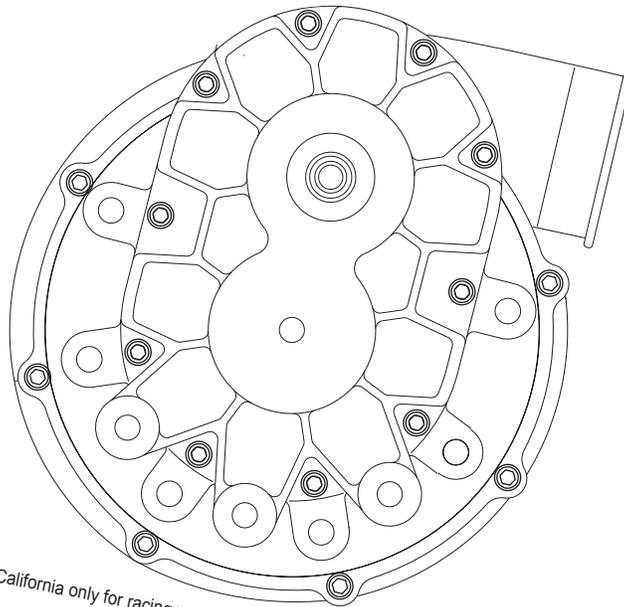


Ford 5.2L Mustang GT350 Supercharger System Installation Instructions

2016 Model Year*



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



ENGINEERING, INC

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FOREWORD

This manual provides information on the installation, maintenance and service of the Vortech supercharger kit expressly designed for this vehicle. All information, illustrations and specifications contained herein are based on the latest product information available at the time of this publication. Changes to the manual may be made at any time without notice. Contact Vortech Engineering for any additional information regarding this kit and any of these modifications at (805) 247-0226 7:00am-3:30pm PST.



Take note of the following before proceeding:

1. Proper installation of this supercharger kit 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 contact your dealer or Vortech Engineering for possible installers in your area.
2. This product was designed for use on stock (un-modified, OEM) vehicles. The PCM (computer), engine, transmission, drive axle ratios and tire O.D. must be stock. If the vehicle or engine has been modified in any way, check with Vortech prior to installation and use of this product.
3. Use only premium grade fuel with a minimum of 91 octane (*R+M/2*).
4. Always listen for any sign of detonation (*knocking/pinging*) and discontinue hard use (*no boost*) until problem is resolved.
5. Vortech is not responsible for any clutch, transmission, drive-line or engine damage.

Exclusions from Vortech warranty coverage considerations include, but not limited to:

1. Neglect, abuse, lack of maintenance, abnormal operation or improper installation.
2. Continued operation with an impaired vehicle or sub-system.
3. The combined use of Vortech components with other modifications such as, but not limited to, exhaust headers, aftermarket camshafts, nitrous oxide, third party PCM programming or other such changes.

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NOTICE

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2016 Ford Mustang GT350

Installation Instructions

Congratulations on selecting the best performing and best backed automotive supercharger available today... the VORTECH® supercharger!

Before beginning this installation, please read through this entire instruction booklet and the Street Supercharger System Owner's Manual which includes the Limited Warranty Program, the Warranty Registration form and return envelope.

Vortech supercharger systems are performance improving devices. In most cases, increases in torque of 30-35% and horsepower between 35-45% can be expected with the boost levels specified by Vortech Engineering. 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 as well as the supercharger. Vortech Engineering is not responsible for engine damage.

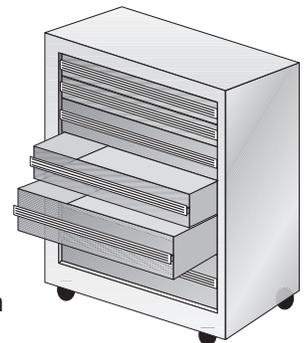
Installation on new vehicles will not harm or adversely affect the break-in period so long as factory break-in procedures are followed.

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 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 test driving your vehicle. Thereafter, always use a high grade SF rated engine oil or a high quality synthetic, and change the oil and filter at least every 3,000 miles. Never attempt to extend the oil change interval beyond 3,000 miles, regardless of oil manufacturer's claims as potential damage to the supercharger may result.
6. Before beginning installation, replace all spark plugs that are older than 1 year or 15,000 miles with original heat range plugs as specified by the manufacturer and reset timing to factory specifications (follow the procedures indicated within the factory repair manual and/or as indicated on the factory underhood emissions tag). Do not use platinum spark plugs unless they are original equipment. Change spark plugs every 20,000 miles.

TOOL & SUPPLY REQUIREMENTS

- 3/8" socket and drive set: SAE & metric
- 1/2" socket and drive set: SAE & metric
- Adjustable wrench
- Open end wrenches: metric
- TORX T-20 driver
- Utility knife
- **Oil-Fed Kits:** 3/8" NPT tap, center punch, 5/8" tapered punch, heavy grease, 8 quarts manufacturer-specified engine oil, oil filter, oil filter wrench



If it has been 35,000 miles or more since your vehicle's last spark plug change, then you will also need:

- Spark plug socket
- NEW spark plugs



2016 Ford Mustang GT350, H.O.

Part No. 4FQ218-074L

PARTS LIST

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

PART NUMBER	DESCRIPTION	QTY.	PART NUMBER	DESCRIPTION	QTY.
008110	DECAL, VINYL, VORTECH	2	4FQ112-134	DISCH ASY, '16 MUST GT350, BLK 1	1
008130	LICENSE PLATE FRAME, VORTECH 1	1	4FQ012-090	DISCH. TUBE C, 2015 MUST GT	1
008447	1 YR S/C WARRANTY PKG 1	1	4FQ012-134	DISCH TUBE A, V-7, '15 MUST GT BLK	1
009035	S/C LUBE, BOTTLED, 3-PACK 1	1	4FQ017-071	SPACER TB ADAPT, '16 MUST GT350	1
2F339-124	V3 SCI ASY, '16 MUST GT350, BLK 1	1	4FQ112-085	ASY, DISCH TUBE B, MUST GT350	1
4FQ012-141	MOD. AIRBOX, OEM, '16 MUST GT 1	1	4FQ112-104	ASY, DISCH TUBE D, '15 MUST GT BLK	1
4FQ020-020	INSTR. MAN, 2016 MUST GT350 1	1	7C040-008	M4-.7 X 8MM SCHD SS	2
4FQ111-013	MNTG BRKT ASY, G2, 2015 MUST 1	1	7C060-031	M6 X 1.0 X 30 BUTN HD ZN PLT	4
2A017-875-27	SPACER, .875OD X .404ID X 1.895L	4	7C060-050	M6 X 1.0 X 50 HXHD ZINC PLATE	4
2A017-875-28	SPACER, .875 OD X 2.730 LONG	1	7F008-021	NUT, M8 X 1.25, SERRATED FLG	4
2A017-876-13	SPACER, .875OD X .328ID X 2.730L	2	7J006-093	6MM WASHER, PLATED	8
2A017-876-14	SPACER, .875OD X .328ID X 2.058L	2	7J312-875	5/16" WASHER, 7/8" OD, CUSTOM	4
2A017-876-15	SPACER, .875OD X .328ID X 2.146L	1	7P062-187	1/16 NPT X 3/16 HOSE BARB	1
2A017-876-16	SPACER, .875OD X .328ID X 1.928L	1	7P157-219	REDUCER UNION, 5/32" TO 7/32"	1
2A046-031	BELT, 6 RIB X 103.31 EFF. LENGTH	1	7P500-016	TEE, .5X.5X1/16NPT, METAL	1
4FQ010-011	MNTG PLT, OUTER, 2011 MSTG 5.0	1	7PS300-277	SLEEVE, BUMP REDUCER, 3.0- 2.75	1
4FQ010-021	MNTG PLT, INNER, 2011 MSTG 5.0	1	7PS300-300	SLEEVE, BLACK, 3.00D X 3.00	2
4FQ017-021	SPCR, .875/1.25OD X .328ID X 1.782L	1	7PS300-301	BUMP HOSE, 3.00D X 3.00L	1
4FQ017-031	SPCR, .875ODX.404IDX.363L W/.66 PLT	4	7PS350-300	REDUCR, BLK 3.5-3 X 2.3LG, MOD	1
4GF016-161	PULLEY, 3" IDLER, GROOVED, MOD	1	7PS350-304	SLEEVE, BLACK 3.50" D X 3.0" L	1
4PCS016-160	PULLEY, IDLER, SRT10 TRUCK	1	7PS400-350	REDUCER, BLK 4.0-3.5 X 3.0L	1
4TX016-150	IDLER, 2.75 DIA, SMOOTH, 7 RIB	2	7PS400-382	ELBOW, 4.0 X 3.82 S-SHAPE, SILICONE	1
7A375-126	3/8-16 X 1.25 HHCS, GR8, PLT	5	7R002-044	#44 SAE TYPE F SS HOSE CLAMP	1
7A375-352	3/8-16 X 3.5" HX HD GR8	5	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	7
7C080-064	M8 X 1.25 X 65MM BHCS CL10.9	1	7R002-056	#56 SAE TYPE F SS HOSE CLAMP	5
7C080-081	M8 X 1.25 X 80 HXHD CL10.9	1	7R002-064	#64 SAE TYPE F SS HOSE CLAMP	2
7C080-101	M8-1.25 X 100 BHCS CL10.9	1	7U012-240	O-RING, 2-240, 3.734 ID X .139	1
7C080-200	M8-1.25 X 200MM STUD, 35MM THREAD	2	7U030-046	5/32" VACUUM LINE	.025FT
7F008-021	NUT, M8 X 1.25, SERRATED FLG	2	7U030-218	7/32 VAC HOSE, BUNA-N	5FT
7J312-000	5/16 FLAT WASHER-SAE	3	8A003-074	MAF, 3.8 ID, BLACK	1
7K375-040	3/8 AN960 FLAT WASHR PLATED	9	8H040-175	FILTER, 1.75" I.D., RACE BYPASS	1
7K375-050	3/8 WASHER, STAINLS, .030THK	1	4FQ114-030	ENG COOL SYS MOD ASY, '15 MUST1	1
4FQ112-113	AIR INLET ASY,CF,'15 MUST GT350 1	1	5W001-085	SLEEVE, FLEX BRAID 1.5" NOM.	1
008358	DECAL, INLET, 2011 MSTG GT VORT	1	7P312-050	5/16 UNION HOSE MENDER	1
4FQ012-113	INLET DUCT, CARBON, 15-17 MUST 5.0	1	7P375-050	3/8 HOSE UNION, BRASS	1
5W001-039	1" HEAT SHRINK TUBING	3IN	7P375-075	3/4" HOSE BARB UNION, BRASS	1
5W001-082	SLEEVE, FLEX BRAID .75" NOM.	.75FT	7P375-098	TEE, 3/8 INCH, PLASTIC	1
7J006-093	6MM WASHER, PLATED	2	7R002-024	#24 SAE TYPE F SS HOSE CLAMP	1
7P250-120	1/4 NPT PIPE PLUG	1	7R004-001	STEPLESS CLAMP, 15.7-70	4
7P375-098	TEE, 3/8" INCH, PLASTIC	1	7R004-002	STEPLESS CLAMP, 17.0-70	7
7P375-106	PCV VALVE, FORD, 3/8" HOSE	1	7R004-007	STEPLESS CLAMP, 28.6 X 7MM	2
7P375-378	VALVE, CHECK, 3/8 BARB X 3/8 BARB	1	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5
7P500-039	1/2 NPT X 5/8 BARB 90 , PLATED	1	7U030-065	HOSE, 3/4 X 90" RUBBER, SHORT	1
7P625-004	5/8 TEE, GF NYLON	1	7U030-109	VAC HOSE, 7/64 ID	.50FT
7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1	7U031-016	5/16 PCV/VAC RUBBER HOSE	1
7P625-375	REDUCER, 5/8 BARB TO 3/8 BARB	2	7U038-000	3/4 HEATER HOSE	3
7PS375-100	SLEEVE, 3.75 X 1.0 3-PLY MATTE BLK	1	8N155-090	WATER TANK WELD ASY, 2015 MUST	1
7PS400-200	SLEEVE, BLACK 4.0D X 2.0	1	4FQ155-021	WASHER RESERVOIR ASY, GT350 1	1
7PS400-225	BUMP SLEEVE, 4 X 2.25, BLACK	1	4GE055-010	TANK "A", WSHR FLUID, 2 QT	1
7PS400-351	REDUCER SLEEVE, 4.0 X 3.5 X 2.35L	1	4GE055-020	CAP, BUTTRESS THRD UNVNTD 2-1/4	1
7R002-052	#52 SAE TYPE F SS HOSE CLAMP	1	4GE055-030	TANK, RMT FILL WSHR FLUID, W/ CAP	1
7R002-064	#64 SAE TYPE F SS HOSE CLAMP	4	7A250-039	1/4-20 X .375 BHCS	4
7R004-002	STEPLESS CLAMP, 17.0-70	6	7A250-074	1/4-20 X .75 HHCS PLTD	2
7R004-004	STEPLESS CLAMP, 25.6 X 7MM	10	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	2
7R004-007	STEPLESS CLAMP, 28.6 X 7MM	2	7J250-001	1/4 WASHER, SAE, PLTD	6
7U030-056	3/8 PCV/VAC RUBBER HOSE	3FT	7J312-875	5/16" WASHER, 7/8" OD, CUSTOM	1
7U033-000	5/8" PCV HOSE	2.5FT	7P375-625	3/8 NPT X 5/8 HOSE FTG, BARBED	1
7U100-055	TIE WRAP, 7.5" NYLON	10	7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1
8A004-007-1	BLK OFF PLT, VORT, FORD SLOT MAF	1	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	1
			7R004-004	STEPLESS CLAMP, 25.6 X 7MM	3
			7U033-000	5/8" PCV HOSE	1FT
			5A003-070	SCT TUNER, '11-'16 MUST GT 1	1
			5W001-097	HRNSS, TB EXTEN, '16 MUST GT350 1	1
			8D204-064	RACE BYPASS VALVE, G3 BLK/SAT 1	1
			8F060-725	FUEL INJ, ID725, 2011 MUST 8	8
			8H040-205	AIR FILTER, 2015 MSTG GT PANEL 1	1
			8PN101-054	WELDED CORE ASY, 05 MUST, BLK 1	1



