



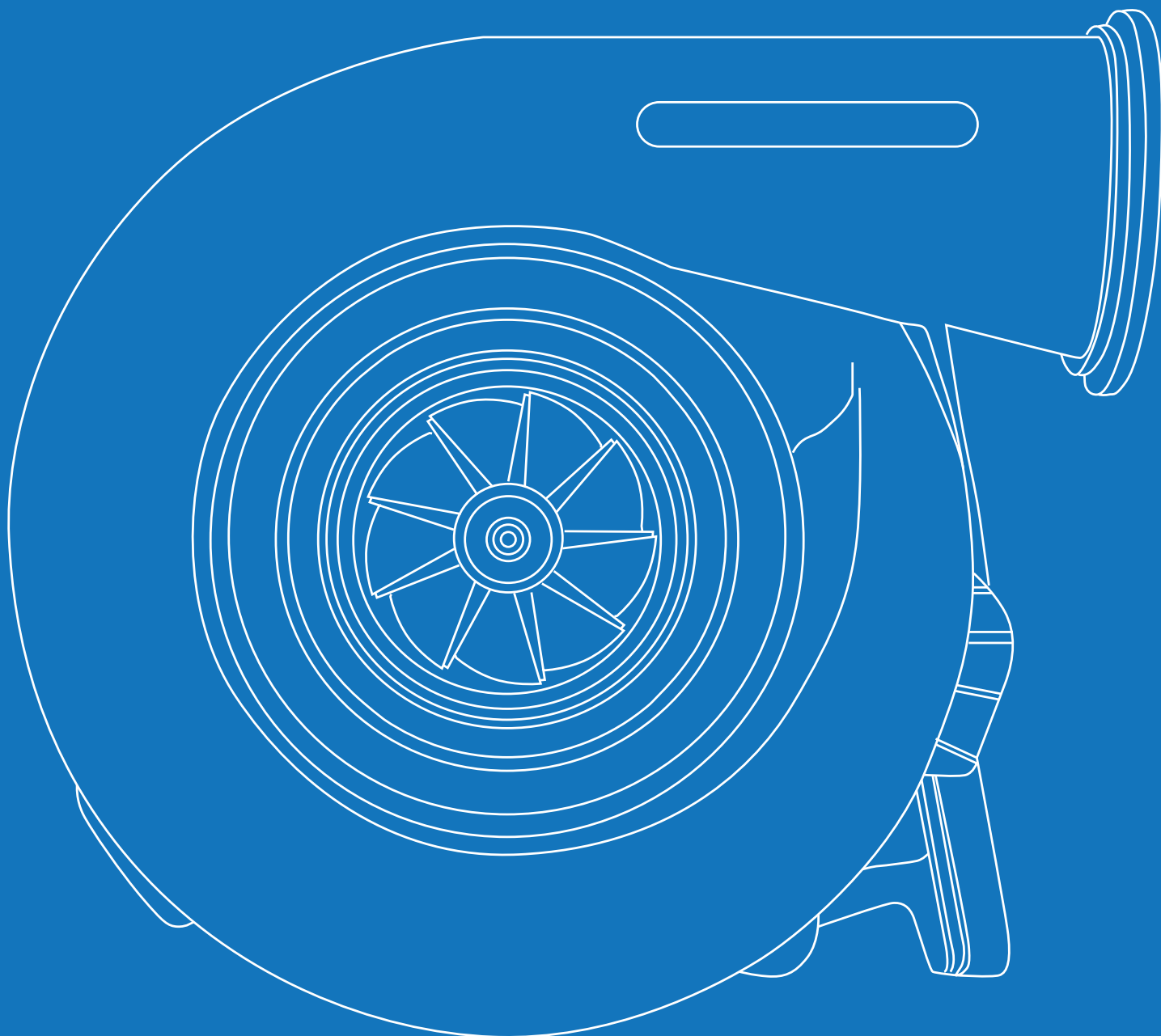
The China  
Turbocharger Supply  
Chain Expert

**International Turbocharger Market**

**S·M·A·R·T Program**

**GP's Intellectual Property Plan For Customers**

**Case Studies**



*If You Saw The Darkness In Front Of You ,  
Don't Be Afraid,  
That's Because Sunshine Is At Your Back.*



## **GP TURBOCHARGERS – POTENT COMBINATION OF PERFORMANCE AND EFFICIENCY**

GP turbocharger is a leading turbocharger brand aiming to push limits of the driving by supplementing power to the engine. The GP turbocharger brand is owned by NB MOTOR GROUP which also supplies other automotive parts such as suspension parts, alloy wheels and car inner accessories for the automotive aftermarket.

The turbocharger having an impeller diameter between 45 mm to 250 mm that allows the single pressure to reach up to 3.8 while the maximum rotation speed can reach up to 200, 000 r/min. GP turbocharger uses mixed flow turbo power technology where the turbocharger takes advantage of radial and spindle flow thereby raising the performance of GP turbocharger by 3%.

### **THE TECHNOLOGY ADVANTAGE**

When compared with natural aspirated engine of identical power output, GP turbocharger reduces fuel consumption as the naturally wasted exhaust gases are put back to use thereby contributing to engine's efficiency. The lower volumetric displacement of the turbo also leads to lowering of frictional and thermal losses. The power-to-weight ratio of the exhaust gas turbocharged engine is better than a naturally aspirated engine.

The performance of a turbocharged engine at high altitudes is better than naturally aspirated engine. The reason is low pressure at high altitudes leads to drop in performance of naturally aspirated engine. In fact the performance of the turbocharged engine improves at higher altitudes due to difference between the virtually constant pressure upstream of the turbine and the lower ambient pressure at outlet. The reduced overall-size of the turbocharger engine leads to reduced sound-radiating outer surface making them less noise than naturally aspirated engine with identical output.

### **QUALITY CENTERED PRODUCTION**

The primary aim of Ningbo GP Turbocharger Company is to produce highest quality products that offer best value to the customer. The company tests all turbochargers rigorously for defects in mechanical structure, physical properties, tolerances and dimensions. The quality team ensures every turbocharger manufactured meets stringent quality requirements.

