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Installation Instructions

Turbo Control Valve

for 1994-2000 850/S70/V70/V70XC Turbo Models,
1998-2004 C70 Turbo Models

ipd #120152



SUGGESTED TOOLS

- Pliers
- 3mm Allen wrench
- Phillips Screwdriver
- Flat Blade Screwdriver
- 8mm End Wrench

REMOVAL

- 1 Disconnect coil wire from ignition coil and airbox lid. (Only models thru 1998 will need to perform this step.)

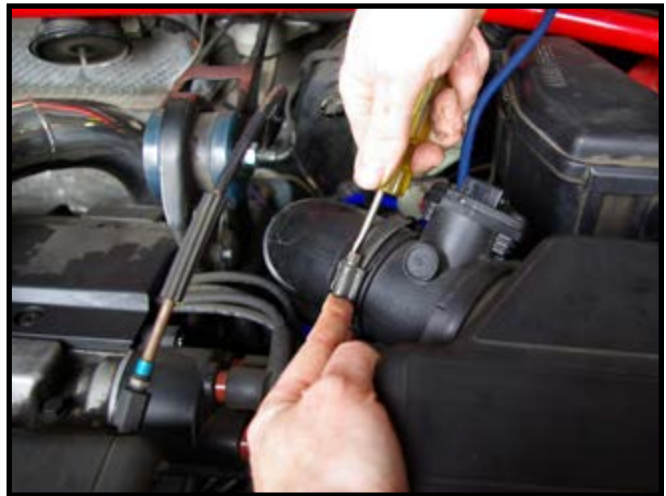


REMOVAL

- 2 Disconnect air mass electrical connector by pinching the wire release tab and pulling up.



- 3 Loosen clamp on air mass hose by using a flat blade screwdriver. Turn it counter clockwise. Separate the air mass from inlet hose. Some light force may be required to separate.



- 4 Release the 7 air box tabs by pressing them down. Once tabs are released, set the top air box lid aside.



REMOVAL

- 5 Remove the bottom of the air box by grabbing firmly on the inner edge and pull up.



- 6 For 850 models, remove the two torx 20 screws holding the stock BCS to the air box. For 70 series models, slide the factory TCV assembly off of the air box. Note the location of each of the factory vacuum lines on the factory TCV and the color band marked on each line. Compare this to the corresponding color marks on the three ports of the ipd HD TCV. Once you've established the three color codes vacuum lines, go ahead and disconnect them from the factory TCV.



INSTALLATION

- 1 Using the supplied hardware, install the ipd HDTCV to the mounting bracket.



INSTALLATION

- 2** Install the ipd HDTCV and bracket to the air box. Using the two supplied screws, screw the ipd HDTCV bracket into the two lower mounting holes using a Phillips screwdriver located on the bottom of the air box shown below.



Arrows indicate mounting location



Phillips head screws being installed

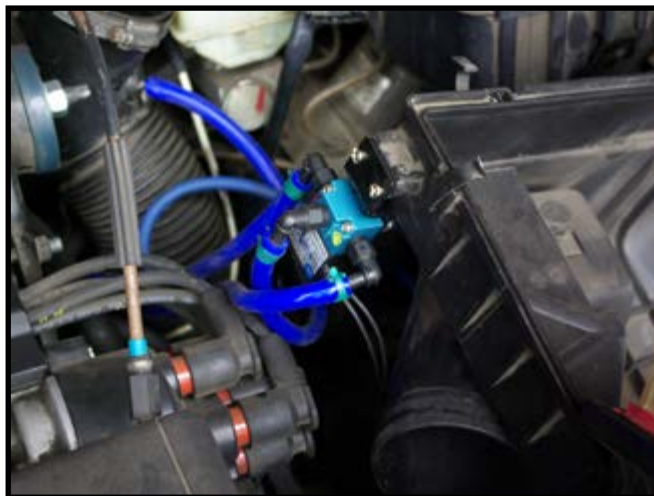
Note: Be sure not to over tighten the three elbows onto the TCV. Over tightening the elbows, especially on the center port (Labeled #3 that is going to the intake) can cause the TCV to not function properly as there is a screen over that port which can get crushed down into the unit. Snug each elbow down by hand, having some threads showing on each elbow is normal.



ipd HDTCV and bracket installed on the bottom of the air box.