2016 Ford Mustang GT350, H.O. Tuner Kit

Part No. 4FQ218-174L

PARTS LIST

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

PART NUMBER	DESCRIPTION	QTY.	PART NUMBER	DESCRIPTION	QTY.
008110	DECAL, VINYL, VORTECH	2	4FQ112-134	DISCH ASY, '16 MUST GT350, BLK 1	
008130	LICENSE PLATE FRAME, VORTECH 1		4FQ012-090	DISCH. TUBE C, 2015 MUST GT	1
008447	1 YR S/C WARRANTY PKG 1		4FQ012-134	DISCH TUBE A, V-7, '15 MUST GT BLK	1
009035	S/C LUBE, BOTTLED, 3-PACK 1		4FQ017-071	SPACER TB ADAPT, '16 MUST GT350	1
2F339-124	V3 SCI ASY, '16 MUST GT350, BLK 1		4FQ112-085	ASY, DISCH TUBE B, MUST GT350	1
4FQ012-141	MOD. AIRBOX, OEM, '16 MUST GT 1		4FQ112-104	ASY, DISCH TUBE D, '15 MUST GT BLK	1
4FQ020-020	INSTR. MAN, 2016 MUST GT350 1		7C040-008	M4-.7 X 8MM SCHD SS	2
4FQ111-013	MNTG BRKT ASY, G2, 2015 MUST 1		7C060-031	M6 X 1.0 X 30 BUTN HD ZN PLT	4
2A017-875-27	SPACER, .875OD X .404ID X 1.895L	4	7C060-050	M6 X 1.0 X 50 HXHD ZINC PLATE	4
2A017-875-28	SPACER, .875 OD X 2.730 LONG	1	7F008-021	NUT, M8 X 1.25, SERRATED FLG	4
2A017-876-13	SPACER, .875OD X .328ID X 2.730L	2	7J006-093	6MM WASHER, PLATED	8
2A017-876-14	SPACER, .875OD X .328ID X 2.058L	2	7J312-875	5/16" WASHER, 7/8" OD, CUSTOM	4
2A017-876-15	SPACER, .875OD X .328ID X 2.146L	1	7P062-187	1/16 NPT X 3/16 HOSE BARB	1
2A017-876-16	SPACER, .875OD X .328ID X 1.928L	1	7P157-219	REDUCER UNION, 5/32" TO 7/32"	1
2A046-031	BELT, 6 RIB X 103.31 EFF. LENGTH	1	7P500-016	TEE, .5X.5X1/16NPT, METAL	1
4FQ010-011	MNTG PLT, OUTER, 2011 MSTG 5.0	1	7PS300-277	SLEEVE, BUMP REDUCER, 3.0- 2.75	1
4FQ010-021	MNTG PLT, INNER, 2011 MSTG 5.0	1	7PS300-300	SLEEVE, BLACK, 3.00D X 3.00	2
4FQ017-021	SPCR, .875/1.25OD X .328ID X 1.782L	1	7PS300-301	BUMP HOSE, 3.00D X 3.00L	1
4FQ017-031	SPCR, .875ODX.404IDX.363L W/.66 PLT	4	7PS350-300	REDUCR,BLK 3.5-3 X 2.3LG, MOD	1
4GF016-161	PULLEY, 3" IDLER, GROOVED, MOD	1	7PS350-304	SLEEVE, BLACK 3.50" D X 3.0" L	1
4PCS016-160	PULLEY, IDLER, SRT10 TRUCK	1	7PS400-350	REDUCER, BLK 4.0-3.5 X 3.0L	1
4TX016-150	IDLER, 2.75 DIA, SMOOTH, 7 RIB	2	7PS400-382	ELBOW, 4.0 X 3.82 S-SHAPE, SILICONE	1
7A375-126	3/8-16 X 1.25 HHCS, GR8, PLT	5	7R002-044	#44 SAE TYPE F SS HOSE CLAMP	1
7A375-352	3/8-16 X 3.5" HX HD GR8	5	7R002-048	#48 SAE TYPE F SS HOSE CLAMP	7
7C080-064	M8 X 1.25 X 65MM BHCS CL10.9	1	7R002-056	#56 SAE TYPE F SS HOSE CLAMP	5
7C080-081	M8 X 1.25 X 80 HXHD CL10.9	1	7R002-064	#64 SAE TYPE F SS HOSE CLAMP	2
7C080-101	M8-1.25 X 100 BHCS CL10.9	1	7U012-240	O-RING, 2-240, 3.734 ID X .139	1
7C080-200	M8-1.25 X 200MM STUD, 35MM THREAD	2	7U030-046	5/32" VACUUM LINE	.025FT
7F008-021	NUT, M8 X 1.25, SERRATED FLG	2	7U030-218	7/32 VAC HOSE, BUNA-N	5FT
7J312-000	5/16 FLAT WASHER-SAE	3	8A003-074	MAF, 3.8 ID, BLACK	1
7K375-040	3/8 AN960 FLAT WASHR PLATED	9	8H040-175	FILTER, 1.75" I.D., RACE BYPASS	1
7K375-050	3/8 WASHER, STAINLS, .030THK	1	4FQ114-030	ENG COOL SYS MOD ASY, '15 MUST1	
4FQ112-113	AIR INLET ASY,CF,'15 MUST GT350 1		5W001-085	SLEEVE, FLEX BRAID 1.5" NOM.	1
008358	DECAL, INLET, 2011 MSTG GT VORT	1	7P312-050	5/16 UNION HOSE MENDER	1
4FQ012-113	INLET DUCT, CARBON,15-17 MUST 5.0	1	7P375-050	3/8 HOSE UNION, BRASS	1
5W001-039	1" HEAT SHRINK TUBING	3IN	7P375-075	3/4" HOSE BARB UNION, BRASS	1
5W001-082	SLEEVE, FLEX BRAID .75" NOM.	.75FT	7P375-098	TEE, 3/8 INCH, PLASTIC	1
7J006-093	6MM WASHER, PLATED	2	7R002-024	#24 SAE TYPE F SS HOSE CLAMP	1
7P250-120	1/4 NPT PIPE PLUG	1	7R004-001	STEPLESS CLAMP, 15.7-70	4
7P375-098	TEE, 3/8" INCH, PLASTIC	1	7R004-002	STEPLESS CLAMP, 17.0-70	7
7P375-106	PCV VALVE, FORD, 3/8" HOSE	1	7R004-007	STEPLESS CLAMP, 28.6 X 7MM	2
7P375-378	VALVE, CHECK, 3/8 BARB X 3/8 BARB	1	7U030-056	3/8 PCV/VAC RUBBER HOSE	2.5
7P500-039	1/2 NPT X 5/8 BARB 90 , PLATED	1	7U030-065	HOSE, 3/4 X 90° RUBBER, SHORT	1
7P625-004	5/8 TEE, GF NYLON	1	7U030-109	VAC HOSE, 7/64 ID	.50FT
7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1	7U031-016	5/16 PCV/VAC RUBBER HOSE	1
7P625-375	REDUCER, 5/8 BARB TO 3/8 BARB	2	7U038-000	3/4 HEATER HOSE	3
7PS375-100	SLEEVE, 3.75 X 1.0 3-PLY MATTE BLK	1	8N155-090	WATER TANK WELD ASY, 2015 MUST	1
7PS400-200	SLEEVE, BLACK 4.0D X 2.0	1	4FQ155-021	WASHER RESERVOIR ASY, GT350 1	
7PS400-225	BUMP SLEEVE, 4 X 2.25, BLACK	1	4GE055-010	TANK "A", WSHR FLUID, 2 QT	1
7PS400-351	REDUCER SLEEVE,4.0 X 3.5 X 2.35L	1	4GE055-020	CAP, BUTTRESS THRD UNVNTD 2-1/4	1
7R002-052	#52 SAE TYPE F SS HOSE CLAMP	1	4GE055-030	TANK, RMT FILL WSHR FLUID, W/ CAP	1
7R002-064	#64 SAE TYPE F SS HOSE CLAMP	4	7A250-039	1/4-20 X .375 BHCS	4
7R004-002	STEPLESS CLAMP, 17.0-70	6	7A250-074	1/4-20 X .75 HHCS PLTID	2
7R004-004	STEPLESS CLAMP, 25.6 X 7MM	10	7F250-021	1/4-20 NYLOCK NUT ZINC PLATED	2
7R004-007	STEPLESS CLAMP, 28.6 X 7MM	2	7J250-001	1/4 WASHER, SAE, PLTD	6
7U030-056	3/8 PCV/VAC RUBBER HOSE	3FT	7J312-875	5/16" WASHER, 7/8" OD, CUSTOM	1
7U033-000	5/8" PCV HOSE	2.5FT	7P375-625	3/8 NPT X 5/8 HOSE FTG, BARBED	1
7U100-055	TIE WRAP, 7.5" NYLON	10	7P625-091	5/8 X 5/8 X 90 BARB ELBOW, PLASTIC	1
8A004-007-1	BLK OFF PLT, VORT, FORD SLOT MAF	1	7R002-010	#10 SAE TYPE F SS HOSE CLAMP	1
			7R004-004	STEPLESS CLAMP, 25.6 X 7MM	3
			7U033-000	5/8" PCV HOSE	1FT
			5W001-097	HRNSS,TB EXTEN,'16 MUST GT350 1	
			8D204-064	RACE BYPASS VALVE, G3 BLK/SAT 1	
			8H040-205	AIR FILTER, 2015 MSTG GT PANEL 1	
			8PN101-054	WELDED CORE ASY,05 MUST, BLK 1	

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1. BASIC COMPONENT REMOVAL

NOTE: Retain all fasteners & note the original location of each for future re-use.

- A. Remove the (6) 8mm-headed fasteners securing the front bumper cover to the upper radiator support. Set aside for later re-installation.

(See Fig. 1-a)

- B. There are (2) 5.5mm-headed fasteners (one on each side) hidden underneath the weather stripping on the top of the bumper cover near the headlights. Remove these fasteners & set aside for later re-installation.

(See Fig. 1-b)

- C. Remove the (2) plastic fasteners securing the brake cooling duct to the inner fender liner. Do this for both sides.

(See Fig. 1-c)

- D. In order to allow adequate working space to access the backside of the front bumper cover, it is suggested to remove all of the plastic fasteners securing the fender liners to the fenders & front undertray & allowing the inner fender liner to rest on top of the wheels. Do this for both sides.

(See Fig. 1-D)



Fig. 1-a: Remove Bumper Cover Fasteners



Fig. 1-b: Remove 5.5mm-Headed Fastener



Fig. 1-d: Remove Fender Liner Fasteners



Fig. 1-c: Remove Fender Liner Fasteners

1. BASIC COMPONENT REMOVAL, cont'd

- E. Remove the (6) T25 screws securing the rear section of the front splitter to the belly pan. Located inside the (4) elongated slots on the front splitter are (4) 7mm-headed screws securing the front splitter to the front bumper cover. These will also need to be removed. Once all fasteners have been removed, push the front splitter forward to detach it from the front bumper cover.

