OWNERS MANUAL

...with installation instructions

Banks Twin-Turbo System

Small Block Chevy V-8

THIS MANUAL IS FOR USE WITH SYSTEMS 21101-21104 & 21107-21110

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Dear Customer,

If you have any questions concerning the installation of your Banks Twin Turbo System, please call our Technical Service Hotline at (888) 839-2700 between 7:00 am and 5:00 pm (PT). If you have any questions relating to shipping or billing, please contact our Customer Service Department at (888) 839-5600.

Thank you.

General Installation Practices

1. Before starting work, familiarize yourself with the installation procedure by reading all of the instructions.

2. Throughout this manual, the left side of the vehicle refers to the driver's side, and the right side to the passenger's side.

3. Before installing any components, inspect them for any foreign material that may have entered during shipping and handling, machining or assembly. Remove any burrs, machining chips and polishing compound from castings. Rinse all hoses and tube assemblies with solvent and blow dry, especially braided hoses after assembly of hose-end fittings.

4. Teflon paste has been provided with this kit for pipe thread assemblies. We recommend it over Teflon tape to eliminate the possibility of tape fragments getting into the lubrication and fuel systems. Flared fittings, hose and tube assemblies require no sealant.

5. Plastic or fiberglass parts, rubber hoses, brake lines, wiring, etc. in close proximity to hot exhaust components will need to be shielded from heat. We **do not** recommend that the exhaust system be covered with any kind of heat wrap or blanket, as this may overheat it causing warpage, cracks, or burn-out. We recommend placing heat shielding on or between adjacent components. This may be in the form of reflective blanket material, or sheet metal forming air gaps, such as on our turbo exhaust manifold. On vehicles with low hood lines, it is advisable to mount heat shielding on the underside of the hood over the turbos and exhaust piping.

6. During installation, keep the work area clean. Do not allow anything to be dropped into intake, exhaust, or lubrication system components while performing the installation, as foreign objects will cause immediate engine damage upon start-up.

Special Tools:

- 37º flare tool kit for ¼" and ⅜" line
- Measuring tools
- Access to a lathe

Engine Support Systems

Your Banks Sidewinder Twin-Turbo system has the potential to make considerable power, but only if the vehicle's support systems are upgraded to match. We recommend you consider making the following modifications if you have not already done so.

FUEL SYSTEM

A quality high-performance EFI fuel pump capable of producing the recommended injector pressure and fuel flow volume for the anticipated power level will be required. Check with your EFI manufacturer for their nozzle flow rates and pressures. As a general rule, an engine at WOT under load will use ½ pound of gasoline per horsepower per hour. Thus an 800-horsepower engine will require a fuel-flow capacity of 400 pounds per hour total flow from the eight injectors. This is a minimum requirement, as the pump should have some additional flow and pressure reserve to allow for pressure regulation and high demand conditions. Install a fuel pressure gauge to monitor pressure while tuning. Pressure is ΔP injector. If your injector needs a ΔP of 45 psi and you will be running 10 psi of boost pressure, the pump will need to make 55 psi of pressure at the necessary fuel flow rate.

Sparkplug selection will vary somewhat with the system application and cylinder heads used. In general, plugs will need to be several heat ranges colder than stock to prevent the plug from becoming a source of pre-ignition. Do not use projected tip-style plugs that extend the center insulator into the combustion chamber.

EXHAUST SYSTEM

Turbochargers respond quicker and will produce more boost with minimum backpressure. If possible, use a 3-inch-diameter outlet pipe from each turbocharger. In a minimum space situation, you may reduce to 2½-inch-diameter off of each turbo, increasing to 3 inches as soon as possible, but power will be reduced. In a racing application, keep the pipe size 3 inches or larger, and as short as practical. On a street vehicle, mufflers should be a low-restriction chambered design (no glass packs) with inlet and outlet sizes at least 3 inches. Keep the number of bends to a minimum, and as free flowing as practical. Stainless steel tubing is not necessary, but will last a lot longer.

The fuel tank pick-up line or outlet fitting should be at least as large as the fuel pump inlet, typically a –10 or –12 line size. If at all possible, mount the pump in the rear of the vehicle, close to the fuel tank. A high-flow fine mesh fuel filter should be installed at the fuel pump inlet. Check with the pump manufacturer for filter micron size.

High-volume/high-pressure electric pumps must be supported by an electrical system capable of providing the rated pump amperage and supply voltage. Check that the wire gauge and fuse amperage is appropriate for the pump selected. Most ECUs switch the pump on and off through a relay tied to the ECU's ignition circuit.

IGNITION

A high-energy multiple spark or CD ignition system is required to provide adequate spark energy during high-boost operation. Check with your ECU manufacturer to determine what type of ignition triggering is compatible with the ECU circuitry. Distributor cap, rotor, and plug wires must be in top condition to prevent mis-firing under boost. Spiral-core, low-resistance plug wire is recommended for use with most electronic ignition systems.

LUBRICATION

Any oil suitable for lubricating the engine will lubricate the turbos. Oil contaminated by dirt or debris, or a lack of oil, will cause rapid turbo bearing failure. Anytime new turbos are installed, or a new engine is started for the first time, the turbos should be oil-primed prior to engine start-up. Disconnect the turbo oil drain lines at the oil-pan fittings and crank the engine with the ignition off until oil is observed flowing from the drain lines, then reconnect lines and start the engine. An alternative method is to pump several shots of clean engine oil into each turbo oil inlet fitting, then crank the engine with the turbo feed lines disconnected and ignition off until oil flows from

the feed lines. Reconnect the lines and start the engine. Oil priming ensures that the turbos will not be spinning before engine oil reaches them, as in an unprimed engine with empty oil passages.

When a turbocharged engine is shut off after a period of operation, especially when it has been run under moderate boost, it is recommended that it be allowed to idle for 30-60 seconds before shut down. This allows engine oil to cool the turbo bearings and to prevent the hot turbo from baking the engine oil into sludge on the turbo bearings.

Do not shut a turbocharged engine off immediately following high RPM/boost operation, as the turbos will spin for a number of seconds with no oil pressure, causing bearing damage.

Never place a restrictor in the inlet or outlet turbocharger oil line. The turbocarger bearing clearances provide the necessary restriction to oil flow. A restricted or blocked turbo oil drain line will cause oil to back up into the turbo, pushing past the seals and entering the intake or exhaust system resulting in oil burning. Restricted oil inlet flow may result in damaged turbo bearings. If the engine will not produce normal oil pressure, steps must be taken to upgrade the engine's oil system, or reduce oil temperature/increase viscosity.

Exhaust Manifold Installation

1. Apply a small amount of Anti-seize onto the treads of the twelve ⅜"-16 x 3" bolts. See **Figure 1**. Install two lock washers on each bolt, coarse side in.

2. Install each manifold with the heat-shield between the manifold and the cylinder using the two outside bolts. See **Figure 2**.

3. Install the remaining 10 bolts.

4. Make an initial pass tightening each bolt to 15 ft-lbs. Then make a final pass tightening each bolt to 35 ft-lbs.

Figure 1

Figure 2

Turbocharger Assembly Installation

1. Apply a small amount of Anti-seize onto the course treads of the eight ⅜" x 2" studs

2. Install four studs into the turbine inlet flange on each exhaust manifold.

3. Thread two ⅜ nuts onto the fine threads of one of the studs.

4. Lock the nuts together by turning them in opposite directions. See **Figure 3**.

5. Once the nuts are locked together use a wrench to snug the studs into the exhaust manifold flange (approx 5-8 ft-lbs).

6. Loosen the nuts by turning them in the opposite direction and remove them from the studs.

7. Repeat **Steps 3 – 6** for the remaining seven studs.

8. Install a flange gasket over the studs onto the exhaust manifold flange.

9. Install a turbo spacer over the studs onto the flange gasket. See **Figure 4**.

10. Install another flange gasket over the studs onto the turbo spacer.

11. Remove the turbocharger assemblies from their packaging.

12. Carefully check the assemblies for any packing debris. Remove all debris found in the assembly. *Note: Make sure the turbocharger assemblies are completely cleaned before installing them on the engine. Debris in the turbocharger can damage it and the engine if not removed.*

Figure 3

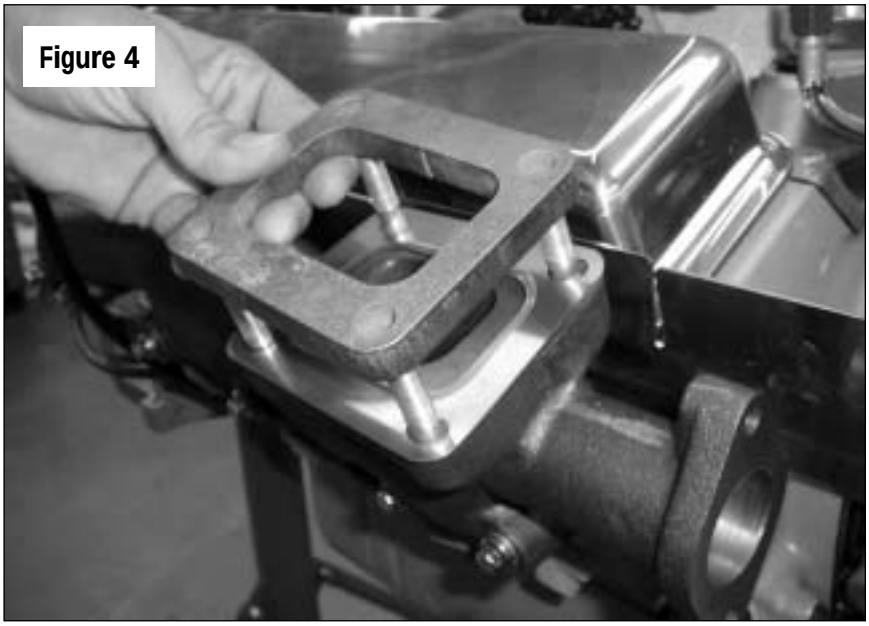


Figure 4

13. Install the two turbocharger assemblies onto the two exhaust manifolds. The turbine outlet should face the rear of the engine. See **Figure 5**.

