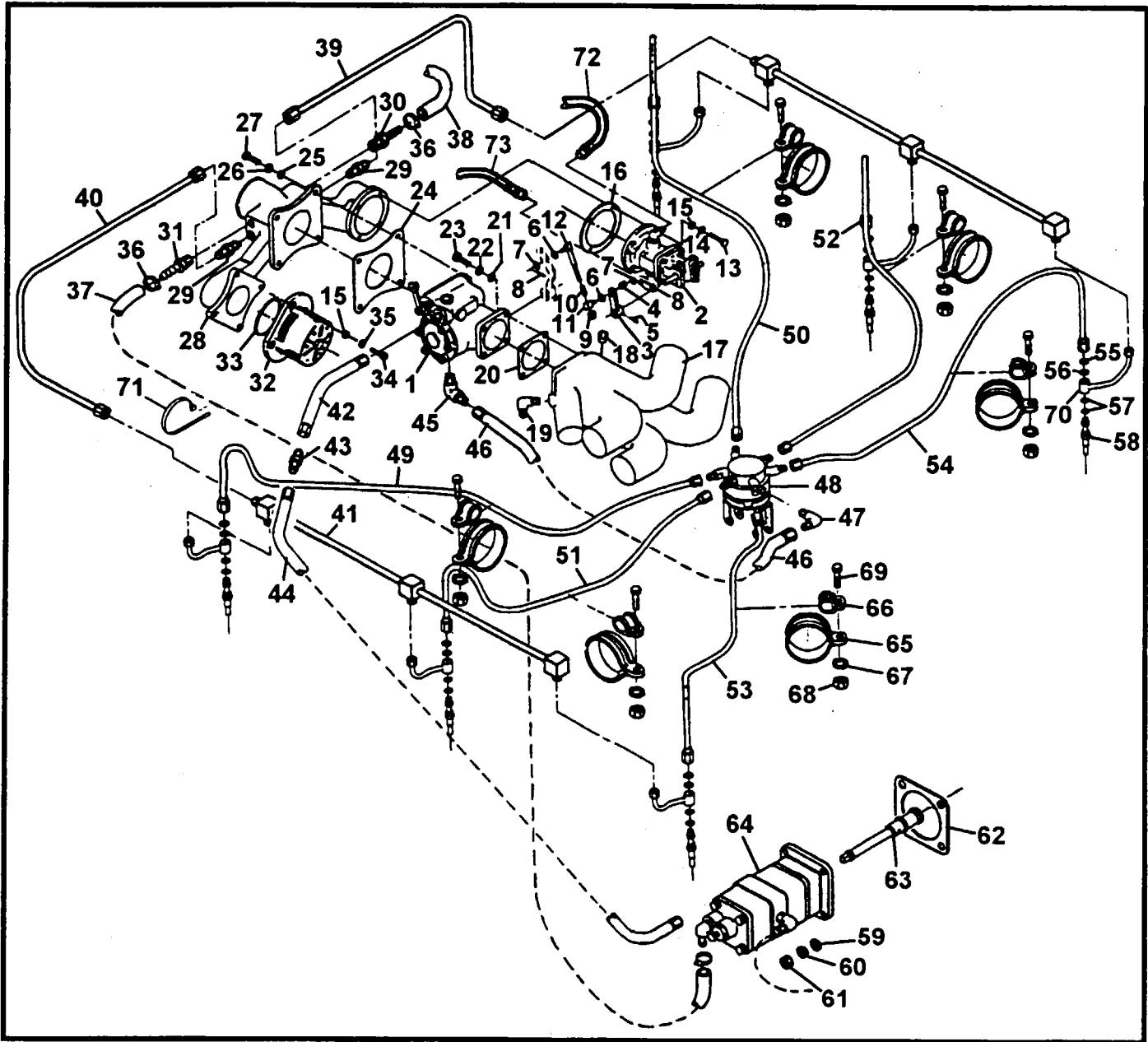


FIGURE 4-1. FUEL INJECTION ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
4-1	-	Fuel Injection System, TSI0-360-RB Only	1
	-	Fuel Injection System, LTSI0-360-RB Only	1
-1	654475A1	Servo Assembly, Fuel	1
-2	649362-3	Controller & Lever Assembly	1
-3	632555-51	Lever	1
-4	632554-2	Bushing	1
-5	626813	Pin, Lever	1
-6	625327-2	Washer, Wave	2
-7	537690	Washer	2
-8	2500	Pin, Cotter	2
-9	MS21044N3	Nut, Self-locking	1
-10	626634	Spring	1
-11	632557	Rod End	1
-12	633381-8	Rod & Link Assembly	1
		ATTACHING PARTS	
-13	AN500A10-12	Screw, Fillister	4
-14	MS35338-43	Washer, Lock	4
-15	AN960-10	Washer, Plain	8

-16	653333	Gasket, Controller	1
-17	654356	Manifold Assembly	RF
-18	2024	Plug, .125	1
-19	649493	Elbow	1
-20	654367	Gasket	RF
		ATTACHING PARTS	
-21	AN960-516	Washer, Plain	RF
-22	MS35338-45	Washer, Lock	RF
-23	537750	Screw, .31-18	RF

-24	654366	Gasket	1
		ATTACHING PARTS	
-25	AN960-416	Washer, Plain, Upper	2
	22139	Washer, Plain, Lower	2
-26	MS35338-44	Washer, Lock	4
-27	24835	Screw, Cap, Upper	2
	MS35295-6	Screw, Cap, Lower	2

-28	654368	Adapter Assembly, Air Throttle	1
-29	X12935	Connector, Flex	2
-30	654378	Fitting, Mag. Pressure	1
-31	642070-1	Fitting, Straight	1
-32	643511-34	Valve, Overboost	1
-33	MS29513-138	Seal, "O"Ring	1
		ATTACHING PARTS	
-34	AN500A10-12	Screw, Fillister, 10-24	4
-35	MS35338-43	Washer, Lock	4

-36	640187	Clamp, Hose	3

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
-37	628555-30	Hose, Fuel Pump Deck Pressure	1
-38	628555-39	Hose, Filter To Fitting	1
-39	654370	Tube Assembly, Air Reference, 2-4-6 Side	1
-40	654369	Tube Assembly, Air Reference, 1-3-5 Side	2
-41	633485	Tube Assembly, Air Manifold	1
-42	646644S4S6.50	Hose, Nipple To F/I Servo	1
-43	MS51501B4	Nipple-Tube, Fuel Pump To Metering Unit	1
-44	646644S4S32.00	Hose, Fuel Pump To Nipple	1
-45	MS51527B4	Elbow, 90° Degree	1
-46	64644S4Y15.75	Hose, F/I Servo To Manifold Valve	1
-47	628437	Elbow, Fitting 90° Degree	1
-48	652432-4A1	Manifold Valve Assembly, Fuel	1
-49	654451	Tube Bend Assembly, Inj. Line, Cyl. #1	1
-50	654452	Tube Bend Assembly, Inj. Line, Cyl. #2	1
-51	654453	Tube Bend Assembly, Inj. Line, Cyl. #3	1
-52	654454	Tube Bend Assembly, Inj. Line, Cyl. #4	1
-53	654455	Tube Bend Assembly, Inj. Line, Cyl. #5	1
-54	654456	Tube Bend Assembly, Inj. Line, Cyl. #6	1
-55	628556	Washer, .31 I.D.	6
-56	640612	Washer, .50 O.D. x .31 I.D.	6
-57	630979-9	"O"Ring	12
-58	633608-13B	Nozzle, Fuel	6
ATTACHING PARTS			
-59	AN960-516	Washer, Plain	4
-60	MS35338-45	Washer, Lock	4
-61	AN315-5R	Nut, Plain	4

-62	653747	Gasket, Fuel Pump	1
-63	630265	Shaft, Fuel Pump Drive	1
-64	654351-2A1	Pump Assembly With Fittings, Fuel, TSI0-360-RB Only	1
	654351-1A1	Pump Assembly With Fittings, Fuel, LTSI0-360-RB Only	1
-65	MS21919WF27	Clamp, Loop, Cushioned	6
-66	MS21919WF5	Clamp, Loop, Cushioned	6
-67	AN960-10L	Washer, Flat	6
-68	MS21044N3	Nut, Self Locking 10.32	6
-69	AN3-4A	Bolt	6
-70	640501	Sleeve	6
-71	MS3367-2	Strap, Tie Down	2
-72	646644S6S37.00	Hose, Controller to Wastegate	1
-73	646644S6S13.50	Hose, Controller to Accessory Case	1

①Order nozzle by number/letter stamped on hex of nozzle.

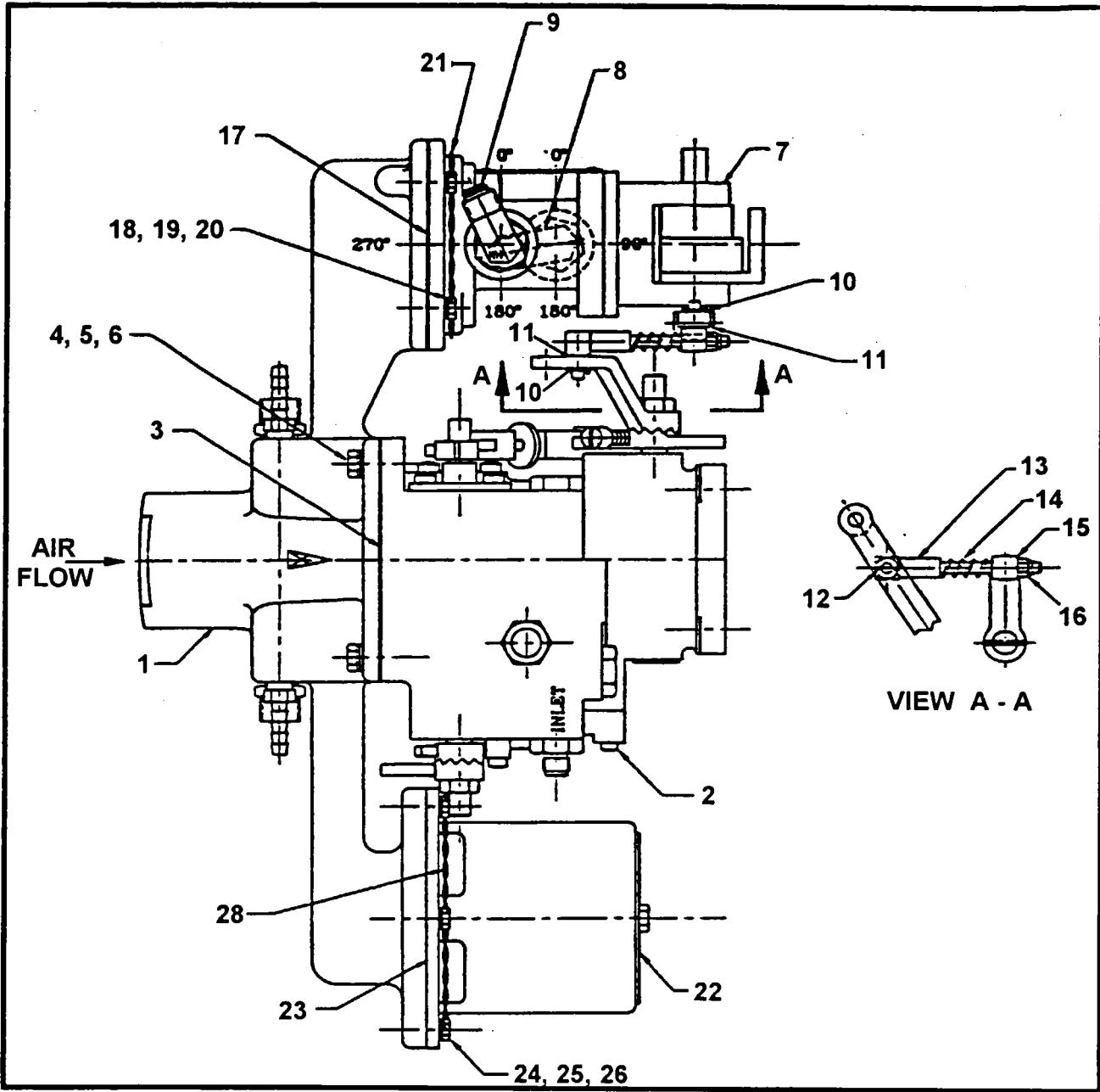


FIGURE 4-2. ADAPTER, FUEL SERVO, CONTROLLER & OVERBOOST VALVE

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
4-2	-1	Adapter Assembly, Air Throttle	RF
	-2	Servo Assembly, Fuel	RF
	-3	Gasket	RF
ATTACHING PARTS			
	-4	Washer, Plain, Upper	RF
	AN960-416	Washer, Plain, Lower	RF
	-5	Washer, Lock	RF
	-6	Screw, Cap, Upper	RF
	24835	Screw, Cap, Lower	RF

(continued on next page)

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
4-2 (cont'd)-7	640655-28	Controller & Lever Assembly	RF
-8	643951	Fitting, Bottom, Controller To Acc. Case, Return	1
-9	643951	Fitting, Top, Controller To Wastegate	1
-10	537690	Washer	RF
-11	625327-2	Washer, Wave	RF
-12	2500	Pin, Cotter	RF
-13	633381-8	Rod & Link Assembly	RF
-14	626634	Spring	RF
-15	632557	Rod End	RF
-16	MS21044N3	Nut, Self-locking	RF
-17	653333	Gasket, Controller	RF
		ATTACHING PARTS	
-18	AN500A10-12	Screw, Fillister	RF
-19	MS35338-43	Washer, Lock	RF
-20	AN960-10	Washer, Plain	RF
-21	535011	Lockwire	AR

-22	643511-34	Valve, Overboost	RF
-23	MS29513-138	Seal, "O"Ring	RF
		ATTACHING PARTS	
-24	AN960-10	Washer, Plain	RF
-25	MS35338-43	Washer, Lock	RF
-26	AN500A10-12	Screw, Fillister, 10-24	RF
-27	535011	Lockwire	AR

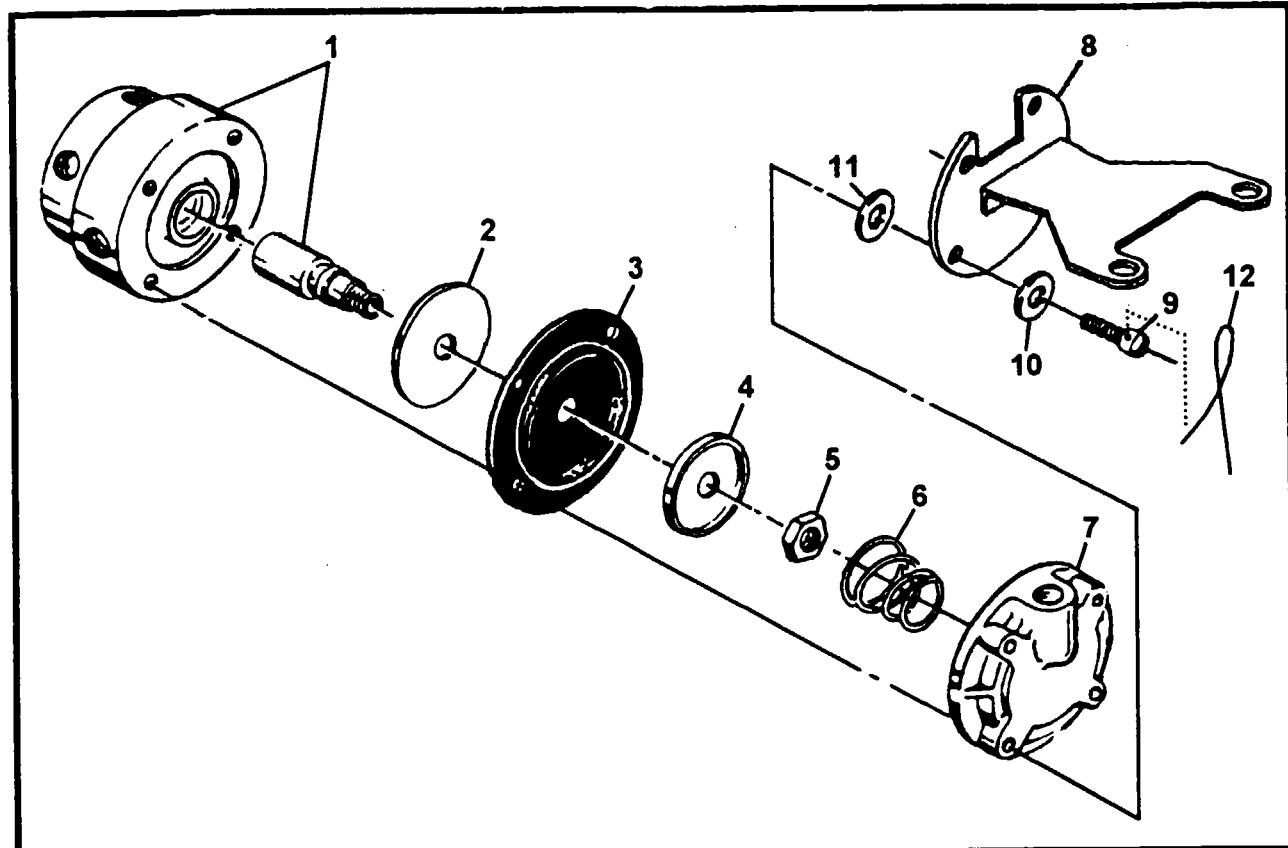


FIGURE 4-3. FUEL MANIFOLD VALVE

FIG. & INDEX	PART NUMBER	1 2 3	DESCRIPTION	QUANTITY
4-3	652432-4A1	① ②	Fuel Manifold Valve Assembly	RF
-1	652431	③	Body, Fuel Manifold Valve	1
-2	627123		Plate	1
-3	626536A2		Diaphragm	1
-4	626556		Plate	1
-5	AN315-4R		Nut	1
-6	627378		Spring	1
-7	634325		Cover	1
-8	654498		Bracket	1
			ATTACHING PARTS	
-9	AN503-8-12		Screw	4
-10	MS35338-42		Washer, Lock	4
-11	AN960-8		Washer	4

-12	535011		Wire, Lock	AR

NOTES:

- ① For complete parts breakdown of manifold valve assemblies see TCM Form X30593A.
- ② Bracket and fittings included.
- ③ 652431 Plunger and body are matched set.