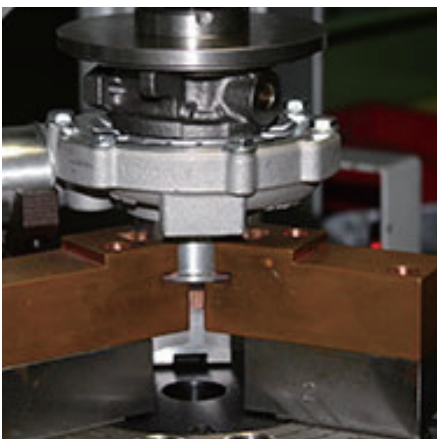
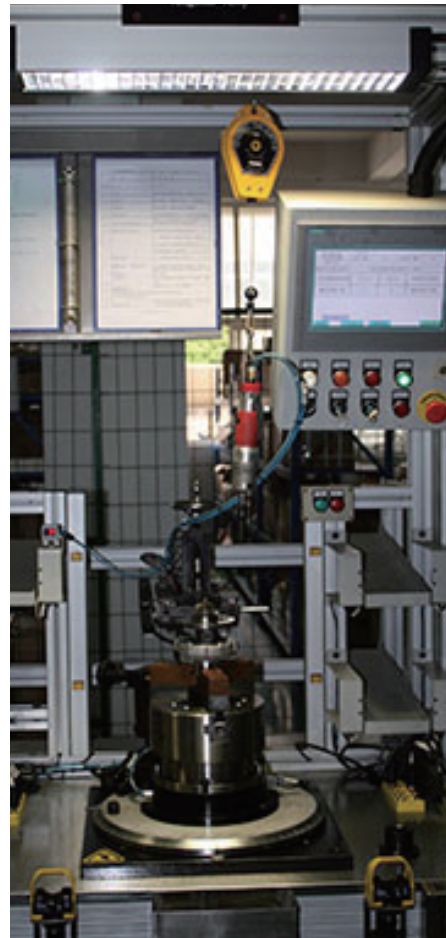
The new turbocharger that you buy to replace the OEM part is same as the one fitted by your vehicle manufacturer. Our competitive pricing policy helps you get the OEM product at much lower price.

### **A PERFORMANCE ORIENTED TURBOCHARGER FOR EVERY VEHICLE**

Ningbo GP Turbocharger Company manufactures 1000+ models of turbochargers that can be fitted on vehicles of all leading auto manufacturers like Volkswagen, Mercedes Benz, Toyota, Hyundai, General Motors, Mitsubishi and many more. The company also manufactures turbo kits for those who like to assemble turbo charging systems to enhance the performance of their vehicle. The GP turbo kit is compatible with wide range of turbochargers. The company manufactures several other parts used in turbocharger assembly that includes cartridge, compressor wheel and turbine wheel. Ningbo GP Turbocharger Company also supplies turbocharger and spares to OEM's like BorgWarner China, JMC/JAC, Yunnei engine, DCD/Lovol

The company owns a fully equipped test lab and a professional R&D team that look into developments of new turbocharger technologies to make them fuel efficient and push performance limits further. . Ningbo GP Turbocharger Company is your one-stop shop for turbochargers and everything related to turbo charging equipment and technology.









## WHEN YOU DO BUSINESS WITH NINGBO GP TURBOCHARGER COMPANY, YOU HAVE TAKEN A SMART DECISION. HERE ARE THE REASONS

**S** – Supply Chain Manager. We have earned the trust and reputation of client's that makes us reliable Turbo sourcing agent for every client

**M** - Market Analyst- We doesn't just manufacture GP Turbochargers. Our focus is on innovation to bring you greener products that also perform beyond expectations. We follow a policy at least 2 research sessions every year to upgrade turbocharger technology.

**A** – Alex Wu- Our sales engineer will tell you the reasons clients trust us and are happy doing business with us all these years

**R**- Risk Controller – We stand by the quality of our products and are happy to offer Open

Account to businesses up to 90 days. We also stock turbochargers for VIP customers so that your clients never have to wait due to shortages in market.

**T**- Turbo Specialist – With more than 1000+ turbochargers, we are an established turbo specialist loved by clients and popular as well.

## INTERNATIONAL NEWS

### TURBOCHARGER MARKET ESTIMATED TO HIT 22.1 BILLION BY 2020

Turbochargers demand is expected to grow exponentially in coming years. Fast depletion of fossil fuels and increasing awareness about pollution globally has led to demand for more fuel-efficient cars. No doubt every vehicle manufacturer is busy fine tuning their engine technology to meet the new emission standards and keep the fuel consumption low at the same time. The basic concept of the turbocharger is to recycle wasted energy from the exhaust gases thus ensuring maximum utilization of the fuel energy.

### ADOPTION RATE OF TURBOCHARGERS IS EXPECTED TO INCREASE BY 2020

The new turbocharger technologies like VGT allows facilitating the change in the aspect ratio in accordance to change in the engine speed conditions. The VGT turbochargers feature small movable vanes that direct the exhaust gas flow onto turbine blades. This new turbocharger technology allows vehicle owners to achieve higher fuel efficiency, lower emissions without compromising on the performance of the vehicle.

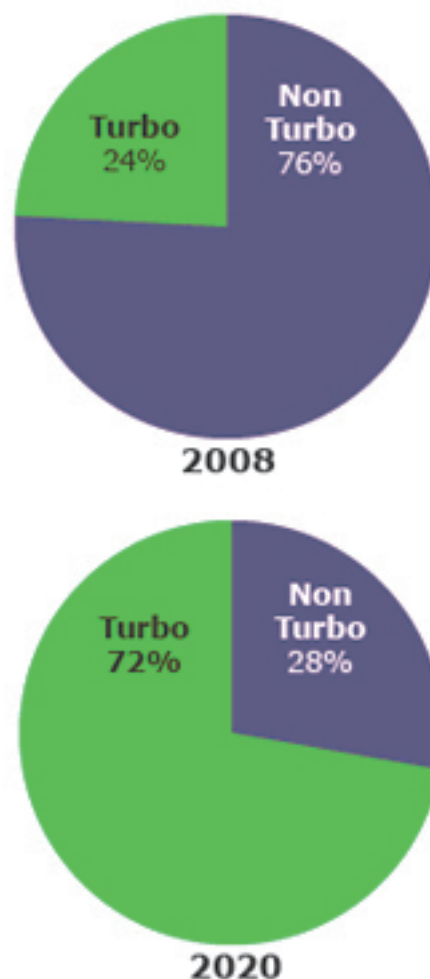
The European emission norms are getting stricter with passing time. But the availability of the VGT turbochargers will allow vehicle manufacturers to meet new emission norms and also keep the performance of the vehicle that will make customers happy. The emission norms in other parts of the world are also causing faster adoption of turbochargers. While the adoption of turbochargers differs with each region, it mainly depends on the preferences for the fuel efficiency and the emission norms specified for the region. As per reports from leading market research agencies, the Asia-Oceania will be the largest turbocharger market followed by North America

