

Replacing ThirdGen V-belts with Serpentine belt

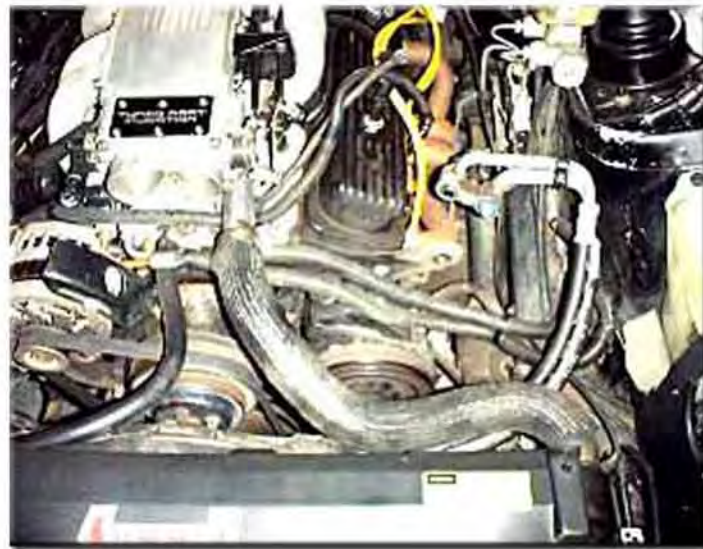
Text and photos by Tech Experts at <http://sethirdgen.org/>
PDF'd and additions by Duck-Kingman AZ

First acquire all the parts, including the left and right brackets, A/C compressor, alternator, power steering pump, crank pulley, water pump (serpentine pumps spin backwards), pump pulley, suction/discharge A/C hose, belt, and the studs and bolts. Most of this, if not all, can be picked up at the boneyard, or other sources of used parts. Typical prices are \$75-150. Make sure to get all the support brackets. If the smog pump will not be installed, a belt pulley or different size rerouted belt [Dayco 968K6] will be needed. If the conversion is on an '85-'87 TPI, the metal fuel pipes in front of the engine need to be replaced with GM P/Ns: 10055875 & 10055874, connecting the fuel rail to the flex hoses.

Repair manuals always say to disconnect the negative battery cable, definatly do that, since the project requires altering the alternator wires. Then have the A/C system sucked down by an A/C recovery machine, drain the coolant, and remove the Air ducting going to the throttle body.



This is what the stock V-belt setup looks like - cluttered, difficult to work on (too many awkward brackets) and the belts tend to squeal.



Since the A/C sytem is empty, go ahead and remove the A/C compressor by taking off all the brackets and bolts that hold it in place. Also remove the A/C lines from the back of the compressor. Separate the A/C lines by undoing the fitting at the condensor and the accumulator. ALWAYS use two wrenches to avoid twisting the line.

The V-belt suction/discharge line is bulky and rather awkward, and will help "clean up" the engine bay when gone.





Now remove the Alternator. Make sure to ditch the brackets, pull the smog pump and remove the lower radiator hose.

If the engine is an '85-'87 TPI, replace the metal fuel lines [the photo shows custom lines to adapt a Y-body fuel rail to an F-body car].

Next step is to remove the water pump. Don't bother removing the pulley, just remove the four bolts that hold it on. Set these four bolts aside from the heap of V-belt crap, they will be reused on the new water pump. When the pump is gone remove the power steering pump. The fitting on the back is 16mm, and since the line will be reused, break it free with a flare nut wrench.



The last step to escape the V-belt nightmare is to remove the crank pulley. There are three 5/8" (16mm) bolts that bolt it to the balancer, and one crank bolt in the middle. While down there, put the new one on.

Now is the time to start putting brackets on. There is one stud on the passenger side. Hopefully the bolts and studs with the brackets were included with the other parts, since there are several different sizes.



It is best to put the stud in first, to hold the bracket in place while the other parts are lined-up.

If the Torx bolts didn't get stripped out during removal, reuse them, if not, install suitable alternatives.



There are two small studs for the drivers side bracket. The bracket can be installed without removing the power steering pump. This is good, since removal requires a special tool. After the bracket is tightened, connect the PS pump lines. It may be easier to get the line started, then hang the bracket. Make sure it is good and tight, just don't round it off.

