



RHB TURBOCHARGERS

Quick Start Guide & Technical Information





Tri-Bearing

TB5-45 | TB6-52 | TB6-58 | Super Six

Contents

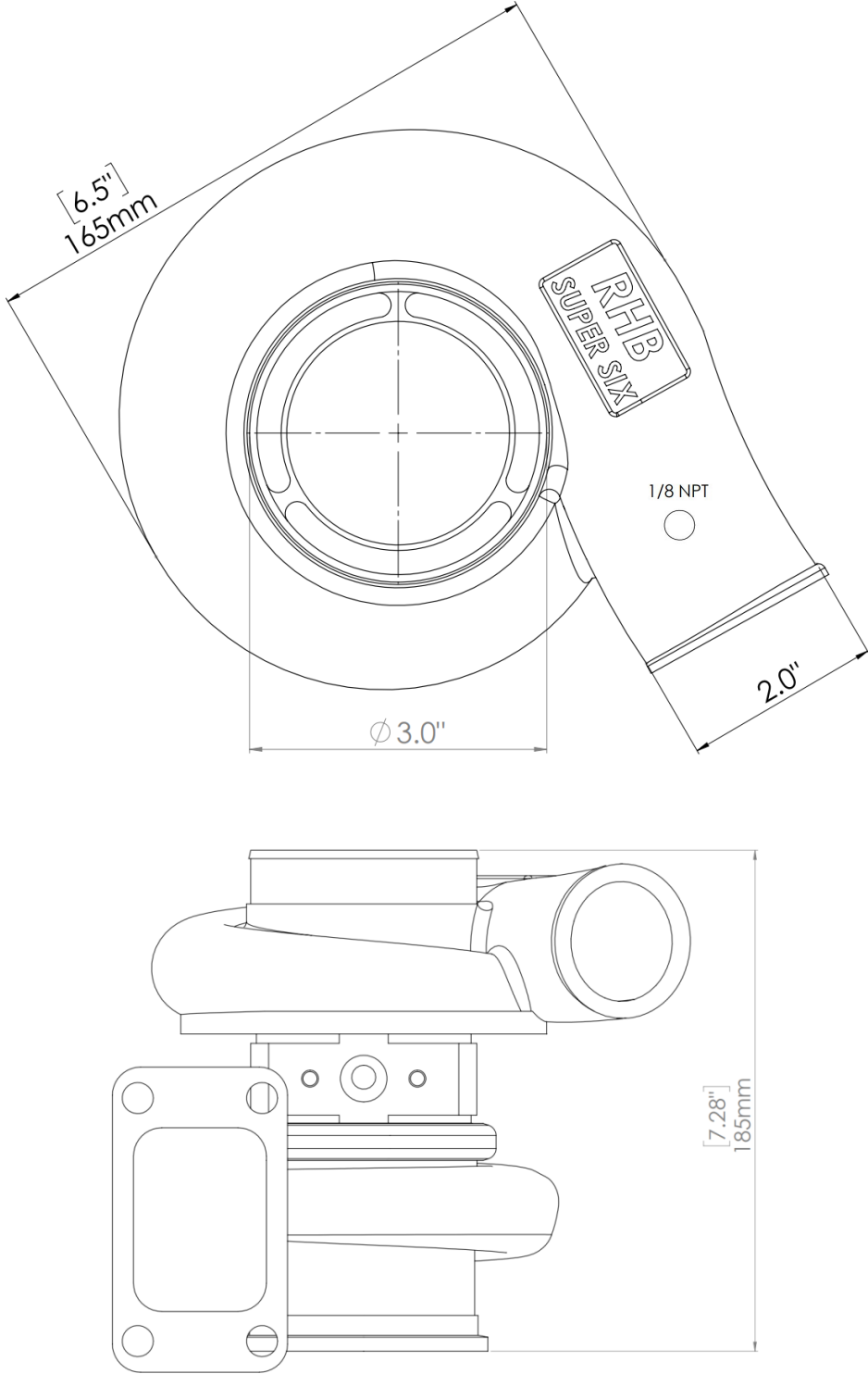
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Specifications