- 3** Partially reinstall the bottom of the air box. Connect the factory vacuum lines, one at a time to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 1) on the ipd TCV. Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Connect the blue line from the intake tube to the blue port (marked 3). Replace the old factory spring clamps with new clamps. The 90 degree TCV fittings can be adjusted to help insure best vacuum line routing. See diagram (#1) on page 6 for clarification.

Note: The vacuum lines shown at right are silicone and not found in factory applications. The factory hoses will have the correct color coding if they haven't been replaced.



INSTALLATION

- 4 Connect ipd's HDTCV electrical connector.
- 5 Snap the bottom of the air box back into the factory location. Reconnect the fresh air inlet hose to the air box.

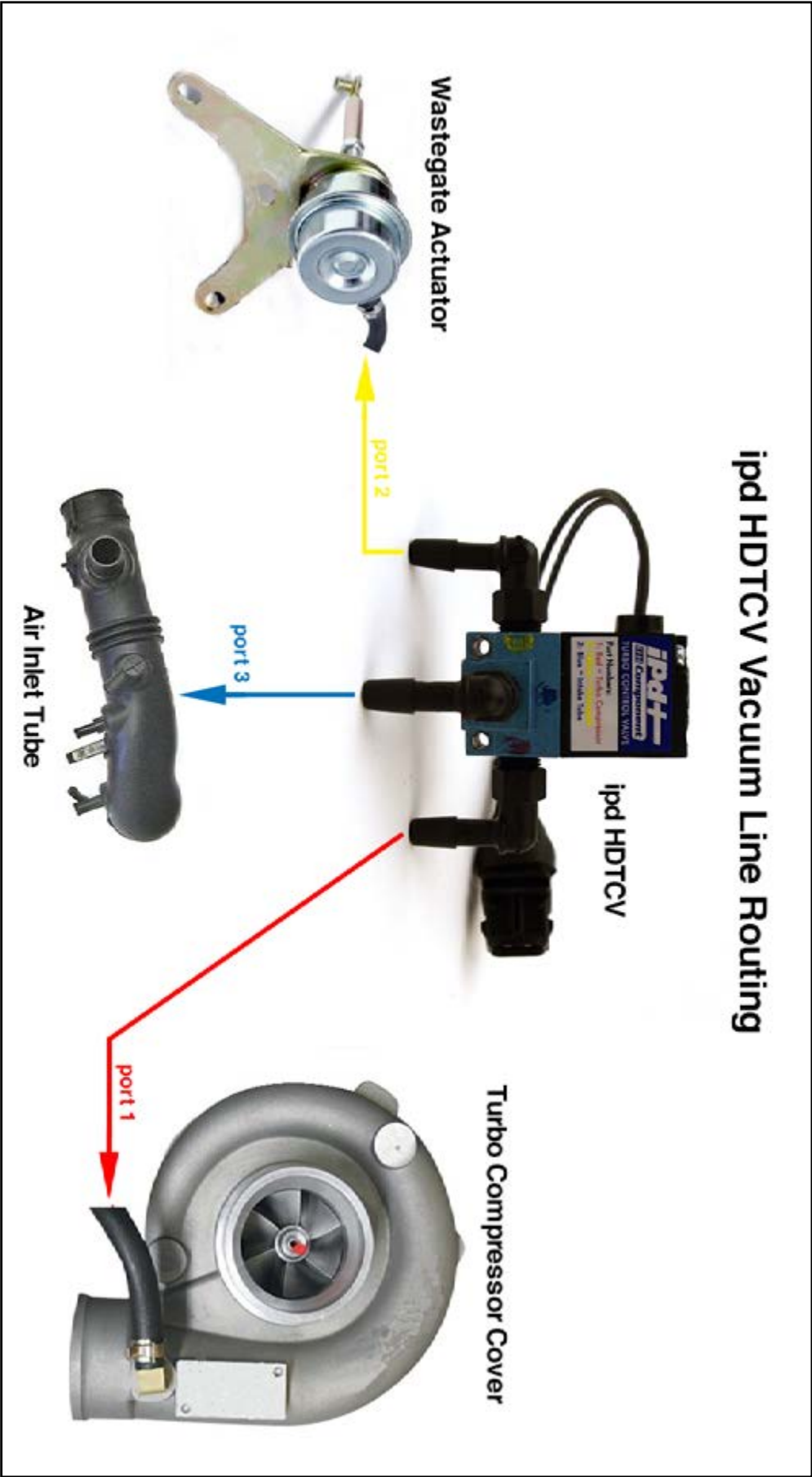


- 6 Reinstall air box lid, coil wire, mass air hose, clamp and electrical connector. Make sure all air box lid clips have been snapped back into place.