### ASIA-OCEANIA – LARGEST TURBOCHARGER MARKET

The Asia-Oceania region has countries like India, China, Japan and South Korea which are some of the fastest growing economies in the world. Almost every major OEM has an R&D and production facility established in the region to exploit market opportunities and build a powerful engine that provides reduced emissions and greater fuel economy is a demand trend for end-users. This is driving the turbocharger market faster than experts have imagined. As per leading market research report, China is expected to be one of the largest turbocharger markets by the onset of the year 2020.

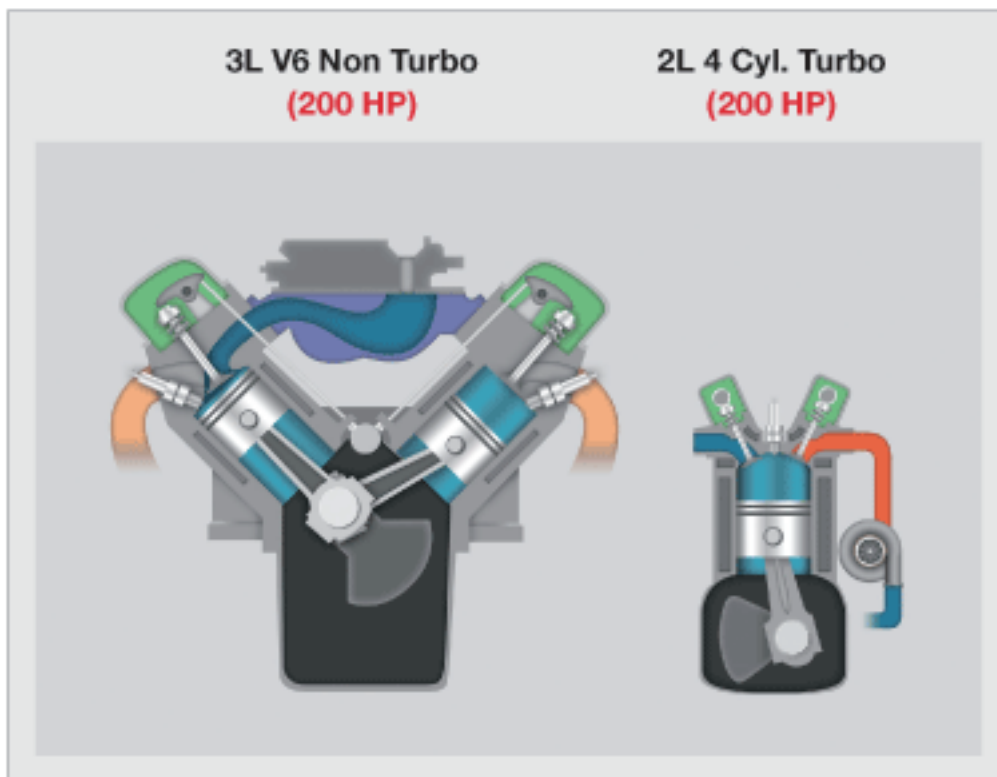
Due to the faster economic development of China and simultaneous rise in disposable income, the country has the world's fastest growing consumer market. The economic development of China has prompted many leading automobile manufacturers to set up manufacturing facilities in China. As vehicle manufacturing ramps up due to increasing demand globally, so will the demand for turbochargers increase to keep up with emission standards and improving the performance of the vehicle? Looking at the advancements in turbocharger technology, it would not be wrong to say- turbochargers are no longer an additional accessory but an essential one for your vehicle.

Global Turbo Penetration  
% of cars sold globally





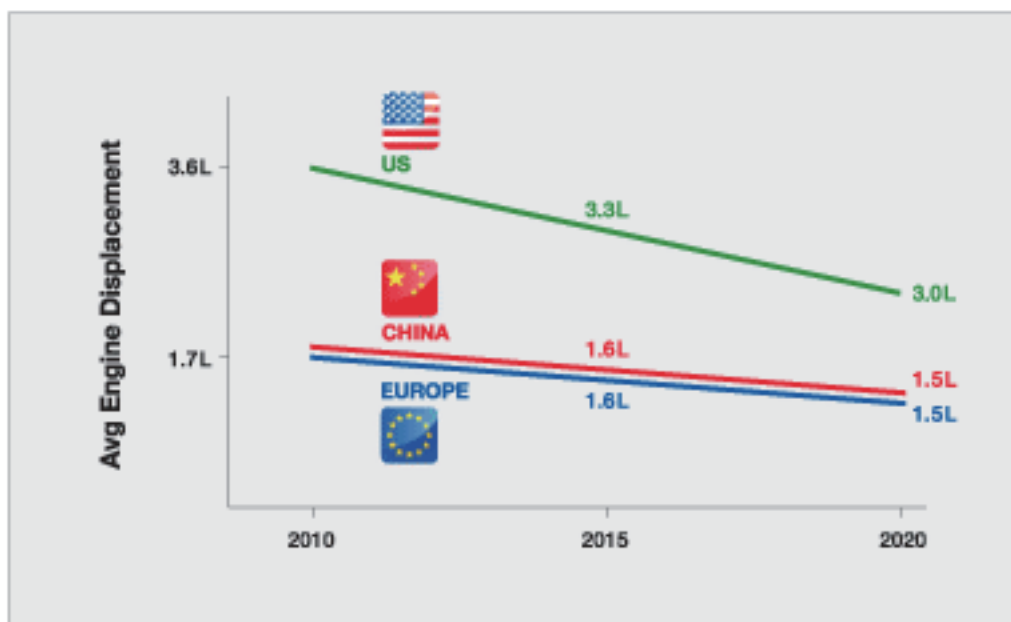
## Turbo + Small Engine = Fuel Economy



*By harnessing the energy from exhaust gas otherwise wasted, turbocharger helps a smaller engine to perform like a bigger one with better fuel efficiency.*