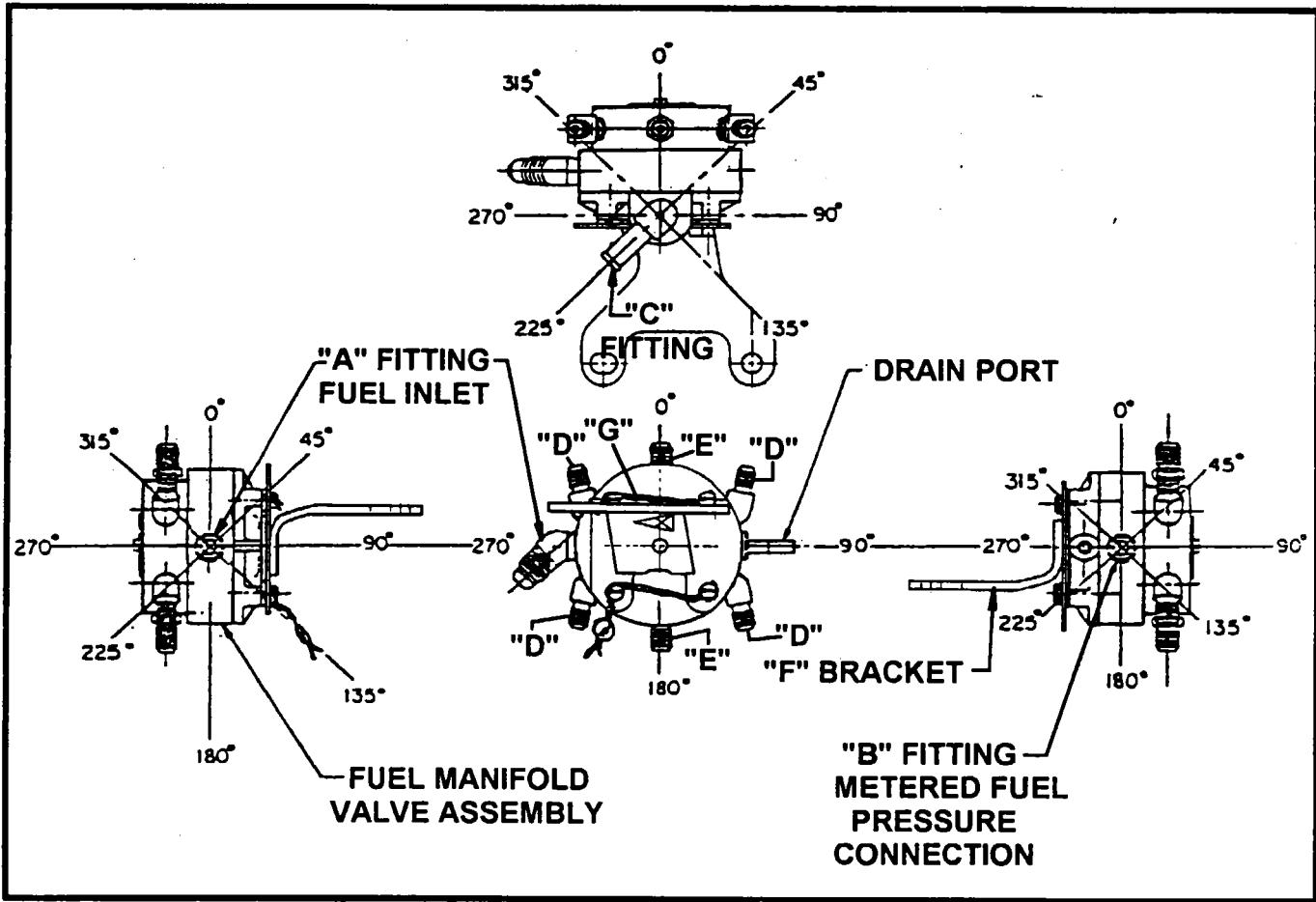


FIGURE 4-4. FUEL MANIFOLD VALVE FITTING LOCATIONS

FIG. & INDEX	PART NUMBER	DESCRIPTION			QUANTITY
		1	2	3	
4-4	-A 628437	Elbow, 90°, Fuel Inlet			1
	-B 2024	Plug, Metered Fuel Pressure			1
	-C AN844-4	Elbow, Drain			1
	-D 627331	Elbow, 45°			4
	-E AN780-2	Nipple			2
	-F 654498	Bracket			RF
	-G 535011	Lockwire			AR

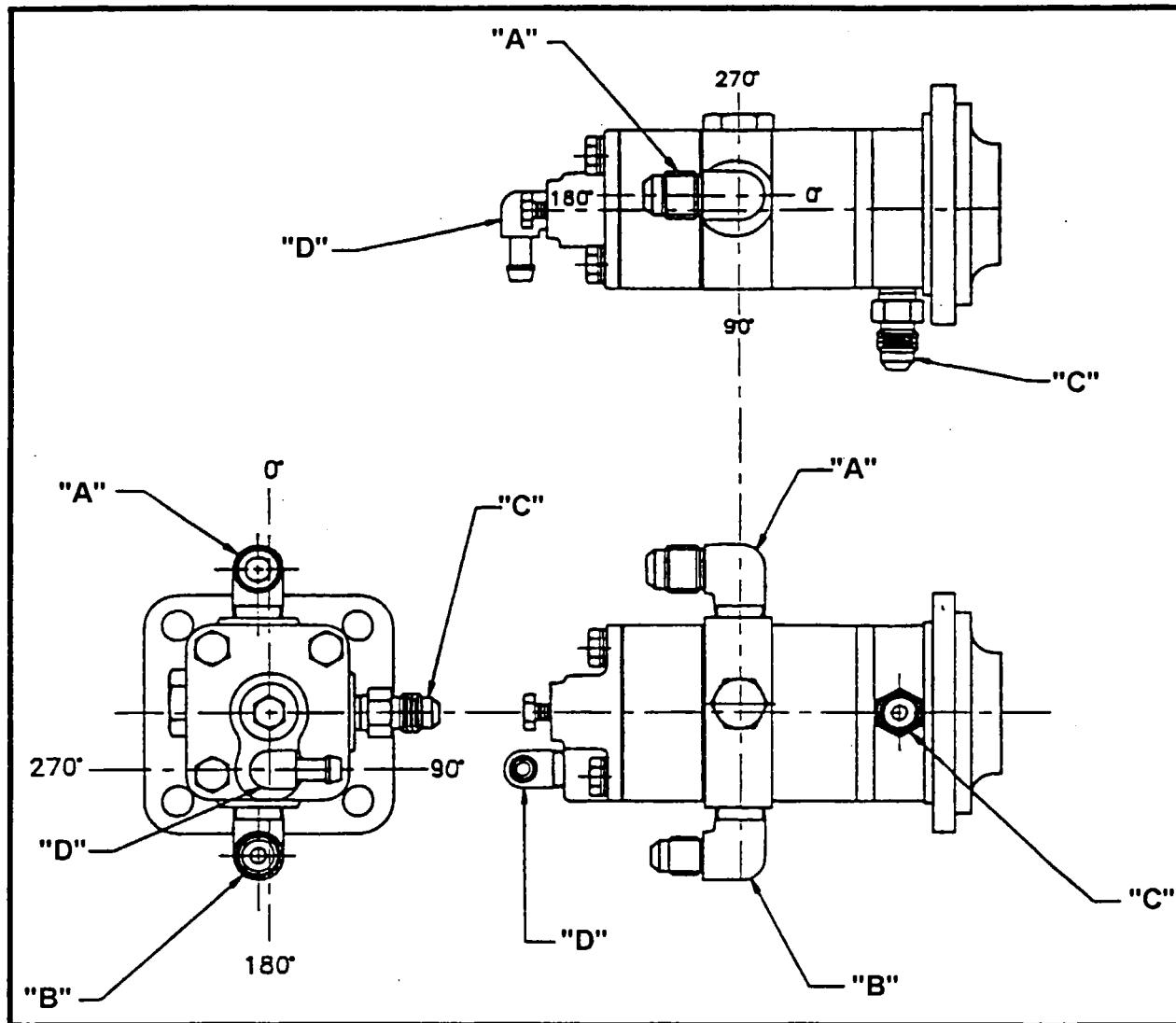


FIGURE 4-6. FUEL PUMP FITTING LOCATIONS

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
4-6	654351-2A1	Fuel Pump & Fittings, TSI0-360-RB Only	RF
	654351-1A1	Fuel Pump & Fittings, LTSI0-360-RB Only	RF
-A	641889	Elbow, 90°, Fuel Inlet	1
-B	636596	Elbow, 90°, Fuel Outlet	1
-C	628436	Fitting, Drain	1
-D	629125	Elbow, Fitting, Air Reference	1

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CHAPTER 5

INDUCTION SYSTEM

FIGURE		PAGE
5-1	Induction System (TSIO-360-RB)	5-2

FIGURE 5-1. INDUCTION ASSEMBLY

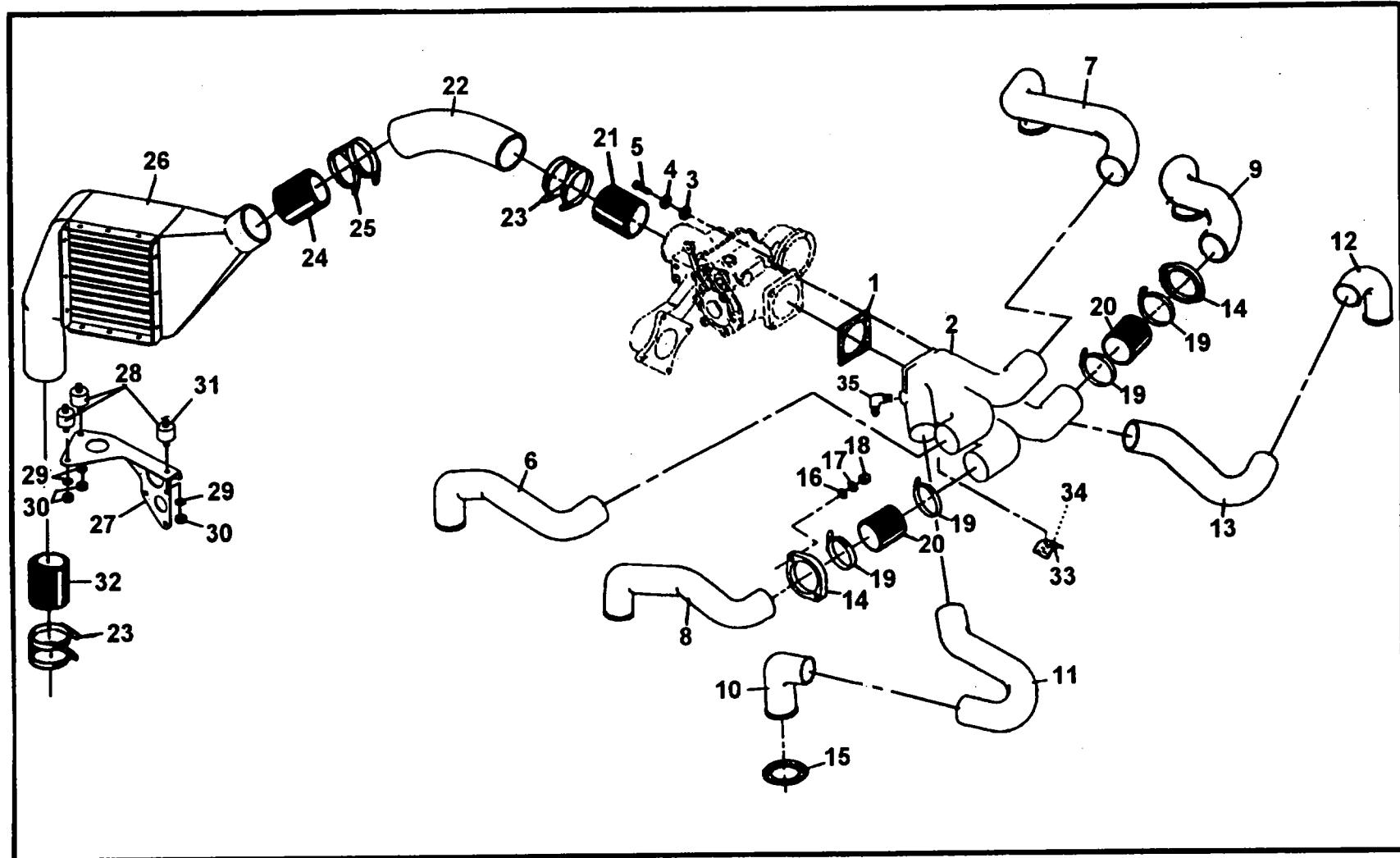


FIG. & INDEX	PART NUMBER		QUANTITY
5-1	-1	654367	\$
	-2	649256-4	
		Gasket, Intake Manifold	1
		Manifold And Fitting Assembly	1
		ATTACHING PARTS	
	-3	AN960-516	Washer, Plain
	-4	MS35338-45	Washer, Lock
	-5	537750	Screw, .31-18
		****	4
	-6	649261	Tube, Induction, Cyl. #1
	-7	649262	Tube, Induction, Cyl. #2
	-8	649263	Tube, Induction, Cyl. #3
	-9	649264	Tube, Induction, Cyl. #4
	-10	654289-1	Tube, Induction, Cyl. #5
	-11	654289-2	Tube, Induction, Cyl. #5
	-12	649266-1	Tube, Induction, Cyl. #6
	-13	649266-2	Tube, Induction, Cyl. #6
	-14	646933	Flange, Induction Tube
	-15	654227	Gasket, Intake Manifold
		ATTACHING PARTS	6
	-16	AN960-516L	Washer, Plain
	-17	MS35338-45	Washer, Lock
	-18	AN315-5R	Nut, Plain, .31-24
		****	12
	-19	AN737TW74	Clamp, 1.75 I.D., Hose
	-20	642917-16	Hose, Intake
	-21	642917-15	Hose, Intake, 2.25 I.D.
	-22	654298	Tube, Induction, Aftercooler
	-23	629163-5	Clamp, Assembly
	-24	642917-6	Hose, Intake, 2.25 I.D.
	-25	629163-7	Clamp, Assembly
	-26	654295	Aftercooler
	-27	654299	Bracket, Aftercooler
	-28	654363	Mount, Vibration Damper
	-29	MS35338-44	Washer, Lock
	-30	23890	Nut, Plain, .25-20
	-31	646941	Sealant, Adhesive
	-32	642917-2	Hose, Aftercooler To Turbo
	-33	646416	Bumper, Rubber
	-34	646439	Adhesive
	-35	649493	Elbow