(See Fig. 1-e)

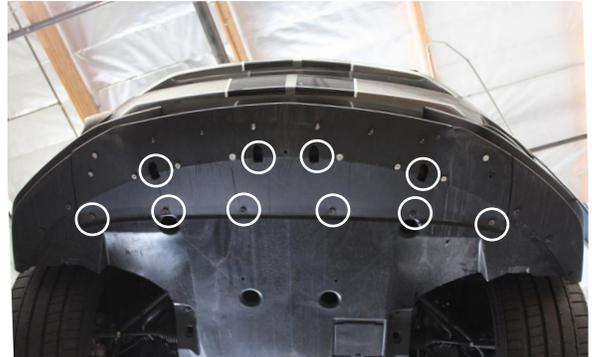


Fig. 1-e: Remove Front Splitter

- F. Remove the (2) T25 screws & (1) 7mm-headed screw securing the corner of the front bumper cover to the belly pan. Do this for both sides.

(See Fig. 1-f)



Fig. 1-f: Remove Screws Securing Front Bumper Corners

- G. Remove the (6) 7mm-headed fasteners securing the belly pan to the front bumper cover.

(See Fig. 1-g)

- H. There are (2) 7mm-headed fasteners (one per side) securing the corners of the front bumper cover to the fender. With the fender liners out of the way, reach behind the front bumper cover & remove these fasteners. Once removed, pull the corners of the front bumper cover away from the fender. Carefully remove the front bumper cover from the vehicle, making sure to unplug the turn signal harness connector from the main harness.

(See Fig. 1-h)



Fig. 1-h: Bumper Corner Fastener
(Bumper Removed)



Fig. 1-g: Remove Front Belly Pan Screws

1. BASIC COMPONENT REMOVAL, cont'd

- I. Located along the outer perimeter of the upper & lower sections of the radiator shroud are a number of plastic fasteners securing rubber shrouding to the radiator shroud. You will need to remove those plastic fasteners in order to remove the radiator shroud assembly in the next step.

(See Fig. 1-i)

- J. Remove the (4) 10mm-headed fasteners & (3) plastic fasteners securing the radiator shroud to the front of the vehicle. Unplug the ambient air temperature sensor, then remove the shroud & set aside.

(See Fig. 1-j)

- K. You will notice a wire harness running along the back side of the bumper support secured by (3) gray clips. Free the harness from the bumper support.

(See Fig. 1-k)

- L. Release the gray clips from the wire harness & set aside. These will not be reused.

(See Fig. 1-l)



Fig. 1-j: Remove Radiator Shroud



Fig. 1-l: Gray Clip Removal



Fig. 1-k: Wire Harness

1. BASIC COMPONENT REMOVAL, cont'd

- M. Loosen the hose clamp securing the air inlet tube to the throttle body, then proceed to detach the breather hoses from the air inlet tube.

(See Fig. 1-m)

- N. Remove the 10mm-headed screw securing the air box to the vehicle. Unplug the MAF sensor connector & remove the air inlet assembly from the vehicle.

(See Fig. 1-n)

- O. Remove the pressure cap from the engine coolant reservoir near the passenger side front of the engine compartment. Locate the engine coolant drain valve at the bottom passenger side corner of the radiator. Open the valve and drain the coolant into a clean container for later reuse. Drain enough to empty the reservoir and below the level of the upper radiator hose.

(See Fig. 1-o)

- P. Unclamp and detach the two small hoses from the upper portion of the coolant reservoir & disconnect the larger hose from the bottom of the coolant reservoir. Be prepared to catch any spillage. Remove the two (2) 10mm-headed fasteners securing the coolant reservoir. Remove the reservoir and set it aside. It will not be reused.

(See Fig. 1-p)



Fig. 1-m: Loosen Hose Clamp



Fig. 1-n: Unplug MAF & Remove Air Inlet Assembly



Fig. 1-p: Coolant Reservoir

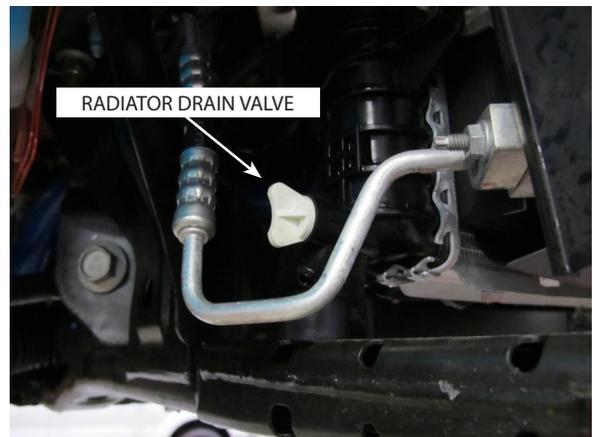


Fig. 1-o: Radiator Drain Valve

1. BASIC COMPONENT REMOVAL, cont'd

- Q. Release the upper radiator hose clamp connection to the radiator. Release the quick release upper radiator hose connection to the thermostat housing by pulling the spring clip back and sliding the hose fitting off. Remove the upper radiator hose and set it aside for later modification. Remove the coolant hose to the right of the "Y" fitting, above the thermostat housing & set it aside. It will not be reused.

(See Fig. 1-q)



Fig. 1-q: Upper Radiator Hose Disconnect

- R. Use a 15mm wrench to rotate the belt tensioner counter-clockwise to release tension from the outer 6-rib accessory drive belt. Remove the belt and set it aside as it will not be reused.

(See Fig. 1-r)



Fig. 1-r: Belt Tensioner

- S. Remove the two (2) T20 fasteners securing the MAF sensor to the OEM airbox. Remove the MAF sensor and set aside for later use.

(See Fig. 1-s)

- T. Unplug the electrical connector from the throttle body by sliding the red clip outward and depressing the tab. Remove the four (4) 8mm-headed screws securing the throttle body to the intake manifold. These fasteners will not be reused. Remove the throttle body and set it aside for later reinstallation, ensuring that the sealing gasket remains in the intake manifold. Place a rag in the intake manifold to keep any foreign debris from getting inside.

(See Fig. 1-t)



Fig. 1-t: Throttle Body



Fig. 1-s: MAF Insert
(shown with OEM airbox removed)

2. MISCELLANEOUS PREPARATION

- A. Free the large wiring harness from the two (2) mounting locations on the engine front cover forward of the passenger side cylinder head. Use extra care when disengaging the lower clip from the threaded hole in the engine cover as this threaded hole will be used in a later step. If part of the clip breaks off in the threaded hole, carefully extract it without damaging the threads. Route the harness higher up along the passenger side valve cover.

(See Fig. 2-a)



Fig. 2-a: Wiring Harness

- B. Cut off the coolant reservoir mount closest to the drivers side of the vehicle. This is to make room for the new intake tube. You may need to make further adjustments when you install the intake tube.

(See Fig. 2-b)

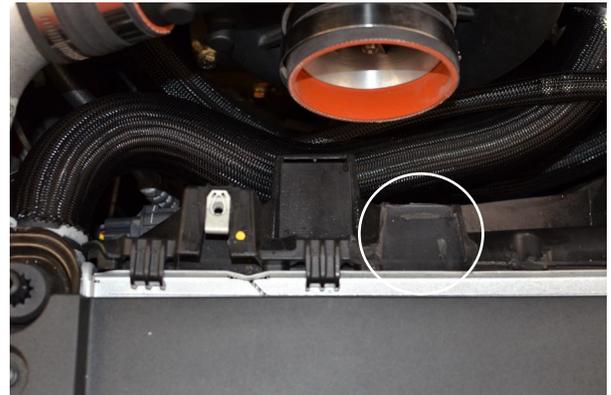


Fig. 2-b: Coolant Reservoir Mount (Removed)

- C. Remove the battery cover by removing the (3) plastic fasteners & pulling forward.

(See Fig. 2-c)

- D. Unplug the battery leads.

(See Fig. 2-d)

- E. Remove the coil covers from the cylinder heads. Remove the ignition coils and spark plugs. Re-gap the spark plugs to .032", re-install and torque to 9 ft-lbs. Reinstall the coils and coil covers.



Fig. 2-d: Unplug Battery Leads



Fig. 2-c: Remove Battery Cover

3. SUPERCHARGER ASSEMBLY PREPARATION AND INSTALLATION

NOTES:

1. Refer to Figure 3.1 near the end of this section for the size and position of all spacers.
2. Use blue Loctite (thread locker) on the threads of each screw prior to final tightening of the assembly.



Fig. 3-a Modify Tab

- A. Using a coarse file or similar tool, remove approximately 1/8" from the front edge of the passenger side valve cover tab. This will ensure proper supercharger-to-valve cover clearance during installation.
(See Fig. 3-a.)
- B. Remove the following three (3) 10mm-headed screws securing the engine front cover on the passenger side: (See Fig. 3-b)
 - a. The uppermost screw
 - b. The screw just above the A/C compressor
 - c. The screw between the A/C compressor and the crankshaft

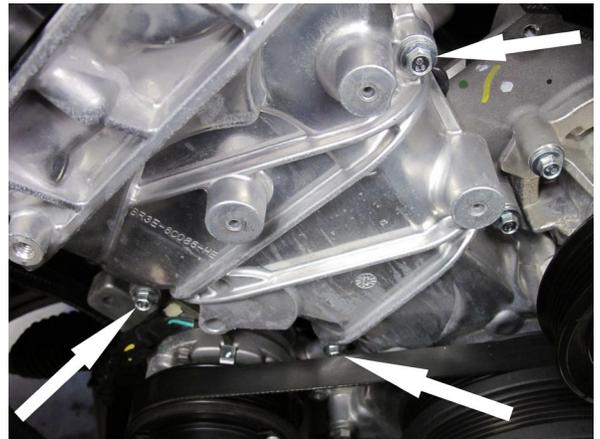


Fig. 3-b: Engine Cover Screws

3. SUPERCHARGER ASSEMBLY PREPARATION AND INSTALLATION

- C. Inspect the supercharger mounting plate/idler pulley assembly and familiarize yourself with its components and configuration. The new belt should be routed so that the ribbed side engages the ribbed idler pulley and the smooth side rides on the other pulleys. Note the multiple mounting locations of the ribbed idler, used to compensate for different supercharger pulley sizes and belt lengths. All four (4) idler mounting bolts should be left slightly loose during installation to facilitate alignment. (See Fig. 3.1 and Fig. 3.2 Belt Routing Diagram later in this section)
- D. Thread the two (2) included M8 x 200mm studs into the lower two engine cover fastener holes, in the locations of the previously-removed fasteners (one just above the A/C compressor and one between the A/C compressor and the crankshaft). Use a small amount of blue thread lock on the threads. Leave approximately 6" of stud exposed.
- E. Slide a .875" x 2.058" spacer over the stud above the A/C compressor. **See Fig. 3.1 near the end of this section for this and all other mounting bracket spacer and fastener locations.**
- F. Slide a .875" x 2.146" spacer over the stud between the A/C compressor and the crankshaft.
- G. With the thinner steel plate closer to the engine, begin to slide the mounting bracket assembly over the studs. Place a .875" x 2.730" (.323 I.D.) spacer over each stud, sandwiched between the two mounting plates.
- H. Place a 5/16" flat washer over the open end of each stud and secure with an 8mm flange head nut. Adjust stud exposed length as needed so 1-2 threads protrude beyond the nut. Do not tighten at this time.



*Fig. 3-c: Belt Routing
(front plate removed for clarity)*

3. SUPERCHARGER ASSEMBLY PREPARATION AND INSTALLATION, cont'd

- I. Locate the .875" x 1.928" spacer and M8 x 80mm hex head screw. Place a 5/16" flat washer on the screw and pass it through the outer (3/8" thick) plate and .875" x 1.928" spacer into the threaded boss on the engine cover in the location furthest toward the passenger side. Do not tighten at this time.
- J. Locate the remaining .875" x 2.058" spacer and M8 x 100mm button head screw. Pass the screw through the inner (1/4" thick) plate (with no washer) and .875" x 2.058" spacer into the uppermost engine cover hole from which an OEM screw was previously removed (2nd hole from the top over-all). Do not tighten at this time.
- K. Tighten the four (4) idler pulley mounting bolts. Ensure that the second-highest bolt has the thin washer (the others have standard-thickness washers).
- L. Confirm that the four (4) screws and two (2) studs securing the supercharger assembly to the engine are properly aligned. Tighten them in progressive steps in an alternating sequence.
- M. Locate the supplied 1.00" black anodized aluminum throttle body spacer. Install the included large O-ring into the groove in the spacer. This O-ring seals against the throttle body and the smooth side of the spacer seals against the OEM O-ring in the intake manifold. Install the spacer using the supplied (4) M6 x 30mm button-head screws & (4) 6mm washers. Notice one of the tabs on the throttle body spacer has a relief cut. The relief cut is to allow clearance for the throttle body actuator & needs to be mounted towards the top-right of the throttle body mount on the intake manifold. (See Fig. 3-m)
- N. Mount the throttle body to the throttle body spacer using the (4) M6 x 35mm screws & (4) 6mm washers. The throttle body connector must be facing the drivers side of the vehicle in order to clear the mounting bracket. (See Fig. 3-n)
- O. Carefully snip the strip of tape securing the throttle body electrical harness to the connector housing. Use the provided throttle body extension harness to reconnect the throttle body to the main harness.
- P. Route the large wiring harness near the passenger side valve cover, throttle body electrical harness, and any other items away from moving parts and sharp edges and secure.

