

# Turbo Tech



This section is about some Basic Turbocharger Info, what things do.. How things come apart, and different Styles of Turbochargers.

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Turbonetics 60-1 Turbocharger



This is what makes the 14b such a great turbo, the exhaust wheel is one of the largest for a factory Turbo'd 4cyl cars. You can see the wastegate flapper to the left.

Overall, I think this is a great turbo to work with on custom turbo projects. Especially for D-series Motors. It does have a bit more turbo lag than the others, But nothing to erratic.



Next up, is the little guy, The DSM 1g Automatic Turbo. Known as the TD04. The TD04 is basically shaped the same as the 14b in most ways. The exhaust wheel and compressor are a bit smaller. This turbo boost's similar to the DSM T-25 turbo setup.

The inlet flange on the TD04 is a bit smaller than the 14b/T-25

The 14b & TD04 have 3 through holes and 1 stud, that does not go through.



The 2g DSM T-25 turbocharger. This was the first turbocharger I ever worked with on a Custom Project. It is Oil & Water cooled like the 14b. The 14b & TD04 are Mitsubishi Turbos, The T-25 Turbo is made by Garrett.



The exhaust housing is the same on all the DSM turbochargers (4g63) You can see how much smaller the exhaust wheel is than the 14b Turbo. The wastegate is also different than the 14b turbo, and they cannot be interchanged.



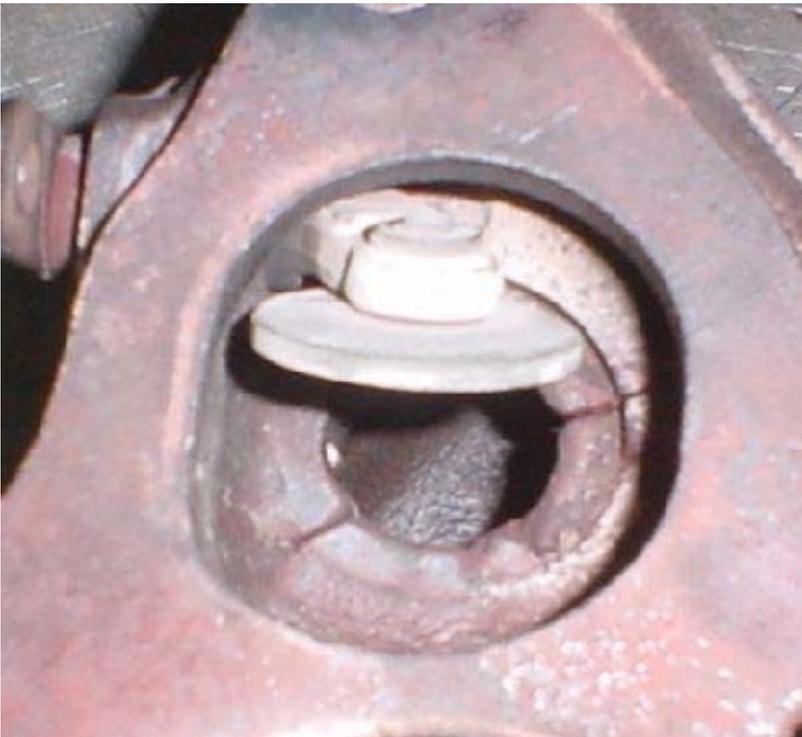
The Compressor housing makes the T-25 turbocharger very easy to work with.

Overall, this turbo is a great turbocharger if you like incredibly fast spooling turbo's. But does not pull nearly as hard at 12psi that a 14b does.



Exhaust Housing - Turbine (center section) - Compressor - Internal Wastegate

Taking the 14b apart, is very simple. First take off the 10mm bolt that holds the center section together. Tap with a hammer and it will separate from the exhaust housing. Next get some good Snap ring plyers and take the Compressor housing off.



This is a very common problem with Turbochargers, especially Internally wastegated ones. Over time, the heat just breaks down the cast, and it starts to crack. This one was so bad I could see light all the way through it. Most of the time you can still use turbos if they have hairline cracks, But when they are this bad, and causing boost problems, its

time to get a new exhaust housing.

#### 14b Exhaust Housing Wastegate Flapper



The T-3 Turbocharger. This is the standard in most turbochargers. Garrett T-3 turbo's are used in lots of Factory cars. First off how to identify a T3 turbo. All true T3 turbochargers have a rectangular flange with 4 bolt holes. For compressor housings and exhaust housings, their are just so many different styles and combinations. .48 a/r's all the way to .82's

Wastegates are all different on T-3's some low as 5.5psi some as high as 12. The one shown is adjustable



Its a very easy turbo to work with when doing custom turbo projects. Their are so many

different sizes and styles of these turbos, since they come on so many different types of cars. Some makes that have them:

- Ford
- Volvo
- Saab
- Buick GM
- Nissan
- and others



This is a basic T-3 exhaust housing flange with an internal wastegate. One of the easiest to make a downpipe with. All you do is bolt that flange to the housing, and take it to an exhaust shop to make your downpipe... Simple Simple..

But not all T-3's come with these styles of flanges.

Some Turbos spool fast, some Turbos spool slow. The larger the A/R the more CFM it will flow, and the more lag it will have. Most of the .48 turbos spool very fast with D-series Motors.



Hybrid Turbochargers, T3/T4 Turbos... The concept of using a small center section to spool fast and using a large Compressor for more cfm. These turbos are one of the best to use. Especially on B-series Motors. T3/T4's can support anywhere from 300-450hp. Some can come internally gated or external. This is a .70ar compressor .63 exhaust



The Big Bad Boy Turbo, T4 turbo. There are many series of these turbos, I am not familiar with that many of them, since I have never used one. These are for very large HP applications. Mainly v6 or v8's. Some heavily built race Honda B/D series motors can be used with these, mainly for drag racing.



T4 Turbocharger (Diesal Truck) - T3/04e Turbocharger - 14b DSM Turbocharger



This is the KKK Turbocharger, The KKK turbo comes from Germany, many European cars use these turbos. Audi/VW/Porsche and others. This turbo shown the KKK 26 I believe, is similar to a basic T-3 turbo. The inlet flange is identicle to the T-3 turbo. But some other KKK turbo's have very odd looking inlet flanges.

I personally have never used one, but I am sure they could be used.



The IHI RHB5 Turbo, a few different styles of this turbocharger, This turbo is the Ford Probe/Mazda MX6/ 626 Turbocharger. It has a circular inlet flange, and wastegate that is set at 8psi.

These turbos are very small, and spool incredibly fast on stock D-series engines.



You can see how small and compact this turbo is, which makes it very easy to work with. It is both Oil and water-cooled. Some people chop the O2 housing downpipe section in half so they can get a better angle with the downpipe.



IHI Turbocharger, off a Subaru.