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CHAPTER 6

AIR CONDITIONING SYSTEM

FIGURE		PAGE
6-1	Compressor Brackets, Starter And Starter Adapter Assembly (TSI0-360-RB)	6-2

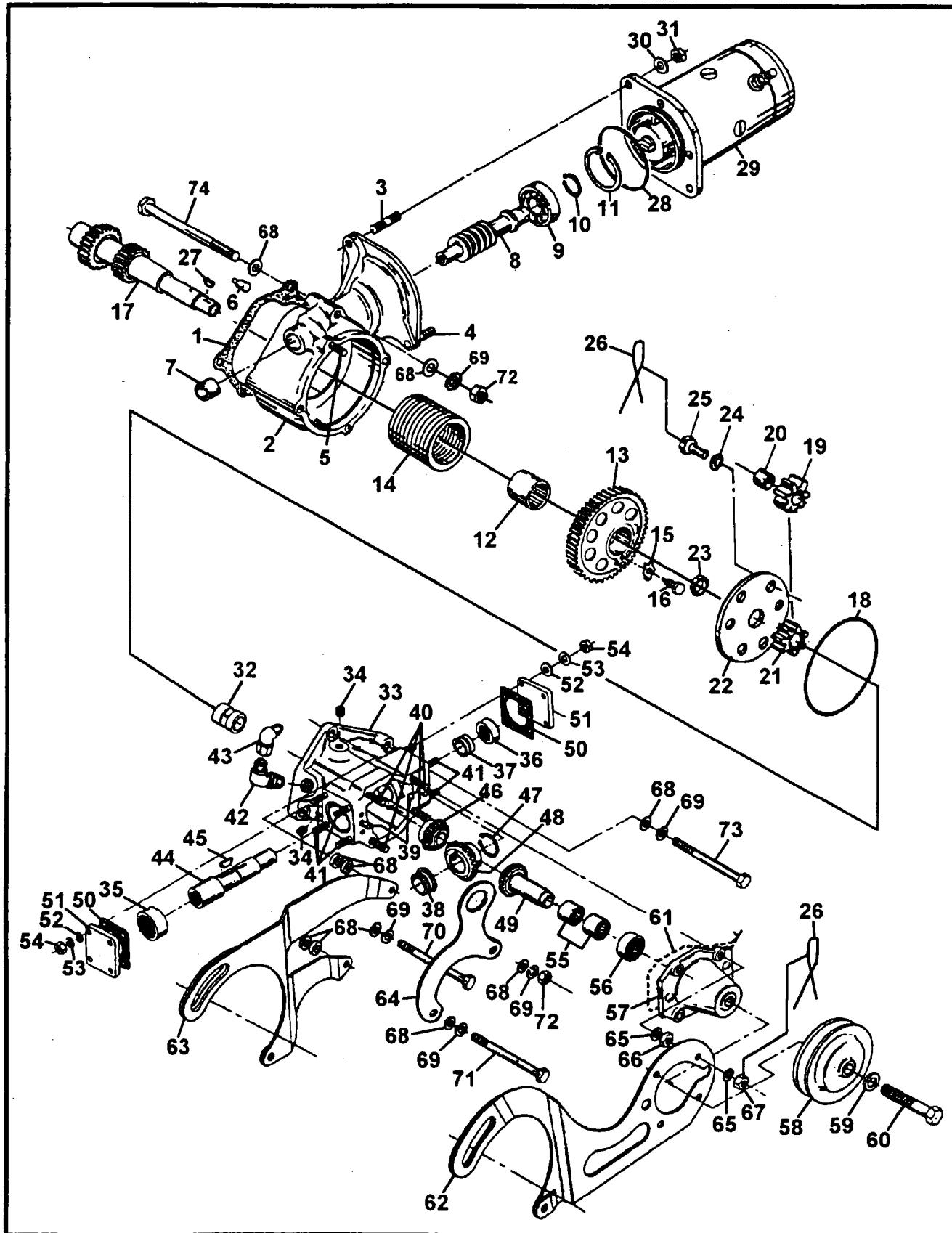


FIGURE 6-1. FREON COMPRESSOR, STARTER AND STARTER
ADAPTER ASSEMBLY (TSI0-360-RB)

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY TSI0-360-RB
6-1	-1	649988 Gasket, Adapter-To-Accessory Case	1
		653074A23 Adapter Assembly, Starter	1
		EQ6939 Compressor Mounting Kit	AR
	-2	653074 Housing Adapter	1
	-3	402127 Stud, 3/8 x 1 17/32 inch long, 1.00 extension	1
	-4	401861 Stud, 3/8 x 1 3/4 inch long, 1.22 extension	1
	-5	401834 Stud, 5/16 x 18, 1.30 extension	1
	-6	627882 Dowel, .51 inch long, .17 extension	1
	-7	641368 Bearing, Needle	1
	-8	643303 Shaft, Starter Worm	1
	-9	X13041 Bearing, Ball	1
	-10	MS16626-3078 Ring, Retaining	1
	-11	502287-3 Ring, Retaining	1
	-12	630680 Bearing, Roller	1
	-13	653696 Gear, Worm Wheel	1
	-14	643109 Spring, Clutch	1
	-15	501867 Washer, Tab	1
	-16	633845 Screw	1
	-17	653709 Shaftgear, Starter	1
	-18	AN123902 O-Ring	1
	-19	633630 Gear, Scavenge Pump	1
	-20	633632 Bushing, Gear	1
	-21	633629 Gear, Scavenge Pump	1
	-22	654814 Cover Scavenge Pump	1
	-23	633609-7 Bearing Needle	1
	-24	20522 Washer	6
	-25	22537 Screw	6
	-26	535011 Lockwire	AR
	-27	633342-6 Key, Woodruff	1
	-28	MS9021-038 O-Ring	1
	-29	646275-1 Motor Starter	1
	-30	539058 Washer	2
	-31	2441 Nut	2
	-32	633687 Bushing	1
		640756A7 Adapter, Scavenge pump and Accessory Drive	1
	-33	640756 Adapter Housing Assembly	1
	-34	402941 Plug	2
	-35	642910 Seal, Oil	1
	-36	25102 Seal, Oil	1
	-37	632409 Bushing	1
	-38	642912 Bushing	1
	-39	630773 Dowel	2
	-40	401843 Stud	4
	-41	401870 Stud	8
	-42	643951 Elbow, 90°	1
	-43	MS51522B6 Elbow, 45°	1
	-44	642930 Shaft, Gear	1
	-45	MS20066-98 Key, Square	1
	-46	640684 Gear, Bevel	1

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY TS10-360-RB
6-1	-47	522247-3	
	-48	640802	1
	-49	640809	1
	-50	653487	2
	-51	640380	2
	-52	20522	8
	-53	MS35338-44	8
	-54	AN315-4R	8
	-55	633609-9	2
	-56	534938	1
	-57	640815	1
	-58	641893	1
	-59	20202	1
	-60	640816	1
	-61	641543	AR
	-62	642290	1
	-63	653328	1
	-64	654374	1
	-65	AN960PD416L	8
	-66	AN315-4R	4
	-67	MS9882-10	4
	-68	AN960-516	10
	-69	MS35338-45	7
	-70	MS20074-05-37	1
	-71	630966-5.75	1
	-72	AN315-5R	2
	-73	627433	1
	-74	628056	1

CHAPTER 7

ELECTRICAL CHARGING SYSTEM

FIGURE		PAGE
7-1	Alternator Assembly	7-2

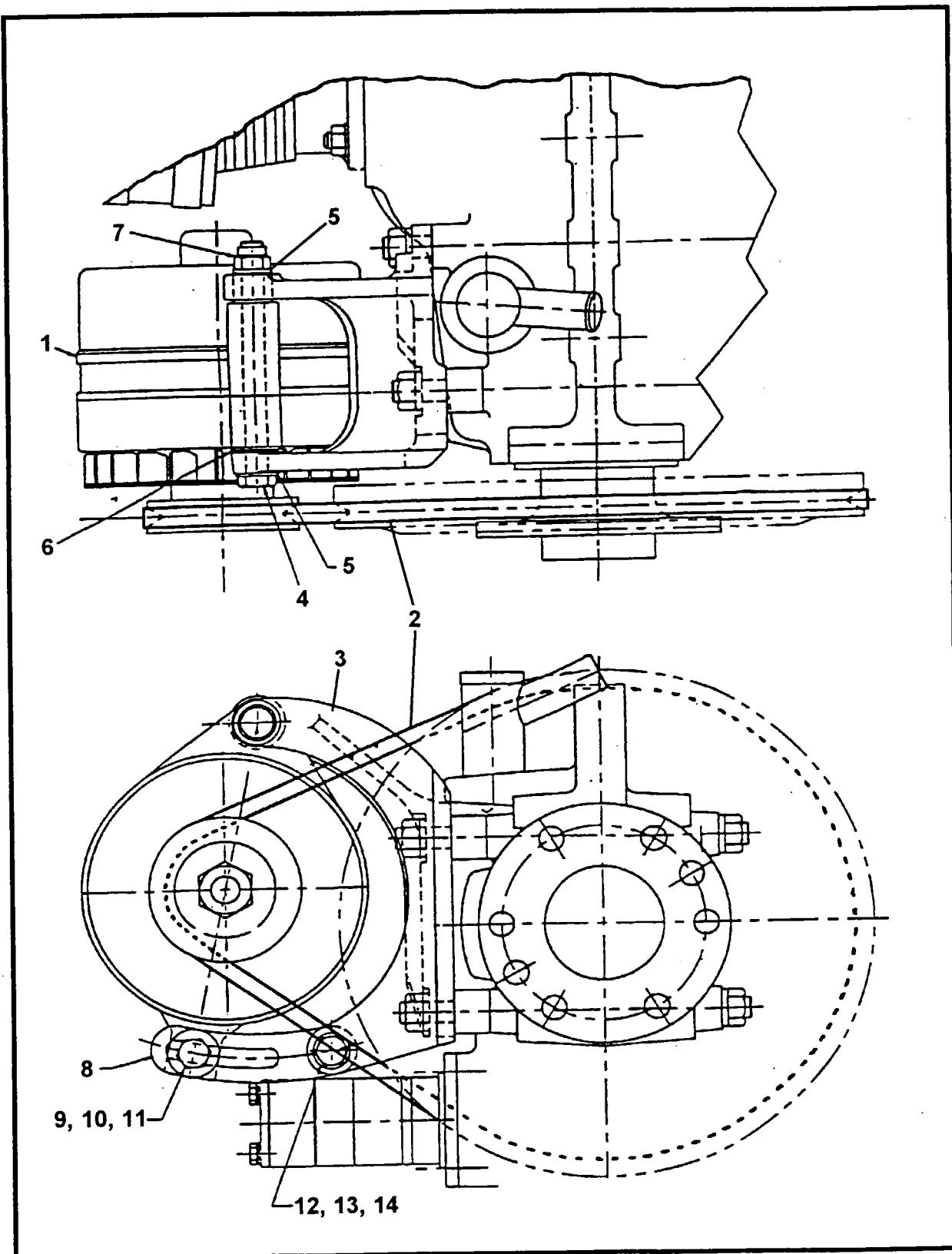


FIGURE 7-1. ALTERNATOR ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION			QUANTITY
		1	2	3	
7-1	- 1	654200	Alternator		1
	-2	654517-1	Belt, Alternator Drive- 38.00		1
	-3	654358	Bracket, Alternator Mount		1
	-4	AN7-46A	Bolt		1
	-5	AN960-716	Washer		2
	-6	AN960-716L	Shim		2
	-7	MS21045-7	Nut		1
	-8	654288	Bracket, Alternator Adjusting		1
	-9	MS35338-46	Washer, Lock		1
	-10	649288	Washer		1
	-11	MS20074-06-07	Bolt		1
	-12	AN960-616	Washer		1
	-13	MS21044N6	Nut		1
	-14	MS90726-61	Bolt		1

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CHAPTER 8

STARTING SYSTEM

FIGURE		PAGE
8-1	Optional Starter Adapter Assembly (TSI0-360-RB)	8-2
8-2	Starter Adapter Assembly (LTSI0-360-RB)	8-4

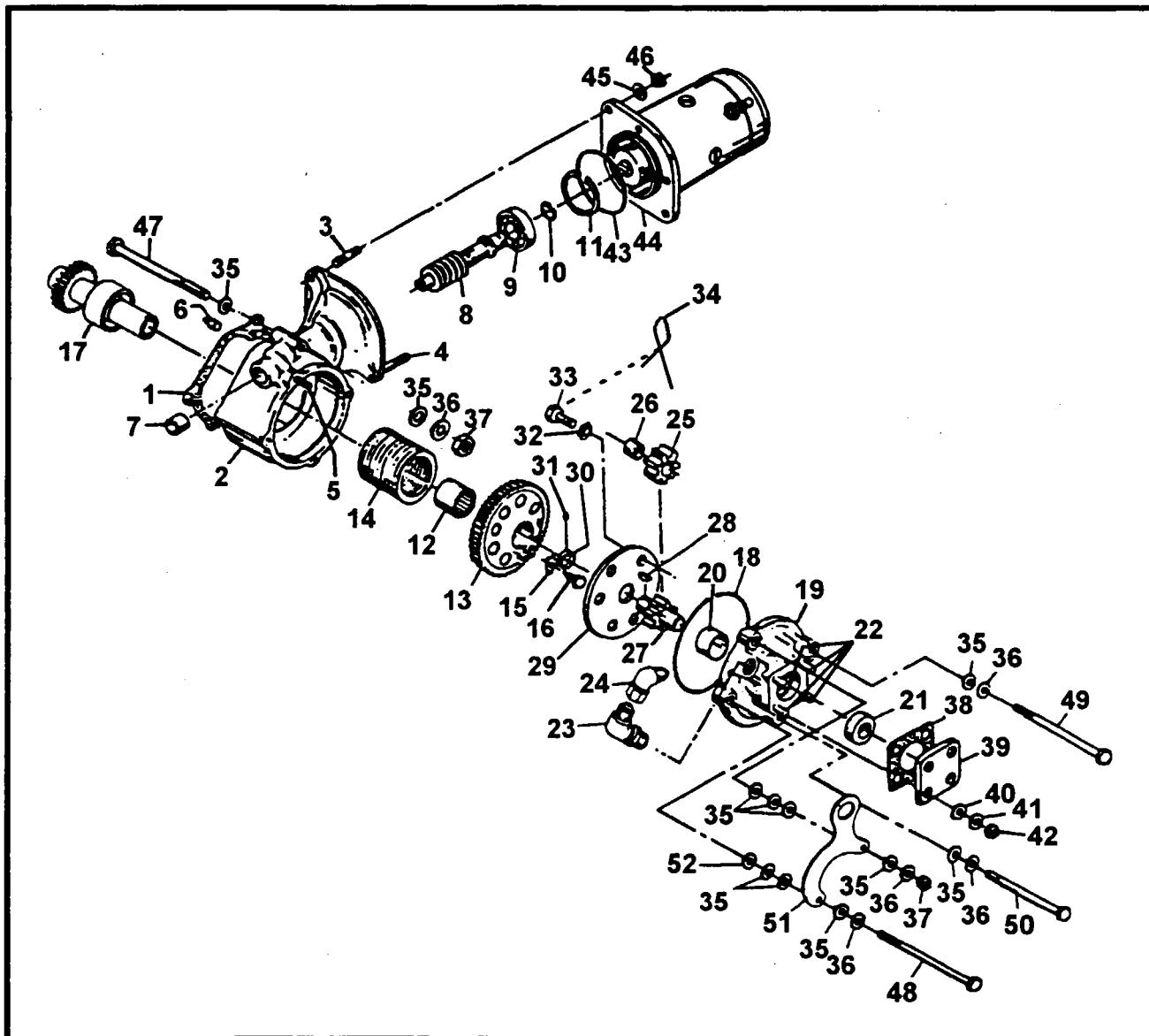


FIGURE 8-1. OPTIONAL STARTER ADAPTER ASSEMBLY (TSI0-360-RB)

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY TSI0-360-RB
8-1	-1	649988 Gasket, Adapter-To-Accessory Case	1
		653074A13 Adapter Assembly, Starter	1
-2	653074	Housing Adapter	1
-3	402127	Stud, 3/8 x 1 17/32 inch long, 1.00 extension	1
-4	401861	Stud, 3/8 x 1 3/4 inch long, 1.22	1

NOTE...See Figure 6-1. For TSI0-360-RB standard equipment starter adapter.