If you have ipd's short ram intake attach the TCV to the intake box as shown below.



Diagram 1:



Initial Drive Procedure and Warnings:

- 1** ipd recommends the use of a boost gauge for proper boost monitoring when installing any aftermarket parts that affect boost or power levels in a turbo charged vehicle. The ipd HD TCV is a high speed, high accuracy control solenoid intended for boost control and as such will expose any inconsistencies in the factory boost development system. This means that boost and power development issues you may not have been aware of may now come to your attention as they were previously masked by the factory TCV and its slower, less precise actuation. While a boost gauge is recommended, it is not required for this product. The ipd TCV operates in the same manner as the stock valve so it is well suited to stock cars as well as tuned cars. All the factory engine safety features such as knock control and boost limit are retained so the operation of the HD TCV is seamless.
- 2** Volvo engine control units feature 'learning' software, this means the on board programmed logic in the ECU can adapt to changing conditions in certain engine parameters. Boost development is one of the parameters that the ECU monitors and can adapt to a certain degree. It is possible to drive the vehicle in a specific manner to allow the ECU to adapt to the new TCV and its characteristics. Adaptation of the ipd TCV is not as critical in stock cars as it is for tuned cars, however both will benefit from following the adaptation sequence.
- 3** After the installation of the ipd HD TCV drive the vehicle for 5 minutes without developing any boost pressure to allow the engine to warm up. In a safe and appropriate place, accelerate the vehicle to approx half of its maximum boost level and hold there for 5-7 seconds, then decelerate to below 30mph. Proper accelerator modulation will be necessary to control the boost level. Repeat this 4 times. Turn the engine off and wait for 12 minutes. For optimum results the above procedure should be performed twice.
- 4** Once completed be sure to closely monitor boost pressure when reaching the maximum boost target. If any inconsistencies or improper boost levels are reached, stop immediately and have a qualified technician inspect the vehicle for any of the following potential issues.
 - Compressor bypass valve leakage
 - Boost tubing leaks
 - Vacuum line leaks, vacuum elbow leaks
 - Incorrect waste gate setting
 - Stored codes in the engine control module
 - Proper installation of the TCV
- 5** Correct any problems and/or diagnose any on board trouble codes before continuing.
- 6** If you experience any inconsistencies or improper boost levels, re-install the factory TCV and call our customer service line at 800-444-6473 for assistance, we are happy to help you!

One Year Limited Warranty

ipd warrants to the original purchaser that the parts manufactured and/or sold by ipd (the Product) is free from defects in material and workmanship under normal use. ipd warrants that the Product will perform substantially in accordance with the specifications set forth in the documentation provided with it. The above express warranties are made for a period of the lesser of 12,000 miles or 12 months from the date the Product is installed in your vehicle.

Any improper use, operation beyond capacity, substitution of parts not approved by ipd in writing, any alteration or repair by others, or any removal, defacing or altering of the identification shall void this warranty. There is no warranty on high-performance or race related parts due to the nature of usage.

The purchaser shall notify ipd at 1-800-444-6473 of any defect within the warranty period no later than thirty (30) days after purchaser discovers the defect. Should any failure to conform to this warranty appear within the warranty period, ipd shall, on notification, correct the nonconformity at its option, either by repairing any defective part, or by making available, FOB ipd's plant, a repaired or replacement part. The purchaser must insure any defective item being returned because ipd does not assume risk of loss or damage while in transit. No payment or reimbursement shall be made for installation, removal, transportation or other charges. The remedies set forth in this instrument are exclusive, and the liability of ipd with respect to any sale shall not exceed the price of the product on which the liability is based.

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