



Dedicated to improving vehicle fun, safety & performance

Installation Instructions

ipd HD Performance Turbo Control Valve

2001-2007 V70 / XC70 turbo models

2001-2007 S60 turbo models

2004-2007 V70R / S60R

ipd #120153



SUGGESTED TOOLS

- Pliers
- 3mm Allen wrench
- 8mm End Wrench

REMOVAL

Installation for S60R, V70R (2004-2007) - for non R models see page 4

- 1 Locate the factory TCV on the air box lid and remove it from its mounting tab by pulling it away from the air box. Disconnect the electrical plug from the factory TCV.

Note the location of each of the factory vacuum lines on the factory TCV and the color band marked on each line before you disconnect them. Compare this to the corresponding color marks on the three ports of the ipd HD TCV. See diagram 1 on page 6 for clarification.



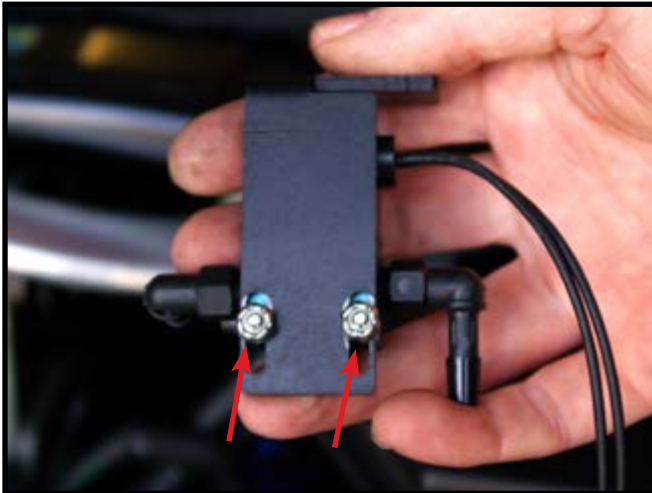
REMOVAL



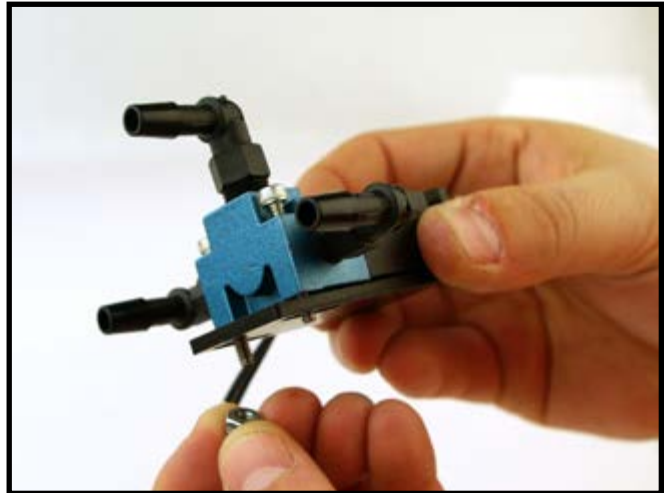
Picture above shows TCV removed from the vehicle and vacuum lines disconnected. Red arrow indicates where you will mount the ipd HDTCV.

INSTALLATION

- 2 Before completely tightening the valve onto the bracket, you'll need to adjust the valve to bracket clearance to give a tight interference fit on the air box mounting tab. "Sandwich" fit.



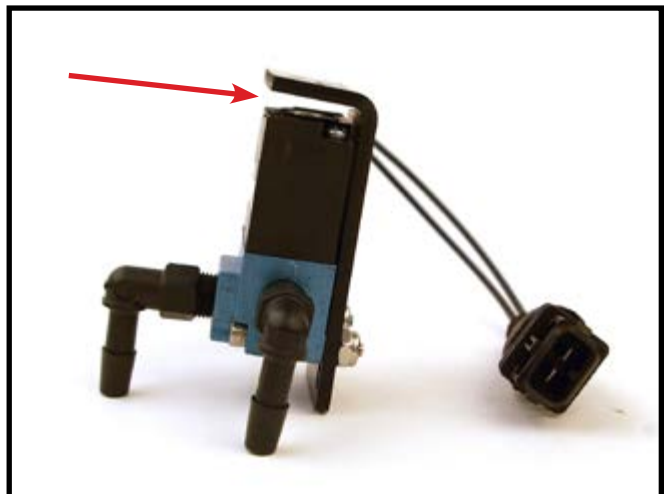
Adjustment slots



HDTCV being mounted to the bracket.