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY TSI0-360-RB
-5	401834	Stud, 5/16 x 18, 1.30	1
-6	627882	Dowel, .51 inch long, .17 extension	1
-7	641368	Bearing, needle	1
-8	643303	Shaft, Starter Worm	1
-9	X13041	Bearing, Ball	1
-10	MS16626-3078	Ring, Retaining	1
-11	502287-3	Ring, Retaining	1
-12	630680	Bearing, Roller	1
-13	653696	Gear, Worm Wheel	1
-14	643109	Spring, Clutch	1
-15	501867	Washer, Tab	1
-16	633845	Screw	1
-17	653698	Shaftgear, Starter	1
-18	AN123902	O-Ring	1
-19	649321	Body, Scavenge Pump	1
-20	632409	Bushing	1
-21	25102	Seal, Oil	1
-22	401801	Stud 1/4 - 20 x 1.12, .62 extension	4
-23	643951	Elbow, 90°	1
-24	MS51522B6	Elbow, 45°	1
-25	633630	Gear, Scavenge Pump	1
-26	633632	Bushing Gear	1
-27	633637	Gear, Scavenge Pump	1
-28	633342	Key, Woodruff	1
-29	633848	Cover, Scavenge Pump	1
-30	633856	Bushing	1
-31	635768	Pin Dowel	1
-32	20522	Washer	6
-33	22537	Screw	6
-34	535011	Lockwire, Scavenge Pump Cover Screws	AR
-35	AN960-516	Washer, Plain	12
-36	MS35338-45	Washer, Lock	5
-37	AN315-5R	Nut	2
-38	653487	Gasket, Cover	1
-39	640380	Cover, Accessory Drive	1
-40	20522	Washer, Plain	4
-41	MS35338-44	Washer, Lock	4
-42	AN315-4R	Nut, Plain	4
-43	MS9021-038	O-Ring	1
-44	646275-1	Motor, Starter, 24V	1
-45	539058	Washer	2
-46	2441	Nut	2
-47	628056	Bolt, 5/16 x 5 13/32 inch long	1
-48	632938	Bolt	1
-49	627433	Bolt	1
-50	538999	Bolt	1
-51	654374	Eye, Engine Lifting, Rear	1
-52	22535	Spacer	1

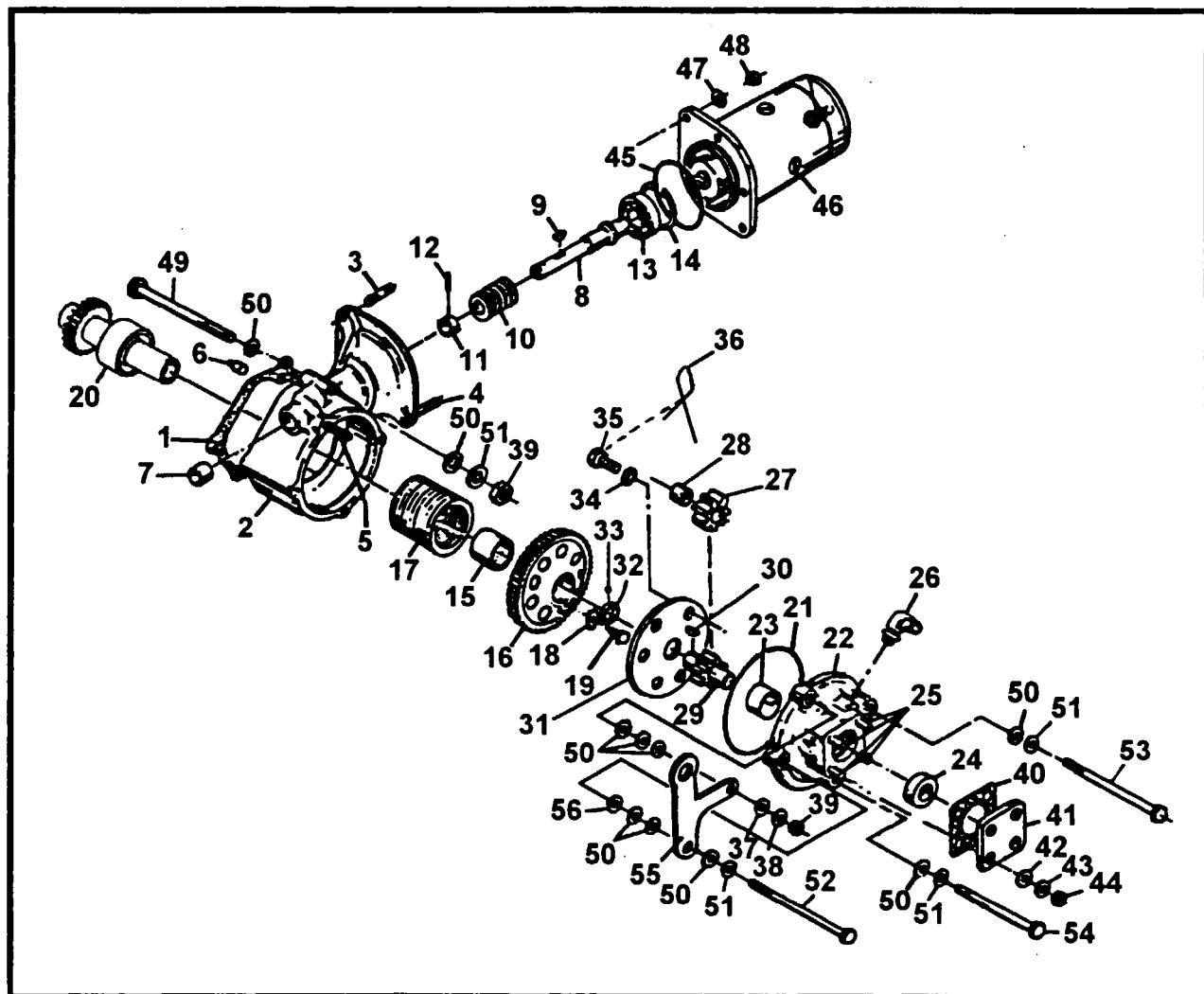


FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY LTSI0360
8-2	-10	539793 Gear, Starter Worm	1
	-11	628149 Bushing, Gear	1
	-12	528155-1 Pin	1
	-13	X13041 Bearing, Ball	1
	-14	502287-3 Ring, Retaining	1
	-15	630680 Bearing, Roller	1
	-16	653708 Gear, Worm Wheel	1
	-17	643110 Spring, Clutch	1
	-18	501867 Washer, Tab	1
	-19	633845 Screw	1
	-20	653698 Shaftgear, Starter	1
	-21	AN123902 O-Ring	1
	-22	641103 Body, Scavenge Pump	1
	-23	632409 Bushing	1
	-24	25102 Seal, Oil	1
	-25	401870 Stud, 1/4 20 x 1.12, .62 extension	4
	-26	643951 Elbow	1
	-27	633630 Gear, Scavenge Pump	1
	-28	633632 Bushing, Gear	1
	-29	633637 Gear, Scavenge Pump	1
	-30	633342 Key, Woodruff	1
	-31	641078 Cover, Scavenge Pump	1
	-32	633856 Bushing Cover	1
	-33	635768 Pin, Dowel	1
	-34	20522 Washer	6
	-35	22537 Screw	6
	-36	535011 Lockwire	AR
	-37	AN960-516 Washer, Plain	1
	-38	MS35338-45 Washer, Lock	1
	-39	AN315-5R Nut	1
	-40	653487 Gasket, Accessory Drive	1
	-41	640380 Cover	1
	-42	20522 Washer, Plain	4
	-43	MS35338-44 Washer, Lock	4
	-44	AN315-4R Nut, Plain	4
	-45	MS9021-038 O-Ring	1
	-46	646275-1 Motor, Starter, 24 Volt	1
	-47	539058 Washer	2
	-48	2441 Nut	2
	-49	628056 Bolt, 5/16 x 5 13/32 inch long	1
	-50	AN960-516 Washer, Plain	11
	-51	MS35338-45 Washer, Lock	4
	-52	630966-5.75 Bolt	1
	53	627433 Bolt	1
	-54	538999 Bolt	1
	-55	646938 Eye, Engine Lifting, Rear	1
	-56	22535 Spacer	1

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CHAPTER 9

ACCESSORY CASE

FIGURE		PAGE
9-1	Accessory Case Studding Assembly	9-2
9-2	Accessory Case Attaching Parts (TSI0-360-RB)	9-4
9-3	Accessory Case Attaching Parts (LTSI0-360-RB)	9-6

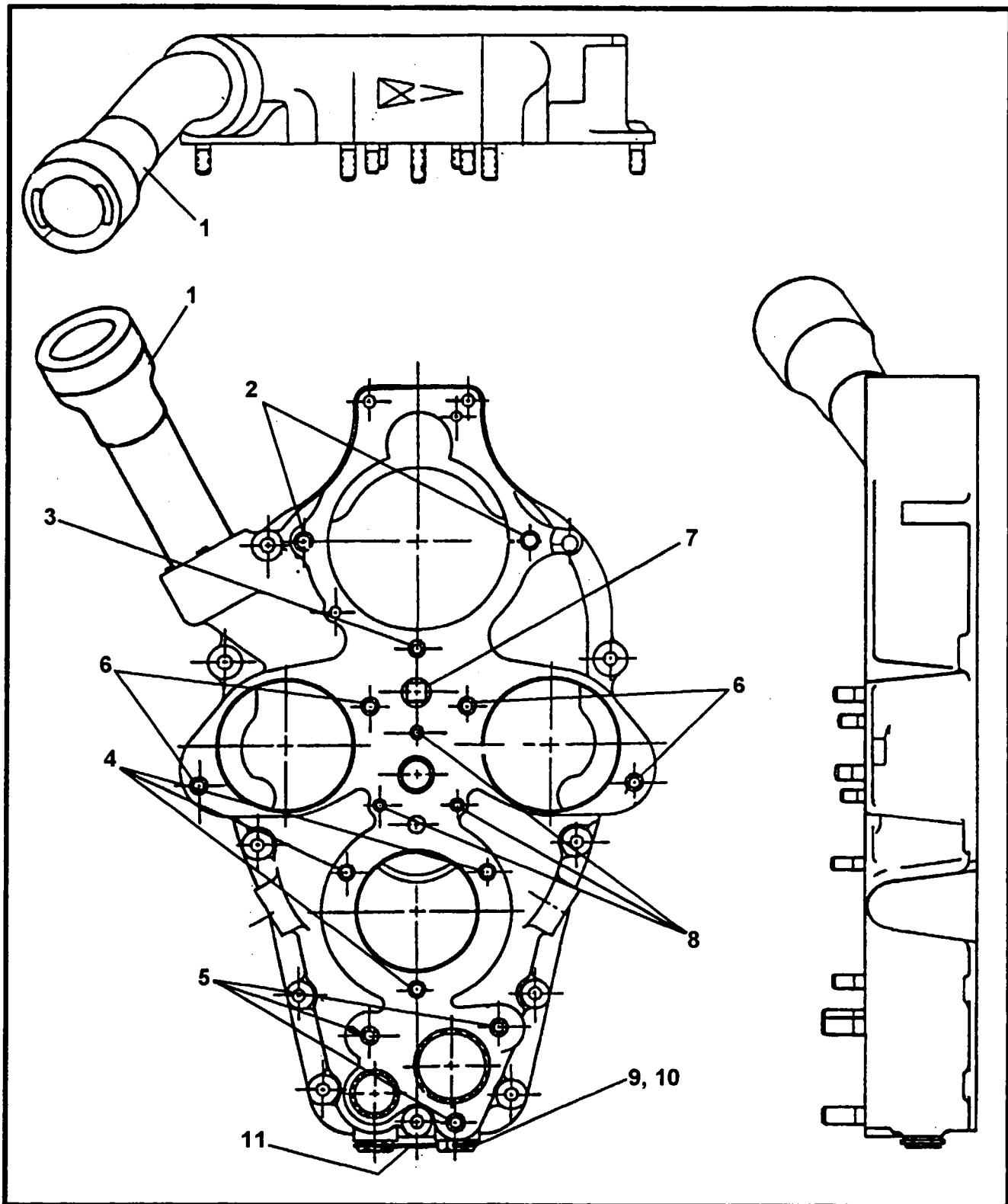


FIGURE 9-1. ACCESSORY CASE STUDDING ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3	DESCRIPTION	QUANTITY	
				TSI0-360-RB	LTSI0-360-RB
9-1	642634-2A1		Accessory Case, Stud Assembly	1	
	643829A24		Accessory Case, Stud Assembly		1
-1	642625		Neck Assembly, Oil Filter	1	1
-2	MS122162		Helical Coil, .3152-18	2	2
-3	MS122122		Helical Coil, .3125-18 .04-.08 Below Flange	1	1
-4	402044		Stud, .3125-24, .81 extension	3	3
-5	401971		Stud, .3125-24, 1.00 extension	3	3
-6	401885		Stud, .3125-24, .70 extension	4	4
-7	629518-3		Plug	1	1
-8	AN125970		Stud, .250-28, .59 extension	3	3
-9	532432		Plug	2	2
-10	MS35769-11		Gasket, Plug	2	2
-11	535011		Lockwire	AR	AR