## Engine Downsizing Trend

*(Source: Global Insight & Honeywell)*



*Turbo's ability to deliver big engine performance in smaller displacement power blocks will increasingly support an automotive industry downsizing agenda focused on meeting fuel efficiency targets while maintaining impressive driveability.*

## TURBOCHARGERS – WAY TO THE FUTURE

If you are looking to increase the fuel efficiency of the vehicle without compromising on the power and performance, you need nothing but a good turbocharger. Turbocharger can significantly increase the engine power for minimum possible engine displacement. The automotive industry is racing ahead on the downsizing trend to reduce the overall weight of the vehicle and improve fuel efficiency. This enhances the need for a turbocharger which can improve the performance of the engine without adding any substantial weight to the vehicle. Thus, we can see increasing demand for greener (fuel-efficient and less polluting) vehicles and trend for engine downsizing are the main drivers propelling the growth of turbocharger industry.

## COMPANY NEWS

### GP'S INTELLECTUAL PROPERTY PLAN FOR CUSTOMERS

In the globally competitive environment, intellectual property has become more important than ever. It is considered foundation of economic growth that fosters invention and innovation and propels the wheel of prosperity. Increasing significance of intangible assets is forcing organizations to actively manage the IP protector role to sustain competitive advantage and maintain superior performance.

### IP IN THE AUTO INDUSTRY – CHALLENGES AND OPPORTUNITIES

Increased collaboration has led to complex business models which put more stress on IP protection in auto industry at all levels. Issues such as branding, counterfeiting, and reputation management are moving up in the corporate agenda. Intellectual property in auto sector includes engineering designs, models, images and other technological data that enables manufacturer to make products that meet performance requirements

The IP protection has become complex for auto industry as cars have become computers on wheel. The auto industry has become more about technology and less about tires and engines. Today's car manufacturers are integrating high-tech innovations such as audio technology, video technology, GPS, Wi-Fi, connectivity, security and many more technologies in vehicles to make them more attractive.

### IP PROTECTION IS POSSIBLE IN CHINA

Many US, and Europe companies entering China market treat Intellectual property as secondary matter when it should be their primary concern. Before you understand IP protection tools available in China, you need to have clear definition of what IP means. It does not mean copyrights, patents, or trademarks. These are tools to protect your IP.

Intellectual property means

- Design of any kind: product design, system architecture, engineering drawings,
- Industrial processes and know how
- Brand and image
- Business plans and corporate strategy

Foreign companies think that since they have done enough to secure their rights in North America and Europe, they need not do anything in China. This is a big mistake. The key concept is IP protection is local. All IP protection is based on local laws and practice. Businesses are required to adopt an effective and realistic protection program to secure IP. If they are doing business in China, they need to think situation in China.

IP risks in China can be managed if you are realistically aware of the situation and take practical steps for protection. Patent protection is not readily available in China as it is a rule in China to file a patent request in China within a year after it is filed elsewhere. If you follow the IP protection rules implemented in China, you can very well protect your intangible assets in China as well.





## HOW WE - GP TURBOCHARGER PROTECT OUR CLIENT'S IP RIGHTS?



### HELP REGISTERING IN INTELLECTUAL PROPERTY

GP Turbocharger is in forefront when it comes to protecting client's IP. The company's fair business practice involves making their client's aware of the IP threats and play a major role in helping them register IP in China. This guarantees their business advantage is well protected at all times.

### TRAIN EMPLOYEES FOR IP PROTECTION

Intellectual property can take many shapes- patents, copyrights, production processes, customer relationships and communication systems. GP Turbocharger Company limited believes that not everything can be legally protected but they need to have property IP protection practices in place to guard such information within company. Hence, the company has made IP importance and safeguarding, an important element of the employee training program. The IP awareness training program shows employees how to respond when anyone outside the organization enquires about proprietary information. This way the company manages the IP risk where there is higher risk of information accidentally given in comparison to being stolen.

### NON-DISCLOSURE AGREEMENTS

GP turbocharger works to frame non disclosure agreements to protect IP of their clients. For those who don't know NDA is a contract between parties to not disclose any information protected by NDA agreement. This ensures secrets of our clients stay underground and if it does not work, our client has a legal course to sue for damages. NDA's are surefire ways to ensure the confidential information stays protected in different situations

## CASE STUDY-1

### THE DEVIL IS IN THE DETAILS - GP TURBO (OEM STANDARD) V.S. OTHER FACTORY'S TURBO -

“If an engine is the heart of a car, then a turbo is the heart of hearts “.

#### Findings

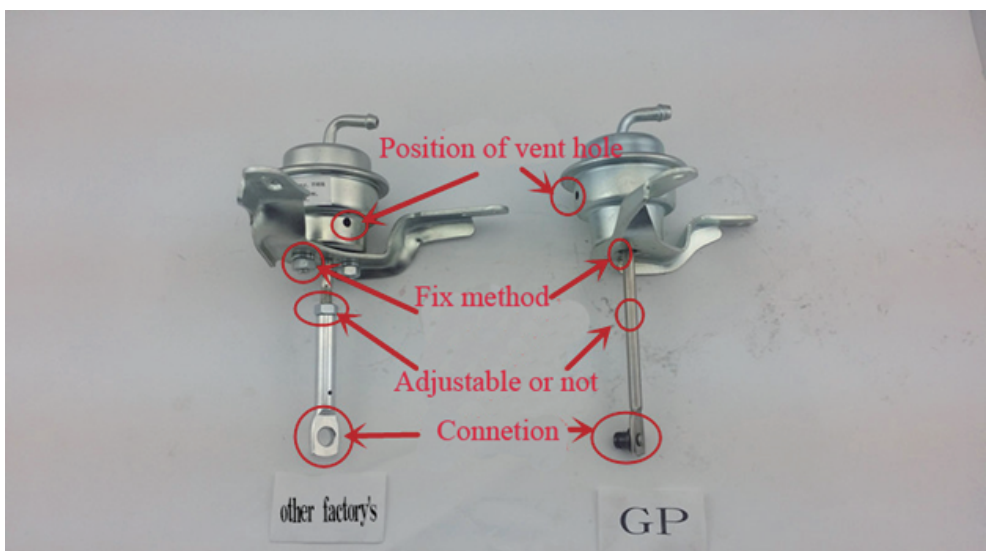
GP turbochargers undergoes precise machining process to ensure smooth finish and perfect fitting mechanism

GP Turbochargers are manufactured using industry approved materials that ensures, the turbocharger has the strength to withstand extreme temperatures that are formed during fuel combustion.