Mounting tab on side of air box sits here between TCV and top of mounting bracket. Insure a tight interference fit.

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.



INSTALLATION

- 3 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.



- 4 Once the vacuum lines are connected the HDTCV, sandwich the air box tab between the TCV and mounting bracket and tighten the screws as shown above.
- 5 Reconnect the electrical connector to the ipd TCV.
- 6 Drive moderately during the initial few minutes of driving after installing the ipd HD TCV. The engine control unit will need to adapt to the new actuation characteristics of the ipd TCV. The factory TCV has a greater latency in operation and this will need to be accounted for during the first few minutes of driving. See addendum on page 7 for proper drive procedure and warnings.

REMOVAL

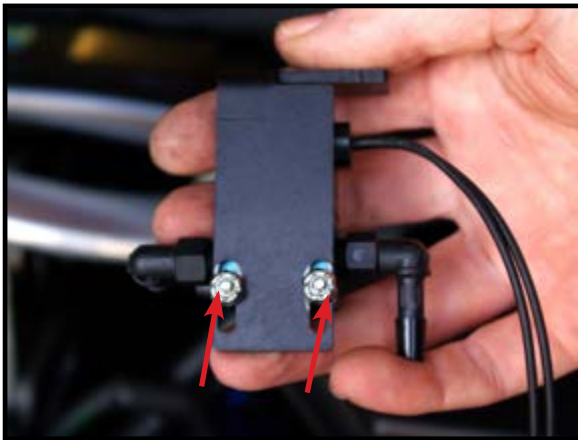
Installation for S60, V70, XC70 (2001-2007)

- 1 Locate the factory TCV on the air box lid and remove it by sliding it back from its mounting tab. Disconnect the electrical plug from the factory TCV.

Note the location of each of the factory vacuum lines on the factory TCV and the color band marked on each line before you disconnect them. Compare this to the corresponding color marks on the three ports of the ipd HD TCV. See diagram 1 on page 6 for clarification.



- 2 Before completely tightening the valve onto the bracket, you'll need to adjust the valve to bracket clearance to give a tight interference fit on the air box mounting tab.

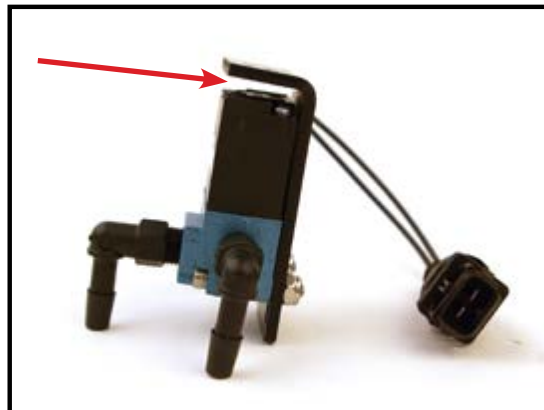


Adjustment slots



HDTCV being mounted to the bracket.

Leave slight gap so the bracket can slide onto the air box mounting tab. Insure a tight interference fit.



INSTALLATION

- 3 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). 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.



- 4 Slide the ipd TCV onto the mounting tab. You may find some adjustment of the bracket necessary to ensure a tight fit.

You may want to shorten the vacuum lines for better fitment.