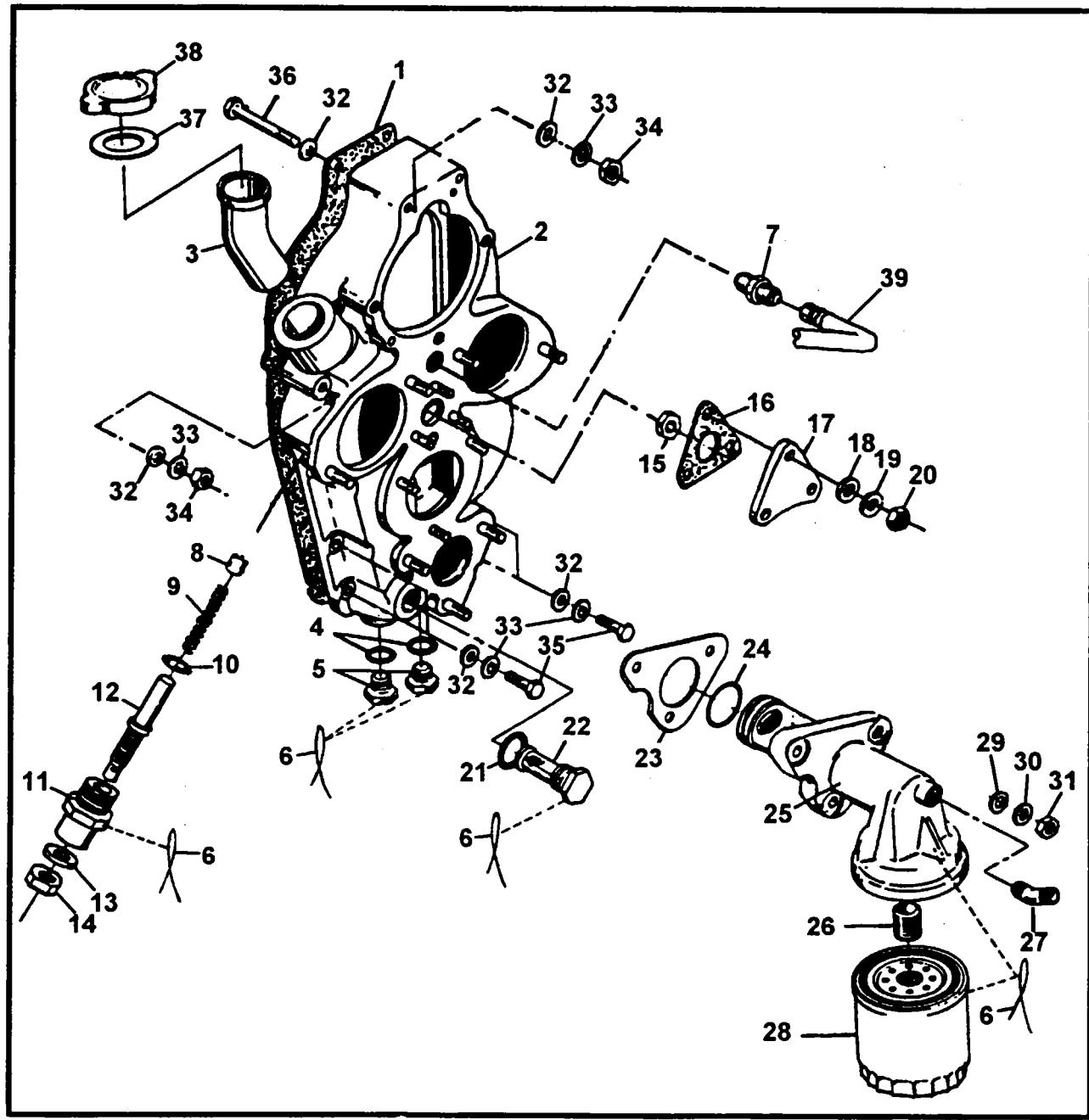


FIGURE 9-2. ACCESSORY CASE ATTACHING PARTS (TSI0-360-RB)

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY TSI0-360-RB
9-2	-1	653418 Gasket, Crankcase Cover	1
	-2	642634-2A2 Accessory Case Assembly	1
	-3	642635 Tube, Oil Filler Neck	1
	-4	MS35769-11 Gasket, Plug	2
	-5	532432 Plug	2
	-6	535011 Lockwire	AR
	-7	MS51500B6-6 Fitting, Straight	1
	-8	631687 Plunger, Oil Pressure Relief Valve	1
	-9	627458 Spring	1
	-10	MS35769-18 Gasket	1
	-11	641074 Cap	1
	-12	649215 Screw, Adjusting	1
	-13	X1473 Washer	1
	-14	632762 Nut	1
	-15	AN315C6R Nut (R/H)	1
	-16	649980 Gasket, Cover	1
	-17	632475 Cover	1
	-18	AN960-416L Washer	3
	-19	MS35338-44 Washer, Lock	3
	-20	AN315-4R Nut	3
	-21	MS35769-21 Gasket, Screen	1
	-22	653658 Screen, Scavenge Oil	1
	-23	653748 Gasket, Oil Filter Adapter	1
	-24	MS9021-028 O-Ring	1
	-25	653539-1 Adapter, Oil Filter	1
	-26	653489 Stud	1
	-27	649242 Fitting, Orifice	1
	-28	649922 Filter Assembly, Oil	1
	-29	AN960-516 Washer, Plain	3
	-30	MS35338-45 Washer, Lock	3
	-31	AN315-5R Nut	3
	-32	AN960-516 Washer, Plain	12
	-33	MS35338-45 Washer, Lock	12
	-34	AN315-5R Nut	7
	-35	537961 Screw	4
	-36	AN5-32A Bolt	1
	-37	642892 Gasket, Oil Filler Cap	1
	-38	654715 Cap, Oil Filler	1
	-39	646644S6S13.50 Hose, Controller to Accessory Case	RF

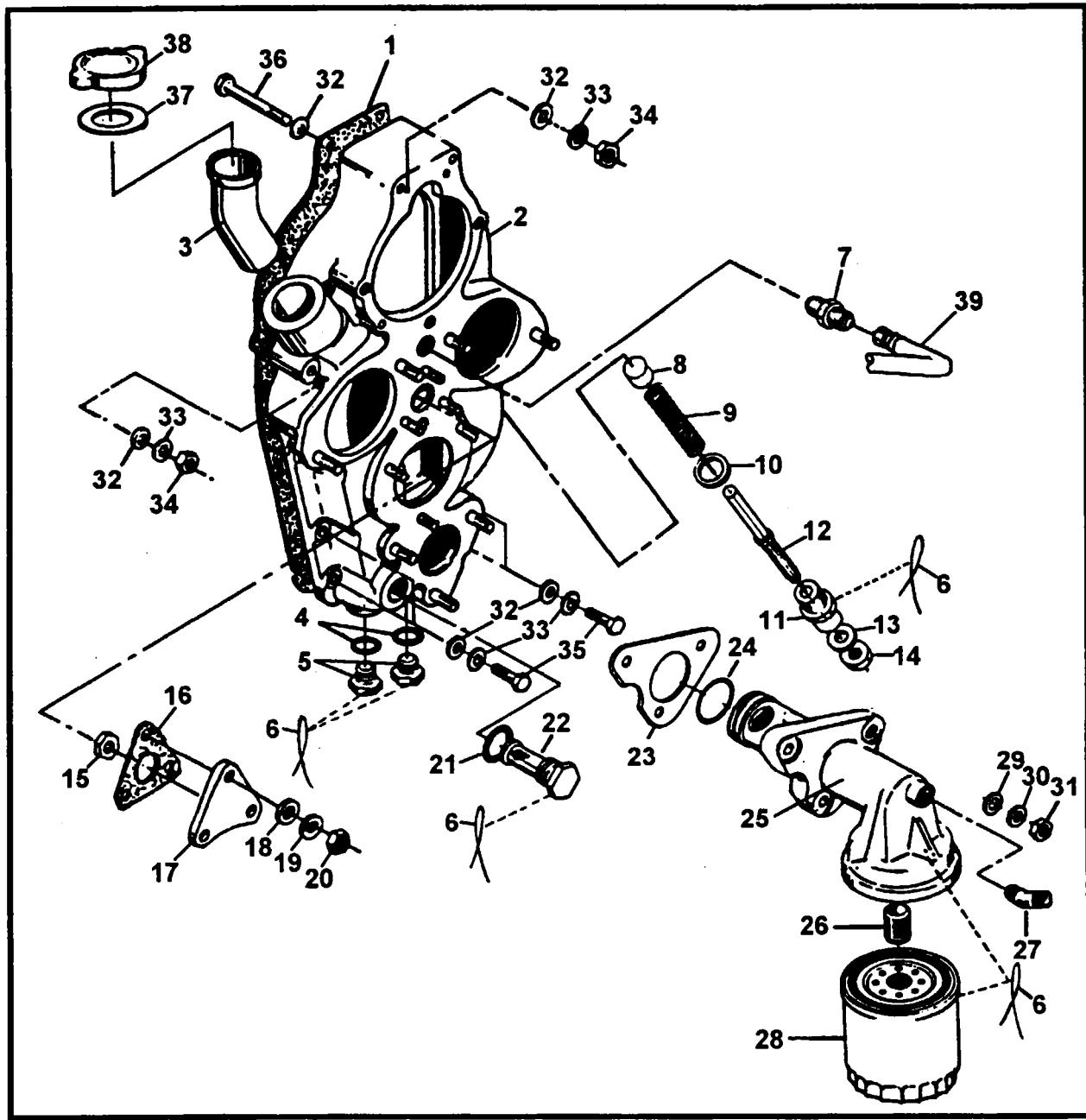


FIGURE 9-3. ACCESSORY CASE ATTACHING PARTS (LTSI0-360-RB)

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION			QUANTITY LTSI0-360-RB
		1	2	3	
9-3	-1	653418	Gasket, Crankcase Cover		1
	-2	643829A25	Accessory Case Assembly		1
	-3	642635	Tube, Oil Filler Neck		1
	-4	MS35769-11	Gasket, Plug		2
	-5	532432	Plug		2
	-6	535011	Lockwire		AR
	-7	MS51500B6-6	Fitting, Straight		1
	-8	631687	Plunger, Oil Pressure Relief Valve		1
	-9	627458	Spring		1
	-10	MS35769-18	Gasket		1
	-11	641074	Cap		1
	-12	649215	Screw, Adjusting		1
	-13	X1473	Washer		1
	-14	632762	Nut		1
	-15	AN315C6L	Nut (R/H)		1
	-16	649980	Gasket, Cover		1
	-17	632475	Cover		1
	-18	AN960-416L	Washer		3
	-19	MS35338-44	Washer, Lock		3
	-20	AN315-4R	Nut		3
	-21	MS35769-21	Gasket, Screen		1
	-22	653658	Screen, Scavenge Oil		1
	-23	653748	Gasket, Oil Filter Adapter		1
	-24	MS9021-028	O-Ring		1
	-25	653539-1	Adapter, Oil Filter		1
	-26	653489	Stud		1
	-27	649242	Fitting, Orifice		1
	-28	649922	Filter Assembly, Oil		1
	-29	AN960-516	Washer, Plain		3
	-30	MS35338-45	Washer, Lock		3
	-31	AN315-5R	Nut		3
	-32	AN960-516	Washer, Plain		12
	-33	MS35338-45	Washer, Lock		12
	-34	AN315-5R	Nut		7
	-35	537961	Screw		4
	-36	AN5-32A	Bolt		1
	-37	642892	Gasket, Oil Filler Cap		1
	-38	654715	Cap, Oil Filler		1
	-39	646644S6S13.50	Hose, Controller to Accessory Case		RF

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CHAPTER 10

LUBRICATION SYSTEM

FIGURE		PAGE
10-1	Oil Pump Assembly	10-2
10-2	Oil Cooler Assembly	10-3
10-3	Oil Sump Assembly	10-4

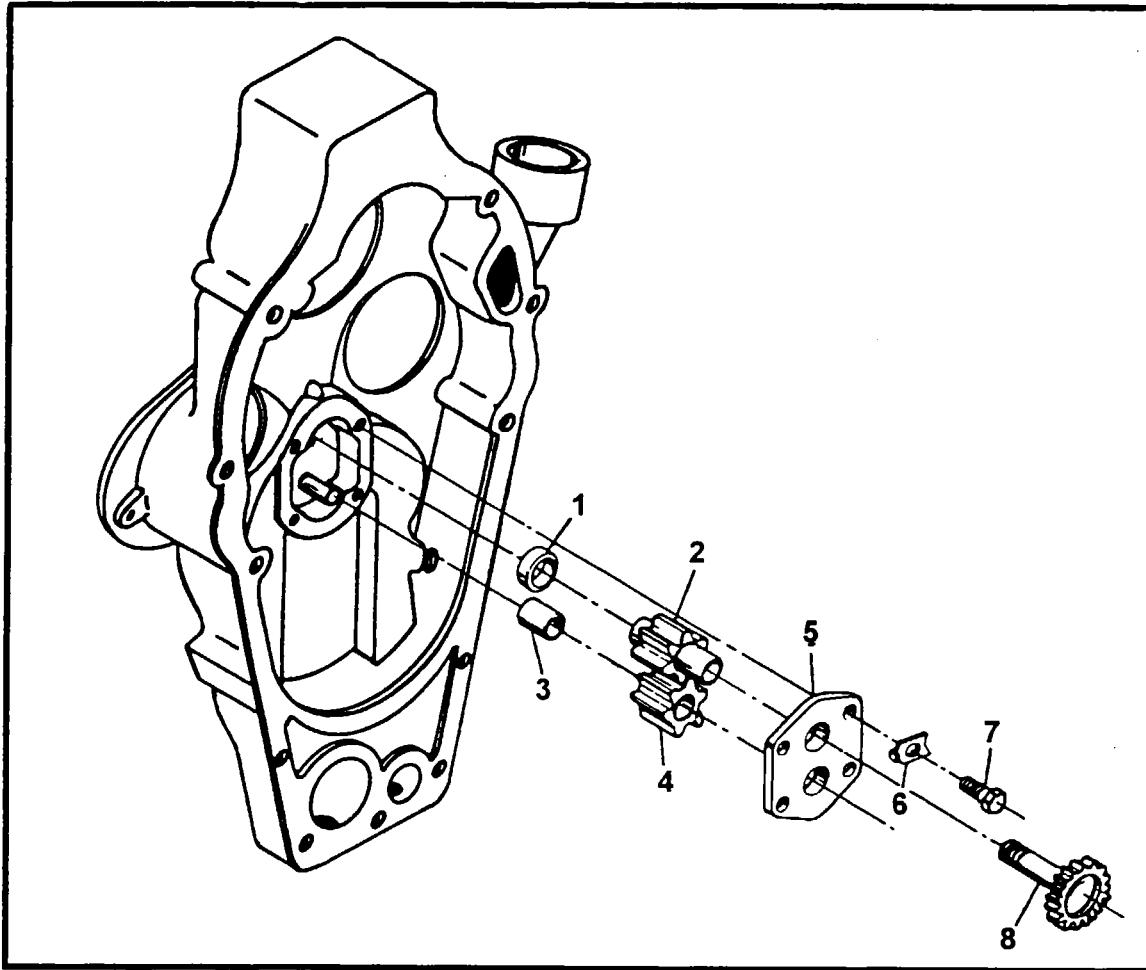


FIGURE 10-1. OIL PUMP ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY	
			TSI0-360-RB	LTSI0-360-RB
10-1	-1	Bushing, Split .72 I.D.	1	1
	-2	Gear, Oil Pump	1	1
	-3	Bushing	1	1
	-4	Gear, Oil Pump Driven	1	1
	-5	Cover, Oil Pump	1	1
	-6	36025 ①	Washer, Tab Lock	4
	-7	626487	Bolt, Oil Pump Cover	4
	-8	654210	Gear, Oil Pump Drive (R/H)	1
	-8	654210-1	Gear, Oil Pump Drive (L/H)	1

① Trim bent end to insure running clearance.

