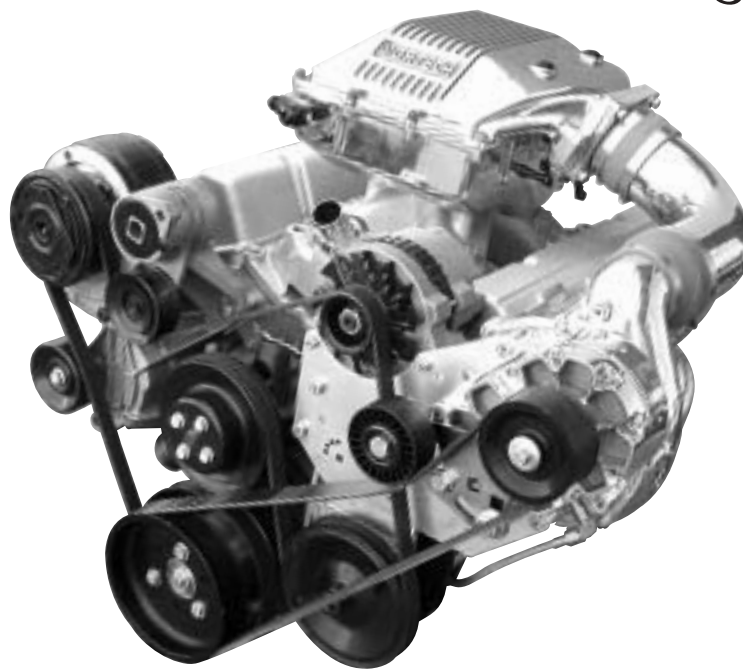


Universal Small Block Chevy-Carbureted Supercharger System Installation Instructions



*Legal in California only for racing vehicles which may never be used upon a highway.



ENGINEERING, LLC

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Fax: 805 247-0669 • www.vortechsuperchargers.com • M-F 8:00AM - 4:30PM (PST)

FOREWORD

Proper installation of this system requires general automotive mechanic knowledge and experience. Please browse through each step of this instruction manual prior to beginning the installation to determine if you should refer the job to a professional installer/technician. Please call Vortech Engineering for installers in your area.

Important Installation Notes:

- *This system was designed to fit on engines equipped with a "long" water pump and OEM V-belt drives or serpentine accessory drives (OEM TPI/TBI) applications, 1990-1995 and GM Performance Parts accessory drive system #'s 12497697, 12497698 and 12497869). For correct belt alignment, the proper accessory drive crank pulley and accessory bracketry must be used. These components are not supplied in this kit. Earlier models equipped with short water pumps will require a long water pump to be installed.*
- *This kit can be used on engines with and without power steering. For engines equipped with power steering and V-belt accessory drives, a Saginaw type pump will be required as well as an optional Vortech power steering pulley assembly. This assembly includes all required hardware, tensioner assembly and anodized billet aluminum pulley. Depending on the vehicle, power steering lines may require fabrication.*

— *Optional Vortech power steering pulley and hardware assembly: 4GP110-051*

The following carbureted system support parts are not included as part of the system but are available from Vortech:

1. Supercharger pulleys and retainer assembly: contact technical department for proper application match.
 - Vortech **#2A031-250**: Ø2.50", 10-rib driven pulley
 - Vortech **#2A031-275**: Ø2.75", 10-rib driven pulley
 - Vortech **#2A031-295**: Ø2.95", 10-rib driven pulley
 - Vortech **#2A031-312**: Ø3.12", 10-rib driven pulley
 - Vortech **#4MA018-051**: Ø7.00", 10-rib drive (crank) pulley
2. Compressor bypass valve and flange: (Contact the technical department to determine the proper valve selection for the application)
 - Vortech **#4GP012-031**: Ø3" aluminum discharge duct w/attached flange for Vortech race bypass valve. Simple attachment to supplied silicone discharge elbow contained in #4GP218-030/-038
 - Vortech **#8D204-001**: Race Bypass Valve
 - Vortech **#8D004-052**: Race Bypass weld-on flange (aluminum)
 - Vortech **#8D103-001**: Mondo Bypass Valve
 - Vortech **#8D003-052**: Mondo Race Bypass weld-on flange (aluminum)
 - Vortech **#8D205-003**: BV57 Bypass Valve
 - Vortech **#8D005-051**: BV57 Bypass weld-on flange (aluminum)
3. Custom fuel line/fitting kits for carburetor, stainless steel (designed specifically for Vortech carburetor enclosure)
 - Vortech **#8M110-020**: Holley 4150 series (w/dual metering blocks), SS fuel line kit
 - Vortech **#8M110-030**: Demon series, SS fuel line kit
4. Aftermarket ignition amplifier (not required, but recommended)
 - Vortech **#5A001-008**: Crane HI-6 ignition amplifier box w/rev-limiter
 - Power steering pulley and hardware assembly as described above
 - Vortech **#4GP110-051**
5. Carburetor air diffuser. Straightens airflow into the carburetor for improved response/driveability
 - Vortech **#8M011-001**: Ø5.75" x 2.50" tall carburetor air-diffuser, stainless steel

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Universal Small Block Chevrolet Carbureted System

INSTALLATION INSTRUCTIONS

PLEASE READ CAREFULLY

This kit should only be installed by qualified mechanics. It is imperative that the correct air/fuel mixture be maintained at all times. This Universal Kit is to be supplied to competent engine tuners for their completion by the addition of, and tuning of, an appropriate carburetor unit and fuel pump.

This product is intended for use on healthy, well maintained engines. Installation on a worn-out or damaged engine is not recommended and may result in failure of the engine.

Vortech Engineering is not responsible for engine damage. Installation on new engines will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

For best performance and continued durability, please take note of the following key points:

1. Use only premium grade fuel 91 octane or higher (R+M/2).
2. The engine must have stock or lower than stock compression ratio.
3. If the engine has been modified in any way, check with Vortech prior to using this product.
4. Always listen for any sign of detonation (pinging) and discontinue hard use (no boost) until problem is resolved.
5. Perform an oil and filter change upon completion of this installation and prior to operating the vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter every 3000 miles.
6. Before beginning installation, replace all spark plugs with one to two step colder heat range and reset timing to no more than 26°-28° total. (Always follow the procedures indicated in the factory repair manual.)