#### OEM DESIGN SPECIFICATIONS

The GP turbocharger is designed as per OEM design specifications so that you don't have to make expensive modifications when you need to replace factory fitted turbocharger in the vehicle. Our GP turbocharger has fitting hole at right place so that you can easily fix the turbocharger on the engine without any structural modifications or additional accessories

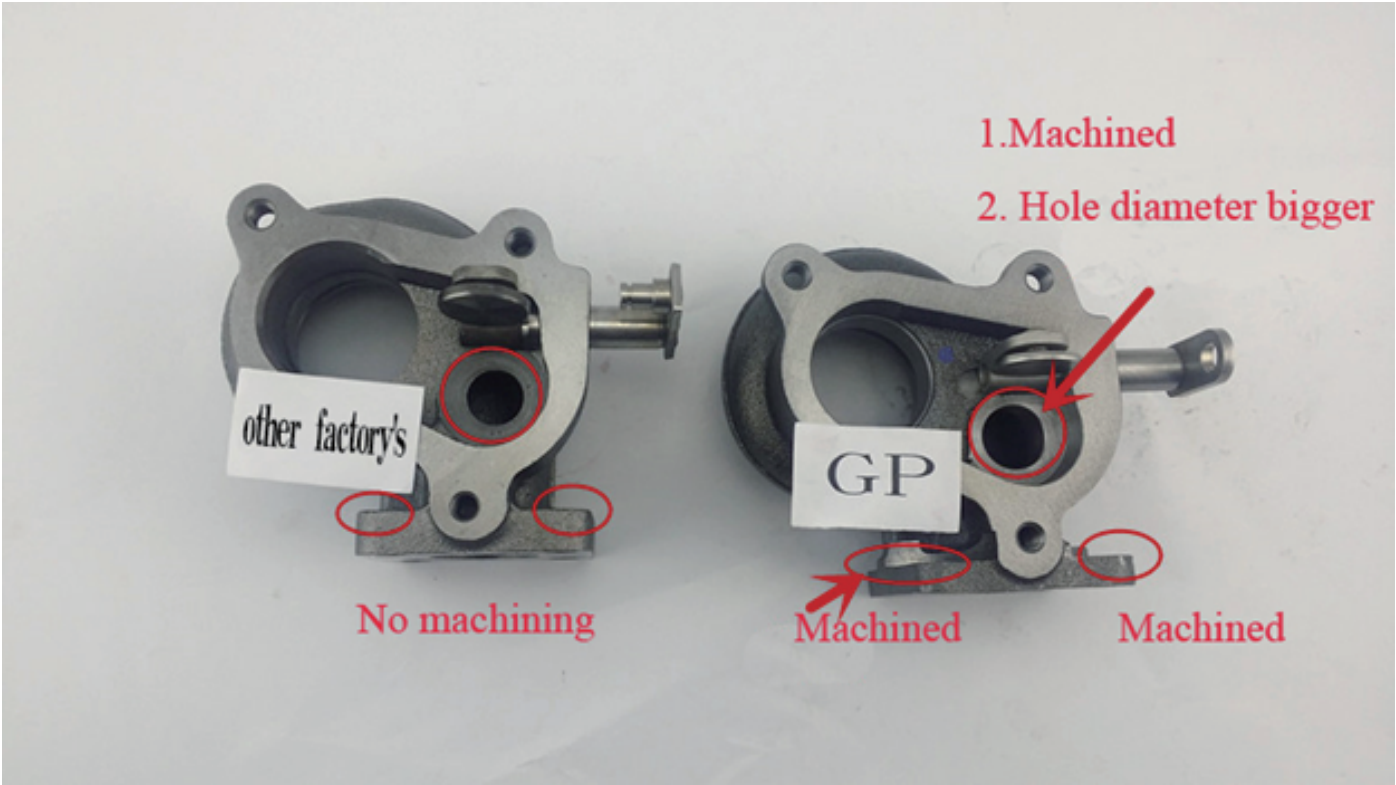
Turbochargers of other manufacturer completely ignore the OEM design that requires the technician to make major modifications to fit the turbocharger. The result is an ill-fitted turbocharger providing no benefits at all. Can you guarantee a performance from a wrongly designed turbocharger ? We say No, it can never happen.





TURBINE HOUSING

A look at the above given samples and you can see the fitting holes on both turbocharger are different. The hole diameter plays an important role in power and efficiency of the charger. Think of A/R sizing like sizing an exhaust for your N/A motor. You go too big and you actually loose flow because you lose the scavenging effect. Go to small and you bottleneck the exhaust and loose power. The effect of turbo A/R size is the same. The GP turbocharger has a smoother finish that is achieved by computer aided machining process. Other turbocharger gives no importance to the scale and size of the internal parts which play an important role in performance of the turbocharger. The result is you have an underperforming engine even with turbocharger attached.



MATERIAL STANDARDS OF TURBINE HOUSING

DIA2000SE

Date: 2016-3-28  
Time: 9:46:11

List of Analyses

Date: 2016-3-28

Time: 9:05:12

SampleNo HKHF4

Program Fe-20-M

	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	Co
Value	2.93	4.48	0.332	0.0260	0.0270	0.0330	<0.0025	0.0360	0.00650	0.230	0.0150
	Ti	Nb	V	W	Pb	Mg	B	Sb	Sn	Zn	As
Value	0.0310	<0.0010	<0.0010	0.0260	0.0320	0.0530	0.00910	<0.0010	0.00750	>0.0320	0.0380
	Bi	Ce	Zr	La	Se	N	Fe				
Value	<0.0015	0.0180	<0.0015	>0.0300	0.0500	>0.0120	<89.6				

