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Thread: [DIY: Boost Leak Tester](#)

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Dave926 
Member



Join Date: Mar 30th, 2005
Location: Rhode Island
Posts: 4,166
Vehicles: 1989 Helios GLI 1997 Mk3 ****box


DIY: Boost Leak Tester 01-08-2011 05:15 PM [Reply](#) #1

Its pretty regular here that there are so many threads with cars that have running issues, most of the time due to vac leaks that are not easily found. Ive build one here with input from other automotive forums. Its simple, cost very little money and works MINT!

Parts List

Spray Bottle
You can get this anywhere for about \$2. Doesnt even matter so long as it can be adjusted from a mist to a stream



Your favorite household dish soap



3" PVC cleanout plug
[Buy Here](#)



Slime Tire Valve .453"
[Buy Here](#)

Drill bit 5/16th's (Use whatever style you want, I didnt have one)
[Buy Here](#)



3"x3" Rubber Coupling, adjust one end to the size to match your Turbo Inlet/MAF. MEASURE DO NOT ASSUME SIZE
[Buy Here](#)



Loctite Epoxy (May not be necessary)
[Buy Here](#)



Air Chuck w/Locking Clip (makes this MUCH easier) You need a fitting to mate this to your air hose, you MUST use teflon tape to seal it.
[Buy Here](#)



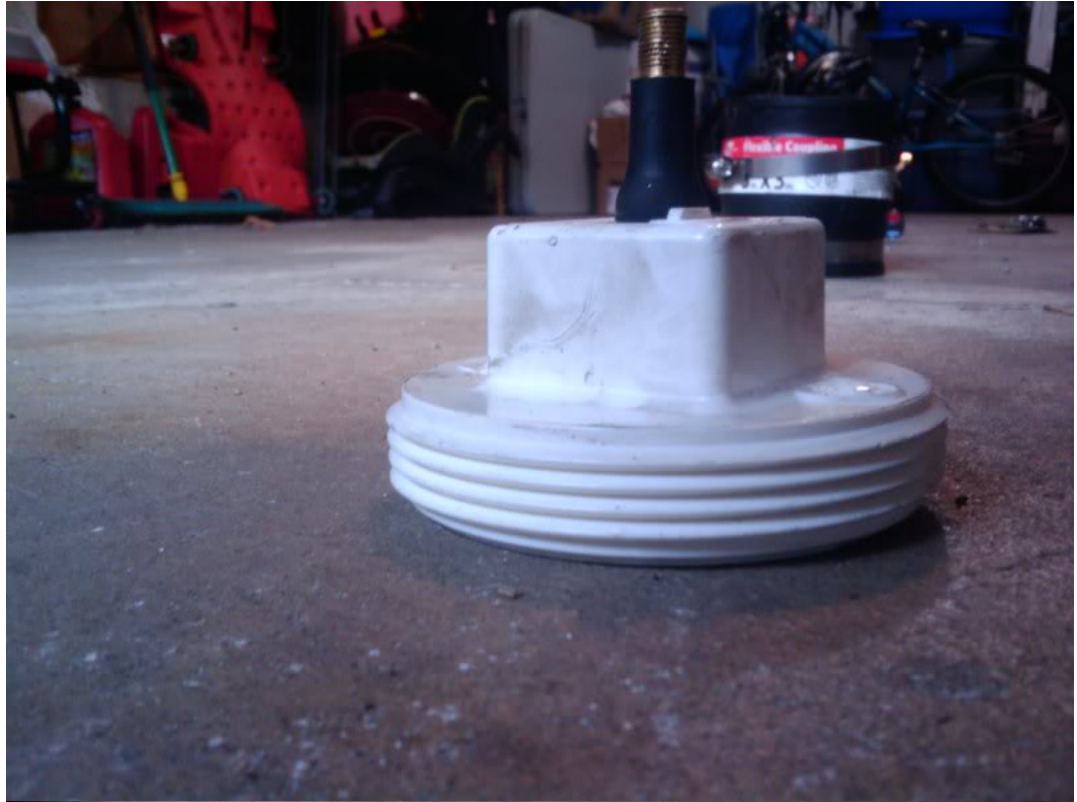
Process/Assembly

Using your 5/16th drill bit, bore a hole in the center of the square part on the PVC clean out plug. The hole will be a bit smaller than the .453" hole needed for the tire valve, so wiggle the drill around a bit while its on to enlarge the hole slightly.

Before you jam the tire stem in, make sure you have the orientation correct for your engine bay. There is no right or wrong way to do this here.

Keep doing this until the tire stem goes in. It will be a struggle which is good, it means it will be airtight. Getting this to go in the hole is akin to putting o-rings on a cis injector.