TOOL AND SUPPLY REQUIREMENTS:

- Factory Repair Manual
- 3/8" Drive and Socket Set: SAE and Metric
- 1/2" Drive and Socket Set: SAE and Metric
- Adjustable Wrench
- Open End Wrenches: SAE and Metric
- Center Punch
- SF Rated Quality Engine Oil
- Loctite Sealer #RC-609
- Oil Filter, and Wrench
- Heavy Grease
- Silicone Sealer
- Teflon Paste Sealant
- TAP, 3/8-18 NPT





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Universal Small Block Chevy Carbureted V2 S-TRIM Part No. 4GP218-030SQ/038SQ PARTS LIST

IMPORTANT: Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
2E128-040	S/C CHEV UNIV CARB, GEN2 V2	1	4GP111-041	ASY, MAN TENS. SBC GEN2	1
2A032-333	S/C DRIVE PLY, 3.33" 10-GRV	1	4MA116-160	IDLER ASY, MARINE GEN2	1
8R101-003	PULLEY RETAINED ASY, 10-RIB	1	4FA011-032	BELT TENSIONER PLATE STD	1
7U100-071	KEY, 3/16"SQ x 1-1/8" LONG	1	4GP017-051	SPACER, 10-RIB MAN TENS. SBC	1
2A040-011	PULLEY RETAINER S/C	1	7A437-300	7/16-14 x 3.00" SHCS GR8	1
7B375-150	3/8-24 x 1-1/2" GR8 HX	1	7C012-020	M12 x 1.75 x 20mm HXHD CL8.8	3
7K375-040	3/8"AN960 FLAT WASHER, PLATED	1	7J012-092	12mm WASHER, FLAT	3
8M001-060	CABLE, THROTTLE	1	7J438-072	7/16" WASHER, .94"OD x .109" THK	1
8M010-170	BRKT, CHVY THROTTLE CABLE	1	7J437-081	7/16"SAE WASHER PLATED	1
8M205-012	CARB ENCLOSURE ASY	1	4GB130-026	OIL FEED LINE ASY	1
007051	CARB ENCL ASY, UNIV SAT, G2 L	1	70000	INSPECTOR NUMBER	0
7A312-078	5/16-18 x 3/4" SHCS, S'STL	16	7P125-026	1/8"NPT x #4 SAE FLARE, 90°	1
7A312-253	STUD, 5/16" x 2-1/2" CARB ENCLOSURE	4	7P250-036	-4 SAE FLARE TO 1/4"NPT	1
7C011-050	10-32 PLUG SCREW	1	7P250-066	-4 45° FEM SWIVEL x 1/4"NPT	2
7F312-024	5/16-24 JAM NUT	4	7P250-080	1/4"NPT FEM. ELBOW, 90°	1
7J312-000	5/16" FLAT WASHER, SAE	4	7P250-123	1/4"NPT x 1-1/2" PIPE NIPPLE	1
7J375-024	3/8" COPPER WASHER	4	7P525-067	.525" CRIMP FERRULES	2
7K312-030	5/16"AN WASHER, SS	12	7U030-026	1/4" OIL FEED HOSE	3
7P187-102	-3 BULKHEAD FITTING TO 1/4" HOSE	1	7U100-055	TIE-WRAP, 7.5" NYLON	4
7P187-103	PLUG, -3 O-RING PORT	3	4GP130-036	OIL DRAIN ASY	1
7P250-120	1/4"NPT PIPE PLUG	1	7U030-036	1/2" OIL DRAIN HOSE	3
7P375-104	PLUG, 3/8-16, BRASS SHORT	4	7P375-017	3/8"NPT x 1/2" BEADED HOSE BARB	1
7PP500-087	PLUG, AN-8 O-RING PORT	3	7P375-033	3/8"NPT x 3/8"NPT SRT EL	2
7U100-003	O-RING 3 - 903	4	7R001-008	#8 STNLS HOSE CLAMP	2
7U100-008	O-RING 3 - 908	3	70000	INSPECTION NUMBER	0
7U100-020	10-32 GASKET	1	7T640-011	PUNCH, OIL PAN FTG	1
8M001-018	GASKET, 90mm THROTTLE BODY	1	4GP112-010	INLET ASY, S.B. CHEVY CARB.	1
8M003-051	MACH, MONDO COOLER COVER2	1	8H040-050	AIR FILTER 3.5" FLG. 7"L	1
8M010-025	MORSE CABLE BRKT, CARB ENC	1	4FA012-011	INTAKE TUBE, 180° w/o BOSSES	1
8M105-012	ENCL, STD. MACH ASY SAT.	1	7S350-200	SLEEVE, 3-1/2" x 2" BLUE	1
8M110-010	ASY, THROTTLE LINK, CARB ENCLOSURE	1	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	3
8M001-017	HOLLEY 4-BARREL BASE GASKET	2	7R002-044	#44 SAE TYPE "F" SS HOSE CLAMP	1
4GP111-031	MTG BRKT ASY, SBC GEN2	1	75375-200	SLEEVE, Ø3.75" x 2.00"	1
4GP017-021	GM THROTTLE CABLE	1	75350-004	SLEEVE, Ø3.5" x 1"	1
4GP010-035	MOUNT PLATE, SBC UNIV, GEN2	1	7R002-060	#60 SAE TYPE "F" SS HOSE CLAMP	1
2A017-751-05	SPACER, .750"OD x .360" LONG	2	4GP112-040	DISCHARGE ASY, SBC GEN2 SAT	1
2A041-594	BELT, K100594-GATES	1	8M003-041	MACHINE, Ø3.5" FLANGE, SATIN	1
7A375-500	3/8-16 x 5" HXHD GRADE-8	2	7S350-276	ELBOW, SIL Ø3.5" x 2.75" CHEVY CARB	1
7A375-400	3/8-16 x 4" BOLT HXHD GR8	3	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	1
7A375-100	3/8-16 x 1" G5 HHCS, PLT	5	7R002-044	#44 SAE TYPE "F" HOSE CLAMP	1
7A375-126	3/8-16 x 1.25" HHCS, GR8, PLT	4	4GP116-041	6" CRANK PLY ASY, SBC UNIV GEN2	1
4GB011-021	MOUNTING BRKT-MACH	1	4GP017-031	SPACER, SBC CRANK PULLEY, SERP	1
7K375-040	3/8"AN960 FLAT WASHER, PLATED	14	4MA018-041	6" CRANK PULLEY, UNIVERSAL	1
7A375-475	3/8-16 x 4.75" HXHD GR8 PLTD	2	7B375-500	3/8-24 x 5.0" HXHD GR8	3
7A375-375	3/8-16 x 3-3/4" HXHD	3	7B437-600	7/16-20 x 6.0" HXHD GR8	1
7A375-112	3/8-16 x 1.125" FLT HD ALN	2	7J375-044	3/8"SAE WASHER, PLTD	3
7A375-077	3/8-16 x 3/4" GR8 FLAT HD ZNC	1	7J438-081	7/16"SAE WASHER, PLATED	1
7C080-030	M8 x 1.25" x 30 HXHD CL10.9	1	4GP017-041	SPACER, SBC CRANK PULLEY, V-BELT	1
7C080-070	M8 x 1.25" x 70 HXHD ZINC	1	7B375-475	3/8-24 x 4-3/4" HXHD GR8	3
7F008-023	NUT, M8 x 1.25" x 70 HXHD ZINC	1	4GP020-015	INSTR. MANUAL, UNIV. SBC GEN2 KIT	1
7J008-001	3/8" FLAT WASHER	2	008443	S/C RACE INFO. PKG ASY, VORTECH	1
			008130	LICENSE PLATE FRAME, VORTECH	1
			008110	SMALL SILVER DIE-CUT DECAL	2



