



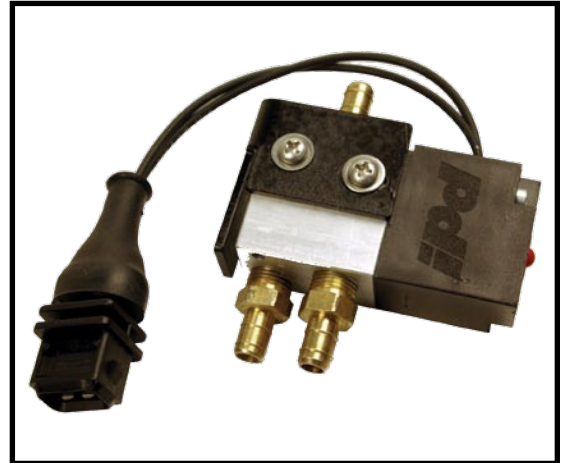
Dedicated to improving vehicle fun, safety & performance

Installation Instructions

Turbo Control Valve

for S70 all, C70 1998-2005, V70 1998-2007,
S80 all, XC90 all, S60 all (turbo models only),
S40/V40 (1999-2004)

ipd #3E1010



SUGGESTED TOOLS

- Pliers
- end wrench
- Screwdriver
- Allen wrench

INSTALL TIME

- Appx 0.5 - 1.0 hours

INSTALLATION

Installation for S60R, V70R (2004-2007)

- 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.

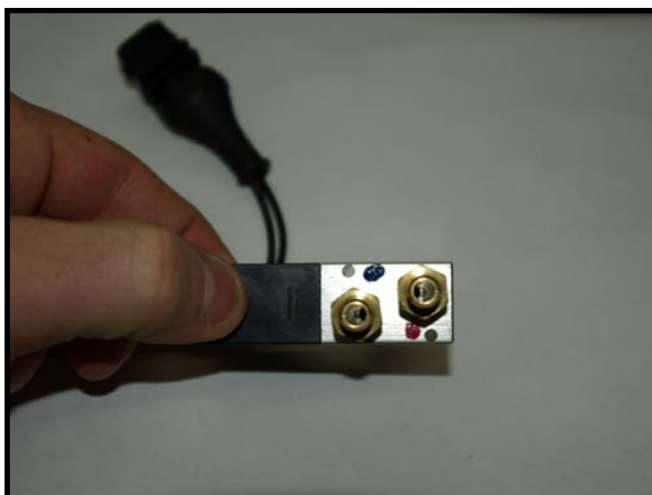


INSTALLATION

- 2 Slide the ipd TCV onto the mounting tab on the air box, be sure that it 'snaps' into place firmly. You may need to adjust the mounting bracket on the ipd TCV to ensure a tight fit.



- 3 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.



INSTALLATION

- 4** Transfer the factory vacuum lines, one at a time, from the factory TCV to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 3) on the ipd TCV. Connect the blue line from the intake tube to the blue port (marked 1). Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Replace the old factory spring clamps with new clamps.



- 5** Disconnect the electrical connector from the factory TCV and connect it to the ipd TCV.



Take care during the initial drive 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 at end of this instructional for proper drive procedure and warnings.

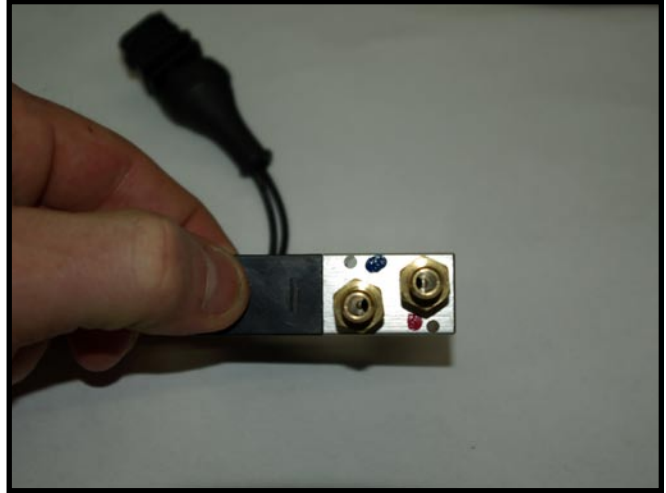
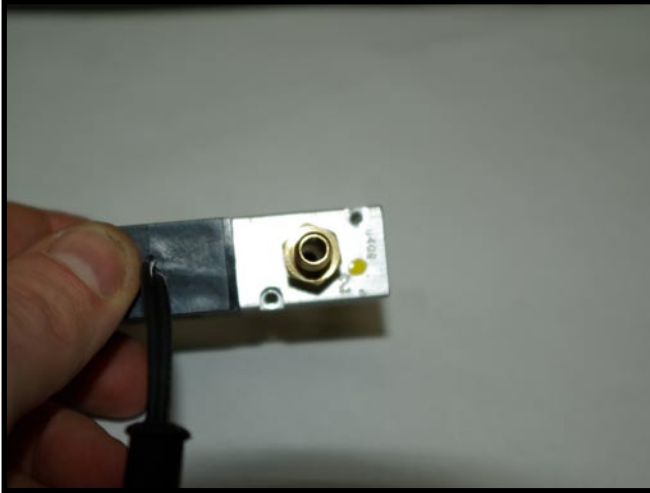
Installation S60, S80, XC90, V70 (2001-2007)