14. Install a ⅜" AN washer over all 8 studs.

15. Apply a small amount of Anti-seize onto the treads. See **Figure 6**.

16. Install a ⅜" collet-lock nut onto each of the 8 studs with the round collet side of the nut against the AN washer and tighten to approximately 15 - 20 ft-lbs. *Note: This torque value is just for reference. A torque wrench cannot be used to tighten these studs due to the limited clearance. The nuts must be tightened with a wrench.* See **Figure 7**.

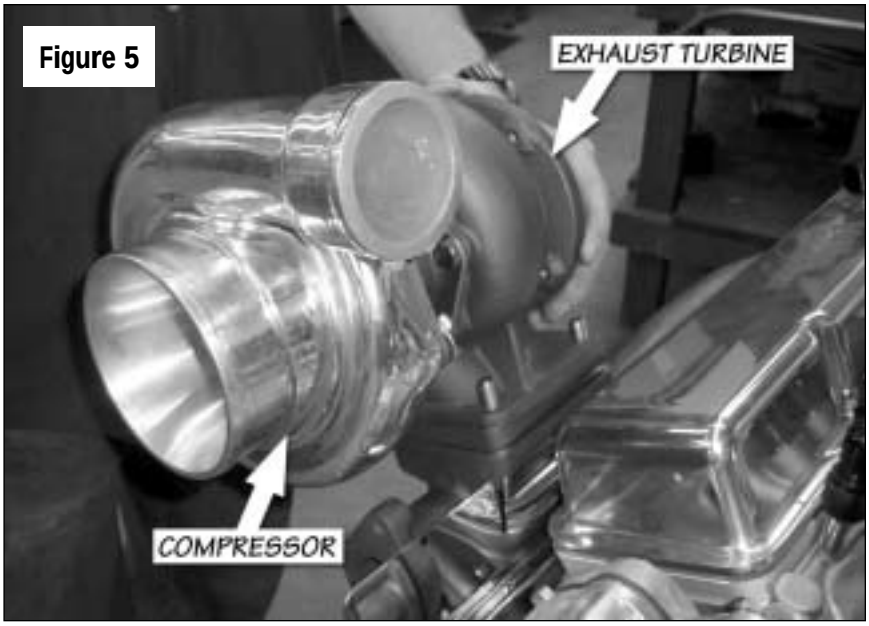


Figure 5


Figure 6

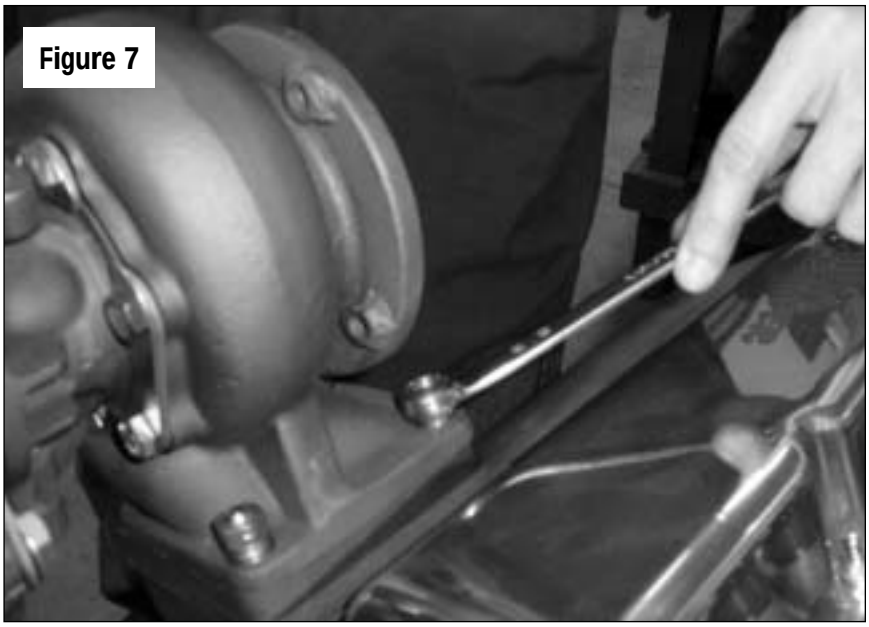


Figure 7

17. Lay a straightedge on top of the oil inlet flange of the center sections of the two turbocharger assemblies. See **Figure 8**.

18. Rotate the center sections until the top surface of each is flush with the straightedge.

19. Tighten all six bolts that hold the center section to the exhaust turbine housing on each turbocharger to 12-15 ft-lbs.

20. Bend over the lock tabs for each of the bolts tightened. *Note: Leave the bolts that hold the compressor housing to the center section loose until later.*

Turbocharger Oil Feed Line Installation

1. Apply liquid Teflon to the ¼" NPT thread of the two ¼" NPT – 4 AN 90º elbow fittings. See **Figure 9**.

2. Install one of these fittings into the top of the each aluminum adapter on the center section. See **Figure 10**.

3. Using a 9/16" wrench, rotate both fittings until they are tight and the -4 AN male ends point directly at each other.

4. Apply liquid Teflon to the ¼" NPT thread of the ¼" x -6 AN male fitting and install it into the ¼" NPT female thread of the ¼" x -4 male T-fitting. Be careful to not over tighten. See **Figure 11**.

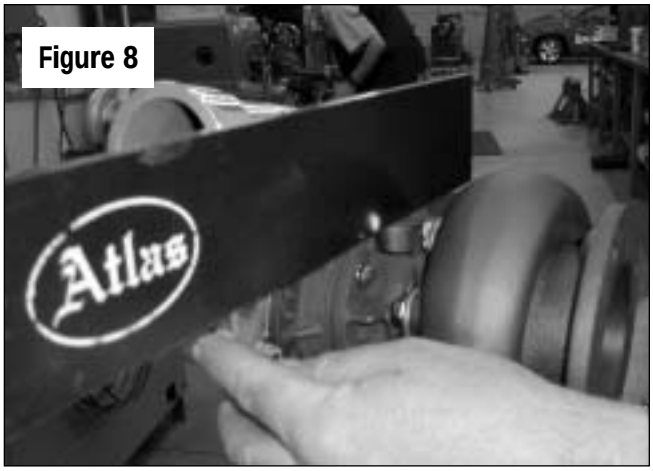


Figure 8


Figure 9


Figure 10


Figure 11

If installing on an aftermarket block follow ***Steps 5*** and ***6***. *If installing on a stock block skip to* ***Step 7***.

5. If installing on an aftermarket block, apply liquid Teflon to the ½" NPT thread of the ½" x –6 AN male fitting and install it into the ½" NPT port on the back of the block. Be careful to not over tighten.

6. Install the ⅜" tube onto the –6 AN fitting on the back of the block and route forward to the front of the intake manifold. Mark the tube for length and best fit, then cut and flare both ends. (For reference see page 18 for "*Instructions for Flaring Stainless Steel Hard Lines.*") Install the –6 AN fitting that was installed in the T-fitting on this end of the tube. Only tighten finger tight. See **Figures 12a** and **12b**. Skip to **Step 9**.

7. If installing on a stock block, apply liquid Teflon to the ¼" NPT thread of the ¼" x –6 AN male fitting and install it into the ¼" NPT port on the oil filter flange of the block. Be careful to not over tighten. See **Figure 12c**.

8. Install the one end of the –6 hose onto the –6 AN fitting and route forward to the front of the intake manifold. Install the other end on the –6 AN fitting that was installed in the T-fitting on this end of the tube. Only tighten finger tight. (For reference see page 16 for *Hose and End Fitting Assembly*.)