Universal Small Block Chevy Carbureted V1 T-Trim

Part No. 4GP218-030T/038T

PARTS LIST

IMPORTANT: Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

PART NO.	DESCRIPTION	QTY	PART NO.	DESCRIPTION	QTY
2A138-040	S/C CHEV UNIV CARB, GEN2 V1	1	4GP111-041	ASY, MAN TENS. SBC GEN2	1
2A032-333	S/C DRIVE PLY, 3.33" 10-GRV	1	4MA116-160	IDLER ASY, MARINE GEN2	1
8R101-003	PULLEY RETAINED ASY, 10-RIB	1	4FA011-032	BELT TENSIONER PLATE STD	1
7U100-071	KEY, 3/16"SQ x 1-1/8" LONG	1	4GP017-051	SPACER, 10-RIB MAN TENS. SBC	1
2A040-011	PULLEY RETAINER S/C	1	7A437-300	7/16-14 x 3.00" SHCS GR8	1
7B375-150	3/8-24 x 1-1/2" GR8 HX	1	7C012-020	M12 x 1.75 x 20mm HXHD CL8.8	3
7K375-040	3/8"AN960 FLAT WASHER, PLATED	1	7J012-092	12mm WASHER, FLAT	3
8M001-060	CABLE, THROTTLE	1	7J438-072	7/16" WASHER, .94"OD x .109" THK	1
8M010-170	BRKT, CHVY THROTTLE CABLE	1	7J437-081	7/16"SAE WASHER PLATED	1
8M205-012	CARB ENCLOSURE ASY	1	4GB130-026	OIL FEED LINE ASY	1
007051	CARB ENCL ASY, UNIV SAT, G2 L	1	70000	INSPECTOR NUMBER	0
7A312-078	5/16-18 x 3/4" SHCS, S'STL	16	7P125-026	1/8"NPT x #4 SAE FLARE, 90°	1
7A312-253	STUD, 5/16" x 2-1/2" CARB ENCLOSURE	4	7P250-036	-4 SAE FLARE TO 1/4"NPT	1
7C011-050	10-32 PLUG SCREW	1	7P250-066	-4 45° FEM SWIVEL x 1/4"NPT	2
7F312-024	5/16-24 JAM NUT	4	7P250-080	1/4"NPT FEM. ELBOW, 90°	1
7J312-000	5/16" FLAT WASHER, SAE	4	7P250-123	1/4"NPT x 1-1/2" PIPE NIPPLE	1
7J375-024	3/8" COPPER WASHER	4	7P525-067	.525" CRIMP FERRULES	2
7K312-030	5/16"AN WASHER, SS	12	7U030-026	1/4" OIL FEED HOSE	3
7P187-102	-3 BULKHEAD FITTING TO 1/4" HOSE	1	7U100-055	TIE-WRAP, 7.5" NYLON	4
7P187-103	PLUG, -3 O-RING PORT	3	4GP130-036	OIL DRAIN ASY	1
7P250-120	1/4"NPT PIPE PLUG	1	7U030-036	1/2" OIL DRAIN HOSE	3
7P375-104	PLUG, 3/8-16, BRASS SHORT	4	7P375-017	3/8"NPT x 1/2" BEADED HOSE BARB	1
7PP500-087	PLUG, AN-8 O-RING PORT	3	7P375-033	3/8"NPT x 3/8"NPT SRT EL	2
7U100-003	O-RING 3 - 903	4	7R001-008	#8 STNLS HOSE CLAMP	2
7U100-008	O-RING 3 - 908	3	70000	INSPECTION NUMBER	0
7U100-020	10-32 GASKET	1	7T640-011	PUNCH, OIL PAN FTG	1
8M001-018	GASKET, 90mm THROTTLE BODY	1	4GP112-010	INLET ASY, S.B. CHEVY CARB.	1
8M003-051	MACH, MONDO COOLER COVER2	1	8H040-050	AIR FILTER 3.5" FLG. 7"L	1
8M010-025	MORSE CABLE BRKT, CARB ENC	1	4FA012-011	INTAKE TUBE, 180° w/o BOSSES	1
8M105-012	ENCL, STD. MACH ASY SAT.	1	7S350-200	SLEEVE, 3-1/2" x 2" BLUE	1
8M110-010	ASY, THROTTLE LINK, CARB ENCLOSURE	1	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	3
8M001-017	HOLLEY 4-BARREL BASE GASKET	2	7R002-044	#44 SAE TYPE "F" SS HOSE CLAMP	1
4GP111-031	MTG BRKT ASY, SBC GEN2	1	75375-200	SLEEVE, Ø3.75" x 2.00"	1
4GP017-021	GM THROTTLE CABLE	1	75350-004	SLEEVE, Ø3.5" x 1"	1
4GP010-035	MOUNT PLATE, SBC UNIV, GEN2	1	7R002-060	#60 SAE TYPE "F" SS HOSE CLAMP	1
2A017-751-05	SPACER, .750"OD x .360" LONG	2	4GP112-040	DISCHARGE ASY, SBC GEN2 SAT	1
2A041-594	BELT, K100594-GATES	1	8M003-041	MACHINE, Ø3.5" FLANGE, SATIN	1
7A375-500	3/8-16 x 5" HXHD GRADE-8	2	7S350-276	ELBOW, SIL Ø3.5" x 2.75" CHEVY CARB	1
7A375-400	3/8-16 x 4" BOLT HXHD GR8	3	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	1
7A375-100	3/8-16 x 1" G5 HHCS, PLT	5	7R002-044	#44 SAE TYPE "F" HOSE CLAMP	1
7A375-126	3/8-16 x 1.25" HHCS, GR8, PLT	4	4GP116-041	6" CRANK PLY ASY, SBC UNIV GEN2	1
4GB011-021	MOUNTING BRKT-MACH	1	4GP017-031	SPACER, SBC CRANK PULLEY, SERP	1
7K375-040	3/8"AN960 FLAT WASHER, PLATED	14	4MA018-041	6" CRANK PULLEY, UNIVERSAL	1
7A375-475	3/8-16 x 4.75" HXHD GR8 PLTD	2	7B375-500	3/8-24 x 5.0" HXHD GR8	3
7A375-375	3/8-16 x 3-3/4" HXHD	3	7B437-600	7/16-20 x 6.0" HXHD GR8	1
7A375-112	3/8-16 x 1.125" FLT HD ALN	2	7J375-044	3/8"SAE WASHER, PLTD	3
7A375-077	3/8-16 x 3/4" GR8 FLAT HD ZNC	1	7J438-081	7/16"SAE WASHER, PLATED	1
7C080-030	M8 x 1.25" x 30 HXHD CL10.9	1	4GP017-041	SPACER, SBC CRANK PULLEY, V-BELT	1
7C080-070	M8 x 1.25" x 70 HXHD ZINC	1	7B375-475	3/8-24 x 4-3/4" HXHD GR8	3
7F008-023	NUT, M8 x 1.25" x 70 HXHD ZINC	1	4GP020-015	INSTR. MANUAL, UNIV. SBC GEN2 KIT	1
7J008-001	3/8" FLAT WASHER	2	008443	S/C RACE INFO. PKG ASY, VORTECH	1
			008130	LICENSE PLATE FRAME, VORTECH	1
			008110	SMALL SILVER DIE-CUT DECAL	2



Universal Small Block Chevy Carbureted V7 YSI-Trim Part No. 4GP218-030YSI/038YSI **PARTS LIST**

IMPORTANT: Before beginning installation, verify that all parts are included in the kit. Report any shortages or damaged parts immediately.