- 1** Locate the factory TCV on the air box lid and slide it toward the rear of the vehicle to remove it from its mounting tab.



INSTALLATION

- 2** 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.



- 3** Transfer the factory vacuum lines, one at a time, from the factory TCV to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 3) on the ipd TCV. Connect the blue line from the intake tube to the blue port (marked 1). Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Replace the old factory spring clamps with new clamps.



- 4** Disconnect the electrical connector from the factory TCV and connect it to the ipd TCV.



INSTALLATION

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



Take care during the initial drive 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 the note at end of this instructional for proper drive procedure and warnings.

Installation S70,V70 (1998-2000), C70 (1998-2005)

- 1 Locate the factory TCV on the air box lid and slide it upward to remove it from its mounting tab.

Using the included screw, fasten the included bracket to the lower air box lid as shown. You may find it easier to remove the upper air box lid from the air box or remove the air box entirely when attaching the bracket. Be careful not to over tighten the screw.



- 2 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.

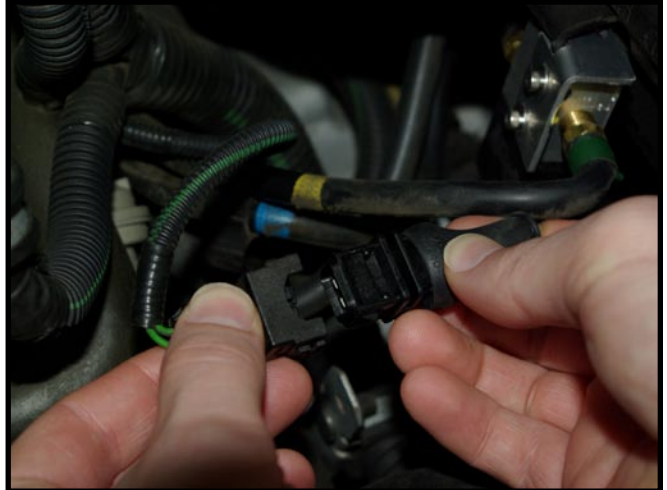


INSTALLATION

- 3** Transfer the factory vacuum lines, one at a time, from the factory TCV to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 3) on the ipd TCV. Connect the blue line from the intake tube to the blue port (marked 1). Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Replace the old factory spring clamps with new clamps.



- 4** Disconnect the electrical connector from the factory TCV and connect it to the ipd TCV.



- 5** With the bracket attached to the air box, use the included bolts, washers, and nuts to attach the ipd TCV to the bracket.



INSTALLATION

Take care during the initial drive 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 the note at end of this instructional for proper drive procedure and warnings

Installation for models with ipd Short ram intake

- 1** Slide the factory TCV out of the aluminum heat shield.

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.