Finished Product



At this point use the epoxy if you like, mine was so tight there is no chance air is leaking out. Just be careful where you apply it, do not fill the valve with glue or air cannot pass through.

Assemble with the rubber coupling, crank those worm gear clamps for all they are worth

Finished Product



Get the Air Chuck with the clip.





Make sure your compressor/tank has a regulator on it, adjust till its down to a reasonable psi. Nothing crazy here, but setting it to 5 psi would be useless. Regulated pressure on the left (red knob to adjust), tank pressure on the right.



How to Use It

Mix water with a nice portion of dish soap in the spray bottle, test the spray pattern. Adjust how you like it, but I think its best used when it makes a stream.

Attach the coupler to your turbo inlet/maf, again make sure its very TIGHT.



Hook the air chuck to the tire stem, and spray away where ever you think there is a leak. The soap will bubble like mad even with the smallest leak.

Quick solutions for fixing vac/pressure leaks

Cheap Hairspray on the intercooler pipes



Home Made bead roller, exhaust piece from a clamp welded on one side, steel washer on the other



Zip Ties for Small vac lines



Mods put this in the FI FAQ, since there is *nothing* there for boost leak detection devices.

[DIY Boost Leak Tester](#)

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VDub Dan-O

Member



Join Date: Mar 24th, 2010
Location: Morrisville, NY
Posts: 523
Vehicles: 2002 FrankenTurbo
Powered Turbo S Beetle

01-08-2011 06:17 PM [Reply](#) #2

Back when I had my S4, I didn't use the tire valve and just drilled and epoxied in an quick connect air fitting straight into the PVC cap. One less thing to blow off and hit you in the face. (ask me how I know) 🙄

Love the homemade bead roller. 🙌
I'm going to make one of those!

Originally Posted by **checkdalevel**
Don't you wish that evil on me Ricky Bobby

There's no replacement for displacement...
Yeah there is: **BOOST!**

Reply With Quote

Dave926

Member



Join Date: Mar 30th, 2005
Location: Rhode Island
Posts: 4,166
Vehicles: 1989 Helios GLI 1997
Mk3 ****box



01-08-2011 06:28 PM [Reply](#) #3

That would work. The clip on air fitting is nice, Ive tested mine to 30 psi no problem yet. Then again if it popped off the only thing it would hit is my strut tower

The tire valve is fed from behind and pressure seals it, the epoxy is just there incase someone drills the hole too big.

The bead roller is something Ive seen on other forums, its not mine unfortunately.

Last edited by Dave926; 01-08-2011 at 06:30 PM.

[DIY Boost Leak Tester](#)

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vwturbofox

Member



Join Date: Jul 31st, 2010
Location: washington,everett
Posts: 624
Vehicles: 1989 vw fox gl turbo,
Holset hy35 on meth:)new project
1968 bug

01-08-2011 10:47 PM [Reply](#) #4

nice i built mine from 2 1/2 exhaust pipe welded a flat piece of metal then welded a quick connect air fitting all was free parts laying around from other projects helped find tons of leaks.

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Dave926

Member



Join Date: Mar 30th, 2005
Location: Rhode Island
Posts: 4,166
Vehicles: 1989 Helios GLI 1997
Mk3 ****box



01-09-2011 01:47 PM [Reply](#) #5


Not bad to be honest. I dont think I could weld good enough to prevent leaks lol.

[DIY Boost Leak Tester](#)


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01-09-2011 10:54 PM [Reply](#) #7

Dave926 Member



Join Date:	Mar 30th, 2005
Location:	Rhode Island
Posts:	4,166
Vehicles:	1989 Helios GLI 1997 Mk3 *****box



I will take your advice, but spinning the turbo seems silly.

If you have a large enough leak I could see that happening, but otherwise i doubt it. Leaks can happen at the compressor outlet, or even where the compressor housing meets the CHRA, so testing that with the pressure tester on the discharge hose will not work.


The hard plastic tool cant hit me in the nuts anyways, the strut tower would block it.

If a turbo cant handle 30 psi it isnt for me 🇹🇲


Last edited by Dave926; 01-09-2011 at 11:13 PM.

[DIY Boost Leak Tester](#)

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<p>Dave926</p> <p>Member</p>  <p>Join Date: Mar 30th, 2005 Location: Rhode Island Posts: 4,166</p>	<p>No Im talking about the turbo spinning while using this boost leak tester. My turbo has yes to spin while doing this, and I think the only way for it to spin would be if I had a pretty decent leak such as a tube not being attached.</p>	<p>01-11-2011 08:02 PM</p> <p>Reply #9</p>
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Vehicles: 1989 Helios GLI 1997
Mk3 ****box




[DIY Boost Leak Tester](#)

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GinsterMan98 

Member




Join Date: May 19th, 2008
Location: Panama City FL
Posts: 3,486
Vehicles: 96 GTI VR6 08 Hyundai Santa Fe SE

