

Many of the MiTos have a turbo fitted, including all TwinAir and diesel variants along with most of the 1.4 petrol variants.

Alfa Romeo used several manufacturers of turbos in the MiTo including MHI (Mitsubishi), IHI, BorgWarner and Garrett.

As you can see from the diagram at the top of the page, the turbo uses the exhaust gases to drive a turbine which spins an air compressor that pushes more air into the engine cylinders which in turn will burn more fuel and create more power. Sucking the hot exhaust gas into the turbine spins it, which in turn spins the compressor pushing more air into the engine via the intercooler.

So the turbo plays an important role and any failures will render your MiTo in need of urgent repair. And as the exploded diagram to the right shows, there are many constituent parts within the turbo which can fail. Any failures may require one of three actions, broadly summarised as follows:

## Turbo Repair

If your turbo has failed, it typically means an internal part is worn or broken.

other significant damage or failure.

## Reconditioned Turbo or Turbo Rebuild

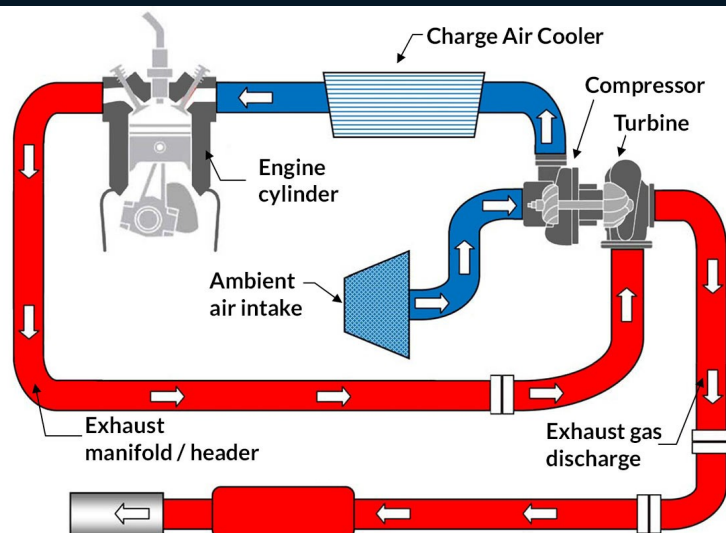
A turbo rebuild or a reconditioned turbo is where the complete turbocharger is completely stripped to each constituent part.

The compressor and turbine housings are opened and the impeller, shaft and turbine, all O-rings, bearings and retaining rings are all inspected for wear and damage and then dimensionally checked to be within tolerances. If not, then the worn parts are scrapped and replaced with new replacement parts. In all situations, all the bearings and seals should be replaced as a reconditioned turbo should never be re-assembled with used bearings and seals. Re-assembly includes balancing and calibration, resulting in a newly reconditioned turbocharger.

## Remanufactured Turbo

A remanufactured turbocharger is where the complete internal workings of the worn turbo are replaced with brand new replacement parts, regardless of whether some of the parts are still serviceable.

The only parts to be reused are the compressor and turbine housings. The internal components in their entirety is often



called the "cartridge", or the "CHRA" (which means the Centre Housing Rotating Assembly).

Both the compressor and turbine housings are fully cleaned and an entirely new CHRA is installed, balanced, calibrated and tested for noise and oil leaks before being fitted to the cleaned housings.

A remanufactured turbo is, essentially, a new turbo.