<p>TB5-45 45lb/min</p>		<p>Flank Milled Compressor Wheel</p>	<p>Full Metal Free Floating Triple Ball Bearing</p>	<p>Compressor: 52.5mm Inducer 68mm Exducer 73mm Ext. Tip Turbine: 49.2mm Exducer 56mm Inducer</p>	<p>220-450HP*</p>
<p>TB6-52 52lb/min</p>		<p>Flank Milled Compressor Wheel</p>	<p>Full Metal Free Floating Triple Ball Bearing</p>	<p>Compressor: 52.5mm Inducer 68mm Exducer 73mm Ext. Tip Turbine: 54mm Exducer 61.5mm Inducer</p>	<p>250-520HP*</p>
<p>TB6-58 58lb/min</p>		<p>Flank Milled Compressor Wheel</p>	<p>Full Metal Free Floating Triple Ball Bearing</p>	<p>Compressor: 54mm Inducer 71.4mm Exducer 76.5mm Ext. Tip Turbine: 54mm Exducer 61.5mm Inducer</p>	<p>300-575HP*</p>
<p>Super Six 70lb/min</p>		<p>Point Milled Compressor Wheel</p>	<p>Full Metal Free Floating Triple Ball Bearing</p>	<p>Compressor: 59.4mm Inducer 76mm Exducer 84.3mm Ext. Tip Turbine: 59mm Exducer 67mm Inducer</p>	<p>400-700HP*</p>

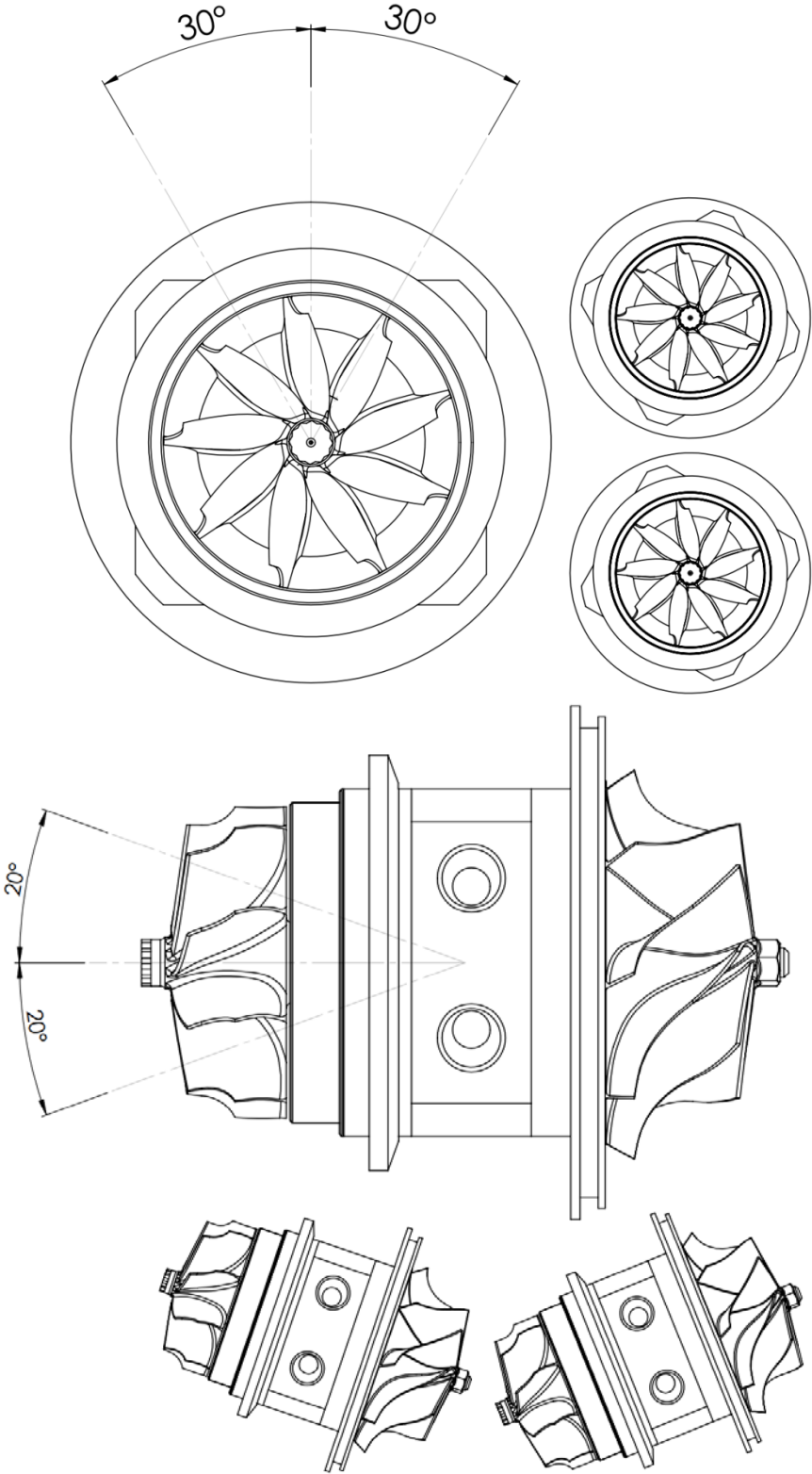
*Horespower figures are a recommended range in HP measured at the crankshaft