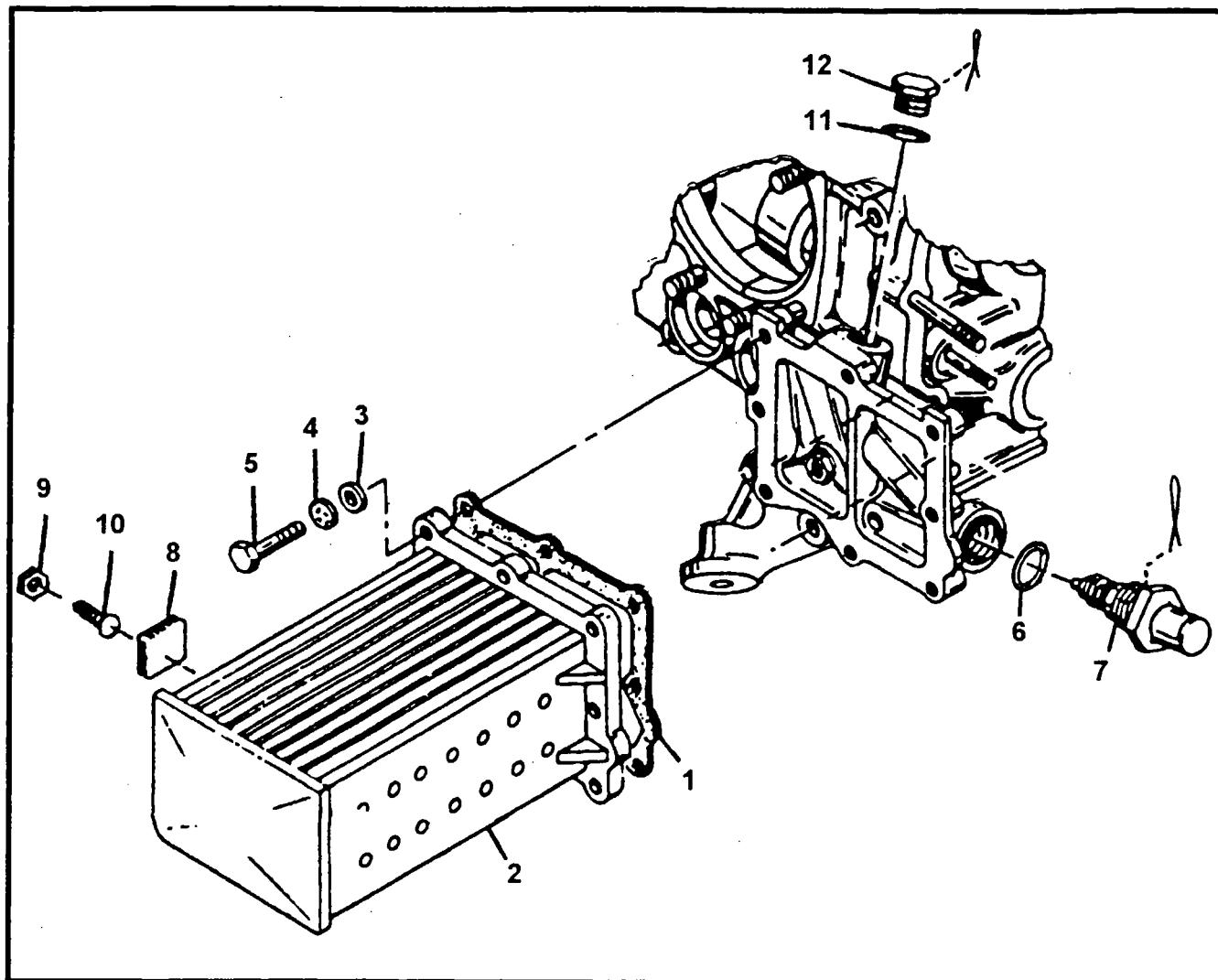


FIGURE 10-2. OIL COOLER ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
10-2	-1	654117 Gasket, Oil Cooler	1
	-2	646880 Cooler Assembly, Oil	1
		ATTACHING PARTS	
	-3	AN960-416L Washer, Plain	8
	-4	MS35338-44 Washer, Lock	8
	-5	24835 Screw .25-20	8

	-6	627496 Gasket, Vernatherm	1
	-7	639305 Vernatherm (Oil Temperature Control Valve)	1
	-8	632983 Shoe, Oil Cooler Bracket	1
	-9	13XX18001 Nut, Hex	1
	-10	632987-1.12 Screw .31-18, Install In Cyl. #2 Rocker Cover	1
	-11	MS35769-11 Gasket, Copper	RF
	-12	532432 Plug	RF

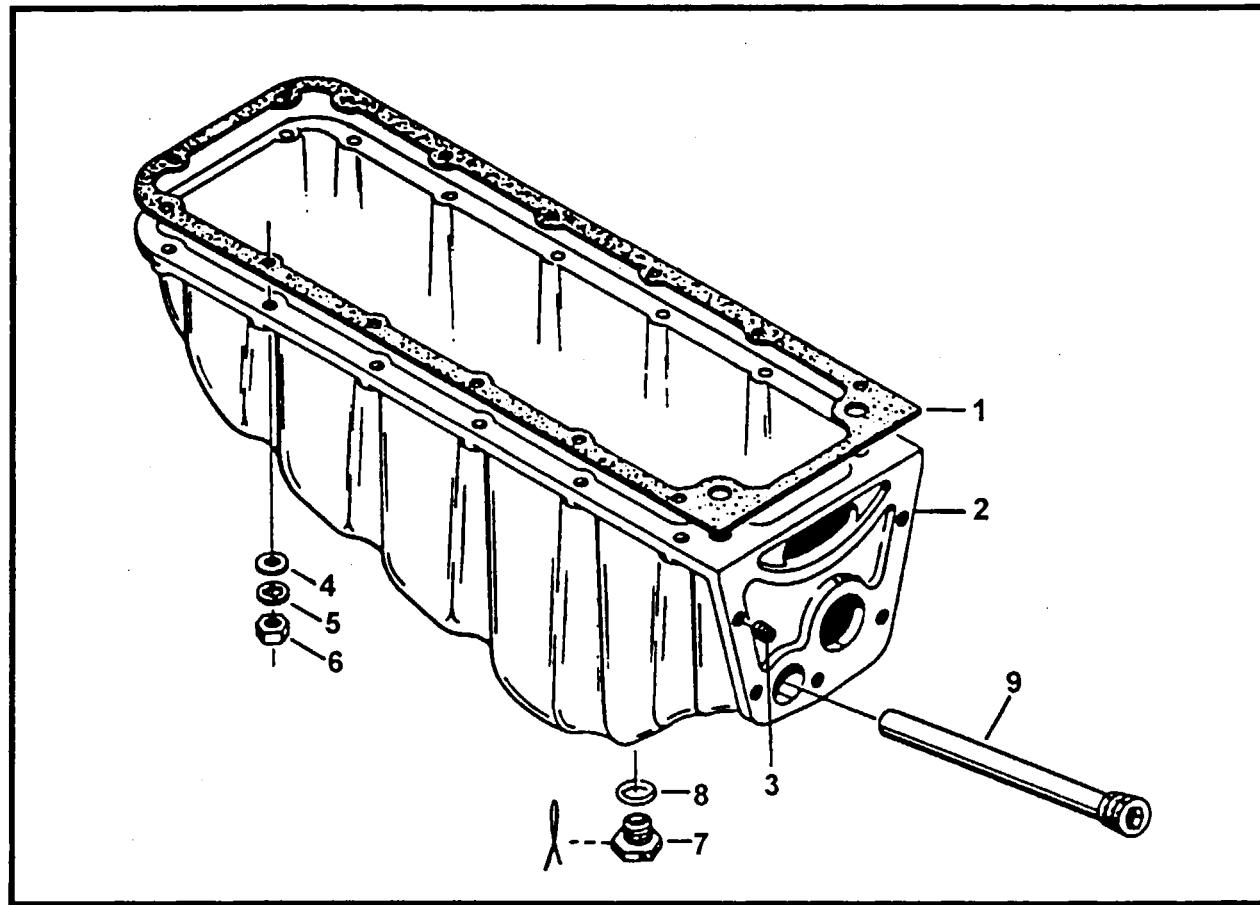


FIGURE 10-3. OIL SUMP ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
10-3	-1	649972 Gasket, Oil Sump	1
	-2	629571A1 Sump, Oil	1
	-3	MS122122 Helical Coil	5
	-4	20522 Washer	14
	-5	MS35338-44 Washer, Lock	14
	-6	AN315-5R Nut, Plain	14
	-7	636376 Plug, Magnetic, Drain	1
	-8	MS35769-11 Gasket, Plug	1
	-9	626264 Tube, Oil Suction	1

CHAPTER 11

CYLINDERS AND PISTONS

FIGURE		PAGE
11-1	Baffle Assembly	11-2
11-2	Cylinder Assembly	11-4
11-3	Piston And Rings	11-7

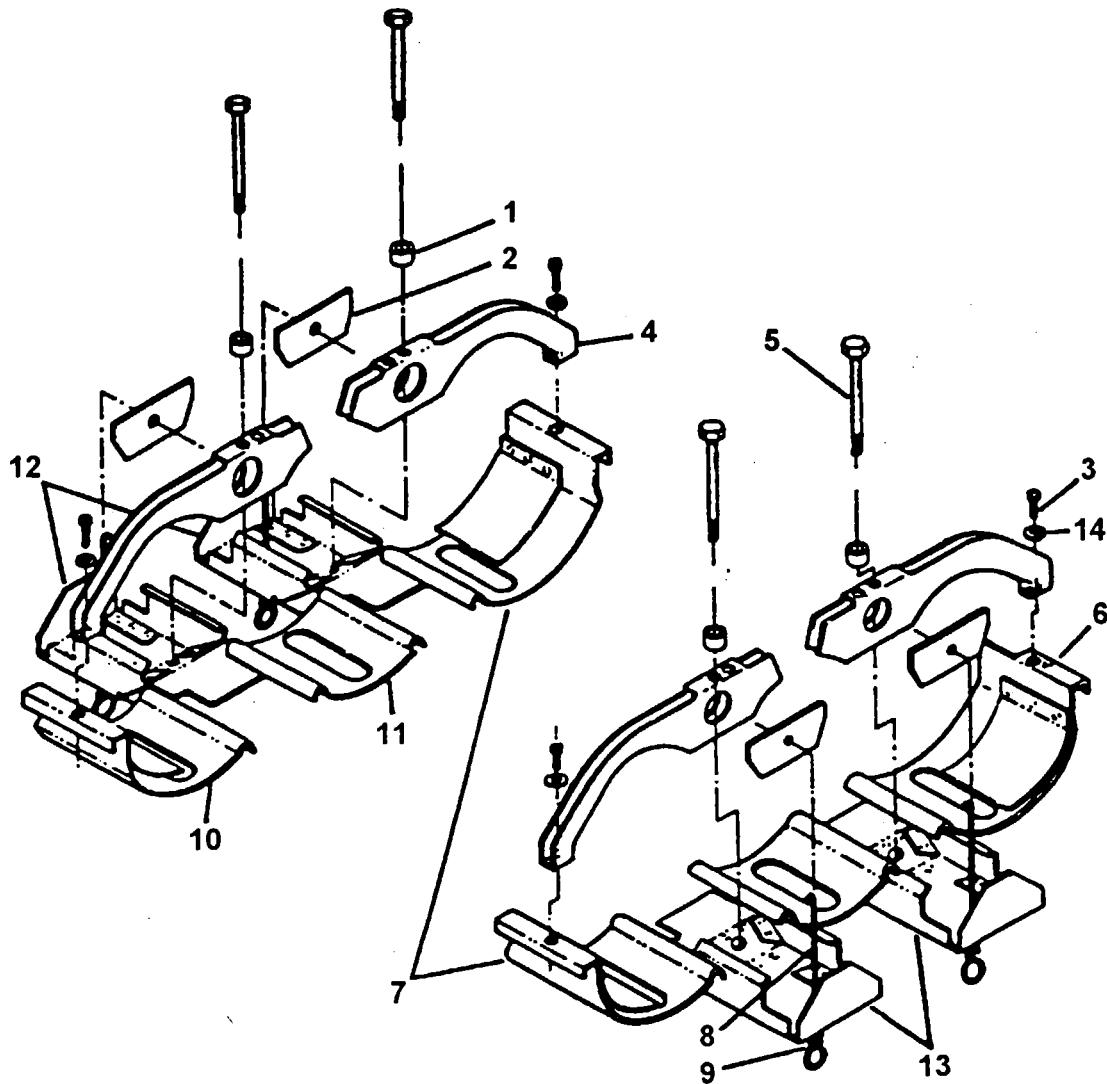


FIGURE 11-1. BAFFLE ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION			QUANTITY
		1	2	3	
11-1	-1	646812	Spacer		4
	-2	641166	Support, Baffle, Outer		4
	-3	MS35207-263	Screw		4
	-4	641341	Support, Baffle Inner		4
	-5	AN3-75A	Bolt, No. 10-32 x 7-13/16 Lg.		4
	-6	649037	Baffle Assy., No. 2 Cyl.		1
	-7	649035	Baffle Assy., No. 1 & 6 Cyl.		2
	-8	641346	Baffle Fastener		4
	-9	641347	Spring, Compression		4
	-10	649036	Baffle Assy., No. 5 Cyl.		1
	-11	649034	Baffle Assy., No. 3 & 5 Cyl.		2
	-12	641330	Baffle Assy., Intercyl		2
	-13	641322	Baffle Assy., Intercyl		2
	-14	AN960-10L	Washer, Plain		4

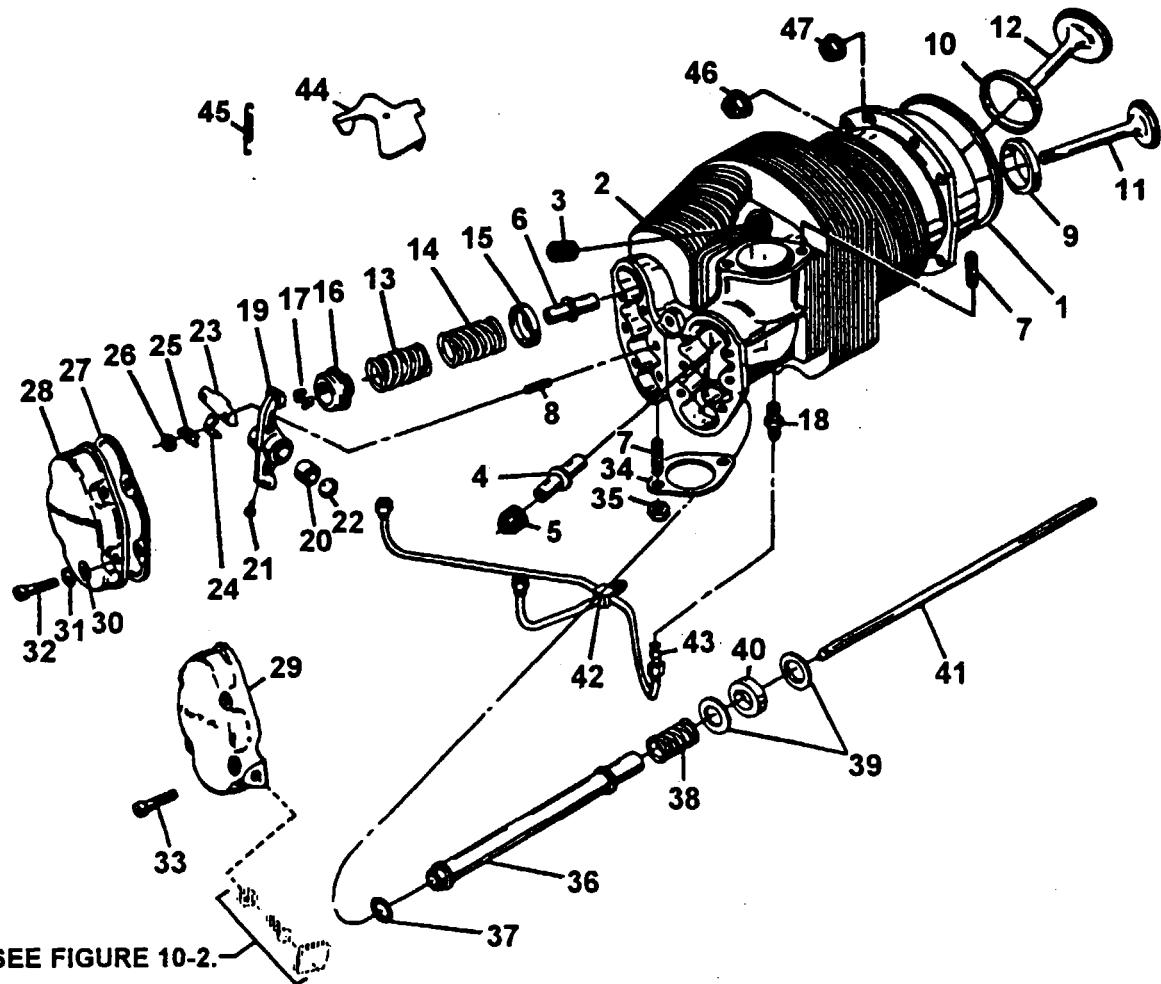


FIGURE 11-2. CYLINDER ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
11-2	- 1	21477	Packing, Cylinder Base
	- 2	654702A1	Cylinder & Valve Assembly
		65345ITC-A4	Cylinder & Valve Assembly, Chrome
		654702A3	Cylinder Kit, Loaded
		65345ITC-A5	Cylinder Kit, Loaded, Chrome
		654702A1BP	Cylinder Kit, Loaded, Balanced Piston
		653451TC-A5BP	Cylinder Kit, Loaded, Balanced Piston, Chrome
	- 3	530112	Insert, Spark Plug Thread
	- 4	646681	Guide, Valve, Intake
	- 5	646678	Seal, Intake Valve Guide
	- 6	653214	Guide, Valve, Exhaust