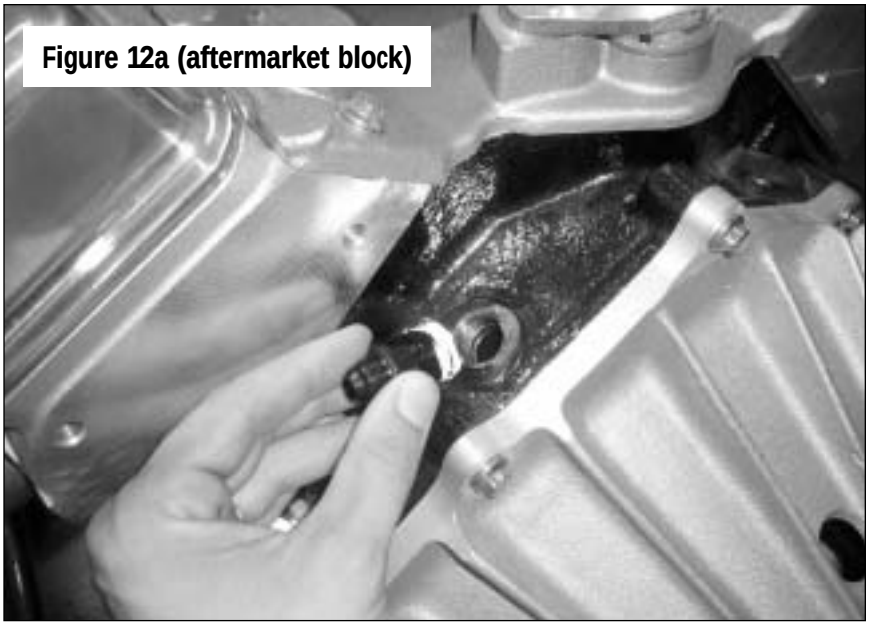


Figure 12a (aftermarket block)

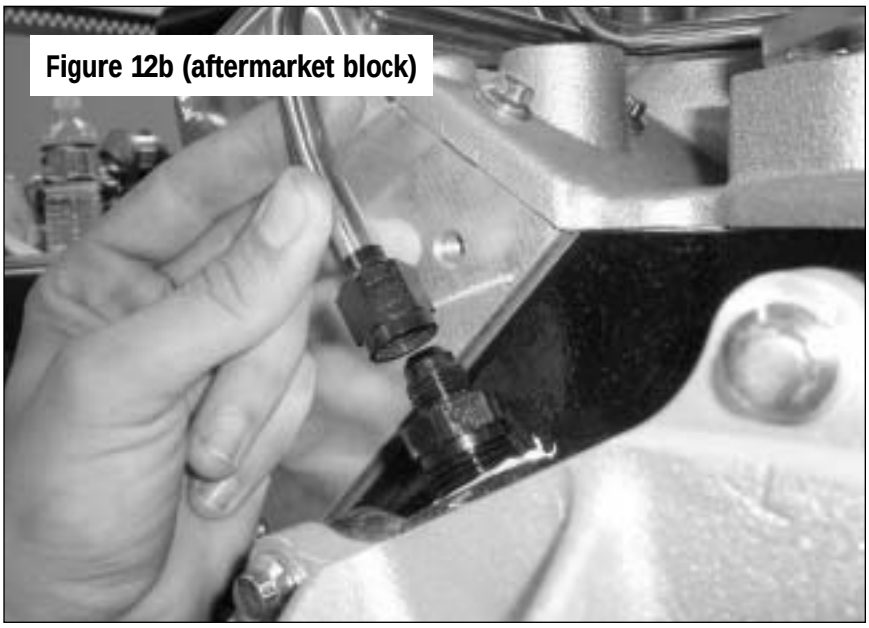


Figure 12b (aftermarket block)

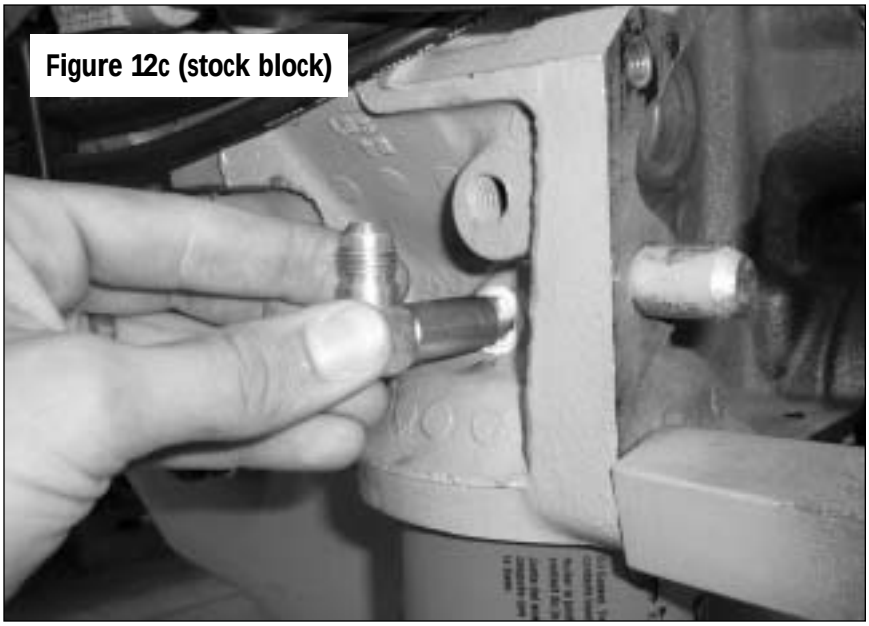


Figure 12c (stock block)

9. Install the 24" long tube onto the -4 male fitting on the right side turbocharger and route to the T-fitting. (See *"Instructions for Flaring Stainless Steel Hard Lines"* on page 18 to ensure the best fit.)

10. Install the 14" long tube onto the -4 male fitting on the left side turbocharger and route to the T-fitting. (See "Instructions for Flaring Stainless Steel Hard Lines" on page 18 to ensure the best fit.)

11. Tighten all six (6) connections carefully to not over tighten. See **Figure 13** and **14** for the correct look of the finished tubing.
(Note: **Figure 13** shows the installation on a stock block. A soft line is used in stock block applications whereas a hard line is used for aftermarket blocks.)

Figure 13

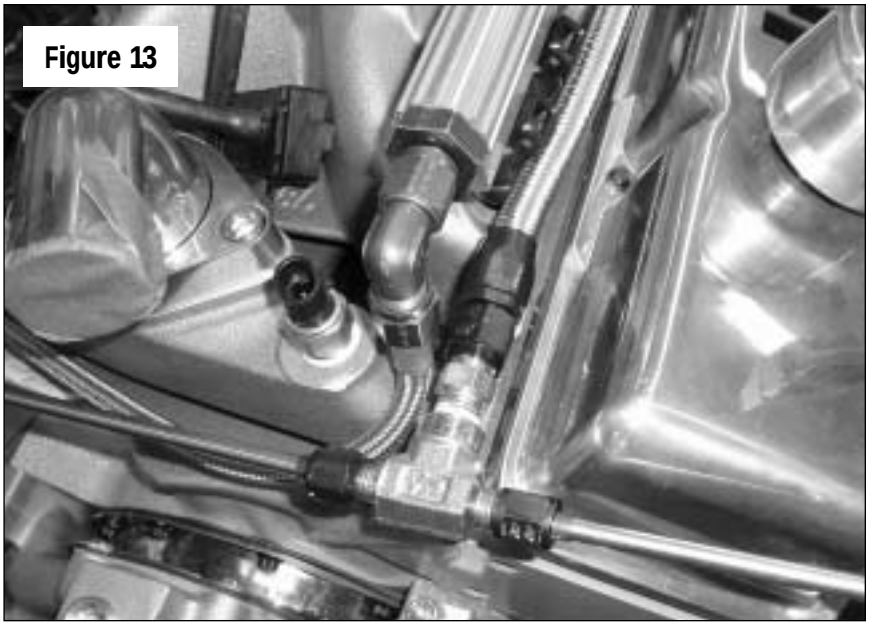
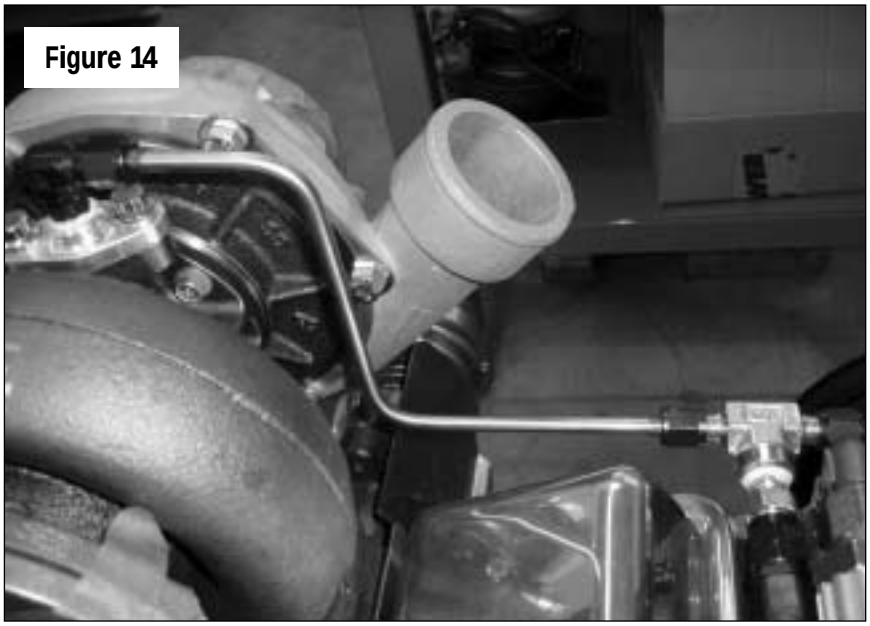


Figure 14



Turbocharger Oil Drain Line Installation

1. Oil drain threaded bungs must be welded to the oil pan prior to installing fittings. Two ½-inch NPT bungs are provided for welding to a steel oil pan (for an aluminum pan, installer must provide aluminum weld bungs). Locate the center of each bung 1½ inches below the pan rail flange adjacent to the center main cap, check for pan bolt clearance. This location prevents return oil from being slung by the counterweights or rodcaps. With the pan off the engine, punch or drill a ⅝-inch-diameter hole through the pan wall at each center mark. Center each bung over the hole, check that the chamfered thread side of the bung faces out, then weld or braze the bungs to the pan. See **Figure 15**.