Handwritten signature

## GP TURBO

DIA2000SE

Date: 2016-3-28

Time: 9:46:07

### List of Analyses

Date: 2016-3-28

Time: 9:02:30

SampleNo. HDHDB

Program Fe-20-M

	C	Si	Mn	P	S	Cr	Ni	Mo	Al	Cu	Co
	%	%	%	%	%	%	%	%	%	%	%
Value	3.06	3.16	0.245	0.0270	0.0170	0.0510	<0.0025	0.0280	0.00660	0.221	0.0140
	Ti	Nb	V	W	Pb	Mg	B	Sb	Sn	Zn	As
	%	%	%	%	%	%	%	%	%	%	%
Value	0.0330	<0.0010	<0.0010	0.0320	0.0350	0.0360	0.00570	<0.0010	0.00920	>0.0320	0.0280
	Bi	Ce	Zr	La	Se	N	Fe				
	%	%	%	%	%	%	%				
Value	<0.0015	0.0140	<0.0015	~0.0270	0.0520	>0.0120	<90.8				

70272

## OTHER FACTORY'S

Let's have a look at the different composition analysis of turbine housing I - QTSi-Mo. Our major content figure for Si & Mo is 4.48&0.036, while other factory's is only 3.16&0.028. This will affect the stability of turbine housing



## COMPRESSOR HOUSING

Detail is the key to success. The image clearly shows the perfect design of air nozzle in GP turbo charger. The shape of the nozzle determines the acceleration of the particles and the size of the combustion pattern. The air nozzle in GP turbo charger is housed at the sweet spot that ensures the GP turbocharger gets the most value out of your nozzle.



GP TURBO

常州市佳科汽车零部件有限公司									
样品成份分析检测报告									
分析程序	镍铬铁合金					打印类型	标准化浓度		
送样单位						分析者	管理员		
测样名称	390-外					分析日期	2016/3/26 14:14:26		
样品批号						样品规格			
环境条件						备注			
次数\元素	C	Mo	Mn	Cu#1	Nb	Fe	B	P	S
1	0.123	4.065	0.0058	<0.0001	1.929	0.829	0.0197	0.0079	0.0081
2	0.117	4.049	0.0058	<0.0001	1.895	0.842	0.0211	0.0080	0.0084
3	0.128	4.063	0.0061	<0.0001	1.968	0.849	0.0220	0.0079	0.0084
平均值	0.1227	4.0590	0.0059	0.0001	1.9307	0.8400	0.0209	0.0079	0.0083
绝对偏差	0.00551	0.00872	0.00017	0.00000	0.03653	0.01015	0.00116	0.00006	0.00017
相对偏差	4.49	0.21	2.94	0.00	1.89	1.21	5.54	0.73	2.09
次数\元素	Si#2	W	Cr#1	Ti	Co#1	Zr	Al	Ni	
1	0.046	0.0553	13.673	0.9861	<0.0001	0.0172	4.868	73.3669	
2	0.046	0.0554	13.704	0.9744	<0.0001	0.0179	4.923	73.333	
3	0.047	0.0586	13.652	1.0032	<0.0001	0.0193	4.928	73.2395	
平均值	0.0463	0.0564	13.6763	0.9879	0.0001	0.0181	4.9063	73.3131	
绝对偏差	0.00058	0.00188	0.02616	0.01448	0.00000	0.00107	0.03329	0.06598	
相对偏差	1.25	3.33	0.19	1.47	0.00	5.90	0.68	0.09	

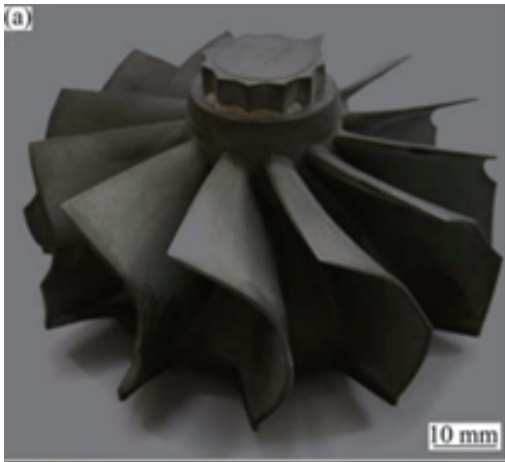
OTHER FACTORY'S

713C Material OE Standard	
Elemental composition	Content ( % )
C	0.08-0.20
Si	maximum0.50
Mn	maximum0.25
S	maximum0.015
Cr	12.00-14.00
Mo	3.80-5.20
Nb+ Ta	1.80-2.80
Ti	0.50-1.00
Al	5.50-6.50
B	0.005-0.015
Zr	0.05-0.15
Fe	maximum1.80
P	maximum0.015
Cu	maximum0.50
Co	maximum1.00
Ni	

SEAL RING



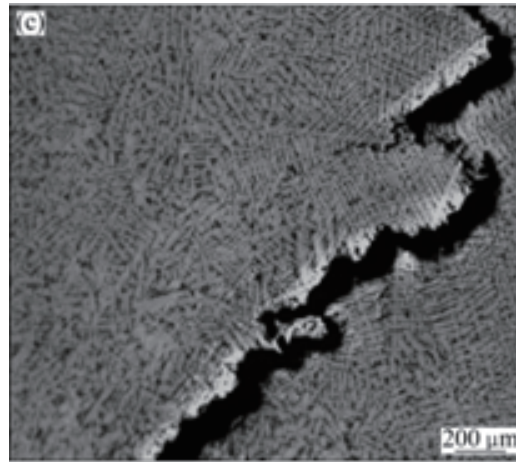
The seal ring of GP turbocharger uses W6Mo5Cr4V2, material that has high temperature resistance at 350-400℃. The materials used in seal ring of other turbocharger is 3Cr13 which has a temperature resistance at 250-300℃, this will be a hidden trouble for the turbo. Other turbocharger in the market are manufactured using less heat resistant materials that will decrease the life of the turbocharger thereby calling for early replacements. The high probability of failure also puts security of your customers at risk. This leads to end customer dissatisfaction that can ruin your business.



## TURBINE WHEEL

Fig a- shows the external structure of turbine wheel after subjected to higher temperatures

Fig b and c – shows typical macrostructure of hot tearing regions and the microstructure of crack that develop at high temperatures  
Let's look at this turbine wheel composition analysis. The material is 713C, however our competitor's value of B, Zr and Al is not according the OEM standard . This is specifically done to keep costs low while sacrificing the security of turbine wheel.