Now is also a good time to install the new A/C suction/discharge line. Use new O-rings, and lubricate them with Mineral Oil (R-12 oil) even if using R-134.



Double-wrench to tighten the fittings, and don't over tighten. They are made of soft aluminum.



The alternator can now be installed. The wires won't reach, since the ALT was moved from the other side, and will be lengthened later. Make sure to install the bracket supporting the back of the alternator, it runs from the back of the alternator, down to the first stud on the exhaust.

Most alternator manufacturers warranties are void if this isn't used, and it says so in the warranty! Install it!



Use Liquid teflon sealant on the water pump bolts. Also, use new gaskets, and install them dry! NO RTV!!! It's not needed. Then put the pulley on.



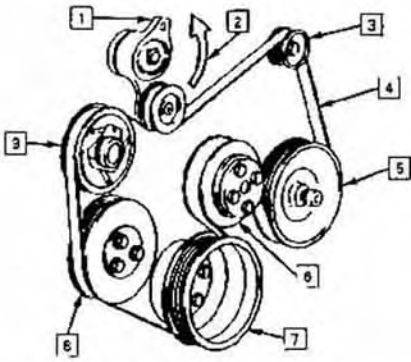
Now it's time to mount the A/C compressor connect the lines, use new O-rings on the compressor and lube with mineral oil. If using the smog pump or the Smog pump delete pulley, install it and use the factory diagram to install the belt. If the pump or pulley will not be used, install the optional length belt and follow that routing diagram.

Next, alter the wiring to accommodate the new location of the alternator and A/C compressor. The wires for the compressor need to be shortened (or just roll them up and tuck away) and the alternator wires need to be lengthened. Make sure to use suitable gauge wire to lengthen the battery lead to the alternator stud, since with a partially discharged battery, or under high load, the alternator could pass 60+ Amps through it! Take care of any finishing touches, top off the P/S fluid and coolant and double-check everything. Finally, have the A/C system Evacuated (sucked to a vacuum) and recharged.

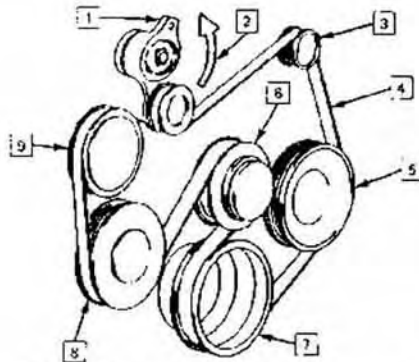
DUCK-notes: Since doing this upgrade on my '87 IROC about three years ago, the only glitch has been a loosening of the crank pulley bolts, causing a noticeable rattling when the A/C comes on. A couple dabs of LockTite fixed it. Also, highly recommend installing a NEW A/C compressor and dryer instead of whatever comes with the bone-yard serpentine package, as most likely the 15-year-old compressor seals have dried and will leak.

Spending the \$300 for a new compressor and dryer will ensure good AC for at least the next ten years.

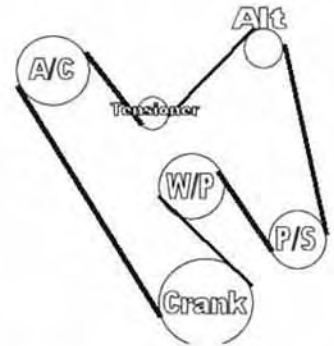
The following pages have 3-view diagrams of the parts and complete parts listings.