2. Install ½" NPT x –10 AN 45º elbow fitting into the oil pan with the AN end pointing straight up. See **Figure 16**.

3. Apply anti-seize to the four 8mm x 1.25 x 20mm hex bolts.

4. Install a circle lock washer over each 8mm bolt and insert the bolts from below the flange. Place the gasket over the bolts and install onto the underside of the turbocharger center section. See **Figure 17**.

5. After all four bolts are installed torque each bolt to 15-18 ft-lbs.

6. Assemble the -10 hose with the straight hose end on one end and the 90º hose end on the other to route from the drain tube to the oil pan. Carefully measure the necessary length of hose and cut to size. See “Hose and End Fitting Assembly” on page 16 for instructions on how to assemble the hose.


Figure 15


Figure 16

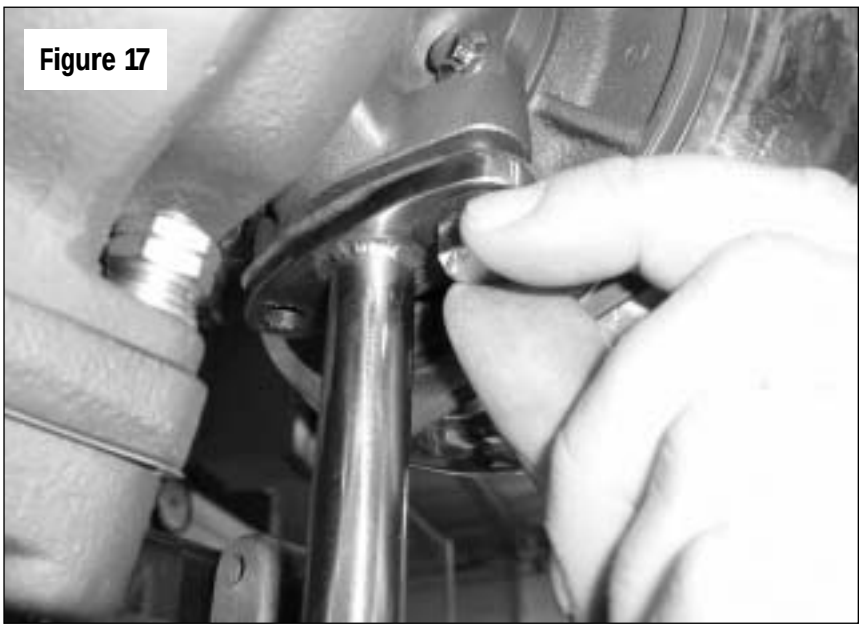


Figure 17

7. Install the -10 hose with the 90º fitting attached to the oil drain tube and the straight end attached to the 45º elbow. Use a 1" wrench to tighten the nut and a 15/16" wrench to prevent the tube from twisting. See **Figure 18**.

Figure 18

Turbocharger Wastegate Installation

1. Apply anti-seize to the coarse threads of the four 15/16" studs.

2. Install the four 15/16" studs, coarse thread, into the front flanges of the exhaust manifolds and tighten.

3. Apply anti-seize to the fine threads of the 15/16" studs.

4. Install the right side waste gate onto the right side manifold. The outlet of the waste gate will point away from the engine.

5. Install a 15/16" AN washer onto each of the four 15/16" studs.

6. Install a 15/16" collet lock nut onto each of the four 15/16" studs and torque to 15-18 ft-lbs. See **Figure 19**.

Figure 19

7. Repeat steps 1–6 for left side wategate.

Pressure Chamber Installation

1. A ½-inch NPT female pipe thread port must be provided at the rear of the intake manifold plenum area for the shuttle valve vacuum line. Drill and tap into the manifold at the approximate location of the elbow fitting shown in **Figure 20**. Check that your proposed location will allow the 45° ½ NPT x –10AN elbow to be rotated 360° when tightened. If any additional vacuum/boost components are to be connected to the rear of the manifold plenum (MAP sensor, boost gauge, fuel pressure regulator ref., etc.), drill and tap the necessary pipe thread ports as shown in **Figure 20** above the elbow fitting. Many EFI throttle bodies provide alternative ports to connect these components.

Note: This operation is best performed with the manifold removed. Always properly clean before installation.

2. Apply liquid Teflon to the pipe threads of the ½" x -10 AN 45º fitting and install into the back of the intake manifold. See **Figure 20**.

3. Install the 4 - 5/16" x 7 studs into the manifold until bottomed, followed by the flange gasket and then the throttle bottle.

4. The 3" long aluminum spacer tube must be trimmed to the proper dimension to fit the throttle body being used. Remove material from the end opposite the O-ring chamfer. This cut must be square and should be performed on a lathe. If the cut is not square the pressure chamber will not seal properly. If a lathe is not available, take to a certified machinist. Refer to **Table 1** on page 20 for the necessary trim length for some common throttle bodies.

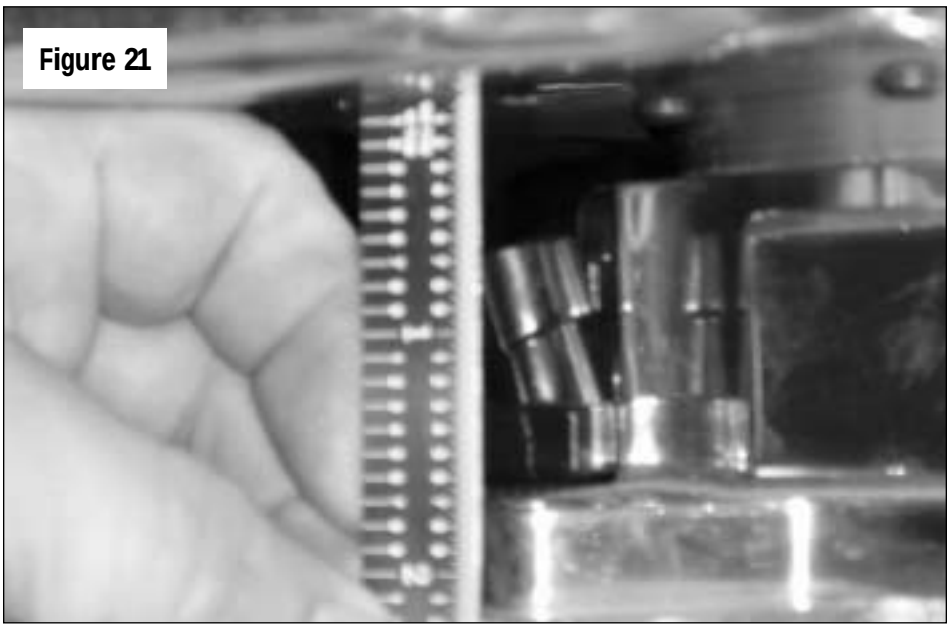
*Note: If your throttle body is listed on Table 1, skip to **Step 10**. If it is not listed, continue to **Step 5**.*

5. If your throttle body is not listed, this dimension must be measured. To determine the proper dimension install the upper plenum onto the throttle body without the supplied rubber gasket. Seat the chamber squarely by pushing down and rotating.

6. Measure the clearance between the bottom of the chamber and the top of the flange on the throttle body. See **Figure 21**. Measure all four corners. You can use a spanner, machinists rule (shown), or snap-gauge, etc.

Figure 20

Figure 21



7. Make the necessary adjustments to get all four measurements within 1/64".

8. Remove the pressure chamber from the throttle body.

9. Add 1/16" to the measured dimension (to compensate for the gasket) and cut the aluminum spacer tubes to this dimension.

10. Install the rubber gasket on the throttle body.

11. Install a spacer onto each of the studs with the chamfered end of the sleeve towards the chamber. See **Figure 22**.

12. Slide an O-ring over each of the bolts until it is seated on the underside of the chamber.

13. Install the pressure chamber over the studs and seat it firmly to the throttle body gasket. Temporarily install the cover and check the four studs for proper length. If necesary, trim studs so they are flush with the top cover.

14. With the pressure chamber in place, install four AN washers followed by the 4 - 5/16" x 28 nuts. Tighten the nuts down evenly, making sure the O-rings underneath are seating evenly. See **Figure 23**.

15. Install the cover onto the pressure chamber. *Note: No sealant is needed.*

16. Install the eleven buttonhead 5/16" x 3/4" bolts. Torque to 15–18 ft-lbs.

17. Install 4 - 5/16" AN washers over the studs followed by 4 - 5/16" x 28 Nylock nuts. Torque to 10-12 ft/lbs.

17. Place one 2½" O-ring into the groove of each of the two hose nipples.

18. Install the hose nipples onto the front of the pressure chamber using the ¼" x ½" x ¾" cap screws. Torque to 5-8 ft-lbs.