## New Turbo

Of course, you can source and buy an entirely new turbo, but

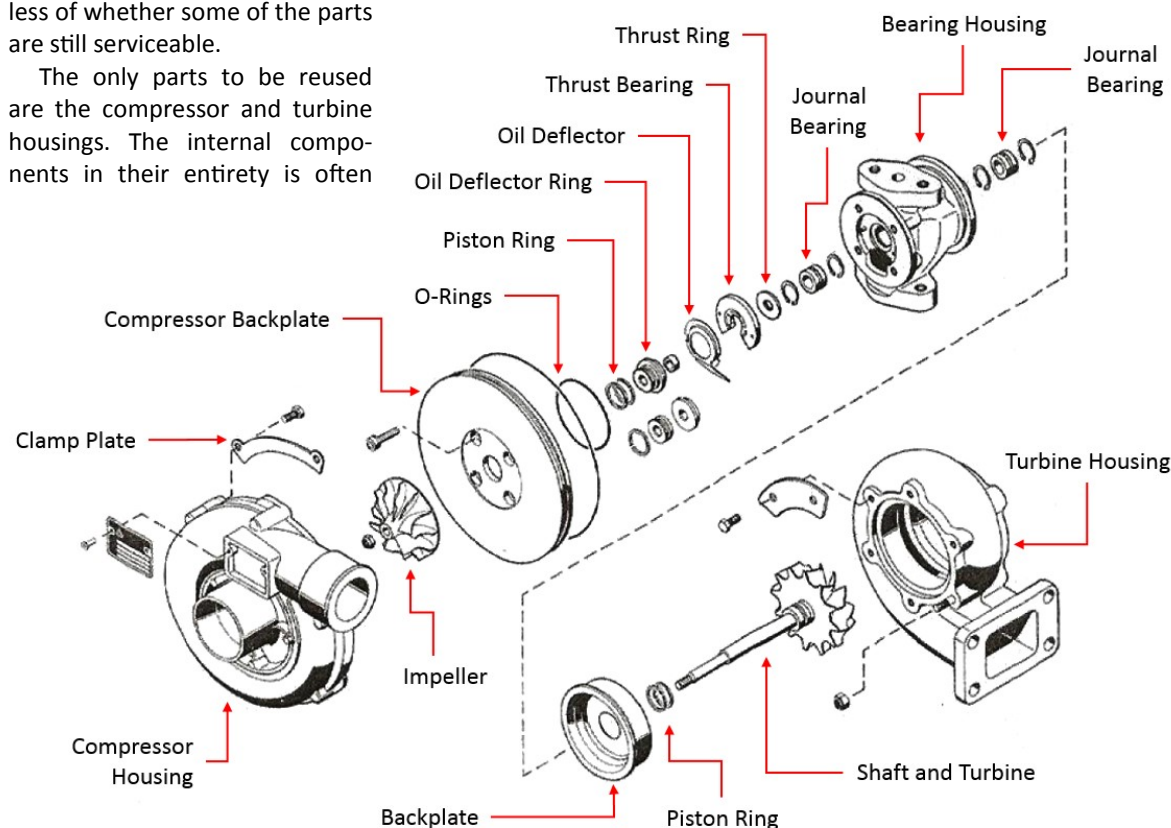
the price will likely be significantly higher than any of the previous options, so depending on the type of failure, age of the turbo and mileage your MiTo has covered, it will be far more cost-effective to find an expert and have either a repair, reconditioning or a remanufactured turbo.

## Hybrid Turbos

A hybrid turbo typically involves taking your existing turbo and improving the performance by replacing selected parts internally to deliver an increase in



A turbo expert can identify the damaged component and change it before re-testing that the turbo is operational. This is the simplest way to fix a faulty turbo as long as there is no



# MiTo Turbo Guide

power and optimum efficiency.

Taking a standard turbo and simply increasing the boost pressure is making the turbo spin faster which risks turbine blade failure, whilst running the compressor impeller faster which lowers efficiency and increases temperatures.

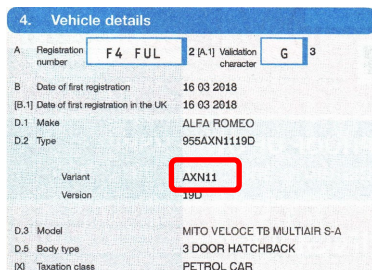
Hybrid turbos often include enlarged billet compressor wheels, different profile or enlarged turbine wheel blades, new thrust assemblies and journal bearings along with any internal CNC modifications to the compressor and turbine housings to fit the new internals.

Simply fitting a hybrid turbo alone to your MiTo will increase power, but your car will need a remap to account for the differences, and should be combined with a larger front-mounted intercooler to bring a greater volume of air through.

## MiTo Turbo Fitments

The table below lists all variants of the MiTo fitted with a turbo, and lists which turbo is fitted to your car along with relevant part numbers.