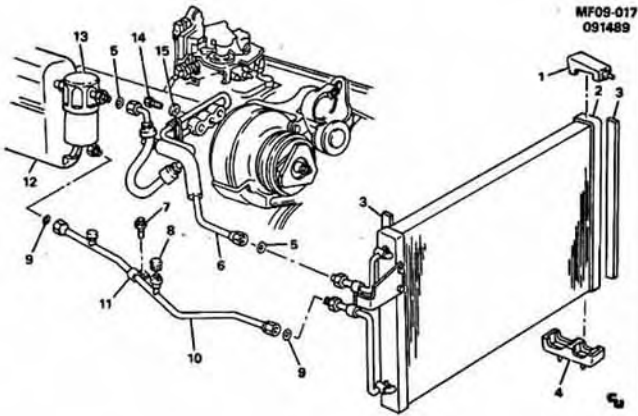
1988 Belt routing



1989-92 Belt routing



AIR pump bypass routing



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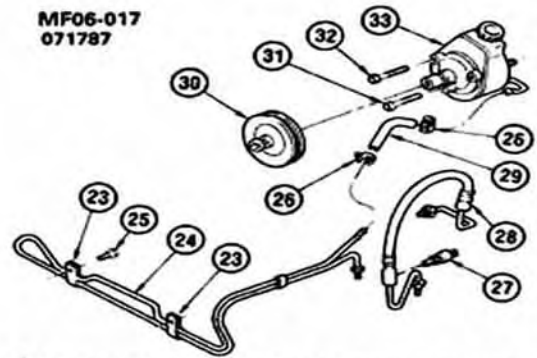
MF08-017

1987 "F" A.C. REFRIGERATION SYSTEM-5.0L,5.7L V8 (LB9/5.0F,L98/5.7-8)
1988-90 "F" A.C. REFRIGERATION SYSTEM-5.0L,5.7L V8 (L03/5.0E,LB9/5.0F,L98/5.7-8)

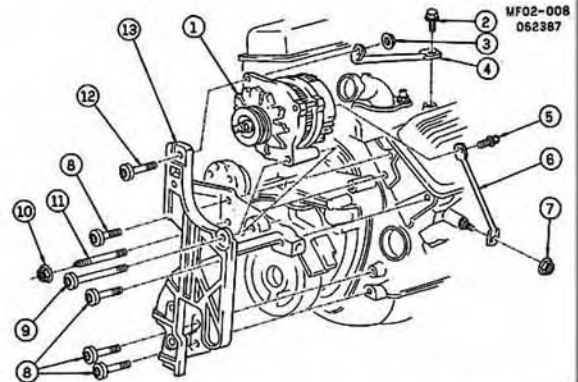
1.	9.190	INSULATOR, Cndsr Upr	14088853
2.	9.190	CONDENSER (1987-89)	3058534
3.	9.190	CONDENSER (1990)	52451266
4.	9.190	SEAL, Cndsr (to Mtr Compt Frt)	10037550
5.	1.270	INSULATOR, Rad Mt	14083800
6.	8.927	O-RING (1.25 IDx.070 Thk)(Part of 10)	3094214
7.	9.177	FITTING, Compl W/Hoses (1987)(1)	10054986
8.	9.228	FITTING, Compl W/Hoses (1987)(2)	10070216
9.	9.228	HOSE, Cmpr & Cndr (1988-90)	10089457
10.	8.977	SCREW, Hex W/Ft Wa (M8.3x1.81x20)	22527476
11.	9.177	CAP, Chrg Vlv (3/8-24)(1988)(Part of 10)	3033974
12.	9.177	CAP, Chrg Vlv (3/8-24)(1989-90)(Part of 10)	52451233
13.	8.927	O-RING (2.75 IDx.080 Thk)	3093111
14.	9.220	TUBE, Evap Inl (1987)	14090457
15.	9.220	TUBE, Evap (1988)(incl 5.8)(3.6)	10056002
16.	9.220	TUBE, Evap (1988-90)(incl 5.8)(4.6)	10105263
17.	9.198	VALVE, Serv(3)	10027804
18.	9.177	VALVE, Press Sw (1988-90)(4)	3041827
19.	8.927	O-RING (.301 IDx.070 Thk)	3092509
20.	8.242	CLIP, Evap Tube (1988-90)	10108264
21.	N.S.	MODULE, Htr & Evap & Blot(5)	3058444
22.	9.195	ACCUMULATOR, Dehydr	11508216
23.	8.900	BOLT, Hex (M10x1.5x45)	1108216
24.	8.931	WASHER, Spr Lk (7/16x25/32x7/64)	8439513

NOTE 1: 1st Design 1987 - Has switch port at compressor end.
NOTE 2: 2nd Design 1987 - Has no switch port.
NOTE 3: 1st Design 1988 - Horizontal evaporator inlet pipe.
NOTE 4: 2nd Design 1988 - Vertical evaporator inlet pipe.
NOTE 5: See chart in group 9.000 for usage.
NOTE 6: Components Serviced.