<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>	<u>PART NO.</u>	<u>DESCRIPTION</u>	<u>QTY</u>
2A158-070	S/C CHEV UNIV CARB, GEN2 V7	1	4GP111-041	ASY, MAN TENS. SBC GEN2	1
2A032-333	S/C DRIVE PLY, 3.33" 10-GRV	1	4MA116-160	IDLER ASY, MARINE GEN2	1
8R101-003	PULLEY RETAINED ASY, 10-RIB	1	4FA011-032	BELT TENSIONER PLATE STD	1
7U100-071	KEY, 3/16"SQ x 1-1/8" LONG	1	4GP017-051	SPACER, 10-RIB MAN TENS. SBC	1
2A040-011	PULLEY RETAINER S/C	1	7A437-300	7/16-14 x 3.00" SHCS GR8	1
7B375-150	3/8-24 x 1-1/2" GR8 HX	1	7C012-020	M12 x 1.75 x 20mm HXHD CL8.8	3
7K375-040	3/8"AN960 FLAT WASHER, PLATED	1	7J012-092	12mm WASHER, FLAT	3
8M001-060	CABLE, THROTTLE	1	7J438-072	7/16" WASHER, .94"OD x .109" THK	1
8M010-170	BRKT, CHVY THROTTLE CABLE	1	7J437-081	7/16"SAE WASHER PLATED	1
8M205-012	CARB ENCLOSURE ASY	1	4GB130-026	OIL FEED LINE ASY	1
007051	CARB ENCL ASY, UNIV SAT, G2 L	1	70000	INSPECTOR NUMBER	0
7A312-078	5/16-18 x 3/4" SHCS, S'STL	16	7P125-026	1/8"NPT x #4 SAE FLARE, 90°	1
7A312-253	STUD, 5/16" x 2-1/2" CARB ENCLOSURE	4	7P250-036	-4 SAE FLARE TO 1/4"NPT	1
7C011-050	10-32 PLUG SCREW	1	7P250-066	-4 45° FEM SWIVEL x 1/4"NPT	2
7F312-024	5/16-24 JAM NUT	4	7P250-080	1/4"NPT FEM. ELBOW, 90°	1
7J312-000	5/16" FLAT WASHER, SAE	4	7P250-123	1/4"NPT x 1-1/2" PIPE NIPPLE	1
7J375-024	3/8" COPPER WASHER	4	7P525-067	.525" CRIMP FERRULES	2
7K312-030	5/16"AN WASHER, SS	12	7U030-026	1/4" OIL FEED HOSE	3
7P187-102	-3 BULKHEAD FITTING TO 1/4" HOSE	1	7U100-055	TIE-WRAP, 7.5" NYLON	4
7P187-103	PLUG, -3 O-RING PORT	3	4GP130-036	OIL DRAIN ASY	1
7P250-120	1/4"NPT PIPE PLUG	1	7U030-036	1/2" OIL DRAIN HOSE	3
7P375-104	PLUG, 3/8-16, BRASS SHORT	4	7P375-017	3/8"NPT x 1/2" BEADED HOSE BARB	1
7PP500-087	PLUG, AN-8 O-RING PORT	3	7P375-033	3/8"NPT x 3/8"NPT SRT EL	2
7U100-003	O-RING 3 - 903	4	7R001-008	#8 STNLS HOSE CLAMP	2
7U100-008	O-RING 3 - 908	3	70000	INSPECTION NUMBER	0
7U100-020	10-32 GASKET	1	7T640-011	PUNCH, OIL PAN FTG	1
8M001-018	GASKET, 90mm THROTTLE BODY	1	4GP112-010	INLET ASY, S.B. CHEVY CARB.	1
8M003-051	MACH, MONDO COOLER COVER2	1	8H040-050	AIR FILTER 3.5" FLG. 7"L	1
8M010-025	MORSE CABLE BRKT, CARB ENC	1	4FA012-011	INTAKE TUBE, 180° w/o BOSSES	1
8M105-012	ENCL, STD. MACH ASY SAT.	1	7S350-200	SLEEVE, 3-1/2" x 2" BLUE	1
8M110-010	ASY, THROTTLE LINK, CARB ENCLOSURE	1	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	3
8M001-017	HOLLEY 4-BARREL BASE GASKET	2	7R002-044	#44 SAE TYPE "F" SS HOSE CLAMP	1
4GP111-031	MTG BRKT ASY, SBC GEN2	1	75375-200	SLEEVE, Ø3.75" x 2.00"	1
4GP017-021	GM THROTTLE CABLE	1	75350-004	SLEEVE, Ø3.5" x 1"	1
4GP010-035	MOUNT PLATE, SBC UNIV, GEN2	1	7R002-060	#60 SAE TYPE "F" SS HOSE CLAMP	1
2A017-751-05	SPACER, .750"OD x .360" LONG	2	4GP112-040	DISCHARGE ASY, SBC GEN2 SAT	1
2A041-594	BELT, K100594-GATES	1	8M003-041	MACHINE, Ø3.5" FLANGE, SATIN	1
7A375-500	3/8-16 x 5" HXHD GRADE-8	2	7S350-276	ELBOW, SIL Ø3.5" x 2.75" CHEVY CARB	1
7A375-400	3/8-16 x 4" BOLT HXHD GR8	3	7R002-056	#56 SAE TYPE "F" SS HOSE CLAMP	1
7A375-100	3/8-16 x 1" G5 HHCS, PLT	5	7R002-044	#44 SAE TYPE "F" HOSE CLAMP	1
7A375-126	3/8-16 x 1.25" HHCS, GR8, PLT	4	4GP116-041	6" CRANK PLY ASY, SBC UNIV GEN2	1
4GB011-021	MOUNTING BRKT-MACH	1	4GP017-031	SPACER, SBC CRANK PULLEY, SERP	1
7K375-040	3/8"AN960 FLAT WASHER, PLATED	14	4MA018-041	6" CRANK PULLEY, UNIVERSAL	1
7A375-475	3/8-16 x 4.75" HXHD GR8 PLTD	2	7B375-500	3/8-24 x 5.0" HXHD GR8	3
7A375-375	3/8-16 x 3-3/4" HXHD	3	7B437-600	7/16-20 x 6.0" HXHD GR8	1
7A375-112	3/8-16 x 1.125" FLT HD ALN	2	7J375-044	3/8"SAE WASHER, PLTD	3
7A375-077	3/8-16 x 3/4" GR8 FLAT HD ZNC	1	7J438-081	7/16"SAE WASHER, PLATED	1
7C080-030	M8 x 1.25" x 30 HXHD CL10.9	1	4GP017-041	SPACER, SBC CRANK PULLEY, V-BELT	1
7C080-070	M8 x 1.25" x 70 HXHD ZINC	1	7B375-475	3/8-24 x 4-3/4" HXHD GR8	3
7F008-023	NUT, M8 x 1.25" x 70 HXHD ZINC	1	4GP020-015	INSTR. MANUAL, UNIV. SBC GEN2 KIT	1
7J008-001	3/8" FLAT WASHER	2	008443	S/C RACE INFO. PKG ASY, VORTECH	1
			008130	LICENSE PLATE FRAME, VORTECH	1
			008110	SMALL SILVER DIE-CUT DECAL	2
			7S400-350	REDUCER, 4" - 3.5"	1
			7R002-064	#64 SAE TYPE "F" SS HOSE CLAMP	1