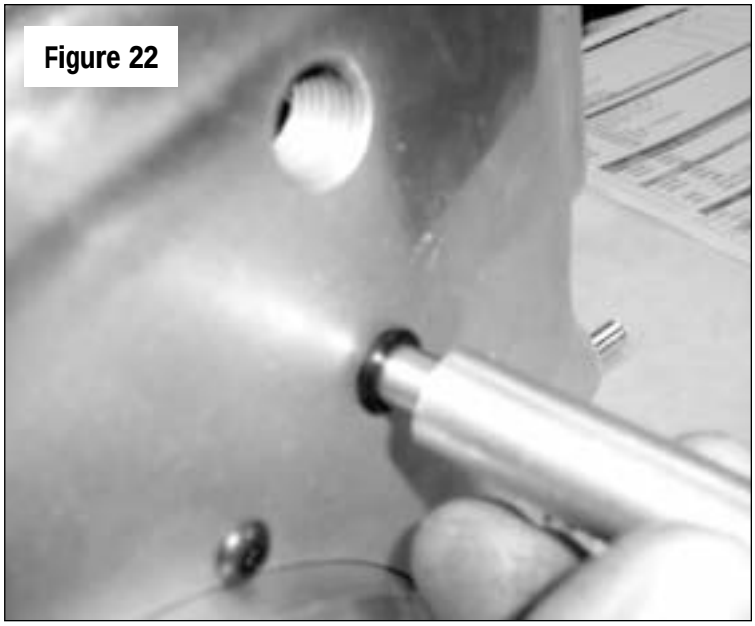


Figure 22

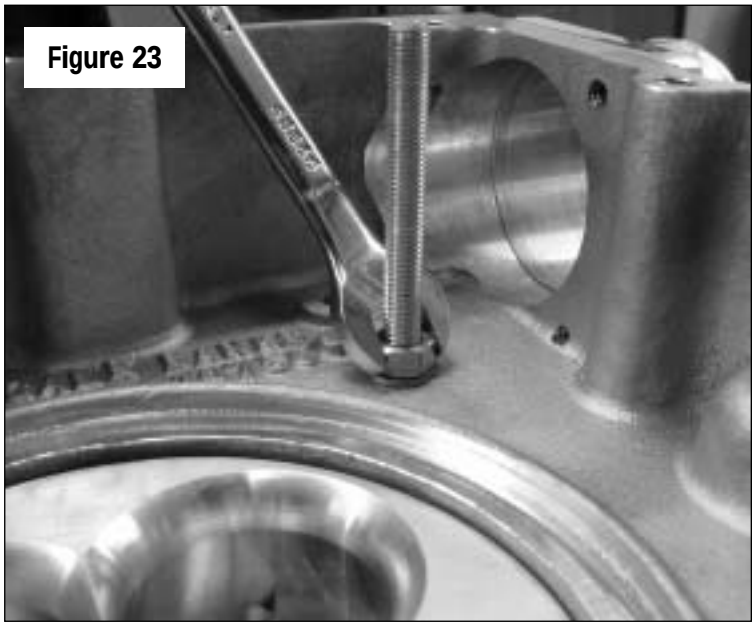


Figure 23

Shuttle Valve Installation

Note: This installation may require assistance from a second person.

1. Install the shuttle valve cap and gasket onto the right side of the pressure chamber using four ¼" x ¾" bolts. Torque the ¼" bolts to 5-8 ft/lbs. See **Figure 24**.

2. Place the shuttle valve into the bore with the tapered end first. See **Figure 25**. *Note: Make sure that the valve moves freely in the bore beforehand.*

3. Slide the spring into the valve inside the bore.

4. Install the gasket onto the guide. Insert the spring guide into the spring. See **Figure 26**.

5. Obtain four ¼" x ¾" bolts and have the necessary tools handy for their installation.

6. Push on the spring guide to compress the spring until the spring guide flange is seated against the pressure chamber. *Note: This step is much easier with two people.*

7. Install the four ¼" x ¾" bolts to hold the spring guide. Make sure to have all four bolts sufficiently installed before releasing the spring to avoid damage to the components or personal injury. Torque the ¼" bolts to 5-8 ft/lbs.

8. Apply liquid Teflon to the ½" NPT threads of the ½" NPT x -10 AN 90º fitting.

9. Install the ½" NPT x -10 AN 90º fitting into the spring guide. Tighten the fitting leaving the -10 end facing straight back.

10. Assemble the -10 hose with the 45º hose end on one end and the 90º hose end on the other to route from the intake manifold to the


Figure 24


Figure 25

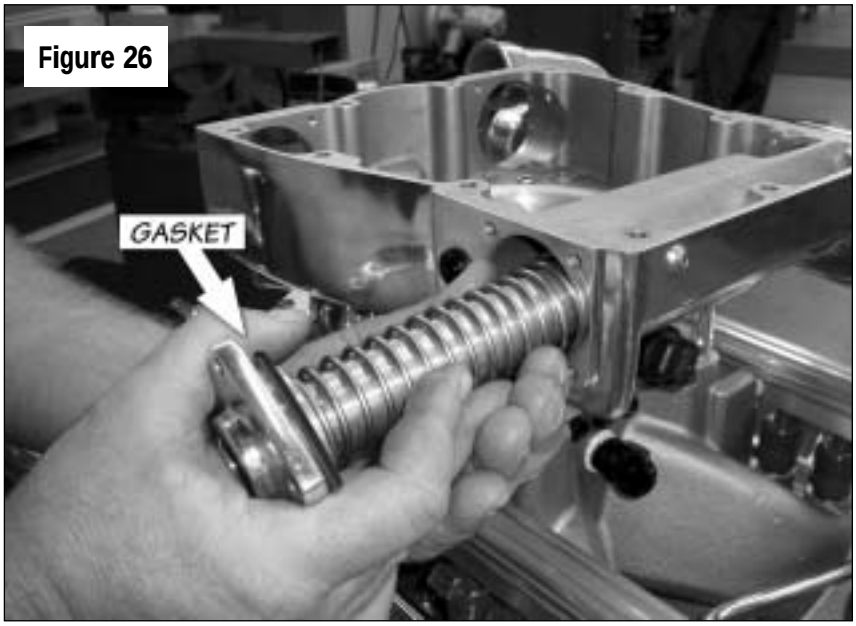


Figure 26

pressure chamber. The 45º hose end connects to the intake manifold and the 90º hose end connects to the pressure chamber. See **Figure 27**. Carefully measure the necessary length of hose and cut to size. See “Hose and End Fitting Assembly” on page 16 for instructions on how to assemble the hose.

11. Install the hose and tighten the fittings.

Boost Tube Installation

1. Loosen the six bolts on each turbocharger compressor cover so covers may be rotated. Install boost tubes between turbo compressor covers and hose nipples on pressure chamber using four pieces of 2½" x 2½" silicone hose and eight worm-drive hose clamps. *Note: There is a right-hand and left-hand boost tube, test fit tubes between turbos and nipples.* There should be approximately ⅛" of an airgap between the boost tube and the turbo or nose nipple. See **Figure 28**. Make sure hose clamps are properly positioned behind hose beads, then tighten clamps. Tighten the six bolts on each turbo compressor cover to 10-12 ft-lbs, then bend lock tabs against bolt heads.

Wastegate Actuation Kit Installation

1. Apply liquid Teflon to the ¼" NPT threads of the ¼" x -4 AN 90º fitting. A ¼" - ⅜" NTP bushing is supplied. Loosely install the 90º fitting into the bushing.

2. Install this fitting and bushing into the right side of the pressure chamber in front of the shuttle valve cap. See **Figure 29**.