## COMPOSITION ANALYSIS OF TURBINE WHEEL

常州市佳科汽车零部件有限公司									
样品成份分析检测报告									
分析程序	铬镍铁合金					打印类型	标准化浓度		
送样单位						分析者	管理员		
测样名称	390					分析日期	2016/3/26 13:56:54		
样品批号						样品规格			
环境条件						备注			
次数\元素	C	Mo	Mn	Cu#1	Nb	Fe	B	P	S
1	0.098	4.154	<0.0001	<0.0001	2.179	0.280	0.0101	0.0083	0.0096
2	0.097	4.166	0.0001	<0.0001	2.168	0.295	0.0105	0.0085	0.0098
3	0.099	4.179	<0.0001	0.003	2.163	0.295	0.0109	0.0086	0.0100
平均值	0.0980	4.1663	0.0001	0.0011	2.1700	0.2900	0.0105	0.0085	0.0098
绝对偏差	0.00100	0.01250	0.00000	0.00167	0.00819	0.00866	0.00040	0.00015	0.00020
相对偏差	1.02	0.30	0.00	156.97	0.38	2.99	3.81	1.80	2.04
次数\元素	Si#2	W	Cr#1	Ti	Co#1	Zr	Al	Ni	
1	0.038	0.0563	13.114	0.7947	0.003	0.0919	5.879	73.2841	
2	0.039	0.0576	13.081	0.7936	0.005	0.0935	6.052	73.1234	
3	0.039	0.0576	13.088	0.7918	0.005	0.0942	6.115	73.0409	
平均值	0.0387	0.0572	13.0943	0.7934	0.0043	0.0932	6.0153	73.1495	
绝对偏差	0.00058	0.00075	0.01739	0.00146	0.00115	0.00118	0.12220	0.12368	
相对偏差	1.49	1.31	0.13	0.18	26.65	1.27	2.03	0.17	

## MACHINING



The GP turbocharger has smoother finish that shows the higher level of craftsmanship and superior turbocharger parts. On the other hand, the other turbocharger manufacturer shows no inclination towards machining that is standard industry requirement to produce superior automotive parts.

Inadequate machining leads to surface irregularities that affect fitting and performance of the turbocharger. With other turbochargers, bad machining can introduce defects in the part that will hamper the performance of the vehicle. Ignoring this aspect is going to affect your end customer. Can you win end-customer's trust by offering quality degraded parts?



## MATERIAL IMPURITIES OF TURBINE WHEEL



Fig 1



Fig 2



The Fig 1 shows the material composition analysis. The black spots marks the material impurities that affects the molecular strength of the material used. On the other hand, the Fig 2 shows there are no material impurities in the metal used in GP Turbocharger which means you get a superior performing turbocharger that has longer life. Let's say if the compressor wheel fails, the turbo will fail, then how about the engine? It's unbelievable.

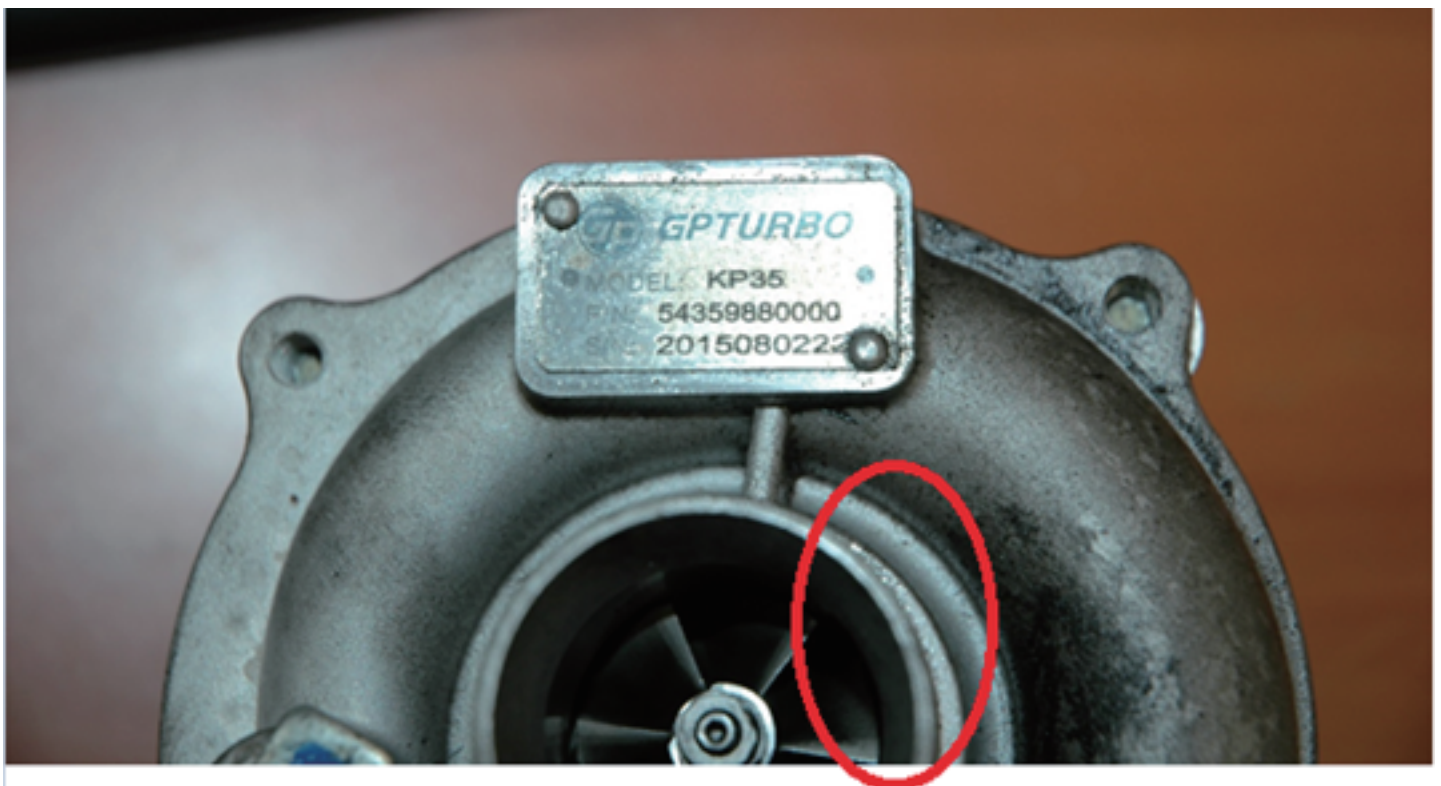
## CASE STUDY-2

### DIRTY MOTOR OIL – THE REASON FOR TURBOCHARGER FAILURE

As the sales engineer of GP Turbo, I have seen some customers coming to replace their turbo chargers under our 1 year warranty period. Following the company warranty policies, we are always happy to assist customers and have provided replacement to the customer. From all the experiences I have seen the most reason for leaking oil turbocharger is not in right maintenance procedures. Let me explain a scenario which involves a leaking oil turbo charger and replacement.