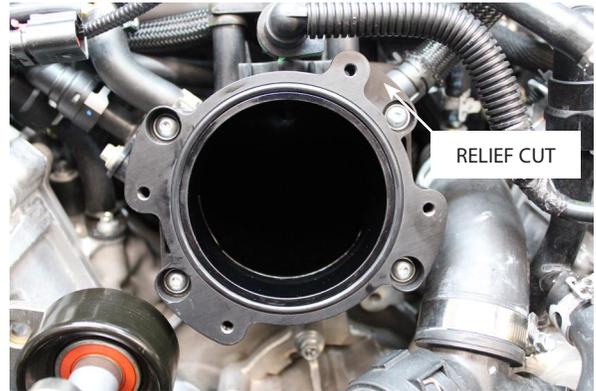


Fig. 3-m: Throttle Body Spacer



Fig. 3-n: Mounted Throttle Body

3. SUPERCHARGER ASSEMBLY PREPARATION AND INSTALLATION, cont'd

- Q. Align the 6-rib drive belt according to the diagram shown at the end of this section. The belt routing is almost identical to the OEM routing with the exception of the portion that passes between the water pump pulley and crankshaft pulley to drive the supercharger. Ensure that the belt routes smoothly over the supercharger pulley and all of the new idler pulleys as well as the OEM engine accessories.
- R. Use a 15mm wrench to rotate the OEM belt tensioner counter-clockwise and install the belt. Depending on pulley size, it may be necessary to adjust the location of the ribbed supercharger idler pulley to achieve proper belt tension. Ensure that the belt wraps smoothly around each of the pulleys and that all ribbed pulleys are properly engaging the belt's ribs.
- S. **Engine Oil Fed Units Only:** Locate the included length of black braided 1/2" oil drain hose. Remove the shipping cap from the 1/2" barbed oil drain fitting on the bottom of the supercharger and attach the drain hose with the included #8 worm gear clamp.
- T. Place the supercharger into the cradle of the outer mounting plate, aligning the five (5) mounting holes, with the pulley toward the engine and the discharge pointing straight down. Secure the supercharger to the plate with five (5) 3/8-16 x 1.25 hex head screws with washers. Route the braided drain hose (if equipped) directly downward, away from moving parts and sharp edges, and secure.

NOTE: For oil feed & oil drain line instructions, proceed to Section 11, then return to Section 4 once complete.

FIG. 3.1: MOUNTING BRACKET ASSEMBLY DIAGRAM

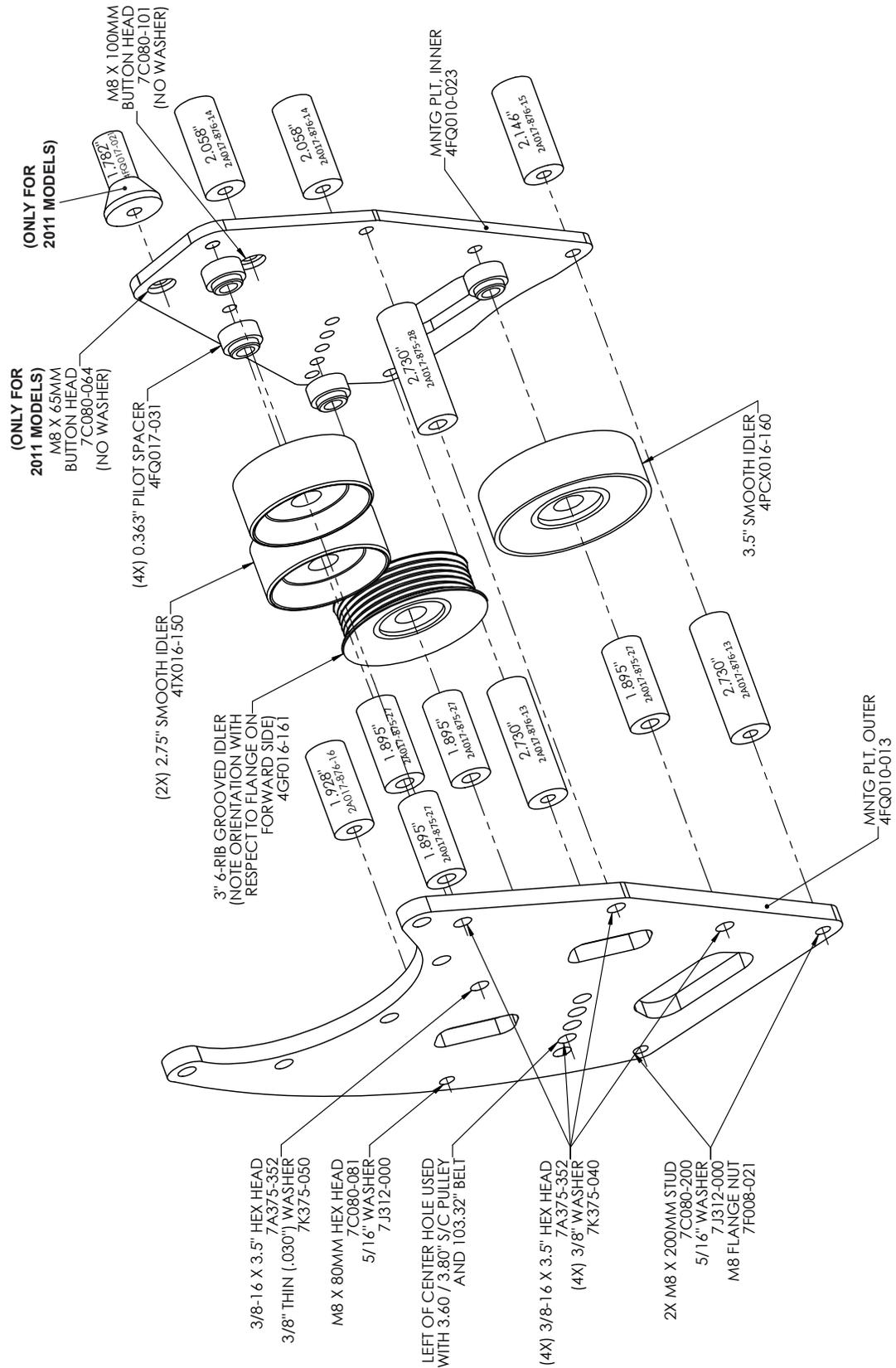
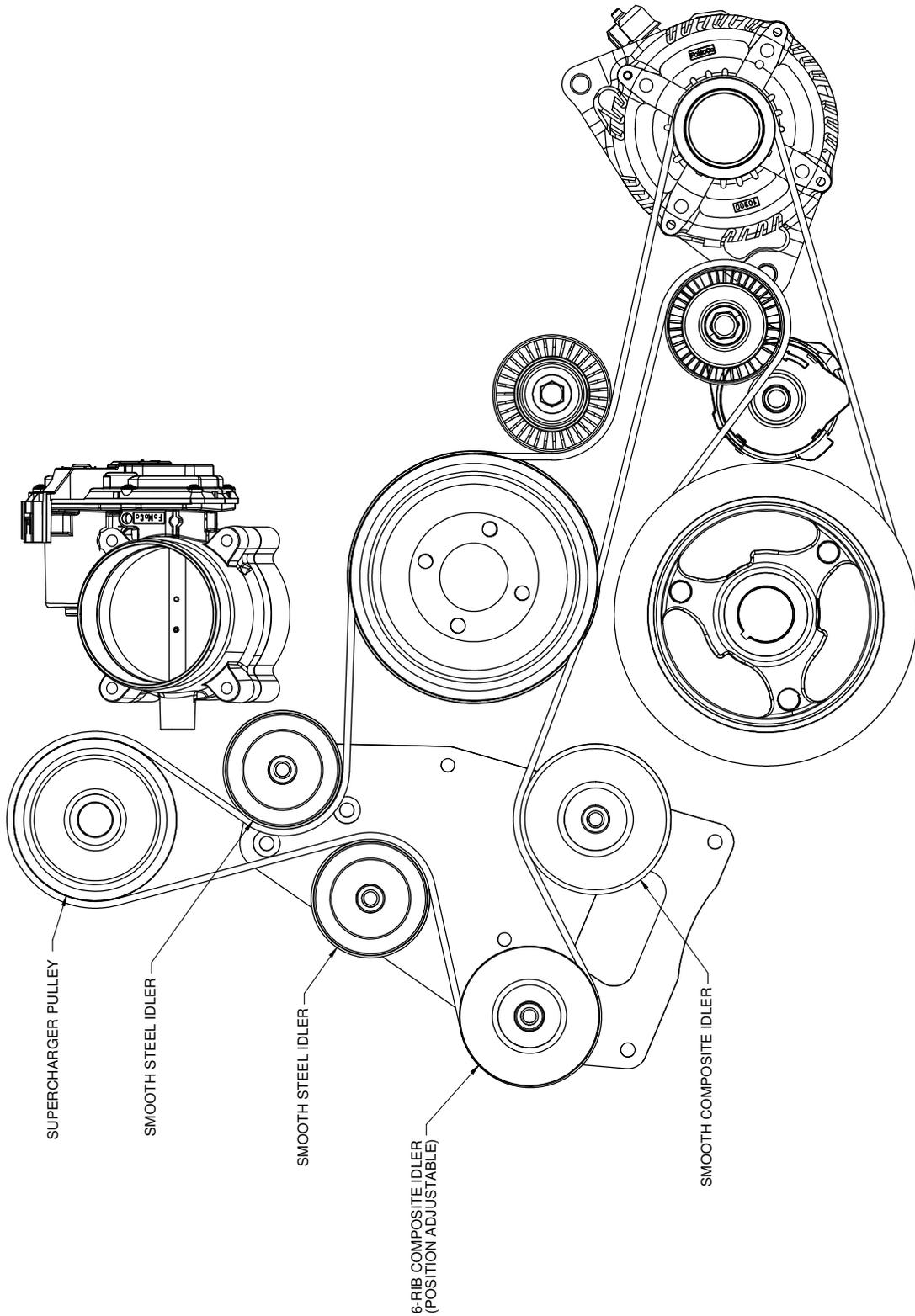


FIG. 3.2: BELT ROUTING DIAGRAM



4. PCV SYSTEM MODIFICATION

- A. Modify and reinstall the passenger side PCV hose as follows:
- Use a razor blade to carefully slit each end of the plastic tube until it can be split away from the barbed fittings inside. Take care not to damage the fittings.
 - Locate the provided fittings & PCV valve, then loosely assemble them as shown (See Fig. 4-a)
 - Attach the section of PCV assembly with the 45° quick disconnect to the intake manifold & the other section with the 90° quick disconnect to the valve cover breather. Measure the length of hose necessary to mate the two together, then remove both pieces of the assembly. Once the hose is cut to length, assemble the PCV assembly as shown. (See Fig. 4-b)
 - Install the assembly as shown with the 45° quick disconnect fitting installed to the intake manifold. Secure as needed for clearance to the supercharger pulley. (See Fig. 4-d)



Fig. 4-a



Fig. 4-b



Fig. 4-c: Modified Passenger Side PCV Hose

5. CHARGE AIR COOLER (CAC) & DISCHARGE TUBE INSTALLATION

NOTE: Vehicles equipped with the "Track Pack" option from Ford will need to remove the windshield washer reservoir. Skip to Section 12, then return to this section once complete.

- A. Remove the (4) 13mm-headed screws & (4) 13mm-headed nuts securing the front braces to the upper radiator support & back side of the front bumper support.

(See Fig. 5-a)

- B. Back out the 4 inner-most screws of the bumper support, leaving about 1/2" of the screw protruding from the back side. Raise the cooler into position, making sure to align the cooler brackets to the 4 screws previously backed out. Once aligned, begin to thread the screws through the cooler brackets. Proceed to re-install the previously removed front braces, making sure the cooler bracket is sandwiched between the lower brace mounts & bumper support. Route the wire harness along the top side of the bumper support.

(See Fig. 5-b)

- C. Cut off the entire lower section of the radiator shroud, leaving only the mount for the ambient air temperature sensor.

(See Fig. 5-c)

- D. The upper section of the radiator shroud will need to be modified in order to clear the charge air cooler and wiring harness that runs along the top of the front bumper support. Trim away as necessary, periodically test fitting the radiator shroud for proper fitment.