General Dimensions



* Housings & overall sizing will vary depending on options, largest housings displayed above

Mounting Constraints

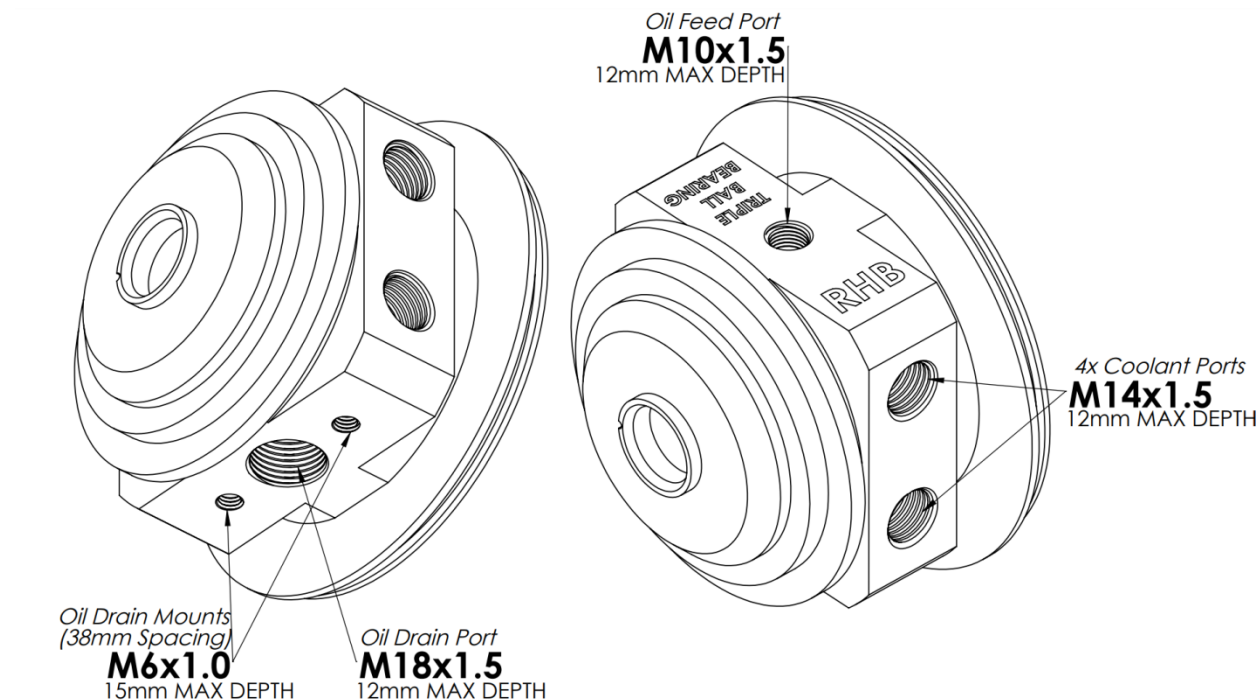


CHRA Clocking

When mounting a turbocharger, it is critical that the CHRA is correctly oriented to ensure good oil drainage. The optimal way to mount any of our Tri-Bearing turbochargers is with the shaft parallel to the ground and with the oil drain path perpendicular to the ground. It is understood that this may be difficult to achieve in some applications, thus the turbocharger may be mounted within the angles displayed in Figure 3 and Figure 4 without issue.

Compressor and turbine housings may be mounted freely in 360°.

Plumbing



Oil Feed

Your turbocharger will come with and require an oil feed restrictor sized between 0.060" and 0.040" (1mm to 1.5mm). Whether banjo bolt or AN adapter fitting, threads must not exceed 12mm of intrusion into the oil feed port. Using an excessively long fitting may result in the fitting not sealing correctly, or in severe cases, turbocharger damage.

It is important that the oil feed to the turbocharger is free from debris and is a filtered supply sourced post engine oil filter. It is recommended that you purge your oil feed line prior to running the turbocharger for the first time. This means cranking the engine with

the oil feed line disconnected to flush debris through the turbo oil feed line. Debris may be present in even a brand new oil feed line. Any debris will clog the oil restrictor fitting and cause turbocharger damage. If you cannot purge your oil feed line, it is recommended to remove the restrictor fitting and inspect for debris after the turbocharger is first run.

All engine oil grades from 0w3 to 20w60 or higher are acceptable. Oil feed lines must not be smaller than -3AN.