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
11-2	-7	402044 Stud, 5/16 x 1-3/8 inch long	24
		402044P003 Stud, 5/16 x 1-3/8 inch long	Opt.
		402044P007 Stud, 5/16 x 1-3/8 inch long	Opt.
		402044P012 Stud, 5/16 x 1-3/8 inch long	Opt.
-8	401852 Stud, 1/4 x 1-13/32 inch long	24	
		401852P003 Stud, 1/4 x 1-13/32 inch long	Opt.
		401852P007 Stud, 1/4 x 1-13/32 inch long	Opt.
		401852P012 Stud, 1/4 x 1-13/32 inch long	Opt.
-9	635959 Insert, Exhaust Valve Seat	6	
		635959P005 Insert, Exhaust Valve Seat	Opt.
		635959P010 Insert, Exhaust Valve Seat	Opt.
		635959P015 Insert, Exhaust Valve Seat	Opt.
		635959P020 Insert, Exhaust Valve Seat	Opt.
		635959P030 Insert, Exhaust Valve Seat	Opt.
-10	646929 Insert, Intake Valve Seat	6	
		646929P005 Insert, Intake Valve Seat	Opt.
		646929P010 Insert, Intake Valve Seat	Opt.
		646929P015 Insert, Intake Valve Seat	Opt.
		646929P020 Insert, Intake Valve Seat	Opt.
		646929P030 Insert, Intake Valve Seat	Opt.
-11	654067 Valve, Exhaust	6	
-12	646459 Valve, Intake	6	
-13	625957 Spring, Valve, Inner	12	
-14	625958 Spring, Valve, Outer	12	
-15	24026 Retainer, Valve Spring	12	
-16	631654 Roto Coil Assembly	12	
-17	627731 Key, Valve Spring Retainer	24	
-18	632068 Sleeve, Drain Connector	6	
-19	639648 Rocker Arm Assembly	12	
-20	627693 Bushing Rocker Arm	12	
-21	21007 Screw, Drive #2	12	
-22	653189 Washer, Thrust	24	
-23	653825 Shaft, Valve Rocker	12	
-24	631996 Retainer, Valve Rocker	24	
-25	501867 Washer, Tab	24	
-26	646605 Nut, Plain	24	

-27	653195 Gasket, Rocker Cover	12	
-28	627593 Cover, Rocker	11	
-29	633019 Cover, Rocker	1	
-30	AN960-416 Washer, Plain	48	
-31	MS35338-44 Washer, Lock	48	
-32	649353-.62 Screw	44	
-33	AN500D416-20 Screw	4	
-34	630365 Gasket, Exhaust Flange	6	
-35	22022 Nut, Exhaust, Brass	12	
-36	632141 Housing, Push Rod	12	
-37	630286 Seal, O-Ring	12	
-38	632317 Spring, Push Rod Housing	12	

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
11-2 -39	629711	Washer	24
-40	641607	Seal, Push Rod Housing	12
-41	630393	Push Rod Assembly	12
-42	642580	Tube Assembly, Cylinder Drain	2
-43	632248	Sleeve	3
-44	630057	Baffle, Cylinder Head	6
-45	532377	Spring, Cylinder Baffle	6
-46	652422	Nut, Flanged, 7/16	12
-47	652421	Nut, Flanged, 3/8	36

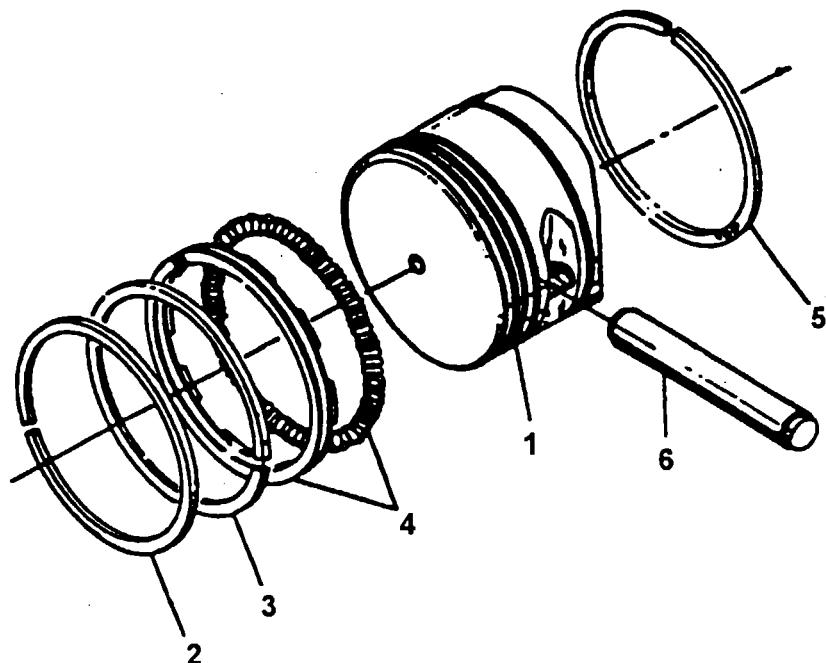


FIGURE 11-3. PISTON AND RINGS

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
11-3 -1	654727	Piston 7.5:1 Compression Ratio	1
	654727PO15	Piston	Opt.
	654727BP	Piston, Balanced	Opt.
	654727PO15BP	Piston, Balanced	Opt.
-2	648039	Ring Compression, Top Groove	1
	648039CP ①	Ring Compression, Top Groove	Opt.
	648039 P005	Ring Compression, Top Groove	Opt.
	648039PO15 ①	Ring Compression, Top Groove	Opt.
-3	648040	Ring Compression, Second Groove	1
	648040CP ①	Ring Compression, Second Groove	Opt.
	648040PO05	Ring Compression, Second Groove	Opt.
	648040PO15 ①	Ring Compression, Second Groove	Opt.
-4	648041	Ring Oil Control, Third Groove	1
	648041CP	Ring Oil Control, Third Groove	Opt.
	648041PO05	Ring Oil Control, Third Groove	Opt.
	648041PO15	Ring Oil Control, Third Groove	Opt.
-5	648042	Ring, Fourth Groove	1
	648042PO05	Ring, Fourth Groove	Opt.
	648042PO15	Ring, Fourth Groove	Opt.
-6	629690	Pin and Plug Assembly	1

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CHAPTER 12

CRANKCASE

FIGURE		PAGE
12-1	Crankcase Associated Parts	12-2
12-2	Crankcase Attaching Parts	12-4
12-4	Crankcase Studding Assembly	12-6

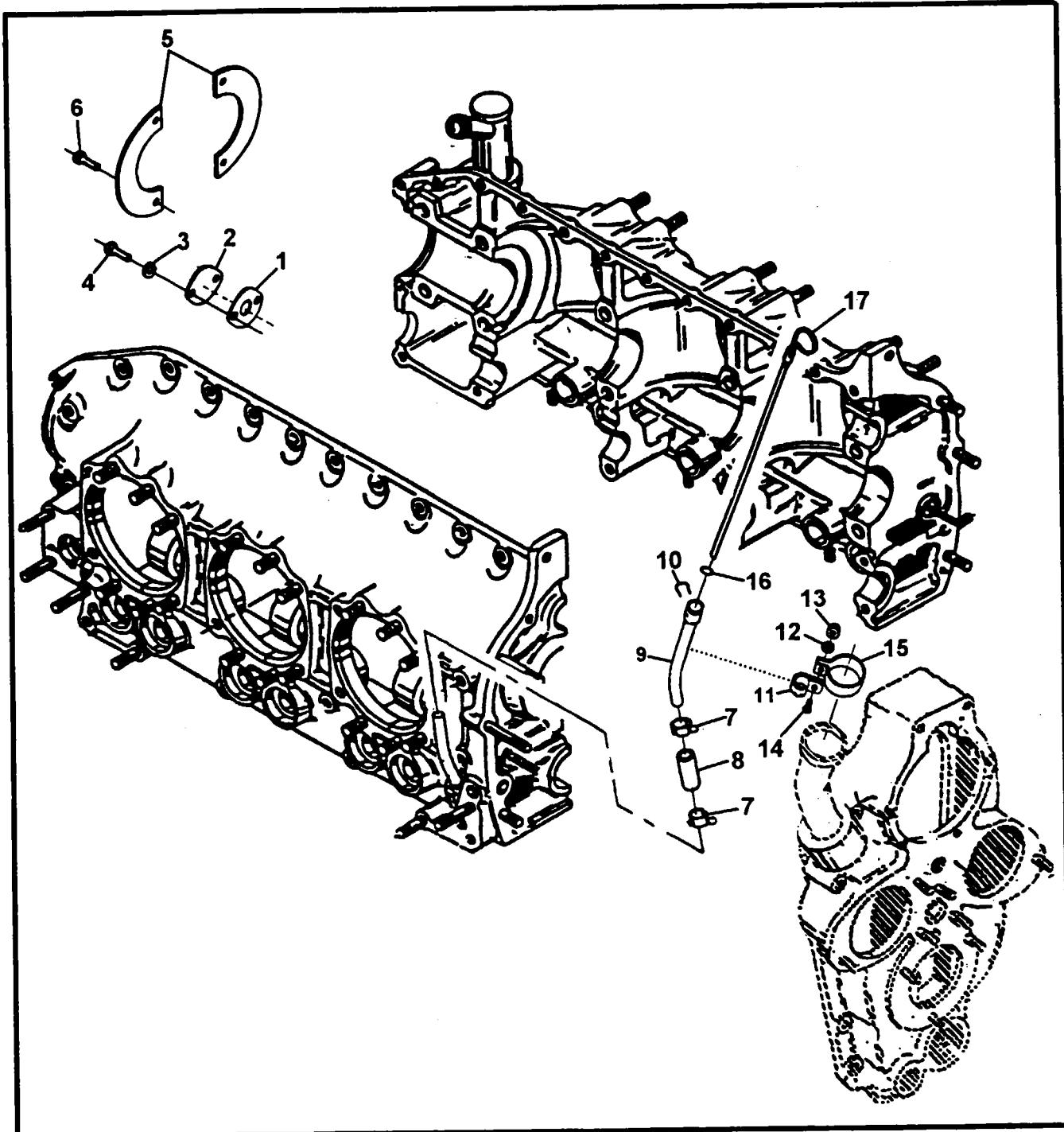


FIGURE 12-1. CRANKCASE ASSOCIATED PARTS

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION			QUANTITY
		1	2	3	
12-1	- 1	653415	Gasket, Cam Cover		1
	-2	642914	Cover, Camshaft		1
	-3	MS35338-44	Washer, Lock		2
	-4	626487	Screw, Cam Cover		2
	-5	641361	Plate, Oil Seal Retainer		2
	-6	628321-38	Screw, Retainer		4
	-7	640187	Clamp, Hose		2
	-8	631928	Hose, Oil Gage Housing		1
	-9	654461	Housing, Oil Gage		1
	-10	537299	Ring, Oil Gage Lock		1
	-11	MS21919WCJ8	Clamp, Oil Gage Housing		1
	-12	AN960-8	Washer, Plain		1
	-13	MS21044N3	Nut, Self-Locking		1
	-14	AN3-4A	Screw		1
	-15	654499	Clamp, Filler Neck-to-O/G Housing		1
	-16	MS9021-011	O-Ring, Oil Gage		1
	-17	632062-36	Gage, Oil, TS10-360-RB		1
	-17	632062-37	Gage, Oil, LTS10-360-RB		1

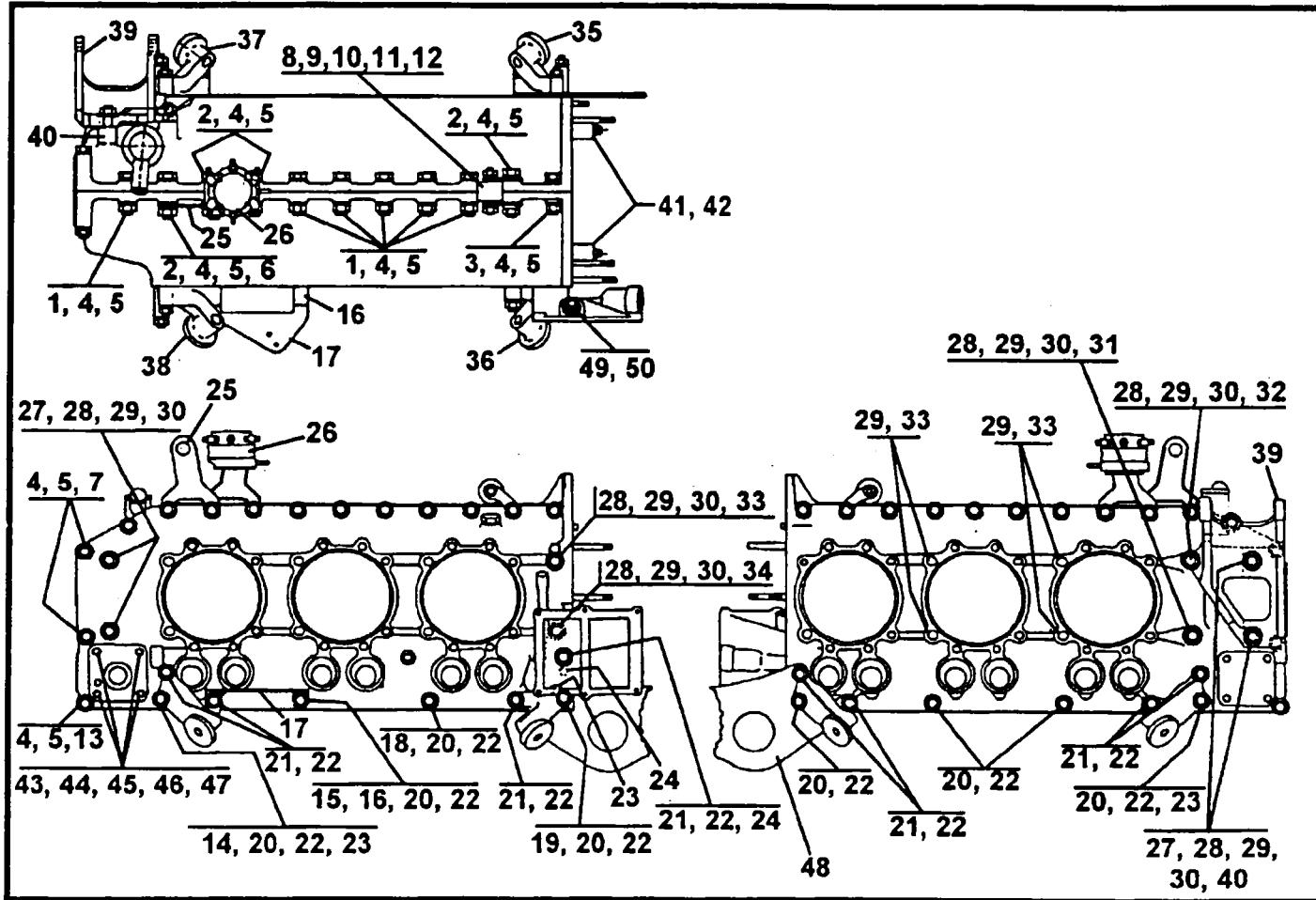


FIGURE 12-2. CRANKCASE ATTACHING PARTS

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
12-2 - 1	AN4-13A	Bolt, 25-28X1-13/32	6
- 2	AN4-14A	Bolt, .25-28X1-17/32	4
- 3	AN4-13A	Bolt, 25-28X1-13/32	1
- 4	20522	Washer, Plain	28
- 5	AN315-4R	Nut, Plain	14
- 6	AN960-416	Washer, Plain	1
- 7	629728	Bolt, Through	2
- 8	654364	Brace, Shock Mount	2
- 9	654363	Mount, Shock	1
- 10	22139	Washer	2
- 11	MS35338-44	Washer, Lock	2
- 12	23890	Nut	2
- 13	631823-5.19	Bolt, Through	1
- 14	537466-5	Bolt, Through	1
- 15	630693-10.60	Bolt, Through	1

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
12-2	-16	Bushing	1
	-17	Bracket, Prop Cable	1
	-18	Bolt, Through	1
	-19	Bolt, Through	1
	-20	Washer, Plain	8
	-21	Washer, Plain	8
	-22	Nut, Plain	16
	-23	O-Ring	3
	-24	O-Ring	2
	-25	Eye, Engine Lifting	1
	-26	Manifold, Valve	RF
	-27	Bolt, Through	2
	-28	Nut	8
	-29	O-Ring	20
	-30	Washer	8
	-31	Bolt, Through	1
	-32	Bolt, Through	1
	-33	Bolt, Through	5
	-34	Bolt, Through	1
	-35	Bracket, Engine Mount, 1-3-5 side, rear	1
	-36	Bracket, Engine Mount, 2-4-6 side, rear	1
	-37	Bracket, Engine Mount, 1-3-5 side, front	1
	-38	Bracket, Engine Mount, 2-4-6 side, front	1
	-39	Bracket Alternator Mount	1
	-40	Spacer, Bracket	2
	-41	Bushing, Mag Drive Support	2
	-42	Nut, Spiral Lock, 12-point	2
		Pin, Mag Gear Bushing	2
	-43	Cover, Governor	1
	-44	Gasket, Governor cover	1
	-45	Spacer	8
	-46	Washer, Plain	4
	-47	Washer, Lock	4
	-48	Bracket, Turbo, Inner	1
	-49	Gasket, Copper	2
	-50	Plug	2

➤ Place end stamped "L" on 2-4-6 side of crankcase.