(See Fig. 5-d)



Fig. 5-a: Remove Front Braces

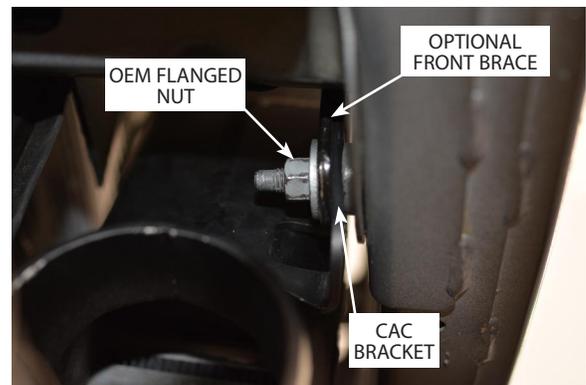


Fig. 5-b: CAC Mounting Order



Fig. 5-d: Modified Upper Shroud Section

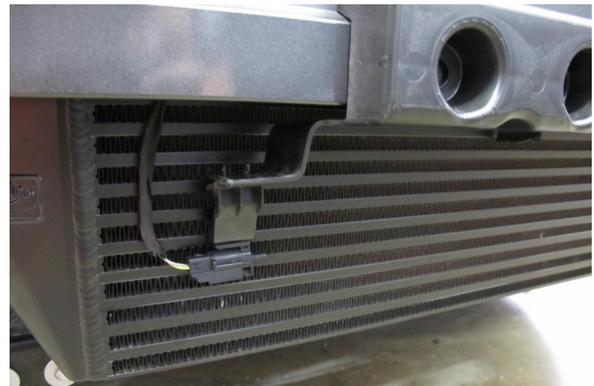


Fig. 5-c: Modified Lower Shroud Section

5. CHARGE AIR COOLER (CAC) & DISCHARGE TUBE INSTALLATION, cont'd

NOTE: Leave all hose clamps loose until all silicone couplers & discharge tubes are properly installed. Hose clamps will be tightened in Step M.

- E. With the radiator shroud sufficiently trimmed, re-attach it to the vehicle using (3) of the previously removed plastic fasteners & (2) of the previously removed 10mm-headed fasteners.
(See Fig. 5-e)
- F. In order to make room for Tube B, you will need to modify the passenger side of the carbon composite core support. Install a straight 3" silicone sleeve & two #48 hose clamps to the passenger side of the cooler. Temporarily install a 3" silicone bump sleeve to the end of Tube B with the smaller bend. Mock up Tube B & you will see where you need to trim. Use Fig. 5-f as a visual aid & trim accordingly.
(See Fig. 5-f)
- G. Install the 3.00"-2.75" silicone bump reducer sleeve to the volute. The volute end of the sleeve uses a #44 hose clamp, while the tube end uses a #48 hose clamp. Install Tube A & clock it accordingly.
(See Fig. 5-g)
- H. With the carbon composite core support modified, install a 3" silicone bump sleeve & two #48 hose clamps to the end of Tube B with the smaller bend. Slide the open end of Tube B into the silicone coupler on the cooler. Slide the other end of Tube B into Tube A. For proper clearance between the body of the vehicle & the windshield washer reservoir, you will need to bend the steel tab, closest to the bypass valve flange, towards the front of the vehicle.
(See Fig



Fig. 5-e: Modified Radiator Shroud

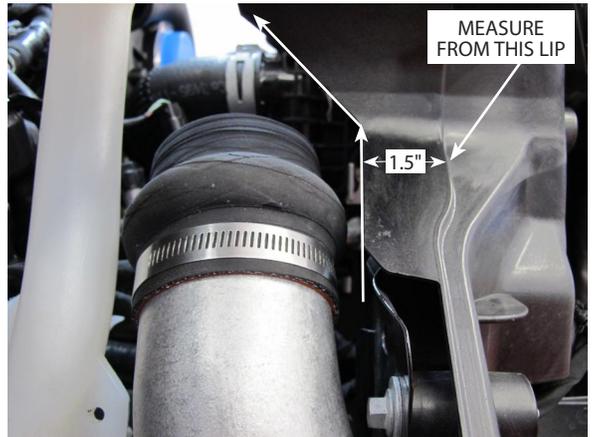


Fig. 5-f: Modified Radiator Support (After Modification)

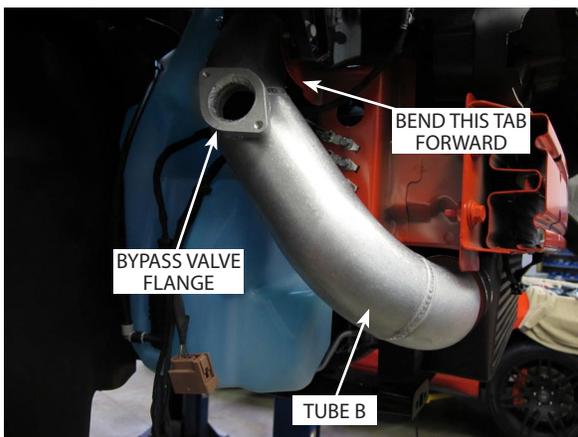


Fig. 5-h: Tube B Installation

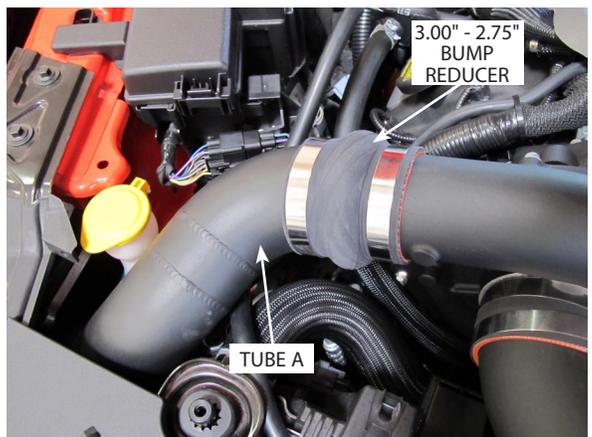


Fig. 5-g: Tube A Installation

5. CHARGE AIR COOLER (CAC) & DISCHARGE TUBE INSTALLATION, cont'd

- I. With tubes A & B in place, attach the bypass valve with the supplied hardware & gasket to the bypass valve flange on Tube B. Make sure that the opening of the bypass valve is facing towards the back of the vehicle. Once secured, attach the supplied filter to the bypass valve & tighten the supplied hose clamp.

(See Fig. 5-k)

- J. Install the 3.50"-3.00" reducer sleeve to the driver side of the cooler. Secure the cooler end of the reducer sleeve with a #48 hose clamp. Locate Tube C, which has two 90° bends, and slide it into the silicone sleeve on the cooler & secure with a #56 hose clamp. Install a 3.50" silicone sleeve & two #56 hose clamps onto the open end of the Tube C.

(See Fig. 5-l)

- K. Make sure that Tube C is clear of the horn & oil cooler. You may need to relocate the horn wiring harness to keep it from resting against Tube C.

(See Fig. 5-m)

- L. Locate Tube D & insert the one end of the tube into the silicone sleeve previously attached on Tube C. Attach the supplied 4.00"-3.50" silicone reducer sleeve & #56 hose clamp to the other end of Tube D, then install the MAF housing. Be sure to have the "FLOW" arrow on the MAF flange facing towards the throttle body.

(See Fig. 5-l)

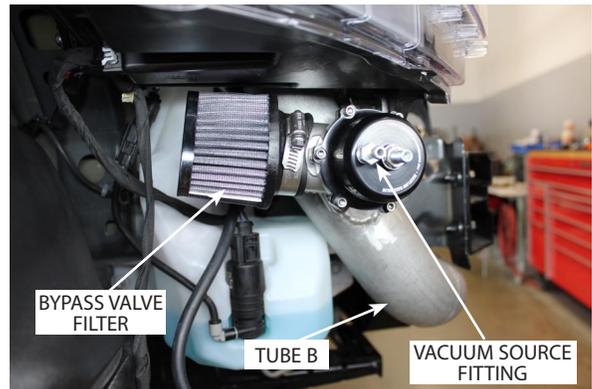


Fig. 5-i: Bypass Valve Mounting

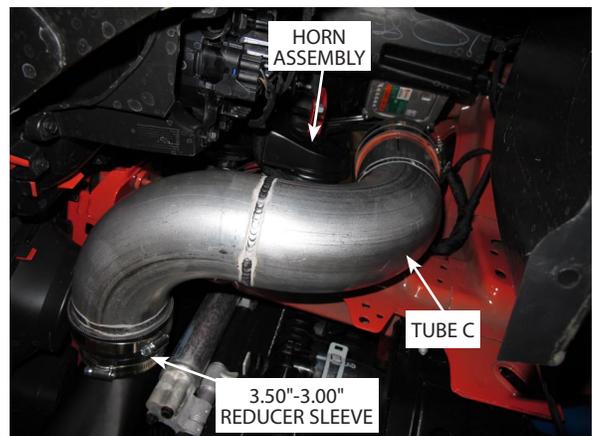


Fig. 5-j: Tube C Installation

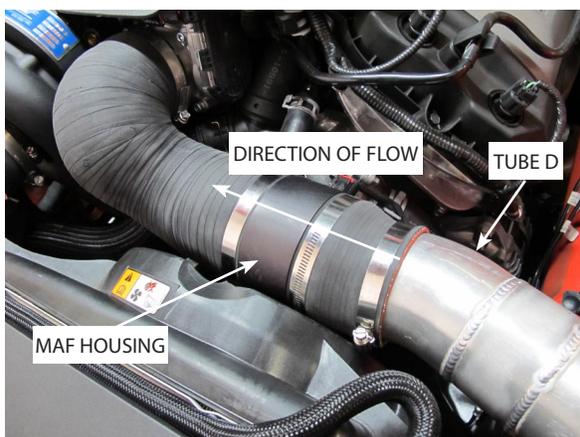


Fig. 5-l: Tube D & MAF Housing Installation



Fig. 5-k: Check Tube C Clearance

5. CHARGE AIR COOLER (CAC) & DISCHARGE TUBE INSTALLATION, cont'd

- M. Attach the throttle body sleeve & #56 hose clamp to the throttle body, then attach the other end of the sleeve to the MAF housing. Use #64 hose clamps to secure the MAF housing. Once in place, insert the MAF sensor into the flange & secure with the provided M4-.7 x 8mm screws. Connect the MAF plug to the sensor. Verify that all tubes are free of any obstructions then proceed to tighten all of the hose clamps.

(See Fig. 5-m)

- N. Remove the plastic push pins securing the brake cooling ducts to the front bumper cover. These will not be reused.

(See Fig. 5-n)

- O. Remove the three (3) 7mm-headed fasteners securing the oil cooler duct to the front bumper cover. This will not be reused.

(See Fig. 5-o)

- P. With the necessary ducting removed, test fit the front bumper cover to the vehicle, check for any clearance issues & adjust as necessary.

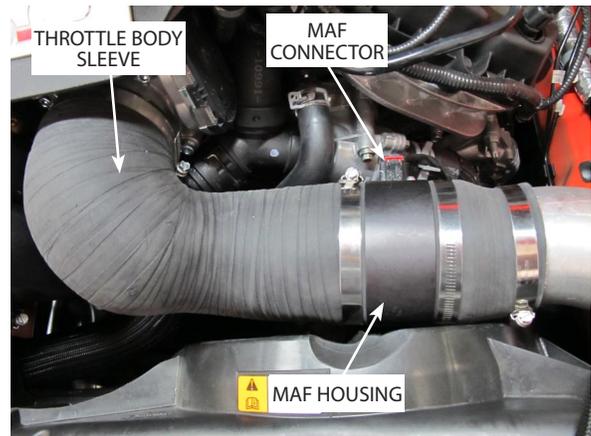


Fig. 5-m: Throttle Body Sleeve Installation



Fig. 5-n: Remove Brake Cooling Ducts



Fig. 5-o: Remove Oil Cooler Duct

6. FUEL INJECTOR REPLACEMENT

- A. Disconnect the fuel feed line from the fitting near the driver side fuel rail. **CAUTION:** The fuel line may be pressurized. Take care to avoid spray and spills.
- B. Remove the four (4) 10mm hex nuts securing the plastic heater hose guides and set the guides aside for later reinstallation.
(See Fig. 6-b)
- C. Reposition the vacuum tube assembly mounted under the driver side heater hose guide to facilitate fuel rail removal.
- D. Remove the foam insulation from each fuel rail (2 pieces total).
- E. Unplug each of the eight (8) fuel injector electrical connectors.
- F. Remove the four (4) 10mm-headed screws securing the fuel rails to the intake manifold (2 per side)
- G. Unplug the fuel pressure sensor from the drivers side fuel rail.
- H. Lift the fuel rails (with injectors attached) up and away from the engine, taking care not to spill fuel from the feed fitting. Drain the fuel from the rails.
- I. Note the orientation of the OEM injectors in the fuel rails. Disengage the retaining clips and remove the OEM injectors.
- J. Install the supplied high-flow injectors into the fuel rails in the same orientation as the OEM injectors and secure in the original fashion. You will not need to re-use the original retaining clips.
(See Fig. 6-k)



Fig. 6-b: Hose Guide Removal



Fig. 6-h: Aluminum Fuel Rail Spacers



Fig. 6-k: Fuel Rail / Injector Assembly Detail

6. FUEL INJECTOR REPLACEMENT, cont'd

- K. Install the rail/injector assembly into the intake manifold.
- L. Secure the fuel rails with the (4) 10mm-headed screws previously removed.
- M. Connect the fuel injector electrical connectors to each of the eight (8) injectors. Connect the fuel pressure sensor electrical connector.
- N. Place the foam insulation back over each fuel rail.
- O. Place the vacuum tube assembly back into position on the studs near the driver side fuel rail.
- P. Reinstall the plastic heater hose guides and secure with the OEM 10mm hex nuts. Route the heater hoses over them in the OEM fashion.
- Q. Reconnect the fuel feed line to the fitting on the fuel rail assembly. Make sure it is securely connected in the OEM fashion.