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1. PREPARATION/REMOVAL

- A. Disconnect the negative lead to the battery.
- B. Remove the fan and shroud to aid in installation. It may also be necessary to install a fan spacer at a later time.
- C. **(V-Belt)** Loosen all nuts and bolts that are used to tension the alternator and power steering pump V-belts. Remove the factory belts.
- D. **(Serpentine)** Loosen tension on the tensioner and remove the factory drive belt.
- E. **(Serpentine)** If so equipped, loosen the two screws securing the alternator to the cast factory bracket on the driver's side. Remove any other electrical connections to the alternator. Remove the alternator from the bracket and set aside.
- F. **(Serpentine)** Remove the power steering pulley from the power steering pump. Loosen the screws securing the pump and remove the pump from the factory bracket. Temporarily lay the pump in the engine compartment.
- G. **(Serpentine)** Remove the factory cast bracket from the driver's side of the motor.
- H. **(V-Belt)** Remove the factory power steering pump from the motor.

V-BELT NOTE: This kit is designed to work with later model V-belt power steering pumps. The power steering pulley shaft should be Ø3/4" and is not threaded at the end.

2. OIL FEED INSTALLATION

- A. The supercharger uses engine oil for lubrication and must have an oil feed line connected to a filtered oil access point on the engine.
- B. Remove the 1/4"NPT plug located on the engine block just above the oil filter boss. Replace the plug with the supplied 1/4"NPT x 90° elbow and 1/4"NPT x -4 flare fitting.

NOTE: Use clean engine oil on the pipe threads. Teflon tape and sealant is not recommended as it might loosen and cause blockage of the small oil feed orifice resulting in supercharger failure.

- C. Connect the supplied feed line to the flare fitting and route it up to the front of the driver's side cylinder head. Secure the hose with tie-wraps away from exhaust heat, chaffing and/or sharp objects. Temporarily cover the open end from debris until the connection is made to the supercharger. (See Fig. 2-a.)

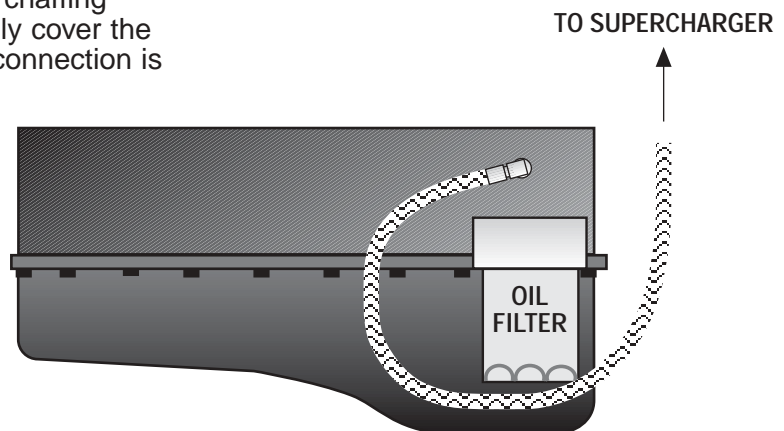


Fig. 2-a

3. OIL DRAIN INSTALLATION

- A. To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan. Locate and mark the hole location. (See Fig. 3-a.) It is best to punch the hole rather than drill.

NOTE: Removal of the oil pan may ease oil drain fitting installation on some applications.

- B. Remove any paint from around the hole area.
- C. Use a small center punch to perforate the pan and expand the hole, switch to a larger diameter punch and expand the hole further to approximately $\text{Ø}9/16"$. Most punches are made from hexagon material and may be placed in a socket with an extension to make this procedure easier. Use caution so that the hole is not enlarged too much and that the punch does *NOT* contact the crankshaft.
- D. Tap the hole with a 3/8"NPT tap approximately 1/4" deep. Pack the flutes of the tap with heavy grease to hold the chips. Use a small magnet to check for any stray chips.

NOTE: This method of rolling over the lip of the hole and tapping works well if carefully done and should cause no problems.

- E. Thoroughly clean the threaded area. Apply a small amount of silicone sealer to the new threads. Apply more sealer to the supplied 3/8"NPT x 90° elbow and secure in the previously threaded hole. Make sure a seal is formed all around the fitting. Rotate the fitting so that the oil drain hose can be easily routed to it. Apply sealer to the supplied 3/8"NPT x 1/2" beaded hose barb fitting and install in the previously installed 90° elbow.
- F. Drain the engine oil, install a new filter and refill with fresh oil.

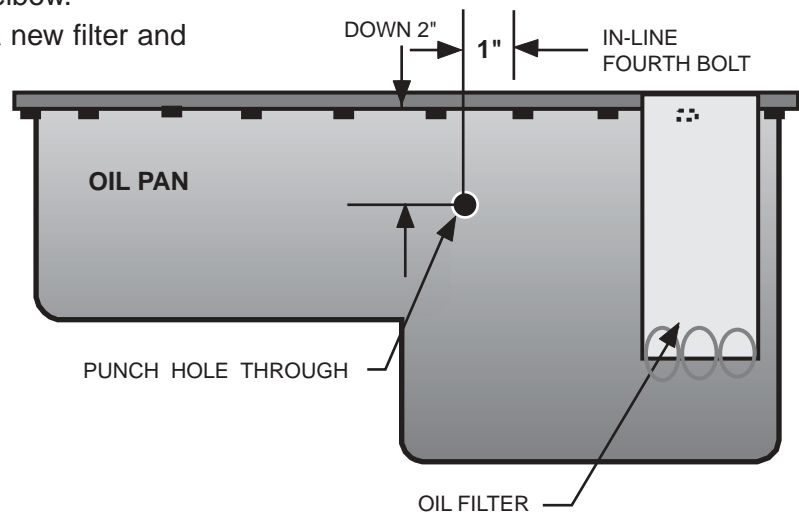


Fig. 3-a

4.1 MAIN BRACKET/SUPERCHARGER INSTALLATION (Serpentine)

NOTE: Some applications (depending on intake manifold height) may require the relocking of the supercharger volute. If relocking is required for your application, loosen and remove the six 1/4-20 cap screws and retaining plates that hold the compressor housing (volute) to the gearcase. If the compressor housing does not rotate freely relative to the gearcase, DO NOT FORCE IT. SERIOUS SUPERCHARGER DAMAGE MAY OCCUR. The machined mating surfaces are designed to prevent pressurized air from escaping and have minimal tolerances. If the housing will not move or is very tight, contact Vortech Engineering immediately at 805 247-0226 and ask our service department for further assistance.

- A. Locate the supplied cast bracket, L-shaped spacer, and two .360" thick spacers.
- B. Use the 3/8-16 x 4" screws and washers to mount the cast bracket to the cylinder head using the .360" L-shaped spacer between the bracket and cylinder head. Use the 3/8-16 x 5" hardware to mount the lower section of the cast bracket to the block with the two .360" spacers. (See Fig. 4.1-a.)
- C. Locate the supplied supercharger mounting plate. Secure the plate to the mounting bracket with the supplied 3/8-16 x 1.25" screws and washers. (See Fig. 4.1-b.)
- D. Mount the power steering pump (if equipped) to the back side of the cast bracket using the supplied 3/8-16 flat-head screws. Reinstall the power steering pulley. (See Figs. 4.2-b, 4.2-c.)
- E. Mount the alternator to the mounting plate with the supplied 8mm hardware. (See Fig. 4.1-c.)