Remember, if you are not certain which variant your MiTo is, you can use the Variant code which is in Section 4 of your V5 document from the DVLA.



4. Vehicle details

A Registration number: F4 FUL 2 (A-1) Validation character: G 3

B Date of first registration: 16 03 2018  
(B.1) Date of first registration in the UK: 16 03 2018

D.1 Make: ALFA ROMEO  
D.2 Type: 955AXN1119D

Variant: AXN11  
Version: 19D

D.3 Model: MITO VELOCE TB MULTIAIR S-A  
D.5 Body type: 3 DOOR HATCHBACK  
[X] Taxation class: PETROL CAR

You will also see listed any additional vehicles that the turbo is fitted to. This may be useful if you are searching for a used or refurbished turbo replacement.



Searching for “turbo reman”, “turbo rebuild” and “turbo re-conditioning” on the internet should find plenty of specialists.

But always ensure you shop around as there are many turbo specialists in the UK offering refurbished units (typically at a

discount if you give them your broken turbo) or able to refurbish *your* turbo for considerably less than buying a new unit.

As with everything, find the option that suits your budget to keep your MiTo on the road using a reputable expert.

Variant	Engine	Model	From	To	Turbo	Part Numbers	Also Fitted To
AXW1B	312A2000	0.9 TwinAir (85) Petrol	2012	2014	MHI 49373-03012 TD02H2-07TVT-2.7	55240093 71795700	Fiat 500, Panda Lancia/Chrysler Ypsilon
AXY1B	199B6000	0.9 TwinAir (105) Petrol	2013	⇒	MHI 49180-03102 TD025L4bR	55249538 55248457 71796218	Fiat 500, 500L
AXG1A	198A4000	1.4 TB (120) Petrol	2009	2010	IHI RHF3 VL37	55212917	Fiat Bravo, Punto, Grande Punto Abarth Punto, Grande Punto
AXM1A	955A2000	1.4 TB (135) MultiAir Petrol	2010	2014	Garrett MGT12	55228036	Fiat Bravo, Punto, Punto Evo
AXR11	955A7000	1.4 TB (135) MultiAir Petrol TCT	2010	2014	Garrett MGT12	55228036	Fiat Bravo, Punto, Punto Evo
AXA1B	199A8000	1.4 TB (155) Petrol	2008	2011	IHI RHF3 VL38	71724555 71724556	Abarth 500
AYB11	955B1000	1.4 TB (140) MultiAir Petrol TCT	2014	⇒	Garret MGT1446	55231115	Alfa Romeo Giulietta Abarth 500, Grande Punto/Evo Jeep Renegade, Fiat 500X
AXN1B	940A2000	1.4 TB (170) MultiAir Petrol	2010	2014	Garret MGT1446	55231115	Alfa Romeo Giulietta Abarth 500, Grande Punto/Evo Jeep Renegade, Fiat 500X
AXN11	940A2000	1.4 TB (170) MultiAir Petrol TCT	2014	⇒	Garret MGT1446	55231115	Alfa Romeo Giulietta Abarth 500, Grande Punto/Evo Jeep Renegade, Fiat 500X
AXH1B	199A3000	1.3 JTDM (90) Diesel	2009	2010	BorgWarner BV35	55198317	Fiat Doblo, Punto, Linea Lancia Ypsilon, Musa
AXP1A	199B1000	1.3 JTDM-2 (95) Diesel	2010	2016	BorgWarner BV35	55221160	Fiat Doblo, Punto, Linea, Fiorino Vauxhall Corsa, Astra, Meriva
AXT1A	199B4000	1.3 JTDM-2 (85) Diesel	2011	2016	BorgWarner BV30	55233062	Fiat 500L, Punto
AYC1A	199B1000	1.3 JTDM-2 (95) Diesel	2016	⇒	Garrett GTD1036VZ	55216672 55270995	Fiat 500X, 500L, Fiorino, Qubo
AXC1B	955A3000	1.6 JTDM (120) Diesel	2008	2016	Garrett GTB1446VZ	55246405 55230178 55220701	Fiat 500L Jeep Renegade