01-12-2011 02:18 AM [Reply](#) #10


I agree, it will not spin if there is no flow. a leak will not cause it to spin IMO. I get what your saying though. Nice tester BTW.👍

98 GTI - Mustard Mayhem - 1/4 - 11.679@117.58mph - .8 bar - parted [Timeslip](#)
96 GTI - Turbo Panda - 1/8 - 7.63@97mph - 1.1 bar of turbo fun!
89 325is - New turbo project
www.lugtronic.com

Reply With Quote

Dave926 

Member




Join Date: Mar 30th, 2005
Location: Rhode Island
Posts: 4,166
Vehicles: 1989 Helios GLI 1997 Mk3 ****box

01-12-2011 01:29 PM [Reply](#) #11


Thank you. Id like one of the mods to put this in the FAQ because there is nothing in there to build a boost leak tester. I think in total I spent 25 bucks or so to build this, and I had to but everything shown because I did not have the tools.

[DIY Boost Leak Tester](#)

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VDub Dan-O 

Member



Join Date: Mar 24th, 2010
Location: Morrisville, NY
Posts: 523
Vehicles: 2002 FrankenTurbo Powered Turbo S Beetle

01-12-2011 10:28 PM [Reply](#) #12



 Originally Posted by **matt_bogner** 
if you still think i'm wrong i'll post up the procedures from CAT and Cummins on testing for boost leaks. they know a thing or two about boosted engines. neither mention testing through the inlet side of the turbo(s)

I'll bite, I'd be interested in seeing that information.

I would think on a big dog/big displacement diesel there's enough air flow as the CAC and all the tubing fills up with air to spin the turbo over. On our little pup sized 1.8 liter engines I just can't see where there's enough airflow to spin the impeller and cause damage you speak of. If this was the case, every time we shut out engines off with no oil pressure we would do the same catastrophic damage you speak of.


Plus as stated before, VW Audi guys have been boost leak checking this way for years.

Last edited by VDub Dan-O; 01-12-2011 at 10:31 PM.


 Originally Posted by **checkdalevel** 
Don't you wish that evil on me Ricky Bobby

There's no replacement for displacement...
Yeah there is: **BOOST!**

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

GinsterMan98 

Member








Join Date: May 19th, 2008
Location: Panama City FL
Posts: 3,486
Vehicles: 96 GTI VR6 08 Hyundai

01-13-2011 03:31 AM [Reply](#) #13

 Originally Posted by **checkdalevel** 
if you still think i'm wrong i'll post up the procedures from CAT and Cummins on testing for boost leaks. they know a thing or two about boosted engines. neither mention testing through the inlet side of the turbo(s)


I don't want you to get mad so just hear me out on this one. If you have a leak in the cold side housing of the turbo the only way to find it is to test the cold side of the turbo. I would just cap off the outlet and put a home made pressure testing thingy on the inlet of the turbo and see if it leaks. It will not spin if there is no flow, it does not matter how many psi are in there, if there is no flow the turbo will not spin. If you just pump air unrestricted though it then I can see your point and it would spin. A small leak will not cause enough flow I would think. Please don't take this