One of our customers came to service center complaining about his leaking oil turbocharger after 5000KM's driving. As the turbocharger was in 1 year replacement warranty period, we gave him a new turbocharger at first and then analyze the reason of leaking oil.

When I inspected the turbocharger closely, I noticed the gap between the compressor wheel and compressor housing was more than normal. Further investigation revealed the gap was not due to fitting but due to wear and tear of parts inside.



## LACK OF GLUE-

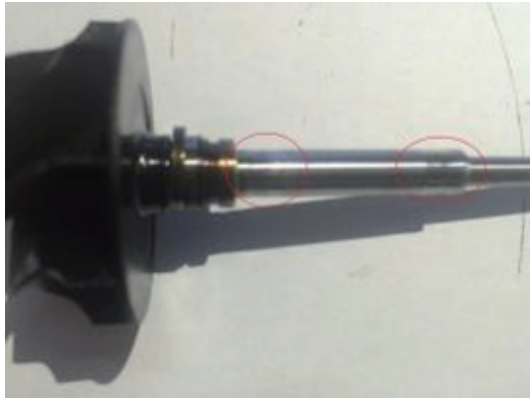


The lack of glue in turbocharger parts is a clear indication of loose fitting. As you can see there is no sign of glue in other turbocharger parts whereas GP turbochargers have the marks of industrial glue that keeps the parts fitted together. Can you imagine an ill-fitted turbocharger and the results?

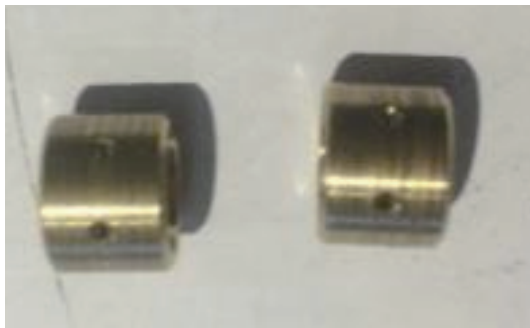
The comparison report is presented to you to show the difference between turbochargers quality. We have tried to present an honest analysis of turbochargers so you can make an informed choice. The Zanauto has had 20+year's history in the European auto engine market. We know better quality means a lot to you. The only thing that we want is to keep offering you better quality on turbochargers and help you get a brighter future.







When I inspected further I was surprised when I saw turbine shaft and journal bearing had a little scratches/abrasion.



Looking at the images, you can clearly see the scratches on the shaft and bearings that cannot be caused by shortage of oil. If that had been the case, you would have seen bluish color on the parts which is not seen. The parts look clean and the reason for the scratches can be impurities in the engine oil.

## WHY THE TURBOCHARGER LEAKS OIL?

My experiences of working with turbochargers tell damages by dirty oil are one of the reasons for turbocharger failure. Damage by dirty oil can be easily identified by medium to heavy scratches on critical bearing surfaces. To avoid such damage, you should always use oil and filters from recommended manufacturers. The filters and oil should be changed while fitting new turbocharger or at regular intervals. You should be careful regarding oil change as dirty oil damage could result from

- Dirt introduced during servicing
- Degraded lubrication oil
- Malfunctioning oil filter or by-pass valve
- Damaged, blocked or low quality oil filter
- Manufacturing debris or engine wear

It is quite common phenomenon that dirt particles enter your engine after long distance driving. Hence it is extremely necessary to change oil to prevent damage to engine and other parts like turbochargers. Dirty oil can break the whole balance of driving by affecting main engine parts.

Thus you can see regular and timely maintenance of your vehicle can save you from big expenses. The customer was happy to receive the new replacement turbocharger and was convinced the quality was not an issue but the real culprit was ignorant about regular maintenance practices.

## CASE STUDY-3

### WE ARE DETERMINED TO DELIVER QUALITY

At GP Turbo, we value our customers, and we are willing to go an extra mile just to ensure that you are satisfied. It is in line with this that we offer a 12 month warranty program. We always take responsibility and it is no surprise that our services have kept improving day by day.

The quality standards that we have set ensure that only approved products that have been appropriately moulded get into the market. However, whenever there are any few amendment to be made, we will fix them as soon as we discover them. As the customer, your feedback matters a great deal. Sometimes you can be our eye and ear, and we always appreciate that.

Here is an example of a situation that helped us better our services. A customer purchased a turbocharger from us but upon installation, it wasn't functioning. Since the turbocharger had a one-year replacement guarantee, we responded immediately and asked him to send the malfunctioning turbocharger back to us. In line with the unconditional guarantee, we gave him a new turbocharger. The satisfaction was evident from him because we had acted promptly to salvage the situation.

We checked the turbocharger that our buyer had returned and true to his word, it wasn't functioning. We noticed that the valve nozzle had been distorted. Now we had to establish the source of the distortion. The images that were taken before shipment showed no fault; the nozzle was just okay. We went further to do pressure testing to establish the level of damage on the inner side.





Probably, the valve nozzle had been damaged while the turbocharger was being transported. At this point, we noticed that we had to improve our packaging to avoid similar alterations in future. Since then, we have resolved to use more craft paper to wrap the turbocharger in the box so that it is very well cushioned from any hostilities on the road. Our clients will no longer have to worry about the condition of their merchandise during shipping because this situation taught us that we need to pack the turbochargers better.

The happiness of our customers always comes fast. We want to boost your engine with our state of the art turbochargers, but we also want you to have a reason to get back to us when you acquire a new ride. You can always get back to us when you have a problem because it has proven to be beneficial to you and us.







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