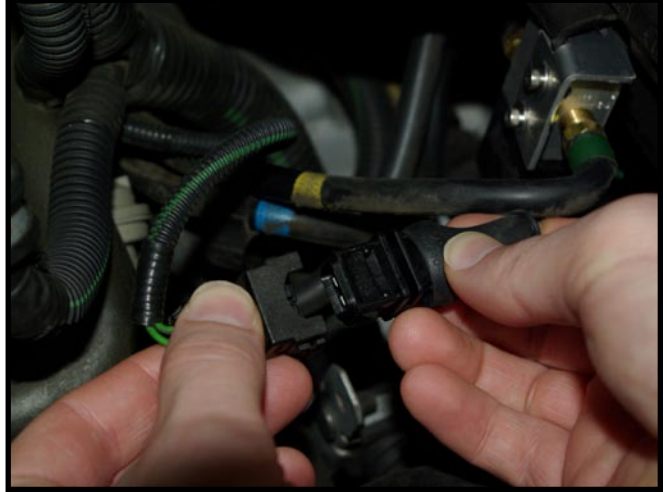


- 2** Transfer the factory vacuum lines, one at a time, from the factory TCV to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 3) on the ipd TCV. Connect the blue line from the intake tube to the blue port (marked 1). Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Replace the old factory spring clamps with new clamps.

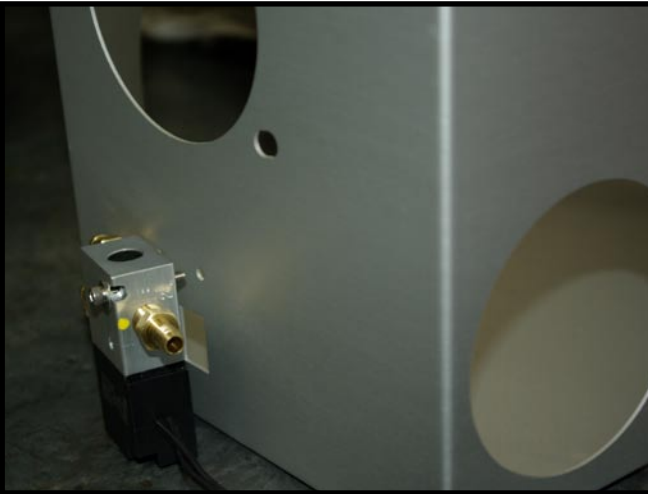


INSTALLATION

- 3 Disconnect the electrical connector from the factory TCV and connect it to the ipd TCV.



- 4 Use one each of the included bolt, washer, and nut to fasten the ipd TCV to the aluminum heat shield as shown.



- 5 Take care during the initial drive 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 the note at end of this instructional for proper drive procedure and warnings

Installation S40,V40 (1999-2004)

- 1 Locate the factory TCV on the air box lid and slide it upward to remove it from its mounting tab.



INSTALLATION

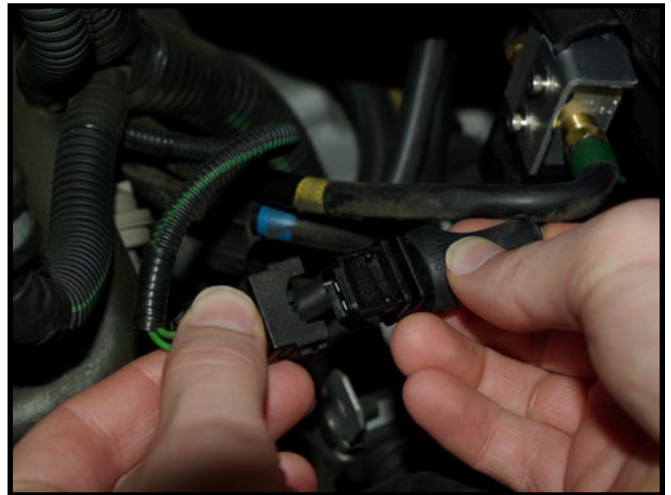
- 2** Note the location of each of the factory vacuum lines on the factory TCV and the color band marked on each line. Compare this to the corresponding color marks on the three ports of the ipd HD TCV.



- 3** Transfer the factory vacuum lines, one at a time, from the factory TCV to the ipd TCV. Connect the red vacuum line from the turbo to the red port (marked 3) on the ipd TCV. Connect the blue line from the intake tube to the blue port (marked 1). Connect the yellow line from the wastegate actuator to the yellow port (marked 2). Replace the old factory spring clamps with new clamps.



- 4** Disconnect the electrical connector from the factory TCV and connect it to the ipd TCV.



INSTALLATION

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

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.

EXCEPT AS STATED OTHERWISE IN THIS WARRANTY, ipd MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. ipd shall not in any case be liable for special, incidental, consequential, indirect, or other similar damages arising from any breach of these warranties even if ipd or its agent has been advised of the possibility of such damages. Some states do not allow the exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you.

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