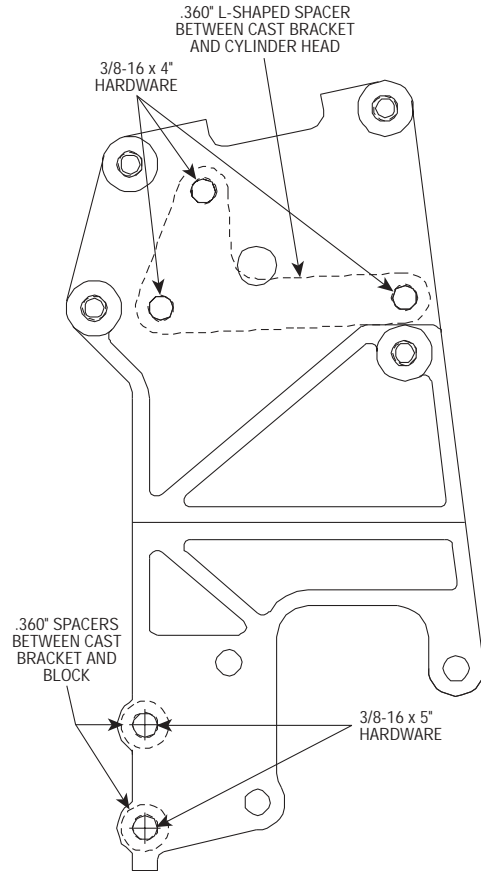


Fig. 4.1-a

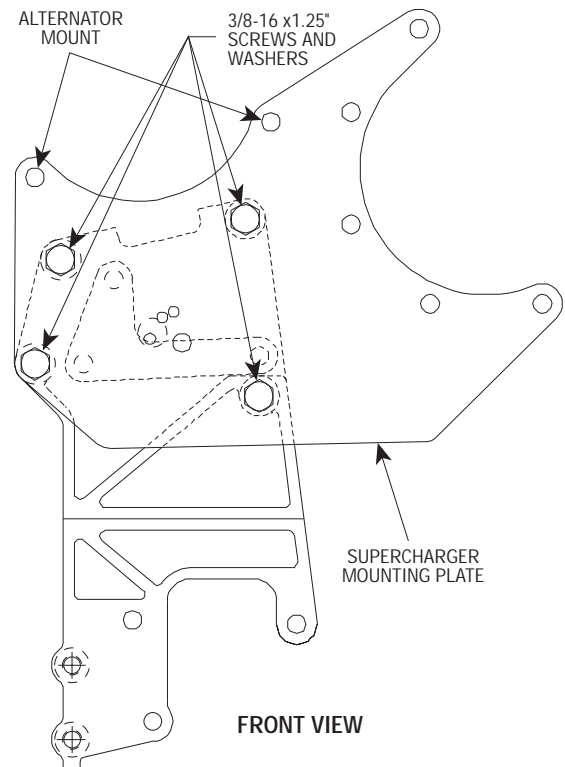


Fig. 4.1-b

4.1 MAIN BRACKET/SUPERCHARGER INSTALLATION (Serpentine), cont'd

- F. Attach the oil drain hose to the 1/2" barbed fitting on the bottom of the supercharger. Secure the hose with the supplied hose clamp.
- G. Using the supplied 3/8-16 x 1.25" screws secure the supercharger to the mounting plate. (See Fig. 4.1-b.)



Fig. 4.1-c

4.2 MAIN BRACKET/SUPERCHARGER INSTALLATION (V-Belt)

- A. Locate the supplied cast bracket. (See Fig. 4.2-a.)

NOTE: Due to the many possible configurations of accessory drives in Small Block Chevy applications, the accessory drive crank pulley spacer may be modified to mate with the supplied supercharger drive crank pulley and the vehicle's existing accessory drive crank pulley.

- B. **(Non-power steering only, P/S models proceed to 4.2-C.)** Using the 3/8-16 x 3.75" screws and washers, mount the cast bracket to the cylinder head. Use the 3/8-16 x 4.75" screws and washers to secure the lower section of the cast bracket to the engine block.
- C. **(Power steering models only.)** Locate the optional 4GP110-051 P/S pump support assembly. Using the 3/8-16 x 3.75" screws and washers, mount the cast bracket to the cylinder head. Install the 3/8-16 x 6.75" screws and washers through the power steering tensioner bracket, .915" long spacers, cast bracket, and into the engine block. (See Fig. 4.2-a.)
 - 1. Locate the supplied P/S belt tensioner pulley. Install the 3/8-16 x 1.75" screw and washer through the tensioner bracket. Place the pulley/pilot assembly onto the previously installed 3/8-16 x 1.75" screw and loosely secure using the 3/8" washer and NYLOC

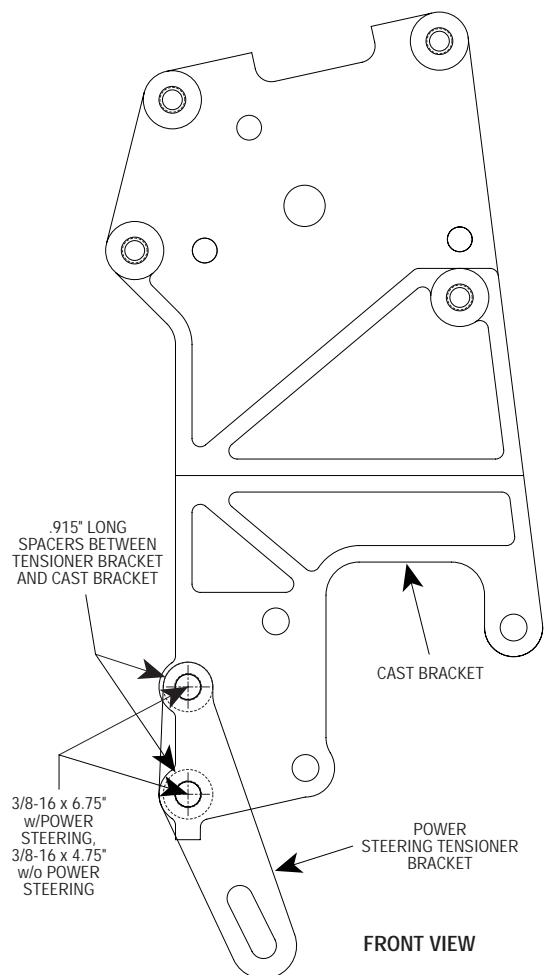


Fig. 4.2-a
(Power Steering Equipped Models Only)

2. Mount the power steering pump to the back side of the cast bracket using the supplied 3/8-16 flat-head screws. Locate the power steering pump drive flange. Using the appropriate GM power steering pulley installer, install the drive flange as you would a normal power steering pulley. (See Fig. 4.2-b.)
3. Using the six 1/4-20 x .75" screws and washers, attach the supplied power steering pulley. (Blue loc-tite on the threads is recommended.) (See Figs. 4.2-b, 4.2-c.)