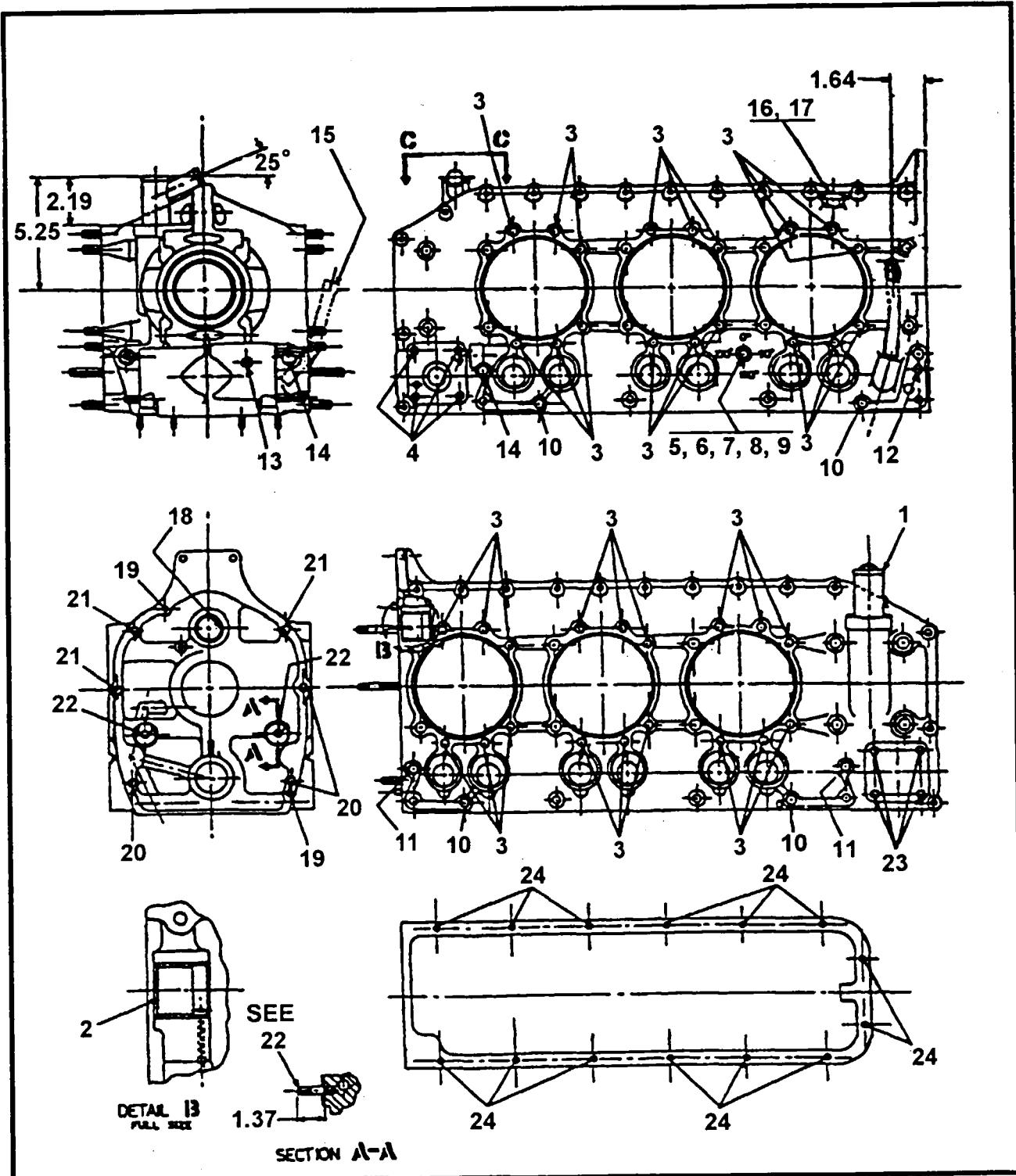


FIGURE 12-3. CRANKCASE STUDDING ASSEMBLY

FIG. & INDEX	PART NUMBER	1 2 3 DESCRIPTION	QUANTITY
12-3	653688-16	Studding Assembly, Crankcase	1
-1	537505	Breather Assembly	1
-2	629718	Bushing, Starter Shaftgear	1
-3	643651-1	Stud	36
-4	401814	Stud	4
-5	646038	Bushing, Reducer	1
-6	MS20822-6	Elbow	1
-7	MS51523B6	Swivel Tee	1
-8	649247	Reducer Orifice	1
-9	MS51531B6	Nut	1
-10	402066	Stud	4
-11	401944	Stud	3
-12	401862	Stud	1
-13	2024	Plug	1
-14	AN932-C4	Plug	2
-15	632067	Housing, Oil Gage	1
-16	MS35769-11	Gasket	1
-17	532432	Plug	1
-18	629720	Dowel	1
-19	21080	Dowel	2
-20	401809	Stud	3
-21	402439	Stud	3
-22	401814	Stud	2
-23	402151	Stud	4
-24	401801	Stud	14

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CHAPTER 13

ENGINE DRIVE TRAIN

FIGURE		PAGE
13-1	Crankshaft Group	13-2
13-2	Camshaft Group	13-4

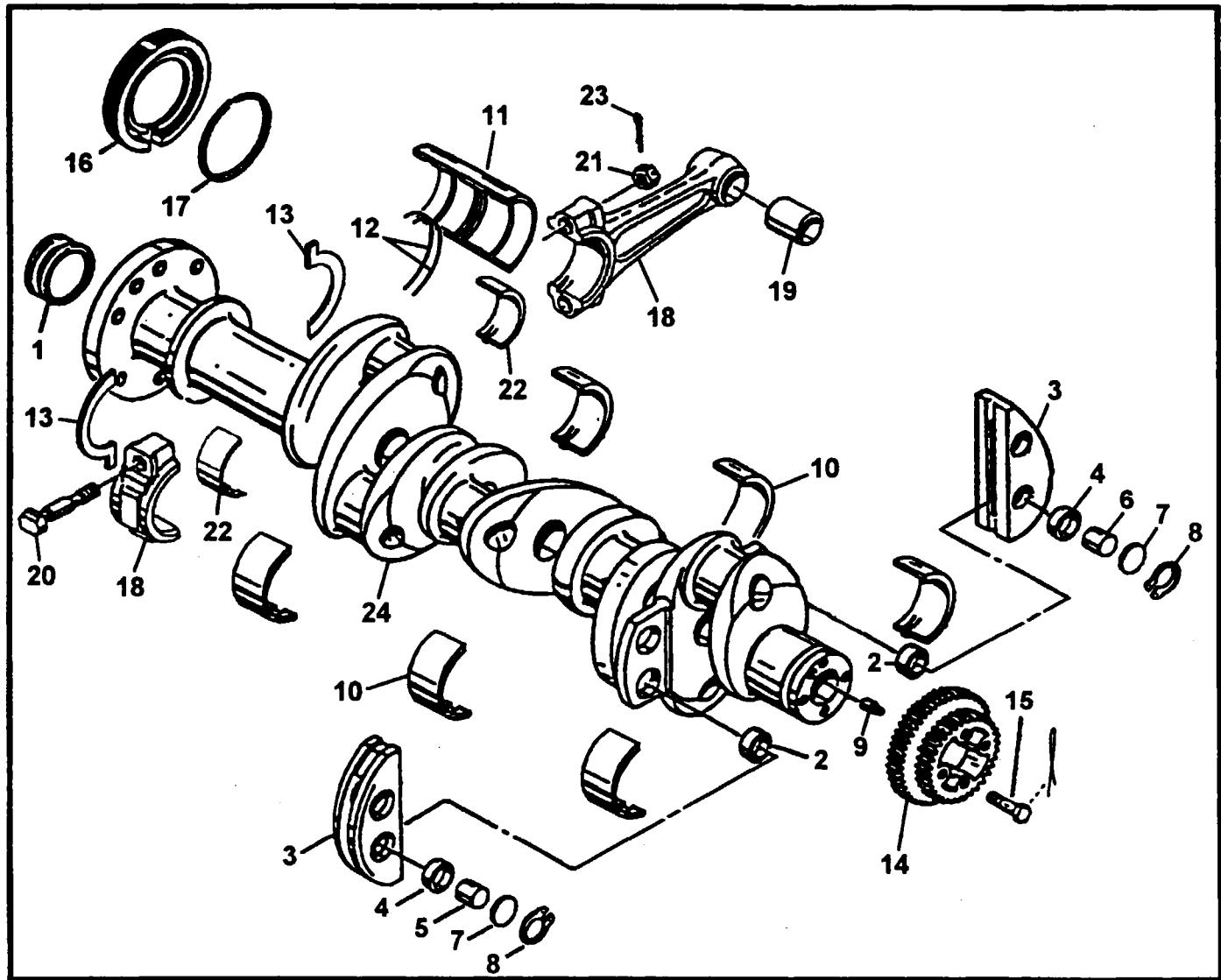


FIGURE 13-1. CRANKSHAFT GROUP

FIG. & INDEX	PART NUMBER		QUANTITY
13-1	653129A1	Crankshaft and C/W Assembly	1
-1	629935	Plug, Crankshaft	1
-2	639580	Bushing, Crankshaft C/W	4
-3	639199	Counterweight	2
-4	639198	Bushing	4
-5	643626-110	Pin, Counterweight 4-1/2 order	2
-6	643626-111	Pin, Counterweight 6th order	2
-7	653143	Plate, Retaining	8
-8	629004	Ring, Retaining	8
-9	630651	Dowel	1
-10	642337	† Bearing, Main, Rear & Intermediate	6
-11	641992	† Bearing, Main, Front	2
-12	632879	Packing	4
-13	646288	Washer, Thrust	4
-14	630690	Gear, Crankshaft Cluster	1
-15	630692	Screw	4
-16	530917	Seal Assembly, Crankshaft	1
-17	530974	Spring	1
-18	646320A1	Connecting Rod Assembly	6
-19	538684	. Bushing, Piston Pin	1
-20	530213	. Bolt, Connecting Rod	2
-21	626140	. Nut, Slotted, Special, 3/8-24	2
-22	642338	† Bearing, Connecting Rod	12
-23	639292	Pin, Cotter	12

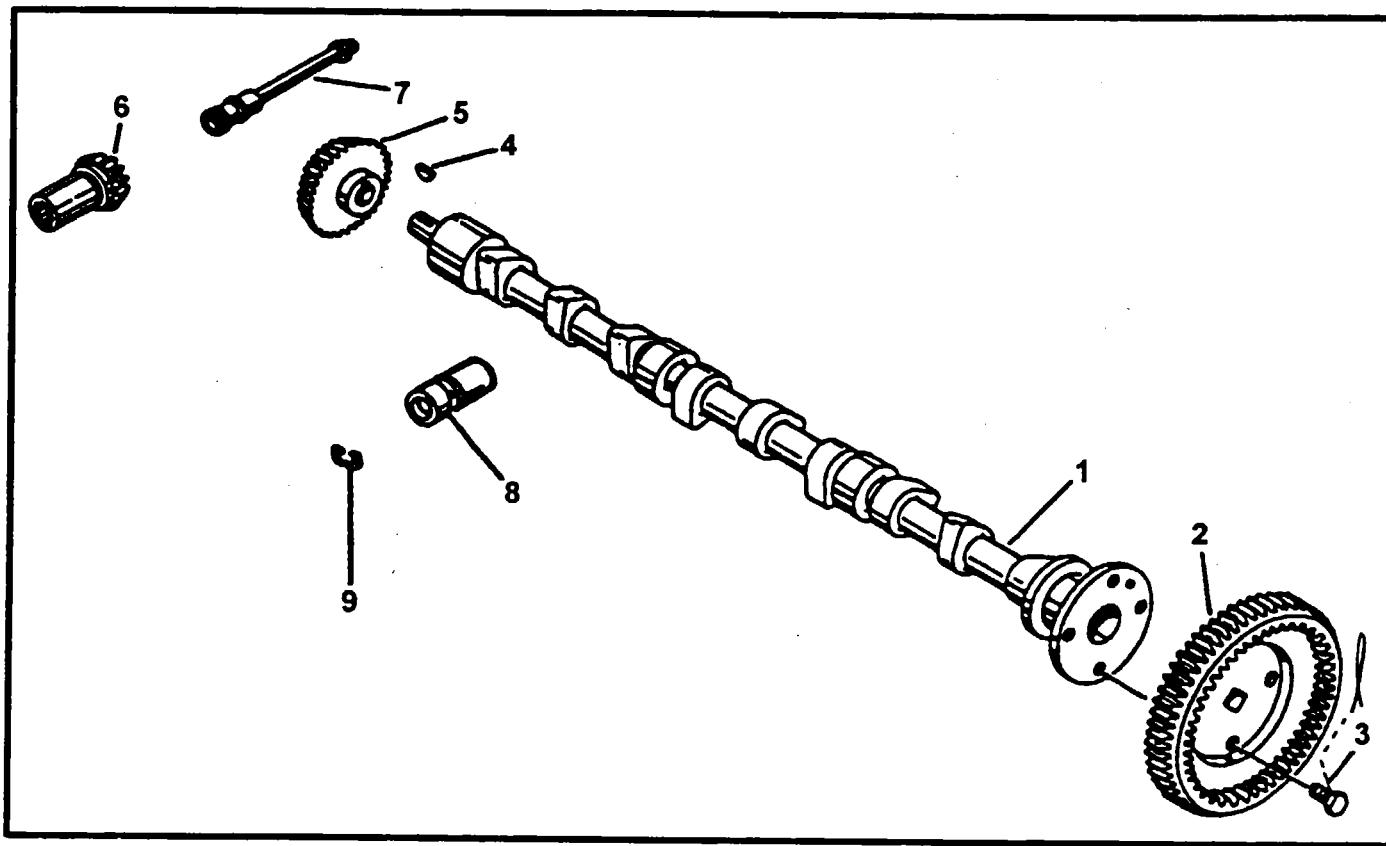


FIGURE 13-2. CAMSHAFT GROUP

FIG. & INDEX	PART NUMBER	13 3 DESCRIPTION	QUANTITY	
			TSI0-360-RB	LTSI0-360-RB
13-2	-1	653061 Camshaft	1	
	-1	643069 Camshaft		1
	-2	632477 Gear, Camshaft	1	1
	-3	630742 Screw, 5/16-24 x 3/8	4	4
	-4	MS35756-8 Key, Woodruff	1	1
	-5	629588 Gear, Governor Drive	1	1
	-6	629602 Gear, Governor Driven	1	1
	-7	630265 Shaft, Fuel Pump Drive	1	1
	-8	653906 Tappet, Hydraulic	12	12
	-9	628491 Ring, Snap	12	12