Oil Drain

It is imperative that an oil drain size of -10AN or larger is used. Smaller oil drains may result in oil consumption or coking. Since oil drainage depends on gravity, oil drains should be a direct path from the turbocharger to the oil pan with no kinks, sharp bends or restrictions. There should be no bends greater than 60° within 2 inches (50mm) of the turbocharger. Small, restrictive, obscure or near horizontal oil drains should only be used when paired with a scavenge pump.

There are provisions to use a universal 2 bolt style oil drain flange, as well as provisions to use an M18 adapter fitting of choice. It is important that your oil drain fitting does not intrude more than 12mm into the CHRA as this may cause oil to pool inside the CHRA.

Coolant

The Tri-Bearing series of turbochargers comes with 4 coolant ports to make coolant line routing a breeze with complete freedom of placement. Since the CHRA is an aluminum assembly, coolant is essential to regulate temperature. A minimum of 2 coolant ports must be used to create an inlet and outlet for coolant flow. Running without coolant is not recommended, however it can be acceptable in some forms of racing such as time attack, drag racing or autocross. Coolant lines must not be smaller than -6AN.

Clocking

The compressor housing is secured by a large circlip. Simply compressing the circlip is usually enough to rotate the housing 360°. If the housing must be removed, ensure that it slides off without damaging compressor blades. Install only once it is free from debris, and ensure that it is entirely seated and centered.

The turbine housing is secured by a v-band clamp. Loosening the V-band clamp is usually enough to rotate the housing 360°. If the housing must be removed, ensure that it slides off without damaging turbine blades. Install only once it is free from debris, and ensure that it is entirely seated and centered. The torque spec for the 10mm V-band nut is: 7ft-lb

Running Conditions

There are no special precautions to take when running a Tri-Bearing turbocharger, however the standard rules to running a turbocharger apply. These include:

- Always run an air filter when possible
- Always run a properly functioning blow-off valve when possible
- Allow coolant to approach operating temperature before hard driving
- Allow 10-20 seconds of idle time before shut down after hard driving to prevent oil coking
- Ensure there are no severe boost leaks in the system that can cause shaft over-spin
- Ensure wastegate is functional and correctly set up

Exceeding pressure ratios of 4:1 bar (43.5psi of boost) regularly, or exceeding shaft speeds of 180,000rpm regularly may reduce the lifespan of your turbocharger.

Without a shaft speed sensor, you can confirm that you are below the 180,000rpm shaft speed limit by ensuring you are no more than 15% above the recommended HP range for your specific turbocharger. (Measured at the crank)

Out of the Box

In a brand new state, your turbocharger will have 0.005"-0.0065" of end to end shaft play (axial). This normal, and is necessary to allow for thermal expansion. The rotating assembly should always spin freely.

If you require technical support, always feel free to contact us at:

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SIXTY (60) DAY RETURNS

All sales are final, with the exception of unused product. Upon delivery, a sixty (60) day return period will be activated. Products may be refunded ONLY if a return request is submitted before the expiry of the sixty (60) day return period, and the product has not been used or tampered with. A brief justification of the return is required as a component of the return request.

Refunds will only be issued once products have physically been returned and have been confirmed to be in an unused condition and not tampered with. Return shipping will be at the expense of the customer.

PRODUCT INFORMATION & LIMITED LIABILITY

By purchasing a turbocharger, you realize that it is a mechanical device that can cause severe injury and bodily harm if misused or installed incorrectly.

As we cannot control what you, the end user does with our product, RHB Turbochargers cannot be held accountable for:

- Any injury or bodily harm sustained due to mishandling, misuse or unsafe practices
- Any damages to a consumer's vehicle or machinery
- Any illegal or malicious activities involving our product(s)

Here at RHB, we have done extensive research and development such that we can produce turbochargers and

turbocharging products that are in the top tier of reliability, performance and consistency. It is our philosophy that turbochargers should outlast the vehicle they are installed on, when the turbocharger is used within its recommended operating range in correct conditions. That being said, operating any turbocharger (including ours) outside of its recommended operating range or conditions will create a risk of turbocharger failure or poor performance. To find the optimal operating range and conditions of your turbocharger, please refer to your manual.

Since factors affecting the reliability and performance of turbocharger systems are vast and complex, we do not offer warranty or replacements for failed or poor performing turbocharger units.

Our turbochargers are for off road use only. This means they are intended for racing use only and may be illegal for road use depending on your jurisdiction.

DUE DILLIGENCE

It is the customer's responsibility to read through any articles, manuals or product information to enable them to select the correct product before making a purchase. For best results, it is important that you understand the limits, capabilities, and intended application of the product. All written material for a specific product is included on that product page. If you feel that anything is missing or incomplete, or you require more information, do not hesitate to contact us.