NOTE: The end of the pump shaft should be flush with the end of the drive flange when fully installed.

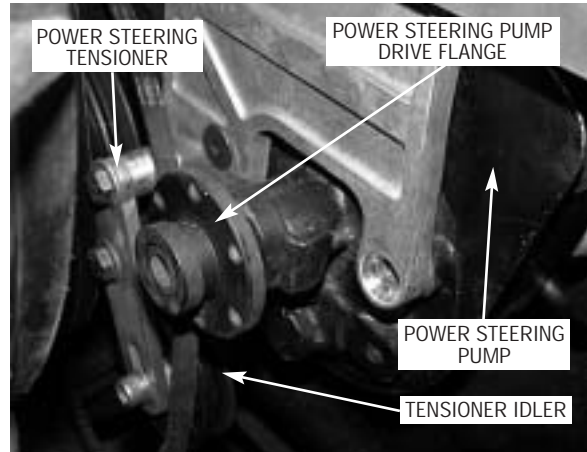


Fig. 4.2-b
(Power Steering Equipped Models Only)

- D. Locate the supplied supercharger mounting plate. Secure the plate to the mounting bracket with the supplied 3/8-16 x 1.25" screws and washers. (See Fig. 4.1-b on previous page.)
- E. Attach the oil drain hose to the 1/2" barbed fitting on the bottom of the supercharger. Secure the hose with the supplied hose clamp.
- F. Using the supplied 3/8-16 x 1.0" screws and washers secure the supercharger to the mounting plate. (See Fig. 4.2-c.)

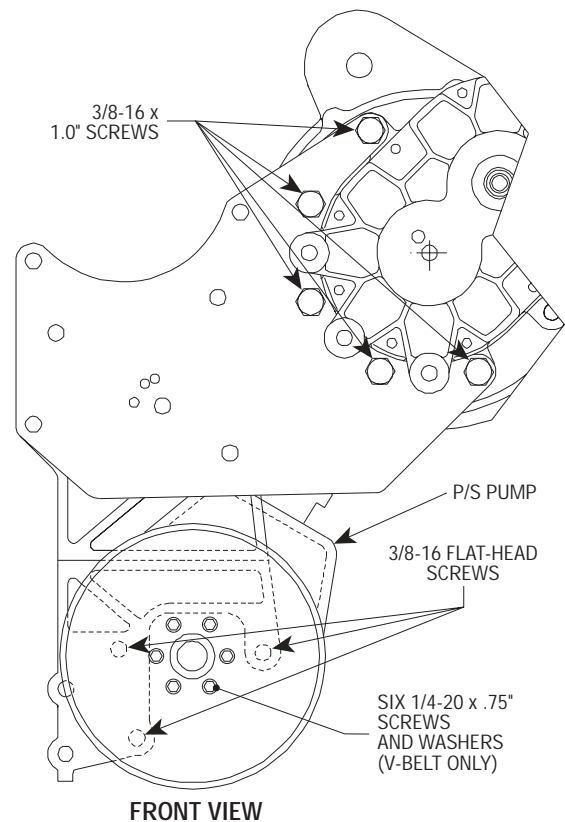


Fig. 4.2-c

5. CRANK PULLEY AND SUPERCHARGER DRIVE PULLEY INSTALLATION

NOTE: Two crank pulley spacers are provided in this system. 4GP017-031 (3.695" long) is to be used for serpentine drive systems. The 4GP017-041 (3.293" long) is to be used for V-belt applications.

- A. Locate the supercharger drive assembly (4GP116-041). Using the 7/16-20 x 6" screw and washer, loosely install the appropriate spacer for your application to the front of the factory crank pulley.
- B. Rotate the previously installed spacer to align the three mounting holes. Install the supplied 10-rib crank pulley and secure using the supplied hardware. (3/8-24 x 5" for Serpentine and 3/8-24 x 4.75" for V-belt applications.) Torque center bolt to 35 ft.lbs. and the three pulley retainers to 25 ft.lbs.

NOTE: Take care to ensure that all pulleys and spacer are piloting correctly and seated flat against their mounting faces.

- C. Install all applicable accessory belts at this time and tension using the appropriate belt tensioner for your application.
- D. Lightly grease the supercharger input shaft and/or the supercharger drive pulley bore. Install the pulley onto the supercharger input shaft and rotate the pulley to align the keyways. Slide the square key into the keyway. Install the pulley retainer assembly into the input shaft and hand tighten.

NOTE: If the supercharger drive pulley will not slide onto the shaft DO NOT FORCE IT. Light heating of the supercharger drive pulley with a propane torch will aid in installation.

- E. Locate the manual tensioner assembly (4GP111-041). Install the 7/16-20 screw through the 7/16" "thick" washer, tensioner pulley, pulley spacer and tensioner plate. Secure using the 7/16" SAE washer (thinner one) and Nyloc nut provided.

NOTE: The bearing retaining ring on the pulley should be facing the pulley spacer to properly clear the "thick" retaining washer. (See Fig. 6-d.)

- F. Loosely install the belt tensioner assembly onto the supercharger using the M12 hardware provided. Locate the supplied 10-Rib supercharger drive belt and install between the crank pulley and supercharger pulley. Using a 1/2" ratchet, apply tension to the supercharger drive belt and secure the three M12 screws previously installed. (See Fig. 5-b.)