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1988-89 "F" STEERING SYSTEM RELATED PARTS (L03/5.0E,LB9/5.0F, L98/5.7-8)



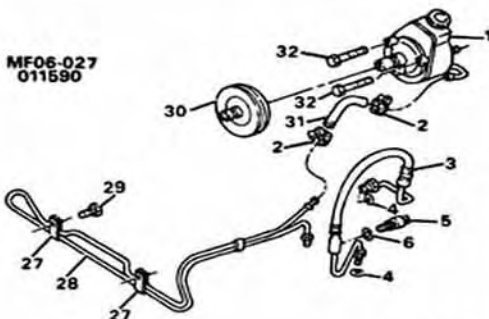
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1988-91 "F" GENERATOR MOUNTING-V8 (LB9/5.0F,L98/5.7-8,L03/5.0E)

1.	2.275	GENERATOR, Reman (1988-89)(LB9,L98 W/K68)	10463092
2.	2.275	GENERATOR, Reman (1990)(LB9,L98 W/K68)	10463140
3.	2.275	GENERATOR, Reman (1988-89)(L03 W/K98)	10077510
4.	2.275	GENERATOR, Reman (1988-89)(L03 W/K60)	10463099
5.	2.275	GENERATOR, Reman (1990)(L03 W/K60)	10463148
6.	2.275	GENERATOR, Reman (1991)(L03 W/K60)	1101648
7.	8.900	BOLT, Hth (3/8-16x.88) 280M Por	9440169
8.	8.917	NUT, Hth (M8x1.25) 10 Paor	11507036
9.	2.277	BRACE, Gen Inboard Rr (1988 L03)	10077597
10.	2.277	BRACE, Gen To Inl Manif (1988)(L98,L98)	10077510
11.	8.900	BOLT, Hth (M8x1.25x25) 10.9 Paor	11509843
12.	2.277	BRACE, Gen Rr (1988)	10077505
13.	2.277	BRACE, Gen Rr (1989-91)	10077579
14.	8.917	NUT, Hth (M8x1.25) 9.2Zr	1150843
15.	8.913	BOLT, Torx Hd (3/8-16x1 1/8) Paor	14091547
16.	8.913	BOLT, 6 Lob Soc (M10x1.5x85) 9.8 Paor	11514462
17.	8.917	NUT, Hex Fig (3/8x16) 280M Phos	14067004
18.	8.806	STUD, Gen Brkt (3/8-16x4.3/8-16x1) Por	10055894
19.	8.913	SCREW, Fan Hd (M8x1.25x45) 8.8 Paor	11514382
20.	2.277	BRACKET, Gen & P.S. Pump (1988-91)	10105212

GM Parts Direct sells both an AC delete pulley (p/n 10055890) and a smog pump delete pulley (p/n 10186167). These are on the website but are not really listed as delete pulleys. Part # 10186167 is listed as a water pump pulley, but it is the correct part # for the smog pump delete pulley. You can use the stock belt and routing, and look better than deleting the whole thing, plus you can keep the bolts that help hold the bracket to the block.

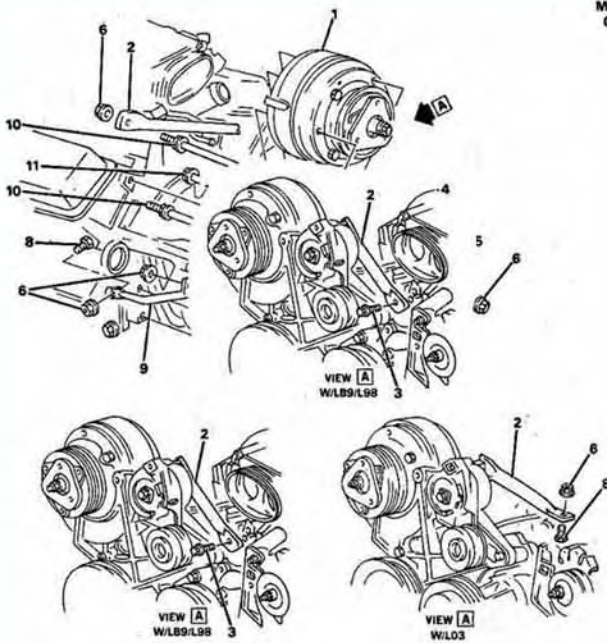
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011590