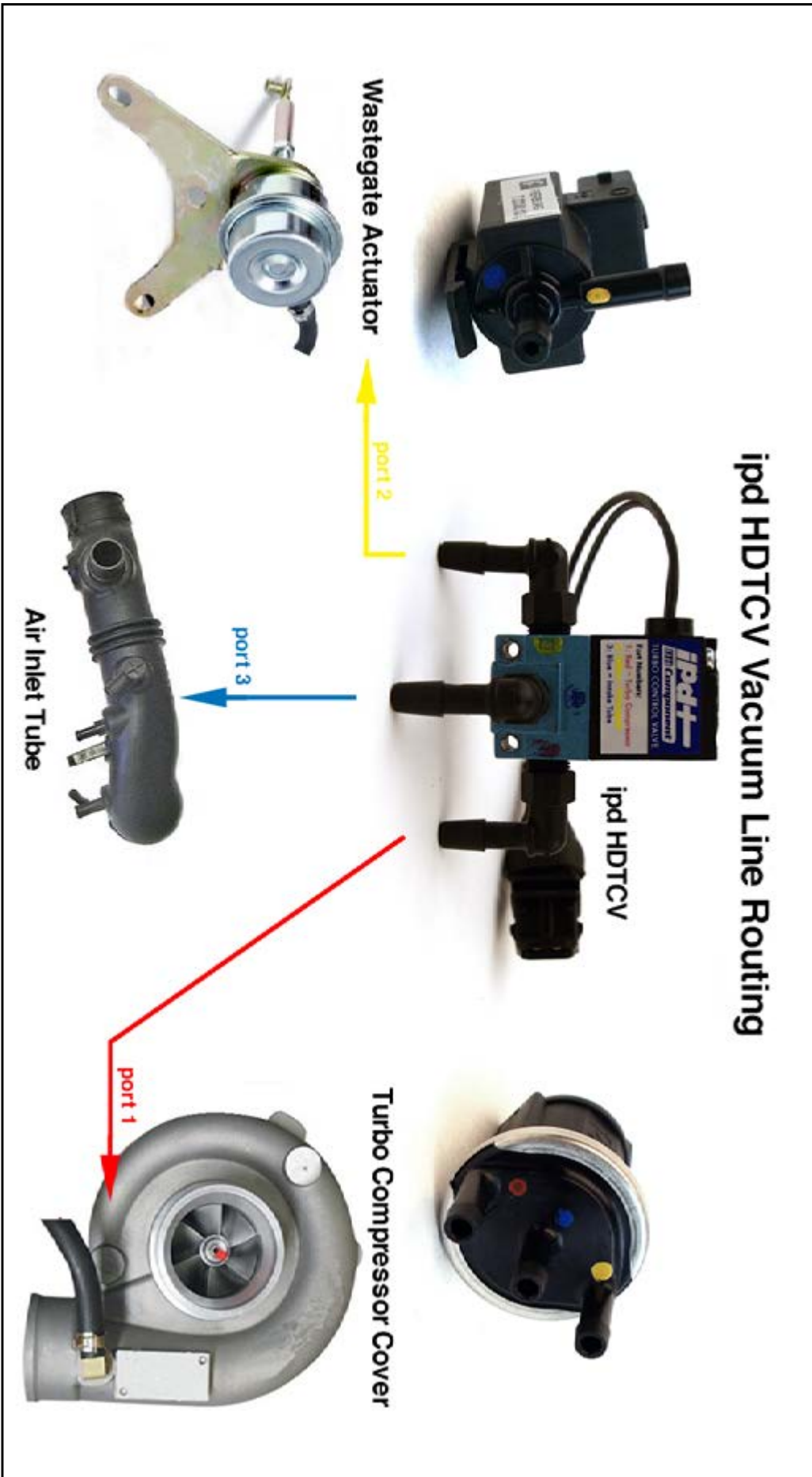


Arrow indicates the direction that the TCV bracket slides onto the air box mounting tab.

- 5 Reconnect the electrical connector to the ipd TCV.

- 6 Drive moderately during the initial few minutes of driving after installing the ipd HD TCV. The engine control unit will need to adapt to the new actuation characteristics of the ipd TCV. The factory TCV has a greater latency in operation and this will need to be accounted for during the first few minutes of driving. See addendum on page 7 for proper drive procedure and warnings.

Diagram 1:



INSTALLATION

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!

WARRANTY

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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This warranty is governed by the laws of the State of Oregon.