<div><div>Santa Fe SE</div><div></div></div>	<p>the wrong way and get mad, I am just saying what I think about this. You would want to be careful with how much pressure you use to test it though, I would only use enough to cover how much boost you are running. I am not an expert on turbos so If anyone knows thats this method could damage the oil seal or something, please share. I have done this a few times on diffrent cars without negitive side effects. If its wrong then its wrong, I just don't see it spinning the turbo and damaging the bearings that way.</p> <div>98 GTI - Mustard Mayhem - 1/4 - 11.679@117.58mph - .8 bar - parted Timeslip 96 GTI - Turbo Panda - 1/8 - 7.63@97mph - 1.1 bar of turbo fun! 89 325is - New turbo project www.lugtronic.com</div> <div>Reply With Quote</div>
<div><div><div>Scrubbs</div><div>Member</div><div></div><div>Join Date: Mar 13th, 2006 Location: GB Maryland Posts: 816 Vehicles: Mk2,s Mk3's</div></div></div>	<div>06-20-2011 10:21 AM <div>Reply</div> #14</div> <p>Although i dont believe a spining turbo will do much damage, but think what happens when you put 30 psi in , and it blows the connection off. im sure the turbo will spin quite fast. done it with a couple old stock turbos going back for cores.</p> <div>Reply With Quote</div>
<div><div><div>Dave926</div><div>Member</div><div></div><div>Join Date: Mar 30th, 2005 Location: Rhode Island Posts: 4,166 Vehicles: 1989 Helios GLI 1997 Mk3 *****box </div></div></div>	<div>06-20-2011 04:33 PM <div>Reply</div> #15</div> <div><div>Originally Posted by Scrubbs</div><div><i>Although i dont believe a spining turbo will do much damage, but think what happens when you put 30 psi in , and it blows the connection off. im sure the turbo will spin quite fast. done it with a couple old stock turbos going back for cores.</i></div></div> <p>Unless you were using zipties to hold the tubing on, it shouldnt blow right off. Maybe I should add to progressively increase the pressure until a reasonable amount while searching for leaks?</p> <div>DIY Boost Leak Tester</div> <div>Reply With Quote</div>
<div><div><div>masterqaz</div><div>Member</div><div></div><div>Join Date: Oct 4th, 2007 Location: Oakville Ont Posts: 2,724 Vehicles: 94 JTI Vrt 60-1 .58ar exh obd2 440 racefile 20psi/meth</div></div></div>	<div>07-14-2012 02:46 AM <div>Reply</div> #16</div> <p>Highly unlikely that spinning up a turbo briefly without an oil feed would do any damage. Hardly any load or heat to cause the bearings or journal bushings to sustain damage or fail.</p> <p>After all oil is quite viscous and doesn't just disappear when the engine isnt running.</p> <p>What you know was written by someone as insurance, so you couldnt blame them as technically you did it wrong by their standards.</p> <p>Old I know.</p> <div>Forced convection.... Now we grillin. Some times she goes, some times she doesn't.... Way of the road</div> <p>Rem 870 super mag in max 4 camo for sale. Pm me</p> <div>Reply With Quote</div>
<div><div><div>SuperchargedK20Z3</div><div>Junior Member</div><div>Join Date: Apr 30th, 2012 Posts: 63</div></div></div>	<div>08-06-2012 12:55 PM <div>Reply</div> #17</div> <p>Where do I hook this up at to test my entire system intercooler, piping, turbo, and all?</p> <p>I have an 09 tsi gti</p> <p>Sent from my DROIDX using Tapatalk 2</p> <div>Reply With Quote</div>
<div><div><div>Dave926</div><div>Member</div><div></div><div>Join Date: Mar 30th, 2005</div></div></div>	<div>12-01-2012 09:11 PM <div>Reply</div> #18</div> <p>I would say disconnect the airbox, and go from there. If i remember correctly the inlet pipe on a tsi is plastic, so be caref</p>

Location: Rhode Island

Posts: 4,166

Vehicles: 1989 Helios GLI 1997 Mk3 ****box




DIY Boost Leak Tester

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masterqaz

Member



Join Date: Oct 4th, 2007

Location: Oakville Ont

Posts: 2,724

Vehicles: 94 JTI Vrt 60-1 .58ar exh obd2 440 racefile 20psi/meth

12-02-2012 03:12 PM

Reply

#19

Originally Posted by SuperchargedK2023

Where do I hook this up at to test my entire system intercooler, piping, turbo, and all?

I have an 09 tsi gti

Sent from my DROIDX using Tapatalk 2


Safest bet is directly to the turbo inlet. Which means removing the inlet pipe.

Forced convection.... Now we grillin.
Some times she goes, some times she doesn't.... Way of the road
Rem 870 super mag in max 4 camo for sale. Pm me

Reply With Quote

groggory

Moderator




Join Date: Apr 21st, 2003

Location: Long Beach, CA

Posts: 10,106

Vehicles: 2002 VW GTI 1.8 BT



FAQ'd in 1.8t FAQ

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My FAQ / DIY Thread -- Look here for 90% of the questions you have

Welcome to the world of racing! Budgets are ALWAYS exceeded, deadlines are never meet, end-goals never reached, and wives always unhappy... it's all worth it though!

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Ronnie@JDLAutoDesign

Banner Advertiser

BANNER ADVERTISER

Join Date: Apr 3rd, 2013

Location: Mid Town Phx AZ

Posts: 314

Vehicles: 87 Conquest TSi

I built one out of some scrap aluminum we had at the shop. Also used an air pressure regulator, vacuum hose, and a few dif size couplers depending on turbo inlet size

04-18-2013 02:28 PM

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#21

http://forums.vwvortex.com/showthread.php?5149361-DIY-Boost-Leak-Tester#post69350952

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groggory 
Moderator



Join Date: Apr 21st, 2003
Location: Long Beach, CA
Posts: 10,106
Vehicles: 2002 VW GTI 1.8 BT

DIY: Boost Leak Tester

04-18-2013 03:19 PM

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#22

 Originally Posted by [Ronnie@JDLAutoDesign](#) 

I built one out of some scrap aluminum we had at the shop. Also used an air pressure regulator, vacuum hose, and a few dif size couplers depending on turbo inlet size



Sounds like my personal setup. Plenty of adapters for any inlet size

[My Build](#)
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