MF06-027

1990-91 "F" STEERING SYSTEM RELATED PARTS

GM Part #	Description	Pack Qty	Unit Price	Quantity	Est. Price	Core Charge	Est.
10186167	PULLEY, AS	1	335.22	1	335.22	50.00	37.95

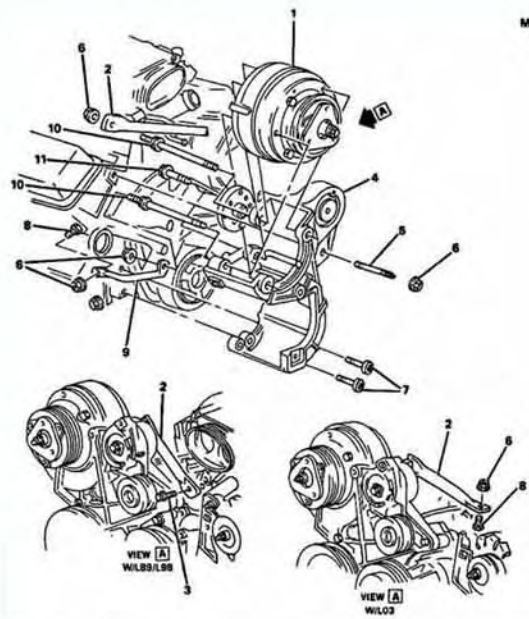


MF09-018

1988-90 "F" A.C. COMPRESSOR MOUNTING-5.0L,5.7L V8 (L03/5.0E,LB9/5.0F,L98/5.7-8)

1.	9.170	COMPRESSOR (1988)(1989 Exc Y82)(* 1)	12326200
	9.170	COMPRESSOR (1989 W/Y82)(* 1)	12326204
	9.170	COMPRESSOR (1990)(* 1)	12337714
2.	9.171	BRACE (1989-90)(W/L98,LB9)	10105292
	9.171	BRACE (1989-90)(W/L03)	10105289
3.	8.900	BOLT, Hth (M8x1.25x25)	11508106
4.	1.060	BRACKET, Inj Pump & Drive Belt Tens	10055800
5.	3.655	STUD, Inj & Tens Brkt (9.52x69.85)	10055883
6.	8.917	NUT, Hex Flg (3/8x16)	14057004
7.	8.913	BOLT, Torx W/Seal (3/8x16x1)	14091547
8.	N.S.	STUD	
9.	9.171	BRACE (1988)	10077515
	9.171	BRACE (1989-90)	10105267
10.	8.180	STUD	10055888
11.	8.900	BOLT (M12x1.75x36)(0.029)	14069928

NOTE 1: See respective Group for detailed illustrated view.



MF09-026

1991 "F" A.C. COMPRESSOR MOUNTING-5.0L,5.7L V8 (L03/5.0E,LB9/5.0F,L98/5.7-8)

1.	9.170	COMPRESSOR (* 1)	12337714
2.	9.171	BRACE (W/LB9,L98)	10105292
	9.171	BRACE (W/L03)	10105289
3.	8.900	BOLT, Hth (M8x1.25x25)	11508106
4.	1.060	BRACKET, Air Inj Pump & Drive Belt Tens (3.655)	10055800
5.	3.655	STUD, Air Inj & Tens Brkt (9.52x69.85)	10055883
6.	8.917	NUT, Hex Flange (3/8-16)	14057004
7.	8.913	BOLT, Torx W/Seal (3/8x16x1)	14091547
8.	N.S.	STUD	
9.	9.171	BRACE	10105267
10.	8.180	STUD	10055888
11.	8.900	BOLT (M12x1.75x36)	14069928

NOTE 1: See respective Group for detailed illustrated view.