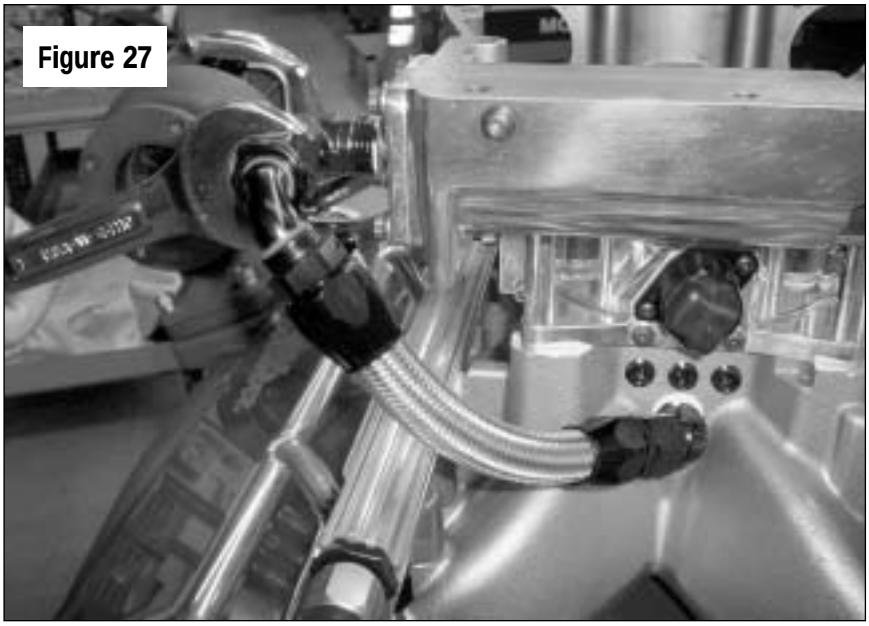


Figure 27

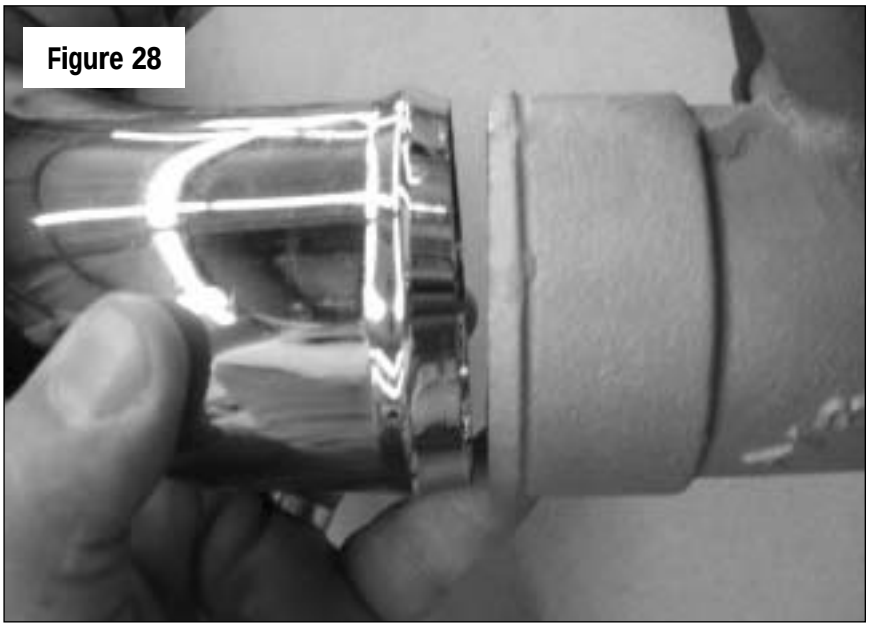


Figure 28

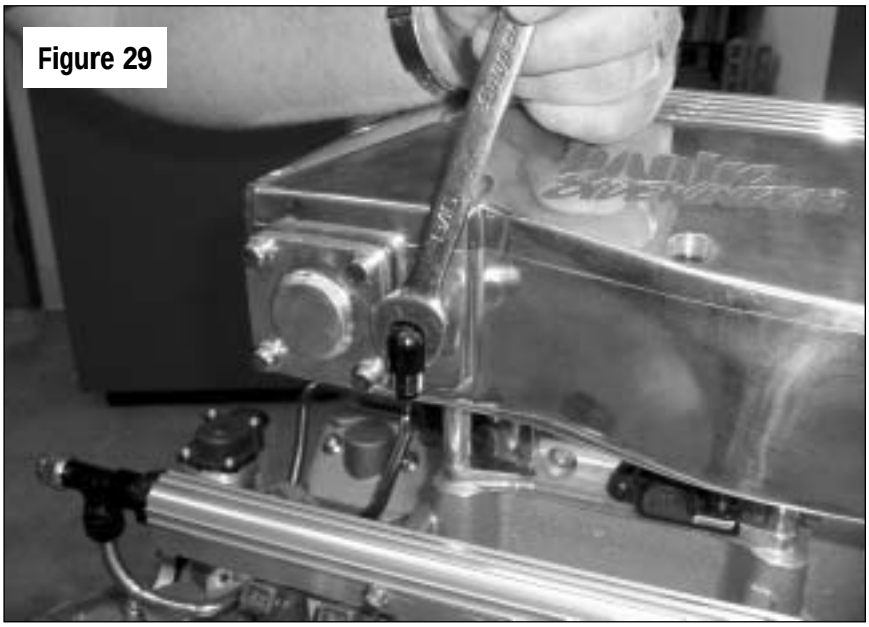


Figure 29

3. Install the boost reference tube to this fitting and route towards the front of the engine. See **Figure 30**. *Note: Cut and flair the tube for the best fit.* (For reference see *"Instructions for Flaring Stainless Steel Hard Lines"* on page 18.)

4. Install the -4 AN T-fitting on the end of the boost reference tube. (For reference see *"Instructions for Flaring Stainless Steel Hard Lines"* on page 18.)

5. Install a -4 AN 90º fitting onto the top of each waste gate. See **Figure 31**.

6. Connect the left and right waste gate feed tubes between the -4 AN T-fitting and the -4 AN 90º fitting on the waste gates. *Note: Cut and flair the tube for the best fit.*

7. Tighten all fittings. Use two wrenches to tighten the feed tubes to the T-fitting. See **Figure 32**.

8. See **Figure 33a** and **33b** for the correct look of the finished installation.

Hose and End Fitting Assembly

1. Wrap hose tightly with tape at cutting point. Using a fine tooth hacksaw, cable cutters or radiac wheel, cut the hose in the middle of the tape. Remove tape after cutting, being careful not to fray the braid.

2. Slip hose into socket to the depth indicated by the hose insertion mark on the outside of the socket. This should be just short of the back of the threads.

3. VERY IMPORTANT— Mark hose with tape or suitable marking device at rear of socket. This mark will later indicate to you if the hose has pushed out of the socket during assembly.


Figure 30

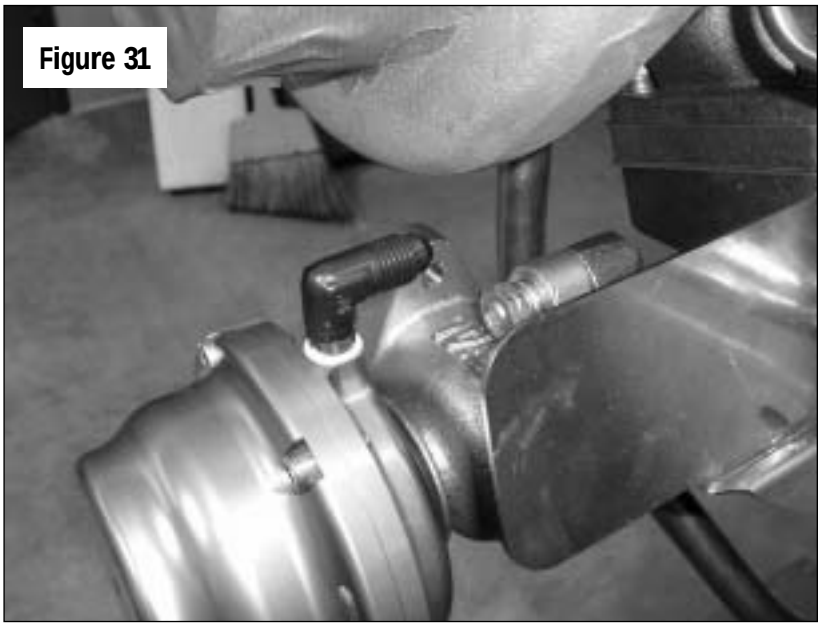


Figure 31


Figure 32

4. Using an anti-seize lubricant, liberally lubricate inside of hose and threads on the nipple. Holding nipple horizontally in a vise, push socket end carefully with hose onto nipple with a turning motion and engage nipple threads into those of the socket. Continue tightening by hand as far as possible to make sure that the threads are properly mated and no cross threading has occurred.

5. Using a wrench, complete tightening assembly. When properly assembled, a small gap of .030 or less should exist between the socket and shoulder of the nipple.

6. VERY IMPORTANT– Check mark made on hose in step 3 for any evidence of push-out. Hose assembly should be cleaned and tested to twice the maximum operating pressure. Hose assembly should also be checked at time of installation for any leakage under normal operating conditions.