Fig. 6-m: Re-securing Fuel Rails

7. ENGINE COOLING SYSTEM MODIFICATION

- A. Locate the previously-removed OEM upper radiator hose. Remove the factory spring clamp & set aside. Cut off 3" from the end of the hose.
(See Fig. 7-a)
- B. Cut away the OEM plastic hose clamp on the quick-release end of the radiator hose, taking care not to damage the hose. Separate the hose from the quick-release fitting.
(See Fig. 7-b)
- C. The upper radiator hose will need to be flipped when re-installed on the vehicle in order to provide adequate space between the upper radiator hose & the supercharger. The end of the hose originally attached to the quick-release fitting will now be attached to the upper radiator inlet. The other end will now be attached to the quick-release fitting.
(See Fig. 7-c)
- D. Once both ends of the hose are attached & properly clocked, secure the radiator-side of the hose using the previously removed spring clamp. Use the supplied #24 hose clamp on the quick-release side of the hose.
(See Fig. 7-d)

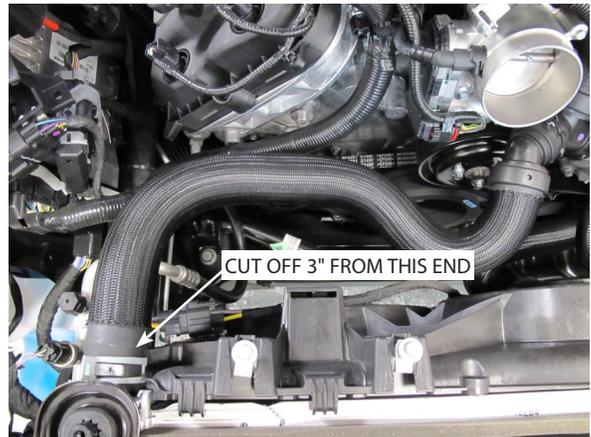


Fig. 7-a: Upper Radiator Hose
(OEM Configuration)

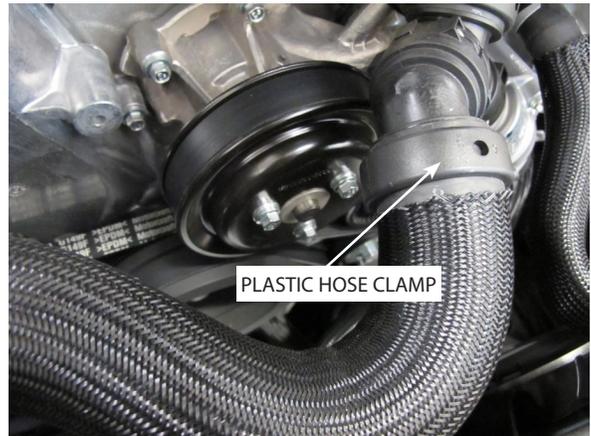


Fig. 7-b: Cut Plastic Hose Clamp



Fig. 7-d: #24 Hose Clamp



Fig. 7-c: Upper Radiator Hose
(New Configuration)

7. ENGINE COOLING SYSTEM MODIFICATION, cont'd

- E. To the right of the passenger side shock tower you will see a ground strap for the electric power steering system. You will need to relocate this strap to the harness mount directly below the original mounting location for this ground strap. Reuse OEM hardware. (See Fig. 7-e)
- F. Remove the (1) 13mm-headed screw on the brace to the right of the battery & attach the new coolant reservoir as shown. (See Fig. 7-f)
- G. The second mount of the coolant reservoir will be mounted where the electric power steering ground strap was previously attached. Reuse the 8mm-headed fastener to fasten the coolant reservoir. (See Fig. 7-g)
- H. Locate the included 3/8" hose and cut a 2" piece. Install the piece onto the hose barb on the replacement coolant reservoir and secure with an included #17 stepless clamp. (See Fig. 7-h)

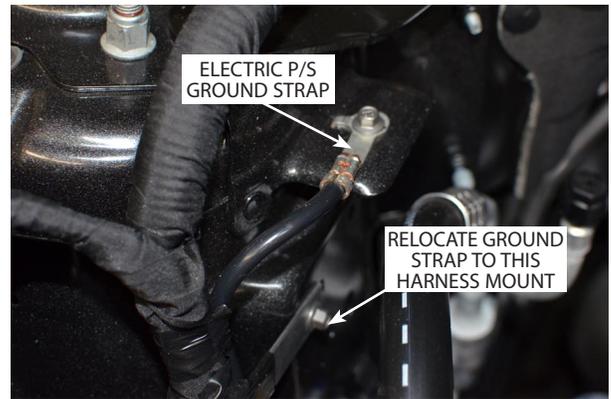


Fig. 7-e: Ground Strap Relocation



Fig. 7-f: Coolant Reservoir Mount #1



Fig. 7-h: Ø3/8" x 2" Hose

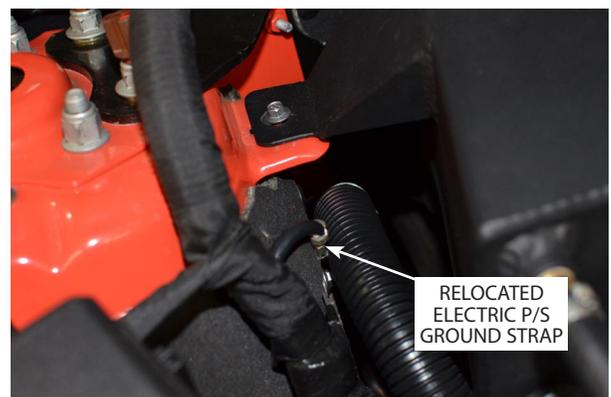


Fig. 7-g: Coolant Reservoir Mount #2

7. ENGINE COOLING SYSTEM MODIFICATION, cont'd

- I. Slide another #17 stepless clamp onto the 2" piece and then insert the black plastic TEE as shown, so one leg points forward and one points to the driver side. Secure with the #17 stepless clamp. (See Fig. 7-i)
- J. Locate the small coolant hose running from the driver side front of the engine previously disconnected from the OEM coolant reservoir. Cut off the molded bends of the hose. (See Fig. 7-j)
- K. Use the included 5/16" hose, 5/16" barbed hose unions, and #15.7 stepless clamps to extend the upper coolant hose along the top of the engine. Route the hose under the large wiring harness and secure away from moving parts and sharp edges. Trim to length and secure the hose to the plastic TEE using the #15.7 stepless clamps. (See Fig. 7-k)



Fig. 7-i: $\text{\O}3/8" \times 2"$ Hose



Fig. 7-j: Small Coolant Hose



Fig. 7-k: Small Coolant Hose

7. ENGINE COOLING SYSTEM MODIFICATION, cont'd

- L. Locate the coolant overflow hose running along the top of the radiator (previously disconnected from the OEM coolant reservoir). Pull back the abrasion sleeve and cut off the molded elbows of the hose. Use the included 3/8" hose, 3/8" barbed hose union, and #17 stepless clamps to extend the coolant overflow hose along the top of the radiator, under discharge tube and around to the area of the replacement coolant reservoir. Secure using #17 stepless clamps. (See Fig. 7-l)

- M. Trim the 3/8" hose to length & secure it to the plastic TEE using a #17 stepless clamp. (See Fig. 7-m)

- N. Locate the provided 3/4" 90° hose elbow, 3/4" brass hose union & (2) 28.6 stepless clamps. Slide the hose union into one end of the hose elbow & the other end into the length of provided 3/4" hose. Use the 28.6 stepless clamps to secure. Attach the other end of the hose elbow to the drivers side heater tube & secure with the OEM hose clamp. (See Fig. 7-n)

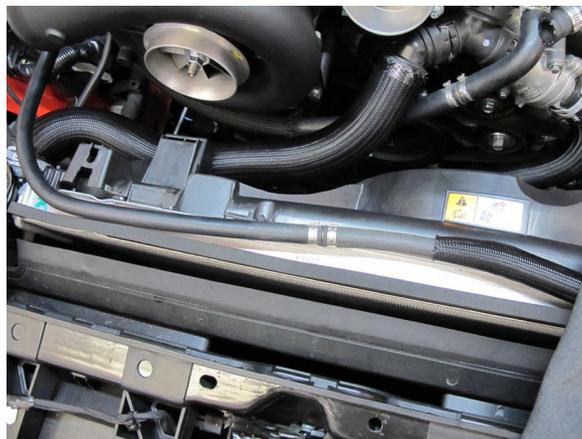


Fig. 7-l: Coolant Overflow Hose Cut & Splice



Fig. 7-m: Coolant Overflow Hose



Fig. 7-n: 3/4" 90° Hose Elbow

7. ENGINE COOLING SYSTEM MODIFICATION, cont'd

- O. Route the open end of the new 3/4" coolant hose (with OEM abrasion sleeve attached) across the front of the motor & attach to the new coolant reservoir on the passenger side. Use zip ties to secure the 3/4" coolant hose to the upper radiator hose.

(See Fig. 7-o)

- p. Attach the provided length of 7/64 rubber hose to the brass fitting next to the threaded bung & route it towards the bottom of the vehicle. Refill the engine cooling system via the replacement coolant reservoir with the previously-drained coolant. Filter if needed, ensuring no contaminants enter the cooling system. The coolant reservoir should be approximately 1/2 full. Do not overfill. Close the reservoir with the OEM cap from the OEM coolant reservoir.

(See Fig. 7-p)

NOTE: Periodically check the coolant level once the car is running and the cooling system purges.



Fig. 7-o: 3/4" Coolant Hose Routing



Fig. 7-p: 3/4" Coolant Reservoir

8. AIR INLET ASSEMBLY INSTALLATION

- A. Locate the provided check valve & insert it as shown. The check valve is directional & will need to be installed so the flow arrow is pointing towards the yellow OEM dual check valve. Secure with the provided 17.0 stepless clamps.

(See Fig. 8-a)

- B. Attach the provided air inlet tube to the super-charger using the provided reducer sleeve. Remove the quick release fitting from the hose that was previously attached to the OEM air inlet tube, insert the brass 3/8-5/8 reducer in its place & secure with a 17.0 stepless clamp. Remove the 90° quick disconnect fitting from the drivers side breather hose, insert it into the length of 5/8" rubber hose & secure it with a 25.6 stepless clamp. Route the 5/8" rubber hose towards the fitting installed on the provided air inlet & cut it to length. Next, locate the 5/8" plastic tee & tee into the drivers side breather hose. Clock the tee towards the brass 3/8-5/8 reducer & join the two with a length of hose. Once everything is in place, secure the hoses to the fittings using the provided 25.6 stepless clamps.

(See Fig. 8-b)

- C. Locate the OEM air box provided with the kit & use the provided MAF port cover to block off the original location of the MAF sensor. Reuse the OEM hardware to secure the MAF port cover.

(See Fig. 8-c)



Fig. 8-a: Install Check Valve

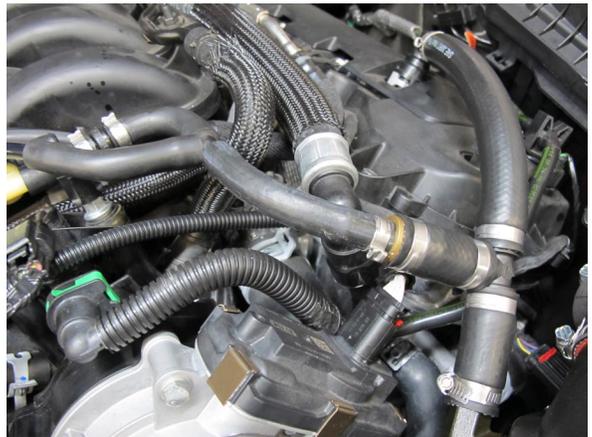


Fig. 8-b: Driver Side PCV Hose Modification (Reference)



Fig. 8-c: Air Inlet to Airbox Connection; MAF Port Cover

8. AIR INLET ASSEMBLY INSTALLATION, cont'd

- D. Trimming of the provided OEM air box lid may be required to clear the discharge tube. Trim as necessary, then proceed to install the OEM air box assembly into the vehicle & secure using the factory screw.