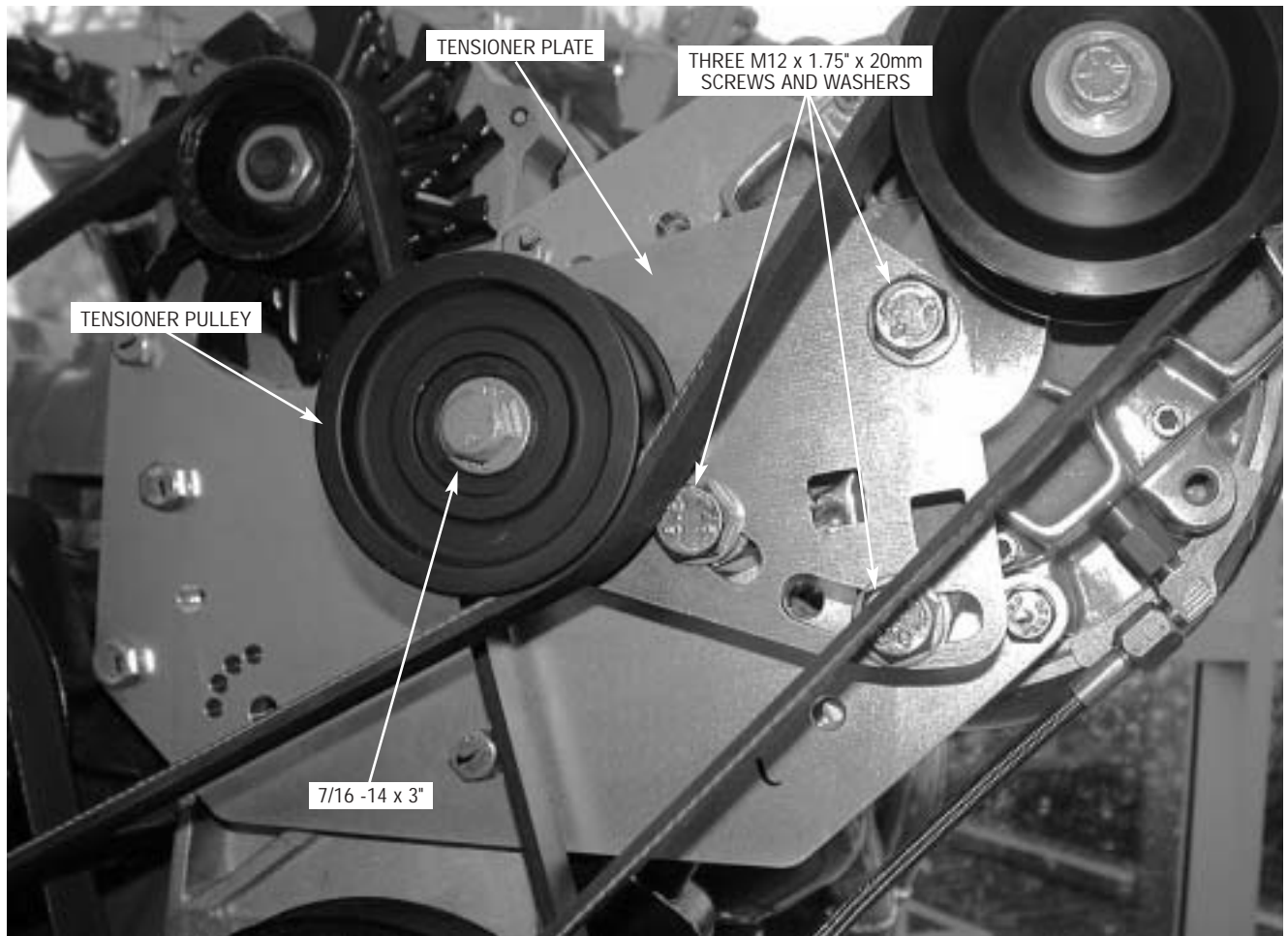


Fig. 5-b

6. DISCHARGE DUCTING/CARBURETOR ENCLOSURE

NOTE: *OPTIONAL:* Due to the many possible configurations of intake manifolds (with regard to carburetor flange height) a carburetor spacer may be required to obtain the necessary height for proper supercharger and discharge duct alignment. As an option, the carburetor enclosure cover may be turned around so that the inlet is facing the passenger side of the vehicle. This may be desirable on some vehicle applications with tall intake manifolds or for vehicles with other clearance issues. (See Figs. 6-a, 6-b for more detail.)

1. This optional discharge arrangement requires the supercharger to be sent into Vortech for a volute exchange to a straight discharge unit (a curved volute is originally supplied on the supercharger).
2. An extended discharge elbow must be purchased from Vortech (#4GA012-021).
3. Also a discharge elbow must be purchased from Vortech (#8M012-012).
4. Routing of the fuel line inlet to the rear of the enclosure must also be performed.

- A. Install Vortech carburetor enclosure (if not already completed) assembly #8M205-012 included in this kit. Instructions are included in the enclosure assembly.
- B. Locate the 4GP112-040 discharge assembly. Using the supplied gasket and 5/16-18 x 3/4" socket-head screws from the carburetor enclosure assembly, secure the 3/5" aluminum flange to the carburetor enclosure lid.
- C. Install the 3/5" x 2.75" 90° elbow (7S350-276) between the supercharger discharge and the 3.5" aluminum flange previously installed. Trim the ends if necessary for best fit. Secure using a #44 and #56 hose clamp.

NOTE: *The 7S350-276 is made to be trimmed in order to fit, allowing for various intake manifold heights.*

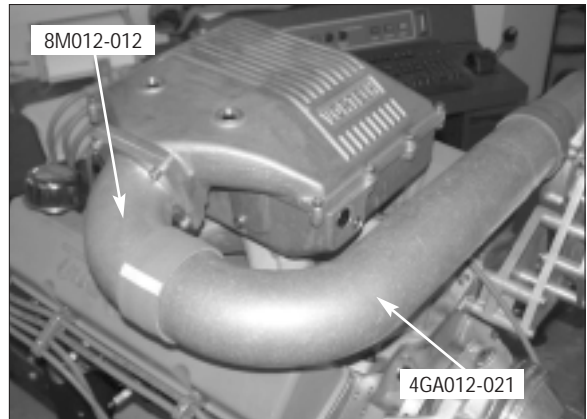


Fig. 6-a (Optional)

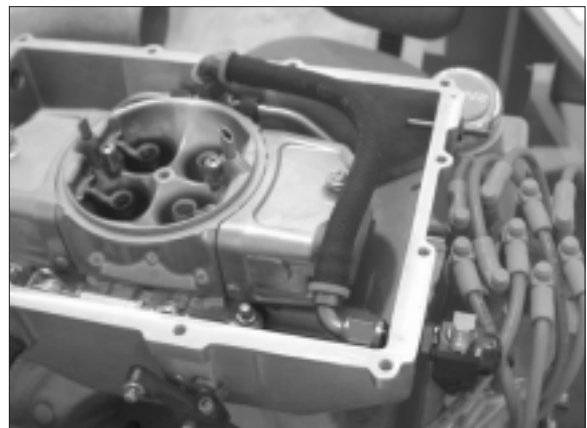


Fig. 6-b (Optional)

7. FINAL REASSEMBLY AND CHECK

WARNING: Do not attempt to operate the vehicle until all components are installed and all operations are completed including final check.

- A. Refit the upper fan shroud.
- B. Reconnect the battery.
- C. If your vehicle has gone over 15,000 miles since its last spark plug change, you will need to change the spark plugs now before test driving the vehicle.
- D. Check all fittings, nuts, bolts and clamps for tightness. Pay particular attention to oil and fuel lines around moving parts, sharp edges and exhaust system parts. Make sure all wires and lines are properly secured with clamps or tie-wraps.
- E. Check all fluid levels, making sure that your tank(s) is filled with 91 octane or higher fuel before commencing test drive.
- F. Start engine and allow to idle a few minutes, then shut off.
- G. Recheck to be sure that no hoses, wires, etc. are near exhaust headers or moving parts and for signs of any fluid leakage. Re-jet the carburetor as required. Install a boost referenced high-performance mechanical fuel pump or high performance electric fuel pump with boost referenced fuel regulator. Use a wide band O2 sensor to verify a proper air/fuel ratio (*Vortech suggests 11.0:1 for 91 octane pump fuel*).
- H. Check ignition timing to make sure it is properly set before commencing test drive.
- I. **PLEASE TAKE SPECIAL NOTE:** *Operating the vehicle without all sub assemblies completely and properly installed and working may cause **FAILURE OF MAJOR ENGINE COMPONENTS.***
- J. Test drive the vehicle.
- K. Read the Street Supercharger System Owner's Manual and **RETURN THE WARRANTY REGISTRATION FORM** within thirty (30) days of purchasing your super-charger system to qualify.



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