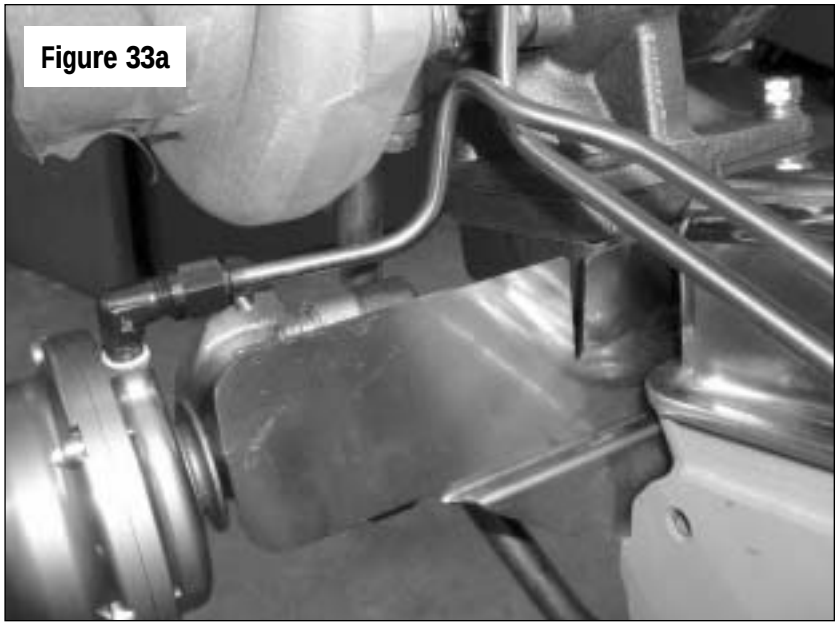


Figure 33a

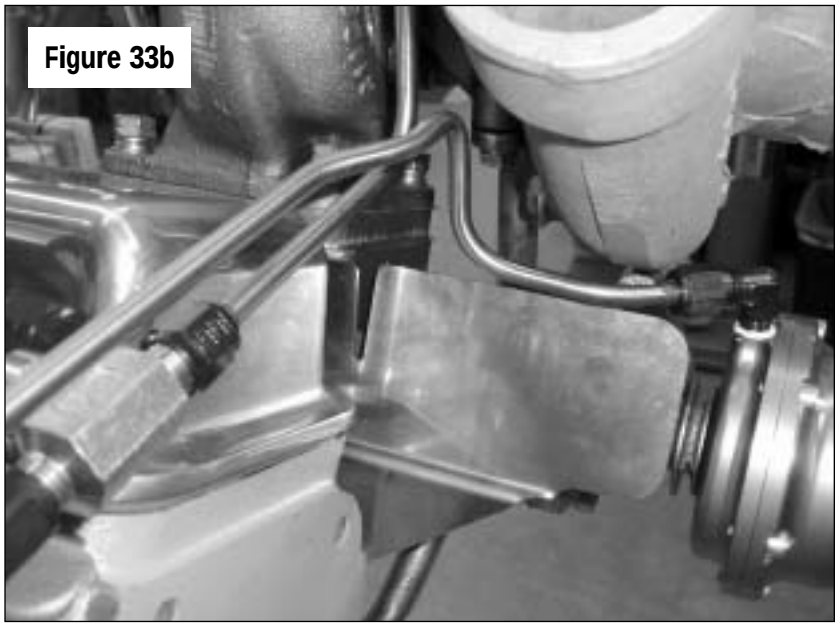
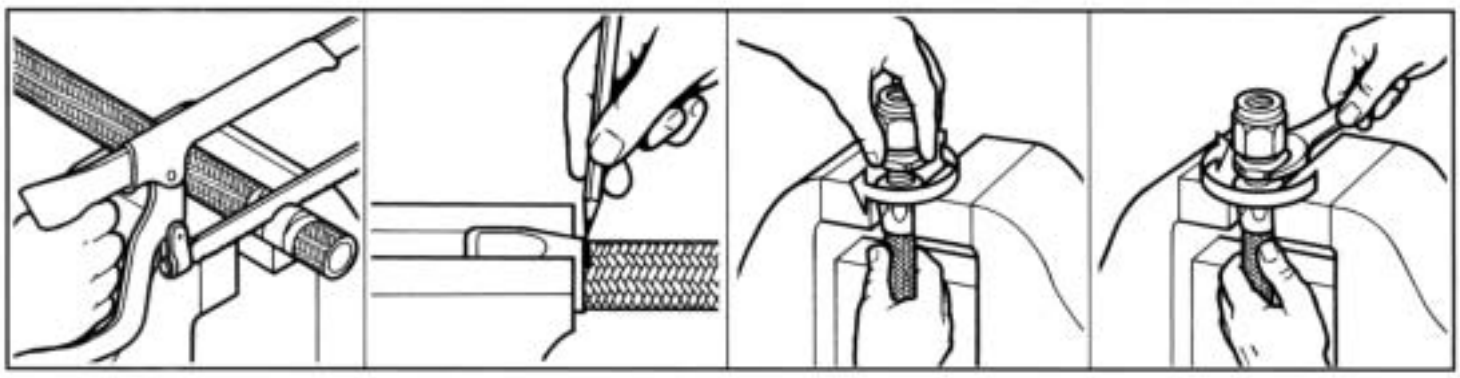


Figure 33b

Hose and End Fitting Assembly



Instructions for Flaring Stainless Steel Hard Lines

The pre-bent ¼" and ⅜" hard lines in this kit are intentionally left approximately 1" longer on each end to allow the end user to maximize the proper fit and routing for each application.
The tools required are:
- 37 Degree single flare kit,
- Marking pen
- Tapered reamer
- Hacksaw, tubing cutter or cut-off saw.