(See Fig. 8-d)

- E. Connect the inlet duct to the OEM airbox with the Ø4" bump hose. Use the included Ø3.75" x 1" long silicone ring to adapt the airbox fitting up to Ø4" to fit inside the bump hose. Secure with two #64 worm gear clamps.

(See Fig. 8-e)

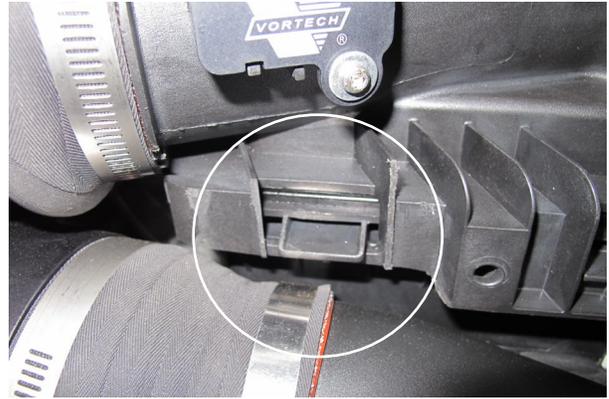


Fig. 8-d: Trimmed Air Box Lid



Fig. 8-e: Connect Inlet Duct To Air Box

9. BYPASS VALVE CONNECTION & BUMPER COVER RE-INSTALLATION

- A. Locate the supplied vacuum tee fittings & assemble them as shown.
(See Fig. 9-a)
- B. Cut the OEM vacuum hose shown & insert the vacuum tee.
(See Fig. 9-b)
- C. Attach the 7/32-5/32 reducer fitting & short length of 5/32 vacuum hose to the vacuum tee. Locate the supplied 7/32 vacuum hose & attach it to the reducer fitting. Run the vacuum hose along the top of the engine, across the passenger side of the engine. Route the vacuum hose down towards the discharge tube with the bypass valve, making sure to avoid damaging the hose. Use the supplied zip ties to secure the vacuum hose. Attach the open end of the 7/32 vacuum hose to the vacuum port on located on the top of the bypass valve.
(See Fig. 9-c)
- D. Verify that all hose clamps & hardware securing the charge cooler to the vehicle are secured, then proceed to re-install the front bumper cover & any panels that have been removed & secure with the proper fasteners.
(See Fig. 9-d)



Fig. 9-a: Vacuum Tee Installation



Fig. 9-b: Vacuum Tee Installation



Fig. 9-d: Re-install Front Bumper Cover

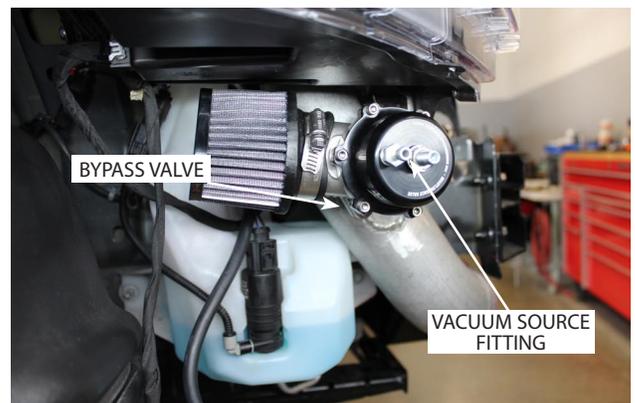


Fig. 9-c: Bypass Valve

10. OIL FEED INSTALLATION (OIL-FED UNITS ONLY)

- A. Locate the supercharger oil feed port on the passenger side of the supercharger. (See Fig. 10-a)
- B. Remove the blue plastic plug from the supercharger oil feed port and install the included -4AN male fitting. (See Fig. 10-b)

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

- C. Connect the 90° end of the included -4AN braided oil feed hose to the supercharger oil feed fitting. Route the hose downward and toward the driver side between the supercharger discharge and the forward mounting plate. (See Fig. 10-c)
- D. Continue routing the oil feed hose to the lower driver side area of the engine, passing it rearward between the alternator and the engine oil filter. **Use extra care to secure the hose away from moving parts and sharp edges.**



Fig. 10-a: Supercharger Oil Feed Location

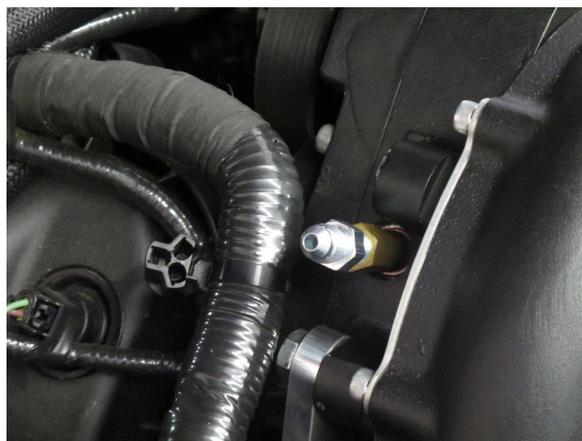


Fig. 10-b: -4AN Oil Feed Fitting Installed

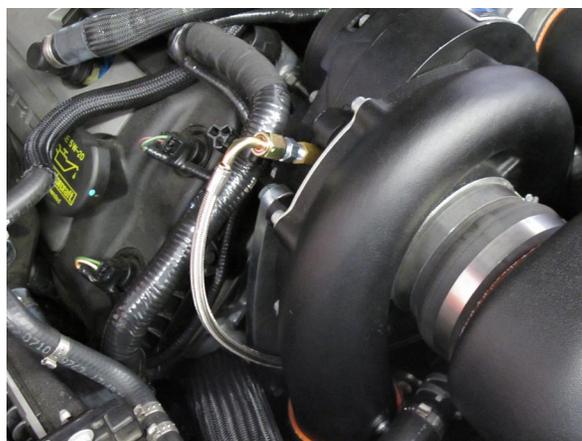


Fig. 10-c: 90° Oil Feed Hose Installed

10. OIL FEED INSTALLATION (OIL-FED UNITS ONLY), cont'd

- E. Locate the OEM oil pressure sensor located just above and behind the engine oil filter. (See Fig. 10-e)
- F. Disconnect the electrical connector from the OEM oil pressure sensor and remove the sensor itself by unthreading it from its 1/4" NPT port. Temporarily plug the port, as a small amount of oil may drain out.
- G. Install the supplied 1/4" NPT TEE fitting into the oil pressure sensor port and orient so one female port faces upward and one faces outward.

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

- H. Install the OEM oil pressure sensor into the upward-facing port of the TEE. (See Fig. 10-h)
- I. Install the 1/4" NPT male x -4AN male 90° fitting into the outward-facing port of the TEE. Orient to point forward and slightly down. (See Fig. 10-h)
- J. Reconnect the electrical connector to the OEM oil pressure sensor.
- K. Connect the straight end of the previously-installed -4AN braided hose to the -4AN male 90° fitting installed into the TEE, routing the hose between the alternator and oil filter. (See Fig. 10-k)
- L. Confirm that all oil feed fittings are secure and that the hose is secured in a smooth path free of kinks and away from moving parts and sharp edges.



Fig. 10-e: OEM Oil Pressure Sensor



Fig. 10-h: Oil Feed Assembly
(shown removed for clarity)

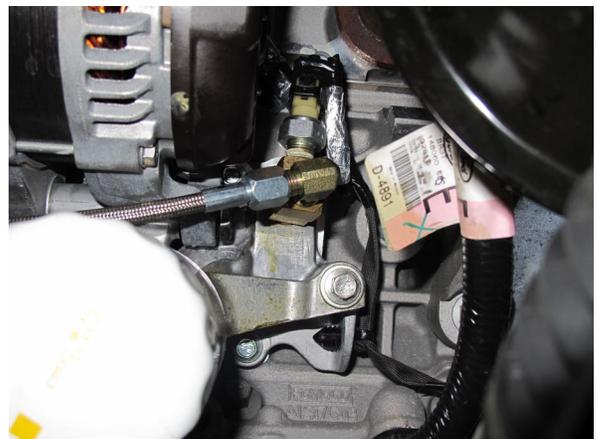


Fig. 10-k: Oil Feed Assembly Orientation

11. OIL DRAIN INSTALLATION (OIL-FED UNITS ONLY)

NOTE: To provide an oil drain for the supercharger, it is necessary to make a hole in the oil pan. It is best to *punch* the hole rather than to drill it.

- A. Locate the wiring harness secured to the front edge of the oil pan. Remove the two (2) 10mm nuts securing the wiring harness mounting brackets (one on each side of the crankshaft), allowing the harness to be pulled downward for improved access to the front face of the oil pan. (See Fig. 11-a)
- B. Mark the location for the oil drain fitting on the smooth portion of the front face of the oil pan toward the passenger side, approximately 5/8" down from the oil pan mounting flange. (See Fig. 11-b; also see Fig. 11-1 at the end of this section)
- C. Remove paint from the area around the hole location.
- D. 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. (See Fig. 11-d)
- E. Tap the hole with a 3/8" NPT tap approximately 1/4" deep. Pack the flutes of the tap with heavy grease to hold chips. Use a small magnet to check for any stray chips.

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

- F. Thoroughly clean the threaded area. Apply a small amount of silicone sealer or Teflon paste to the new threads. Apply more sealer to the included 3/8" NPT hose barb fitting and install the fitting into the hole, making sure a seal is formed all around the fitting.
- G. Change the engine oil and filter to flush out any contaminants that may have entered the oil pan.



Fig. 11-a: Wiring Harness Mounting Location (pass. side shown, driver side similar)



Fig. 11-b: Oil Drain Fitting Installation Location



Fig. 11-d: Punching Hole in Oil Pan

11. OIL DRAIN INSTALLATION (OIL-FED UNITS ONLY), cont'd

- H. Locate the oil drain hose previously attached to the barb fitting on the bottom of the supercharger. Trim the hose to length and secure to the barbed drain fitting on the front of the oil pan with an included worm gear clamp.

NOTE: Use extra care to secure the drain hose away from moving parts and sharp edges. It is important that the hose travels downhill for its entire length.

- I. Resecure the wiring harness running in front of the oil pan, using the included brass spacers to relocate the harness downward for drain hose clearance. (See Fig. 11-i)

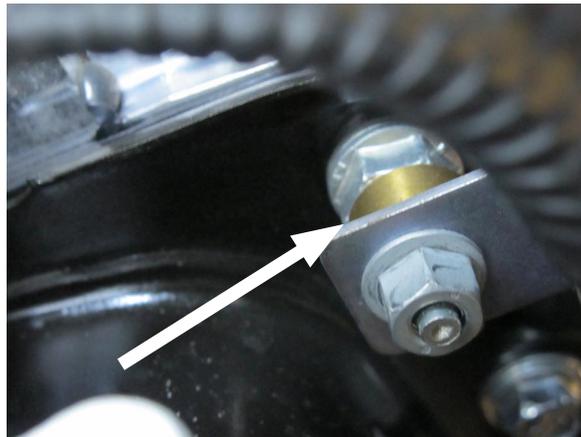


Fig. 11-i: Wiring Harness Spacer

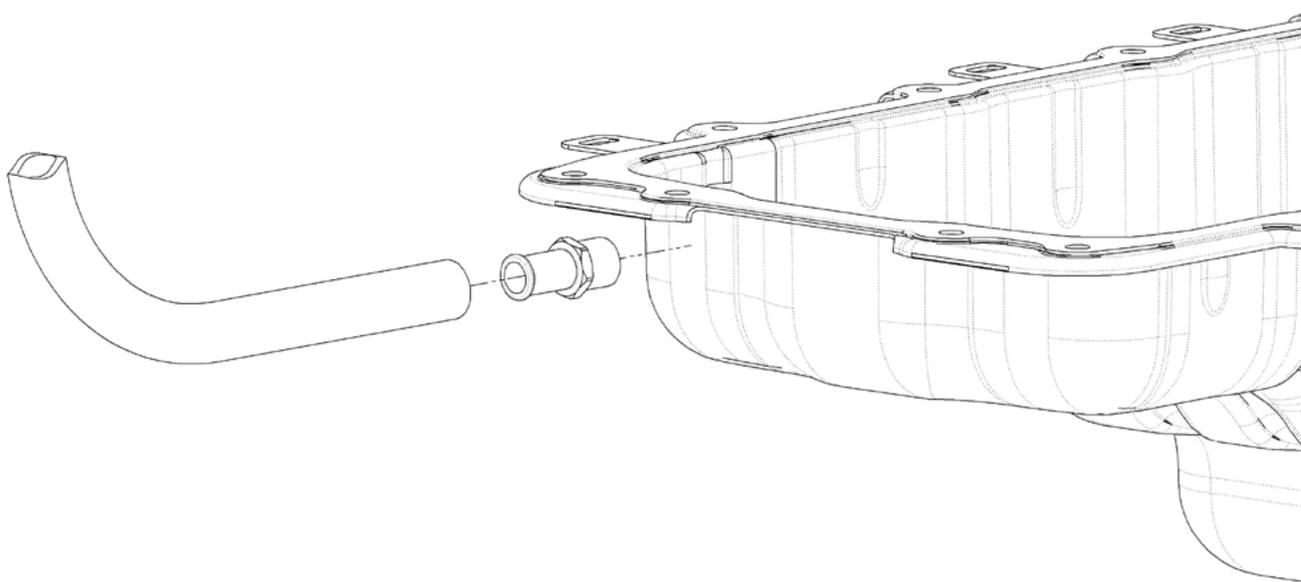


Fig. 11-1: Oil Drain Fitting Placement

12. WINDSHIELD WASHER RESERVOIR MODIFICATION

NOTE: The following section is for GT350 vehicles equipped with the optional "Track Pack"

- A. Place an empty bin under the windshield washer reservoir & remove the pump from the reservoir by lifting the pump upwards & away from the reservoir. Once the windshield washer fluid has drained, remove the reservoir from the vehicle by removing the (3) 10mm-headed fasteners & wiring harnesses attached to the reservoir.