1. Hold pre-bent tubing in place to determine the best location and routing.

2. Using a marking pen, identify the cut on one end only. See **Figure 34**.

3. Cut tube at that mark. See **Figure 35**.

4. Deburr the inside and outside of the end to be flared. See **Figure 36**.

5. Install nut and sleeve. See **Figure 37**.

6. Using flare tool, form a single 37 degree flare on the end. See **Figure 38**.

7. Check sleeve and nut for proper fit against back side of flare. See **Figure 39**.

8. Using low pressure air or solvent, flush out inside of tube to remove debris.

9. Install tube to fitting and mark the final cut location on the other end.

10. Repeat steps 4 through 8.


Figure 34

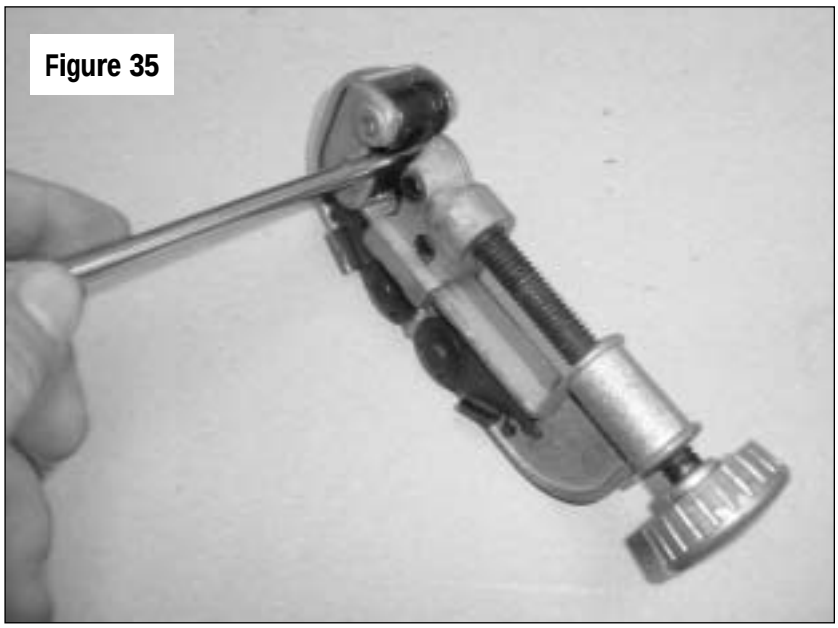


Figure 35

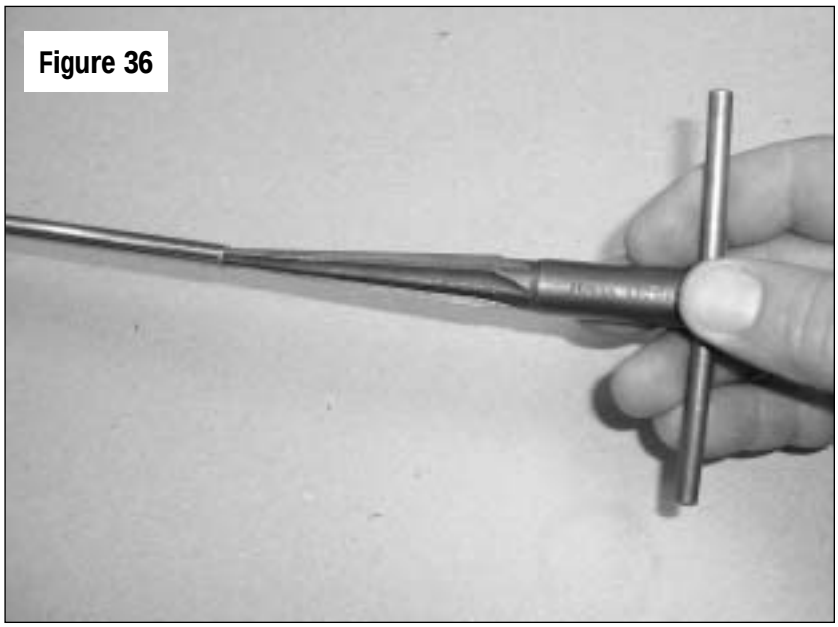


Figure 36

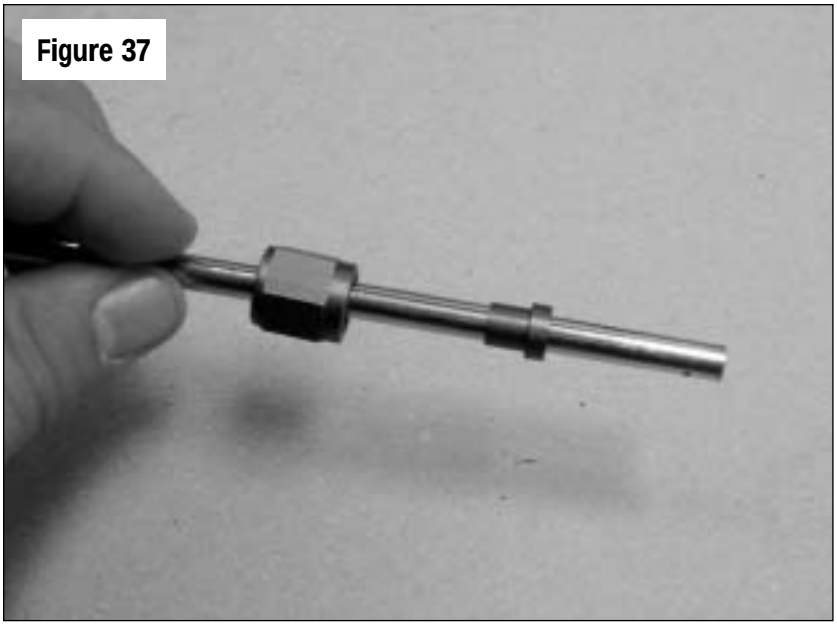


Figure 37

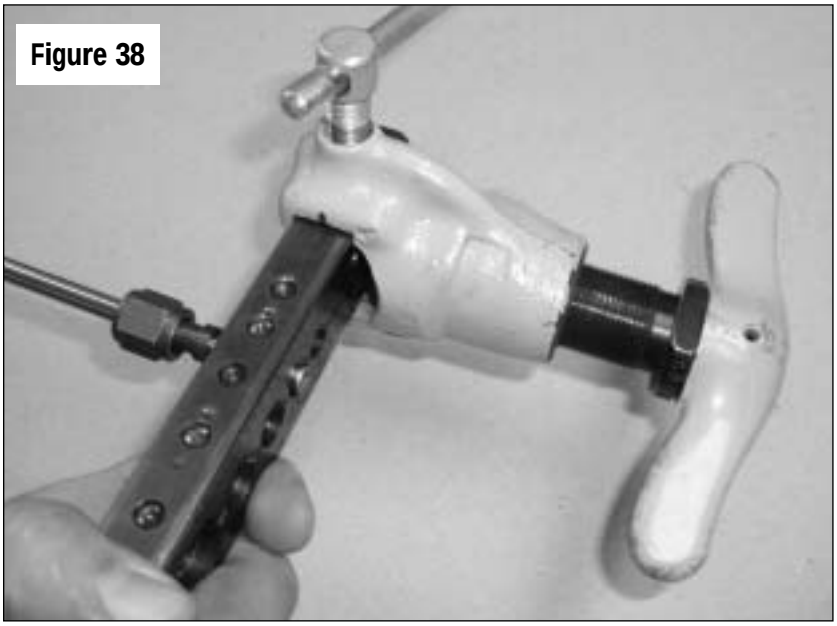


Figure 38

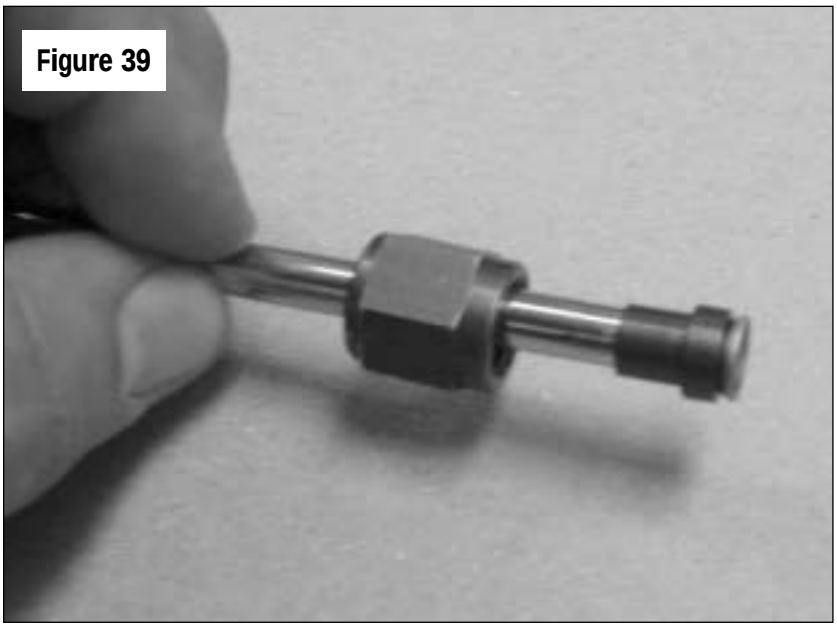


Figure 39

Common Throttle Bodies

Table 1

Throttle Body	Height	Spacer +/- .010"
Accel		
74202PM	1.900	1.960
74202S4	1.900	1.960
74202S2	1.180	1.240
Holley		
9900-171	1.500	1.560
4BBL TBI	1.366	1.426
Accufab		
4B-BL	1.400	1.460
4B-BK	1.400	1.460
4B-RED	1.400	1.460
4B-POL	1.400	1.460

Product - Banks Twin Turbo System

Application - Small Block Chevy - 800 HP

System Part Number - 21101

51101	**Exhaust Manifold Kit, Std Port Heads (51102 - RP Heads)**	1
51051	**Exhaust Manifold, Std Port, Left**	1
51056	**Exhaust Manifold, Std Port, Right**	1
26075	Heat Shield, Manifold, Left	1
26076	Heat Shield, Manifold, Right	1
91401	Washer, ⅜" AN	8
91408	Washer, ⅜" Circle Lock, S/S	24
91418	Nut, ⅜" Collet lock	8
91503	Stud, ⅜" x 1½" (½" NC, ¾" NF)	8
91967	Bolt, 12 pt washer head, ⅜"-16 x 3" S/S	12
93032	Gasket, Turbine Inlet	4

24008	**Turbocharger Kit**	**1**
24031	**Turbocharger**	2
24032	Cartridge	2
24033	Compressor Cover	2
24023	Turbine Housing .96 A/R	2
24502	Clamp Plate	6
24504	Lock Plate	6
24506	Clamp Plate	6
24508	Lock Plate	6
26027	Heatshield	2
51058	Spacer, Turbine Inlet	2
91223	Bolt	24
52303-00	Flange, Turbine Outlet	2
91951	Cap Screw - ⅜-16 x 1"	8
93002	Gasket, Turbine Outlet	4

24072	**Oil Supply Kit-Stock Block**	**1**
24073	Tube Assy- Oil Feed Tube, Left - ¼" x .035 x 24"	1
24074	Tube Assy - Oil Feed Tube, Right - ¼" x .035 x 14"	1
92102	Fitting, ¼" NPT x -4 AN Male, 90 Deg Elbow	2
92114	Fitting, ¼" x -4 AN Male, TEE	1
92125	-6 AN x ¼" NPT Long Elbow	1
92126	Fitting, ¼" NPT x -6 AN	1
92155	-6 Hose End, Straight	2
92504	Nuts, -4	4
92505	Sleeves, -4	4
94603	-6 Braided Hose	3

CONTINUED ON NEXT PAGE

24082	**Oil Drain Kit**	**1**
24083	**Turbo Oil Drain, Left**	1
24084	**Turbo Oil Drain, Right**	1
91205	Washer, Circlelock 5/16"	8
91786	Hex Bolt, 8mm x 1.25 x 20	4
92185	Fitting, -10 hose x ½" NPT, 45 Deg Elbow	2
92274	Weld Bung, ½" NPT Steel	2
92310	Hose End, -10 Straight	2
92311	Hose End, -10 x 90 Deg Elbow	2
93042	Gasket, Turbo Oil Drain	2
94605-5	Hose, braided #10 x 5" (2 Ea)	2

24711	**Wastegate Kit**	**1**
24703	Wastegate, Left - 6PSI / 12PSI	1
24704	Wastegate, Right - 6PSI / 12PSI	1
24709	Identification Plate	1
24710	Identification Plate	1
91201	Washer, 5/16" AN	4
91218	Nut, 5/16" Collet lock	4
91490	Stud, 5/16"x 1½" ½" NC, ¾" NF	4
91851	Drive Screw, No 0 SS, ⅛" Long	6
92096	Fitting, ⅛" NPT X -4 AN 90 degree	2
	Gasket, Bypass Tube	2

24713	**Wastegate Actuation Kit**	**1**
24720	Tube Assy, Boost Ref	1
24721	Tube Assy, Wastegate Feed, Left - ¼" x .035 x 20"	1
24722	Tube Assy, Wastegate Feed, Right - ¼" x .035 x 13"	1
92102	Fitting, ¼" NPT x -4 AN Male, 90 Deg Elbow	1
92118	Fitting, -4 Tee	1

42442	**Boost Tube Kit**	**1**
42440	**Boost Tube, Left - 2½"**	1
42441	**Boost Tube, Right - 2½"**	1
92852	Hose Clamps	8
94272	Hose, 2½" X 2½" - Black	4

21106	**Pressure Chamber Kit**	**1**
42351	Body, Pressure Chamber	1
42352	Spacer, Pressure Chamber - ½" x 3"	4
42354	Cover, Pressure Chamber - Standard Style	1
42358	Piston, Shuttle Valve Piston	1
42360	Spring, Shuttle Valve	1
42371	Cap, Shuttle Valve	1
42374	Cap, Spring Guide	1
42378	Hose Nipple, 2½"	2
91035	**FASTENER KIT**	**1**
91201	Washer, 5/16" AN, SS	8
91211	Nylock Nut, 5/16" - 24	4
91214	Hex Nut, 5/16" - 18	4
91215	Hex Nut, 5/16" - 24	4
91520	Stud, Pressure Chamber Mounting	4
91905	Cap Screw, ¼"-20 x ¾" Soc. Hd	8
91906	Cap Screw, ¼"-20 x ¾" Button Hd Socket	8
91920	Cap Screw, 5/16"-18 x ¾" Button Hd Cap Screw	11
92790	**FITTING KIT**	**1**
92185	Fitting, -10 hose x 1/2" NPT, 45 Deg Elbow	1
92186	Fitting, -10 x 1/2" NPT 90 Deg Elbow	1
92251	Hex Plug, Steel, ⅛"	1
92257	Hex Plug, Steel, ¼"	1
92259	Hex Plug, Aluminum - ⅜"	1
92310	Hose End, -10 Straight	2
92311	Hose End, -10 x 90 degree Elbow	1
92247	Bushing, ⅜" NPT x ¼" NPT	1

93901	**GASKET & SEAL KIT**	**1**
93062	Gasket, Pressure Chamber	1
93112	Gasket, Piston Stop	1
93142	O-Ring, ¼" ID x ⅜" OD x 1/16" (Buna N material)	4
93630	O-Ring, Hose Nipple - 2.450 ID x 2.625 x 1/16" - (Buna N material)	2
94605-10	Hose, braided #10 x 10" .252/inch	1
90045	Anti-Sieze	1
90040	Liquid Teflon	1
	Owner's Manual	1

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