(See Fig. 12-a)

- B. Remove the 10mm-headed fastener securing the transmission cooler lines to the support mount on the passenger side of the radiator.

(See Fig. 12-b)

- C. Pull the transmission cooler lines away from their mount, then remove the mount by removing the 10mm-headed fastener securing it to the passenger side of the radiator. The mount & fasteners will not be re-used.

(See Fig. 12-c)



Fig. 12-a: Remove Windshield Washer Reservoir



Fig. 12-b: Remove Transmission Cooler Lines From Mount



Fig. 12-c: Remove Transmission Cooler Lines Mount From Radiator

12. WINDSHIELD WASHER RESERVOIR MODIFICATION, cont'd

- D. Locate the provided zip tie & secure the transmission cooler lines to the neighboring A/C line. Be sure the zip tie wraps around the rubber isolator. (See Fig. 12-d)
- E. Located on the passenger side of the carbon-composite core support is a tab that's protruding upwards. The backside of the tab has a stepped lip that needs to be smoothed down in order to mount the remote fill reservoir. Use a file or a drum sander to carefully smooth out the lip. Once smooth, use the "narrow" section of the bracket as a drill template & mark 2x holes on the protruding tab. Using a 1/4 drill bit, drill out the 2x holes. These will be used to mount the remote fill reservoir bracket. (See Fig. 12-e)
- F. Locate the remote fill reservoir & mount it to the "wide" end of the remote fill bracket using the provided 2x 1/4-20 x .375 button head screws & 2x 1/4 washers. (See Fig. 12-f)

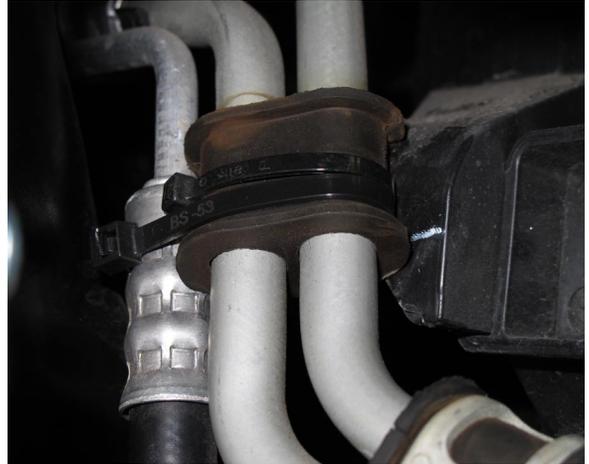


Fig. 12-d: Secure Transmission Cooler Lines To A/C Line via Rubber Isolator

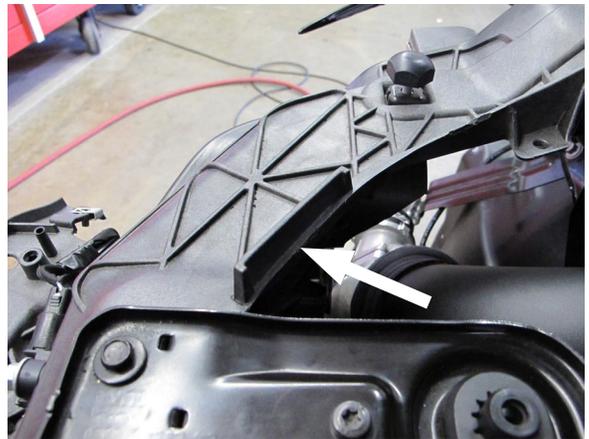


Fig. 12-e: Smooth Out Stepped Lip



Fig. 12-f: Mount Remote Fill Reservoir To Remote Fill Bracket

12. WINDSHIELD WASHER RESERVOIR MODIFICATION, cont'd

- G. Using 2x 1/4-20 x .375 button head screws, secure the remote fill reservoir mount to the carbon-composite core support.
(See Fig. 12-g)
- H. Locate the 1 foot length of hose & cut it into a 3" section & a 9" section. Use the provided 5/8 90° plastic elbow to mate the 2 lengths of hose & secure using 2x 25.6 stepless clamps. Slide a 25.6 stepless clamp onto the 3" length of hose, then attach the 3" length of hose to the 5/8 brass barb on the windshield washer reservoir, but do not secure the clamp at this time. Attach the provided mounting bracket to the right side of the windshield washer reservoir & secure it using the provided 2x 1/4-20 x .750 screws, 2x 1/4-20 nylock nuts & 4x 1/4 washers. Check to make sure that the windshield washer reservoir has a rubber grommet installed, then proceed to mount the windshield washer pump by sliding it into the grommet & into the windshield washer reservoir.
(See Fig. 12-h)
- I. Locate the 5/16 washer & slide it onto the windshield washer reservoir mounting stud on the vehicle. This washer will act as a spacer.
(See Fig. 12-i)



Fig. 12-g: Mount Remote Fill Bracket



Fig. 12-h: Assemble Windshield Washer Reservoir As Shown



Fig. 12-i: Install 5/16 Washer To Mounting Stud

12. WINDSHIELD WASHER RESERVOIR MODIFICATION, cont'd

- J. Mount the new windshield washer reservoir assembly to the vehicle using 2 of the 3 OEM mounting locations. The left side of the windshield washer reservoir will use the OEM mounting stud with the previously installed 5/16 washer. Once in position, clock the 5/8 hose towards the remote fill reservoir located at the top of the vehicle.

(See Fig. 12-j)

- K. Route the 9" length of 5/8" hose under Tube A & attach it to the previously installed remote fill reservoir. Secure the hose using the provided #10 hose clamp. At this time, secure the loosely installed 25.6 stepless clamp on the 3" section of 5/8 hose at the windshield washer reservoir.

(See Fig. 12-k)

- L. Re-connect the windshield washer pump & re-attach the nozzle feed hose to the windshield washer pump. Verify that all other hose connections are secure, then slowly begin to fill the windshield washer reservoir from the remote fill reservoir near the top of the vehicle. Only fill it with enough windshield washer fluid to fill the windshield washer reservoir. There should be no windshield washer fluid stored in the remote fill reservoir or the 5/8 hose.

(See Fig. 12-l)

- M. Remove the transmission cooler duct from the front bumper cover by removing the 3x 7mm-headed screws. This will not be re-used as it causes an interference with Tube B.

(See Fig. 12-m)

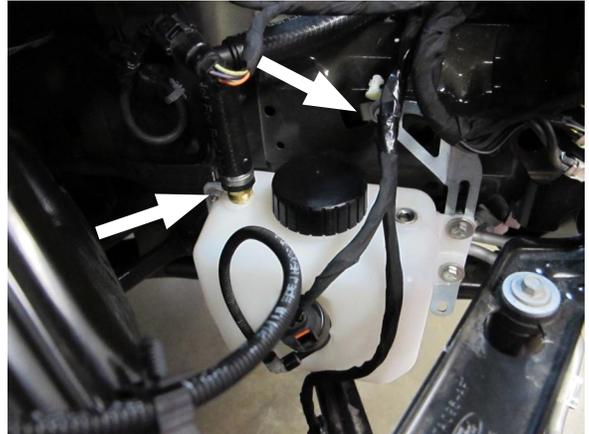


Fig. 12-j: Secure Windshield Washer Reservoir



Fig. 12-k: Secure 5/8 Hose To Remote Fill Reservoir



Fig. 12-m: Remove Transmission Cooler Duct



12. REFLASH COMPUTER

IMPORTANT! To ensure trouble-free programming of your vehicle's computer:

- Make sure the vehicle's battery is sufficiently charged.
- Turn off all accessories and close doors to prevent unnecessary drain on the battery.
- Do not attempt to program your vehicle while a battery charger is connected.
- Improper battery voltage will result in failure of the programming process.
- Do not disconnect the cable or turn off the ignition during programming unless prompted to do so.

- Reconnect the battery.
- With the vehicle off, locate the vehicle's OBD2 port located in the lower left hand corner of the dash on the driver side of the vehicle. (See Fig. 13B) Make sure this connector is seated all the way into the vehicle's OBD2 port. Do not allow this connector to become disconnected during programming or damage may occur to the vehicle's ECM.
- The Reflash tool will power up and display "Program Vehicle". Press ENTER.
- In order to use the SCT Flash tool, you must agree to the terms set forth by SCT Flash. Press ENTER to agree.
- Follow the on-screen prompts to step through the reflash process.
 - When prompted to turn the key on, do so and wait for the vehicle to fully "boot up" When ready, press ENTER.
 - When prompted to "Select Vehicle" select "Mustang GT HO", then press ENTER.
 - The name of the tune being loaded will come up on the screen. Press ENTER.
 - The first phase of the reflash process will now begin.
 - After the process is done finalizing, you will be prompted to turn the key off. Once the key is off, the reflash tool will automatically proceed to the next step.
 - The reflash tool will now prompt you to turn the key on, but do not turn on the engine. Proceed to turn the key to the on position. The reflash tool will automatically proceed to unlock the processor and begin to set it up.
 - Now the reflash tool will begin to load the Vortech tune to your vehicle.
 - When the tune is loaded, the reflash tool will proceed to clear any DTC's.
- The reflash process is now complete. You may unplug the reflash tool from the OBD2 port at this time.



Fig. 12B: OBD2 Connector and Port



Fig. 12C: Flash Tool

NOTE: The red dot at the center of the D-Pad on the SCT Flash tool acts as the "ENTER" button.

13. FINAL CHECK

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

- A. 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.
- B. 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.
- C. Check all fluid levels, making sure that your tank is filled with 91 octane or higher fuel before commencing test drive.
- D. Start the engine and allow to idle a few minutes, then shut off.
- E. Recheck to be sure that no hoses, wires, etc. are near exhaust headers or moving parts. Look also for any signs of fluid leakage.
- F. **PLEASE TAKE SPECIAL NOTE:** Operating the vehicle without ALL of the subassemblies completely and properly installed may cause **FAILURE OF MAJOR COMPONENTS.**
- G. Test drive the vehicle.
- H. Always listen carefully for engine detonation. Discontinue heavy throttle usage if detonation is heard.
- I. Read the **STREET SUPERCHARGER SYSTEM OWNER'S MANUAL AND RETURN THE WARRANTY REGISTRATION FORM** within thirty (30) days of purchasing your supercharger system to qualify.

For internally lubricated V3 units only

This supercharger has been factory pre-filled with special Vortech synthetic lubricant. Oil does not need to be added to a brand new unit, however a fluid level check should be performed.

Prior to operating the supercharger on the vehicle and after installation onto the vehicle:

Remove the factory installed flat-head brass shipping plug (not the dipstick) from the top of the supercharger case. Replace the sealed shipping plug with the supplied vented plug. Do not operate the supercharger without it. Check the supercharger fluid level using the dipstick as follows:

Fluid level checking procedure:

1. Ensure that the .06" copper sealing washer is located on the dipstick base.
2. Thread the clean dipstick into the unit until it seats.
3. Once the dipstick has seated, remove the dipstick from the unit. Fluid should register in the crosshatched area on the dipstick.
4. **DO NOT OVERFILL!!!** Drain excess fluid from the unit if it is above the maximum level on the dipstick.

Check the fluid level using the dipstick at least every 2,500 miles.

Initial supercharger fluid change must be performed at 2,500 miles. The supercharger fluid must be changed every 7,500 miles maximum thereafter.

Drain the fluid, refill the unit with 4 oz. of Vortech V3 lubricating fluid, and then confirm proper oil level using the dipstick. **DO NOT OVERFILL!!!**

WARNING: Use of any fluid other than the special Vortech lubricant will void the warranty and may cause component failure.



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